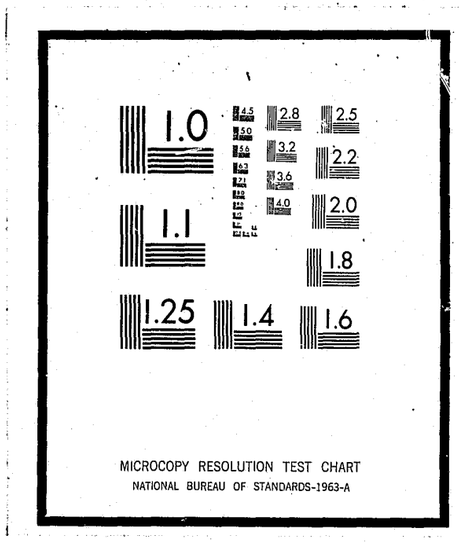


GEORGE A. PRAUL ASSOCIATES

Public - Safety Consulting

1054 Bristol Road, Warminster, Penna. 18974

(215) 675-6961

-1641K Fed
-386 total - mostly 6's.

February 25, 1974

Mr. Keith M. Miles
Director, Evaluation Management Unit
Governor's Justice Commission
P.O. Box 1167
Harrisburg, Pennsylvania 17108

Dear Sir:

Enclosed please find copy of the Final Evaluation Report concerning Allentown, Penna. Project # NE-167-72A.

If you have any questions concerning same please do not hesitate to call me.

Sincerely,

George A. Praul

GAP;ss

15682

FINAL EVALUATION REPORT

CITY OF ALLENTOWN, PENNSYLVANIA

PROJECT NE-167-72A

PROJECT TITLE - EMERGENCY COMMUNICATIONS SYSTEM

Prepared by

GEORGE A. PRAUL ASSOCIATES
1054 Bristol Road
Warminster, Penna. 18974

SECTION I

EXECUTIVE SUMMARY OF EVALUATION REPORT

The Emergency Communications System Project implemented by the City of Allentown was designed to establish one central emergency communications center to receive and process all requests for emergency police, fire, and ambulance services within the City. The system was also designed to offer faster and easier access to the general public by providing 911 telephone service, no coin dialing from public telephones and citizen access call boxes throughout the City.

The major activities of the project included establishing and equipping a modern communications center in the City's Public Safety Building, transferring existing police, ambulance, and fire dispatching from their respective locations to the new center, staffing the center with trained and capable non-sworn personnel to perform the communications function, modifying telephone service to accomodate 911 service, and educating the public to the availability of the new service.

The City and the Project Staff have worked diligently in accomplishing these tasks and have initially been very successful in providing the residents of the city with a sophisticated and well planned system. Minor problems arising during implementation have been met head-on and resolved where possible, or plans altered when necessary.

The system has been fully operational since September of 1973, and the operation is improving continuously as the personnel become more familiar with their duties, and the police and fire personnel become more accustomed to the change in procedures.

Evaluation tasks conducted during the project period substantiate the initial beliefs of the Project Staff that considerable improvement was possible. Some of the indicators developed that support this statement are as follows;

1. Citizen awareness of the number to call in an emergency has increased by 17%.

2. Citizen calls to the Bell Telephone operator for emergency purposes has decreased by 40%.

3. Citizen access time to reach the emergency service has decreased by 55% on direct dial calls.

4. Overall response time has been reduced by a minimum of 10.4%.

5. Due to the non coin call system now available at all public phones the citizen has additional availability of access to the emergency services.

6. As the operational personnel become more and more proficient the entire system becomes more professional and better suited to react favorably in the face of large emergency situations.

In light of the success already achieved by the Project Staff, and the overwhelming acceptance by the citizens of Allentown, it is highly recommended that the system concept be continued.

SECTION II

PROJECT ACTIVITIES

The original goals and objectives of the project were to combine all the communications functions of the City into one main center using new techniques, non-sworn personnel, modern equipment, and a 911 telephone system in order to improve the communications process. By these steps it was believed that response time could be significantly reduced thereby increasing the apprehension rate and crime clearance rate.

The project application placed specific emphasis on the crime of robbery and identified a 35% increase in the index crimes in the City between 1970 and 1971 as compared to a national increase of 7%.

The main project activities included establishment of the Communications Center, changeover of the telephone system to the 911 concept, educating the public in the use of the system, and establishing a unit of government with staff to operate the system.

SECTION III

EVALUATION ACTIVITIES

Evaluation of this project was divided into three major parts. Part 1 consisted of identifying conditions existing before implementation of the system. Part 2 was concerned with the activities of the project during the changeover period, and Part 3 was a re-examination of the same criteria that was examined before system implementation to determine comparisons and identify changes.

The data and information used for this evaluation consisted of all the actual data affecting total response time. This included measuring the following:

- Time expended by the citizen in reaching the emergency service.
- Citizens required to dial the operator for emergency service due to lack of knowledge regarding the telephone numbers to call.
- Time expended in receiving, processing, and dispatching requests for service.
- Manpower available to receive and respond to the calls.
- Time expended in traveling to the scene of requests for service.

The methods used to collect the data varied in each case and, in particular instances to insure validity, actual time study tasks were performed.

In the case of citizen access time, local citizens were hired to make test calls at two different times during the program. In each case 200 calls were made at various times and stop-watch timed.

Information regarding message processing time and patrol car travel time was stop-watch timed by the evaluation staff in one hundred different cases. In all cases the validity of the information collected was of prime importance and the method of collection determined accordingly.

The scope of the evaluation consisted mainly of collecting and comparing data relating to operations, response time, equipment, interviews and meetings with the Project Staff, and evaluation of the performance of the operational personnel.

The evaluation effort was only limited by the length of time available from implementation (September, 1973) until final report filing time (February, 1974). However, sufficient statistical groundwork has been reported to permit the continuation of "in-house" evaluation.

Feedback from the evaluation staff was continuous during the project and included many procedural suggestions and recommendations that have been adopted. Several recommendations were also made in the interim evaluation report and the City administration is actively attempting to implement them.

The recommendations included a revision in operational personnel scheduling from current 10 hour and 14 hour days to standard 8 hour work days. The Project Staff intends to make this change within the next 30 days.

Another major recommendation made in the interim report was to attempt to resolve the problems created by the operational personnel being represented by two separate unions. This situation has resulted in two pay scales and two benefit packages existing among the center personnel. The new City administration that took office in January is attempting to resolve this problem.

SECTION IV

PROJECT RESULTS & ANALYSIS

The major anticipated result of the project was a reduction in response time and this has been initially successful.

Another result hoped for was either a reduction in the crime of robbery or an increase in the apprehension rate caused by more rapid response.

Examination of Department crime records were compared for the periods - September through December, 1972, and September through December, 1973. The 1972 period experienced 62 robberies with 13 cleared - or 21%, while the 1973 period shows 66 robberies with 16 cleared - or 24%. — not statistically significant

The time periods available are not considered sufficient for proper analysis, however, they do indicate that while the occurance rate has not decreased, the clearance rate by arrest is starting to increase.

In general then, the anticipated results of the project have been initially realized and indications for continued improvement are apparent.

This project has resulted in improved response time, improved citizen access for reporting crime, and at least initial indications of an improved clearance by arrest rate. While crime reduction has not been experienced thus far, it seems probable that improvement in all other factors will eventually tend to reduce crime occurences even if only due to displacement.

It is the opinion of the evaluation staff that this project represents the best way to attack the problem of reducing response time.

The concept of 911 emergency centers has been proven most effective in many areas of the nation and current, or pending, legislation in many states is directed toward establishing statewide 911 services.

The Allentown Center has only been operational since September, 1973, and has already shown some improvement. This initial improvement is encouraging and favorably comparable to other similar projects that have been implemented.

Systems using other approaches such as a seven digit emergency-only number have not proven nearly as successful mainly because of the requirement for the public to learn another standard telephone number.

The adoption of the 911 system in Allentown has provided the citizens with a method of reaching emergency services that was never before possible. This will most certainly result in more accurate and efficient crime reporting and, hopefully, create a better police-public relationship due to the professional and efficient processing of the citizens' complaints.

As in most other projects of this type, short range budgetary savings are not realized. Savings are better related to the units of service provided and the long range capability for expansion that was not possible prior to project implementation.

A specific example is personnel costs. Before this project was implemented personnel were required at the fire center and police headquarters. The total number of employees performing the communications duties varied by needs, however, the total number was approximately the same as the current number of operational personnel assigned to the Communications Center. The City has not released any of the original persons and has actually added non-sworn employees to relieve the police personnel. The City is then expending more money to provide the service. The project savings are better related to the more efficient use of the police personnel, thereby possibly reducing the need for expansion in that department, the added capability now available to process a larger number of requests for service, and the increase in efficiency.

It is quite obvious that future expenditures would have been much higher if the system had not been implemented and that is the actual cost savings factor.

SECTION V

FINDINGS & RECOMMENDATIONS

The findings of this evaluation effort are detailed in two data summary reports.

The first report was filed as an Appendix to the Interim Evaluation Report and consisted of findings before the new communications system was operational.

The second summary report was delivered to the City of Allentown in January, 1974, and copies will be attached to those copies of this report that are forwarded to the Governor's Justice Commission. The second summary report identified the findings of similar data collecting after the new center became operational and shows comparisons to the original report.

The second report indicates that during the first four months of operation some degree of success has been accomplished.

An overall response time reduction of 10% has been identified, however this is only the minimum reduction accomplished. If the reduction in 'dial operator' calls had also been computed into the overall reduction, the percentage would be much greater.

The reduction was not included for two reasons, as follows:

1. The intent was to show the variation between two identical testings, therefore the same number of calls were made through the operator in both tests.

2. The control of the reliability of the data was poor since the telephone company supplied the information based on cards filed by numerous telephone operators in the central offices.

It is accurate to state however, that the 10.34% reduction is the absolute minimum reduction and the probability exists that a 15% reduction was realized. It is also probable to expect that additional decreases will be realized because of the improving public awareness of the 911 operation as identified in the second data summary.

The factor that has most affected the success of this project is the cooperative attitude of all persons concerned. These include the City Administrator, the Project Staff and the operational personnel of the new center and emergency services agencies. Their ability to be constructive, and devotion to producing an efficient operation, has proven to be a key factor in the project.

The project has proven to this evaluator to be of considerable worth to the City of Allentown, its' citizens and the City Government. The initial findings are conclusive enough to strongly indicate that continued improvement will be realized in reaching the project goals and objectives and will be accomplished in the most efficient and cost effective manner.

It is also the opinion of this evaluator that continued progress will result in improvements in all areas of the Criminal Justice system. As the citizenship of the community becomes more aware it is believed that they will also become more responsive. This could well result in quicker and more complete crime reporting and an increased willingness on the part of the citizentry to become involved.

Specific recommendations designed to aid the City in gaining additional improvement from this project are as follows:

- Continue to actively seek a solution to the problem of the operational personnel being represented by two separate unions and having different wage and benefit packages.

- Continue to improve the level of management and line supervision assigned to the communications staff.

- Develop and provide a continuous in-service training program for the dispatching staff that is designed to deal with day to day problems, operational standards, and review of previous errors.

- Develop and institute periodic staff meetings between the management staff of the communications center, police department, and fire department to review problems, alter procedures, and create mutual understanding between the agencies.

- Continue the collection of statistical data to be used for in-house evaluation and comparisons to the initial findings of this report.

It is further recommended that the City institute a broad review of the police department in an effort to insure that existing personnel are being utilized to the best advantage. This recommendation is made due to the limited amount of manpower available to receive and process calls for service as identified in the summary reports, and is in no way meant to be a criticism of the police administration.

In considering projects of like nature in the State of Pennsylvania, it is recommended that the Governor's Justice Commission assure itself that the following major items are given adequate attention by the project planners.

- Extensive and conclusive pre-project data collection and planning.
  An example of this planning can be reviewed in a report recently prepared for Lancaster City and County, Pennsylvania. This report represents initial planning stages.
- Detailed technical and operational design based on initial report and human engineering factors.
- Extensive pre-operation training for all personnel.
- Heavy public education programs.

COMMUNICATIONS EVALUATION PROJECT

ALLENTOWN, PENNSYLVANIA

PROJECT -- TASK 3

Summary of Data

3A Citizen Access Time

To determine the time expended by a citizen when he decides to call the police until he reaches the complaint operator, 200 telephone calls were made to Police Headquarters and exact times logged from the lifting of the receiver to an answer by the police complaint desk. Two persons were selected to make 100 calls each and they each used their home phones which are in the two separate exchange areas. Each caller performed the following tasks but on separate days. All calls were distributed over a period of time and at a frequency of no less than 12 minutes apart to avoid overloading the complaint operator.

1. 50 calls were made by each caller over a 48 hour period during the week of January 14th, 1974. The calls were made by dialing 911 and timed from the start of dialing until answered in the emergency communications center. The results of these calls are shown on EXHIBITS 1 & 2.

2. 50 calls were made by each caller over a 48 hour period during the week of January 14th, 1974. These calls were made by dialing Operator and asking for the Allentown Police and were also timed from the start of dialing until contact was made with the emergency communications center. The results of these calls are shown on EXHIBITS 3 & 4.

EXHIBIT 5 is a comparison between the citizen access times from Tasks 1A and 3A.

Telephone survey from 439 exchange, January 16 - 19, 1974.

CALL NO.	TIME OF CALL	SECONDS TO COMPLETE CALL	BUSY SIGNAL yes	BUSY SIGNAL no	DISCONNECT yes	DISCONNECT no	COMMENTS
1.	8.52 PM	11		x		x	
2.	9.13	8		x		x	
3.	9.40	6		x		x	
4.	10.00	8		x		x	
5.	10.45	8		x		x	
6.	11.00	10		x		x	
7.	11.15	11		x		x	
8.	11.29	9		x		x	
9.	11.44	10		x		x	
10.	11.59	9		x		x	
11.	12.15 AM	7		x		x	
12.	12.30	12		x		x	
13.	12.45	9		x		x	
14.	1.00	13		x		x	
15.	1.15	8		x		x	
16.	1.30	7		x		x	
17.	1.45	12		x		x	
18.	2.00	11		x		x	
19.	2.15	11		x		x	
20.	2.30	19		x		x	
21.	2.45	9		x		x	
22.	3.00	13		x		x	
23.	3.15	12		x		x	
24.	3.30	8		x		x	
25.	3.45	13		x		x	
26.	9.18	8		x		x	
27.	9.40	8		x		x	
28.	9.55	13		x		x	
29.	10.10	11		x		x	
30.	10.25	12		x		x	
31.	10.57	8		x		x	
32.	11.13	14		x		x	
33.	11.25	13		x		x	
34.	1.35 PM	27		x		x	
35.	2.00	17		x		x	
36.	2.20	8		x		x	
37.	2.39	16		x		x	
38.	3.10	12		x		x	
39.	3.25	7		x		x	
40.	3.53	11		x		x	
41.	5.20	14		x		x	
42.	5.42	10		x		x	
43.	6.00	8		x		x	
44.	6.22	17		x		x	
45.	6.40	8		x		x	
46.	6.55	10		x		x	
47.	7.24	35		x		x	
48.	7.57	9		x		x	
49.	8.15	51		x		x	
50.	8.35	10		x		x	

EXHIBIT 2

Telephone survey from 797 exchange, January 16 - 19, 1974.

CALL NO.	TIME OF CALL	SECONDS TO COMPLETE CALL	BUSY SIGNAL yes	BUSY SIGNAL no	DISCONNECT yes	DISCONNECT no	COMMENTS
1.	8.00 AM	25		x		x	
2.	8.15	24		x		x	
3.	8.30	24		x		x	
4.	8.45	23		x		x	
5.	9.00	24		x		x	
6.	9.15	23		x		x	
7.	9.31	22		x		x	
8.	9.46	24		x		x	
9.	10.05	23		x		x	
10.	10.20	20		x		x	
11.	10.35	23		x		x	
12.	10.50	23		x		x	
13.	11.05	23		x		x	
14.	11.20	23		x		x	
15.	11.35	23		x		x	
16.	4.00 PM	18		x		x	
17.	4.15	29		x		x	
18.	4.30	29		x		x	
19.	4.45	21		x		x	
20.	5.00	28		x		x	
21.	5.15	27		x		x	
22.	5.33	25		x		x	
23.	5.50	24		x		x	
24.	6.05	26		x		x	
25.	6.35	25		x		x	
26.	6.50	22		x		x	
27.	7.05	21		x		x	
28.	7.20	22		x		x	
29.	7.35	21		x		x	
30.	7.50	21		x		x	
31.	8.05	20		x		x	
32.	8.20	24		x		x	
33.	8.35	21		x		x	
34.	8.50	21		x		x	
35.	9.05	25		x		x	
36.	12.01 AM	24		x		x	
37.	12.16	22		x		x	
38.	12.33	22		x		x	
39.	12.48	17		x		x	
40.	1.03	21		x		x	
41.	1.18	17		x		x	
42.	1.35	25		x		x	
43.	1.50	17		x		x	
44.	2.05	20		x		x	
45.	2.20	21		x		x	
46.	2.35	22		x		x	
47.	2.50	19		x		x	
48.	3.05	24		x		x	
49.	3.20	17		x		x	
50.	3.35	18		x		x	

EXHIBIT 3

Telephone survey from 439 exchange, January 14 - 17, 1974.

CALL NO.	TIME OF CALL	SECONDS TO COMPLETE CALL	BUSY SIGNAL yes	BUSY SIGNAL no	DISCONNECT yes	DISCONNECT no	COMMENTS
1.	12.30 AM	29		x		x	
2.	12.46	35		x		x	
3.	1.05	29		x		x	
4.	1.20	30		x		x	
5.	1.35	29		x		x	
6.	1.50	27		x		x	
7.	2.07	29		x		x	
8.	2.23	32		x		x	
9.	2.40	28		x		x	
10.	2.55	25		x		x	
11.	3.10	30		x		x	
12.	3.25	29		x		x	
13.	3.40	28		x		x	
14.	3.55	29		x		x	
15.	4.13	31		x		x	
16.	9.55	37		x		x	
17.	10.13	47		x		x	
18.	10.30	1.25		x		x	Bell oper. - 63 s answering
19.	10.50	30		x		x	
20.	11.09	45		x		x	Bell dialed wrong no.
21.	11.33	53		x		x	Bell - 34 s answering
22.	11.50	33		x		x	
23.	12.25 PM	32		x		x	
24.	12.45	35		x		x	
25.	1.08	56		x		x	Bell - 33 s answering
26.	1.30	36		x		x	
27.	1.53	54		x		x	Bell - 35 s answering
28.	2.08	29		x		x	
29.	2.22	37		x		x	
30.	2.44	59		x		x	Bell - 33 s answering
31.	4.05	60		x		x	Bell - 37 s answering
32.	4.45	29		x		x	
33.	5.05	26		x		x	
34.	5.20	29		x		x	
35.	6.04	29		x		x	
36.	6.20	34		x		x	
37.	6.50	34		x		x	
38.	7.08	50		x		x	
39.	7.38	26		x		x	
40.	7.55	26		x		x	
41.	8.15	30		x		x	
42.	8.44	33		x		x	
43.	9.10	37		x		x	
44.	9.26	30		x		x	
45.	9.45	28		x		x	
46.	10.00	57		x		x	Bell - 30 s answering
47.	10.16	29		x		x	
48.	10.37	26		x		x	
49.	10.55	41		x		x	
50.	11.17	47		x		x	

EXHIBIT 4

Telephone survey from 797 exchange, January 14 - 17, 1974.

CALL	TIME OF CALL	SECONDS TO COMPLETE CALL	BUSY SIGNAL yes	BUSY SIGNAL no	DISCONNECT yes	DISCONNECT no	COMMENTS
1.	4.00 PM	44		x		x	
2.	4.15	45		x		x	
3.	4.30	2.00		x		x	Rang 8 times for Bell Oper.
4.	4.48	1.05		x		x	
5.	5.05	56		x		x	
6.	5.20	48		x		x	
7.	5.35	58		x		x	
8.	5.50	59		x		x	
9.	6.05	1.06		x		x	
10.	6.20	47		x		x	
11.	6.38	1.00		x		x	
12.	6.55	2.06		x		x	
13.	7.15	52		x		x	
14.	7.30	2.10		x		x	
15.	7.47	43		x		x	
16.	8.02	2.06		x		x	
17.	8.18	44		x		x	
18.	8.35	46		x		x	
19.	8.50	51		x		x	
20.	9.05	42		x		x	
21.	12.01 AM	1.05		x		x	
22.	12.17	2.00		x		x	
23.	12.33	1.28		x		x	
24.	12.50	49		x		x	
25.	1.05	3.53		x		x	Dialed twice for Bell oper.
26.	1.20	45		x		x	
27.	1.35	41		x		x	
28.	1.50	40		x		x	
29.	2.05	41		x		x	
30.	2.20	43		x		x	
31.	2.35	51		x		x	
32.	2.50	54		x		x	
33.	3.06	54		x		x	
34.	3.22	46		x		x	
35.	3.38	1.45		x		x	
36.	8.30	55		x		x	
37.	8.50	45		x		x	
38.	9.15	41		x		x	
39.	9.30	43		x		x	
40.	9.45	39		x		x	
41.	10.03	1.16		x		x	
42.	10.20	58		x		x	
43.	10.40	57		x		x	
44.	10.57	53		x		x	
45.	11.15	55		x		x	
46.	11.33	42		x		x	
47.	11.50	57		x		x	
48.	12.10 PM	43		x		x	
49.	12.36	1.15		x		x	
50.	12.52	1.00		x		x	

EXHIBIT 5

COMPARISON
CITIZEN ACCESS TIME
PRIOR TO AND AFTER 911 IMPLEMENTATION
CITY OF ALLENTOWN, PENNSYLVANIA

200 Test Calls, July 1973, prior to "911"	Minimum Time	Maximum Time	Average Time
50 direct dial calls from 439 exchange	15 s	74 s	31 s
50 direct dial calls from 797 exchange	26 s	141 s	46 s
50 dial operator calls from 439 exchange	24 s	92 s	46 s
50 dial operator calls from 797 exchange	27 s	118 s	51 s
Averages for 200 Test Calls	23 s	106 s	44 s

200 Test Calls, January 1974, after 911 implementation			
50 direct dial calls from 439 exchange	6 s	51 s	12 s
50 direct dial calls from 797 exchange	17 s	29 s	22 s
50 dial operator calls from 439 exchange	26 s	85 s	36 s
50 dial operator calls from 797 exchange	39 s	233 s	64 s
Averages for 200 Test Calls	22 s	99 s	34 s

Percent of Change

Direct dial calls	- 55.84 %
Dial operator calls	+ 3.09 %

3B "Dial Operator" Police Calls

The Bell Telephone Company was requested to supply information regarding the number of times citizens dial the operator when they need the Police Department.

During the period January 6th through January 12th, 1974, the total number of calls placed through the operator was 77.

Comparison

Task 1B

Operator calls July 23 thru July 29, 1973, inclusive 187

Daily average - 26.7 calls

Task 3B

Operator calls Jan. 6 thru Jan. 12, 1974, inclusive. 77

Daily average - 11 calls

Percent of change

Estimated seasonal reduction in crime reporting for same periods 18 %

Estimated actual percent reduction in dial operator calls 40 ~~34~~ %

3C & 3D. Message Processing and Police Response Time

To determine the amount of time expended after a complaint is received in the Communications Center until the responding police unit reaches the scene, 100 actual complaint cards were reviewed for cases requiring immediate response.

EXHIBIT 6 presents the findings of this review.

EXHIBIT 7 is a comparison between Tasks 1C and 1D and 3C and 3D.

EXHIBIT 8 is a bar graph comparing total response time.

EXHIBIT 6 - 1

MESSAGE PROCESSING
and
RESPONSE TIME

(All Times in Minutes)

DATE	TIME	TYPE OF CALL	MESSAGE PROCESSING TIME	RESPONSE TIME	TOTAL TIME
1/11/74	12:08	Accident	2	8	10
	12:44	Accident	1	5	6
	12:54	Accident	1	1	2
	13:26	Injury	3	3	6
	15:53	Accident	3	5	8
	18:05	Disturbance	1	4	5
	19:20	Alarm	1	8	9
	19:31	Juvenile problem	1	2	3
	19:37	Alarm	1	1	2
	19:41	Fight	6	4	10
	20:26	Accident	2	2	4
	20:26	Injured person	2	2	4
	20:49	Fight	3	7	10
	20:55	Disturbance	3	3	6
	21:19	Alarm	4	4	8
	22:44	Accident	1	6	7
	22:51	Assault and Battery	1	4	5
	22:56	Family disturbance	5	6	11
	23:01	Live wire down	3	9	12
	23:05	Disturbance	1	1	2
	23:18	Alarm	1	8	8
	23:35	Burglary	1	5	6
	23:56	Injured person	2	1	3
1/12/74	00:58	Family disturbance	1	6	7
	01:02	Attempted suicide	3	6	9
	01:27	Woman in labor	4	2	6
	02:22	Fight	2	5	7
	02:56	Assist officer	1	7	8
	03:10	Woman in labor	1	2	3
	03:28	Attempted entry	1	4	5
	03:38	Man with gun	1	4	5
	03:56	Strong gas odor	2	3	5
	07:10	Fire	1	3	4
	08:30	Alarm	2	6	8
	09:32	Traffic Hazard	1	5	6
	09:42	Burglary	1	3	4
	09:46	Unwanted person	1	1	2
	10:09	Injured person	1	1	2
	11:21	Robbery	1	3	4
	12:28	Accident	1	5	6
	13:08	Accident	1	1	2
	13:19	Attempted burglary	4	4	8
	14:50	Man with gun	1	2	3

EXHIBIT 6 - 2

DATE	TIME	TYPE OF CALL	MESSAGE PROCESSING TIME	RESPONSE TIME	TOTAL TIME
1/12/74	15:16	Shoplifter	11	1	12
	15:23	Fire	1	1	2
	15:31	Accident	4	1	5
	15:33	Alarm	1	7	8
	16:06	Injured person	3	1	4
	16:13	Vandalism	1	4	5
	16:41	Accident	1	2	3
	17:28	Hit and run	1	5	6
	17:57	Fight	1	2	3
	18:50	Fight	1	4	5
	19:02	Stroke victim	1	1	2
	19:20	Alarm	1	4	5
	19:38	Injured person	1	4	5
	19:52	Accident	1	1	2
	20:21	Injured person	1	3	4
	20:47	Malicious mischief	2	4	6
	21:53	Assault	1	2	3
	22:41	Possible stroke	1	4	5
	23:52	Burglary	1	3	4
1/13/73	00:35	Sick person	1	6	7
	01:44	Family disturbance	1	3	4
	02:13	Disturbance	1	2	3
	02:36	Injured person	1	3	4
	02:47	Injured person	1	6	7
	03:01	Prowler	1	4	5
	03:17	Disturbance	1	7	8
	03:45	Man with a gun	1	1	2
	05:03	Someone screaming	1	2	3
	07:21	Woman in labor	1	3	4
	07:22	Possible dead person	1	6	7
	09:11	Vandalism	1	5	6
	12:03	Accident	1	7	8
	13:11	Alarm	1	6	7
	13:34	Fight	3	6	9
	14:13	Drunk	1	2	3
	16:10	Disturbance	1	6	7
	19:17	Alarm	1	6	7
	20:18	Sick person	1	2	3
	21:45	Fire	2	1	3
	22:27	Fire	1	2	3
	23:02	Alarm	1	2	3
	23:49	Disturbance	1	1	2
1/14/74	00:21	Heart attack	1	6	7
	10:48	Shoplifting	7	8	15
	17:15	Accident	1	1	2
	17:34	Harrassment	4	1	5
	17:34	Shooting	1	1	2
	19:02	Accident	1	1	2
	19:46	Disturbance	3	6	9

EXHIBIT 6 - 3

DATE	TIME	TYPE OF CALL	MESSAGE PROCESSING TIME	RESPONSE TIME	TOTAL TIME
1/24/74	03:22	Accident	1	3	4
	03:53	Assault and battery	2	1	3
	10:09	Accident	1	6	7
	12:24	Fight	1	4	5
	14:26	Assault and battery	1	3	4
	15:05	Disturbance	1	3	4
	17:08	Fire	1	1	2
	17:52	Fire	1	2	3

COMPARISON

MESSAGE PROCESSING TIME AND RESPONSE TIME

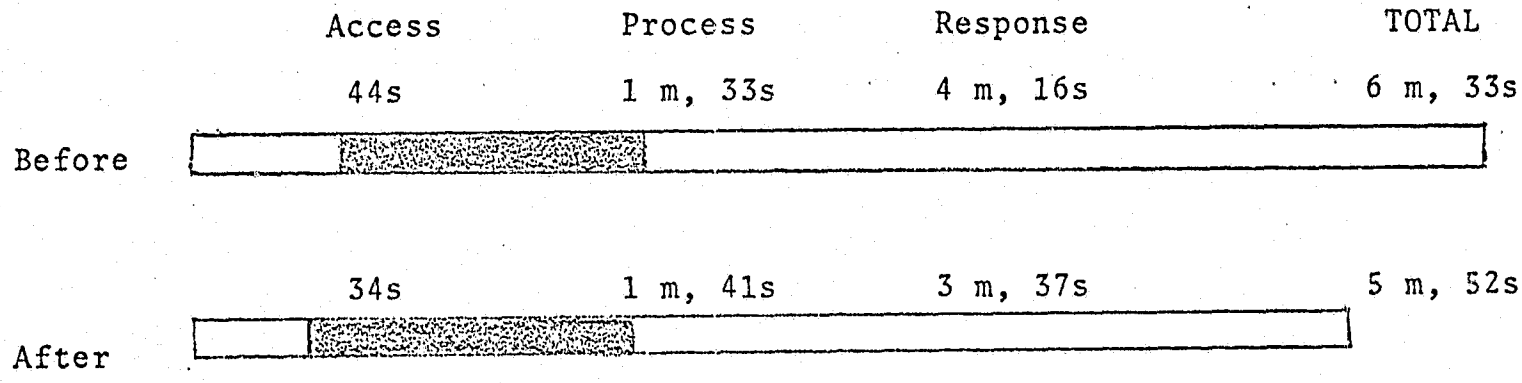
TASKS 1C & 1D to Tasks 3C & 3D

EXHIBIT 7

TASKS		
1C and 1D		
100 Cases studied (Time in minutes & seconds)		
Average processing and response time total	05.48	05.18
Longest processing and response time total	18.00	15.00
Shortest processing and response time total	01.00	02.00
Average response time	04.16	03.37
Longest response time	15.00	08.00
Shortest response time	00.05	01.00
Average processing time	01.33	01.41
Longest processing time	15.00	11.00
Shortest processing time	00.10	01.00
3C and 3D		
100 Cases studied (Time in minutes & seconds)		

TOTAL RESPONSE TIME GRAPH

Before and After 911 Implementation
Based on developed averages



Overall reduction of 10.43%.

EXHIBIT 8

3E Manpower Availability

To determine the manpower available to answer requests for service, work schedules were reviewed for four one-week periods. Each one-week period was selected from a different month.

The results of that review are shown on EXHIBIT 9.

EXHIBIT 10 is a comparison between the figures compiled regarding manpower availability before and after the Emergency Communications Center became operational.

Manpower Availability - October 15 thru October 21, 1973.

DAY & DATE	SHIFT	LIEUT.	SGT.	PATROL OFFICERS	PARK POLICE	FOOT OFFICERS	MOBILE UNITS
Monday	7 AM- 3 PM	1	1	17	1	1	14
10/15/73	3 PM-11 PM	0	1	18	2	2	13
	11 PM- 7 AM	1	0	10	0	1	10
Tuesday	7 AM- 3 PM	1	1	16	1	1	15
10/16/73	3 PM-11 PM	0	1	19	2	1	15
	11 PM- 7 AM	1	1	11	0	1	12
Wednesday	7 AM- 3 PM	1	1	18	1	1	16
10/17/73	3 PM-11 PM	0	1	19	1	1	15
	11 PM- 7 AM	1	1	14	0	1	13
Thursday	7 AM-3 PM	1	1	17	1	1	15
10/18/73	3 PM-11 PM	1	1	19	1	1	16
	11 PM- 7 AM	1	1	14	0	1	13
Friday	7 AM- 3 PM	1	1	15	2	1	15
10/19/73	3 PM-11 PM	1	1	17	2	1	14
	11 PM- 7 AM	1	1	12	0	1	12
Saturday	7 AM- 3 PM	0	1	16	2	1	13
10/20/73	3 PM-11 PM	0	1	16	1	1	13
	11 PM- 7 AM	1	1	10	0	1	12
Sunday	7 AM- 3 PM	0	1	13	2	1	12
10/21/73	3 PM-11 PM	1	1	14	2	1	13
	11 PM- 7 AM	1	1	10	0	1	12

EXHIBIT 9 - 2

Manpower Availability - November 19 thru November 25, 1973.

DAY & DATE	SHIFT	LIEUT.	SGT.	PATROL OFFICERS	PARK POLICE	FOOT OFFICERS	MOBILE UNITS
Monday	7 AM- 3 PM	0	1	16	2	1	13
11/19/73	3 PM-11 PM	1	0	16	2	1	11
	11 PM- 7 AM	1	0	16	0	1	12
Tuesday	7 AM- 3 PM	1	1	19	1	1	16
11/20/73	3 PM-11 PM	1	1	17	2	1	15
	11 PM- 7 AM	1	0	12	0	1	11
Wednesday	7 AM- 3 PM	1	1	20	1	1	16
11/21/73	3 PM-11 PM	1	0	18	2	1	14
	11 PM- 7 AM	0	1	11	0	1	11
Thursday	7 AM- 3 PM	1	0	16	1	1	12
11/22/73	3 PM-11 PM	1	0	10	2	1	11
	11 PM- 7 AM	0	1	11	0	0	11
Friday	7 AM- 3 PM	1	1	19	2	1	16
11/23/73	3 PM-11 PM	1	0	17	0	1	15
	11 PM- 7 AM	0	1	9	0	0	9
Saturday	7 AM- 3 PM	1	1	16	2	1	14
11/24/73	3 PM-11 PM	1	0	16	2	1	13
	11 PM- 7 AM	0	1	11	0	0	11
Sunday	7 AM- 3 PM	1	1	10	3	1	12
11/25/73	3 PM-11 PM	0	1	12	2	1	12
	11 PM- 7 AM	0	1	11	0	0	11

EXHIBIT 9 - 3

Manpower Availability - December 3 thru December 9, 1973.

DAY & DATE	SHIFT	LIEUT.	SGT.	PATROL OFFICERS	PARK POLICE	FOOT OFFICERS	MOBILE UNITS
Monday	7 AM- 3 PM	1	1	15	1	1	14
12/3/73	3 PM-11 PM	1	0	19	1	2	15
	11 PM- 7 AM	1	1	14	0	1	12
Tuesday	7 AM- 3 PM	1	0	12	0	0	12
12/4/73	3 PM-11 PM	1	1	17	1	2	16
	11 PM- 7 AM	1	1	15	0	1	12
Wednesday	7 AM- 3 PM	0	1	12	0	0	12
12/5/73	3 PM-11 PM	0	1	20	0	1	15
	11 PM- 7 AM	1	1	14	0	1	12
Thursday	7 AM- 3 PM	1	0	11	1	0	10
12/6/73	3 PM-11 PM	0	1	19	1	1	15
	11 PM- 7 AM	1	1	13	0	1	12
Friday	7 AM- 3 PM	1	1	15	1	1	14
12/7/73	3 PM-11 PM	0	1	19	1	1	16
	11 PM- 7 AM	1	0	13	0	1	11
Saturday	7 AM- 3 PM	0	1	13	1	1	12
12/8/73	3 PM-11 PM	0	1	16	2	1	14
	11 PM- 7 AM	1	0	11	0	1	11
Sunday	7 AM- 3 PM	1	1	13	1	0	12
12/9/73	3 PM-11 PM	0	1	13	2	1	12
	11 PM- 7 AM	1	0	12	0	0	11

EXHIBIT 9 - 4

Manpower Availability - January 7 thru January 13, 1974.

DAY & DATE	SHIFT	LIEUT.	SGT.	PATROL OFFICERS	PARK POLICE	FOOT OFFICERS	MOBILE UNITS
Monday	7 AM- 3 PM	0	1	19	1	1	16
1/7/74	3 PM-11 PM	1	1	17	2	1	14
	11 PM- 7 AM	1	0	11	0	1	10
Tuesday	7 AM- 3 PM	0	1	16	1	1	15
1/8/74	3 PM-11 PM	1	1	15	2	1	13
	11 PM- 7 AM	1	1	13	0	0	12
Wednesday	7 AM- 3 PM	1	0	19	1	0	16
1/9/74	3 PM-11 PM	1	0	19	1	0	13
	11 PM- 7 AM	1	1	14	0	1	12
Thursday	7 AM- 3 PM	1	0	18	1	0	16
1/10/74	3 PM-11 PM	1	1	19	2	0	13
	11 PM- 7 AM	1	1	13	0	0	12
Friday	7 AM- 3 PM	1	1	15	2	0	13
1/11/74	3 PM-11 PM	1	1	19	2	1	13
	11 PM- 7 AM	1	1	14	0	0	12
Saturday	7 AM- 3 PM	1	1	17	3	1	13
1/12/74	3 PM-11 PM	1	1	18	2	1	12
	11 PM- 7 AM	1	1	13	0	1	12
Sunday	7 AM- 3 PM	1	1	14	3	0	13
1/13/74	3 PM-11 PM	1	0	11	2	0	11
	11 PM- 7 AM	1	0	12	0	0	11

EXHIBIT 10

COMPARISON
of
MANPOWER AVAILABLE TO ANSWER CALLS

Before and After
System Implementation

TOTAL MAN-SHIFTS ON DUTY

	Lieut.	Sgt.	Patrol Officers & Motorcycles	Park Police	Foot Officers	TOTAL
Task 1E	72	42	1,140	112	76	1,444
Task 3E	62	63	1,228	83	67	1,503
% Change	- 13.9%	+43.2%	+7.7%	- 25.9%	- 11.8%	+ 4.1%

3F Airtime Utilization

Airtime utilization was not recomputed during this phase of the evaluation plan because the second frequency will not be operational until after February 1, 1974.

3G Equipment Evaluation

The area designated as the Emergency Communications Center and the equipment in use were examined during Task 3 of this project, and the following conclusions reached:

1. Space

Ample space is provided for the communications function and the design and decor is satisfactory. All equipment is new and modern, and disturbances caused by police and fire personnel entering the area is at a minimum. All walk-in complaintants go to the Desk Sergeant's office in another area of the building and the Communications Center is kept secure from unwanted persons.

Entry into the Center requires the operator inside to push a door release button, and a closed circuit Television System lets him identify who is at the door before he releases it.

2. Procedures

The Center houses two dispatch consoles and four complaint operator positions, however; the normal on-duty squad is four persons. Telephone complaints can be received at any position but usually are taken at either one of two telephone positions, or at one dispatch console. The other dispatch console is used almost exclusively for radio communications. A central conveyor system carries the message cards between the complaint operator positions and the dispatch consoles. This method of processing

complaint messages is in keeping with many other police communications centers around the nation.

3H Public Awareness

To determine any possible improvement in public awareness of the 911 concept, telephone calls were made to 100 telephone numbers selected at random, and the results of that testing is shown on EXHIBIT 11.

EXHIBIT 12 is a comparison between this data and that collected in the same manner in Task 2A of this project.

EXHIBIT 11

Public Awareness Telephone Survey

	Male	Female	Total
Persons contacted	23	77	100
Persons aware of 911 for all services	13	38	51
Persons believing 911 is for police only	9	27	36
Persons believing 911 for police and fire only	0	2	2
Persons with no knowledge of 911	1	10	11

The 51 persons that were fully aware of 911 were asked to identify the various methods by which they learned of the system. The results are as follows:

	Male	Female	Total
Newspapers	11	23	34
Posters	2	5	7
Verbally	0	1	1
Number on police cars	2	3	5
Mail	6	16	22
Radio	5	6	11

EXHIBIT 12

COMPARISON
of
TWO PUBLIC AWARENESS SURVEYS

The first survey was conducted during the changeover period and, generally, represented awareness to advance advertising.

The second survey was conducted after approximately four months of operation.

	Survey 1	Survey 2	% of change
Persons contacted	100	100	0
Persons aware of 911 for all services	45	51	+ 13.3
Persons believing 911 is for police only	26	36	+ 38.5
Persons believing 911 is for police and fire only	1	2	+ 50.0
Persons with no knowledge of 911	28	10	- 64.3
Total persons aware of 911 for police	72%	89%	

END