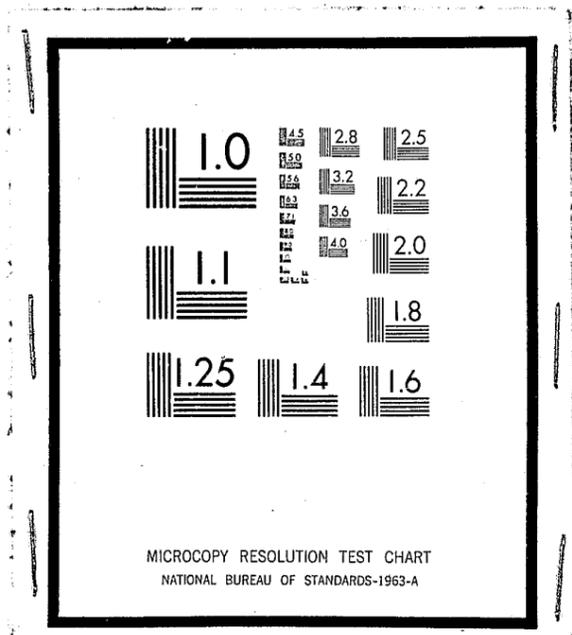


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U.S. DEPARTMENT OF JUSTICE
LAW ENFORCEMENT ASSISTANCE ADMINISTRATION
NATIONAL CRIMINAL JUSTICE REFERENCE SERVICE
WASHINGTON, D.C. 20531

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LAW ENFORCEMENT ASSISTANCE ADMINISTRATION
POLICE TECHNICAL ASSISTANCE REPORT

SUBJECT: Fairfield County, Connecticut; Regional Law Enforcement Information System Development
REPORT NUMBER: 76-138
FOR: Fairfield County, Connecticut, Criminal Justice Planning Administration

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ACQUISITIONS

CONTRACTOR: Westinghouse Justice Institute
CONSULTANT: Robert L. Marx
CONTRACT NUMBER: J-LEAA-003-76
DATE: September 1976

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FOREWORD

This request for Technical Assistance was made by the Fairfield County, Connecticut, Criminal Justice Planning Administration. The requested assistance was concerned with developing an information system for the County, and in particular for the areas of Greenwich, Wilton, New Caanan, Darien, Norwalk, and Stamford.

Requesting Agency: Fairfield County Criminal Justice
Planning Administration,
Mr. Thomas D. Flynn, Chief
Regional Planner

State Planning Agency: Connecticut Justice Commission,
Ms. Mary Hennessey, Executive
Director; Mr. Nobel Benson

Approving Agency: LEAA Region I (Boston),
Mr. John M. Keeley, Police
Specialist; Mr. Alfred G.
Zappala, Systems Specialist

1. INTRODUCTION

Law enforcement agencies in Connecticut presently have access to the National Crime Information Center (NCIC), the National Law Enforcement Telecommunication System (NLETS), and the State Department of Motor Vehicles files (DMV) through a switched terminal network known as COLLECT. No statewide computerized information system for law enforcement presently exists, although the intention of building one has been announced and some preliminary steps toward implementation have been taken. For analysis, the Consultant assumed that a statewide information system will be available in the future, and it will contain the standard "NCIC-like" files for missing and wanted persons, stolen articles of various kinds, and possibly a computerized criminal history.

Individual law enforcement agencies pay for membership in the COLLECT system at the rate of \$5,000 per agency per year, which includes installation of a single terminal (video) at the police departments' dispatching center. Of course, this represents a major expenditure for the small departments involved. It is important to note that the records centers of the police departments are in all cases physically separated from the dispatch centers, so that a single terminal could impose organizational problems if there is an attempt to use the COLLECT terminals as information system terminals.

The original technical assistance request identified systems needs in six areas:

- Equipment state of the art.
- Software requirements.
- Lease versus purchase analysis.
- Cost analysis of various systems.
- Possibilities of a hookup with New York State.
- Identification of comparable systems.

Any exhaustive treatment of these problem areas is impossible within the scope of the Technical Assistance Program. More important, during the Consultant's site visit, it became apparent that several preliminary steps were needed before identification, description, and procurement of equipment is possible. While attempting to discuss the problem areas identified in the original request, the Consultant also attempted to derive clear-cut procedures for the area's law enforcement agencies to move toward implementation of the information system.

2. UNDERSTANDING OF THE PROBLEM

Fairfield County's law enforcement agencies have essentially four alternatives in the future course of information systems for their departments:

- Remain as they are at present.
- Join the Bridgeport information system.
- Develop a "subregional" shared information system.
- Build several independent computerized information systems.

Each of these alternatives is discussed briefly in the remainder of this section.

- Remain Manual -- All of the law enforcement agencies presently have manual records systems. These systems are usually built around "master namefiles" in which the names of all persons who have "come to the attention" of the department are filed. These, in turn, point to separate files, often numerically (chronologically) organized, for incidents, arrests, traffic tickets, gun and bicycle registrations, and the like. The manual systems also share some statistical reports (e.g., the monthly FBI Uniform Crime Reports). Although there is a general feeling among the police chiefs that these existing systems are less efficient, less accurate, and less responsive than a computer system could be, no one feels that the manual systems have completely broken down, nor that automation is absolutely essential for continued operation of the departments. Therefore, a real alternative is to continue the operation of the manual systems, perhaps with outside assistance to redesign them for maximum effectiveness and efficiency.
- Join Bridgeport -- Bridgeport presently operates a police information system on the city computer, provides services to at least one other city, and has indicated willingness to act as a regional "hub" for a shared information system. No analysis was made of the Bridgeport system, which is presently limited to incident reporting and maintenance of a master namefile. However, no great enthusiasm was encountered among the chiefs for joining the Bridgeport system. This seems to be based on concerns

that a shared police information system on a city computer does not provide adequate control of priorities over implementation and operations, a feeling of social and geographic isolation from Bridgeport among the communities under consideration, and a feeling that membership in the Bridgeport system may not be economically attractive to the smaller cities and towns. If, as the Consultant was told unofficially, membership in the Bridgeport system would cost about \$20,000 per agency per year, it is entirely possible that less expensive alternatives are available.

- Subregional System -- The alternative discussed most by the chiefs during the site visit involves a single dedicated police computer system, placed in one of the police departments to be served, and serving all departments via terminals. This alternative would use a relatively low cost minicomputer configuration, on-line access to all departments as though they had full control of the computer (a time sharing concept), and cooperative standardization on implementation priorities, file organization, data elements, and other technical matters by the chiefs involved.
- Stand-Alone Systems -- Cooperative shared systems have historically been implemented for one or two reasons: There is sometimes a perceived need to share data in order to increase the effectiveness of the "man on the street" by providing information concerning crimes and criminals in surrounding localities; and, often dominant, there has been the need to share computer facilities in order to reduce the implementation and operational costs of computerized systems to the participating agencies. In return for the perceived benefits of sharing, police chiefs in the past have been willing to put up with its disadvantages that arise in the areas of: Difficulty in standardization, lack of ultimate control over the implementation and operation, training personnel in new methods and procedures, and general lack of "pride of ownership." Recent developments in computer hardware, especially in the lower end of the minicomputer lines and the newer microcomputer lines, and in the development of less expensive mass memory devices, have sharply reduced the financial advantages of shared computer systems.

Thus, a real alternative to shared computer systems is development of three to six completely separate stand-alone computer facilities, each serving a single department, but all implemented and developed under a single contract to assure maximum efficiency and minimum cost during implementation. For those who have not closely followed the computer revolution in the last few years, it should be pointed out that what is to be discussed is not the gigantic instruments of yesteryear, but of computers no larger than an ordinary office desk, designed for use by any skilled clerical person after about 20 hours training, and costing in the general range \$10,000 to \$30,000.

3. ANALYSIS OF THE PROBLEM

To analyze the problem, the six original questions asked in the technical assistance request were discussed:

- Hardware State of the Art -- Computer hardware poses no problem to any alternative configuration that can be imagined for southern Fairfield County police departments. A large, even bewildering, array of computer capabilities is available from a variety of sources, nearly all of excellent quality and varying in price primarily in terms of their inherent capability and processing speed. Complete hardware costs for a single department system, assuming modest requirements, could be as low as \$12,000, whereas complete hardware costs for a six-city subregion, again assuming modest requirements in terms of application programs to be installed and run, could begin at \$75,000 or so. It should be recognized that these are lower costs, and that it would not be difficult to double the hardware costs involved, depending on the number and complexity of application programs implemented.
- Software Requirements -- A major cost, and probably the majority cost for implementation, lies in the areas of software design, construction, and installation. Major factors affecting software costs are the number and complexity of programs to be developed and the extent to which the software vendor can "re-sell" software he has already developed for other clients. If the application program is fairly simple (e.g., nothing more than a master namefile with pointer to manual substantive files in a completely stand-alone configuration), software costs may be as little as \$25,000. This "rock-bottom" cost could possibly be obtained even if up to six completely separate but identical stand-alone systems were purchased for the individual departments, assuming that they could be purchased at a single time. On the other hand, it would not be difficult to run software costs up to \$150,000 or more, depending on the number and complexity of programs required for new applications. The strong trend is to "bundle" software and hardware costs into a single procurement, with a prime contractor responsible for both. This helps in cost minimization, since the software producer gets discounts from the computer manufacturer not otherwise available to the end user, and uses this as part of his profit, thereby keeping the software costs lower.

- Lease versus Purchase -- For all practical purposes, the consideration of lease versus purchase for computer equipment in the range being considered in this assignment does not arise. For the most part, procurements are made on a "turnkey" basis in which lease terms are not offered. In those cases where lease terms are offered, they tend to be deferred payment schedules rather than leases, in which the customer is fully obligated to pay the full price over an extended time (usually 2 years). Although the lease/purchase analysis is sometimes still required by LEAA on grant funding, the analysis is easily performed by the system vendors, and always turns out to favor purchase.

- Cost Analysis -- It is not possible to analyze the relative cost of systems serving 4, 6, 8, or 10 towns until more definite performance specifications and application areas for the system are defined.

- Possibility of Two-State Hookup -- Because the individual law enforcement agencies concerned already have connection through COLLECT to the National Law Enforcement Telecommunications Systems, they inherently have the ability for real-time communication with northern New York communities. Although it may seem somewhat strange to send a message from Connecticut to New York via the NLETS switching center in Arizona, it is nevertheless completely feasible and considerably less expensive. This is true because the NLETS connection already exists and does not charge for additional usage, while direct connect would require leased telephone wires between Connecticut and New York. Although the development of procedures for direct on-line access to New York State data bases (as distinct from administrative message transfers between the two States) is beyond the scope of this assignment, it does not involve major technical hurdles. The agencies involved must agree to the appropriateness of connection, and coordinate technical procedures among the States and cities involved and NLETS.

3.1 Comparable Systems

The problem in identifying comparable systems is one of discovering what applications are desired in the southern Fairfield County region, and then identifying systems having those capabilities in approximately

the size needed. Depending on whether the southern Fairfield County subregion wants to develop a single information system or several independent agency systems, different systems would be identified as models. In Section 5 of this report, certain systems are identified and suggestions are made that they be visited or at least studied as an aid to defining the objectives of an information system for this area.

In summary, the Consultant's analysis of the problem leads to the belief that it is not primarily technical. Once certain decisions have been made concerning the organization and overall configuration of the system, its technical configuration will easily be defined and appropriate similar systems will be identified for copying. The implementation of police information systems is a mature discipline and several reputable contractors engage regularly in this business area. In short, the problem is not "how do we get it" but "what do we want to get."

4. FINDINGS AND CONCLUSIONS

- The State criminal justice information system is essentially undefined except for the existing message switching capability (COLLECT). Nevertheless, it can be assumed that it will take the form of a relatively standard State information system supplying the "NCIC-like" files, with terminal access to towns and cities via the COLLECT network.
- The existing COLLECT terminals and lines could be used as the telecommunications medium for a sub-regional information system, thereby eliminating the ongoing costs of leased telephone lines to connect the towns involved. If this is pursued, however, the terminals will be in the dispatch area rather than the records room, which might not be acceptable to some or all departments.
- In general, the experience level in data processing for the towns being considered is low, although one town has unit records equipment for statistical data processing, and another town has a Termitrex optical data processing system for approximately the same purposes. The implication of this is that any jump into on-line file management and electronic data processing should probably be undertaken gradually rather than designing a full system to meet all possible police needs at one time.
- File structures, data elements and their definition, and other important technical matters are already reasonably standardized due to the tendency to operate around the FBI Uniform Crime Reports reporting practices, State-standardized arrest and disposition forms, and informal sharing of ideas in the past.
- Implementation costs and ongoing operational costs will vary widely, depending primarily on the number and complexity of application programs required. If the complexity is kept low and outside resources are relied upon for upgrading the system in future years, system operation can be undertaken entirely by existing personnel in records sections of the interested police departments with a minimum of special training.

No "computer specialists" will be required. On-going costs would consist primarily of equipment maintenance charges (approximately 10 percent of the equipment list price per year), telephone line charges (unless the COLLECT system is used or individual stand-alone computers are implemented), and system upgrade costs (primarily programming).

- The next appropriate steps in the system implementation process consist of chiefs of police learning about the possibilities for computerized information systems, and coming to decisions concerning the general capabilities desired. The police chiefs must also make basic decisions on information sharing to determine if an integrated information system is being considered for its information sharing capacity, or for perceived cost benefits; if only the latter holds, then the question of a subregional system versus several stand-alone systems is purely a technical question that can be answered in the marketplace by allowing optional configurations in the request for proposal phase.

5. RECOMMENDATIONS

Six specific recommendations are made: The first four represent management decisions to be made by the chiefs involved in the possible system; the last two lead up to the procurement of a specific system configuration.

- Decide Whether to Move Ahead -- The affected police chiefs should first decide whether they will move ahead in automation. In making this decision, they should recognize that a positive decision represents a substantial commitment of management effort for implementation of a system, possible months of negotiations and compromise with other chiefs concerning system features, a fight for funding at the State, regional, and possibly Federal levels, and a substantial commitment to future funding for ongoing operation of the system. Matched against these inconveniences, the chiefs can weigh expected improvements in the efficiency and effectiveness of their records systems. Since this is basically a management decision, no technical input beyond that contained in this report should be necessary. The decision can probably be reached in a single working session and complete unanimity is not required in order to proceed to the following steps.
- Decide on the Bridgeport System -- A meeting or meetings should be held involving the affected police chiefs, the heads of their records sections, the chiefs and heads of records sections of Bridgeport and Trumbull department, and a representative of the Bridgeport data-processing staff involved in the police information system. The purpose of the meeting would be to determine what capabilities the Bridgeport system offers and what costs would be involved to join the system. Following this set of meetings, individual chiefs and their records supervisors should meet to develop departmental positions concerning the advantages and disadvantages of the Bridgeport system, following which the affected chiefs should meet to make a final decision. Technical input to these meetings would be primarily by records supervisors of Bridgeport and Trumbull, and the Bridgeport data-processing manager. Key points in the decision process include the present and proposed capabilities of the Bridgeport system,

flexibility of the system to meet the needs of other cities and towns, disadvantages of operating with a shared computer outside of management control of a police department, and operational costs.

- Decide on Requirement for Information Sharing -- The records supervisors of the affected departments should meet to determine the desirability of sharing information. It might be useful for each supervisor to extract a small segment of records from his own files and have these records cross checked against other local agency files to determine to what extent witnesses, complainants, arrestees and suspects actually cross agency lines. In making their own analyses, supervisors should keep in mind that the State criminal justice information system will, in the not-too-distant future, provide statewide services for many kinds of stolen articles, wanted persons, arrestees, and so on, and that this capacity need not be duplicated at the subregional level. At the conclusion of this process, the records supervisors should take a stand both individually and as a group concerning the desirability for sharing information. The police chiefs should then consider the recommendations and make a final decision concerning such a requirement. If such a requirement is found to exist, then stand-alone agency computers are infeasible for the application; and a subregional system is appropriate.
- Preliminary Decision on Initial Applications -- Even though the police chiefs and records supervisors have not had much opportunity to study computerized information systems in action, it is appropriate for them to attempt some early prioritizing of computer applications. The purpose of this process is not so much to define the ultimate system as it is to begin substantive thinking about the information system and the ways in which it will fit into ongoing departmental activities. It is urged that the first applications implemented be operational rather than statistical in nature (i.e., a master namefile is preferable to an FBI crime report production program). The output of the action suggested here should result in the development of a "want list," with rough priorities assigned to each want but not necessarily with final agreement among all participants as to the exact priorities or even to the inclusion or exclusion of any item from the list.

- Contact Cities and Vendors -- Through use of the Fairfield County Planning Office for staff assistance as necessary, the affected police chiefs should contact some cities, towns, and multi-city regions that have recently implemented or are now implementing computerized information systems, to get their views on appropriate applications and to see them in action. The Fairfield County Regional Planning Office and perhaps the LEAA Regional Office could be helpful in identifying sites. From past experience, it is recommended that Newton, Massachusetts; Cranston, Rhode Island; Harrisburg, Pennsylvania; and Stockton, California, be included on the list. These sites are suggested not because they are "perfect systems" but because they represent widely diverse approaches to implementing information systems, with diverse priorities for applications, differing hardware configurations, different approaches to regionalization versus independent agency systems, and a range of costs more than five to one. It is recommended that the initial contact be on a chief-to-chief basis requesting system documentation and brochures, which later can be followed by personal letters or site visits, as possible, to actually observe the systems. The purpose of this exercise is not to select a vendor or configuration, but to observe the decisions that others have made in somewhat similar circumstances and to learn from their experience. Following this contact with agencies that have had recent experience in system implementation, it is recommended that contact be made with suitable vendors. Lists of suitable vendors are obtained easily from the agencies mentioned above simply by using those vendors who replied to the Request for Proposals (RFP) of those agencies (not just the winners) as a source list. A form letter, indicating preliminary interest in the system, will undoubtedly generate some interest in the vendor community and will probably result in additional documentation and visits to Connecticut. Most responsible vendors have marketing staffs with substantial experience in police systems; and, although they obviously have a point of view not necessarily the same as the affected chiefs, they nevertheless provide information concerning what can be done, the relative costs of different approaches, and their experiences in other localities. Of course, the purpose of these contacts

is neither to select a vendor nor even to develop a bidders list for an eventual procurement; it is simply to collect information for the purpose of defining the system performance measures that eventually have to be incorporated into the RFP and contract.

- Prepare a Request for Proposals -- This is the stage at which firm decisions must be made concerning the stand-alone systems versus shared systems, application programs, throughout capacity, interconnection with COLLECT, and other system features. These decisions should be made by the affected police chiefs. Technical assistance may be needed at this point to convert the management decisions into the specialized jargon necessary to elicit good bids and then to assist in the understanding of the bids received.

Based on the assumption that timing becomes a real management priority within the affected police departments, and that the police chiefs, and through them their staffs, develop some sense of urgency concerning the implementation of such a system, the actions recommended in the first five recommendations above could be carried out in 3 to 6 months. Preparation of requests for proposals, after all decisions have been made, will consume about 2 months; the procurement process another 3 months; and system implementation another 6 to 12 months. Of course, grant preparation and approval can easily take 3 months or much longer and must be completed before the RFP is published.

END

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