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POLICE DEPARTMENT

MASTER AUTOMATION PLAN

October 31, 1975

ARTHUR YOUNG & COMPANY

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1500 FIRST NATIONAL BANK BUILDING
MINNEAPOLIS, MINNESOTA 55402

October 31, 1975

Mr. Elroy E. Erie
Director, Systems Development
Minneapolis Police Department
Room 109, City Hall
Minneapolis, Minnesota 55415

Dear Mr. Erie:

Arthur Young & Company is pleased to submit this final report of our engagement to develop a Master Automation Plan (MAP) for the Minneapolis Police Department. Based upon our discussions with you during reviews of preliminary drafts of the MAP, we believe that this report satisfies the contractor specifications of our proposal and contract for this engagement.

We wish to acknowledge the cooperation of the many members of the Police Department and other City departments with whom we worked during the study. Their contributions of time and experience were invaluable in preparing this report.

We found this engagement to be interesting and challenging, and look forward to another opportunity to be of service to the City. As we have agreed, we will be available to present an oral summary of the MAP to City officials in the near future. Please do not hesitate to contact us if you have questions or comments regarding the engagement.

Very truly yours,

Arthur Young & Company

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I. INTRODUCTION AND MANAGEMENT SUMMARY

I. INTRODUCTION AND MANAGEMENT SUMMARY

Efficient information management and control is an essential element in the successful operation of a modern metropolitan police department. The Minneapolis Police Department has recognized the need to develop to the fullest extent possible systems that will increase the utilization and usefulness of information that is routinely collected in daily police operations. This document represents one of several initial steps taken by the Department toward development and implementation of comprehensive data systems to support and improve the delivery of police service to the citizens of the City of Minneapolis.

1. BACKGROUND

In February, 1974 the Minneapolis Police Department developed and adopted a long range plan to improve the police department and reduce crime. One aspect of the long range plan is the development of a police information system. The goal of this program as stated in the plan is to "upgrade the police information system to provide department operational and managerial data and compatibility with other criminal justice information projects". As the department began a systems development project, the complexities of the information system goal become apparent as a result of systems analysis performed by the City Data Processing Department. Upgrading of management and operational information was found to require a system that integrates nearly all functions within the police department. Compatibility with other criminal justice information projects dictated a coordinated planning effort to allow for interfaces with existing and planned state and county criminal justice systems. The Department responded to these requirements by establishing a systems development task force with representatives from City Data Processing and all areas

within the Department. To insure coordination with other criminal justice information projects the Department actively participates in planning activities at the City, County and State levels.

Initial examination of automated police systems focused upon the application of computer technology in areas that would directly support and assist daily patrol activities. As a result of these studies, the Police Department embarked on the development of a Computer Assisted Dispatch system. CAD is a computer based, operationally oriented dispatching system that integrates the complaint answering and the police unit dispatching functions. When implemented, a Burroughs 2700 digital computer system will capture information received from telephoned complaints, verify its correctness and transmit the information to the appropriate dispatcher electronically. In addition, the CAD system will maintain the current status of field units and capture data relating to field unit performance and distribution of calls-for-service within the City of Minneapolis.

Further automated systems development is planned to be expanded in scope and address the management as well as operational information needs. This planned expansion of computer based systems and the need to coordinate on-going projects with information system applications lead to the need for development of a master automation plan. For development of a long range automation plan, the Department requested and received funds from the Minnesota Crime Commission to contract for development of a Master Automation Plan. Arthur Young & Company was selected by the Department to develop a comprehensive plan within an eight week period. The results of that effort are presented in this document.

2. OBJECTIVES OF THE MASTER AUTOMATION PLAN

This Master Automation Plan is aimed at establishing an initial schedule and plan for development of automated police systems. The

intent of these systems will be to improve the accessibility of information, provide management with an expanded information base for decision making and to increase the flow of operational information to field units.

The overall objective of the plan is to provide the Minneapolis Police Department with a planning tool indicating the tasks to be performed to successfully implement a complete information system. The plan establishes an interactive planning procedure with scheduled evaluation points for both system development and master plan adjustment.

In addition, the objectives of the automated systems development efforts are the following:

- . Improve the quality and effectiveness of law enforcement and crime prevention
- . Increase the safety of law enforcement officers and the public
- . Provide technical direction for police department automated data processing development
- . Reduce or eliminate redundant tasks and duplication of records and costs
- . Improve the flow of information within the Department
- . Increase the utilization of the records system for investigative activities and patrol planning
- . Provide timely information for management decision making.

The MAP covers a five year development period and identifies specific time intervals for major system expansion. It considers and allows for the interface to City, State and County systems in existence or contemplated. Additionally, the MAP includes the following:

- . Implementation timetable
- . Functional description of each activity and component of the system
- . Personnel requirements for development, implementation, and on-going activities
- . An overview of training needs
- . Justification for implementation of the MAP
- . Overall evaluation of all short and long range needs presented within or implied by the MAP
- . An analysis of current privacy and security standards and regulations.

The Master Automation Plan is presented in five major sections. The first three sections present the background, justification, systems overview, recommendations and needs analysis. The fourth and fifth sections of the plan describe the information system components, outline development tasks and present project and cost schedules.

3. JUSTIFICATION FOR AUTOMATED SYSTEMS

A major justification for installing automated systems in the Minneapolis Police Department is based upon the primary attribute of modern data processing equipment. That attribute is the ability to manage, store, collect and distribute large volumes of data more efficiently than manual file systems.

The Minneapolis Police Department dispatch center receives approximately 60,000 telephone calls monthly. Of these, 16,000 calls result in dispatch of police services. For each call that results in a dispatch, the Department must generate and maintain a dispatch record. The record includes the time the call was received, time unit dispatched, nature of call, location of incident and the units assigned.

For each of the 7,000 offense reports generated monthly, a complete offense record must be maintained including supplemental reports and witness statements.

Offenses and complaint records are but two of many police functions that generate data that must be filed, managed and retrieved daily by the Department. There are, in addition, arrest reports, vehicle accident reports, traffic violations, criminal histories, final disposition reports, booking reports, detoxification reports to name just a few.

Automated systems offer an attractive alternative to increasing clerical burdens associated with manual file system growth and can produce substantial ancillary benefits. Current clerical operations require the repetitious entry of data that is common to several reports. An automated system would require only that supplemental facts be entered once the basic data has been input. Computer systems can be programmed to examine all data entered for correctness, thus eliminating or reducing clerical errors.

The MPD collects volumes of data that do not become useful information until the individual data elements can be combined in a logical sequence identifying the correlating factors. Two or more seemingly unrelated offenses can be linked together by allowing grouping offenses by various combinations of data elements, such as: vehicles involved, type of premise victimized, victim characteristics, time of day, day of week, etc. Hence the record system becomes a more useful source of information and a more highly utilized investigative tool when these associations can be established.

Another benefit that can be derived from well designed automated systems is the production of specialized reports for Department management and crime prevention planning. Data can be tailored

to the needs of management at the various command levels within the department. The precinct commander can receive data that is summarized to provide information for deployment decisions at the precinct level and information on unit performance. Similarly, data can be accumulated that will present to the Chief of Police information on the needs and relative performance of the entire Department.

To develop programs to combat specific crime problems requires that data be available which can be used to identify and define the scope of the problem, provide demographic characteristics of the area affected and present a historical synopsis of crimes occurring in an area. In addition, automated systems can project crime specific program resource requirements and the impact on overall resource management. Efficient management of police resources becomes especially important as the City is faced with growing budgetary pressures and limited resources. Information must be readily available for effective manpower allocation and control of funds, inventory and property.

4. INFORMATION SYSTEM OVERVIEW

The Master Automation Plan describes a series of computer applications that are integrated to meet the Department's information systems goal. An integrated systems approach is recommended because of security considerations, interdependence of department functions and commonality of data requirements. Physically, the integrated information system will exist as a state-of-the-art computer system with on-line data entry and retrieval and mobile digital communications. Each element of computer hardware included in the plan is aimed directly toward increasing management information and support of the police officer in the field.

(1) Information System Structure

The recommended system will automatically capture and record data on the allocation of police resources, identify emerging crime trends, supply data for evaluation of crime specific programs and interface with City, county, state and federal information systems. Exhibit I, following this page, presents graphically the structure of the recommended police information system. The principal system functions are the following:

. Computer Assisted Dispatch

The Minneapolis system will be a real time, operationally oriented computer system. It will record complaints, validate complaint address, display status of patrol units and record dispatch assignments. CAD is presented as a separate system that supplies data to the information system. This relationship is required to accommodate the planned Consolidated County Communication System. When the County facility becomes operational, the changeover to a countywide CAD will not severely impact the Minneapolis police information system.

. Information System Interfaces

Police operations and management require information from several sources outside the Department. Financial information from the City, court dispositions from County and stolen property and criminal history information from the State all flow into the Department on a daily basis. MINCIS should be interfaced in a manner that allows for direct communication from authorized terminals in the proposed MPD terminal network. A direct interface to the City's planned financial management system should be incorporated in the system design as well as the possibility of a Hennepin County Criminal Justice Information System.

. Communications Network

A significant expansion of digital communications capability is anticipated to extend the benefits and resources of a computerized information system.

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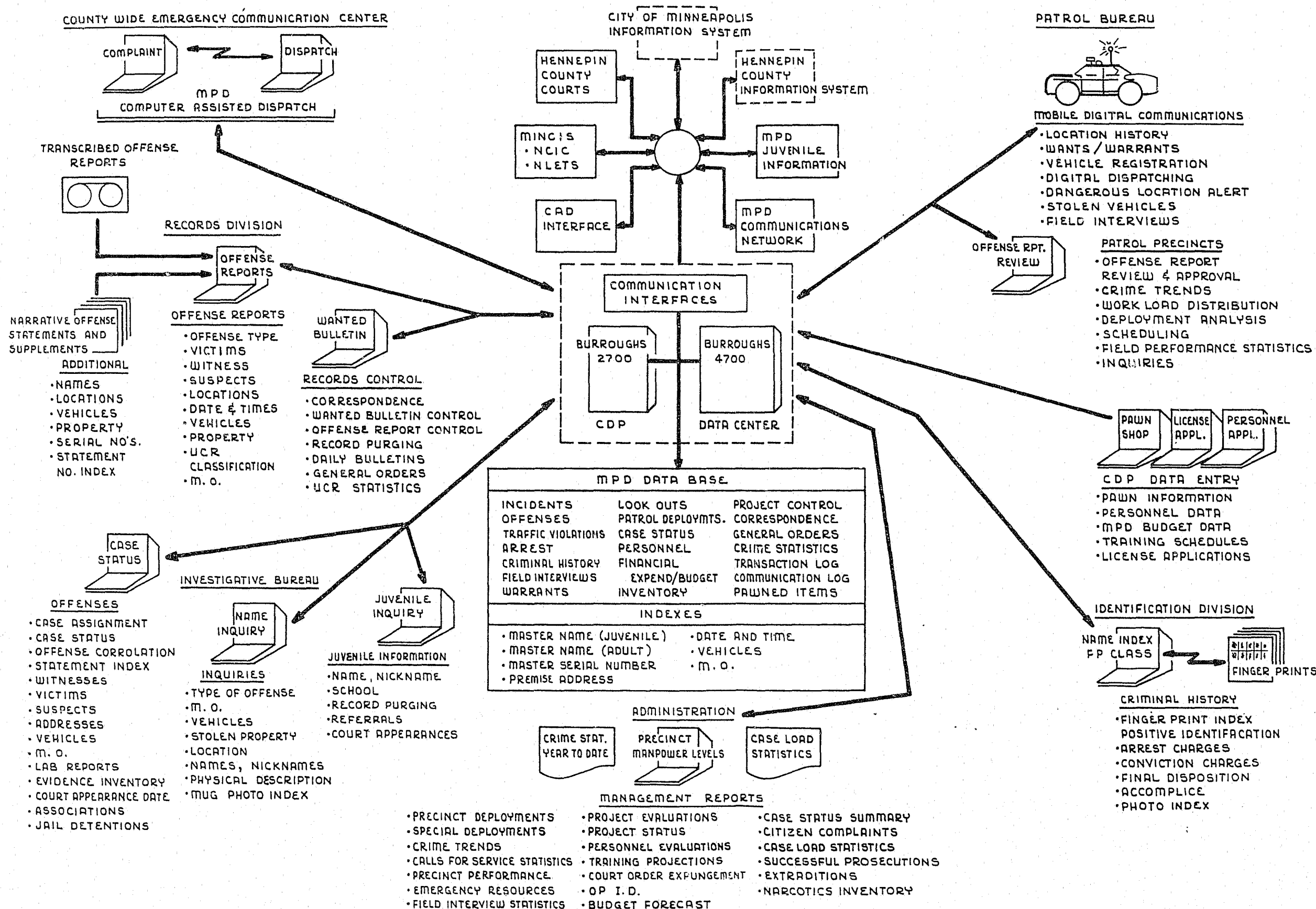
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MINNEAPOLIS POLICE DEPARTMENT
INFORMATION SYSTEM OVERVIEW



- . Existing computer hardware can be continuously evaluated in an operational environment and expanded only when a demonstrated need exists.
- . Financial, demographic and vehicle maintenance information needs of the Department can be consolidated with City needs in the planned City management information system.
- . Established priorities emphasizing operational information can be satisfied in conjunction with management needs.

Top priority for implementation is placed on the crime analysis, manpower deployment and offense information. Crime analysis and manpower deployment combined with offense data collection will enable the Department to fully utilize data that will be produced as computer assisted dispatching becomes operational. Additionally, the offense data input component of the system will build an initial data base that includes the following files:

- . Incident File
- . Offense Case File
- . Master Name File
 - Victims
 - Witnesses
 - Suspects
- . Stolen Property File
- . Vehicle File
- . Offense Addresses
- . Stolen Bicycle File
- . Wants and Warrants Runaway File.

Automation of arrest reporting and updating of criminal history information will be dependent upon development of a County based booking and detention system and therefore, has not been included in the first year of system implementation. Handgun registration is tied to automatic searching of state and federal gun files and should be implemented after installing a direct computer interface with MINCIS. Exhibit v following page 49 presents a detailed schedule for modular systems implementation.

There are several recommended studies and programs that should be undertaken by the Department coincident with information systems development. The following programs would define crime analysis technique and establish new procedures for incorporation during the systems design phase.

- . Develop crime analysis techniques based upon the evaluated results of the Patrol Emphasis Program.
- . Establish a research team consisting of patrol, investigative and data processing personnel to review existing crime specific modus operandi systems. Request LEAA funding for a program to define, implement and evaluate the usefulness of MO factors in criminal apprehension.
- . Establish procedures and criteria for the on-line review and approval of offense reports by patrol supervisors.
- . Establish in cooperation with the County Attorney crime specific offense reports with officer resumes as separate reports. The revised offense report formats should be designed to satisfy Part II crime reporting requirements and include MO factors.
- . Work jointly with the City to establish a central microfilm capability that can be interfaced with the MPD information system.
- . Establish a systematic numbering system for incidents, offenses, stolen vehicles, stolen property, arrest and criminal histories, eliminating the various unique number systems in the Department.

These recommended programs are included in the detailed component implementation schedule following page 49.

Digital terminals at precinct stations and key locations within police headquarters should provide on-line access to management and operational information on a timely basis. Mobile digital terminal should have direct access to the local data base as well as state and federal files.

. MPD Data Base

The system should provide an integrated data base where all data is stored and protected from unauthorized access. Individual data elements should be extensively cross-indexed to enable access by a variety of parameters.

. Data Entry

On-line data entry should be provided for operational data and the City's data entry facilities should be utilized for data that is less time dependent. All data entered into the system should be edited for correctness and logged for control and accountability.

. Information Retrieval

The system should produce management reports on a regular basis and respond with on-line summary information on request. Automatic file searches that produce a list of possible records that match or closely match the information requested should also be supported.

. Juvenile Information

Juvenile information should be included in the overall system but not be integrated with adult offender information. This can be accomplished by establishing a separate juvenile information subsystem that would be a physical part of the system but logically remain separate. This approach would allow the Department to gain the economies of integrated development and operation and the security of separate systems.

(2) Cost Summary

Information system development will require a significant commitment by the City in terms of manpower and money. We estimate that 46 man-years of effort and nearly \$3,000,000

will be required to develop the MPD information system. However, a substantial portion of the cost is composed of transfer payments from MPD to CDP for personnel and computer services. While a significant portion of the costs attributable to the project will not involve additional cash requirements for the City, it is probable that some new cash requirements will exist.

The table below summarizes project costs for 1976-1981 during the development period. They include a 7% inflation adjustment for salary-related cost components. Additionally, it should be noted that the computer services cost estimate for 1981 also represents the on-going annual operating costs of the system.

<u>Year</u>	<u>Personnel Services</u>	<u>Computer Services</u>	<u>Total</u>
1976	\$ 187,392	\$ 144,500	\$ 331,892
1977	283,887	177,130	461,017
1978	320,427	219,416	539,843
1979	342,952	253,232	596,843
1980	268,823	288,676	557,499
1981	<u>78,443</u>	<u>280,760</u>	<u>359,203</u>
Total	\$1,481,924	\$1,363,714	\$2,845,638

5. SUMMARY OF APPROACH AND RECOMMENDATIONS

The Master Automation Plan has been structured for an information system development program that extends over five years. This recommended approach has the following advantages for the Police Department:

- . Design and implementation can be accomplished using principally City Data Processing resources.
- . The evaluated results of police improvement programs, such as the Patrol Emphasis Program, can serve as major inputs to the system design.

- . Existing computer hardware can be continuously evaluated in an operational environment and expanded only when a demonstrated need exists.
- . Financial, demographic and vehicle maintenance information needs of the Department can be consolidated with City needs in the planned City management information system.
- . Established priorities emphasizing operational information can be satisfied in conjunction with management needs.

Top priority for implementation is placed on the crime analysis, manpower deployment and offense information. Crime analysis and manpower deployment combined with offense data collection will enable the Department to fully utilize data that will be produced as computer assisted dispatching becomes operational. Additionally, the offense data input component of the system will build an initial data base that includes the following files:

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- . Establish a systematic numbering system for incidents, offenses, stolen vehicles, stolen property, arrest and criminal histories, eliminating the various unique number systems in the Department.

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II. REQUIREMENTS ANALYSIS

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The Minneapolis Police Department information needs encompass more than information directed toward apprehension of wanted persons, stolen property and vehicles, modus operandi, etc. They include those needs that are common to the control and management of any large organization or business. The police mission is different from that of private enterprise, but many of the problems are the same.

The scope of the information needs and requirements presented in the following sections of the master plan address themselves to viewing the Minneapolis Police Department as a whole and recognize that, for management and control, information from all functions within the department must flow into the management process.

The following sections describe the information needs of various operational and support divisions within the MPD. Management information should be made available from each of the areas and should include the following types of information:

- . Work load volumes as compared to incident or offense activity for each precinct by watch and day of week.
- . Investigative caseload by type of offense and clearance rates by type of offense. Cases backlogged and the percentage of cases that resulted in successful prosecution.
- . Identification of shifting crime trends or the general police service needs by neighborhoods.
- . Forecast of available manpower, short term and long range projections.
- . Operating cost projections including equipment and supplies.
- . Evaluations of personnel and units.

Management reporting should be on a summary or exception basis with the support detail available on request.

1. PATROL INFORMATION

In analyzing the information needs of the Patrol Division and their current use of automated reports, several areas were noted where automation would provide additional benefits. The first of these areas is early crime trend recognition. Before patrol commanders can begin to develop strategies for counteracting a surge in crime, they must have the capability to quickly recognize emerging crime trends and define the areas in which they are developing. At present, a series of crimes may be well developed before full recognition of the problem can be discerned from the current reporting procedures. Additionally, the need for greater information sharing between Minneapolis and adjoining communities on daily crime occurrences would be of substantial benefit in recognizing crime patterns that extend from or reach into Minneapolis from adjoining communities. The mobility of criminals and possible displacement of crime by intensified patrol and enforcement requires on a daily basis more detailed information on the activities and problems of neighboring communities.

Another area where automation would aid patrol is in the identification of locations that continually require police services and the nature of the response given. A history of calls for police services by location would better prepare the officers responding to calls for service and identify locations where officers were endangered or threatened in the past. There is a need for more information by patrol districts on the problems and crimes that have occurred during the previous watches. The current roll call briefings convey major problems occurring in the District and City, but could be improved by having specific information available on activities performed during the previous shifts in hardcopy form.

Digital communications which began as an experiment in Minneapolis patrol cars has now become an important and highly utilized source of patrol information. The speed with which patrol officers

can receive information from the State MINCIS System on warrants and warrants emphasizes the capabilities of digital communications and points out the need to expand this capability to include access to local warrants and other information that is not available through the State system. Technology transfer as currently projected will provide a direct link to the local computer system that could provide this needed information.

2. INVESTIGATIVE INFORMATION

Investigative requirements result from the need to establish a centralized information source that is capable of correlating or linking similar cases, individuals, vehicles or addresses. This information source should be accessible by the following parameters:

- . Name and nickname
- . Physical identifiers such as height, weight, sex, race, date of birth, and fingerprint classification
- . Type of offense
- . Date and time of offense
- . Location (premise address) and type
- . Vehicles used to commit offense
- . Serialized property stolen
- . Associates
- . Witnesses
- . Victims and victim characteristics

There is a need to consolidate the information contained in investigative files and establish an extensive cross-reference system that will, given a name, provide an investigator with all information associated with that name. Access to information by name alone does not provide the uniqueness necessary to identify or sufficiently narrow the range of possibilities when accessing a large records system. Combining name with physical identifiers such as race, sex, height, weight, date of birth, and the reason for the name appearing in the files such as traffic offender, burglary victim, witness or criminal offender would aid Minneapolis investigators in narrowing the list of possibilities during an investigation. To access criminal history information in the Department, an investigator now must know the name of the person sought and, if the name is a very common name, it will require a lengthy manual examination of each criminal history packet filed under that name grouping.

Given a reasonably good physical description or nickname, investigators need to be able to obtain from the records system as a whole a list of possible suspects fitting that description. There is a need to establish a link in the records system between known associates that would eliminate the need to manually search the files for each individual name known for an investigation.

The current records system does not lend itself to grouping similar crimes by method of operation, type of business or premise victimized or property stolen. Groupings of offenses by date, time and day of week they occurred, type of vehicles used and victim characteristics are difficult with the existing system.

The MPD information system should support Department investigators by providing timely information to assist in case investigations. In this regard, the Crime Analysis Unit should assist in providing information to field investigators both when requested and also at the initiative of the Crime Analysis Unit when warranted.

Both universal and crime-specific analysis should be supported, as described in the Police Crime Analysis Handbook.¹ The following factors, as outlined in the Handbook, should be present for analysis by investigators. The universal crime factors are as follows:

CRIME TYPE

- Burglary (class: business-commercial, residential, other)
- Robbery (class: armed vs. not armed)
- Auto Theft (automobile, commercial vehicle, motorcycle, etc.)
- General Larceny (thefts from autos, auto accs, scrap metal, dock, etc.)

¹U.S. Department of Justice, Law Enforcement Assistance Administration, National Institute of Law Enforcement and Criminal Justice (November 1973)

- Fraud (forgery, credit cards, confidence games, etc.)
- Rape and Sex Crimes (forcible rape, child molesting, indecent exposure)
- Aggravated Assault and Murder

GEOGRAPHICAL

- Location offense occurred
- Street address or intersection
- Block
- Subreporting area or census tract
- Reporting area, patrol area or beat
- Zone, precinct, or district

CHRONOLOGICAL

- Specific time offense occurred
- Time span in which offense occurred (day-night)
- Day of week
- Week of year
- Month of year

VICTIM TARGET

- Victim person (sex, age, race, etc. of victim)
- Type victim structure (single dwelling house, apartment, high rise, etc.)
- Type victim premise (commercial, industrial, public, etc.)
- Victim purpose (sales, service, manufacturing, etc.)
- Victim knowledge of suspect

. SUSPECT VEHICLE DESCRIPTIVE

- Specific license number
- Make of vehicle
- Model and year of vehicle
- Color of vehicle
- Damage to vehicle

. PROPERTY LOSS DESCRIPTIVE

- Serial number of property loss
- Make of property loss (brand name, etc.)
- Model of property loss
- Type of property loss
- Purpose of property used for

Crime specific analysis factors that should be included in the information system are the following:

. RESIDENTIAL BURGLARY SPECIFIC

- Type premise attacked (house, exterior apt., interior apt., etc.)
- Occupied vs. unoccupied
- Point of entry (window, door, etc.)
- Method of entry (pry door or window, pipe wrench door, break window, etc.)
- Presence of physical evidence (latent prints, etc.)

. COMMERCIAL BURGLARY SPECIFIC

- Type of business attacked (TV store, clothing store, savings and loan, etc.)
- Alarm information (no alarm, alarm defeated, method, etc.)
- Point of entry (window, door, roof, wall, floor, vent, etc.)
- Method of entry (window, smash, lock inbreak out, peel wall, etc.)
- Safe attack method (rip, punch, peel, burn, drill, grind, etc.)

. ROBBERY SPECIFIC

- Type of business victim (diner, bar, taxi, savings and loan, gas station, etc.)
- Victim person descriptors (sex, race, age, occupation, etc.)
- Type weapon used (handgun, shotgun, knife, club, etc.)
- Suspect mask and type (facial area covered)
- Suspect statement during commission (or note), particular M.O.

. THEFT FROM PERSON SPECIFIC

- Exact location of victim (sidewalk, park, hallway, etc.)
- Victim person descriptors (sex, race, age, etc.)
- Victim condition after attack
- Suspect particular M.O. (approach, flight, statements, etc.)
- Object of theft (cash, checks, credit cards, jewelry, etc.)

. AUTO THEFT SPECIFIC

- Area stolen vs. area recovered
- Exact last location (on street, parking lot, carport, sales lot, etc.)
- Make, year and model of vehicle
- Degree of strippage and parts
- Presence or absence of physical evidence

. LARCENY SPECIFIC

- Type victim property (business, personal, use, purpose, etc.)
- Location of property (left unattended, in vehicle, etc.)
- Specific property taken and market potential

- Suspect particular M.O.
- Presence or absence of physical evidence

. FORGERY SPECIFIC

- Check and credit card specifics (how obtained, type, etc.)
- Type business or person victimized
- Document descriptors (stolen commercial, personal, etc.)
- Type of identification used
- Confidence gain specifics (ploy used, etc.)

. RAPE AND SEX OFFENSE SPECIFIC

- Victim person descriptors (age, race, sex, occupation, etc.)
- Location of encounter vs. location of departure
- Suspect statements during commission
- Suspect particular actions or M.O. (include relationship)
- Weapon or degree of force used

. AGGRAVATED ASSAULT AND MURDER SPECIFIC

- Degree of relationship between victim and suspect
- Victim personal descriptions
- Motive
- Weapon used
- Physical evidence.

Additionally, general analyses of crime patterns by time period, geographic locations, etc. should be available to investigators to assist them in formulating hypotheses related to specific cases.

3. JUVENILE

There are special restrictions on the collection of information on Juveniles and Juvenile offenders that must be given special emphasis in design and development of the information system. Juvenile records cannot be included in files with adult criminal offenders. The Minneapolis Police Department Juvenile Division maintains completely separate files on juveniles and periodically purges and destroys records to protect the juvenile's right to privacy. From a Department information standpoint, however, there has to be a balance between the requirement to protect the rights of juveniles and the Department's requirement to protect citizens from Juvenile offenders. This balance is currently maintained by the Juvenile Division that essentially operates separate from the remainder of the Department. Yet the same needs to reduce the clerical burdens of searching manual files and correlating information exists for Juvenile investigators as well as criminal investigators. There exist the same needs for rapid access to information and efficient data collection methods.

Many of the information access requirements that were specified for crime investigators are the same for juvenile investigators. The information system should be able to produce juvenile records when the following information is supplied:

- Name
- Nickname
- Physical description
- School
- Neighborhood
- Vehicles
- Type of offense or police contact
- Arresting officer
- Address.

When a name or nickname is input, the system should return a list of juvenile offenders with the same or similarly sounding names. Similarly, when a reasonably good description is supplied, the system should respond with a list of juveniles fitting that description. Much of the Juvenile Division activity is centered about or connected with the schools in Minneapolis and the information system should respond to inquiries where a school name is the input parameter. Within school districts an even finer geographic input parameter, such as neighborhood should be an allowable access parameter. In addition, the more common vehicle, premise address, type of offense, and arresting officer input request should be supported. To maintain the separation between the flow of criminal and juvenile information, system access to juvenile records should be through or with the knowledge of the Juvenile Division.

4. RECORDS DIVISION

The Police Department Records Division is one of two major depositories of records in the Department. Offense reports dictated by officers are transcribed from tape onto multipart offense report forms by a pool of stenographers and distributed. The original copy of the offense report is filed in a rotating manual file system. The capacity of the manual file system only allows for approximately two years of offense reports to be maintained in the Records Division. From the offense reports a daily crime bulletin is typed and distributed and an index by type of crime (crime book) is updated daily. In addition, the Records Division handles correspondence received by the Department and answers requests for record information.

The current method of offense report preparation does not allow for the review of offense reports by supervisory officers before they are submitted. There is not an effective procedure for insuring that all required reports are submitted. Indexing offense reports by types of crime is a useful tool but is limited by the fact that it is only available to officers at headquarter and necessitates a trip downtown for officers assigned to the precinct stations. Any investigator requesting information over two years in age must be prepared for a trip to the record storage site where offense reports are boxed and stored.

Crime statistics are prepared from a batch computer program that uses manually coded input from the offense reports. The information system should seek to reduce the clerical workload associated with this task.

The MPD information system should provide to the Records Division a complete listing of all reports due and an exception listing of reports not received. Correspondence received by the Department should be logged by the information system and it should indicate the MPD division or unit responsible for generating a response. The information system should be capable of supporting an index of all

offense reports entered into the system whether the offense data is maintained in active computer files or transferred to microfilm. A microfilm system should be made available to the Department and integrated with the computerized information system. The location of Offense Reports on microfilm should be directly referenced in the automated system. Offense reports once entered should be presented to supervisors automatically for review and approval. Policies and procedures for records retention should be developed and used by the Department to reduce storage requirements for records.

All law enforcement agencies must submit monthly Uniform Crime Reports to the State and FBI summarizing offense and arrest activity within their jurisdictions. The basic information necessary to prepare these reports should be included within offense and arrest records maintained within the MPD information system. UCR reporting should then be a periodic byproduct of the system. It should be noted that the capability to produce Uniform Crime Reports on behalf of all reporting agencies now exists within the State MINCIS/CJRS system. Therefore, jurisdictions entering records for all offenses, arrests, and stolen property into MINCIS/CJRS can make use of these State-prepared UCR reports to satisfy their reporting requirements.

The MPD information system should support either locally or through MINCIS/CJRS-automated preparation of the following monthly uniform crime reports:

- . Return A - Monthly report of offenses known to the police
- . Supplement to Return A - Pages 1 and 2
- . Age, Sex, Race of Arrestee - Juvenile
- . Age, Sex, Race of Arrestees - Adult

In addition, Return C - Annual Return of Persons Charged - also should be prepared by the system.

The UCR report for law enforcement officers killed or assaulted should be prepared manually as required.

5. PLANNING AND RESEARCH

The long-range plan developed by the Department establishes specific goals and objectives for improving the delivery of police services and the safety of the community. Each of the goals outlined in the long-range plan has implied data gathering requirements both for program development and control and evaluation. In the recognition of crime problems and the formulation of approaches for problem solution, data and data analysis is required to clearly define the nature of the problem and identify measurable factors that will indicate success or failure of the approaches selected. This implies that the Department develop an information system that is adaptable to the needs of specific crime reduction programs and still produce daily operational data.

From an administrative standpoint, an automated system that can provide for tracking of special funds and federal grants in addition to providing operational data would improve the overall planning process. Information input into the system should be aimed at monitoring and evaluating on-going projects. Initial data input should establish performance measuring data items and criteria to which subsequent data can be compared. In addition to the programmatic data, this component should capture data to track and report on the expenditure of project dollars and resources.

6. TRAFFIC

The MPD information system should collect and store data resulting from traffic-related source documents for analysis to assist in selective enforcement problems. City traffic engineering traffic collision reports and citations for moving violations are the primary documents in this category. Each such record should include the primary location index where the event occurred.

The City Traffic Engineer analyzes Collision Reports periodically and produces computer-prepared reports. These reports are available for MPD use, and should be analyzed to determine their value to MPD in traffic enforcement activities. The possibility of developing an information system component to serve the needs of both MPD and City Traffic Engineering should be investigated.

For MPD purposes, the essential data that should be available from collision reports for analysis must include location, date, time, day of week, primary collision factor, and collision severity.

Many information processing requirements related to traffic citations now are handled by the Hennepin County Traffic Violations Bureau. MPD in addition should collect and store data relevant to traffic enforcement from all moving citations. Minimum data to be stored includes location, date, time, day of week, violation type, and issuing officer identification.

7. PROPERTY

The Minneapolis Police Department maintains an inventory of equipment and supplies in excess of \$500,000. The current automated inventory report lists each item of equipment and is updated periodically. The inventory system is not directly linked to the City Purchasing Department and equipment listed is difficult to equate to specific vendors. This precludes the Department's evaluating vendors of police equipment and contractor services on a formal basis, and possibly disqualifying vendors whose products do not meet Department standards. The current inventory system does not provide Department administrators with the capability to forecast expected useful life of equipment listed in the inventory and identify those items that must be included in budget forecasts. There is also a need to expand the current inventory system to include equipment location and assignment of inventory to the divisions responsible for its use.

For MPD purposes, equipment and property information must allow for the location, tracking and control of Police Department equipment and property. In doing so the system should collect data that will indicate to whom or what unit equipment is assigned and note from which funding source the equipment was obtained (City funds, federal grant, etc.). Included in the data on equipment should be the MPD serial number, purchase order number, cost, manufacturer and manufacture's serial number and any warranty expiration dates. Consumable equipment and supplies should be entered with expected reorder dates. Expected useful life should be included for all major equipment items.

The Department also is responsible for custody of confiscated and recovered property, including property held as evidence. The following data should be collected for these types of property.

- Date of receipt and transfer if found property
- If taken into custody at time of arrest, the arrest number
- Reason for custody - recovered, stolen, evidence
- Location where stored
- Type of property and description including serial numbers

Entry of traceable property items into the system should automatically trigger a search of local, state and federal stolen property files.

Pawned items and gun registrations should also be searched automatically. "Hits" on pawned items that are reported stolen locally should include offense report number and ownership information.

8. PERSONNEL

The Civil Service Commission is in the process of developing a personnel evaluation system for the Minneapolis Police Department. The system is intended to objectively measure the skills of Minneapolis police officers and to identify areas where additional training would be beneficial. There will be, as a result of the data produced from the CAD (Computer-Assisted Dispatch) System, a wealth of information on actual officer performance that should be included in the development of a comprehensive personnel system.

The Minneapolis Police Department's long-range plan describes a manpower resource concept that has been implemented to provide for increased manpower as needed by allowing for a reserve of paid overtime in lieu of hiring additional personnel. Paid overtime now is monitored manually. Program planners would realize substantial benefit through automation of this function, to include forecast and hours remaining or uncommitted. Personnel information collection should include, in addition to the basic background and personal information, a record of all transactions of sworn and civilian members of the Police Department. Data collected should indicate the following facts on request or periodically.

- Amount of sick leave remaining
- Status of training accomplishments and a schedule of additional training required or requested
- Current pay grade
- Overtime hours accumulated
- History of Police Department assignments or commands
- Projected schedule for pay grade changes and/or promotions
- Special skills such as welding, foreign languages, pilot, skindivers, etc.

- Special awards or commendations and complaints and reprimands
- Results of personnel evaluations.

Personnel data input should be identified with a restricted access code for sensitive personal information.

9. CRIME ANALYSIS UNIT

The MPD Crime Analysis Unit should be responsible for operational analysis and research to aid departmental enforcement efforts. Their efforts can contribute to increased departmental effectiveness by providing support such as:

- Correlation of patrol manpower/unit allocation and calls for service to assist in redistribution of patrol resources (geographically and by shift) to better respond to calls for service
- Analysis of crime patterns and M.O. to assist investigators in determining relationships between cases and suspects
- Highlighting emerging crime patterns to permit department administrators to formulate, implement, and evaluate special enforcement programs to combat specific crimes.

Techniques necessary for effective analyses of these types are embodied in the discipline of operations research. Mathematical and statistical tools (such as regression analysis, frequency distribution, simulation, etc.) are used to analyze past data and to project future patterns and trends. Assuming that adequate measures of effectiveness can be developed, such analyses can contribute to the overall effectiveness of MPD if properly used.

The MPD information system should insure that adequate data for crime analysis is collected and stored, and that a flexible and responsive retrieval capability exists for both standard and ad hoc analyses. This means that information regarding complaints, offenses, arrests, and stolen property must be entered and maintained in a data base on a timely basis. Further, this information must be specific enough to permit analyses by:

- Crime type
- Geographic location
- Chronological relationships
- Victim/target type
- M.O.
- Vehicle type
- Property type.

Retrieval capability for analysis support both parameter-driven requests (to permit analysts to tailor retrievals to specific sets of circumstances) as well as automatic exception reports (to highlight particularly trouble-prone locations, stolen property types, etc.). System output should facilitate preparation of maps, histograms, and graphs to aid in analysis and presentation of conclusions.

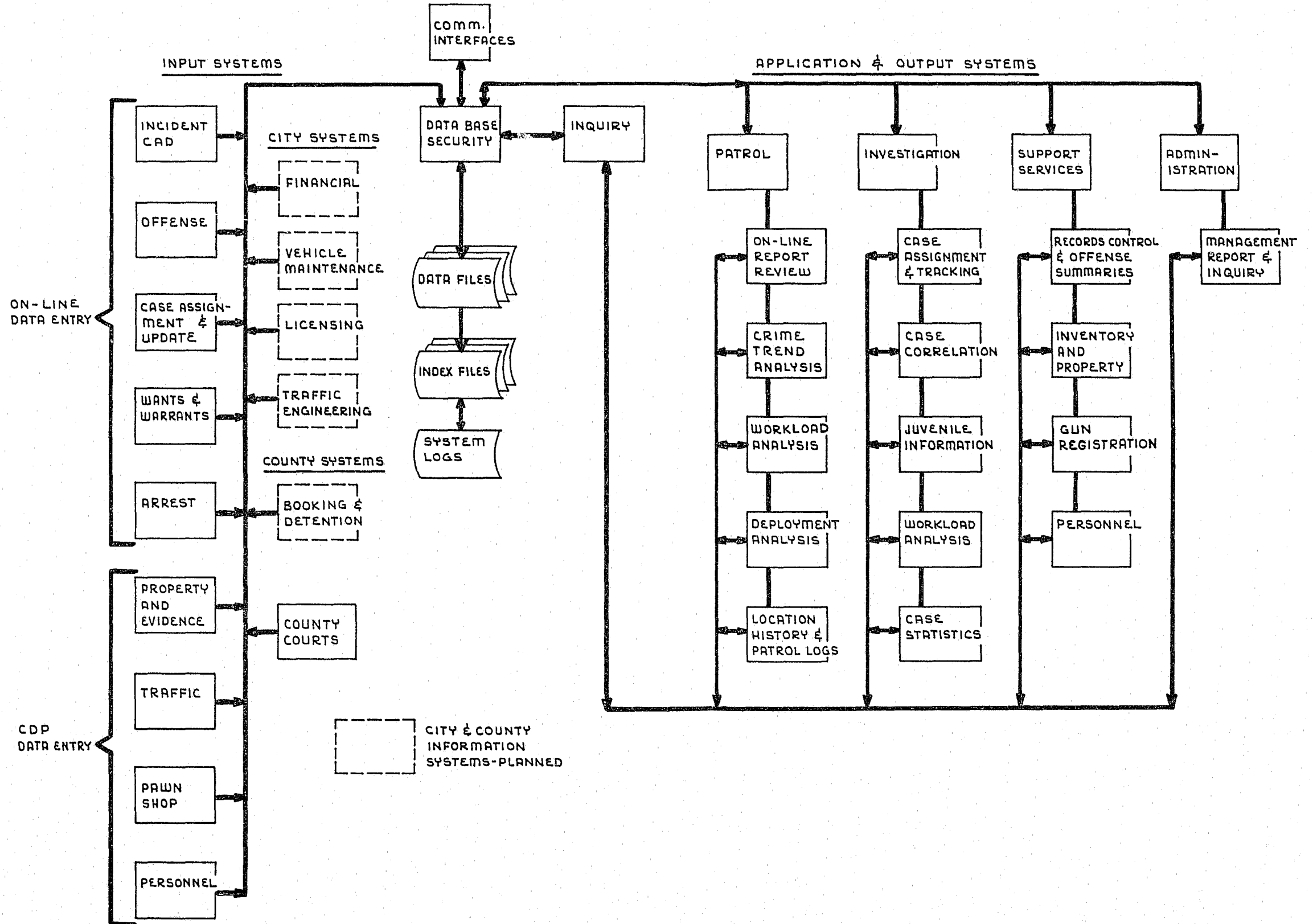
10. IDENTIFICATION

The booking and detention process performed by the Hennepin County Sheriff's Department needs to be integrated more closely with the arrest and identification functions performed by the Minneapolis Police Department. The duplication of identification files should be eliminated to the greatest extent possible and the two agencies should undertake jointly the development of an automated arrest, identification, booking and jail detention system. While the responsibilities and needs of the two agencies differ, the process and information collection is common to both. The process and information needs consist of the following:

- Recording of the charges and circumstances of arrest and taking background information on the arrestee. Recording arresting officers.
- Establishing positive identification through fingerprinting and determining any prior criminal history record
- Photographing the arrestee if no prior photograph exists or if outdated
- Cataloging personal property or evidence taken at time of arrest
- Creating final disposition report for updating when final disposition is received
- Indicating court date and when released, conditions of release, bail amount and bail agency

The requirements for an arrest booking and detention system will depend on agreement reached between Minneapolis Police Department and the Hennepin County Sheriffs' Department.

MINNEAPOLICE POLICE DEPARTMENT
INFORMATION SYSTEM COMPONENTS



III. INTEGRATED INFORMATION SYSTEM CONCEPTS AND STRUCTURE

III. INTEGRATED INFORMATION SYSTEM CONCEPTS AND STRUCTURE

The term Integrated Police Information System as used in this master plan means the merging of computer systems with all major functions performed by the Police Department, with the intent being to assist, support or enhance Police Department performance and possibly to provide additional capabilities where none before existed.

In the data processing world the term Integrated Information System has another meaning that is consistent with the system recommended for development by the Department. When an integrated information system is accessed with a request, several distinct applications may be combined and several categories of data accessed to construct the information requested. For example, a patrol supervisor performing an evaluation of a patrolman could enter the patrolman's name and the purpose - evaluation - and the system would respond with personnel data (training received, current rank, commendations, etc.) and performance data (complaints handled, offense reports filed and arrest). This type of system differs from a batch system, which would require the patrol supervisor in the preceding example to manually compile the information from several separate reports or files.

An integrated police information system is a combination of procedures, computer system software and computer hardware. Procedures define the interaction between man and machine and direct and control the operations of the computer systems. Communications equipment enable this interaction to take place from locations removed from the actual computer installation.

The procedural aspects of the system are the process by which data can be entered into an automated system and information

extracted. Data entry can take two basic forms: indirect or direct. The indirect method, commonly referred to as batch processing, entails the coding of data on a formatted input form from which it is transferred into machine readable form and processed as a batch of input. Department Uniform Crime Reporting (UCR) and inventory reports are currently produced using this process. An alternative to batch processing is the direct method of data input where the user is connected or on-line to the computer system and enters data directly into the system from a terminal device.

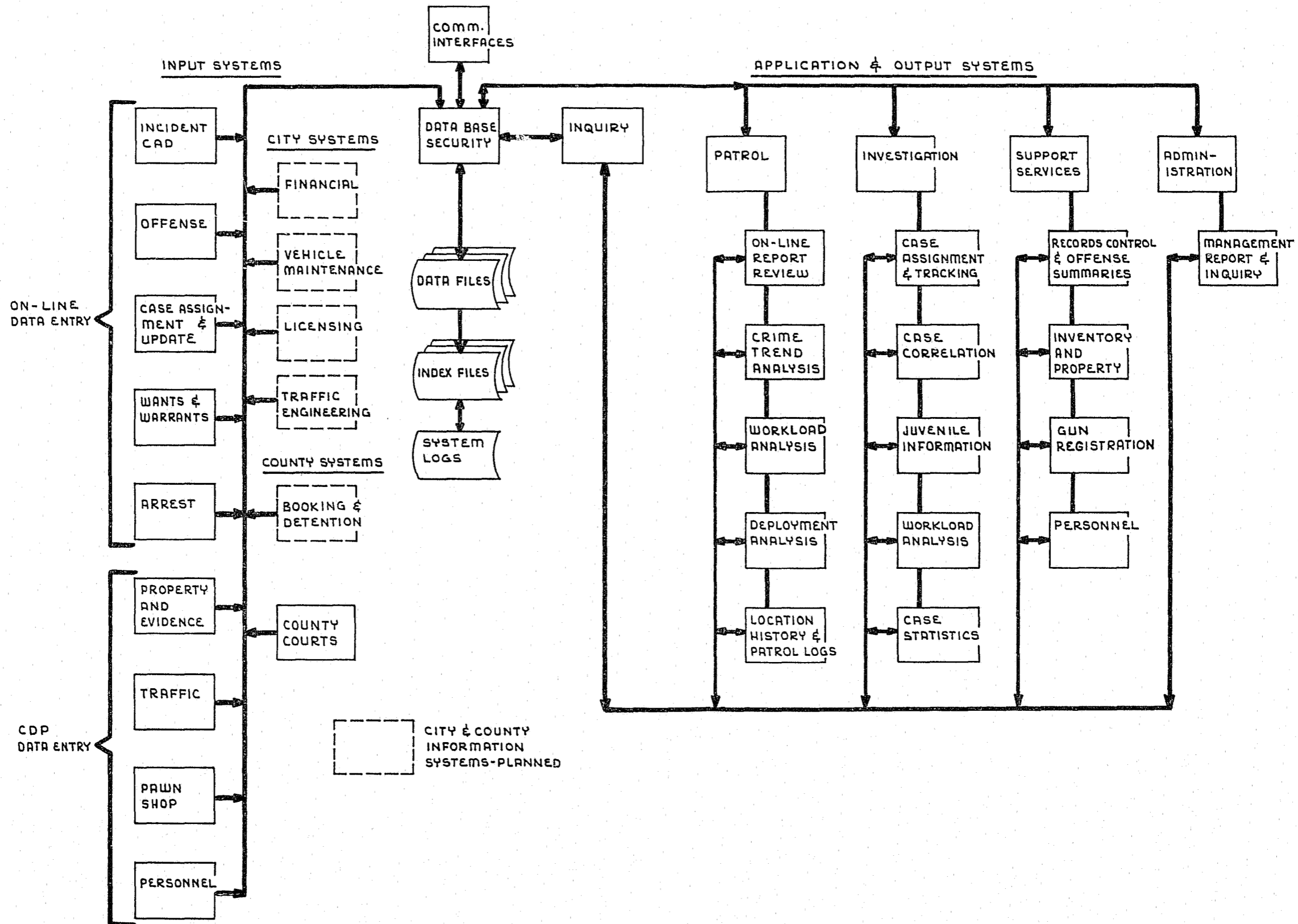
Very often the output produced by automated systems inundate the user with volumes of unwanted data. In contrast, integrated information systems can be designed to answer specific questions. In the previous example, the suggested response to the request for evaluation information on a patrolman provides the supervisor with only the specific information requested and not the entire Department personnel file.

Exhibit II, following this page, presents a conceptual overview of the components that should be included in an Integrated Police Information System for the Department.

1. INPUT SYSTEMS

Data collection forms the basis of an integrated information system and should be designed to minimize or eliminate time consuming and expensive clerical overhead. Within this context the requirements for the Minneapolis Information System are based on non-repetitive entry of data and a complete integration of applications using common data elements. The following are specific input system components that should be incorporated into the information system.

MINNEAPOLICE POLICE DEPARTMENT
INFORMATION SYSTEM COMPONENTS



- . Incident
- . Offense
- . Case assignment
- . Wants and warrants
- . Arrests
- . Property and evidence
- . Traffic
- . Pawn Shop
- . Personnel.

Additional input would be received from interfaces with City and County systems. External information supplied to the MPD information systems could include the following:

- . City of Minneapolis Information System
 - Financial
 - Vehicle maintenance
 - Licensing
 - Traffic engineering
 - Demographic
- . Hennepin County Systems
 - Court
 - Booking and detention
 - Docketing
 - Look-outs.

2. DATA BASE AND DATA BASE SECURITY

An integrated data base is described as a collection of independent data files or data elements that have been merged and correlated to produce a more effective information source accessible through various reference elements. The advantage to implementing an integrated data base is that a request for information submitted with one identifier - driver's license, person's name or vehicle tag number - will produce all the pertinent information concerning that individual or vehicle.

Unique data elements should be placed in the data base one time; all subsequent occurrences of that data element should be referenced back to the original entry. This type of file structure would enable the Department to eliminate the repetitious entry of offense descriptions on arrest reports. One master adult name file should contain references to the following data files:

- . Incidents
- . Offenses
- . Arrest
- . Criminal history
- . Stolen Property
- . Vehicles
- . Gun Registrations
- . Field Interviews.

Names of juveniles should be placed to a separate master name file.

(1) Inquiry and Indexing

Records must often be retrieved when only partial information is available. Index files and automatic index searches should be provided to allow the user in these circumstances to obtain a list of possible records arranged so that the most likely record would appear at the top of the list of possibilities.

Index files and index searches should include the following:

- . Name and physical characteristics
- . Serial number
- . Locations
- . Vehicles including bikes
- . Date, day of week, time and time ranges
- . Modus Operandi.

The name search should allow for entry of name or nickname and/or physical description and return a list of possible names (including similar, sounding names). Included in the response should be the reason the person's name is in the system. The person could be a victim, suspect, complainant, arrestee, mental patient, etc.

Searches by serial number (Social Security, Armed Forces, MPD property number, bicycle number, etc.) should return the name of the person or a description of the property depending on the type of number entered.

When a vehicle license tag number is not known, information should be obtainable by an automatic record search by make, model, year and color. This capability should be included in offense case correlation.

The date and time index and search should be included in the information system to provide chronological access to information. This would allow retrieval of information according to specific time intervals such as all robberies that occurred on a particular day between certain hours and all offense reports filed for the preceding day.

(2) Location Method

Many information needs defined by MPD rely upon an accurate and flexible method of specifying the geographic location of law enforcement related events. Such needs as dangerous premise addresses, high-accident intersections, crime pattern analyses, and manpower distribution can be no more accurate or dependable than is the location method employed. Therefore, the location method should be considered as a fundamental capability of the MPD information system and should be designed to encompass all present and future needs for location-dependent information.

The location method should permit the data records resulting from events to be encoded with a primary location index that is unique and specific for future reference and retrieval. The primary location index should refer to a geographic unit that is small enough to be meaningful, but not so small or precise that exact locations become almost academic. For practical purposes, a small, defined area should be considered as a single point for location purposes. Platted land parcels (usually called "lots") can serve such a purpose in an urban area. Thus, any activity within a given parcel (whether it is the northeast or southeast corner, etc.) should be encoded simply as having occurred in that parcel.

Some additional types of locations within the city should also be identified for location purposes. These pseudo-parcels are locations of interest to law enforcement that are not actual platted property. The city's street network comprises the largest class of pseudo-parcels, with each intersection and street segment between intersections encoded as a primary location index. This capability is especially useful for traffic-related analysis and environment. In addition, other locations such as lakes should be encoded as pseudo-parcels.

The primary location index should be cross-referenced to all other common methods of identifying locations. Thus a location could be specified by one of the cross-references and the primary location index could be found and appended to the data records with no manual look-up needed. The following cross-references should be supported:

- . Premise Address (number and street)
- . Streets Forming Intersections
- . Cross-Streets Bounding Street Segments.

In addition, associative references should be linked with each primary location index to permit location to be related logically to other locations with similar characteristics or common relationships. The following associative references should be supported:

- . Census Tract
- . Precinct
- . Political Subdivision
- . Vector Relationship (for intersections and street segments)
- . Block.

These associative references, in turn, determine the retrieval capabilities of the information system. Since some of these references are subject to change (for example, precinct boundaries may change), it should be possible to update them as necessary. The following general types of retrieval capability should be supported:

- . Single Location
A specific parcel of land
- . Predefined Area
A census tract, precinct, election districts, reporting zone, school district, etc.
- . Non-predefined area
A polygon defined for a specific retrieval of information, such as a four-block area bounded by specific streets with a high incidence of burglary.
- . Vector
A "line" of locations concentrated logically, such as all locations along a specific street.

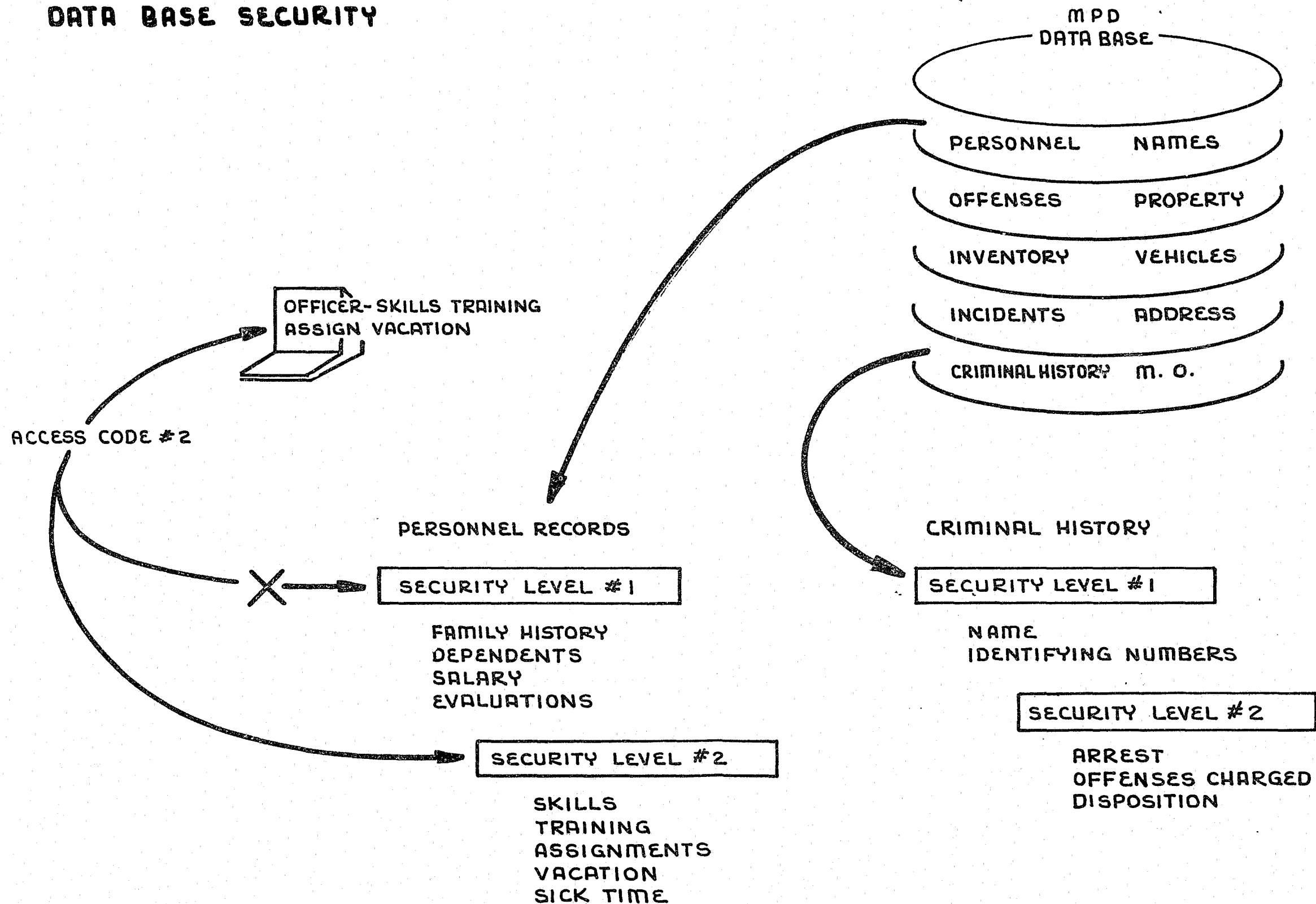
The functional capabilities described above for coding and retrieving location-related data should serve all presently identified MPD information needs. Other municipal needs (such as traffic engineering) also should be considered for compatibility and possible inclusion.

(3) Data Base Security

By consolidating data collected and maintained by the Police Department, which will include arrest records and criminal histories, the possibility of abuse, unauthorized distribution of data or invasion of the privacy of the individual will be increased. By increasing the efficiency of information retrieval for police work the same efficiencies will exist for the individual who intends to misuse or abuse police data. To overcome this difficulty, the recommended integrated system should incorporate a data security component. The purpose of the data security component is to guard access to the data and to interrogate each prospective user to insure that all requests for information are preceded by the proper authorization. This will include interrogating each data terminal and the person using the terminal to determine if he or she has the proper authorization. Due to the sensitivity of such data as arrest records and criminal histories, additional precautions must be applied to these types of information. Arrest records and criminal history data records that include identifying numbers or names will require special authorizations before access to this information is granted.

Exhibit III following this page, illustrates this type of security precaution.

INFORMATION SYSTEM DATA BASE SECURITY



3. APPLICATIONS AND OUTPUT SYSTEMS

The following conceptual system components are presented to illustrate the information that must be provided by an automated system. Application and output systems will manipulate data collected by the various input components to produce information for patrol, investigation, support services and management.

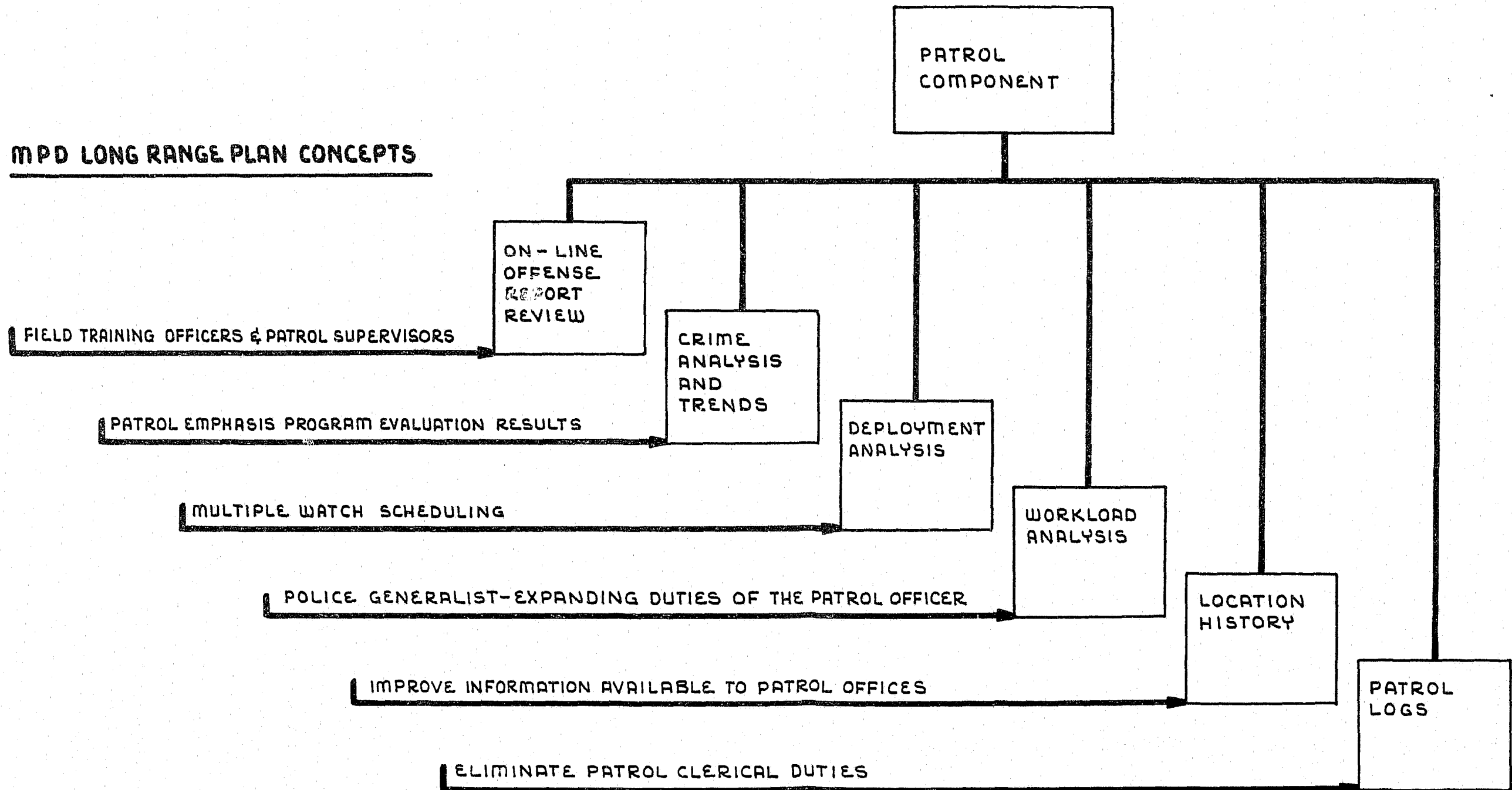
(1) Patrol Component

The purpose of the patrol component is to provide the Patrol Bureau with timely information on crime occurrence, demand for police services and to assist in the deployment of manpower. With the Department moving toward team policing and a police generalist concept for patrol officers more detail information will have to be provide to balance workload between patrol, crime scene duties and investigation. Exhibit IV, following this page illustrates the relationship between long range plan concepts and information system components.

We have identified five specific components that should be included in the system to support the Patrol Bureau:

- . On-line report review and approval for improved supervision and offense report accuracy.
- . Crime analysis for identifying emerging crime trends.
- . Deployment analysis for balancing deployment with demand for service.
- . Workload analysis to equally distribute workload and project hours available for activities other than traditional patrol.
- . Location history to identify locations that consistently require service and type response given in each incident.
- . Patrol logs to eliminate this clerical task from patrol duties.

RELATIONSHIP OF INFORMATION SYSTEM PATROL COMPONENT TO LONG RANGE PLAN



On-line terminals will also enable Patrol officers to make specific inquiries of the data base.

(2) Investigative Component

The purpose of the investigative component is to improve management of investigative caseload, provide investigators with possible leads through case correlation and track and update the status of on-going investigations. The investigative component should automatically search the integrated data base for correlating factors such as similar locations, persons, property stolen, victims, M.O. and vehicles.

For each active case, the information system should provide investigators with a complete list of all persons involved, all statements given, vehicles, property stolen, evidence collected, etc.

Juvenile information should be provided to investigators in similar formats but accessible only through a juvenile division terminal device or with a special access code.

The investigative components should include the following:

- . Case assignment and tracking for management and control purposes.
- . Case correlation to provide investigators with possible investigative loads.
- . Juvenile information for separation of Juvenile and adult investigations.
- . Work load analysis for equal distribution of work load.
- . Case statistics for evaluation and to identify trends.

Investigations should also be provided with an on-line updating capability to add witnesses, property, vehicles, etc.

(3) Support Services

Support services include those applications that are necessary for control of Department inventory, registration of handguns, logging confiscated property and maintaining personnel records. This series of applications should produce daily crime bulletins, missing offense report list and UCR reports. The system components that should be included in the support services component are the following:

- . Records control and offense summary for management of offense data entry, UCR classification and generation of daily crime bulletins.
- . Inventory and property to produce forecast of equipment needs, track inventory movement, and locate property in the custody of the department. Additionally, this component should automatically generate the equivalent to a "stop card" for stolen pawned property.
- . Gun registration component to automatically search state and federal stolen handgun files and to check for criminal history on handgun applicants.
- . Personnel to provide basic personnel information, track payed overtime hours and record personnel transactions.

4. MANAGEMENT REPORTS

Aside from the major thrust of providing operational information to the police department in support of its daily operating needs, the information system should produce reports to aid in the analysis of crime patterns and trends, resource utilization, criminal activity as it relates to deployment, and the performance and evaluation of police personnel.

Crime patterns and trends analysis will require abstracts of data collected by the computer-assisted dispatch system that pertain to the distribution of reported crime by location, type, time of day, and day of week. The computer programs developed to produce the crime patterns and trends analysis should allow cumulative analysis over varying time frames, such as weekly, monthly, semi-monthly, and yearly, thereby providing not only the long-term crime trend determinations but the short-term or seasonal crime patterns analysis.

Resource utilization will be accomplished by categorizing data captured in the operation of the computer assisted dispatch system by the following elements:

- Nature of assignment
- Patrol planning area
- Officer and type of unit
- Time out of service on assignment
- Administrative time out of service.

The computer printed reports produced by the resource utilization programs should be available on a daily basis to police department planners with cumulative utilization reports obtainable on request with the desired time interval. The results of utilization analysis will be recorded on magnetic tape to produce a permanent historical base for long-term operational studies.

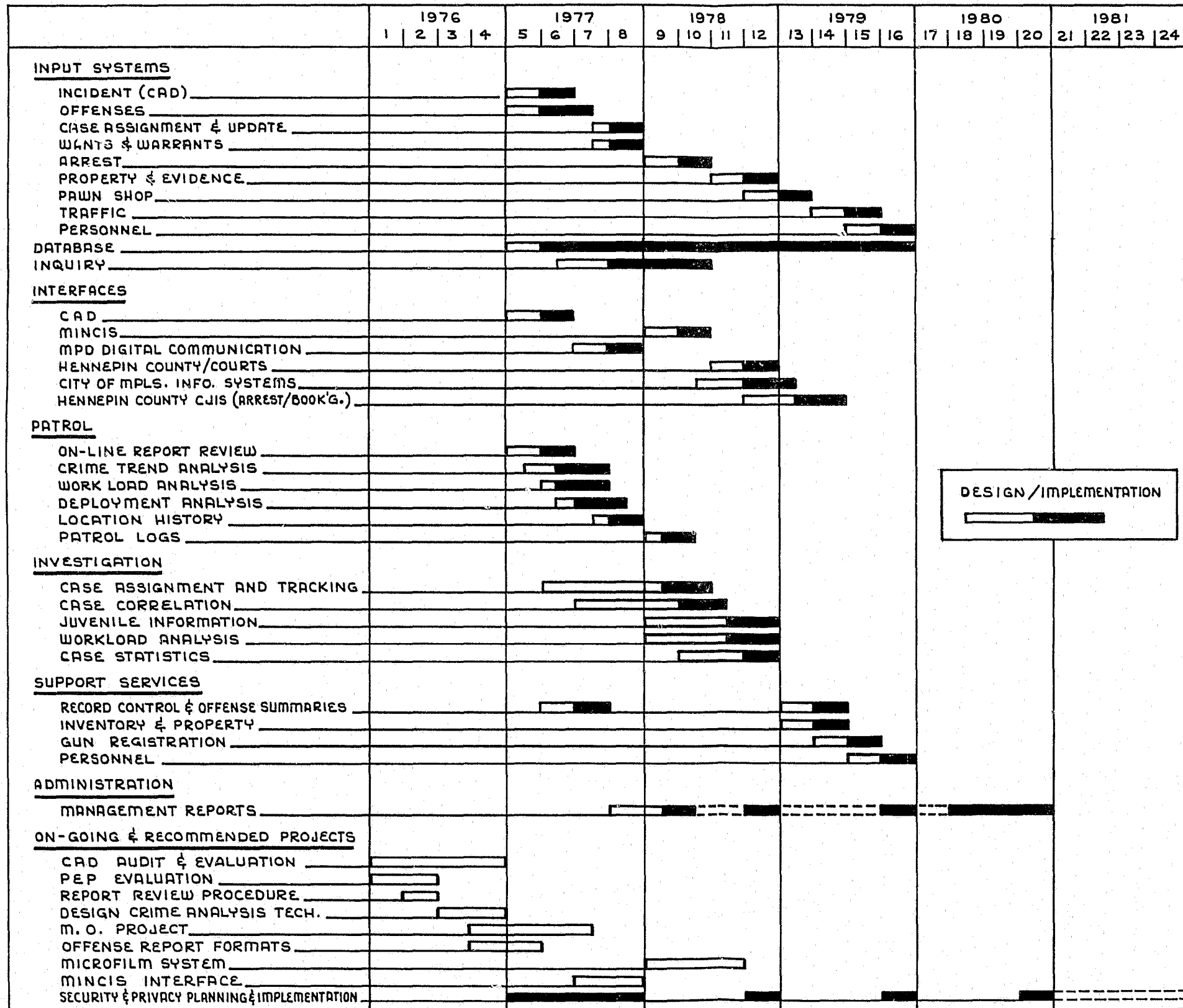
Deployment by work load will involve reduction of operational data to produce computer-printed deployment planning reports. Deployment analysis for each precinct will be accomplished by examining data pertaining to total time field units are out of service on assignments, number of arrests, calls for service, traffic accidents and number of Part I offenses committed.

Personnel and deployment effectiveness will be achieved through examining historical data recorded and maintained in the integrated data base. Deployment and personnel evaluation reports should be produced that indicate the success of particular deployments and officers in handling field incidents.

In addition to detailed management reports, the information system should support concise, on-line, summary reports that could be updated periodically during the day to reflect shifting deployments and workloads.

Exhibit V, following this page, presents the recommended detail design and implementation schedule for information systems components and on-going and recommended projects. For additional information regarding levels of staffing effort, please see Exhibit VI.

**MPD INFORMATION SYSTEM
DETAIL DESIGN AND IMPLEMENTATION SCHEDULE**



IV. PRIVACY AND SECURITY CONSIDERATIONS

IV. PRIVACY AND SECURITY CONSIDERATIONS

This section outlines the current legal issues concerning privacy and security, outlines planning steps that the MPD should undertake and summarizes the results of the initial audit conducted in August 1975 pursuant to the Chapter 401 reporting requirements. Since the regulations and state statutes have a considerable number of facets, this section is intended to highlight some of the more significant areas.

1. PRIVACY AND SECURITY LEGAL ISSUES

The increasing use of automated data processing systems by police departments and the increased concern over the rights of individuals concerning the collection, storage and use of private/confidential data has promulgated a new federal statute and an update of a Minnesota statute concerning security and privacy. These two statutes are (1) Chapter I of Title 28 of the Code of Federal Regulations, Part 20 - Criminal Justice Information Systems, effective June 19, 1975; and (2) Chapter 401-15.162-15.168 of the Minnesota Session Laws 1975 (amending Chapter 479, Minnesota Session Laws 1974), effective June 5, 1975.

(1) Title 28 - Part 20 is an order from the Attorney General of the United States which establishes regulations governing the dissemination of criminal records and criminal history information. The purpose of the act is to afford greater protection of the privacy of individuals who may be included in the records of the Federal Bureau of Investigation, criminal justice agencies receiving funds directly or indirectly from the Law Enforcement Assistance Administration (Minneapolis Police Department), and interstate, state or local criminal justice agencies exchanging records with the

FBI or these federally funded systems. The specific purpose of the regulations is to assume that criminal history record information wherever it appears is collected, stored and disseminated in a manner to ensure the completeness, integrity, accuracy and security of such information and to protect individual privacy.

Criminal history record information system means a system including the equipment, facilities, procedures, agreements and organization thereof for the collection processing, preservation or dissemination of criminal history record information has been defined to mean information collected by criminal justice agencies on individuals consisting of identifiable descriptions and notations of arrests, detentions, indictments, information, or other formal criminal charges, and any other disposition arising therefrom, sentencing, correctional suspension, and release. Excluded from the definition is identification informed such as fingerprint records to the extent that such information does not indicate involvement of the individual in the criminal justice system.

The Act requires that the State of Minnesota submit a plan to LEAA within 180 days of June 19, 1975. This plan, currently being developed, must set forth operational procedures for the following areas:

- . completeness and accuracy
- . Limitations on disseminations
- . General policies on use and dissemination
- . Juvenile records
- . Security
- . Access and review.

The State will be conducting public hearings during October to collect public input concerning the drafting of the Statewide Security and Privacy Plan. The current timetable stipulates that a finalized plan will be developed by the end of November. Consequently, it is reasonable to expect that the Minneapolis police department should have a copy of the finalized plan by early December 1975.

The major immediate impact of this regulation on the MPD will be in the areas of access and review and in maintaining records concerning for use of specified information files required for subsequent audits. The MPD must be capable of conducting its own systematic audit to ensure compliance within those two areas outlined above as well as the other areas outlined in the regulations.

Computer system hardware and applicable software used for criminal history data shall be under the direct control of the MPD. Furthermore, the software and hardware must be protected to prevent unauthorized access. The MPD must promulgate controls over all personnel that have direct access to the computerized data including operational EDP personnel.

The regulations stipulate that any agency or individual violating subpart B of the regulations (State and local criminal history record information systems) shall be subject to a fine not to exceed \$10,000. In addition, LEAA may initiate fund cut-off procedures against recipients of LEAA assistance.

(2) Chapter 401 - State agencies confidential data on individuals, is an act relating to the collection, security and dissemination of data on individuals by the state and its political subdivisions. This act as amended stipulates the following:

- . A report to the legislature is required on or before August 1 of each year containing the names of responsible authorities responsible for the collection/use of public, confidential/private data, and how the data is stored.
- . The responsible authority (MPD) must insure that only data officially authorized be used and disseminated; that data not be used for unauthorized purposes; the use of summary data from confidential/private is allowed within certain circumstances and that procedures must be set up to ensure that all data is accurate and free from leakage.
- . An individual who is asked to supply confidential or private data has to be informed of his/her rights concerning the data and subsequent review and challenge procedures.

The statute further stipulates that any person who willfully violates the provisions of the act, highlighted above, or any lawful rules and regulations of the applicable sections of the statute (15.162-15.168) by any public employee constitutes just cause for suspension without pay or dismissal of the public employee.

2. PRIVACY AND SECURITY PLANNING

The Minneapolis Police Department should immediately initiate privacy and security planning activities in three areas in order to meet the requirements stipulated by Title 28, Part 20 and Ch. 401. These areas are (1) establish written policies and corresponding procedures to ensure that all public, private and confidential data on individuals is accurate, complete, and current and is disseminated/audited/controlled in accordance with the applicable sections of the regulations/statute (section 20.21 (a)(b)(c)(e), 15.1641(b)-(e)); (2) insure general orders and/or directives for implementing the access and review regulation (section 20.21(g)) and the rights of subjects of data section of Ch. 401 (15.165); and (3) develop a comprehensive security plan in accordance with (section 20.21(f)) as part of the initial development of the police records automation activity.

(1) The state is required to develop written policies and procedures concerning the accurate collection, storage and dissemination of the data pursuant to the applicable sections of Title 28 - Part 20. Consequently, when this plan is made available to the Department, individual departmental regulations should be issued to implement them in the appropriate areas. There is a need, however, to develop policies and procedures in the records area which will be needed to augment the anticipated state guidelines.

The department does not currently have a clearly defined policy and supporting regulation concerning the form and substance of records covered by the regulation/statutes. Furthermore, the systems and procedures currently in use are primarily governed by verbal policies and individual discretion of the unit commander/officer-in-charge. Consequently,

there is a possibility of considerable variation in the accuracy, completeness and current relevance of data due to this widespread use of verbal and/or generalized policies. For example, the Department does not have a field manual covering the specific methods, techniques and procedures necessary for filling out arrest reports. Therefore, the development of policies and regulations concerning the collection of data related to arrested persons, etc. and the internal filing, dissemination, control and other use is a necessary prerequisite which the department should undertake in the near term.

(2) The Department should develop appropriate directions and/or regulations for implementing the access and review regulation (section 20.21(g)) and the rights of subjects of data section of the state law, Ch. 401 (15.165).

The access and review section of the federal regulation stipulates a six-part sequence for implementing the procedures. The MPD should develop a corresponding set of procedures for installing the six-part sequence with the appropriate departmental areas. The development of procedures in concert with (section 20.21(g)) must also take into account 15.165(b)(c) of the state statute.

Section 15.165(a) stipulates that an individual asked to supply private or confidential data concerning himself shall be informed of the purpose, consequences, etc. Therefore, it will be necessary for the department to issue the necessary general orders/regulations to implement this provision of the statute in the field and other applicable situations.

(3) Section (section 20.21(f)) stipulates that a number of security precautions be undertaken by the department in conjunction with the development of its computerized system.

In addition, the department is required to institute other security procedures concerning personnel having access to criminal history record information from unauthorized access, theft, fire, sabotage, etc.

The Department is currently in the position to develop policies concerning the development of its computerized records system. It will be necessary, therefore, since the system will be operated by Central Data Processing, for the Department to demonstrate that it has the explicit authority to set and enforce policy concerning computer operations. Other policies/regulations will have to be developed for control of the operations of the automated data processing system by the department in concert with the applicable provisions of the regulations.

The August survey of records/data conducted in the Department indicated that some of the central repositories of criminal history record information currently keep the data in non-secure storage areas: open files, open ledgers, etc. Consequently, it will be necessary for department to revamp its physical security of records in concert with the statute. This should include the placement of the applicable records in secure storage areas, etc.

3. SECURITY AUDIT

The Department conducted a review of its records in August 1975 pursuant to the Chapter 401-15.163 reporting requirements. This review augmented with follow-up interviews indicated that there was a wide variance in the collection, storage and control of data. Some elements are in noncompliance with the regulations. This is due principally because of (1) lack of adequate physical storage facilities, and (2) lack of adequate written policies concerning the collection, storage, dissemination and use of the data. For example, the criteria for giving out arrest records depends primarily on the individual discretion of the individual in the particular unit which has the record (at least five different units have the records). Since the policies are verbal, there is very little assurance over control of dissemination. In addition, records are not routinely kept as to who the requesting parties are. Consequently, the subsequent audit of the request will be difficult to perform.

The Department should develop and implement the required policies/regulations outlined in Section B above and then conduct its own security audit prior to the July 1976 state audit to ensure compliance with Title 28, Part 20 and Ch. 401 - 15.1641, 15.165.

V. MASTER AUTOMATION PLAN

V. MASTER AUTOMATION PLAN

This section of our report presents the work plan to meet the goals and requirements set forth for the MPD information system. It is structured to include information in the form of estimated schedules, tasks, resource requirements, and costs to be expended during the 1976-1981 time period. It must be understood at the outset that development of the MPD information system will require a significant and continuing commitment by both City and MPD Administrators. We estimate that 46 man-years of effort and nearly \$3,000,000 will be expended during a five and one-half year period to analyze, design, implement, and evaluate the MPD information system.

The remainder of this section contains detailed information concerning the work plan and its use. Each major component is summarized as an Exhibit, which is accompanied by supporting narrative, as required.

1. WORK SCHEDULE AND MANPOWER REQUIREMENTS

Exhibit VI, following this page, presents an overview of the phased work schedule in the form of a Gantt chart. Before developing this schedule we gained agreement with MPD Administrators that system development priorities for functional areas should be grouped and ranked as follows:

- . Patrol
- . Investigation
- . Support Services
- . Administration.

This development approach should provide improved information services to users in relation to their operational responsibilities, and should also permit a logical progression of system development by building operational components for later use by Administrators as well.

MINNEAPOLIS POLICE DEPARTMENT
 MASTER AUTOMATION PLAN
 PROJECT SCHEDULE

FUNCTIONAL AREA PHASE	1976				1977				1978				1979				1980				1981				SYSTEMS ANALYST	PROGRAM- MERS	DATA CONV.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
PATROL																									13	26	
CAD AUDIT																									39		
SYSTEMS ANALYSIS																									65		
CONCEPTUAL DESIGN																									39		
DATA BASE DESIGN																									26	65	
DETAIL DESIGN																									13	143	117
IMPLEMENTATION & AUDIT																											
INVESTIGATION																									32		
SYSTEMS ANALYSIS																									46		
CONCEPTUAL DESIGN																									13	65	
DETAIL DESIGN																									13	143	117
IMPLEMENTATION & AUDIT																											
SUPPORT SERVICES																									32		
SYSTEMS ANALYSIS																									46		
CONCEPTUAL DESIGN																									13	65	
DETAIL DESIGN																									13	143	117
IMPLEMENTATION & AUDIT																											
ADMINISTRATION																									32		
SYSTEMS ANALYSIS																									46		
CONCEPTUAL DESIGN																									13	65	
DETAIL DESIGN																									13	143	117
IMPLEMENTATION & AUDIT																											39

Project Director-MPD	7	6	6	7	7	6	6	7	7	6	6	7	7	6	6	7	7	6	6	7	7	6			143
Project Manager-MPD	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13		286
Project Manager-CDP	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9		198	
Systems Analysts	39	39	39	39	26	26	26	26	26	26	26	26	26	26	26	26	26					13		507	
Programmers	13	13			39	39	52	52	52	52	52	52	52	52	52	52	52	52	52	52	13	13		858	
Data Conversion Clerks						39	39	39		39	39	39		39	39	39		13	13	13				390	
Consultant				2				2				2				2				2		2		12	
TOTALS	81	67	54	44	94	132	145	148	107	145	145	148	107	145	145	148	107	93	93	96	55	43		2,394	

		▼ Comprehensive Review
		▽ Intermediate Review
		--- On-Going Audit Activity
		- - - Adaptive Feedback

As shown in Exhibit VI, each of the four major development phases is scheduled for implementation at the end of a calendar year, followed by six-twelve months of post-implementation evaluation and audit. These audit activities are centered upon periodic formal reviews (an intermediate review at mid-year and a comprehensive review at year-end) that are intended both to improve the portions of the information system developed to that point and to provide information of value to ongoing design and implementation activities. We refer to this process as "Adaptive Feedback", and have indicated it on the schedule. This becomes especially important considering the five-year span of time involved and the almost certain necessity to adapt the plan to changes brought about by internal and external influences during the development period.

Exhibit VI also includes manpower estimates by calendar quarter (expressed in man-weeks by role). Additional information concerning manpower requirements is contained in Subsection 3. It should be noted that assignment of additional resources (funding, personnel, technology transfer, etc.) could compress the estimated times shown in Exhibit VI.

2. PROJECT DEVELOPMENT WORK TASKS

The preceding subsection refers to four major functional areas and their priorities. Within each of these phases are four major phases of activity:

- . Systems Analysis
- . Conceptual Design
- . Detail Design
- . Implementation and Audit.

Additionally, the first functional area to be developed (Patrol) also includes a separate phase for Data Base Design. This is because much of the data base structure for this overall system should be accomplished at this time. The three remaining functional areas incorporate further design work related to the Data Base in their Conceptual Design phases.

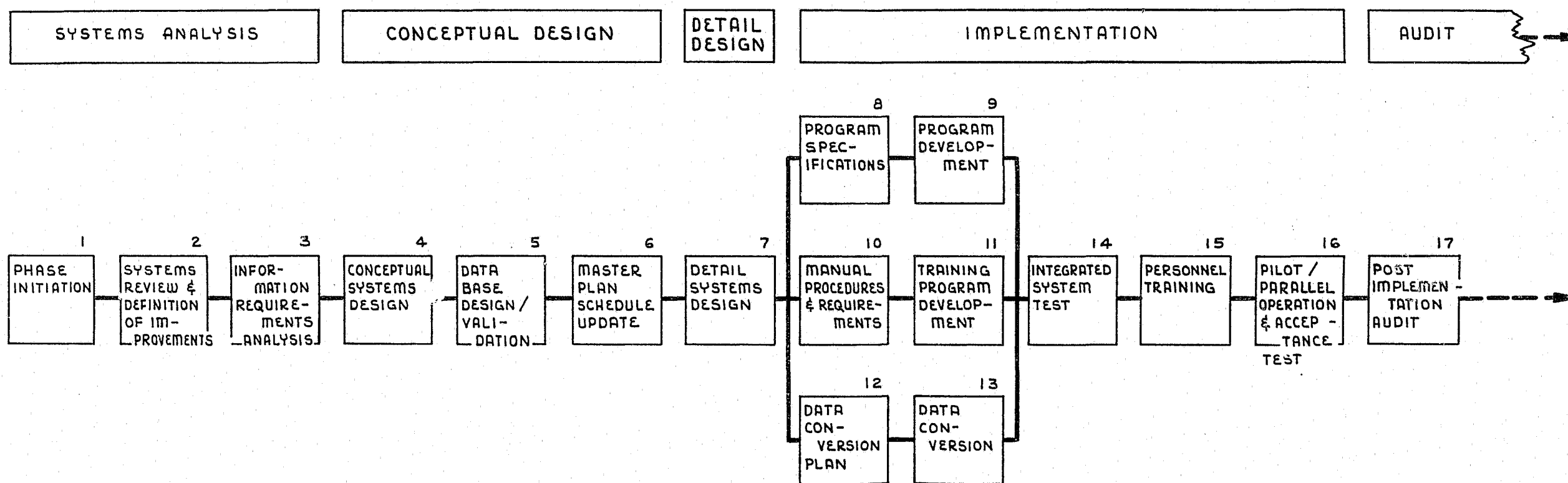
Each of these four phases - regardless of the functional area under development - contains a number of generic work tasks. Exhibit VII following this page, depicts the four phases and their associated tasks in schematic form. These 17 tasks are identified below, and outlined in detail in Appendix A with identification of task objectives and specific activities.

- (1) Phase Initiation
- (2) System Review
- (3) Information Requirements Analysis
- (4) Conceptual System Design
- (5) Data Base Design/Validation
- (6) Master Plan/Schedule Update
- (7) Detail Systems Design
- (8) Program Specifications
- (9) Program Development
- (10) Manual Procedures and Requirements
- (11) Training Program Development
- (12) Data Conversion Plan
- (13) Data Conversion
- (14) Integrated System Test
- (15) Personnel Training
- (16) Pilot/Parallel Operation and Acceptance Test
- (17) Post Implementation Evaluation and Audit

Each task outlined in Appendix A provides a concise generic view of the work to be done. These outlines should be expanded and supplemented by the project team as specific phases are planned in detail. In addition, each formal report or reference document to be prepared is identified (titles are underlined), and a suggested topical table of contents is shown.

MINNEAPOLIS POLICE DEPARTMENT - MASTER AUTOMATION PLAN

PROJECT WORK PLAN SCHEMATIC



▼ COMPREHENSIVE REVIEW
 ▽ INTERMEDIATE REVIEW

3. STAFFING ESTIMATES

As indicated by the manpower estimates shown in Exhibit VI, we recommend a project team made up of both police and data processing personnel. We have identified the following roles:

- . Project Director

Reporting to MPD with overall responsibility for the success of the project. We estimate that the Project Director will be involved on a half-time basis for the duration.

- . Project Manager (MPD)

Reporting to the Project Director with joint responsibility for day to day planning and coordination, as well as substantial involvement in department-related project activities. The Project Manager (MPD) should be assigned full-time for the duration.

- . Project Manager (CDP)

Reporting to the Project Director and the Manager of CDP with joint responsibility for day-to-day planning and coordination, as well as substantial involvement in systems analysis and design activities. The Project Manager (CDP) should be assigned three-quarter time for the duration.

- . Systems Analyst

Assigned by CDP to systems analysis and design activities, with involvement in post-implementation audit as well. An average of two-three systems analysts should be assigned as indicated in Exhibit VI.

- . Programmer

Assigned by CDP to programming activities, with involvement in post-implementation audit. An average of four programmers should be assigned during 1977-1981 as indicated in Exhibit VI.

- . Data Entry Clerks

Responsible for key entry of data to be included in the data base. An average of one-three clerks should be assigned during 1977-1980 as indicated in Exhibit VI.

4. TRAINING REQUIREMENTS

All members of the department will be affected by development and implementation of the MPD information system. To insure that all personnel understand the system well enough to make effective use of it in their jobs, a suitable training program must be developed and carried out. These tasks are outlined in detail as steps 11 and 15 in the preceding subsection. We believe that the training necessary can be categorized and estimated as follows for planning purposes:

. Awareness Training

All department members (as well as other selected City personnel) should receive a minimum of four-eight hours of orientation to the system. The purpose of this orientation is to explain the overall objectives and functions of the system in the broad context of departmental operations.

. Operational Training

Department personnel who are expected to interact with the system (i.e. provide information to it or interpret information from it) should receive 16-32 hours of training in addition to the orientation. This training should be specific to the functions performed by the individuals being trained.

Design and implementation of training programs should be phased to coincide with related implementation tasks for each major phase. Most important, all training should be completed before implementation of the system component to which it is related. Although this may prove to be difficult, we believe that it is essential to the success of the MPD information system.

5. COST PROJECTIONS

Exhibit VIII, following this page, presents project development cost estimates for 1976-1981. We have grouped these estimates as follows:

- . Personnel services
- . Computer services

Exhibit IX, following Exhibit VIII, provides supporting cost estimate factors contributing to the cost projections. The information contained in Exhibit IX is further explained below:

(1) Personnel Services

This cost category includes costs attributable to actual work performed by individuals assigned to the project. However, the following explanatory notes must be considered:

- . Costs shown for the Project Director (MPD) and Project Manager (MPD) are direct labor costs based upon salary estimates provided by the MAP Project Director. They do not include any indirect or fringe benefit costs.
- . Costs shown for all other project team members assume that individuals will be assigned to the project from CDP, and that interdepartmental charge rates provided by the CDP Manager will apply. It must be noted, however, that CDP does not now actually charge City departments for data processing services even though hourly rates for services have been calculated. Thus, these costs will accrue to the project only after a charge-out system for CDP services is implemented.
- . All cost estimates for personnel services are based upon 1976 estimates provided by the MAP project director and CDP manager, and reflect a 7% annual inflation factor for 1977-1981. This includes consultant services, which are estimated at standard billing rates for 1976 and adjusted for 7% annual inflation.

MINNEAPOLIS POLICE DEPT.
 MASTER AUTOMATION PLAN
 COST PROJECTIONS

EXHIBIT VIII

	1976				1977				1978			
	1	2	3	4	5	6	7	8	9	10	11	12
<u>Personnel Services</u>												
Project Director (MPD)	3,500	3,000	3,000	3,500	3,745	3,210	3,210	3,745	4,004	3,432	3,432	4,004
Project Manager (MPD)	4,498	4,498	4,498	4,498	4,810	4,810	4,810	4,810	5,148	5,148	5,148	5,148
Project Manager (CDP)	6,480	6,480	6,480	6,480	6,930	6,930	6,930	6,930	7,416	7,416	7,416	7,416
Systems Analysts (CDP)	28,080	28,080	28,080	28,080	20,020	20,020	20,020	20,020	21,424	21,424	21,424	21,424
Programmers (CDP)	7,280	7,280			23,361	23,361	31,148	31,148	33,332	33,332	33,332	33,332
Data Entry Clerks (CDP)						10,023	10,023	10,023	10,023	10,725	10,725	10,725
Consultant				3,600								4,100
Subtotal	49,838	49,338	42,058	46,158	58,866	68,354	76,141	80,526	71,324	81,477	81,477	86,149
<u>Computer Services</u>												
B-2700 System	36,125	36,125	36,125	36,125	38,804	38,804	38,804	38,804	41,513	41,513	41,513	41,513
B-4700 System						5,976	7,969	7,969	13,341	13,341	13,341	13,341
Subtotal	36,125	36,125	36,125	36,125	38,804	44,780	46,773	46,773	54,854	54,854	54,854	54,854
<u>Totals</u>												
Quarterly	85,963	85,463	78,183	82,283	97,670	113,134	122,914	127,299	126,178	136,331	136,331	141,003
Cumulative	85,963	171,426	249,609	331,892	429,562	542,696	665,610	792,909	919,087	1,055,418	1,191,749	1,332,752
Annual				331,892				461,017				539,843

	1979				1980				1981			
	13	14	15	16	17	18	19	20	21	22	23	24
<u>Personnel Services</u>												
Project Director (MPD)	4,291	3,678	3,678	4,291	4,585	3,930	3,930	4,585	4,907	4,206		
Project Manager (MPD)	5,512	5,512	5,512	5,512	5,902	5,902	5,902	5,902	6,305	6,305		
Project Manager (CDP)	7,938	7,938	7,938	7,938	8,496	8,496	8,496	8,496	9,090	9,090		
Systems Analysts (CDP)	22,932	22,932	22,932	22,932	24,544				13,130			
Programmers (CDP)	35,672	35,672	35,672	35,672	38,168	38,168	38,168	38,168	10,205	10,205		
Data Entry Clerks (CDP)		11,466	11,466	11,466		4,095	4,095	4,095				
Consultant				4,400				4,700		5,000		
Subtotal	76,345	87,198	87,198	92,211	81,695	60,591	60,591	65,946	43,637	34,806		
<u>Computer Services</u>												
B-2700 System	44,254	44,254	44,254	44,254	47,029	47,029	47,029	47,029	47,591	47,591	47,591	47,591
B-4700 System	19,054	19,054	19,054	19,054	25,140	25,140	25,140	25,140	22,599	22,599	22,599	22,599
Subtotal	63,308	63,308	63,308	63,308	72,169	72,169	72,169	72,169	70,190	70,190	70,190	70,190
<u>Totals</u>												
Quarterly	139,653	150,506	150,506	155,519	153,864	132,760	132,760	138,115	113,827	104,996	70,190	70,190
Cumulative	1,472,405	1,622,911	1,773,417	1,928,936	2,082,800	2,215,560	2,348,320	2,486,435	2,600,262	2,705,258	2,775,448	2,845,638
Annual				596,184				557,499				359,203

CONTINUED

1 OF 2

MINNEAPOLIS POLICE DEPARTMENT
 MASTER AUTOMATION PLAN
 SUPPORTING COST ESTIMATE FACTORS

	1976	1977	1978	1979	1980	1981
<u>Personnel Costs</u> <u>(Per Man-week)</u>						
Project Director (MPD)	500	535	572	613	655	701
Project Manager (MPD)	346	370	396	424	454	485
Project Manager (CDP)	720	770	824	882	944	1,010
Systems Analyst (CDP)	720	770	824	882	944	1,010
Programmer (CDP)	560	599	641	686	734	785
Data Entry Clerk (CDP)	240	257	275	294	315	337
<u>Computer Service Costs</u> <u>(Annual)</u>						
B-2700						
Hardware & Maintenance	120,000	129,000	138,000	147,000	156,000	156,000
Personnel/Support	24,500	26,215	28,050	30,014	32,115	34,363
Total	<u>144,500</u>	<u>155,215</u>	<u>166,050</u>	<u>177,014</u>	<u>188,115</u>	<u>190,363</u>
Total Costs Allocated to MPD	<u>144,500</u>	<u>155,215</u>	<u>166,050</u>	<u>177,014</u>	<u>188,115</u>	<u>190,363</u>
B-4700						
Hardware & Maintenance	343,000	343,000	343,000	343,000	343,000	343,000
Personnel/Support	244,000	261,080	279,356	298,910	319,834	342,223
Total	<u>587,000</u>	<u>604,080</u>	<u>622,356</u>	<u>641,910</u>	<u>662,834</u>	<u>685,223</u>
Cost/Job-Hour at Full Capacity	37.23	38.32	39.47	40.71	42.04	43.46
MPD Job-Hour Requirements						
System Development		572	832	832	832	
Production			520	1,040	1,560	2,080
Total		<u>572</u>	<u>1,352</u>	<u>1,872</u>	<u>2,392</u>	<u>2,080</u>
Total Costs Allocated to MPD		<u>21,919</u>	<u>53,363</u>	<u>76,209</u>	<u>100,560</u>	<u>90,397</u>

Note: See accompanying text for additional information

(2) Computer Services

This cost category includes computer usage charges from CDP to the department for system development and on-going production. These costs include equipment rental, maintenance, depreciation and supplies, as well as support personnel costs. The following explanatory notes apply.

- . The support personnel component of computer service costs are based upon 1976 estimates, and reflect a 7% annual inflation factor for 1977-1981.
- . We have assumed that the B-2700 computer to be used for computer-assisted dispatching will be fully charged to MPD even though a charge-out system for CDP services is not in effect. Hardware costs also reflect five additional terminals per year for 1977-1980 (10 in 1976, 30 in 1980).
- . CDP does not now actually charge City departments for computer services, and has not developed a method for equitably distributing such charges for the B-4700 computer. In the absence of an existing rate or method of calculating such charges, we have based our estimates for B-4700 charges upon the following full-capacity formula:

$$\text{Hourly rate} = \frac{\text{Total B-4700 Equipment and Support Costs}}{(8,760 \text{ Hrs/year})(2 \text{ jobs active})(90\% \text{ avail.}) \text{ concurrently}}$$

We believe that our estimates of two jobs active concurrently, and 90% equipment availability are reasonable, but we emphasize that this is a rate based upon full capacity. The actual rate can vary substantially if the B-4700 operates at less than full capacity and all costs are distributed in proportion to actual usage.

- . Computer service costs shown for the last two quarters of 1981 should be representative of on-going operational costs of the system.

6. EVALUATION

It is necessary to review and evaluate the progress of the project at each major milestone of each of the major subtask decision points. Since each subtask activity i.e. patrol, investigation, support and administration, in actuality builds on each other in an evolutionary process, the evaluation process is necessary to ensure that each subtask is developed in a cohesive manner with the other related subtasks. For example, the conceptual design of the investigation module can be modified appropriately to correspond to the final design of the patrol module. This constant process of evaluation and modification over the six years of the plan will ensure that each module evolves and fits into the previous one, taking into account new developments, techniques and "hindsight".

The following review of status of plans, accomplishments and work in progress should be formally conducted once a year:

- . What are the major and minor computer applications that have been implemented in the last year and what is in progress?
- . Have the past years' projects been successful in respect to cost, timing and resulting utility to user departments?
- . What problems, if any, have arisen in the planning and implementation of these projects?
- . Are present systems periodically reviewed by the administration to determine if they continue to meet the criteria for measuring cost and efficiency?
- . Are the criteria used to review systems periodically updated?
- . What is the status, relative to plans and schedules, of present implementation work, both in quantitative and qualitative terms?

- . What problems, if any, have arisen in work currently in progress?
- . What priorities have been assigned to present work by departmental user and CDP departments?
- . Who has established priorities and by whom have they been approved?

The review of EDP Security procedures should also be conducted once a year:

- . Are responsibilities for security firmly fixed and clearly understood by all those having such responsibilities?
- . Are the established security standards, procedures and guidelines followed?
- . Is compliance with the security standards, procedures, guidelines readily auditable?
- . Are variations from security procedures recorded, and are corrective measures taken?
- . Are there periodic independent security audits scheduled, and are these schedules followed?

The internal EDP system controls should also be reviewed as part of the overall yearly evaluation. This review will ensure that an accurate picture of the overall operation of the system can be determined as part of the yearly progress update.

A profile of the system/data processing area should also be conducted. This would consist of a review of personnel, equipment, work load and actual cost involved in the operation of the police systems. This particular evaluation would then be compared with the general review of the planning activity described above.

Another review area would consist of interviews and assessments with the various departmental users. This would consist of the following:

- . Interview key management, departmental and operations personnel
- . Document interviews
- . Assimilate interview documentation and evaluate by considering (1) overall user satisfaction, (2) operational efficiency, (3) cost-benefit, and (4) recommend improvement changes
- . Analyze and evaluate system operations from the users perspective in relation to anticipated results in the following areas (1) transaction volumes, (2) processing time, (3) response time, (4) file capacities, and (5) adequacy of control mechanisms.

An evaluation report should subsequently be prepared and delivered to the Department. It would contain:

- . Introduction
 - Evaluation objectives
 - Scope of report
 - Evaluation methods
 - Current description of MAP system
- . Evaluation findings and conclusion
 - Current status of MAP
 - Current systems performance
 - Operation costs
 - Recommended future timetable
 - Areas for improvement or expansion.

APPENDIX A

(1) Phase Initiation

Objectives:

- . To approve and/or modify the proposed project definition and plan at the inception of each phase.
- . To insure that all elements of the project and phase definitions are fully understood by all members of the project team.

Tasks and Activities:

- . Establish detail work plans for the phase.
- . Finalize project staffing for the phase.
- . Review project scope, objectives, major constraints and determine whether these elements are adequately defined.
- . Approve and/or amend project approach and structure as required.
- . Confirm specific responsibilities and functions of project team members.
- . Work with project team members as required to perform duties and discharge project responsibilities.

. Prepare Phase Definition and Plan:

- Introduction:
 - .. Project background
 - .. Statement of problem
- Phase description:
 - .. Objectives
 - .. Scope
 - .. Constraints:
 - Political
 - Technical
 - Environmental
 - Economic
 - .. Project and phase success criteria.

- Phase organization:
 - .. Management organization chart
 - .. Functions and responsibilities
- Anticipated problems
- Anticipated benefits
- Recommended phase approach:
 - .. Work plan
 - .. Schedule
- . Review general work plan for next phase.

(2) System Review

Definition of Improvements

Objectives:

- . To investigate and document in detail the present procedures within the functional area under development, both manual and automated.
- . To determine the approximate cost and personnel support the existing information system requires.
- . To identify the information improvements which will provide the greatest benefit to management and operational personnel, as well as eliminate or mitigate manual record keeping operations.

Tasks and Activities:

- . Establish detail work plan for the phase.
- . Define documentation standards and techniques. In a predefined format, provide for the inclusion of:
 - Samples of existing forms and reports.
 - Flow charts and/or narrative descriptions of present procedures.
 - Estimates of operating and personnel costs.
 - Summary of findings:
 - .. Scope and intent of existing manual systems.
 - .. Nature of present reporting capabilities.
 - .. Needs for additional or more comprehensive information processing.
 - .. Relative importance of proposed enhancements.
- . Prepare interview guides which outline information to be gathered. Tailor general format to specific functions and responsibilities of individual functions within the department.

- . Schedule interviews with all functions currently constituting the "user" group.
- . Conduct and document interviews.
- . Review present Central Data Processing Department application systems and procedures pertaining to this function:
 - Information sources and destinations
 - Information lead time, frequency, time span
 - Controls
 - Report format and content
 - Supporting data bases
 - Processing logic descriptions.
- . Review general work plan for next phase.

(3) Information Requirements Analysis

Objectives:

- . To evaluate the information processing requirements and potential improvements specified in relation to the capability of a centralized system to fulfill them.
- . To define and document those elements which can be effectively incorporated into an overall systems approach.

Tasks and Activities:

- . Establish detail work plans for the phase.
- . Assimilate and categorize information requirements by purpose and function.
- . Analyze information requirements and prepare Requirement Specification Report:
 - Description of information requirements
 - Technical, economic and operational feasibility
 - Scope, timing and performance prerequisites
 - Cost/benefit analysis
 - Priority evaluation
 - Conclusions and recommendations.
- . Review general work plan for the next phase.

(4) Conceptual System Design

Objectives:

- . To define the systems structure in terms of functional components, systems flow, and performance characteristics.
- . To evaluate alternative methods of procuring the needed capabilities and to recommend a specific project approach.

Tasks and Activities:

- . Establish detail work plans for the phase.
- . Investigate potential adaptation of comparable information systems used by the other police departments. Review feasibility of transferring:
 - Complete system (or)
 - Major subsystems (or)
 - Design concepts (or)
 - Description of functional components (or)
 - Processing methods and techniques.
- . Identify and evaluate alternative design concepts in terms of:
 - System performance
 - Hardware requirements and cost
 - Basic software environment:
 - .. Operating system
 - .. Data base management
 - Personnel support requirements.
- . Define the environment to be affected:
 - Management activities
 - Staffing
 - Equipment utilization
 - Physical layout
 - Work distribution and productivity

. Prepare Conceptual System Design for the Phase:

- Introduction:

- .. Current administrative environment
- .. Current information system:
 - General description of input, output and processing
 - Performance characteristics
 - Operations cost
- .. Problems and deficiencies
- .. Objectives for the phase

- Management summary:

- .. Evaluation of major alternatives
- .. Overview of recommended design

- Conceptual design specifications:

- .. Output reporting
- .. Input requirements and documents
- .. Processing descriptions
- .. Data file composition

- Support requirements:

- .. Hardware
- .. Software
- .. Personnel

- Appendix:

- .. Specific alternatives considered
- .. Comparison of alternatives

. Review general work plan for the next phase.

(5) Data Base Design/Validation

Objectives:

- . To design the overall structure of the information system data base in conformance with the conceptual system design.
- . To establish protocols and conventions for addition to and/or modification of data base to include new data elements and relationships.

Tasks and Activities:

- . Establish detail work plans for the phase.
- . Identify all data elements to be included in the data base.
- . Determine hierarchical relationships and logical links between data elements.
- . Document the data base design for inclusion in the conceptual systems design.
- . Validate the data base design for possible expansion or modification during the conceptual systems design activities of each phase.

(6) Master Plan/Schedule Update

Objectives:

- . To validate project monitoring, documentation and control procedures.
- . To define implementation priorities for phase component subsystems and establish system cutover methodology.
- . To coordinate and schedule major implementation prerequisites and target completion dates.

Tasks and Activities:

- . Establish detail work plan for the phase.
- . Establish project control system:
 - Develop or select monitoring method (e.g., PRIDE, PERT or CPM)
 - Define progress reporting standards and procedures.
- . Schedule system development phases and establish completion dates for:
 - Detail system design
 - Establishing program specifications
 - Program development
 - Data conversion planning
 - Preparation of manual procedures and development of personnel training program
- . Schedule system support requirements:
 - Hardware
 - Personnel
 - Forms and supplies.

(7) Detail Systems Design

Objectives:

- . To define the specific file requirements of the system.
- . To specify the logical operations to be performed upon the data.
- . To define the clerical procedures which support the system.
- . To define the internal controls that govern the system.

Tasks and Activities:

- . Establish detail work plan for the phase.
 - . Divide subsystems into run units.
 - . Define general input and output requirements for each run unit
- Determine turnaround requirements for system operation:
- Timing and frequency
 - Input data
 - Output reports
- . Develop master system flow chart.
 - . Establish internal and run-to-run controls.
 - . Establish recovery and restart procedures.
 - . Identify required manual procedures.
 - . Design report formats and develop descriptions.
 - . Design preprinted source and output forms.
 - . Define the system data base:
 - Establish file descriptions
 - Establish data dictionary
 - . Confirm equipment configuration.
 - . Identify alternative methods for procurement of applications programming.

- . Develop Detail Design Reference Manual
 - General introduction
 - .. Purpose and function
 - .. Files maintained and affected
 - .. Input and output requirements
 - .. Interfaces to other systems
 - Master system flow chart
 - System environment
 - .. Hardware
 - .. Software
 - System controls
 - .. Clerical procedure
 - .. Internal controls
 - .. Audit trails
 - Data specifications
 - .. File descriptions
 - .. Data reference dictionary
 - .. Internal tables
 - .. Transaction specifications
 - .. Report formats and descriptions
 - Glossary
- . Review general work plan for the preparation of programming specifications.

(8) Program Specifications

Objectives:

- . To define the basic functions of each program module to be coded for the system
- . To establish the structuring of modules constituting run units
- . To specify the internal controls to be incorporated in the coding of modules
- . To specify the processing formulae and algorithms to be implemented in individual modules
- . To identify any previously defined text to be incorporated within each module
- . To provide an explicit procedure for each possible error condition.

Tasks and Activities:

- . Establish detail work plans for the phase
 - Estimate the time and costs needed to code each module and run unit
 - Estimate intermediate testing and debugging time for each module and run unit
- . Draft program specifications
 - General introduction to system
 - .. Objectives
 - .. Relationships of system to other systems
 - Master system flow chart
 - .. Network of run units
 - .. Run unit abstracts
 - .. Module abstracts
 - .. Data flow chart showing interaction of run units and MPD data base
 - Internal audit controls

- Linkage editor requirements
 - Job control statements including cataloged procedures
 - List of items copied from Data Dictionary
 - Decision tables
 - Logic flow diagrams
 - Module logic narratives
 - Basic test criteria.
- . Review program specifications for consistency with detail system design.
 - . Determine whether specifications answer all reasonable questions that programmer might have
 - . Determine that all interfaces to other modules are explicitly stated
 - . Insure all referenced data names have been established in Data Dictionary
 - . Review program specifications with programmers to insure understanding
 - . Review general work plan for the program development phase.

(9) Program Development

Objectives:

- . To procure program modules coded and tested in accordance with project standards
- . To provide program documentation, including any special techniques employed within modules
- . To integrate modules into previously defined run units.

Tasks and Activities:

- . Establish detail work plans for the phase
- . Determine procurement method for each subsystem, run unit or module
- . Review program specifications
- . Design program logic:
 - Determine and describe modules needed and their interfaces
 - Separate I/O activity from application logic
 - Prepare intermediate test data
 - Flow chart modules.
 - Desk check module flow charts.
- . Prepare modules:
 - Code and keypunch modules
 - Insert modules in source statement library
 - Compile modules
 - Review coding for compliance to standards
 - Test modules:
 - .. Review test criteria and supplement as required
 - .. Prepare test data
 - .. Conduct module test

- . Prepare program:
 - Link modules to form run unit
 - Perform intermediate testing of integrated program
- . Update Systems Test Plan:
 - Assimilate updated program test criteria
 - Assimilate program test data
- . Prepare Program Reference Manual:
 - Revision index
 - General system and programming information:
 - .. Master systems flow chart
 - .. Program function diagram
 - .. Program abstract
 - .. Operating environment:
 - Cataloged procedures
 - Job control statements
 - I/O diagram
 - Parameter record formats
 - File and data specifications:
 - .. Data file and record descriptions
 - .. Reference file and table requirements
 - .. Report layouts and descriptions
 - .. Logic and procedural definitions
 - .. Formulae used in computations
 - Detail program description:
 - .. Functions
 - .. Controls
 - .. Programming techniques
 - .. Module flow chart
 - .. Program listing
 - .. Intermediate test results

- . Prepare Operations Reference Manual:
 - Purpose of job
 - Configuration requirements
 - Job setup diagram
 - Operator messages and responses
 - Keypunch instructions
 - Output disposition
 - Recovery/restart procedures

- . Review general work plan for next phase.

(10) Manual Procedures and Requirements

Objectives:

- . To assemble, organize and document information describing the interaction of department functions with the information system.

Tasks and Activities:

- . Establish detail work plan for the phase
- . Review requirements with user functions
- . Draft system narrative
- . Define system interface with user
- . Establish documentation standards and define format for manual procedures
- . Prepare procedures by functional area
- . Document interaction between user department and development group
- . Prepare User Procedure Manuals:
 - Illustration index
 - Revision index
 - Introduction
 - System information:
 - .. Purpose
 - .. Features
 - .. General description
 - .. System organization/interaction chart
 - .. Detailed user procedures
 - System elements:
 - .. Inputs
 - .. Outputs
 - System status notification procedures:
 - .. User areas
 - .. Systems and programming personnel
 - Glossary
- . Review general work plan for next phase.

(11) Training Program Development

Objectives:

- . To document training requirements for all departmental personnel
- . To define and schedule the personnel and material resources required to perform the training function.

Tasks and Activities:

- . Establish detailed work plan for the phase
- . Identify training requirements for each department function involved in support or usage of the information system. Consider present level of expertise.
- . Assimilate and classify requirements by:
 - System component
 - Trainee level of participation:
 - .. Management
 - .. Supervisory
 - .. Staff
- . Identify and organize training materials:
 - Master system flow chart
 - User Procedure Manual
- . Specify required resources
- . Develop training schedule and integrate with Project Master Plan
- . Draft User Training Plan
- . Review general work plan for next phase.

(12) Data Conversion Plan

Objectives:

- . To define and document the data conversion requirements for each subsystem
- . To determine what portions of the data conversion can be programmed
- . To estimate and schedule the personnel and equipment resources necessary to accomplish the conversion
- . To allocate responsibilities between the systems development group and the user group for supervision of the conversion effort.

Tasks and Activities:

- . Establish detail work plan for the phase
- . Specify data conversion requirements
- . Specify data conversion procedures
- . Specify special computer programs used to assist conversion
- . Determine required conversion resources

. Draft Data Conversion Plan:

- Introduction:

- .. Purpose
- .. Areas of responsibility

- Conversion requirements:

- .. Source documents
- .. Machine sensible data

- Conversion system:

- .. Flow chart
- .. Narrative description:
 - Data collection
 - Data entry
 - Validation
 - Error reconciliation
 - Cutover procedures

- Time-phased conversion schedule:

- .. Data gathering
- .. Data transcription
- .. Conversion programming
- .. File and table generation
- .. Cutover

- Required resources

- . Schedule the actual conversion effort and integrate with Project Master Plan.
- . Review general work plan for the next phase.

(13) Data Conversion

Objectives:

- . To create all startup data files required for operation of the information system
- . To insure converted files are available when required by Project Master Plan.

Tasks and Activities:

- . Establish detail work plan for the phase
- . Review data conversion plan and modify as required
- . Confirm equipment and personnel resource availability
- . Perform data conversion and validate results
- . Review general work plan for next phase.

(14) Integrated System Test

Objectives:

- . To determine that the integrated system performs in accordance with design specifications
- . To insure the accuracy and completeness of clerical support procedures
- . To confirm the capacity of the system to accommodate large volumes of data and unusual conditions.

Tasks and Activities:

- . Establish detail work plan for the phase:
 - Review System Test Plan
 - Review Project Master Plan
 - Make any required revisions
 - Establish staffing and time schedule
- . Prepare input test data:
 - Obtain files from data conversion procedure
 - Utilize data from intermediate testing
- . Conduct integrated systems test
- . Verify results for consistency with:
 - System Reference Manual
 - Program Reference Manual
 - Operations Reference Manual
 - User Procedures Manual
- . Obtain CDP and user sign-off
- . Review general work plan for the next phase.

(15) Personnel Training

Objectives:

- . To prepare all involved department personnel to support and use the information system
- . To insure training is completed when required by Project Master Plan.

Tasks and Activities:

- . Establish detail work plan for the phase
- . Review User Training Plan and modify as required
- . Review training schedule and revise as required
- . Confirm personnel and material resource availability
- . Perform training according to plan
- . Review general work plan for the next phase.

(16) Pilot/Parallel Operation and Acceptance Test

Objectives:

- . To provide a guide for the execution of a pilot or parallel operation
- . To perform the pilot or parallel operation and obtain acceptance of results by appropriate department management personnel.

Tasks and Activities:

- . Establish detail work plan for the phase:
 - Review System Test Plan
 - Review Project Master Plan
 - Establish staffing and time schedule
- . Establish coordination and control procedures
- . Implement pilot or parallel operations as specified in Project Master Plan:
 - Run operation
 - Verify results
 - Reconcile problems
- . Prepare System Acceptance Test Summary:
 - Edit listings
 - Control data
 - Output reports
- . Obtain management approval and sign-off.

(17) Post Implementation Evaluation and Audit

Objectives:

- . To determine if the information system satisfies department needs and performs well in both the operations and user organizations.

Tasks and Activities:

- . Establish detail work plan for the phase
- . Review system documentation
- . Determine evaluation methodology and criteria
- . Prepare interview guides
- . Interview key management, departmental and operations personnel
- . Document interviews
- . Assimilate interview documentation and evaluate by considering:
 - Overall user satisfaction
 - Operational efficiency
 - Cost effectiveness
 - Recommended improvements
- . Analyze and evaluate system operation in relation to anticipated results:
 - Transaction volumes
 - Processing time
 - Response time
 - File capacities
 - Adequacy of control mechanisms
- . Prepare System Evaluation Report:
 - Introduction:
 - .. Evaluation objectives
 - .. Scope of report
 - .. Evaluation methods
 - .. Brief description of system

- Evaluation findings and conclusions:
 - .. System performance
 - Strengths
 - Weaknesses
 - .. Operational costs
 - .. Areas for improvement or expansion

SOURCES OF FUNDING

The MPD Master Automation Plan provides for development of a generalized data base for operational and management reporting. The data base will include calls for service, crime incident, arrest, and other patrol activity data. As such, it will support a wide range of management and operational functions of the Department. Communications, crime incident reporting and analysis, shift scheduling and resource utilization, and command control would be some of the potential areas that could be impacted by implementation of the MPD information system.

Because of the diversity of functions represented, it is possible that several federal programs could be interested in providing funding support for its implementation. The ideal situation, of course, would be a single source that would provide funding for development and initial operations. Given available federal grants-in-aid programs, however, it would appear that the best approach would be to obtain funding for particular specialized applications (for example, crime statistics analysis based upon CAD data) funded on an individual, as required basis.

The most likely source of funding for basic CAD development would be the state block grant program of the Law Enforcement Assistance Administration (LEAA) of the Department of Justice. The Governor's Commission on Crime Prevention and Control, which is responsible for administering the State block grant program, is in the process of finalizing its 1976 Comprehensive Plan for grant awards to be made in June, 1976. Program 21 of the Plan tentatively provides \$387,000 for information systems development, of which \$100,000 is allocated for State Agencies. No specific projects have been identified by the Plan for the \$287,000 available to local governments. These projects will be selected through a competitive grant application process beginning November 16, 1975.

Actual funding of a grant application depends on a series of reviews and recommendations by different groups: The Hennepin County Criminal Justice Coordinating Council, the Region G Criminal Justice Advisory Council, the State Criminal Justice Information System Advisory Council, and the Grants Subcommittee (Cross-System) of the Governor's Crime Commission. Each group would review the proposal against the objectives, priorities and fund allocations that have been established by the planning process. Each Group would make a recommendation to the Commission which would make the final funding decision.

Given the current and developing plans of these various groups, favorable support for the MPD information system would appear to depend (beyond the cost/benefits of the proposals) on its linkage to current state and local system developments. At the local/Regional level, the relationship of CAD to the Radio Communications and Centralized Dispatching System being planned for Hennepin County would be a prime consideration. At the state level, the prime consideration would be the relationship of the overall MPD information system to the emerging CJIS Master Plan. Within CJIS, this would include operation of the Minnesota Crime Information System, particularly the Uniform Crime Reporting and Criminal History Components of the system, as well as other police applications that might be added.

There are three other LEAA programs that could be alternative funding sources. The LEAA National Institute (Mr. Jeff Albrin, Director) provides funds for different categories of research and evaluation efforts. The current plan of the Institute's program categories for FY 1976 has been issued in draft form. The National Criminal Justice Information and Statistics Service (NCJISS) (Mr. Harry Bratt, Director) also provides grants-in-aid through its Systems Development Division (Mr. Wayne Holtzman,

Director). Within NCJISS, innovative or demonstration projects with potential for technology transfer receive priority for funding support. Fund allocations for such efforts during 1976 have not yet been established.

A second area within NCJISS is the Comprehensive Data Systems Program (CDS). The CDS Program provides discretionary fund awards through the LEAA Regional Offices to develop Uniform Crime Report, computerized Criminal History and related systems at the state level. Although competition among the states for allocation of the approximately \$22 million to CDS, it appears that funds could be obtained to some extent if development would have a critical impact on UCR and CCH implementation. Application for CDS funding would be through the CJIS Advisory Council and Governor's Crime Commission to LEAA Region V (Mr. Frank Sass, Systems Specialist).

Outside of LEAA, there are a number of Federal agencies with grants-in-aid programs that could involve systems development. These programs are summarized in the Federal Catalogue of Domestic Assistance published by the Government Printing Office. Within these wide variety of programs, there are a few agencies which have, in the past, given definite consideration to criminal justice related projects.

These agencies include the Department of Labor (Comprehensive Offender Manpower Planning (COMP) instituted during 1971); the Department of Housing and Urban Development (Community Development Act); and the National Science Foundation. Eligibility criteria, contact persons, application procedures and other general information for these and other agencies is a part of the Catalogue.

Outside of federal assistance, private foundation aid is a possible, but limited, service for funding support. One source, the Ford Police Foundation (Washington, D.C.) apparently was established in 1973 with a \$30 million allocation for research and development projects exclusively in law enforcement.

END

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