

**Management Information
Systems
Committee Report
November 2002**

**Data Integration & The Criminal Justice
System in Whatcom County
*A Strategic Plan and Project WENET***

Whatcom County Law & Justice Council



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**DATA INTEGRATION AND THE CRIMINAL JUSTICE SYSTEM
IN WHATCOM COUNTY
A Strategic Plan Implementing Project WENET**

EXECUTIVE SUMMARY

We live in an age where doctors can supervise open-heart surgery via the Internet, where financiers move billions of dollars with a keystroke, and where a Grandmother can furnish her living room without ever leaving the house, all by using the power of computers. *Data Integration and The Criminal Justice System In Whatcom County*, outlines a multi-year, multi-phased strategic plan that envisions *interagency integration* as the cornerstone project that will commence the process of bringing this powerful force to work for the Criminal Justice System in Whatcom County.

The strategic plan developed by the Management Information Systems (MIS) Committee of the Law and Justice Council (LJC), is based on the premise tangible benefits for communities will be created when criminal justice agencies, regardless of jurisdiction, work together to improve the efficiency and effectiveness of operations by using technology and information resource management. The ultimate goal of the plan is the creation of a multi-jurisdictional, adult and juvenile justice system that has its offender-based processes seamlessly linked together and supported by a smooth flow of information. The Committee recognized early in the planning process, that this vision encompassed such a vast array of objectives and tasks that no single data integration project was feasible. Therefore, the MIS Committee tasked itself with parsing the key components (objectives) of the plan into discrete, manageable projects that could be independently implemented as resources become available. Thus, the strategic plan identifies fourteen (14) objectives or projects and fifteen (15) standards that are designed to guide project development.

The concept of 'data integration', the ability to electronically access and/or exchange critical information at key decision points throughout the justice enterprise, has been championed by members of the Law and Justice community since 1993. Even then, justice system practitioners recognized that there were significant benefits to be gained through the use of technology. These same individuals understood that the greatest single source of system inefficiency was the disjointed, dissonant or even absent flow of information on offenders and system activities. In other words, the current state of data sharing was inefficient and ineffective primarily because each justice system agency had its own unique computer system that could not communicate with any other system. The existence of these multiple legacy systems, that had cost each agency considerable sums of money, was identified as the biggest hurdle to successful implementation of *inter-agency integration*.

The hurdle facing Whatcom County is not unique. In thousands of different businesses, daily operations are critically impaired because disparate computer systems are unable to communicate with each other. Thankfully, computer technology has continued to evolve resulting in the development of technical solutions that can solve these types of communication problems. In the business world, the solution is referred to as Enterprise technology. It involves the use of computer hardware and software to serve as a "translator" between different computer systems. Much like an English/Spanish dictionary, the "translator" is able to match a piece of information from one system with the same piece of information in another system. Once that match is made, the pieces of information can be exchanged.

The strategic plan envisions commencing integration efforts by implementing a software application solution, that maintains legacy systems and creates an ability to exchange data between county government justice agencies (PA, PD, SO and Jail) and the Bellingham Police Department, utilizing a similar 'translator' protocol. Such a translation process will allow a Bellingham Police Officer to create an arrest report using their "Longarm" computer system. Once the officer arrives at the jail, their computer could feed the basic information about the offender (name, date of birth, charges, etc), into the County's AS400 computer system. The information could then be automatically routed, through the AS400, to the jail, to complete portions of the booking paperwork; to the Prosecutor's, to complete portions of the charging paperwork; to the Court, to notify them that the offender will need to be seen by a judge; and to the Public Defender, to notify that office that they have a potential client in the jail.

The exact format of this "translator" process has been a matter of considerable research and discussion. The MIS committee has spent approximately two years researching the most stable and cost effective method to accomplish this goal. Details of the different methods are discussed in detail in the body of the plan. As a result of this research, the committee is recommending that a method referred to as an "import and inquiry via web service" (IIVWS) be adopted, which is otherwise known in the strategic plan as Whatcom Exchange Network (WENET).

The WENET project envisions using a programming methodology recommended by the National Association of State Information Resource Executives (NASIRE). The resulting solution will simplify the deployment of data, distribute costs fairly among users, allow users to maintain high levels of internal security and take full advantage of stable technologies.

Specifically, the WENET project anticipates developing a form of a dictionary, referred to as an XML schema, by which the system will recognize data elements and be able to match them with data elements from another system. Once this dictionary is developed, a process (Application Programming Interface or API) will be put into place that will allow some of that data to automatically be transferred, require that some of the data be specifically requested from one agency computer to another, and protect and hold private some information that would not be available to other agencies, due to legal requirements.

Due to the overall scope of this project, the committee anticipates that WENET will be implemented in two phases. As previously indicated, the initial stage of the project will be the integration of Whatcom County government's law and justice system with the Bellingham Police Department. Given the high number of arrests generated by Bellingham Police, relative to many of the other law and justice partners, it was decided that their inclusion would provide a good testing ground for the integration of two disparate systems. The project scope also includes, as phase two, developing the interface and data exchange protocols needed to connect all other justice system practitioners that operate within the geographic boundaries of Whatcom County. The IIVWS methodology is particularly attractive in this phase because it allows for this gradual adding of departments/agencies as financial resources become available.

It is anticipated that a variety of very positive outcomes will be gained once this project is completed, including but not limited to, the following:

- A single source for law and justice information
- Improved accuracy of information
- Reduction of redundant data entry, freeing staff for other duties not currently being completed due to workload.

- Provide an easily expandable system that can accommodate all members of the Law and Justice community with little additional financial cost.
- Create a system that will allow for eventual information exchange with the State and Federal Justice systems.
- Allow individual agencies to keep their current computer systems.
- Provide critical information on a "real-time" basis to members of the Law and Justice Community.
- Provide the foundation for the development of other projects, such as mobile field reporting for law enforcement.
- Increase accountability by users of the system by creating an audit trail of all inquiries and data entries.
- Utilize a proven technology that is flexible enough to adapt to technological improvements.

This project is an ambitious one. It seeks to bring to county and city governments the same levels of efficiencies and effectiveness that can be found in private industry, while greatly enhancing the safety of the community and its law enforcement officers. The detailed plan included in this document will provide a roadmap to achieve these goals.

"DATA INTEGRATION" AND THE CRIMINAL JUSTICE SYSTEM IN WHATCOM COUNTY

INTRODUCTION AND BACKGROUND INFORMATION

Why is 'data integration' critical to Whatcom County's criminal justice system? The most succinct answer to this question can be found in the County's Law and Justice Strategic Plan, and is as follows:

"Fundamental to any and all systematic change is the need to base all justice system planning, budgeting and evaluation on accurate and timely information. In 1986, the Department of Justice noted that if the justice system did not improve the information upon which it based its decisions it was doomed to repeat earlier mistakes. This situation continues to hold true in Whatcom County.

It is necessary to improve and integrate the various independent computerized management information systems for effective justice information resource management in Whatcom County. The greatest single source of system inefficiency is the disjointed, dissonant or even absent flow of information between justice system agencies on offenders and system activities. None of the other initiatives and recommendations [in this plan] will live up to their promise and the system will never definitively know this until Whatcom County [government] integrates its justice information system and extends its scope to include other external justice agencies.

Specifically, **Recommendation 3.2** of the **Phase II Law and Justice Plan** proposes that the County "proceed with its Data Integration Project". (See Appendix A, *LJC Phase II Report*) The goal of that project was the creation of a "seamless weave of justice system practitioners who could share data entry responsibilities, data verification and editing, data-base use for day-to-day operations, and aggregate justice system data for proactive planning" and budgeting within Whatcom County government. In short, a system that would share much of the information needed by each agency for the day to day processing of offenders in the criminal justice system.

The "Data Integration Project", other wise known as the Criminal Justice Information System (CJIS) Project, referred to in the Phase II Report was always considered one element of a multi-year, multi-phased business tool enhancement. The original CJIS project, started in 1993, envisioned *interdepartmental 'integration'* wherein data would be centrally stored on the County's AS400. (See Appendix B, *History of Data Integration In Whatcom County*) The technical solution for this project incorporated standards that would lay the foundation to allow future data sharing with external agencies, as is suggested in **Recommendation 3.3** of the Phase II Law and Justice Plan.

Based on recommendations contained in the Phase II Law and Justice Plan, a revitalized Law and Justice Council created a MIS (Management Information Systems) standing committee. This newly reconstituted Council charged the MIS Committee with "evaluating and recommending changes to and ensuring coordination of information resource management" relating to technology resource issues and projects pertaining to the justice system.

A review of the Committee's mission statement provides clarity of its purpose and focus.

"Improve the efficiency and effectiveness of all adult and juvenile justice systems within Whatcom County through the use of information resource management to support the enhancement of public safety and the swift and fair administration of justice."

Thus, in 2000, under the auspices of the Law and Justice Council and in partnership with the County Executive, the MIS Committee commenced an analysis of 'data integration', which also included a re-evaluation of the County's CJIS project. The Committee's analysis led to the development of this strategic plan, which includes the recommendation that 'data integration' efforts should commence with project WENET (**Whatcom Exchange Network**) as the first component of a multi-year, multi-phased business tool enhancement. The 'information sharing network' envisioned in the WENET project, will create tangible benefits for communities by having criminal justice agencies work together to improve the efficiency and effectiveness of operations by using information technology. It will lay the foundation for a fully integrated adult and juvenile justice system, that has its offender-based processes linked together and supported by a smooth flow of information. This system, once fully implemented, will result in real-time sharing of data that enhances public safety and eliminates processing bottlenecks. The MIS Committee regards WENET as *mission critical* for all law and justice entities operating within the geographic confines of Whatcom County. As evidenced by APPENDIX C, Letter of Support, all affected law and justice entities concur with this assessment and pledge their support for this project.

DEFINING DATA INTEGRATION

An understanding of 'data integration' and the justice system must start with a definition of the term 'integration'. Those new to the concept of justice integration often assume that integration is merely an expensive consultant service or a product that can be purchased from a vendor. "In actuality, since each situation requiring integration is different, there is no established product or service that can be purchased or readily adapted for new justice integration projects. To a degree, how integration is defined depends on who participates, what information is shared or exchanged, and how data are shared or exchanged within the system".¹ Effectively, the term 'integration' can be understood to encompass a variety of functions designed to enable the timely and efficient sharing of information within and between disparate database systems. For the purposes of this plan, the term 'integration' is defined as *"the ability to electronically*

access and/or exchange critical information at key decision points throughout the justice enterprise". "ibid/NAJIS This definition should not be understood to mean all information between all justice agencies will or should be shared.

WHAT IS THE CURRENT STATE OF DATA INTEGRATION IN THE COUNTY?

The Problem.

Every criminal justice and juvenile justice agency in Whatcom County, as well as every state, federal, municipal and tribal entity maintains its own distinct information system (See Appendix D, County-wide System Survey Results). These systems were originally designed to facilitate internal operations and create efficiencies for each respective agency or department. Varying reasons, including technology limitations and agency/department operational restrictions, precluded these systems from being originally designed to integrate or exchange data. Even though these database systems may be both physically and electronically separate, each has information that is needed on a daily basis by all other practitioners within the justice enterprise. To accommodate this need, 'read-only' database access has been allowed by certain justice system entities. This ability to electronically view data, that is otherwise more difficult to retrieve manually, does create certain operational efficiencies. The effectiveness of such processes are, however, diminished because the access protocols are slow and cumbersome. Since there is no single point of entry to all justice information, practitioners within the enterprise must log onto multiple systems, or multiple terminals using multiple passwords.

What results when disparate databases exist in a justice enterprise like Whatcom County's? Because databases are not 'integrated', no ability exists to capture or distribute data from a single point when it first enters into the justice system. Thus, throughout the enterprise, redundant data entry is prevalent which unnecessarily increases the costs of information systems. The ability to apprehend, adjudicate, supervise and treat criminal defendants is often constrained by the lag time inherent in these systems. Agencies and departments, within the justice enterprise, are unable to link files to track an offender from arrest through treatment or supervision in the community. Composite historical data pertaining to an offender is virtually unavailable for use in decision making. These system constraints often result in arrest, filing, treatment and incarceration decisions being made with incomplete or inaccurate information. Ultimately, this lack of real-time, composite offender data can compromise, not only officer safety, but also the safety of our community.

A simple example of this can be seen in the disconnect, which occurs in certain instances, between the County Prosecutor's Office, Bellingham Municipal Court, and the County Jail , when an offender is arrested and booked on a felony charge by the Bellingham Police Department (BPD). When reports are initially reviewed by the County Prosecutor, the decision may be made that the circumstances of the case do not warrant the filing of a felony charge, but instead more closely fit the criteria for a misdemeanor.

In these instances, since the arresting agency was BPD, the case is then referred to the City Attorney and Bellingham Municipal Court.

Since none of the participants in this example have integrated information systems, the Prosecutor's Office must call the Bellingham City Attorney and notify them that the case is forwarded to their office. The City Attorney must write a misdemeanor citation and fax it to the jail before the offender appears in Superior Court on the felony 'arrest' charge. Best practice mandates that the offender appear before the Superior Court in order to ensure that a record is made of the decision not to file a felony charge. This process also ensures that the jail is properly notified of the offender's status. If, however, the City Attorney is delayed in faxing the copy of the citation to the jail, the offender may get released after appearing in Superior Court. Since probable cause was not established on the felony or misdemeanor charge, the jail has no legal standing to continue to detain and therefore, the offender is released back into the community.

With an integrated system, that includes workflow processes and electronic filing of pleadings, the Prosecutor simply enters the information into the system, which is then automatically distributed to the jail, the appropriate courts and the City Attorney. The workflow elements in an integrated system then allows the City Attorney to electronically file the misdemeanor citation, which would prompt the system to notify all sharing partners of the offender's changed status.

The evolution of technology, particularly the advent of web technologies, shrinking governmental resources, and an ever-increasing demand for immediate information have heightened the realization that these disparate applications should not exist in isolation. It is critical that accurate and timely client level and aggregate data be available for proactive planning, budgeting and evaluation of the county's law and justice enterprise. Unfortunately, the current state of 'data integration' in Whatcom County precludes the existence of a system that can provide all the information necessary to assist today's decision makers when considering law and justice issues.

The Vision.

As a foundation to attaining a better understanding of the project proposal set forth below, it is important to present a vision of where data sharing can lead Whatcom County.

Imagine a police officer in Ferndale or a Sheriff's Deputy in a remote area of Whatcom County stopping a beat-up Ford sedan on a routine traffic violation. The officer, for safety reasons, wants to know as much as possible about the driver before approaching the vehicle. Instead of calling dispatch, the officer types the vehicle license number into a mobile computer linked to a nationwide information system. Within seconds the officer knows conviction history, warrant information, vehicle licensing and registration information, whether the individual has gang connections, is considered armed and dangerous, has mental health issues, or is currently under probation or parole supervision. This information allows the officer to decide whether to make an arrest

without calling for back up assistance. Once the arrest is made, the critical data elements and the officer's narrative report are entered into the computer system from the laptop. Automatically, the data elements are "pushed" into all linked systems and the narrative is routed for review and distribution in a digital format. At key decision points, throughout the legal process, data, pleadings and reports, are exchanged automatically between all justice practitioners in a timely, efficient manner.

Currently, in order to achieve this same sequence of events, multiple phone calls have to be made by personnel at dispatch, who then must relay the requisite information to the officer in the field. Some of the information, such as probation or parole status, is not available to the officer outside of regular business hours.

Once the offender arrives at the jail, the arresting officer ascertains and communicates pertinent information to jail staff, who must then manually enter it into the jail booking system. The arresting officer must also provide a handwritten probable cause statement, which is then manually routed by staff in the jail to the Prosecutor's Office.

A paper copy of the arresting officer's report is routed hours later to the Prosecutor, at which time data is abstracted and keyed into a database. Prior to this, the records staff in the arresting officer's agency, has already abstracted much of the same data and manually keyed it into a separate database. Disposition information, generated each time the offender appears in court, must be entered into at least five different databases, i.e. Prosecutor's, Public Defender's, Jail's, law enforcement agency's and the Court's. This level of redundant data entry can lead to corrupt data that is either incorrect or missing. Erroneous data can lead to an inappropriate arrest or release from custody; both situations having potential liability exposure. It has been estimated that it costs local governments approximately \$200,000 annually to replicate redundant data in these disparate systems.

HOW TO ATTAIN THE VISION

Committee Goals and Objectives

The Committee recognized early in the analysis process, that its vision encompassed such a vast array of objectives and tasks that no single data integration project was feasible. Therefore, the MIS Committee tasked itself with accomplishing the following goal:

Develop a strategic plan that creates the Committee's vision by "eating the elephant one bite at a time". In other words, parse the key components (objectives) of the strategic plan into discrete, manageable projects that can be independently implemented as resources become available.

The following **objectives** have been identified by the Committee as the basic components that will lead to successful implementation of the 'data integration processes' envisioned.

- 1) Design and deploy a computerized process that allows the sharing and/or exchanging of information between all law and justice practitioners, within the county's justice enterprise, that tracks offenders from the moment they enter the system until re-integrated back into the community.
- 2) Create and deploy an interdepartmental integration process that allows data exchange between Whatcom County government's four existing DB2/400 databases (Jail, Sheriff, Prosecutor and Public Defender).
- 3) Convert Whatcom County District Court Probation's MS Access database to an integrated DB2/400 application.
- 4) Develop and deploy a process that allows for the digital creation, distribution and filing of documents, forms and legal pleadings created by justice system practitioners. This process will include the following elements:
 - Identification and design of template documents that can be routed automatically according to workflow protocols.
 - Design and adoption of workflow protocols.
 - Design and implementation of a process that allows for automatic abstraction of pre-defined data elements from the templates for distribution to all pertinent databases.
 - Development and deployment of a process that implements 'digital signature' technologies.
- 5) Design/acquire and deploy an integrated, computerized case management system for Juvenile Services and Detention.
- 6) Design an interface or convert the Assigned Counsel's and Sheriff's Office civil desktop applications (currently written in Visual Basic and MS Access, respectively) to applications that are integrated and resident on the County's AS400.
- 7) Design and deploy a process that facilitates the use of mobile data computing by law enforcement agencies using either CDPD (cellular technology) and/or radio frequency.
- 8) Create interfaces that will allow standardized sharing or exchange of information between Whatcom County's justice enterprise and State criminal justice entities, including but not limited to JIN (Judicial Information Network), WSP (Washington State Patrol) DOC (Washington Department of Corrections) and AFIS (Automated Fingerprint Identification System).
- 9) Develop technology and a process to use fingerprints, or some other biometrics, as unique identifiers for persons as they enter and progress through the justice system.
- 10) Create an interface that will allow sharing or exchange of information between local justice practitioners and CAD (Computer Aided Dispatch).
- 11) Design a system-wide decision support system (DSS), wherein aggregate information is routinely utilized to track information flow that allows justice system and executive administrators to monitor justice system efficiency and effectiveness within Whatcom County.

- 12) Research the feasibility of data sharing with federal criminal justice entities, private sector companies and non-profit organizations that provide direct services to local justice system practitioners.
- 13) Support the GIS Committee's efforts to create and implement a geographical information system.
- 14) Interact with the community's public safety communications committee (WERS -- Whatcom Emergency Radio Systems) to ensure data sharing compatibility.

The Committee recommends that any data integration project that seeks to implement one of these objectives, or a portion thereof, incorporate the following standards:

- Legacy (existing) database systems of all participating justice entities must be maintained.
- Project design must allow for diverse hardware and software environments.
- Integration must be driven by the operations of participating agencies; not separate from the systems supporting the agencies.
- Data should be captured at the originating point, rather than trying to reconstruct it down line or have others capture it.
- Data should be captured once and used many times, leveraging existing resources and improving data quality.
- Generalized automatic query, push, pull, and publish should be constructed as general capabilities of the system.
- Automatic push (export) of information to another agency, based on actions taken within the originating agency.
- Automatic pull (import) of information from other systems for incorporation into the recipient agency's system.
- Capture of data in a timely fashion in order to keep information as current as practicable, i.e. near real-time.
- Quality of the data is maintained through internal control mechanisms that quickly identify the occurrences of inaccurate data and provide for the initiation of timely corrective action.
- System designs must allow corrections to be made at the point of entry and the correction program must automatically correct all of the associated links to all of the integrated systems.
- Each correction/change must be automatically logged in a history file. A method for performing a query on the history of changed records must be available.
- The integrity and security of the data is maintained through internal control mechanisms that prevent access by unauthorized persons and unauthorized use of information by authorized users.
- The technical architecture should focus primarily on the open system building block approach using industry standards such as TCP/IP networking standards, HTTP transmission protocol, XML tagged-field data structure meta-language, XSL and CSS style sheets for information transformations and formatting, LDAP to access directories for passwords and permissions.

- Data transmitted in any form should be encrypted end-to-end.

WHAT ARE THE GENERAL BENEFITS OF SYSTEMS INTEGRATION

In general, the primary objectives of integration are to minimize or eliminate duplicate data entry, enable access to information that is not otherwise available, and ensure the 'real-time' sharing of critical data at key decision points. Historically, systems have been developed in isolation of one another or on incompatible technologies, resulting in independent systems that may share many common data concepts, but that cannot communicate. Duplicate data entry hinders intra-agency operations and interoperability, consumes precious resources, retards timely access to critical data and undermines data quality. Integrating, collating and combining information in new innovative ways creates synergies within and between agencies. Therefore, the MIS Committee believes the following list of benefits compels support for data 'integration' initiatives:

- More efficient use of support personnel in all departments through elimination of multiple data entry points.
- Increased accuracy and reliability of data through standardization across divisions and departments.
- Real-time availability of data in various categories that will allow for: Strategic and Proactive Crime Analysis and Co-Active Strategies, i.e. Community and Problem Oriented Policing.
- Increased officer safety through more accurate and timely availability of data.
- Increased public safety through more accurate and timely availability of data.
- Reduction in use of manual paper processes.
- Computer compatibility across various sites and agencies.
- Improved decision-making at all key decision points in the justice process.
- Supports the capability to access a single record by multiple users simultaneously from remote locations on a 24x7 basis.
- Provides the foundation for other projects including G.I.S., communications interoperability, efficient use of CAD and mobile field reporting.
- Captures data at the first point of entry into the criminal justice system and makes common data available to all authorized staff immediately upon input.
- Digital information increases in value as it is shared widely and effectively within the community and beyond.

APPROACH RATIONALE

As previously indicated, the original CJIS project focused on *interdepartmental* integration of the County's four DB2/400 custom applications. The County's system was originally envisioned as becoming the cornerstone of integration for criminal justice entities within the geographic confines of the county. Initially, this approach was both attractive and logical, because; 1) the Bellingham Police Department (BPD) was a contributing agency to the Sheriff's Office DB2/400 case management database, and 2) it was easier to 'integrate' modular designed applications resident on the same hardware

than disparate systems remotely located. Unfortunately, the creation and deployment of BPD's Longarm case management system, terminated this unique, cross-jurisdictional, sharing of a database. Historically, County justice system practitioners have required information from the City's criminal justice system on approximately forty percent (40%) of their respective caseloads. Thus, the cessation of this relationship with the City's police department created a significant void in information for all justice system practitioners.

The technological tools available today, that facilitate the integration of disparate legacy database systems, far surpass those in existence nine years ago when the County undertook consideration of *interdepartmental* integration. This advancement in technology can easily facilitate implementation of *interagency* data integration.

The need to overcome the loss of access to the criminal offender data maintained by the Bellingham Police Department and the close proximity of City and County governments further supports prioritization of *interagency* data integration. Primarily for these reasons, the MIS Committee decided that 'data integration' efforts should initially focus on the *interagency project* described in objective one on page six (6). **Therefore, it is the MIS Committee's recommendation that the initial phase, of this particular project, be the creation of a data-sharing process between three of Whatcom County's DB2/400 applications (Sheriff, Prosecuting Attorney and Jail) and the Bellingham Police Department's Longarm System. (See Appendix E, LJC/ MIS Project Plan 2000).**

The Committee also recognizes the absolutely necessity of ensuring that full implementation of this project occur, i.e. extending phase one technologies to all justice system practitioners located within the geographic confines of Whatcom County. **Therefore, the Committee further recommends, that the initial BPD data-sharing interface design be scalable to ensure, as phase two, the future inclusion of all other county law enforcement agencies.**

As previously indicated, the MIS Committee has chosen to name this initial project WENET (Whatcom Exchange Network). Throughout this document, WENET should be understood to mean the name of the two phase project that seeks to implement objective one of the MIS Committee's strategic plan. The balance of this report will focus on the technical aspects of WENET.

SOLUTION OPTIONS FOR PROJECT WENET

This section of the plan will outline the varying technical methodologies considered by the MIS Committee, compare and contrast the two methodologies viewed as optimal solutions, and outline, in detail, the recommended solution and implementation strategy for WENET.

Prior to examining the various methodologies of electronically sharing data, it is important to review the basic process of data exchange, which includes the following four separate and equally important functions:

Adding New Information to the Database

Before shared information is added to a database, a method must be in place to determine that the information is indeed new. Obviously, the information could be new for one agency but not new for another agency. Consequently, each agency will have to process the information according to its need when updating a local database. If it is new data, then the appropriate add process will be executed depending upon the type of information (name, citation, warrant, etc) exchanged. If it is not new, then the agency will process it as a change.

Changing Information in the Database

Before shared information can be changed, a method must be in place to verify that the original information to be changed is already in the database. If it is, then the information can be changed. This change process can be simple or quite complex depending on the change. For example, a name spelling change can affect a significant number of records in the database. All links to the original name in the database then have to be changed to link to the new name. However, if the original is not already in the database, an exception list or some other type of warning must be issued and then a decision of what to do with the change has to be made.

Deleting Information from the Database

Obviously, extreme care must be exercised before any information is deleted from a database. Similar to the change process described above, a method must be in place to verify that the original information to be deleted must already be in the database. If the original is already in the database it can be deleted. Also similar to the change process, the procedures to delete the record can be relatively simple or very complex depending upon the type of information to be deleted. Again, deleting a name can have far-reaching consequences and can involve a significant number of database records. If the original information to be deleted is not found in the database, an exception list or some other type of warning must be generated and a decision of what to do with the deleted data request has to be made.

Providing an Audit Trail of Exchanged Information

Just as important as the actual processes of adding, changing and deleting information in a database, is a method of tracking the source (agency, operator, time and date) of all database modifications. The methods used must be secure or the audit trail may be inadvertently or intentionally compromised by users.

Just as there are multiple definitions of the term 'integration', there are multiple data-sharing strategies that can lead to viable, yet different technical solutions for this project. To assist the committee with its analysis of these varying solutions, Jim Seale from Compu-tech was hired as a consultant. Compu-tech was tasked with the following :

1) Evaluation of the multiple methods of sharing data with jurisdictions external to Whatcom County government. The focus of the analysis was connectivity between three of Whatcom County's DB2/400 databases and the Bellingham Police Department's Longarm System

2) Recommend a method for sharing data with outside jurisdictions taking into account security, scalability, open architecture, ease and speed of implementation and cost.

Compu-tech's April 3, 2002, *Final Report on Data Sharing Analysis*, describes four general strategies for sharing data between multiple agencies. The following outlines the four preferred methodologies. The first three methods include summaries of advantages and disadvantages associated to each. The fourth methodology, is the consultant's recommended solution, which is outlined in greater detail. (See Appendix F, *Compu-tech's Complete Report*)

1) Local Database-distributed Update Solution.

Information for each agency is sent to a common repository where it is extracted by each agency and added to the database maintained by that agency.

Advantages:

- Agency controls data access.
- Local database contains all names, incidents, etc. from all participating agencies.
- Each agency can develop its own query functions and data handling.

Disadvantages:

- Requires staffing at each location for the transfer of data.
- Requires programming at each location for retrieval and integration of data.
- Requires programming for sending changes/additions of data.
- Potentially large database at each agency (speed of data access may be impaired).
- Possibility of data getting out of synchronization – Requires provision for re-synchronizing data.
- New agency participation not easily/quickly implemented since they cannot take advantage of a common historical database.
- Each agency depends upon physical and electronic security to protect data originating at any location.

2) Shared Database Solution.

Information from each agency is sent to a common repository where it is extracted and maintained on a separate data warehouse computer. Each agency maintains its own local database but does not store information shared by other agencies on its local computer system. A query facility from the data warehouse computer enables all participants to view all shared information from all agencies.

Advantages:

- All agencies have access to the same information.
- Agency database is smaller – less disk space utilized.
- No data synchronization necessary.
- Uniform inquiry method utilized.
- Agency maintains control of local database.
- Database and system is centrally managed.
- Flexible implementation available.
- Costs of query and data integration are shared.
- Database can be optimized for queries to the warehouse.
- Security is shared.

Disadvantages:

- Potentially slow access to data.
- Database would be for interactive query or copy only.
- Method of inquiry must be standard (agency must conform to the “standard”).
- A single point of failure exists for all agencies.

3) Combination Strategy.

Because of political considerations and the wide disparity between computer resources available to the participating agencies, the third alternative is really just a combination of methods 1 and 2 described above. This option was considered because it was thought that some participating agencies would want to maintain their own complete database of all shared data. A lengthy discussion of this method is not included since its details are covered in the discussions of the other two methods.

4) Compu-tech's Recommended Solution/ Distributed Queries.

A distributed query is a query that can simultaneously access data from multiple platforms using a single Structured Query Language (SQL) statement. In this particular solution, the distributed query is being used to access data from an AS/400 (DB2/400) database and a Microsoft SQL Server 2000 database and combine the data from both sources to produce a single integrated result.

This solution proposes the acquisition of a query file server (either an MS SQL Server or another AS/400 iSeries) for processing the distributed queries. If an MS SQL Server is used, then a data replication facility to replicate data from the production AS/400 to the SQL Server is required. There is no requirement for data replication software if another AS/400 is used. Specifically, this solution provides for the following:

- The production AS/400 (and optionally the BPD production computer) would be isolated from the WAN (Wide Area Network) thereby making it more secure.

- The query process would be off-loaded from the production AS/400 to the new AS/400 file server subsequently freeing the production AS/400 to perform its normal application functions. A similar advantage applies to the BPD production server if BPD installs a separate SQL Server.

The distributed query technique provides a foundation that uses an open architecture approach based upon TCP/IP, RDBMS (Relational Database Management Systems) and operating systems that conform to these standards. The distributed queries can be used for inquiry only, data retrieval and for generating reports. Because the distributed queries are server-based instead of client-based, older client PCs can perform distributed queries on multiple, large databases without having to be upgraded.

The distributed queries will be launched using browser-based Web technology. The SQL queries must be presented using a graphical user interface (GUI) using a technology such as Java Server Pages (JSPs) or Active Server Pages (ASPs). The design infrastructure will include the capability of handling XML-formatted queries, however, the initial queries are to be developed and installed in a non-XML format in order to get a working solution on-line in the shortest amount of time.

Microsoft Solution

In order to further expand its analysis capabilities and not wanting to rely solely on the consultant's report, the MIS Committee requested that several of its members attend a training conference on integrated justice in Sacramento presented by the National Criminal Justice Association. Information provided at the conference confirmed that the Law and Justice Council MIS Project Proposal was technologically viable. The most exciting information attained at the conference related to a web services approach to data sharing. The products that sparked the most interest were Microsoft's .Net platform and BizTalk server.

The Committee members attending this conference recommended that the Microsoft presenter be invited to Whatcom County. In April of 2002, Jeff Lang, from Microsoft, made a presentation describing web services and the Microsoft .Net platform to the entire MIS Committee. The first part of the presentation detailed a web services approach to data sharing and detailed current efforts at the federal level to define data-sharing standards. The web services approach he described, depicted technical staff developing an Application-Programming Interface (API) to the data and constructing a portal for each agency to their respective data utilizing the API. The API language used in this approach was Simple Object Access Protocol (SOAP) based on XML (Xtensible Markup Language).

The second part of Jeff's presentation was a demonstration of Microsoft's BizTalk Server product that works as a go-between for SOAP and databases. Jeff estimated that the BizTalk solution could be deployed in nine months at a cost of \$100,000. Needless to say, this solution generated tremendous enthusiasm among the committee members because of its short design and implementation period and low cost.

Web Services Approach to Data Sharing

Subsequent to this presentation, the MIS Committee was presented with a sixth plan for interagency data-sharing developed by the County's Database Administrator. This sixth option expands and completes the Microsoft suggestion by building upon existing work being done at the state and federal level and implementing the project utilizing existing resources and partners. This approach can be concisely described as 'inquire and import via web services' utilizing document exchange architecture (DXA).

Specifically, this solution proposes that the agencies develop a XML Schema and agree on a common inquiry Application Programming Interface (API) that is accessible via web services, i.e. Simple Object Access Protocol (SOAP). Existing and future applications then query each agency using the API and XML schema. The retrofit of existing sharing-agency applications, to permit queries against other systems, will not create a noticeable operating difference to the end-user. See Appendix G, *Nylander's Web Services Using DXA*

The API is the key to this particular data-sharing methodology. The API is used to exchange data represented in the XML Schema and is simply a list of functions, their properties and return results. Developing an open inquiry standard enables each sharing-agency to design its own software solution to expose the data to a central server. To allow disparate systems to access the API, the specification utilized must be platform independent, i.e. SOAP. This protocol was developed by industry leaders such as Microsoft, IBM and Lotus and is maintained by the World Wide Web Consortium (W3C). SOAP uses the Extended Markup Language (XML) to format the data and inquiries. It is anticipated that Hyper Text Transport (HTTP) or Simple Mail Transport Protocol (SMTP) will be the tools utilized to transport the inquiries. Once the application-programming interface (API) is designed, each agency must create an implementation of the interface for its own system and make it available to the central server on the extranet.

OPTION REVIEW

Prior to making a methodology recommendation for interagency data integration, the MIS Committee decided it was necessary to compare and contrast the two most viable strategies; Distributed Queries (Compu-tech) and Web Services (Nylander). The following outlines the results of this analysis.

Distributed Queries Methodology (CompuTech Proposal)

This proposal implements an enhancement to the query system on each sharing agency system so that an SQL call to the local database uses ODBC to return results from all of the systems.

Pros:

- Simplified implementation taking advantage of existing knowledge.
- Simple to integrate with Longarm because Longarm already uses SQL calls.

- Rapid access to live data.
- Can use existing equipment (hardware).
- Faster to deploy to BPD and Whatcom County than a hybrid system.

Cons:

- May not scale well beyond a couple of agencies for the following reasons:
 - Not every agency has ODBC network accessible databases. This means that some applications will need to provide file access to their systems.
 - Each time an agency is added every other system will need to be modified.
 - Requires each agency to fully divulge the structure of its database, which may not be possible for some closed systems and would most likely not happen at a state and federal level.
- Direct SQL access to multiple databases creates a greater security risk than the access specified in the hybrid system.
- Difficult to implement for Whatcom County government since existing systems do not utilize SQL calls.
- Requires Whatcom County government to use a web browser to lookup data instead of existing applications because of the non-utilization of SQL.

Hybrid System – Inquire and Import via Web Services

This methodology requires the development and deployment of a simple object access protocol application programming interface that is implemented at each agency and on any central servers. If opted for, a central server could handle all data requests and maintain an index of all names in each system to facilitate rapid names retrieval.

Pros:

- The proposed system is scaleable allowing for indefinite growth.
- Security is both centralized and distributed.
- Each agency only needs to know and implement the common API.
- Central names index provides rapid names access.
- A common API, allows each agency to choose which types of information (documents) to share and what to do with the shared data from other agencies.
- Implementation follows the vision of the Federal and State agencies.

Cons:

- An API will have to be created nearly from scratch. While the API will take advantage of the work already done at the Federal and State levels the group will still have to agree on the function list and formats not detailed at the federal level.
- SOAP is significantly newer and more cutting edge than ODBC and thus will have a much steeper learning curve.
- If opted for, either Whatcom County or BPD would need to maintain, in addition to its own data repository, a central server and names index.

- Due to the unknown API it will be difficult to get bids for the later phases without first completing or nearly completing the design of the XML schema and SOAP API.
- With just the BPD and Whatcom County on the system the XML overhead may slow down the responses comparable to ODBC.
- The hybrid system may take two to three months longer to deploy than the distributed query system.

MIS COMMITTEE RECOMMENDATION

Based on the foregoing analysis, the MIS Committee recommends that the **'import and inquiry via web services'** model be utilized to provide interagency data integration. Most of the components of the plan come from the County Database Administrator's suggested alternative methodology and are described verbatim below.

TECHNICAL DESCRIPTION OF HOW TO IMPLEMENT WENET

This project proposal outlines a document exchange architecture (DXA) which is based on the National Information Architecture (NIA) originally outlined in 1998 by the National Association of State Information Resource Executives (NASIRE).ⁱⁱⁱ (See Appendix H, NASIRE Report)

"The NIA focuses on the sharing of dynamic, structured information through the use of documents, and is described as a system with the following characteristics:

- Selecting from a library of document descriptions, each entity wishing to be a holder identifies those documents that it is willing and able to deliver.
- For each such document description, it prepares a set of transformations that map storage element formats from its internal database to the format specified for the sharing document and develops the ability to assemble the elements into the specified document format and to transmit that document.
- Selecting from the same library of document descriptions, each entity wishing to be a receiver identifies those documents that it desires to be able to receive.
- For each such document description, it prepares a set of transformations that map storage element formats to its internal database from the format specified for the sharing document and develops the ability to receive that document.
- The holder entity keeps the directory updated concerning which document descriptions it supports.

The DXA system becomes operational as soon as there are two entities that register in the directory for the same sharing documents. Thereafter, the rollout of information sharing is completely within the control of the willing participants."

This approach simplifies deployment, distributes costs and takes advantage of emerging technologies. Specifically this approach can be broken into six conceptual pieces.

Person Names

Law and justice services are about people. Throughout the law and justice system, information is tied to a person's name. Unfortunately names are not always accurate. A person may give a false name or may use multiple names. In researching this proposal it became clear that even within a single RMS (Records Management System) an officer often must look at multiple names to get the whole picture. It was determined that this is often a difficult task, especially for a computer, to match people, the events surrounding them and their names. Therefore, this proposal makes no attempt to create a central list of names or to automatically combine names. Each agency's RMS will maintain its own master names index at this time.

Document

The term 'document' refers to a conceptual idea of related information and not actual paper documents. Almost any law enforcement record can be expressed as an electronic document. In this proposal, the electronic document stores not only the record content, but also the relationship between individual pieces of the record.

Document exchange architecture (DXA) dictates the adoption of an electronic document standard for all law and justice information records that are to be shared. This electronic document format becomes a transport method neutral container for the records, which facilitates easy exchange. In addition to a document format, each record will be identifiable both as a record and as a version of a record. To accomplish this, the proposal recommends an Universal Resource Identifier (URI)^{iv} be attached to each document plus a date/time stamp.

Requesting Documents

The DXA requires that a method for electronic document exchange be designed. This is the transport method that allows documents to be pulled, pushed and published.

In pushing electronic documents, the sharing agencies agree which records are to be provided automatically without a request. This means that as new or changed information arrives at one system it is automatically pushed to other subscribing systems. For example when a law enforcement agency enters a new arrest record into their RMS it is automatically sent to the Prosecutor's system.

Pulling electronic documents is a query and response methodology where for example, a law enforcement officer at the Bellingham Police Department asks for all arrest records for John Doe from the Whatcom County Sheriff.

Jim Threatte discusses a third method called Publish that for simplification will be treated the same as pushing electronic documents.

Due to complicated work-flows, it is envisioned that pulling documents will be the predominant type of request.

The document transport method will be picked based on the following criteria:

- Open standards
- Programming tools and languages available
- Ability to work with a variety of systems
- Simplicity
- Security options available
- TCP and IP based for network compatibility

Live Query and Indexing

Often times in the Law and Justice arena, old data can become the same as inaccurate data. Therefore all data that is pushed or pulled should be from real time, production data.

In order to speed up some repetitive queries, the partner agencies should implement an indexing service. Such a service should be transparent to the clients and contain the most current data that is available. An example of a useful index would be a names index. A database could store names indexed for fast retrieval along with a pointer (URI) to the record.

Security

An important piece to any project of this scope is security of the data. This means the security of the data while the owner stores it, the authorization and access privileges granted to users of the data and the security both from prying eyes and changes while the information is in transport. Much of the security is dependent on the transport method, however, some requirements can be specified:

- Be client and server neutral
- Security model must be able to extend beyond organizational boundaries
- Must both authenticate and secure
- Simple authorization levels

Independent Clients

One of the core ideas behind the DXA is that if the developer knows the electronic document standard, the transport method and the API then they can use or develop any application they like. This means that existing applications can be modified to query and import data and new applications can be developed independent of the project as the need arises.

Network

To connect the multiple agencies that are involved, including local, state and federal governmental entities, a network infrastructure must be in place that uses industry standards such as the Internet Protocol (IP) and is available to most of the sharing partners. In addition to availability, the network should work to improve the security of the DXA by isolating traffic whenever possible.

IMPLEMENTATION

The first part of this proposal outlined a conceptual framework for a DXA. This part outlines the technical blueprint for building a DXA in Whatcom County that serves local, state and federal interests.

XML Schema for Local Law and Justice

In 1998 the World Wide Web Consortium (W3C)^v approved the standard for version 1.0 of the eXtensible Markup Language (XML)^{vi}. XML provides a content neutral method for storing structured data in plain text. XML has had much success throughout the technology sector as a document container for storing and exchanging data.

To describe what information may be in a document and how it is structured we use a standard description language called XML Schema^{vii}.

This proposal recommends the development of an XML Schema for local law and justice that describes the documents that can be exchanged in XML form. In researching the existing data created, used and stored by the prospective partners we identified a base set of documents that will need to be defined. This set may be increased as new types of partners come online. Backwards compatibility should be considered when developing or changing any schema.

Thankfully a federally sponsored committee called the Global Advisory Committee, part of the Global Justice Information Network^{viii} has created some of the schema already. This committee has created an XML Justice Data Dictionary^{ix} that contains schema for person and property documents as well as others. This proposal plans to use these standardized data elements whenever possible and to create new ones where needed.

The research identified at least eleven different document types that need to be defined; Person, Property, Court Orders, Warrants, Arrests, Jail Booking, Citations, Contact Events Dispatch Events, Prosecutor Pre-charging info and Prosecutor Case info.

API: SOAP and HTTP GET

The goal of this project is to exchange data. Once the data is in a XML document a method is needed to push, pull and publish the documents. This proposal outlines two similar methods and recommends implementation of both of them. These methods build upon the industry standard called HyperText Transport Protocol (HTTP)^x.

The first method is based purely on the HTTP protocol and will be called HTTP GET. As discussed in the conceptual framework of a document, each document should have a URI. By using a Universal Resource Location (URL) style URI which points to an http server to GET XML documents, the URI can serve both as an identifier and as a document request path. For example an incident report might have a URI of "https://www.co.whatcom.wa.us/purl/300001/2001/6/5/121.xml". An XML client can then make an HTTP GET request using that URI and will receive the 121st incident report in XML from year 2001, June 5th. The URI would be up to the data owner.

The second method uses a concept called web services. This builds upon the Simple Object Access Protocol (SOAP)^{xi} standard. SOAP provides a platform neutral method for remote procedure calls (RPC) between applications. This project envisions the development of an Application-Programming Interface (API) for services to be offered by different partners. For example, a function is created outlined as "GetPersons (FirstName, MiddleInit, LastName, DOB)" that returns a XML document Persons which contains Person XML sections. Not every partner will implement every function specified in the API.

SOAP can be built using a variety of transport protocols. This proposal requires the use of HTTP as the binding transport layer, specifically HTTPS using TLS client/server authentication (see PKI, TSL and LDAP below). The API will be published using the Web Services Description Layer (WSDL) on the network used by sharing partners so that developers and programs will know where and how to ask for certain records.

In developing an API we should work to make it flexible and not tied to specific uses or clients. Instead to make it generalized to allow for all current and future client and data source needs.

Optional Indexing Server

This proposal recommends, at a later time, the implementation of an indexing server to index names for the region. The index server will have to be maintained by one of the agencies or in some joint fashion. The server should be simple and implement the names related portion of the API. Whatcom County has an IBM DB2 server that would be perfect for this job. The index would improve the speed at which name queries, the most common query, could be done.

PKI, TSL and LDAP

As mentioned conceptually, a system of this sort needs the maximum in security that is available. Multiple pieces come together to build a secure architecture including digital certificates and directing services.

Digital certificates are based on a concept called public-key cryptography and digital signatures^{xii}. Digital certificates are issued by trusted neutral third parties that identify someone or something (a server). A digital certificate can then be used to authenticate and encrypt traffic between two computers. To manage all of these certificates a Public Key Infrastructure (PKI) is needed. It is envisioned that WENET will utilize the PKI^{xiii} created by the State of Washington.

Since both transport methods use HTTP as the underlying transport protocol, digital certificates will be used to authenticate between users and servers and between servers using Transport Layer Security (TLS)^{xiv}. In instances where it is not possible or practical for client software to process user certificates, server to server authentication may be used with trust placed on the client server that it has properly authenticated each user.

To keep track of all the users and who has access to what, the use of Lightweight Directory Access Protocol (LDAP) version 3^{xv} is proposed for use. A countywide LDAP directory server will contain referrals to each agency that has an LDAP server and contain user and organization information for the agencies and users without a LDAP server. In addition to providing user information, groups will be maintained that control access based on type of information. For example the COP group may contain all sworn law officers who can look up all information except inmate medical information. The COURT group may allow all court details but not have access to arrest narratives.

In addition to architectural design concepts, tried and tested security practices must be exercised. Individual RMS systems and connections to the shared network must be secured.

Servers

A variety of law and justice records management systems (RMS) exist on a variety of platforms. Each RMS system will have to be enhanced/extended to share its data. The underlying tool for exposing data via web services is a web server. Just about every RMS platform has web server capabilities.

AS400

Whatcom County's primary law and justice RMS data is stored in IBM DB2 on an iSeries (the new name for AS400 servers) called "WHATCOM".

To provide this data via web services, Whatcom County will use it's second iSeries server called "WEBHOST". This server is currently configured with a web server

and has real time data access via distributed data management (DDM)^{xvi} to WHATCOM. WEBHOST can be enhanced to run Java servelets and Java Server Pages (JSP). By using SOAP and XML tools developed by both the open source Apache initiative and IBM, Whatcom County's Information Services division can publish web services exposing the RMS data on WHATCOM.

Longarm

The Bellingham Police Department's (BPD) RMS data is stored in a MS SQL server. Microsoft has a variety of methods for developing web services including web services tools under the ".Net" name, specifically ASPx.

Other Law Enforcement Agencies

Due to the large number of web services toolkits available for a large number of platforms and databases, it should not be difficult to find a solution that will allow the other law enforcement agencies located within the geographic confines of Whatcom County to connect to this new integrated system. The biggest stumbling block will be closed RMS systems.

Clients

One of the major benefits of making the platform and interface neutral is that multiple clients can be enhanced/developed to plug into this data stream. Many of the design decisions will be based on how each partner primarily uses its RMS. If a user primarily inquires the system, then a web-based system may be most useful. However, if the user primarily inputs data then their existing clients will need to be extended to allow data inquiry and import of other agency data into their RMS.

AS400

Whatcom County's primary law and justice RMS system is based on RPG using DB2 on an iSeries (AS400) server. By mixing Java and RPG the RMS applications can be extended to include inquiry and import of exchanged data.

The first application to be extended will be the names lookup application. This application is used by almost all other RMS applications to query Whatcom County's primary names file. This application will be extended so that it can query all available names or just those already known by the county. When displaying all names, if a user picks a name not in the local names file, it may be imported and used to further input data about that person. This method helps reduce data entry and develop more accurate person profiles.

Longarm

Longarm is a custom application developed in MS Visual Basic by BPD. As with Whatcom County's RMS, the first thing to be extended will be the names search system.

Browser based

By developing a browser based inquiry application, a tool is provided to those that just need to inquire the system or for enhancing other applications. Such an application should be built to accept different looks, often called skins, based on user needs. The inquire tool will primarily be person based and allow for multiple people to be quickly merged into one view (not actually merged) as names will always be a problem.

Whatcom County will develop a skin designed to integrate with its intranet and will be used as a inquiry tool.

BPD may develop a skin that integrates the web pages into its Longarm RMS. For example, a new Visual Basic form could contain a browser control that contains the web pages. The skin would contain script elements that interact with the form to accomplish the task i.e. the names search system may be developed in this fashion. When a user clicks on a name that exists in the BPD system, instead of expanding that information, the link tells the form to close and bring the information up in their Longarm forms.

The web interface will become the primary tool for non-sharing partners such as Federal agencies, certain Washington state agencies and other counties to inquire into this new, shared data stream. In the future, it may be possible to make this web application accessible over the Internet.

Other Users

The variety of RMS systems and number of possible clients is limitless. It may be that new specific clients are developed for data mining or statistical research.

IGN and Internet

Once the document schemas are defined and web services are built there must be a method developed to connect all of the services, servers and users.

Washington State Department of Information Services (DIS) is developing a standards based data network called the Inter-Governmental Network (IGN)^{xvii}. The IGN is designed to connect all local government agencies to the state and each other. The IGN is separated from the Internet with firewalls to increase security. The State of Washington is already using the IGN for other law and justice projects so it seems natural to consider using it for this proposal. Most data-sharing partners will connect to the IGN via a connection at the Whatcom County Courthouse. Other users may access the IGN using Virtual Private Network (VPN)^{xviii} technology or wireless Cellular Digital Packet Data (CDPD)^{xix} technology through the state DIS Enterprise Security Services^{xx}. Additionally, there may be instances where using the Internet is more feasible. By implementing the security mentioned above and adding host based access lists, it is possible to provide the same level of security as the IGN.

WHATCOM EXCHANGE NETWORK (WENET) GOALS AND OBJECTIVES

Project Goal:

Design and deploy a computerized process that allows the sharing and/or exchanging of information between all law and justice practitioners, within the county's justice enterprise, that tracks offenders from the moment they enter the system until re-integrated back into the community.

Objectives and Tasks:

Objective 1. Employ a technical integrator for the project term.

Objective 2. Create a data exchange process between three of Whatcom County's DB2/400 applications and the City of Bellingham Police Department's 'Longarm' records management system (RMS).

- a.) Employ two interns to assist technical integrator (50 hrs. per month @ \$10/hr.)
- b.) Define documents to be exchanged using XML Schema
- c.) Define Electronic Document Interchange (EDI) methods using SOAP and describe using WSDL
- d.) Connect sharing agencies to each other
- e.) Configure sharing servers with SOAP tools and SSL certificates
- f.) Develop SOAP and HTTP GET connectors for each data source and publish
 - Whatcom County to contract with Compu-tech to build SOAP connectors
 - BPD to contract with RMS developer to extend Longarm
- g) Retrofit existing applications to take advantage of data sharing
 - Whatcom County to contract with Compu-tech to extend current RMS applications
 - BPD to contract with RMS developer to extend Longarm
- h) Develop web based tool for data inquiry
 - Develop a generic data search and retrieval tool for law and justice practitioners accessible from a web browser and based on web technologies.
 - Develop a skin for the tool to integrate with Whatcom County Web services.
 - Integrate with BPD Longarm

Objective 3. Extend the data exchange process to all other law enforcement agencies located within the geographic confines of Whatcom County.

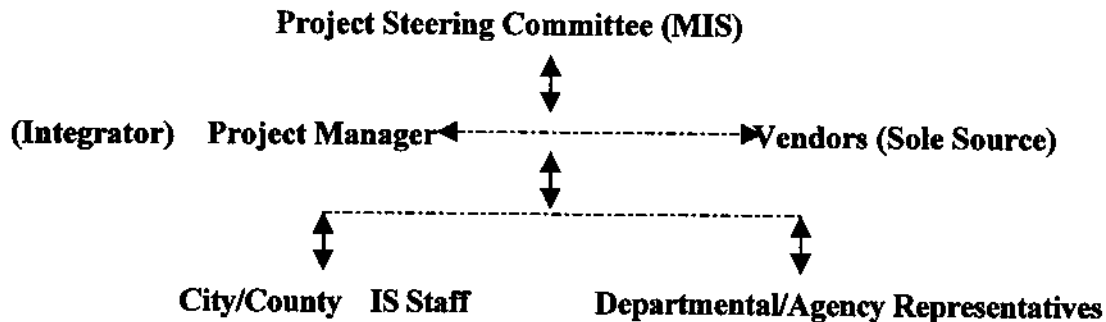
- a) Develop connectors to other law enforcement agencies within the geographic confines of Whatcom County.
- b) Connect all disparate local agency systems.

IMPLEMENTATION TIMELINE COMMENCES WITH RECEIPT OF FUNDS

Steps	Quarter							
	1	2	3	4	5	6	7	8
Employ technical integrator	█	█	█	█	█	█	█	█
Employ 2 interns to assist technical integrator	█	█	█	█	█	█	█	█
Define documents to be exchanged using XML Schema and based on work done by state and federal programs			█	█	█	█	█	█
Define Electronic Document Interchange (EDI) methods using SOAP and describe using WSDL			█	█	█	█	█	█
Connect sharing agencies' servers to each other using the IGN where possible		█	█	█	█	█	█	█
Configure sharing servers with SOAP tools and SSL certificates		█	█	█	█	█	█	█
Develop SOAP and HTTP GET connectors for each data source and publish			█	█	█	█	█	█
- For Whatcom County, contract with CompuTech to build SOAP connectors			█	█	█	█	█	█
- For BPD, contract with RMS developer to build SOAP connectors			█	█	█	█	█	█
Retrofit existing applications to take advantage of data sharing					█	█	█	█
- For Whatcom County, contract with CompuTech to extend current RMS applications					█	█	█	█
- For BPD, contract with RMS developer to extend Longarm					█	█	█	█
Develop web based tool for data inquiry				█	█	█	█	█
- Develop skin for tool to integrate with Whatcom County Web services				█	█	█	█	█
- Integrate with BPD Longarm				█	█	█	█	█
Develop connectors to other counties, WA State and Federal agencies						█	█	█
Staff User Training						█	█	█
Project Evaluation						█	█	█

PROJECT MANAGEMENT AND RESPONSIBILITIES:

The MIS Committee recommends that the Law and Justice Council have oversight authority over this project and that the MIS Committee function as the body assigned to monitor the progress of the project. This structure assumes that the integrator would function as the project manager, have daily oversight of the technical aspects of the project and report to the MIS Committee.



Project Steering Committee (MIS):

Responsible for providing direction to and adequate management support for the project to ensure its successful completion on time and within budget. Specific responsibilities of the committee are:

- Sets scope of project through the development of project specifications.
- Approves interim changes to project scope and specifications.
- Reviews and approves key project deliverables within time constraints.
- Monitors expenditures and ensures fiscal integrity of project.
- Participates in system prototype evaluation and system testing.
- Attends periodic steering committee meetings, as required.

Project Coordinator (Data Integrator):

Responsible for ensuring successful, on time, project completion in conjunction with the Project Steering Committee. Specific responsibilities include:

- Serves as the technical adviser during development of project specifications.
- Serves as the liaison, for communication and coordination, with the project vendors.
- Develops and maintains a project plan for all project tasks which includes tasks, responsible party, estimated effort required, and estimated time required.
- Ensures that the vendors provide periodic status reports to the Project Steering Committee.
- Ensures that the vendors follow agreed software development standards.
- Convenes project steering committee meetings as required regarding WENET project.
- Arranges and coordinates any needed support work to be performed by IS staff and supervises work to completion.
- Coordinates the review process for project change orders. Obtains estimates of effort required and impacts on estimated completion date from vendors and forwards all information to the Project Steering Committee.
- Reports regularly to the Project Steering Committee regarding expenditures related to the project.
- Acts as liaison between vendors and Departmental Representatives regarding design questions.
- Meets/communicates with Departmental Representatives, on an ad hoc basis, to clarify development issues.

IS Director and Technical Staff (City and County):

- Provides technical support to Project Coordinator and selected vendors.
- Provides testing and benchmarking of system during and after implementation.

- Development of an on-going action plan for maintaining the system and ensuring that technical staff remains adequately trained in order to support the system and end-users.

					1st Year	2nd Year
Annual Salary and Benefits for Data Integrator					\$65,000.00	\$65,000.00
Extra Help: 2 Interns @ \$10/Hr. 50 Hrs./Month					\$14,500.00	\$14,500.00
Supplies /PCs for staff and Research books					\$5,300.00	
Equipment						
Digital Certificates					\$500.00	
SOAP Tools					\$1,500.00	
Extranet/IGN Hardware					\$5,000.00	
iSeries Server Model 270-2432 and software					\$60,000.00	
Professional Service Contracts						
Compu-tech County RMS Developer					\$100,000.00	\$100,000.00
RMS Developer for BPD's Longarm System					\$160,000.00	\$160,000.00
Miscellaneous					\$10,000.00	\$55,000.00
Other Developers of Agency RMS systems						\$20,000.00
Project Evaluation					\$25,000.00	\$25,000.00
TOTAL					\$446,800.00	\$439,500.00

PROJECT BENEFITS FROM WENET IMPLEMENTATION:

Interagency integration, as proposed in the WENET Project, should result in the following benefits.

- Allows each sharing agency to keep its current (legacy) computer system.
- Allows each sharing agency to select its level of participation.
- Builds the foundation which will allow for eventual information exchange with State and Federal Systems.
- Provides law and justice professionals with a composite history of persons in the law and justice system.
- Makes all available law and justice data accessible to those that need it.
- Reduces the number of places a law and justice professional needs to look for data.

- Connects the data of local law enforcement agencies and other criminal justice practitioners together.
- System design is scalable, thereby, making it as easy to connect two (2) as it is to connect a dozen sharing partners.
- Provides an open framework to allow for future expansion of data sharing.
- Utilizes existing hardware and systems to minimize investment.
- Builds upon existing staff skills and expertise.
- Uses industry standards, i.e. SOAP, XML, HTTP.
- Allows phased development and deployment based on the time-frames established by each sharing partner.

PROJECT OUTCOMES FROM WENET:

Interagency integration, as proposed in the WENET Project, should result in the following outcomes.

- Increased officer safety through more accurate and timely data availability.
- Increased public safety through more accurate and timely data availability.
- Real-time availability of data in various categories that will allow for Strategic and Proactive Crime Analysis i.e. Community and Problem Oriented Policing.
- Police response times may be reduced.
- Reduces redundancy in data entry.
- Improves the accuracy of information due to quality control standards.
- Fewer additional justice system staff will be needed to deal with increasing caseloads.
- Reduction in use of manual and paper processes to communicate information.
- The public will have better access to individual level information on relatives who are justice involved.
- A greater percentage of outstanding warrants may be served due to the availability of better composite information regarding offenders.

PROJECT EVALUATION :

The nature and scope of the evaluation will include both a pre and post implementation component, which will be defined extensively in a separate document. The MIS Committee anticipates the use of a professional evaluator whose remuneration is included in the project's budget.

COMMUNITY SUPPORT:

In order to ensure successful implementation of both phases of project WENET, it was critical to solicit and acquire the cooperation and support from all the criminal justice practitioners who will be impacted by and benefit from this project. In order to accomplish this task, multiple presentations have been made detailing the mission of the MIS Committee, its strategic plan and the details of WENET. (See

Appendix I, *Powerpoint Presentation*) These efforts resulted in the Committee attaining commitments from all the affected parties to support project WENET. (See Appendix C, *Letter of Commitment*)

ⁱ Integrated Justice Information System Architecture Building Blocks Construction, May 2001; Jim Threatte, Principal Consultant

ⁱⁱ *ibid*/NAJIS

ⁱⁱⁱ The National Association of State Information Resource Executives (NASIRE) represents state chief information officers and information resource executives and managers from the 50 states, 6 U.S. territories, and the District of Columbia. State members are senior officials from any of the three branches of state government who have executive-level and statewide responsibility for information resource management. Additional information regarding NASIRE can be obtained on the Internet at www.nasire.org.

^{iv} A Uniform Resource Identifier (URI) is a compact string of characters for identifying an abstract or physical resource. It is specified by the Internet Engineering Task Force (IETF) (www.ietf.org) standards document RFC 2396. Most people are familiar with a common form of URI called a URL (uniform resource location).

^v The World Wide Web Consortium is the primary standards body for web development. In addition to developing the XML standard they also maintain the HTML standard for web document structure. More information about the W3C can be found on the Internet at www.w3.org.

^{vi} The complete XML standards document can be found on the Internet at <http://www.w3.org/TR/2000/REC-xml-20001006>.

^{vii} XML Schema is not the only method of describing document layout and contents however it is quickly being adopted as the premier method. Because the description itself is in XML it can take advantage of the multitude of tools available for XML processing. More information about XML Schema can be found on the Internet at <http://www.w3.org/xml/schema/>.

^{viii} The Global Justice Information Network has a variety of information online about data sharing projects. They can be found on the Internet at <http://www.it.ojp.gov/global/admin/index.html>.

^{ix} The XML Justice Data Dictionary contains description, comments and schema about over a hundred common law and justice data elements. Of primary interest to this proposal are the person and property data elements. The dictionary can be found on the Internet at <http://www.it.ojp.gov/global/standards/files/xml-data%20defs-0.04b.pdf>.

^x The HyperText Transport Protocol (HTTP) is the primary transport layer of the World Wide Web portion of the Internet. Most are familiar with the beginning portion of a URL which may start with "http://". This tells the web browser to use the HTTP transport layer to make the page/file request. The standard is maintained by the Internet Engineering Task Force (IETF) as RFC 2616.

^{xi} The Simple Object Access Protocol (SOAP) is a standard developed through the W3C that builds upon HTTP as a way of doing remote procedure call (RPC) requests to applications using XML.

^{xii} Pages 31-44, Bruce Schneier, *Applied Cryptography, Second Edition*; John Wiley & Sons, Inc. New York 1996

^{xiii} The states PKI program is called Transact Washington. The program has created a security policy, maintains contracts with vendors for providing certificates and works to extend the program beyond the state. More information about the program can be found at <http://transact.wa.gov>.

^{xiv} Transport Layer Security (TLS) is commonly referred to as Secure Socket Layer (SSL). The standard is detailed in IETF RFC 2246 and HTTP over TLS is detailed in IETF RFC 2818.

^{xv} The Lightweight Directory Access Protocol (LDAP) specifies methods for requesting user and other network information from a directory server. A directory server contains user, group, computer, security and other information suitable for a hierarchical directory. The IETF maintains the LDAP v3 standards. Most agencies already have some sort of directory server that can expose its data via LDAP. Whatcom County is currently working to expose its NDS directory information via LDAP.

^{xvi} Distributed Data Management (DDM) is a common database term however each vendor implements it differently. IBM has developed a DDM system to expose DB2 data between iSeries servers. This has already been configured and tested. It provides direct SQL access to data on either server.

^{xvii} The Inter-Government Network (IGN) currently connects all counties to the state and each other. Some local municipalities are also connected however many are not. The IGN plan calls for municipalities to connect to the IGN through their county seat.

^{xviii} Virtual Private Network (VPN) technology uses digital certificate security to create a network tunnel over other networks such as the Internet.

^{xix} Cellular Digital Packet Data (CDPD) allows computers to access remote networks over cell phones. The Bellingham Police Department and Lummi Law and Order currently uses this technology to access their CAD programs for silent dispatching as well as portions of the state ACCESS system . In addition, Lunmi Law and Order gives their field officers access to their RMS. Unfortunately CDPD coverage is limited to the Bellingham area and does not provide countywide access.

^{xx} More information about the Washington State DIS Enterprise Security Services can be found on the Internet at <http://www.wa.gov/dis/services/ess.htm>.

APPENDIX A:
LAW AND JUSTICE COUNCIL
PHASE II REPORT





Whatcom County

Law & Justice Plan

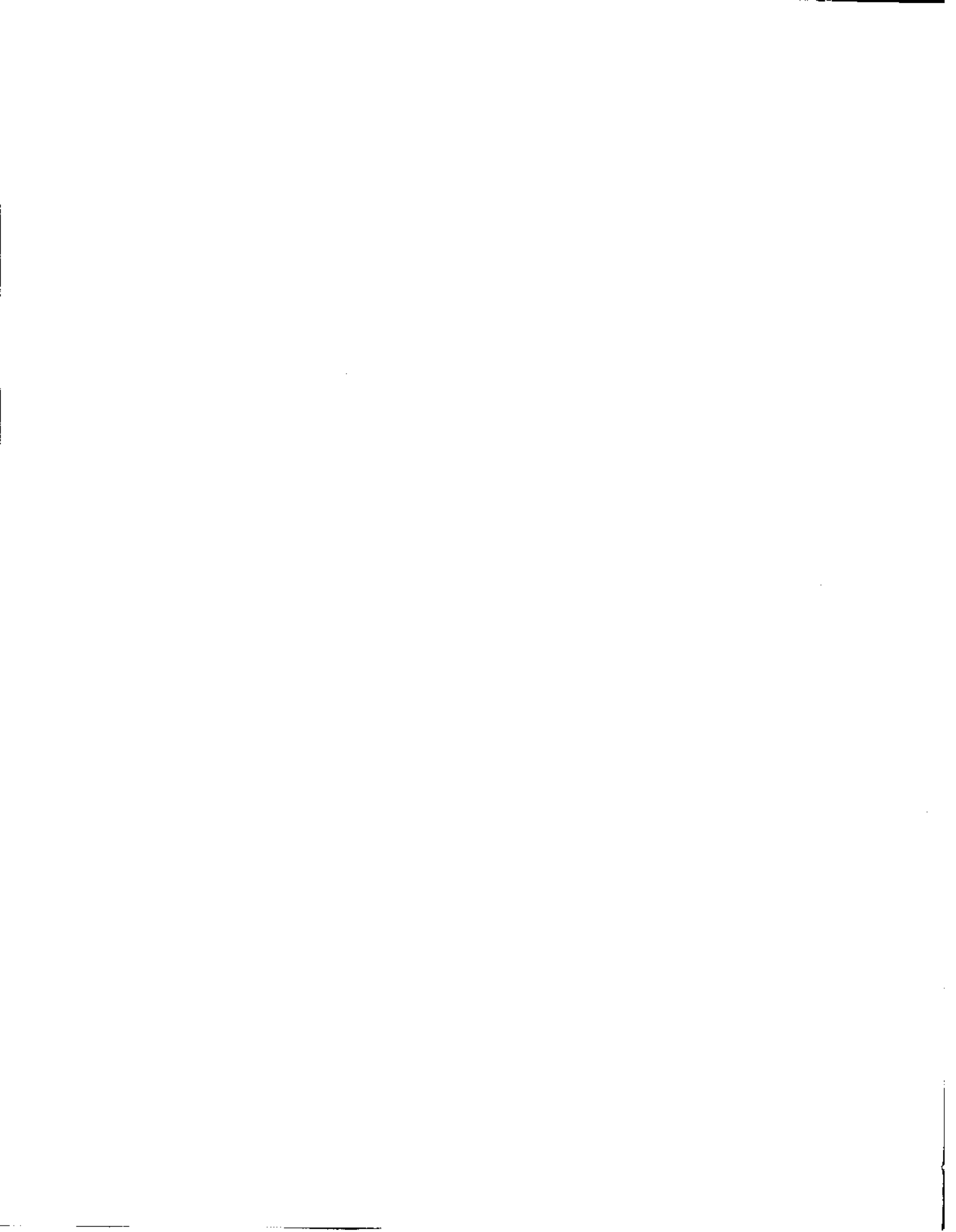
**Phase II Report:
Implementation**

June 2000

Presented by:

Administration of Justice Services
Alvin Cohn, Ph.D.
Stuart Readio

Northwest Regional Council
Victoria Doerper, Executive Director



**WHATCOM COUNTY
EXECUTIVE'S OFFICE**

County Courthouse
311 Grand Avenue, Suite #108
Bellingham, WA 98225-4082



Pete Kremen
County Executive

MEMORANDUM

To: County Council Members

From: Pete Kremen, Whatcom County Executive *Pete*

Date: June 21, 2000

Re: Phase II Report: Implementation
Whatcom County Law and Justice Plan

I am pleased to transmit to you the Phase II Report of the Whatcom County Comprehensive Law and Justice Planning Project. The report presents our consultants' recommendations for implementing an ongoing, coordinated county-wide effort to deal with overcrowded jail and juvenile detention facilities, and increasing demands on our law and justice system. During the past two years many people in our community including the leaders of our law and justice system have been working with consultants Dr. Alvin Cohn and Stuart Radio in an intensive effort to analyze the existing system. These leaders are already moving ahead to implement many of the report's recommendations. They are committed to developing practical and workable improvements that are necessary to enhance the quality of life we all treasure in our community.

I would like to express my appreciation to you for your support with this overall effort. I want to note that I have been particularly impressed with the tenacious commitment of the mayors, prosecuting attorney, judges, police chiefs, community members, department officials, and agency staffers who have contributed their time and expertise as members of our project Steering Committee. They truly understand the need; they are committed to work toward a better future. I want to thank Sheriff Dale Brandland and Deputy Administrator Dewey Desler for their invaluable leadership and vision. I also want to recognize our consultants for their expert work on the plan, and the Northwest Regional Council staff for their efficient management and organizational support of the entire project. We are indeed fortunate to have an organization like the Northwest Regional Council working on our behalf.

A major goal of this plan is to improve efficiency and cost effectiveness. This report will function as a foundation on which the county can build a safer community. The Law and Justice Plan is intended to be a springboard into a future in which justice

is accessible, efficient and cost effective; criminals are held accountable with appropriate and effective sanctions; and communities are safe for everyone.

Some of the first steps down this road that I believe we should take and strongly recommend in this plan are:

- 1) To recharge our countywide Law and Justice Council by formal resolution approved by the County Council;
- 2) To extend our contract with the Northwest Regional Council to provide staff support for the Law and Justice Council;
- 3) To implement and integrate a computerized management information system for all law and justice agencies; and
- 4) To initiate a master facilities planning process which includes planning and design for a new medium/minimum security jail facility.

I look forward to working closely with you to take the action that will improve both the efficiency of the law and justice system and the safety of our community.

Executive Summary

Whatcom County Law and Justice Plan

PREFACE

With the publication of this Phase II Report it has become obvious that this project could not possibly have been completed without the continuing assistance and cooperation of the Steering Committee, which essentially is the Law and Justice Council for Whatcom County.

This one and one-half year project involved not only all of the Whatcom County justice officials, but officials representing Bellingham and all other cities in the County, the treatment community, laypersons, and representatives of the Lummi and Nooksack Tribes. All of these persons willingly cooperated, shared their visions of an effective and efficient justice system, as well as their sense of priorities for feasible programming.

Although the co-project directors assume total responsibility for this final report, we believe we do reflect the needs and desires of the justice community as well as their priorities for implementation.

With a re-vitalized Law and Justice Council in place, we are confident that this strategic plan will continue to receive attention and we believe that earnest efforts will be made in the years to come to update and reformulate the strategic plan to meet the needs of the citizens of Whatcom County.

The assistance, advice, and counsel we received from the Northwest Regional Council staff throughout this project have been immeasurable. We want to express our sincerest gratitude to Dewey Desler, who was the Executive Director at the beginning of the project; and Victoria Doerper, the current Executive Director. There are no words sufficient to thank Kathy Mohebbi and Nat Dickinson for their assistance.

They are remarkable in their competence, organizational skills, and ability to keep us on track. Working with them has been a most pleasurable experience.

AWC

SR

PROJECT STAFF

CO-PROJECT DIRECTORS

Dr. Alvin W. Cohn
Stuart Readie

CONSULTANTS

Caroline Cooper
Alfred Dean
Stephanie Rondenell
Joseph Trotter

STAFF

Sara Cohn
Daniel Ewert
Venus Robinson

Executive Summary

Whatcom County Law and Justice Plan

I. Current Conditions – The Justice System in Whatcom County

Whatcom County's justice system is suffering from serious growing pains. While crime nationwide is on the decrease, Whatcom's jail and detention facilities continue to be so seriously overcrowded that criminals are being turned away. The Whatcom County Executive and Council undertook the study that produced this plan because it was apparent that the whole system is not working as well as it should to protect the public safety. Criminal and civil actions are bogged down in a system so overloaded that offenders often wait months to be processed, and are sometimes never held accountable for their actions. Citizens' civil disputes languish for months waiting to be resolved. The county's justice system is made up of many independent parts, without effective overall coordination. It was apparent to county officials that the immediate problem, jail overcrowding, could only be fixed by many well-thought-out coordinated adjustments to all parts of the system.

Many of the ailments being experienced in Whatcom County are typical of those seen elsewhere in the United States. Whatcom County is unique insofar as it has taken the initiative of proactively and systemically identifying and attempting to remediate these problems.

The most pressing problems the consultants have seen in Whatcom County include (a) *Severe staffing deficits in all justice departments;* (b) *Gaps in the use of technology to enhance justice system performance;* (c) *Constraints in the quality and quantity of justice facilities;* and (d) *A justice system that is lagging behind other similar systems in adopting effective national strategies*

in areas such as offender case management, the use of balanced and restorative justice principles, and collaboration of offender treatment systems with the justice system.

These deficits contribute to a justice system in Whatcom County that struggles with delays in court cases, unserved warrants on serious criminal offenders, and crowded and deteriorating jail and detention facilities.

II. The Impact of Maintaining the 'Status Quo'

It is possible to forecast the nature of the justice system in Whatcom County if its problems are not addressed. Lack of action is definitely not desirable. It would merely maintain current operations at current resource levels, and not make a systemic and targeted effort to effect any of the recommended reforms.

Conducting "business as usual" in the justice system of Whatcom County will result in a system where: (a) *The public becomes more dissatisfied with system responsiveness, feelings of cynicism pervade public opinion and both the perceived and actual safety of the population is compromised;* (b) *Offender populations become even more contemptuous of the justice system;* (c) *Justice facilities are so overused that their useful life cycles are severely compromised and the courts slowly grind to a halt, characterized by delay and inefficiency;* (d) *Dangerous offenders are released prematurely;* (e) *First-time and youthful offenders are converted into more hardened criminals;* and (f) *Whatcom County loses its desirability as a place to live and conduct business.*

III. Our Desired System

The work done by the Law and Justice Committee over the last 18 months has had a specific orientation and purpose. The Committee's Vision Statement on Page "ix" of this Executive Summary clearly provides the focus needed to change the justice system for the betterment of all those who are involved in the system, and ultimately for the quality of life of all the citizens in the county.

The Law and Justice Committee believes that improvements recommended for the county justice system can provide the following results: *(a) Greater law enforcement productivity resulting in more crime solved and a reduction in the public's fear of crime; (b) The productivity of system practitioners can be enhanced to where greater workloads can be accommodated with lower per unit costs and slower resource requirements growth; (c) The justice system is able to proactively and collaboratively plan and budget to accommodate changes in workloads and priorities; (d) The justice system routinely evaluates the impact of its activities and holds itself accountable to public interests; and (e) The justice system becomes sufficiently effective to modify offender behavior and break the cycle of negative offender behaviors.*

IV. The Costs and Benefits

Justice system reformation comes with a price tag, but it promises benefits that will not only offset costs to a large extent, but also will forestall future costs. The total Year One Estimated Costs in the Summary of High Priority Recommendations on Page "x" of this Executive Summary shows a cost to the law and justice system of approximately \$3.4 million dollars for the first year. Subsequent years costs increase slightly primarily reflecting the onset of construction of expanded secure adult jail facilities.

A portion of the costs of jail services can be offset by charges to jurisdictions and user fees.

Many of the initiatives can be funded by external sources if the County vigorously pursues Federal and State grant opportunities.

A number of the recommendations are based upon the assumption that their use instead of traditional practices can be just as effective with the offender population but at a reduced per unit cost.

Additionally, to the greatest extent possible, maximum use has been made of existing resources rather than introducing new, untried programs and policies.

Finally, all of these recommendations suggest significant intangible cost savings. Improving the effectiveness of the justice system should mean that fewer people flow through it and those that do, do not re-offend and return.

V. How to Get to Where We Belong

There are certain reforms and recommendations that need to be immediately initiated to insure that Whatcom County's justice system maintains the momentum developed so painstakingly by the Law and Justice Committee.

The first of these is the need **to reinvigorate and continue to support the efforts of the Law and Justice Council (LJC)**. The LJC is the coordinating organization that must continue its charge of examining, evaluating and modifying the justice system in Whatcom County, now and into the future. It is the watchdog organization whose experience and objectivity are essential ingredients of a justice system that avoids stagnation and facilitates system diversity and innovativeness. The activities of the LJC must continue to act as the catalyst for collaborative and systemic change in the justice system.

Without the LJC the justice system could revert to its tradition of internecine parochialism.

The second essential ingredient of a dynamic justice system is County support of logistical support for the LJC. The LJC is comprised of some of the most involved and busy of county executives. They and their staff are clearly not in a position to provide Committee staff support, and yet without staffing their efforts at system reform may be rendered inefficient and ineffective. **It is therefore imperative that the LJC be given sufficient objective and skilled staff resources to maintain their focus.** This can be accomplished by hiring distinct staff, using consultant assistance when needed or by asking skilled local staff, such as those at the Northwest Regional Council, to act as staff to the LJC. Whatever the decision regarding who staff the LJC, without providing the practical and logistical basis of continuing the LJC the creativity and collaboration seen during the past 18 months may come to a premature end.

Fundamental to any and all systematic change is the need to base all justice system planning, budgeting and evaluation on accurate and timely information. In 1986, the Department of Justice noted that if the justice system did not improve the information upon which it based its decisions it was doomed to repeat earlier mistakes. This situation continues to hold true in Whatcom County.

It is necessary to improve and integrate the various independent computerized management information systems for effective justice information resource management in Whatcom County. The greatest single source of system inefficiency is the disjointed, dissonant or even absent flow of information between justice system agencies on offenders and system activities. None of the other initiatives and recommendations will live up to their promise and the system will never definitively know this until

Whatcom County integrates its justice information system and extends its scope to include other external justice agencies.

A final system-wide recommendation is the need to **develop a realistic facilities plan for Whatcom County government that includes medium/minimum security correctional facilities for both adults and juveniles**. Jail bed space is inadequate, office space for system practitioners is inadequate, courtroom space is inadequate, juvenile detention space is inadequate. Justice system objectives are being frustrated by the systems inability to implement necessary tasks because of space limitations.

It is not just that these facilities are too small. Aside from the fact that these facilities were built for smaller caseloads, they are not adequate for the nature of the client using them. This is especially true in the case of the adult jail located in Bellingham. This is a maximum-security correctional facility built to house the most dangerous of Whatcom County's offender population. It was not designed to house petty thieves, vandals or the addicted.

It is very apparent, to the consultants at least, that Whatcom County is going through extreme growing pains and that the time is appropriate for the County to institute a justice system space planning process, perhaps even seeking external assistance through a request for qualifications process, to assist in the development of a forward-looking plan for accommodating today's and tomorrow's justice system.

WHATCOM COUNTY LAW AND JUSTICE PLAN STEERING COMMITTEE
VISION STATEMENT

JUSTICE: WHATCOM COUNTY

Whatcom County is a place where people live, work and play in communities that are safe, healthy and filled with the natural and cultural beauty that is the hallmark of the Pacific Northwest. Generations of strong families are rooted in the area and provide a deep foundation that is rich in history, local knowledge and stability. Whatcom County has become the kind of place people choose in order to live a lifestyle that is peaceful and satisfying. The population is growing rapidly and newcomers arrive daily. Most come with a vision of hope and the belief that life will be better here.

TODAY

The desire of so many people to live in Whatcom County has resulted in dramatic change. This burgeoning growth has placed huge demands on every aspect of the community's infrastructure. In particular, growth and change have placed immense strains on the civil and criminal justice system upon which the citizens rely to safeguard and protect the life they love. Today the people of Whatcom County live in a community where:

- *Criminal and civil actions are bogged down in a system so overloaded that offenders often wait months to be processed and are sometimes never held accountable for their actions while citizens' civil disputes languish for months waiting to be resolved.*
- *The components of the justice system are not adequately integrated and coordinated*

The County Executive and County Council recognized these problems two years ago and commissioned an expanded Law and Justice Council (LJC) composed of citizens, and officials representing law and justice agencies, social service agencies and local governments to evaluate the problems and conditions and make recommendations. The LJC has determined that current conditions threaten the very quality of life we treasure. Left unchanged, the current conditions in the justice system will result in a community that has lost faith in Justice and has lost hope for a better future.

A VISION FOR TOMORROW

The Law & Justice Council of Whatcom County, representing the citizens, hereby states that we intend to enhance and protect the quality of life we all treasure in our community. The LJC has a vision of a place called Whatcom County where all citizens feel safe and where everyone can enjoy a peaceful life. We offer our citizens a vision of the future where:

- *Justice is accessible, efficient and cost-effective.*
- *Criminals are held accountable with appropriate and effective sanctions.*
- *Communities are safe for everyone.*
- *Individuals, seniors, families, children and businesses thrive and reach their potential.*
- *Victims and all parties are treated with respect and dignity.*

To achieve these goals, the Law & Justice Council has created a road map, *The Law and Justice Plan For Whatcom County*, to take the citizens of Whatcom County from today into tomorrow.

The future success of our community to prevent crime, protect the public, assist victims, hold offenders accountable and resolve civil and domestic disputes depends on our willingness to take ownership of current problems and their solutions.

The time for action is now. We urge the citizens of Whatcom County to join the Law & Justice Council in their commitment to create a future that is peaceful and safe for everyone.

Whatcom County Law and Justice Plan

Summary of High Priority Recommendations

Recommendation	Functional Area	Start Date	Year One Estimated Costs	Year Two Estimated Costs	Year Three Estimated Costs
<i>Law & Justice Council</i>	<i>System-wide</i>	<i>On-Going</i>	\$0	\$0	\$0
<i>Coordinator/Planner Function</i>	<i>System-wide</i>	<i>Jun/Dec 00</i>	\$100,000	\$100,000	\$100,000
<i>Information Management</i>	<i>System-wide</i>				
<i>Expand MIS Subcommittee</i>		<i>Jun-00</i>	\$0	\$0	\$0
<i>Start Data Integration</i>		<i>Sep-00</i>	\$375,000	\$125,000	\$0
<i>Include External Users</i>		<i>Jun-00</i>	\$100,000	\$125,000	\$25,000
<i>Hire Information Svcs Staff</i>		<i>Aug-00</i>	\$60,000	\$60,000	\$60,000
<i>Decision Support System</i>		<i>Aug-00</i>	\$5,000	\$60,000	\$60,000
<i>Jail Remodel</i>	<i>Facilities</i>	<i>Sep-00</i>	\$125,000	\$35,000	\$1,000
<i>Expand Secure Facilities</i>	<i>Facilities</i>	<i>Dec-00</i>	\$250,000	\$3,500,000	\$4,250,000
<i>Central Intake Unit</i>	<i>Facilities</i>	<i>Aug-00</i>	\$125,000	\$25,000	\$0
<i>Pretrial Release</i>	<i>Corrections</i>	<i>Jul-00</i>	\$215,000	\$225,000	\$235,000
<i>Continuum of Sanctions</i>	<i>Corrections</i>	<i>On-Going</i>	\$0	\$0	\$0
<i>Electronic Home Detention</i>		<i>Jul-00</i>	\$140,000	\$140,000	\$145,000
<i>Work Crews</i>		<i>Jul-00</i>	\$250,000	\$300,000	\$325,000
<i>Expand Treatment Options</i>		<i>Jul-00</i>	\$235,000	\$235,000	\$475,000
<i>Expand Adult Probation</i>	<i>Corrections</i>	<i>Aug-00</i>	\$116,000	\$126,000	\$129,150
<i>Expand Juvenile Services</i>	<i>Juvenile</i>	<i>Aug-00</i>	\$138,000	\$357,500	\$360,000
<i>Detention Study</i>	<i>Juvenile</i>	<i>Aug-00</i>	\$5,000	\$0	\$0
<i>System Staffing</i>	<i>System Wide</i>	<i>Jul-00</i>	\$854,150	\$1,389,150	\$1,475,662
<i>Satellite Sheriff's Offices</i>	<i>Law Enforcement</i>	<i>Jun-00</i>	\$200,000	\$75,000	\$75,000
<i>Technology Assessment</i>	<i>Law Enforcement</i>	<i>Jul-00</i>	\$0	\$0	\$0
<i>Case Tracking</i>	<i>Courts</i>	<i>Aug-00</i>	\$44,000	\$46,000	\$48,000
<i>Courthouse Security</i>	<i>System-wide</i>	<i>Jul-00</i>	\$100,000	\$50,000	\$15,000
Total			\$3,405,150	\$6,939,650	\$7,749,662

Whatcom County Law and Justice Plan

Summary of Lower Priority Recommendations

Recommendation	Functional Area	Start Date	Year One Estimated Costs	Year Two Estimated Costs	Year Three Estimated Costs
<i>Jail Population Mgmt</i>	<i>Adult Facilities</i>	<i>Jul-00</i>	\$0	\$0	\$0
<i>Expand Work Release</i>	<i>Adult Facilities</i>	<i>Jul-00</i>	\$0	\$0	\$0
<i>User Fees</i>	<i>System-wide</i>	<i>Jul-00</i>	\$0	\$0	\$0
<i>Volunteer Coordinator</i>	<i>System-wide</i>	<i>Jul-00</i>	\$25,000	\$25,000	\$25,000
<i>Pursue Grants</i>	<i>System-wide</i>	<i>Jul-00</i>	\$0	\$0	\$0
<i>Space Study</i>	<i>System-wide</i>	<i>Jul-00</i>	\$0	\$0	\$0
<i>Federal COPS Application</i>	<i>Law Enforcement</i>	<i>Jul-00</i>	\$0	\$0	\$0
<i>Law Enforcement Meetings</i>	<i>Law Enforcement</i>	<i>On-going</i>	\$0	\$0	\$0
<i>In-Service Training</i>	<i>Law Enforcement</i>	<i>Jul-00</i>	\$15,000	\$15,000	\$15,000
<i>Overtime Conversion</i>	<i>Law Enforcement</i>	<i>Jul-00</i>	\$0	\$0	\$0
<i>Community Education</i>	<i>Law Enforcement</i>	<i>Jul-00</i>	\$35,000	\$35,000	\$35,000
<i>Tribal Relations</i>	<i>LE & Corrections</i>	<i>Jul-00</i>	\$0	\$0	\$0
<i>Drug Court</i>	<i>Courts</i>	<i>Jul-00</i>	\$0	\$0	\$0
<i>"Failure to Appear" Analysis</i>	<i>Corrections</i>	<i>Jul-00</i>	\$0	\$0	\$0
<i>Indigent Defense</i>	<i>Public Defender</i>	<i>Sep-00</i>	\$0	\$0	\$0
<i>Split Sentences</i>	<i>Courts</i>	<i>Aug-00</i>	\$0	\$0	\$0
<i>Investigator</i>	<i>Prosecutor</i>	<i>Jul-00</i>	\$99,500	\$99,500	\$107,000
<i>Victim witness</i>	<i>Prosecutor</i>	<i>Jul-00</i>	\$29,100	\$32,000	\$34,000
<i>Deferred Prosecution</i>	<i>Prosecutor</i>	<i>Jul-00</i>	\$0	\$0	\$0
<i>Driving w/License Suspended</i>	<i>Corrections</i>	<i>Jul-00</i>	\$16,000	\$10,000	\$50,000
<i>Assignments</i>	<i>Public Defender</i>	<i>Jul-00</i>	\$0	\$0	\$0
<i>Risk Assessment</i>	<i>Juvenile</i>	<i>Jul-00</i>	\$0	\$0	\$0
<i>Personal Control Number</i>	<i>System Wide</i>	<i>Jul-00</i>	\$0	\$0	\$0
Total			\$219,600	\$216,500	\$266,000

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INTRODUCTION

Community sentiments regarding public safety, reduced fear of crime, and improved quality of life all contribute to an overall need to ensure that the community's justice system be effective and efficient. While efficiency and effectiveness can be accomplished on an agency-by-agency basis, a systemic approach involving justice agencies along with community participation is required. This means that meaningful partnerships must be developed in order to ensure that all stakeholders have a voice in the kind of justice system wanted and needed.

A systems approach demands that the whole be viewed as greater than its parts. This in no way diminishes the roles and responsibilities of the participating agencies, each of which has its own mandate in terms of services and programs. But, if there is little or no coordination, if agencies and their key personnel do not understand and appreciate the roles of others, the likelihood of a true system certainly is diminished.

The same is true insofar as county-municipality relationships are concerned. That is, while much of a justice system is implemented at a county level of government, the involvement of the cities within that jurisdiction is crucial to ensure a true system of justice. This is of special importance since all of the jurisdiction's citizens are subject to the same justice system and are entitled to efficiencies and effectiveness from that system.

A justice system does not simply happen because it is demonstrably wanted or as a consequence of officials wishing it to be. Rather, there must be strategic planning - a process of examining the current state of affairs in order to determine a specific future state of affairs. It is strategic in that the whole of the proposed system must be analyzed in terms of programs, services, mandates, resources, laws, and desires in order to determine what the system should be at some future date.

Strategic planning cannot be accomplished exclusively through the use of knowledgeable and experienced consultants. Instead, it must involve not only all identified internal and external stakeholders, but community-based stakeholders as well. Such planning, then, becomes a collective responsibility and task not only to ensure the best possible plan, but also to ensure buy-in by all involved.

Both Whatcom County and the various cities' officials clearly recognize the need for strategic planning within its justice system and have been fully prepared to devote appropriate resources for this effort. The Law and Justice Council, representing County and city officials, as well as citizen representatives, and community-based treatment providers, converted itself into a Steering Committee designed to provide oversight and input into the planning process. Meeting almost every month for well over one year, officials of all justice agencies in the County, together with city and community representatives, worked diligently to help analyze data and information gathered during the process.

After the consultants provided summaries of major findings, the Committee addressed these in order to identify those of a critical nature and for which appropriate recommendations for implementation were needed. Further, these findings and recommendations were placed in priority in recognition that all recommendations were not of an equal stature.

This Phase II report, then, reflects the needs of the project stakeholders and the opinions of the consultants. Yet, even though there has been significant involvement of Committee members, this final report reflects the views of the consultants, as guided by the thoughtful input of system practitioners, and not necessarily those of the group. Additionally, as will become obvious from a reading of this report, while a specific recommendation for action may be viewed as important or critical insofar as efficiency and effectiveness are concerned, a limit on existing and potential resources undoubtedly will require a certain level of "phasing." That is, not every strategy can - or should - be implemented at the same time.

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To that end the report has been divided into "high" priority recommendations and those of a lower, though still important, priority.

Some of the recommendations for action contained herein should be viewed as absolutely essential in that they form the foundation for other tasks. For example, a Management Information System (MIS) is a required tool that computerizes all events, decisions, interventions, and the status of offenders so that appropriate and responsible decisions can be made as the offenders travel through the system.

Without such a tool, each agency would have to collect its own data and without knowledge of what others have collected. Therefore, an MIS becomes a support mechanism for such services as classification, risk/needs assessments, determinations of eligibility for pretrial release, the presentence investigation, and decisions about offender-based interventions.

Another foundation recommendation involves the hiring of a justice Planner/Coordinator. During the course of this project the Northwest Regional Council (NWRC) has provided considerable support services. But, it is clearly recognized that a full-time planner/coordinator is needed to support the proposed, reinvigorated Law and Justice Council, to review the collection and analysis of MIS data and information, and to assist agency directors in implementing their own, internal changes in policies and procedures.

In the final analysis, Whatcom County officials, together with the Law and Justice Council and city and community representatives, do indeed recognize the need for change not simply change for change sake, but to create and maintain a viable, system-wide, effective, and efficient justice system - a system that involves adult criminal, juvenile and civil programs and services. While there is no naiveté over the cost of many of the recommendations for action, the Law and Justice Council and countywide officials recognize that while "more of the same" is not the by-word for action, additional resources unquestionably will be needed - over time - to ensure that a just and fair justice system is created and maintained.

Moreover, there has been a clear recognition that a continued reactive approach to problem solving will not produce appropriate system-wide change. For that matter, neither will a proactive response serve the needs of the community. Instead, the LJC has approached its tasks in a co-active manner; that is, by involving both internal and external stakeholders in total partnership.

This Phase II Report flows from the Phase I Report in which the findings, initial recommendations, and priorities for implementation were delineated. These will not be repeated except where the context of a specific recommendation requires some explanation; that is, to help the reader understand why a specific strategy for implementation has been adopted. Further, where possible, the resources needed for implementation will be explained, as will proposals for further action.

It is important to note that a strategic plan, by its very definition, means that it should be viewed as dynamic rather than static. This means that there must be constant re-assessments of findings, evaluations of progress, and continuing identification of needs, resources, and practicalities. The plan is dynamic in that it should be seen not only as requiring updating, but changes based on what works and what doesn't work and according to resource availability.

While ultimately the strategic planning process will be a continuing assignment of the Law and Justice Council, the primary responsibility for an annual up-date will be that of the LJC's Executive Committee, who, in turn, will necessarily have to coordinate not only with County and city officials, but with the County Executive and County Council as well. While this task will require dedicated effort, as long as there are open channels of communication among and between all key policy-makers, the likelihood of justice improvements will be enhanced. This same issue, of course, is just as applicable with regard to County and State relationships, especially with the courts and the Department of Corrections insofar as law and justice issues are concerned.

Finally, it is important to recognize that in order to achieve the kinds of improvements in the justice system contained in this Phase II Report, it is critical to take note of what is commonly called *graduated sanctions*. This is a process of increasing or decreasing an offender's liberty through the use of intermediate sanctions as well as alternatives to incarceration.

As a consequence of appropriate screening for risk and needs, offenders in Whatcom County will be incarcerated if high-risk or supervised in the community according to well-defined terms and conditions for release. As an offender meets his or her obligations, the potential for step-downs in supervision can occur. If there is violative behavior, the likelihood of step-ups will be indicated.

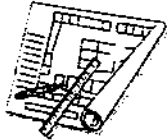
Thus, with the development and enhancement of community-based programs to facilitate more offenders being supervised in the community, key policy-makers collectively must make a decision about *zero tolerance* for misbehavior; that is, unless there is significant mitigation, an offender who is in non-compliance must be dealt with immediately and with a step-up in restricted liberty. Further, consistency in the application of the *zero tolerance* policy will be required to ensure fairness and applied justice.

The narrative that follows this discussion provides a blueprint for implementing prioritized recommendations. The report is organized in two parts: Part I identifies 16 recommendations of the highest priority, including many with system-wide implications; while Part II reflects 23 recommendations of lower priority, all of which are presented irrespective of functional areas within the justice system. *Within each section the individual recommendations are not prioritized.*

High priority recommendations are those that promise the greatest positive impact on system operations and need to be implemented as soon as resources can be secured and appropriate policies and procedures developed to govern implementation.

Lower priorities are those recommendations that can either be handled administratively or implemented when time and resources permit. They appear promising in nature and will impact changes in justice system operations to one degree or another.

Part I. HIGHEST PRIORITY RECOMMENDATIONS



Recommendation 1. Re-Design the Law and Justice Council and Continue Strategic Planning

Functional Area: System-wide

Commentary: The Law and Justice Council (LJC), established by Resolution No.93-015, re-convened during this project as a Steering Committee. At this time, the LJC should be re-established, with additional representatives from the county, cities, and the network of community-based services. A committee has been working on this task and with the approval of the LJC its complete composition has been approved and is to be forwarded to the County Executive and County Council for appropriate action.

The LJC should be responsible for reviewing all aspects of the justice system (criminal, juvenile, and civil); examining data and information contained in the MIS; developing evaluation strategies to determine program needs, benefits, and outcomes; developing quality assurance protocols; and otherwise updating the strategic plan at least annually. Additionally, the LJC should assist the County Executive in the identification of priorities for new programs/personnel within the system, but should have no authority to develop functional area budgets. Instead, it only should review proposed budgets to assist in the priority-setting process.

Implementation Issues: The LJC is empowered by statute. The purpose of the LJC is to introduce order and rationality to a criminal justice system of sanctions and services that has been characterized as neither just nor a system. The purpose of the Law and Justice Council is somewhat expanded insofar as it must also consider civil justice issues that frequently have a profound impact on criminal issues.

Additionally, the participation of representatives from the many Whatcom municipalities is essential. Their membership is a critical ingredient of the Council. No decisions should be made unilaterally by the LJC without a complete consideration of the impact on cities. If the LJC is to be a truly collaborative and representative effort, the cities must be co-active partners in the decision making process.

Timetable: Immediate, on-going implementation is advised.

Staffing Issues: The LJC will require staff support by the NWRC, consultant assistance, or by a full-time Justice Planner/Coordinator.

Costs – Budget: Since the LJC will be engaged in various activities, the County Executive should create a budget for this group that will cover such expenses as travel, hiring consultants, attendance at conferences, and library materials. The budget should include the costs of the planner/coordinator and required staff support. (These costs are presented in the next recommendation.)

As the cities in Whatcom County will be significantly impacted by LJC activities, it is suggested that the cities be asked to assist the County with funding both the LJC and the Planner/Coordinator position.

Applicable Standards: The statute governing local law and justice council responsibilities should guide Law and Justice Council activities.

Management Plan: Since the LJC will now involve over 50 members it is recommended that an executive committee be established, with a citizen member as chair. A citizen chair essentially will be a neutral "person" and thus will bring no political agendas to LJC discourse and action. This is an important issue at least initially as the LJC seeks financial assistance from the County Council and the cities to implement the suggested recommendations contained in this report.

The executive committee should be empowered to meet on a regular basis (e.g., monthly) and make those decisions that require action. Other decisions can wait for the entire group to meet, which should be no less than quarterly.

The executive committee should be responsible for the supervision of the proposed Criminal Justice Planner/Coordinator regarding LJC activities and for overseeing the continuation of the strategic planning process. The executive committee should be composed of the chair, vice chair, secretary, a representative from each of the standing committees, one community member and the County Executive.

The by-laws should detail the nominating and election procedures for the executive committee, all of who should have fixed terms for service.

A task group has adopted a set of by-laws that would govern the roles, responsibilities, and duties of the LJC. This group should proceed with its deliberations and seek final approval from the LJC and by the County Executive. The by-laws must meet the requirements of state law.

In order for the LJC to be effective in its deliberations and since many activities will require serious consideration over time, it is recommended that a number of standing committees be established, both from among the membership of the LJC as well as from line staff, cities, and community-based programs and services.

Standing committees should include (1) Executive (2) Management Information System, (3) Community Based Options, (4) Facilities, and (5) Juvenile Justice, (6) Operations, (7) Public Relations.

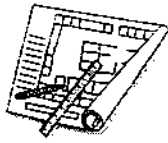
Under the direction of the Executive Committee, the LJC, working with the justice Planner/Coordinator, the County Executive, and County Council, should review the results of the strategic plan annually and update those aspects of the plan that need change.

Analyses of research findings concerning adult, juvenile, and civil justice programs should indicate new and better "what works" programs, which should be evaluated in terms of their "fit" in Whatcom County.

Based on such a review along with the needs of the system and the community, the strategic plan should be updated to accommodate proposed changes. This also means that as the MIS data are collected and analyzed, responsible decisions can be made not only with regard to possible new programs, but also for changes in existing programs - all geared to enhanced effectiveness and efficiency of the system.

Based on its assessment of changes in the plan, the LJC should also recommend changes in costs/funding and submit a proposal to the County Executive, which should include revised implementation schedules and priorities.

Evaluation Protocol: Properly staffed, the Council should annually evaluate its goals and objectives to determine the degree of fidelity with each and analyze systems data to gauge the degree to which supported initiatives alleviate (or exacerbate) targeted problems.



Recommendation 2. Hire a Justice Planner/Coordinator

Functional Area: System-wide

Commentary: A Law and Justice Council without proper staff support will have a difficult time establishing goals and objectives, designing and delegating tasks, and specifically meeting its stated purpose of implementing the strategic plan.

Implementation Issues: In order to work with and otherwise utilize all of the expertise and resources among the Whatcom County government agencies, cities, as well as community-based groups and in order to utilize his or her expertise to engineer change, it is strongly recommended that the Planner/Coordinator be headquartered in the County Executive's office and answerable administratively to the County Executive. The placement of the Planner/Coordinator in the Executive's Office is controversial, as the LJC has expressed the desire to have the position report to the LJC directly.

This position could also be fulfilled by using (via contract) the skilled staff of a local third party planning agency such as the Northwest Regional Council. NWRC staff could seek external consultant assistance on specific implementation issues as needed. This option would help alleviate some of the controversy of placing the planner/coordinator position in the County Executive's Office.

The consultants believe that placing the Planner/Coordinator in the Executive's Office (if this option is preferred) will facilitate the development of a working relationship with the County Council, heads of the various county agencies and departments, as well as develop the necessary resources needed by the LJC in its routine operations.

It is recommended that the planner/coordinator position be given no authority over staff, budgets, and/or functional area policies and procedures. Instead, this person should be viewed as an internal consultant, when and where indicated, serve as the recorder for the LJC, and as an advisor to the County Executive.

Timetable: In view of the fact that the LJC must become a viable and action-oriented group and determine its own roles and procedures, it is recommended that the hiring of the proposed planner/coordinator occur as soon as there is agreement about a job description and a salary level, and as soon as funds can be obtained. This is an on-going task.

Staffing Issues: It is recommended that the job description for this position take into consideration the needs of the LJC with regard to planning and coordination and, as a consequence, seek someone with varied experience in the justice system. The person should be able to work with computerized data and have had experience in dealing with justice agencies, communities, and elected officials.

Costs – Budget: In order to recruit an experienced planner and expert in justice administration, the requirements delineated by the task group should be followed. However, it must be recognized that to obtain the services of one whose credentials are impeccable, it will probably be necessary to provide a salary at no less than \$65,000 to \$75,000, excluding fringe benefits. At least one half-time support person should be assigned to this position. As activities and services expand, an additional one-half support person probably will be needed. Depending on exactly where this person will be situated, there will be costs for supplies, equipment, office furniture, travel, conference attendance, and other incidental expenses directly related to the job requirements.

Applicable Standards: None apply though the person hired to fill this position must be familiar with all applicable standards for each of the functional areas.

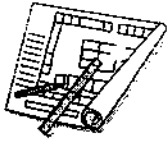
Management Plan: The role, responsibilities, and duties of the proposed Planner/Coordinator are outlined in the Phase I Report. Here, it suffices to state that this person's primary duties will include: (1) providing staff support for the LJC, (2) ensuring the implementation of the strategic plan, (3) advising the LJC of inter-agency developments and problems, (3) working with information system analysts/programmers to ensure a workable MIS, (4) conducting evaluation studies of existing and new programs throughout the system, and (5) keeping appropriate records of transactions, meetings, and other matters in which the LJC may be engaged.

Evaluation Protocol: None envisioned at this time.



Recommendation 3. Justice Management Information System

Central to all efforts to improve local justice system functioning is the need for accurate and timely information on justice system workloads and performance. The mission of the MIS Committee, a standing committee of the LJC, is "...to improve the efficiency and effectiveness of the adult and juvenile justice system in Whatcom County through the use of information resource management in support of the enhancement of public safety and the swift and fair administration of justice."



Recommendation 3.1 Expand and Diversify Committee Membership

Functional Area: System-wide

Commentary: Expanding Committee membership to include private sector representatives will ensure that Whatcom County's Information System (IS) department is kept abreast of the most recent developments in computing platforms. Private sector members can assist the County IS Department in finding resources to fulfill computing objectives. The impact of enlisting the support and expertise of private sector information services professionals can be positive and effective. This collaborative effort may assist the County in maintaining and retaining its current IS staff by sharing resources and developing industry standards in hiring information system professionals.

Implementation Issues: No barriers to implementation are envisioned.

Timetable: The process has already been initiated with the creation of a letter requesting participation. The LJC should continue to solicit new members, providing each with a complete briefing. The selection of all members should be completed by mid-June, 2000.

Staffing: Initially, the staffing of the MIS Committee can be provided by the NWRC, consultants, or by the proposed Planner/Coordinator.

Costs – Budget: None anticipated.

Applicable Standards: None.

Management Plan: There is the need for continued meetings of the MIS Committee with specific agenda items. Fulfilling the remaining recommendations will provide the Committee with a busy agenda over the next 12 to 18 months.

Evaluation Protocol: None.



Recommendation 3.2 Proceed with Data Integration

Functional Area: System-wide

Commentary: It is recommended that the County proceed with its proposed Data Integration Project. This project seeks to create a seamless weave of justice system practitioners in Whatcom County who can share data entry responsibilities, data verification and editing, data base use for day-to-day operations, and share aggregate justice system data for proactive planning, budgeting, and evaluation tasks.

The integration of systems and data should maintain a high priority for the LJC. The estimated budget of \$500,000 over an 18-month period does not compare to the benefits that the Whatcom County agencies will receive from an integrated justice and data system. The benefits include, among others: accurate data; coordinated information from all agencies to determine trends in justice; capacity data for jail beds; and caseload information in the judiciary to determine staff needs and courtroom requirements. These benefits will provide the County with a more efficient and effective justice system to better serve Whatcom County constituents.

The justice and data integration project seeks to update all Whatcom County justice system information systems and link them into a network of systems representing data used to conduct day-to-day operations. Data integration has a number of purposes the most important of which include reducing duplications, improving accuracy, expanding scope, and improving usefulness for system users. The completion of this project will make the multiple systems resident in the County agencies appear to be a single, united justice information system instead of a patchwork of various files.

Implementation Issues: Staffing for system development and maintenance is an issue. Ensuring that the system provides all the required functions for all agencies is also an issue that needs to be addressed by the Committee. Increasing the functions of the integrated system is significant and here, the results tend to be less tangible than facilities.

Additionally, new data files will need to be included into the integration project, including all screening and assessment tools (adult and juvenile), pretrial services screening, and probation and treatment services progress reporting information. It should be the charge of the MIS Committee to monitor these program developments and ensure that essential offender-based data be included in the process.

Selecting a vendor to provide the services has been an issue. The earlier attempt to implement the project was delayed by the Y2K problem.

Timetable: Completing the project to user satisfaction will take between 12 and 18 months, with a December 2001 completion date.

Staffing: The vendor should supply all needed staff during the implementation phase. It is also recommended that IS add a dedicated justice system staff person who can fulfill multiple roles, including oversight of this project and to serve as liaison between all justice agencies.

Costs - Budget: It has been estimated that a maximum budget of \$500,000 will suffice for the completion of the integration project. A Federal grant has been written to help offset local costs and resources. The local financial commitments to this project, moreover, can be used for matching other potential Federal grant opportunities.

Applicable Standards: Only those as promulgated by County Information Services for system operations.

Management Plan: The plan for implementation is very well delineated in the Request for Proposal located on the Whatcom County Web site. It is recommended that the RFP be modified to expand system requirements and to depict the integration effort clearly and concisely to prospective vendors. It is also recommended that an evaluation of current justice system integrators occur to provide the Committee with a listing of qualified and successful vendors in the field. Oversight will be provided by IS staff (as expanded) and the MIS Committee of the Law and Justice Council.

Evaluation Protocol: A process evaluation directed toward monitoring the fidelity of implementation is recommended. It is also suggested that the MIS Committee assume the responsibility of project monitoring as assisted by the proposed Planner/Coordinator.



Recommendation 3.3 Expand Data Integration to Include External System Users

It is recommended that external user agencies, such as municipalities, state, federal, and tribal justice agencies be included in the integration project. This effort should also include the State Justice Information Network and the Judicial Information System, as well as local justice agencies that are not now contributing to the local justice information system, such as District Court Probation and the City of Bellingham's municipal court and law enforcement systems.

Functional Area: System-wide

Commentary: There are a number of system users and agencies that maintain critical defendant files that should be involved in the data integration project. These external users are frequent contributors to Whatcom Justice information systems and they also maintain data files that are invaluable to Whatcom justice system practitioners. Without their participation in the data integration project, the proposed system will never be complete or as useful as it might be. Significant contributors or external users include the City of Bellingham's court and police department, all of the other municipal entities, the State's Judicial Information Network, the Indian Tribes and various Federal law enforcement agencies. Including external justice agencies into the data integration project is a critical component. In many ways these entities, especially the state judiciary, have to become partners in the data integration project since some of the information they routinely collect has become essential for local decision-making. This is especially true for defendant criminal history data, defendant current case processing summaries, and juvenile probation management statistics.

Additionally, every effort must be made to include District Court Probation data in these plans. This is an immense body of data on a very important population that needs to be more prominently shared among local system practitioners.

Timetable: It is important to include these users into the integration project at the same time as the local system is developed. If entities have to be phased in later, the following agencies are the best candidates: the Tribes and the Federal government. It is important to the success of the system that the State's Judicial Information Network, which includes the Superior and District Courts and their various departments, be included in the first phase of this project. Completion date may be December 2001.

Staffing: The need for additional dedicated IS staff is discussed later in this section. The need for a Planner/Coordinator/Grant Writer has also already been discussed. No other staff is visualized.

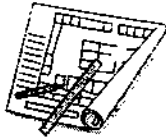
Costs - Budget: Gateways to State agencies are already budgeted. Multi-point access to the other files has not been included in the overall budgetary plan. The Telecommunication grant that was recently written estimates a budget of \$300,000.

Applicable Standards: There are standards that are applicable and they apply to confidentiality, data integrity, and other MIS issues. The MIS Committee in collaboration with the IS department will ensure that such standards are met.

Management Plan: This will become another component of the larger Data Integration project. Management will be subject to the requirements of the external user agencies. It will require compromise on the part of all parties to collaborate on timetables and data requirements.

There is a tendency for local decision-makers to want to move ahead without external user participation. This is ill advised. The County should not re-invent any systems or design a local system that is incompatible with statewide initiatives.

Evaluation Protocol: The same protocol applies here as it does for the preceding recommendation.



Recommendation 3.4 Hire Justice-Dedicated Information Services Staff

Functional Area: System-wide

Commentary: Justice agencies receive too low a priority given their importance in the hierarchy of local government. Unfortunately, requests for modifications to the existing system and requests for new systems most often receive lesser priority than other County agencies whose higher priority frequently is based upon the ability to generate revenue. The consultants recommend supporting the effort to assign an Information Systems staff person to work exclusively on justice system issues, including de-bugging existing systems, expanding justice system computing capabilities, and seeking grant and other external funding sources for justice system applications, among others.

To expedite the continuing efforts related to the development and operations of the MIS, the consultants recommend that an additional staff programmer be hired to join the Information System staff, but one who will be dedicated exclusively to the justice system and to the maintenance of justice data systems. Doing so may reduce the cost of the Data Integration RFP and provide the new staff person with a training period on job duties and the idiosyncrasies of the justice system in Whatcom County.

Implementation Issues: It is necessary to secure funding from the County Council for this position. Hiring competent staff willing to work for County wages is difficult given the severe competition for technical staff. Finding technical staff that is also justice system competent further exacerbates the hiring situation.

Timetable: This person should be hired immediately in order to work with the consultant vendor who will be developing the data integration system. It would be advantageous to have this staff person hired by August 2000.

Staffing: Single justice dedicated systems analyst/technician FTE whose job description conforms to County Human Resources requirements.

Costs – Budget: The costs for this person, including salary and benefits will amount to \$60,000.

Applicable Standards: Only Whatcom County hiring policies and procedures are applicable.

Management Plan: Funds are already available to fund the position if monies allocated to revising the Data Integration RFP are used for first-year staff funding.

Evaluation Protocol: The IS Department should conduct an annual survey of user attitudes in Whatcom County and use these data to focus on user support.



Recommendation 3.5 Include Decision Support in Data Integration Project

Functional Area: System-wide

Commentary: Summary statistics on justice system workloads are difficult to obtain in Whatcom County without instituting a rigorous ad hoc research design. The data on trends in workloads, defendant flow, and system effectiveness are critical elements that allow system practitioners to plan proactively for increased or changing workloads, budget in advance for anticipated changes, and for the evaluation of the consequences of changing policies and procedures. Whatcom County has spent considerable resources in support of this planning effort. Having a routine method of collecting, aggregating, and distributing the same data as part of the data integration project will provide Whatcom County with better organization and accountability for its justice system. Adding the dimension of decision support to the data integration project should extend the usefulness of the project to other non-judicial agencies including the public. If the system developed is extended to external justice system users and thus becomes truly representative of justice system activities on a day-to-day basis, there should be no reason why summary statistics on system activities cannot become readily available to County officials and the public. The more information is shared, the greater the potential for increased trust in the justice system and the services provided.

Implementation Issues: The MIS Committee needs to place a Decision Support System (DSS) on its agenda and be led by a consultant through the process of identifying recurring business decisions that can be answered by DSS.

A review of data elements contained in existing system files suggests that at least 95 percent of those needed are already available. Missing items, as examples, include District Court Probation data and screening and assessment tools as well as some select items on in-custody behaviors at the jail.

Timetable: The next meeting of the MIS Committee should include the identification of business problems. Each subsequent meeting should push the process forward. It is important that the collaborative work developing the DSS should occur at the same time as the Data Integration project because the two support each other. It could be possible to have this project completed by February 2001.

Staffing: The Planner/Coordinator will provide the staffing for the DSS. The new justice IS staff should provide the technical interface between DSS and data integration.

Costs - Budget: No funds need be appropriated unless outside consultation is required to assist IS in DSS development.

Applicable Standards: None. However, the product must be designed to satisfy a wide range of users from all branches of local government and the public.

Management Plan: Implementation should begin immediately and completion will require three months. Desired DSS data must be compatible with data integration RFP. Inclusion of DSS must be specified in the data integration RFP.

Evaluation Protocol: The DSS will become the basis of the on-going, routinized evaluation of system change in the justice system of Whatcom County. All users can easily evaluate web-based distribution of graphically oriented summary data on system activities by affixing an evaluation form onto distributed reports.



Recommendation 4. Remodel The Existing County Jail

Functional Area: Adult Jail Facilities

Commentary: Current overuse levels of the main jail in Bellingham are shortening the life span of this very expensive, well-designed, maximum-security facility. Facility security levels exceed those required by offenders housed there. Crowding in the main jail has contributed to inmate discontent and idleness. Recreational and program space unavoidably is being used to house offenders rather than effect positive change through behavior modification programs.

Moreover, it is critical that the present facility be maintained at a level that assures health and safety of staff as well as inmates. Therefore, it will be important for jail staff to develop a comprehensive, five-year plan for the maintenance and repair of the jail.

It is recommended that the use of the main jail be returned to its original design capacity. It is important to wait on the decision as to the maximum capacity of this jail until proposed state jail physical plant standards are promulgated.

Implementation Issues: The consultants believe that it is possible to accommodate all of the maximum security offender population in Whatcom County in the existing jail if (a) a supervised pretrial release program is implemented, (b) the existing facility is remodeled to include a central intake unit, (c) an inter- and intra- facility objective classification system is implemented, (d) additional medium/minimum security beds are made available elsewhere, (e) the integrated information system project is implemented, (f) community-based options are expanded, and, (g) all informal historical population controls in use in the jail currently are revised and, where appropriate, institutionalized.

The remodeling must be sensitive to proposed state physical plan standards that in essence are identical to the original State Jail Commission jail standards under which the jail was originally designed. The remodeling would also need to be sensitive to local fire code and safety rules and to some of the renovations already conducted. The major renovations that will need to be made include the creation of a more expansive Central Intake Unit and the re-opening of program space. The removal of additional bunks placed in the cell areas is not advised though the temptation to use these beds may be great.

To complete the maintenance and repair schedule, jail staff will need to identify and examine all equipment and construction to determine what will likely need to be changed, replaced, and/or repaired.

Timetable: The remodeling must wait for the final adoption of state physical plant standards. It should also be part of a full facility-wide maintenance plan for the jail. It will also be critically dependent upon the approval of funding for a new minimum-security facility and the re-organization of District Court Adult Probation Services. This project will take 12 months to complete. The due date is therefore September 2001.

The five-year repair and maintenance schedule should be initiated immediately and updated on an annual basis.

Staffing: Initially it should not be assumed that additional staff will be needed if the existing jail is returned to its original design capacity. It may be that fewer staff will be needed to supervise fewer inmates, though existing staffing levels appear inadequate. It may, however, transpire that additional staff are required if staffing is modified to reflect the original design of direct supervision. A staffing analysis using the National Institute of Corrections staffing analysis workbook should be conducted to determine the most appropriate levels of jail staff now and projected through jail re-design.

If fewer staff are needed due to the phasing in of new facilities and the expansion of community-based sentencing options, it may be possible to re-assign staff to other related correctional supervision functions.

Costs – Budget: A full review of the existing jail's intake area still needs to be accomplished however it is estimated that the intake/transfer/release section of the jail that could be used for central intake needs to be 800 or more square feet. A thorough remodeling of this area at \$150 per square foot could cost up to \$125,000. The costs for maintenance and repair cannot be determined until a full schedule is developed.

Applicable Standards: State physical plant standards, American Correctional Association Standards, and local fire and safety code requirements.

Management Plan: Funds might be found for the remodel from Federal sources that are passed through by the State. Local tax revenues could be used for remodeling. Local funds could be sought in the 2001 Sheriff's Office budget.

Evaluation Protocol: None



Recommendation 5. Expand Secure Adult Jail Facilities

If Whatcom County remodels the existing jail to house no more than 150 maximum-security offenders, if alternative sanctions are in place, and if work release is expanded to include 120 offenders an additional 290 medium and minimum security beds will be needed (good until the year 2015) to house these lower levels of offenders (especially the chronic misdemeanant). The site selected should be sufficient to accommodate future expansion for at least another 165 beds that could extend capacity requirements to the year 2025.

Functional Area: Adult Jail Facilities

Commentary: Much of the discussion of remodeling the existing county jail in Bellingham is applicable to this discussion. The catalyst for new construction is the chronic crowding of the existing jail, anticipated future demands for secure space in Whatcom County, and the crippling effects of constrained incarceration on local law enforcement practices, judicial prerogatives, and the ability to change offender behaviors.

Implementation Issues: The major implementation issues are those associated with obtaining funding for construction and operations, the relationship between new facilities and the existing jail, improving or at least maintaining current relationships between the judiciary and jail administration, and various others.

Logistically, it needs to be determined where the new jail will be sited. Additionally some of the following questions need to be considered to ensure that there is consensus among key decision-makers:

Who comprises the new facility's target population? Should contract beds for other agencies and jurisdictions be allowed or even sought out? What levels of security are proposed? Should only minimum and medium security be considered? What inmate programs should be offered? What kinds of community-based support services should be provided at the new jail site? Should the jail campus also include housing for the homeless? These and other questions should be resolved before an architectural and engineering firm is hired to move the project forward from the conceptual to the actual.

Timetable: The search for funding should commence immediately. All sources should be considered. Steps should be taken to secure funding and educate the public regarding the need for this additional facility. The final steps of local planning can be completed within the next six months, while reliable funding sources are located. Local staff should continue to take advantage of the NIC-sponsored Planning of New Institutions (PONI) program, including travel to sites where there have been similar construction projects. It may take two to three years to complete this project, so the operational date probably will be December 2003.

Staffing: Additional jail staff to operate the minimum-security facility will be required. A rough estimate of staffing costs is provided in the section that follows. It is impossible to estimate actual staffing increases until the jail's programming is developed. It is suggested that custodial staff be Sheriff's Office employees while treatment staff be private contractors.

Costs – Budget: Although minimum-security beds are less expensive to build, they have a tendency to be more expensive to operate. A minimum-security facility cannot rely upon security hardware to control inmate behavior; instead staff is used. No good data exist for estimating inmate to staff ratios. Every facility must engage in a specific staffing analysis based upon design, facility purpose, and inmate movement, all of which will be very intense in the proposed minimum-security jail. An estimate of annual operating costs for a new facility of this size could be up to \$8 million for facility administration and security staff.

This estimate will produce an estimated daily cost in the new jail facility of \$76. (Per Diem costs in the existing jail at 200 inmates are \$55.) It is possible for funds to be recaptured from some offenders as well as use grants to offset program costs.

Treatment costs can be estimated by examining data from evaluations of substance abuse treatment programs. The typical cost of case managed substance abuse treatment that includes holistic ancillary services in support of reducing the need for illicit drugs is estimated at \$2,350 per offender per year. This would amount to an annual budget of \$470,000 to provide substance abuse, mental health, remedial education and other essential services for what will most likely impact the chronic misdemeanor offender population. A sizeable proportion of these costs can be covered by the State Alcohol and Drug Abuse funding agency (ADATSA). Determining eligibility for state and federal funding could be another task of CIU staff.

Applicable Standards: The facility should not be strictly designed to proposed State standards because it is not a main correctional facility, but rather a minimum-security, multi-purpose detention facility where dormitory space will predominate. Great care in the design of this facility must be made to conform to the greatest extent possible to final state physical plant standards. The movement to state standards may be a precursor for state funding of new or remodeled jail facilities. Moreover, ACA does have standards for community-based residential facilities that may have applicability for this project.

Management Plan: The number of people who enter the proposed new facility annually may total 4,000, all of whom will be processed at the main jail in Bellingham by the Central Intake according to rules developed jointly with the local judiciary. Inmates primarily will be sentenced offenders (75 to 80 percent) and their length of stay will probably average 30 days. Some offenders will be medium to minimum security, pretrial offenders for whom release from the main jail will be indicated. These offenders will be afforded the same early release and re-classification decisions as those in the main jail.

Failure to attend to minimum -security requirements should result in the return of the inmate to the main jail (depending, of course, on a decision to operate supervision programs on or not on a "zero tolerance" basis).

The majority of the bed space should be dormitory style (up to 75 percent) with an emphasis on having inmates out of the living areas during the day to attend treatment. Hence the need to oversize multi-purpose space to accommodate programs such as:

- 1) Recreation
- 2) Education
- 3) Health Care
- 4) Substance Abuse Treatment
- 5) Mental Health Treatment
- 6) Drug Testing
- 7) Inmate work programs

Additionally, the facility must make itself available for use as a Day Reporting/Treatment Center and to accommodate expanded alternative programs. Further, it is recommended that many community corrections functions should be housed at this facility, including probation and other treatment/supervisory agencies. This will create a full service program that requires an open campus where practitioners can access and depart the site readily.

The facility does not require concrete block with rebar walls and ceilings. The doors do not need to be metal plate or grill and hardware can be less than ultra-heavy duty. The construction cost savings for these reasons can be significant.

Data from national sources has shown that a very modern facility can be built for \$150 per square foot (or approximately \$25,000 per bed). By attempting to accommodate 290 offenders in this site, the following square footage will be needed:

Table 1

Function	Square Footage Required
Intake/Transfer/Release	4,640
Detention/Residential	25,552
Administration	770
Visiting	1,740
Health Care	1,520
Food Service	3,000
General Support	1,270
Total	36,452

These figures do not include rental space for ancillary services nor the 1,500 to 2,000 square feet needed for day reporting as well as space required for probation and pretrial services. The costs assume no perimeter fence especially if the campus site is shared with a juvenile multi-purpose facility where the philosophy should reflect a "family friendly" environment. As it is, sufficient space to accommodate 290 inmates could cost \$7.25 million depending upon the specific nature of the equipment and furnishings involved and actual construction materials. This estimated square footage does assume that at least 75 percent of the bed space will be dormitory style, with 60 square feet in the living area and 35 square feet of day room space per inmate. Both of these figures could be reduced based upon the mobility of the inmate (hours confined to living space).

Additionally, the kitchen has been oversized to accommodate the potential of sharing the function with a new juvenile multi-purpose facility co-located on the same campus. Work release is also not included initially since a private vendor currently provides these services. (Decisions related to the future site of an expanded work release program will have to be made.)

Video Conferencing: Transporting inmates back to the main jail could amount to a major expense if inmates were forced to return to court for miscellaneous hearings on their cases. Instead it is recommended that video conferencing be utilized whenever appropriate.

Evaluation Protocol: The provision of new jail facilities should have a positive impact on the use of the existing jail by reducing crowding. The nature of the population housed in the existing jail should change significantly. The utilization of the new jail should not exceed the design capacity. Attitudes of the judiciary should improve markedly as should those of local law enforcement. These changes should occur after new facility implementation.



Recommendation 6. Create a Central Intake Unit in the Existing County Jail

Functional Area: Adult Jail Facilities

Commentary: A central intake unit (CIU) is both a place and a concept. It is that location (in some cases virtual and for others literal) through which all offenders pass on their way to the least restrictive custody available given the offenders assessed level of risk and need; that is, need for supervision and treatment. The CIU is responsible for the collection of objective information about the offender that will assist in decision-making, such as: release pretrial or detain, assign a defense attorney, determine housing, assign offenders to community-based programs, and help match offender presenting problems with the most appropriate system response. As such, it should be data-driven and serve as another mechanism to control and manage offender populations. A CIU is dependent upon sound information resource management as it cannot be successful if it is based upon impressionistic or subjective information.

Implementation Issues: A Central Intake Unit should be created within the main correctional facility and staffed on a 24-hour per day basis. The CIU resembles the booking function but goes significantly further in that additional offender information is collected and disseminated at the time of offender admission. The CIU will be responsible for the following functions based upon the development of policies and procedures to guide activities:

- 1) Booking
- 2) Classification within the jail and between jail facilities and re-classification
- 3) Release including the screen for supervised pretrial release
- 4) Substance abuse and mental health screening (not necessarily assessment)
- 5) Case management to expedite defendants detained for unusual amounts of time
- 6) Facility program assignment

- 7) Screening for indigence
- 8) Medical screening
- 9) Screening for alternative program eligibility
- 10) Drug and alcohol testing

In Whatcom County, the CIU may be best visualized in the main correctional facility. This facility should remain the primary entry point for all offenders. The CIU staff must establish, under the direction of the local judiciary, prosecutor, and public defender, a graded continuum of sanctions that best matches the severity of the crime, as mitigated or aggravated by the presenting problems of the offender. These rules must allow offenders to move up and down the restrictiveness scale based upon the offender's behavior while under supervision and based, in part, upon the election of a "zero tolerance" policy for misbehavior.

Timetable: A CIU could be implemented immediately as a process even though the potential remodeling of the jail will occur in the future. Training would need to be provided to existing jail staff; however, it is suggested that civilian support staff be utilized for this function to the extent feasible and desirable. Work on arranging for the CIU could begin immediately, with a final jail remodeling date of February 2002.

Staffing: No staffing changes are expected due to this recommendation, unless a decision is made to employ civilian support staff to handle the CIU activities. Specialized staff training will be required

Costs – Budget: Other than the remodeling costs discussed above and the potential employment of civilians, no additional costs are anticipated. (If copyrighted instruments are used for classification and assessment, there may be fees.)

Applicable Standards: No custodial care standards are impacted. The physical layout of central intake would be governed by soon-to-be adopted state jail physical plant standards. Facility placement principles should be governed by ACA custodial care standards. The Planner/Coordinator and the Sheriff could look to national best practices for guidance on program and policy development governing CIU activities.

Management Plan: The management plan is dependent upon remodeling. (See above.) While the remodeling is occurring, staff could be trained, policies and procedures developed and assessment and screening tools selected. The IS staff could also begin the process of automating additional data elements associated with CIU activities including screenings and assessments.

Evaluation Protocol: None



Recommendation 7. Develop a Supervised Pretrial Release Program

Functional Area: Community Corrections

Commentary: It should be remembered that 90 percent of all pretrial bookings into the Whatcom County jail are released prior to disposition. Most offenders are released on bail within 24 hours after booking. Another sizeable proportion of the un-sentenced inmate population is released by a judge on non-financial release within another 24 hours of booking. However, a fair sized population of offenders is eventually released pre-disposition but well after filing and arraignment. This high overall release rate is only inappropriate insofar as it produces a high Failure to Appear (FTA) rate that then exacerbates jail crowding once the FTA offender is re-arrested. The consultants believe that the FTA rate can be impacted by objective release criteria, reminder calls for releases through the bail schedule or low risk personal recognizance, and more active supervision of medium- and high-risk pretrial releases. Lowering the overall release rate could severely crowd the jail and must be avoided.

The data suggest that many offenders who annually pass through the jail could take advantage of the program, with the majority receiving no more supervision other than a reminder call for court obligations. These are offenders who are booked and released before their cases are filed and who constitute the largest pretrial population. The current bail schedules and personal recognizance release methods seem to work well with this population as only about seven percent subsequently fail to appear while their lengths of stay in the jail average a modest 1.4 days. They are primarily District Court offenders. These offenders could be considered administrative pretrial releases who require no face-to-face contacts or stringent conditions, but, instead, reminder calls for upcoming court dates.

A clerical person could be used to remind these releases of their court dates. The total size of this population is estimated to be 1,485 individuals which amounts to an average of six phone calls per day to alert offenders of pending court dates.

Two other pretrial populations, (1) primarily Superior Court offenders at the time of charging and who are frequently Failure To Appear offenders, and (2) probation violators (including those on state probation) spend longer time in custody before eventual disposition. Over 60 percent of these offenders have been in the jail before, with lengths of stay ranging between 12 and 24 days. The total estimated annual number of offenders in this population is 468. These offenders need some face-to-face and phone contacts during the time between filing and disposition, with typical averages of 200 days, and which creates an annual caseload of 250 offenders. These are the offenders who may have failed on release before or with less than stellar ties to the community. However, they are considered minimum risk offenders since they constitute minimal risk to community safety.

Finally, it would be advantageous (as an aid to reducing jail crowding) to extend the pretrial supervision program to some offenders who have not historically been released pretrial. This population is comprised of District Court offenders who spend two-thirds of their jail time as a pretrial prisoner and the rest as a sentenced offender (overall average length of stay of 69 days). The inmate sample data suggest that this population could amount to 80 offenders per year and they should be considered intensive supervision clients.

Implementation Issues: The development of this component of the adult justice system must be carefully constructed so that it does not contribute to jail crowding rather than alleviate it. The proposed timing of the expansion of pretrial release based upon objective criteria should be accomplished as soon as possible. It should be remembered that any program developed will need to be durable enough to continue in existence even after new facilities are added to the County's continuum of sanctions.

Meanwhile, this expanded program can be used to help control the existing jail population.

Another item of importance is the need to develop objective release criteria that does not alter the percentage of pretrial offenders who are released, but rather speeds-up the decision to release for some and provides supervision to others.

Since the Adult Probation Services staff already provides some pretrial supervision services for higher risk clients, it is advisable to expand this important function within that office (see below).

Timetable: The oversight committee should be immediately convened and the release criteria developed based upon a review of existing criteria and in consultation with the judges. Committee members should collect evaluation research on existing pretrial programs at this time for review. Committee members should visit other programs located elsewhere in the state. This function could be developed and implemented by November 2000.

Staffing: Caseloads of the size described above will require an additional staff of two supervision officers, one of who will serve as the division supervisor and will report to the Adult Probation Services Department's Director. It is likely that an additional clerical person will be needed to handle the increased administrative duties.

Costs – Budget: A project of this size could cost \$215,000, or about \$700 per offender actively supervised. However, it can be expected that a net cost savings to the County will accrue through the reduction of failures to appear, fewer subsequent arrests and jail bookings, fewer court proceedings and assignments to the public defender, shortened lengths of jail stay, and reduced recidivism.

Applicable Standards: The program should be built based upon National Association of Pretrial Services Agencies standards, "Performance Standards and Goals for Pretrial Release and Diversion."

Management Plan: Objective release criteria need to be developed and there are some excellent models that might be used. Most of these simple point system scoring models examine offender's criminal history, instant offense, and ties to the community. Whatcom County should develop its own release criteria, test the effectiveness (no crowding, low failure to appear), and institutionalize the process for now and after new facilities are provided.

A committee of judicial members, the prosecutor, public defender, Adult Probation Services and pretrial staff, and citizens need to develop collaboratively release criteria and the specifics of supervision based upon standards and models of programs used elsewhere including those in Washington State. Site visits to these programs are advised. The temptation will be to over-classify releases and to over-supervise offenders, which should be avoided.

Finally, the data files created on released offenders, including the variables in the release form, should become a part of the offender's file, and be automated and distributed to appropriate justice system users as a component of the data integration project.

Evaluation Protocol: It is critical that the impact of this program be evaluated on an on-going basis for it is possible for this program to do harm to the effort to control jail crowding. It is suggested that funds be made available to conduct an independent third party evaluation of the implementation of this project and to ensure that desired impacts are occurring. The evaluation must track the fidelity of release criteria implementation and client/participant outcomes in terms of FTA and new offenses. The data will need to be fed-back continuously to committee members for evaluation and program self-adjustment.



Recommendation 8. Expand the Continuum of Intermediate Sanctions/Incarceration Alternatives

Functional Area: Community Corrections

Commentary: To combat crowding in the jail the Sheriff's Office and Adult Probation Services have shown some imagination in developing curbs on jail use. The local judiciary has shown an immense amount of patience in allowing jail staff to implement some of these policy and procedure changes. The Municipalities have also shown significant patience in curbing their use of the jail. Even with a "go-ahead" for a new facility, population controls need to be in place to manage the existing jail population and to establish a formal basis for avoiding new facility crowding.

It is to be noted that the existing jail is over-utilized and until given institutionalized relief either through innovative programming (like the Alternative Corrections Center) and/or new facilities, the existing jail will continue to be crowded. On top of this is the fact that the existing jail is going to be destroyed through overuse. The facility is designed for 150 or less offenders, most of whom are not supposed to be classified as maximum security. The continued reliance on the existing jail for housing everyone taken into custody undoubtedly will shorten this facility's life.

Electronic Home detention should have twice the number of users and it should be used as the most stringent of alternative programs. At least 50 bracelets could be used on a daily basis for offenders who are currently housed in the County Jail. Electronic home detention should be available to the most serious of pretrial releases and probationers. Based on a classification schema, however, these offenders, as others, must be carefully supervised to ensure compliance with curfew requirements and avoidance of tampering with equipment.

The work crews operated by the Sheriff's Office should be doubled in size also. This program should target offenders of a low to medium security risk, who are not employed but who need to pay back fines, fees, forfeitures, restitution, court costs, and other costs. Failure on the work crew by an offender should result in a step-down (or up in security) to electronic home detention, unless there is serious violation of behavior, which should result in the offender being returned to the jail.

It is also advisable to **expand the availability of substance abuse and mental health treatment** in the main jail. The program can identify potential clients through the substance use screening by the CIU. A more thorough ADATSA assessment can provide the offender with the opportunity to volunteer for the project. A pod in the jail could be used to house these offenders in a modified form of therapeutic community. Successful participation in the program can be used to reduce jail time and lead to the transition of the offender into probation supervision and alternative programs. Aftercare by the treatment agency should be provided to all graduating offenders with a short stint under minimal probation supervision to prevent any crises from occurring. Failure at any stage in the program should send the offender back to an earlier stage if warranted.

There needs to be a **closer coupling of probation supervision through the District Court Adult Probation Services office, the State Department of Community Corrections, and release from jail custody**, for both un-sentenced and sentenced offenders. It could be possible to have the probation/pretrial staff provide a continuum of community-based care for a sizeable proportion of offenders if staff adopts case management principles. Probation supervision to release offenders could act as reinforcement for some offenders. Hence, probation supervision should be available at any time as an appropriate alternative to incarceration.

If probation staff meet periodically with CIU staff to discuss case progress, it might be possible to apply proactively the benefits of supervision at any time that a case appears to need it and drop probation supervision (by judicial decision-making) when the benefits are no longer applicable.

This would take unique collaboration between probation and CIU staff. Such collaboration would be dependent upon the availability of timely and accurate information on offender behavior and progress.

Implementation Issues: The greatest issue confronting implementation is that of directing expanded options toward those who are jail-bound offenders. These programs should not be used to provide supervision for offenders who are not jail-bound or they will not have the desired impact on main jail use. However, there is applicability for some offenders sentenced to probation and who require specialized services.

Obviously, some significant collaboration needs to occur between the Sheriff's Office, the District and Superior Courts, the Prosecuting Attorney, Public Defender, and the Adult Probation Services Department to make these controls work.

Additionally, as inmate flow is based upon timely and accurate information, it is essential that the proposed data integration project be implemented immediately. It is still possible that these controls can be implemented at the present date without data integration. Therefore, the committee must work closely with IS to ensure that existing information systems are in place in the jail and that jail staff have the training needed to use information effectively.

Timetable: It should be possible to implement all of these recommendations simultaneously though it is suggested that community-based options be funded prior to the adoption of permanent main jail population controls. The expansion of these options should occur gradually with full-recommended capacity being reached in 24 months. This will allow a review of successful discharge rates and to determine if enough offenders are available to fill program slots. It is most advantageous to have these options at maximum capacity at the time the new jail facility is opened and other suggested recommendations such as supervised pretrial release are fully operational.

Staffing: The budgets suggested indicate the number of new supervisory staff required. Doubling participants should require twice as many supervisory staff. Staff expansion should be phased in the same fashion as overall caseload increases occur.

Costs – Budget: Replacing the existing maximum-security jail is a very expensive proposition since this kind of facility is designed to provide close supervision for serious offenders. Estimates of replacement costs can reach \$125,000 per bed. Washington State physical plant standards are being developed that will force a reduction in the use of the current jail. Though only recently released in draft form, these standards closely resemble those under which the jail was originally built. Adopting these draft standards will reduce the current jail's capacity almost to its original design capacity.

Expanded electronic home detention should cost about \$280,000 much of which can be recaptured from offender fees. Additionally, the use of this option could save as many as 17,000 detention days that cost \$935,000 at \$55 per inmate day in the main jail.

Having an annual total of 18,000 work crew days would increase program costs to about \$550,000 per year. However, if the work crews enroll only those offenders who are jail-bound, the savings would amount to \$450,000 per year. Here, too, client fees can significantly offset program costs.

Estimates of overall annual client in-custody treatment costs are about \$2,350 per offender. However it is assumed that without such intervention the probability is 50-50 that an offender will come back into the justice system and that if convicted the recidivist will receive a 60-day sentence, then the cost savings per inmate is about \$1,000 (because of the intervention). This estimate ignores the cost to the victim, the cost of prosecution, defense and court costs, and costs to victims, which can add another \$1,000 to the justice processing costs alone. Additionally, substance abuse treatment, properly applied, can reduce the probability of recidivism to 30 percent or less. Misdemeanant probation is also uniquely inexpensive at about \$700 per offender per year or \$2 per day.

User fees are an essential component of this proposal. The cash outlay needed by the County will include additional work crew staffing and van and equipment purchases.

Applicable Standards: There are none but there is a considerable body of evaluation literature that should be collected by the Planner/Coordinator and provided to the staff operating these programs and the LJC for its consideration when designing expansion.

Management Plan: Funding should be sought in the 2001 budget for expanded options. Actual day-to-day management should follow protocols already established by Alternative Corrections Center staff. Many of the policies and procedures used to operate these programs are already in place but should be formalized in a manual and widely circulated.

Evaluation Protocol: The evaluation of the implementation of these proposals is going to be critical. Excellent records must be kept on participation in expanded options and on the impact on the jail and recidivism.



Recommendation 9. Expand and Reorganize District Court Probation Services

Functional Area: Community Corrections

Commentary: District Court Probation will require significantly more resources due to projected increases in caseloads, the development of specialized caseloads (e.g., intensive), and an enhanced supervised pretrial release component. (It is to be noted that existing caseloads are already excessive.)

Implementation Issues: It is recommended that the existing District Court Probation Department be re-organized and re-named Adult Probation and Pretrial Services with two primary divisions: (1) probation and (2) supervised pretrial release. The expanded Department should have a Director and working probation and pretrial supervisors (one each), who would also have administrative as well as caseload duties.

All community-based programs and services for offenders are to be included within the proposed department, with the exception of some inmate-based programs, such as work crews, electronic home detention, and others currently located at the Alternative Corrections Center.

Critical assessments of need and risk are presently being completed to develop appropriate treatment and supervision plans. If properly interpreted, the Level of Service Inventory (LSI) can be a valuable tool in creating individualized treatment and supervision plans for offenders. Careful adherence to the results of the LSI will ensure that offenders are neither over- nor under-classified. This could also have a positive impact on caseloads.

For those with the highest risk, intensive supervision should be provided. This means that these offenders should have face-to-face contacts with their probation officers no less than three or four times per week, especially for offenders with substantial substance abuse and/or violence histories. Lower risk levels will require correspondingly less supervision.

Supervision levels can be impacted by probation moving closer towards a case management philosophy of brokered services with a few tested treatment agencies. The treatment agency, and not probation, would provide the on-going supervision of the client; however, the probation officer will retain primary responsibility for monitoring offenders and arranging for technical violations when indicated.

Referrals to community-based services must not only be made routinely, but progress and attendance reports must be obtained regularly and in a standardized format.

Although a considerable amount of offender assessments will be completed at the time of booking, it will be the responsibility of probation to continue these investigations for both offenders sentenced to probation as well as those assigned pretrial release. Consequently, it will be important for the staffs of the two divisions to develop more comprehensive assessments especially to determine the level of supervision required to ensure community safety and offender responsiveness to treatment plans.

In anticipation of increased investigations of offenders, it is recommended that a new model for pre-sentence investigations be utilized - one which simplifies both the presentation and explanation of background materials on offenders.

At least one probation officer should be assigned the responsibility of ensuring that these assessments (including the initial screening and complete investigations) are completed in a timely manner (especially for those in-custody) and to relate on an ongoing basis with the jail staff completing the initial assessments.

Another probation officer, with appropriate staff support, should be assigned exclusively to work with those offenders classified as minimum risk and who can be supervised in an administrative caseload. It might be possible to use a clerk to perform this function. These offenders, on probation or pretrial release, may have fines/restitution to pay, may be of little or no risk to the community, and do not require higher levels of supervision.

Essentially a computerized caseload, this officer would monitor terms and conditions and otherwise help the offender achieve successful termination (either by discharge or as a result of trial decisions).

This officer could also supervise those offenders whose prosecution is being deferred by the prosecutor, who can be supervised according to the same risk classification schema as others under supervision in the community.

To assist the department, especially in terms of administrative caseload supervision, volunteers should be recruited to assist in such efforts. These volunteers can assist in reviewing terms and conditions compliance, notify probation officers of non-compliance, assist in ensuring that pretrial offenders report to court for hearings, help to obtain appropriate offender attendance records, and otherwise assist in administrative duties. These volunteers would be administrative rather than case aides.

It is recommended that the Director's position include the responsibilities covering administrative duties related to both divisions as well as directing services to clients.

As a consequence of current excessive caseloads and the increasing need to provide more intensive supervision of offenders placed on probation, it is recommended that two additional probation officers be hired within the current year, with an additional officer hired in the second year. For both the probation and pretrial divisions, the Director should develop a staff to client ratio and submit requests for additional staff as increased caseloads warrant such.

Since Native Americans from the Lummi and Nooksack Tribes constitute significant numbers of current and projected offenders who will be under some kind of supervision, it is recommended that negotiations ensue to develop "courtesy supervision," whereby tribal probation officers would supervise these offenders in the community, but where these offenders legally would be under the supervision of the staff at the department.

Timetable: As a consequence of the implementation of selected additional alternatives to incarceration, the caseloads for Adult Probation Services are likely to increase significantly. Therefore, as soon as approval is obtained for the re-organized department, budget requests for the additional person-power should be prepared so that staff can develop a full program and with appropriate caseloads. Thereafter, additional staff will be needed in subsequent years pending referrals. The development of a revised policy and procedure manual covering probation and pretrial services should commence immediately.

The proposed new staff should be recruited as soon as approval of the positions is obtained and funds appropriated. Completion date should be February 2001. However, the re-organization of the department due date is December 2000.

Staffing: One Administrative Director and two Division Supervisors (one position already in existence) along with new probation officers are indicated for 2001 with another officer added in 2002. (Pretrial staff requirements are covered in that section.) The District Court could also use additional staff clerical support to handle increased caseloads.

Costs - Budget: The Director's position should approximate \$75,000 and the two additional officers (supervisors) may cost as much as \$84,000 for the first year. The second year cost would be \$92,000. No support costs are included in this estimate for this initial year of expanded programming (however, one half-time support staff may be required).

Applicable Standards: In order to ensure high levels of practice, it is strongly recommended that the standards promulgated by the American Correctional Association, "Standards for Adult Probation and Parole Field Services" be reviewed so that applicable standards, especially of a priority nature can be implemented. Thus, caseloads, on average, should not exceed 50 to 75 cases for routine probation, 100 to 200 for administrative-type cases, and no more than 25 clients for intensive supervision.

Management Plan: It may be advisable for the LJC to create a committee to participate in the re-organization of the department in order to ensure that organizational goals and standards are implemented, to oversee the development of an up-dated policy and procedure manual, and to ensure that probation objectives are attained and measured. In view of changes in operations and as a consequence of the re-organization of the probation department, it will be important to create an internal committee to review all policies, procedures, and forms to determine what changes are needed to reflect current and proposed activities and programs. This committee should cover both probation and pretrial services and deal with all issues that are operationally applicable.

Probation staff should also review the proposed structure of the department in order to determine roles, responsibilities, communication protocols, and intra-departmental relationships. In view of a recent Washington State Supreme Court decision (*Hertog v. City of Seattle* #66136-7, filed on June 24, 1999), the liability of cities and counties regarding the supervision of criminal offenders on probation or on pretrial release, it is critical that clear, explicit classification and supervision guidelines need to be adopted by the courts that take into consideration the differences between offenders being supervised versus those only being monitored.

While all offenders will receive some level of supervision or monitoring, the levels for such must be based on classification/risk assessments and clearly related to caseload sizes. That is, if the caseloads are unmanageable as a consequence of excessive size, it will be impossible for appropriate supervision. To do less only makes the department and the county vulnerable to litigation.

Evaluation Protocol: As soon as the MIS is online, the department should regularly collect data in order to determine (1) goal accomplishment and (2) success and failure rates of all offenders under supervision and according to category of service.

This will require the identification of variables thought to have significance so that data entry for them can be made on a routine basis. If there is availability of SSPS program, it will be possible to determine outcomes according to statistical significance.



Recommendation 10. Reorganize and Redefine the Juvenile Services Department

Functional Area: Juvenile Justice

Commentary: The Mission Statement of the County Juvenile Services Department (JSD) reads as follows:

To protect the community, provide opportunities for the offenders to make amends to the victim, and hold offenders accountable by connecting them to the community through competency based programming.

The JSD is committed to developing a comprehensive cost effective service delivery system for Whatcom County citizens. The recommendations that follow describe a continuum of care model that encompasses delinquency prevention, accountability, competency building and public safety. It is felt the following strategies will enhance the department's ability to achieve stated goals:

- Enlist the family as the most powerful change agent.
- Enhance the role of core institutions (e.g. schools, business and the faith community) in the Juvenile Justice System.
- Recognize that delinquency prevention is the most cost-effective approach in reducing crimes committed by youth.
- Intervene immediately and effectively when an offense occurs.
- Establish a system of graduated sanctions that responds to the needs of each offender while ensuring the community is safe.
- Provide comprehensive services to victims of crime when requested.
- Develop competencies and skills in offenders whenever possible to lessen the chance of their return to the Criminal Justice System.

The Department provides four distinct services to the citizens of Whatcom County. These are:

- 1) Juvenile Detention, located on the sixth floor of the Courthouse, provides:
 - 24-hour custody for juvenile offenders who are arrested by law enforcement and detained pending a Court hearing.
 - Offenders who are serving a sentence imposed by a Juvenile Court Commissioner.
 - Youth held in the facility per contract with another jurisdiction.

Juvenile Detention employs 17 full-time equivalent (FTE) and 10-15 part-time employees.

- 2) Court Services (Intake) is responsible for all of the hearings that take place between arrest (detention hearing) and sentencing. Court Services staff are currently monitoring a low risk caseload of 69 Offenders. Also, at the writing of this report, there were 86 Offenders pending Court, 24 being arraigned and 6 deferred disposition cases pending Court. (There are 1.5 FTE assigned to Court Services).
- 3) Community Supervision begins when the youth is sentenced. Probation Officers develop a probation contract with each youth assigned. This contract outlines the conditions of community supervision and the schedule for meeting specific obligations set out in the Court order. Community Supervision is meant to provide accountability and public safety for moderate and high-risk offenders through the development and implementation of a case plan which engages the family and the community in addressing the youth's needs and risks. There are 6 probation officers supervising 232 offenders as of the writing of this report.

- 4) Community Programs provide specific services to particular offenders and at-risk youth or particular services to offenders, victims and the community. Community-based service providers under contract with the Department deliver most of these services. These programs and services include but are not limited to: Community Justice – High Risk Program (1.75 FTE); Diversion (contracted out to community agency); Special Sex Offender Dispositional Alternative (SSODA) (.5 FTE); Diagnostic Services (1.25 FTE); Community Justice Accountability Act (CJAA) (contracted out); Chemical Dependency Dispositional Alternative (CDDA) (contracted out); Outside Work Crew (1 FTE); Victim Restoration Project (2 FTE); Community Justice Building Project (contracted out); BECCA Bill Services (1.5 FTE). All of these services and programs are funded by outside sources with the exception of the Outside Work Crew as are 7 of the 8 FTE positions.

Support Services for the JSD consist of a Clerk/Receptionist, two (2) Legal Secretaries, and a Coordinator/Legal Secretary.

In 1999 there were 2,629 offenses referred to the Prosecuting Attorney's Office for consideration. There were 1,347 cases filed during the year, 4,419 proceedings held and 1,800 cases resolved. In 1984 there were 9 Probation Officers in Juvenile Court who handled Offender matters (8 County funded, 1 State funded). Sixteen years later (in 2000) there are 9 Probation Officers of which the County funds 6 and 3 are State funded. The funding for Community Programs that had steadily increased from 1984 to 1999 was reduced from \$1,053,764 in 1999, to \$888,692 in 2000. The JSD reduced its departmental FTE by 2.25 FTE between 1999 and 2000 because of this loss in funding.

Implementation Issues: It is recommended the JSD should be oriented toward the Principles of Balanced and Restorative Justice (BARJ). This platform should be used to increase parental involvement in all types of interventions.

Planned activities include the expansion of victim/offender mediation services and family education and support programs in partnership with community based organizations.

The County can be supportive of the Department's efforts by going ahead with the data integration project including juvenile justice information needs by promoting the expansion of options available to the JSD where the principles of BARJ can be tested.

The JSD has a long history of collaboration with community agencies in the delivery of quality services to youth-at-risk and juvenile offenders. The future success of the work done to prevent juvenile crime, protect the public, strengthen families, assist victims, hold youth accountable, and building supportive communities will depend on the willingness of all stakeholders to take ownership of the problems and the possible solutions.

It is recommended that the Department explore all possible alternatives to detention through the use of a Community "Attention" Center in order to allow a greater number of youth to remain in the community and provide comprehensive assessment and integrated case management. Some of these options include house arrest, day/treatment reporting, electronic monitoring, community service, restitution programs, work crews and community based treatment programs. The consultants would like to see significant expansion of the options available to the Juvenile Court for both pretrial and locally sentenced youthful offenders.

Supervised pretrial release of juvenile offenders is a worthwhile program. As is expanding the use of electronic home detention and work crews.

Another option is substance abuse and mental health treatment that includes family participation. As the probation officers become case managers they will need effective resources to refer clients to in support of case plans

A recent snapshot of youth with active community supervision orders revealed that 43 out of 232 youth were not in school and/or not working. This constitutes a technical violation for these youths but sentencing them to days in Detention would be counterproductive.

Day reporting centers have proven an effective means to serve this population. They can also provide an alternative for detention combined with electronic monitoring. The JTF recommends the establishment of a day reporting center that would provide a combination of services including: service learning work crew projects; G.E.D. preparation and remedial education; vocational preparation training; set up and monitoring of youth on electronic monitoring; and treatment/counseling services.

The JSD should develop new programs to serve specific offender populations through grant writing and/or collaboration with community agencies. Specifically, it is recommended that the JSD:

- Develop culturally relevant and supportive programs for minority youth.
- Develop gender specific and developmentally appropriate programs for offenders.
- Investigate the creation of Juvenile Drug Court.
- Develop a mentoring program for juvenile offenders.
- Create a Task Force to enhance the coordination efforts between probation, schools, law enforcement, and service providers regarding the students served.
- Increase life skills and independent living training programs for older juvenile offenders.
- Create a Tribal Court task group to assess relationships and increase cooperation between jurisdictions.
- Enhance the violence prevention aspect of all programs.

Timetable: In order to address the recommendations of the JFT the timetable has been divided the JSD needs into two time frames; *Immediate* and by *One Year*. Within each time frame, an attempt has been made to provide realistic costs to attain desired outcomes. This phasing is explained in the following sections.

Staffing: Contracts with the Juvenile Rehabilitation Administration (JRA) a division of DSHS grew steadily until 1998 and they have been declining since that time. Consequently, the JSD has had to reduce staff by 2.25 FTE between 1999 and 2000. This coupled with the move from an intervention/supervision model to a competency building/case management model makes JDS staffing needs acute.

The JDS has an immediate need for an additional Probation Officer to assist in the Court process, write reports to the Court, implement the risk assessment instrument, monitor the low risk caseload, and monitor pre-trial release conditions. The Department has a critical need for a staff person to assist in the Court process as well as to provide clerical support to the Detention Staff.

One additional Probation Officer hired in 2001 would achieve the desired probationer to officer ratio recommended by the JTF. It is felt that this staffing level will provide the opportunity for the new case management model to reduce recidivism as well as decreasing the demand for detention beds.

Costs – Budget: Salary and benefits costs for a Probation Officer I plus start-up costs will be \$44,000.00. Salary and benefits for this Detention/Court support position will cost \$34,000. An additional, \$60,000 in professional/contractual services from local funds would provide the Probation Officers the opportunity to address the needs of moderate and high-risk offenders. Looking at it in service units it averages \$300 per offender.

The cost to maintain the Victim Restoration Project from July 1, 2001 to December 31, 2001 would be \$43,500.00. Staffing costs for a Day Reporting Center would be approximately \$92,000 – (1 Work Crew Supervisor @ \$38,000.00 and 1 Case Aide Monitor @ \$36,000.00). Salary and benefits for a probation staff position to enhance case management and reduce detention use, which includes start-up costs, would be \$44,000.00. It is recommended that the costs for medical/health services be included in the JSD budget for 2001. (These services currently cost approximately \$50,000.00).

It is estimated that an outside multi-purpose center could cost in the neighborhood of \$40,000.00 to operate.

Management Plan: To implement the expansion of detention options for adjudicated youth the hiring of an additional Probation Officer is supported. Any programming developed should be oriented towards detention bound offenders to help insure that the net of supervision is not widened, except where the system can demonstrate a higher likelihood of breaking the cycle of juvenile delinquency.

The hiring of a case aide to supervise released youth is supported. The expansion of the electronic home detention program for juveniles is also supported. Additionally, expanding the work crew for sentenced offenders could also have a significant impact on the detention population.

It is the consultant's recommendation that a pool of local treatment funds be established for administration by the Juvenile Services Department to provide community-based substance and mental health treatment for high needs/risk juvenile offenders.

The Victim Restoration Project, which is funded by the Governor's Juvenile Justice Advisory Committee, will terminate on June 30, 2001 unless an additional service request is granted in the 2001 budget. This project has been evaluated by an outside specialist and has been found to be a valuable resource to the Juvenile Services Department as well as to the victims of juvenile crime.

Currently juvenile offenders whose term of community supervision has ended but who continue to owe money remain with the Probation Officer to monitor the collection of these funds. The reality is that this becomes a low priority and these offenders are not held accountable in a consistent manner. These cases will be moved to the Victim Restoration Project for monitoring and collections in the future.

Medical/Health services in Juvenile Detention are currently being supplied and funded by the County Health Department. These services include a Nurse Practitioner (ARNP) and a Certified Medical Assistant (on a part-time basis) as well as consultation time with the Health Officer if needed.

The cost of operating a Day Reporting Center will depend on the availability of space. If space can be found that belongs to the County or to the City of Bellingham the costs could be greatly reduced as compared to going to the open market.

Evaluation Protocol: The JSD should provide outcome-based evaluations to investigate the effectiveness of all interventions. This type of accountability, while difficult to implement will serve the community well. Outcomes to be addressed and measured include but are not limited to:

- 1) Decrease recidivism.
- 2) Enabling offenders to make amends to their victim and to the community.
- 3) Increase offender competencies in:
 - Knowledge of the justice system.
 - Development of expectations that rules/laws will be enforced.
 - Pro-social attitudes and behaviors toward society.
 - Social competency skills.
 - School employment bonding and productivity.
 - Protecting the public through processes in which individual victims, the community and offenders are all active participants.



Recommendation 11. Continue Planning for a Juvenile Multi-Purpose Facility

Functional Area: Juvenile Justice

Commentary: It is recommended that there be continuing evaluation of the need for an additional 30 beds for juvenile offenders and at-risk youth, including an analysis of the need for residential crisis beds. Also there is a need for the exploration of the feasibility for building and operating an alternative facility for those youth who pose no danger to community safety, but need a variety of services, which cannot otherwise be met at this time. If the County fulfills the previous recommendations and enhances the transition to case management, integrated automated risk and needs assessments, expands options such as electronic home detention, work crews, case aides, and high risk treatment resources, much of the need for additional secure juvenile detention bed space can be mitigated. All of the caveats discussed above, such as targeting specific juvenile offender populations, evaluating new initiatives and involving families in treatment must be addressed.

The County's juvenile detention facility is located on the 6th floor of the County Courthouse, with a capacity of 32 beds. There is no feasible means to increase the size of the facility. Adding beds jeopardizes detention standards as well as programming. Future capacity forecasts for detention use indicate a need for up to 80 secure beds by the year 2020. Preliminary cost estimates for construction of a 30-bed facility are \$3.4 million, depending upon program philosophy and design.

Exacerbating the detention-crowding problem is the fact that the JSD does not use electronic monitoring nor does it have a proactive, pretrial release system in place or a day reporting/treatment program.

Implementation Issues: Issues surrounding the need for additional residential beds, as discussed in the Phase I Report, are both grounded in fact and perception as pointed out in the January Bulletin from the Juvenile Accountability Incentive Block Grants Program:

On the factual side, crowding is widespread making affected residential programs difficult to manage and not as safe as those operating at recommended capacities. When staff must focus primarily on safety and security, effective intervention and treatment are compromised.

In response to these concerns, many jurisdictions are pursuing alternatives to construction. This approach, which uses a range of variably restrictive residential and nonresidential services, is commonly called the continuum of care. Similar to the graduated sanctions model set forth in Office of Juvenile Justice and Delinquency Prevention's Comprehensive Strategy for Serious, Violent, and Chronic Juvenile Offenders the continuum-of-care approach requires jurisdictions to examine closely how to direct resources toward managing public safety and meeting the needs of the greatest number of juveniles. The continuum-of-care approach commonly considers and implements a variety of services (such as home detention, electronic monitoring, after school and evening report programs, day treatment, restitution, shelter care, and staff-secure residential programs as alternatives to physically restrictive detention custody.

In evaluating the County's need for beds (secure and non-secure) for this target population, a continuum of care should be developed as it relates to the range of sanctions believed to be appropriate as well as needed service requirements since an over-reliance on juvenile institutions as a primary sanction may weaken other sanctions on the continuum itself. By providing Juvenile Court Commissioners with options, a strong continuum of care can improve the community's ability to deliver appropriate services while holding offenders accountable for their behaviors.

Timetable: An advisory group should be created including representatives from the judiciary, juvenile court, local law enforcement, public defenders and prosecutors offices, youth serving agencies, placement agencies, and community organizations. It should establish the goals for the planning process and monitor progress toward those goals. Appropriate data collection and analysis should proceed immediately to identify program needs and services and provide a plan of action. A recommendation for a new facility and programs could be completed by September 2000.

Staffing: Technical assistance should be obtained regarding the question of how to create a master plan and to assess the need for new or expanded facilities, as well as community-based options. This should be done in conjunction with the study of adult facility needs in Whatcom County in order to look at services that may appropriately be shared.

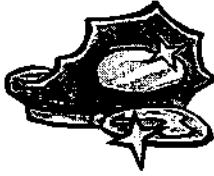
Costs – Budget: The costs for such a study may be reduced considerably by obtaining a grant for technical assistance to aid in this effort. The cost then, to the County, will amount to the cash match if one is required.

Applicable Standards: All of these issues will be identified in the course of the planning process leading toward a strategic master plan for consideration by the Law and Justice Council for recommendation to the County Council. ACA has very specific detention standards that unless usurped by state standards should be followed.

Management Plan: Much of the data needed to forecast a capacity for a new facility is already completed though it would be best to update some of the admissions and lengths of stay statistics. A better sample of the inmate population will improve the reliability of the forecasts and help the committee determine potential uses of both the existing detention facility and any new facilities. All services and programs within the jurisdiction that serve the juvenile offender population should be included in the data analysis according to the National Association of Counties (NACO) because "a jurisdiction's continuum of care may suffer when a new facility is built. In jurisdictions with limited resources a new facility can become a financial drain, leaving fewer resources for alternatives (non-institutional) and prevention programs."

Any planning regarding a new facility and/or the development of alternatives to detention should take into consideration similar adult programming in order to avoid duplicate work and to determine the appropriateness and feasibility of combined services.

Evaluation Protocol: None



Recommendation 12. Bring Current Staffing Levels to National Norms

Functional Area: Law Enforcement, Courts, Prosecution, and Public Defense

Commentary: An examination of the calls for service as related to staffing levels clearly reveals that the Sheriff's Department is grossly understaffed. This not only presents administrative problems in terms of duty rosters, it reduces community safety that results further in increased fear of crime. Citizens want to believe that their law enforcement agencies are responsive to their needs and this cannot be accomplished without appropriate staffing levels.

Based on data collection and analysis efforts of the court administrators and as a consequence of increased caseloads/calendars, and while it does not appear that a new judgeship is required immediately, the data suggest that such a new position will be needed in the near future.

The most critical issue for the Prosecutor's Office is the need to maintain adequate staffing levels to meet caseload requirements. Since it is likely that there will be an increase in the use of alternatives to incarceration and a dramatic increase in the use of supervised pretrial release, the workload may increase accordingly, especially if there is a sizeable number of offenders who violate. As occurs elsewhere throughout the justice system, inadequate staffing precludes effective justice when staff becomes overworked and unable to process cases according to appropriate standards. According to the National District Attorneys Association, prosecutors handling felony cases should not have a caseload greater than 150 cases per attorney per year. In Whatcom County, the current caseload averages 200 to 230 felonies - well beyond promulgated standards.

As system workloads increase, the same findings regarding staffing hold true for the Public Defender's Office.

Implementation Issues: In view of the fact that additional personnel are needed now and because such staff must be fully trained before they can become operational, it is recommended that ten additional deputies officers be hired immediately so that they can work the streets by the end of this calendar year.

Although the Sheriff has repeatedly asked for additional officers, it is recommended that he conduct an analysis of calls for service, link these to staffing levels and response time and on a geographical basis, if possible. The results of converting some overtime costs and possible COPS funding should be taken into consideration. Further, the Sheriff should delineate what the department has been unable to do as a consequence of staff shortages, such as distinct assignments for youth, gangs, drugs, and task group participation with other law enforcement agencies.

Both Superior and District Court administrators need to assess this new judge/courtroom situation on an ongoing basis and propose through the LJC to the County Executive a likely timetable when this will be needed.

The Prosecutor's Office also should continue to evaluate its personnel needs based on changes in crime rates, arrests, changes in legislation, and caseload demands.

Implementation issues for the Public Defender are similar to those of the Prosecutor, especially in terms of staffing and equipment needs. More particularly, the workload of the Public Defender is likely to increase dramatically as more offenders are placed on supervised pretrial release and, therefore, the workload will involve additional kinds of case preparations. Here, again, the Public Defender and Prosecutor must communicate regularly to assess workload developments, inter-departmental relationships, and communication protocols. In all cases attention must be paid to the "ripple" effect where adding professional staff may have a deleterious impact on support staff workloads.

Timetable: The Court Administrators have been reviewing this issue and based upon resource availability, a proposal will be submitted to both the State and the County for implementation.

Since it is not likely that all needed positions can be filled at once, it is recommended that the hiring of additional Sheriff's Office personnel be phased in over a three-year period. (See the staffing discussion below.) The timetable for adding Prosecuting Attorney and Public Defender staff range between the years 2000 and 2010.

Staffing: If we assume that one-half of the current population in Whatcom County receives coverage by the Sheriff's Office and that the national norm of 12 commissioned officers per 10,000 population is an adequate standard, it is simple to determine that in the year 2000 the Sheriff should be able to field 98 deputies. There are now only 63, which leaves a deficit of 25 officers. Adding 10 law enforcement deputies per year for the next three years could bring the Sheriff's Office coverage up to national levels.

It is a complex issue to determine staffing levels for the Prosecutor's Office. Acceptable prosecutor caseloads vary according to the court of jurisdiction, with Superior Court felony cases being the most restrictive in terms of caseloads per attorney (150 per attorney). Assuming modest growth in the District Court (20 percent) and the Juvenile Court (13 percent) and significant growth in the Superior Court (35 percent) between 2001 and 2010, the Prosecutor will need two staff attorneys right now, another two and one-half by 2005, and an additional four attorneys by the year 2010.

The ratio of Public Defender staff to Prosecutor staff is .75, a figure that mirrors the approximate proportion of indigent defendants to total criminal defendants. If the staffing enhancements for the Prosecutor's Office are acceptable, to maintain this ratio of Public Defenders to Prosecutors, an additional one and one-half Public Defender attorneys are needed right now, another one and one-half by 2003, and another three attorneys by 2010.

Costs – Budget: Annual costs over the next three years to add Sheriff's deputies are likely to total \$480,00 per year. Some of these costs could and should be offset through the COPS application and the conversion of some overtime funds to personnel.

Support costs and new attorney costs in the Prosecutor's Office suggest a budget of \$213,800 at this time, \$218,950 by 2003, and \$227,700 by 2010.

Public defender costs are estimated at \$160,350 today, \$164,212 in 2003, and \$170,775 by 2010.

Another \$55,000 is needed in the prosecuting attorney's office on 2001 for automated victim/witness notification and space/equipment redesign. By 2002 the Prosecutor would take advantage of imaging application expansion and voice recognition software as productivity enhancements. These costs amount to \$132,500 in 2002.

Applicable Standards: There are no law enforcement standards regarding numbers of personnel required per units of population, but there are 'norms' that provide a framework for acceptable police coverage. The applicable standards for a new judicial position emanate from a state-created formula. The National District Attorneys Association promulgates the standards applicable in the Prosecuting Attorney's Office, while the Public Defender currently attempts to be responsive to the standards promulgated by the National Legal Aid and Defender Association.

Management Plan: There are some serious costs associated with staffing these offices up to recommended levels. There are negative implications for the justice system by improving staffing in one agency and not the others; therefore, all requests for additional staffs should be reviewed by the LJC in an effort to assist in identifying the 'ripple' effect of person power enhancements and in setting priorities for budget considerations by the County Executive. Each of these agencies should seek grant funds to supplement

existing staff (like the Sheriff pursuing COPS funds) and probably not count on County support for 100 percent of the staff required.

Staffing can be positively impacted by increasing collaborative efforts (especially among law enforcement departments) and by means of productivity enhancements such as the data integration project. Additionally, changes in policies and procedures may impact the need for staff.

As examples, deferred prosecutions, drug court expansion, increased use of community-based options, and targeting specific types of crimes for adjudication and case management should result in the Prosecutor and the Courts conserving resources. The Sheriff could also reduce his overall workload if more calls for service are more strictly screened, and there is an expanded use of non-sworn staff to respond to non-emergency calls or calls with a low probability of successful conclusion. As pressing as the financial issues are, the need to assign carefully Public Defenders only where appropriate and then recoup costs becomes more important.

These are staffing issues that the LJC must continuously review and experiment with solving, if indeed they can ever be solved, provided there is concurrence by the County Executive and County Council.

At a minimum, staffing each of these justice organizations should be brought up to national norms no later than 2001 and then revisited annually thereafter.

Evaluation Protocol: Currently, data are being collected and analyzed in terms of civil and criminal case flows and this should be continued. With the MIS in place, it should be possible to engage in more critical analyses of issues not now being assessed.



Recommendation 13. Establish Sheriff's District Satellite Offices and Evaluate Calls for Service

Functional Area: Law Enforcement

Commentary: In order to deal with the calls for service from a geographical perspective, it is recommended that the Sheriff proceed immediately with changing the current deployment from four to three districts. This should be implemented with the qualification that there also should be several satellite offices developed so that coverage of specific target areas within Whatcom County can experience higher levels of policing.

In order to conserve resources and to facilitate appropriate responses to calls for service, many law enforcement agencies have recognized that it is wasteful to spend time on certain offenses in the field when telephonic investigations can be conducted. An example is that of bicycle theft. Here, then, it is proposed that the Sheriff continue his review of the kinds of calls for service which could be handled by telephone and develop an educational campaign to educate the community on why and how this is being approached.

If the community understands the reasons for such an approach, the likelihood of a negative response will be minimized.

Implementation Issues: The Sheriff has already developed a full proposal on how such re-deployment can be implemented, including staffing requirements, locations for the various offices, and how such changes will benefit the citizenry. Depending upon sites, there may be some construction and/or remodeling costs.

Timetable: The re-deployment of staff should proceed as soon as locations are identified and resources are available. Due date is January 2001.

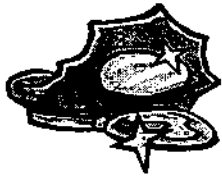
Staffing: The need for additional staff to cover adequately Whatcom County is discussed under various other recommendations. It is recommended, however, that no less than seven additional officers are needed immediately to come from County and Federal Funds. It is also to be noted that persons so hired cannot be operational on the streets for another six to nine months as a consequence of training requirements.

Costs – Budget: The Sheriff has examined all of the recommendations related to additional expenditures and developed a budget based on phases for implementation. Most of the additional funds needed, however, will be for personnel though there will be substantial equipment and furnishing costs.

Applicable Standards: The law enforcement division of the Sheriff's Office has been accredited by the state for it meets the promulgated standards. Consideration shall be given for possible accreditation by the National Law Enforcement Agency Accreditation Program.

Management Plan: The Sheriff should appoint a committee to review calls for service in order to determine the most appropriate sites for these new offices as well as staffing requirements.

Evaluation Protocol: Data should be collected to determine the degree to which response and dispatch times change as a result of the re-location of offices.



Recommendation 14. Conduct a Technology Review in the Sheriff's Office

Functional Area: Law Enforcement

Commentary: In this day and age, changes occur almost on a daily basis insofar as new police technologies are concerned. Therefore, for a law enforcement agency to meet its responsibilities for apprehending criminals and for providing community safety, it is important that new equipment be obtained that will facilitate improved law enforcement practices.

Implementation Issues: The Sheriff should appoint a committee reflective of command and staff levels and persons familiar with technology to review what the department should obtain projected over the next three years. Through consultations with the National Sheriffs Association, the International Association of Chiefs of Police, and the National Institute of Justice Technology Section, this committee can obtain reliable information on "what's new" and how such equipment is being utilized around the country.

It will also be important for members of the committee to attend professional conferences where there are vendor exhibits so that they can identify new technologies that can appropriately be utilized in Whatcom County.

Timetable: This study should commence immediately and be up-dated annually. Due date is September 2000.

Staffing: There are no new staff requirements.

Costs – Budget: Eventually, there will be costs for new equipment; however, the amounts needed from year to year will depend upon the results of the proposed study.

Applicable Standards: No standards apply.

Management Plan: The Sheriff should ensure that this proposed committee produces an annual report updating and detailing technological needs and projected costs.

Evaluation Protocol: No evaluation strategy is indicated except for an assessment of various technologies utilized to determine their effectiveness and efficiencies.



Recommendation 15. Implement Differentiated Case Management/Tracking in the Superior Court for Civil and Criminal Cases

Functional Area: Courts and Prosecution

Commentary: In order to expedite case flow and to control caseloads, differentiated case management becomes a useful tool. Certain types of cases are more involved and move more slowly through the justice system than others. Often these cases do not meet statutory timelines. Court delay impacts many other parts of the justice system including victims and witnesses. This recommendation is made in order to expedite case processing, which should result in greater efficiencies and effectiveness of the system.

Implementation Issues: It is recommended that technical assistance be sought from The American University, which has a grant for such purposes from the Federal Government. This technical assistance effort can be utilized to identify how other prosecutors' offices and courts utilize this approach to case management, which research has proved facilitates greater efficiencies and effectiveness of operations.

Further and as a result of the proposed technical assistance, the courts and the prosecutor will need to determine how such efforts will relate to tracking/case management procedures at the Superior Court and whether or not a tracker/case manager will also be needed within the District Courts and eventually within the Prosecutor's Office.

To assess the enhanced differentiated case management process, it is recommended that a sub-committee of the LJC regularly review its impact on the system and identify needed changes, as well as additional resources that may be needed to ensure greater levels of efficiency and effectiveness.

The composition of this committee should include the court administrators, a judge, the prosecutor, public defender, the jail administrator, a representative of the Bar, and with the justice-dedicated staff person in the Information System department.

The committee should also identify various benchmarks that will be needed to assess the program.

Timetable: The committee could be created immediately. Technical assistance from The American University could be obtained immediately. The courts tracker could be hired in the Superior Court after the committee reviews the results of the technical assistance as a test of the usefulness of the technique. If the results seem positive, expansion to the District Court and the Prosecutor's Office may be explored. This would mean that a tracker could be hired in about six months from the completion of the technical assistance. If acceptable, years two and three could see the tracking system extended to both the Prosecutor's Office and the District Court. The due date on hiring a case tracker is February 2001.

Staffing: Under the guidance of the Superior Court Administrator, a civil and criminal case tracker could be hired. The Administrator's Office should assume the responsibility of providing office space and support.

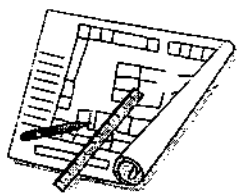
Costs – Budget: A budget of \$44,000 per year is suggested to fund the trial run of case tracking.

Applicable Standards: There is an incredible body of literature on the policies and procedures governing case tracking within the framework of differentiated case management. These should be followed. The actual targets of the case tracker and the emphasis of the project should be left to the Superior Court Administrator to determine.

Management Plan: After the provision of technical assistance, the Superior Court, in consultation with appropriate officials and the Bar, should design and implement an enhanced differentiated case management tracking system of procedures for all targeted cases to address the following objectives:

- 1) Reduction in numbers of cases on trial and motion calendars.
- 2) Provide for certainty of trial dates.
- 3) Provide for timely resolution within stated limits.
- 4) Classify cases at or near the time of filing as to probability of necessity for trial.
- 5) Reduce trial continuances.
- 6) Provide for timely scheduling of pretrial/case settlement events.
- 7) Adopt non-judicial issue identification and dispute resolution alternatives.
- 8) Case management protocols to be designed and implemented that should assist all participants, while respecting professional, ethical, and discretionary rights.

Evaluation Protocol: The proposed Planner/Coordinator could establish a research agenda that includes the review of the impact of differentiated case management tracking in terms of time and resource savings, as well as the impact on workloads. All of the necessary data are already available in the various information systems maintained by the Superior Court. Additionally, there should be a cost-benefit assessment.



Recommendation 16. Improve Courthouse Security

Functional Area: System-wide

Commentary: As a result of unfortunate experiences throughout the country regarding threats to personnel and offices by violence-prone persons, the need for improving courthouse security is of high priority. This is especially true for cases involving domestic violence, but is true for other kinds of situations and cases as well. Further, there is absolutely no justification for not addressing this issue when justice officials and citizens alike face hazards when coming to or working in the courthouse.

Implementation Issues: This is actually a County administration issue rather than a courts issue, for implementation could be given to facilities management. There are numerous private vendors who provide free analyses of security requirements. There are also numerous other municipal and county governments (and schools) who could share with Whatcom County their experiences with this issue.

Timetable: Since the avoidance of tragedy is critical, the appropriate county administration office in association with the Sheriff should conduct a thorough study and report to the County Executive without delay. Implementation should occur as soon as appropriate equipment and staffing can be put into place. Due date is October 2000.

Staffing: It is not possible to determine staffing needs until a full proposal is submitted and approved. It can be assumed that staffing will be a daytime issue only. It is likely that additional staff will be needed since the courthouse itself is without proper security at its various entrances. The staffing needed at the courtrooms, moreover, is likely to be required.

Costs – Budget: Depending on the proposed improvements, a budget for personnel and equipment should be developed and submitted to the County Executive for immediate implementation. The metal detection equipment is expensive, especially if used at multiple entrances. Sheriff's reservists or retired law enforcement could provide staffing or private security can be obtained. An estimated budget to consider might be \$100,000 for the equipment alone

Applicable Standards: Industry standards apply.

Management Plan: County Administration should direct facilities management to examine this issue immediately, including involvement of judicial staff, the Sheriff, other law enforcement users, and perhaps the public who uses the courthouse.

Evaluation Protocol: No evaluation strategy is indicated.

Part II. LOWER PRIORITY RECOMMENDATIONS



Recommendation 17. Improve Jail Population Management

Functional Area: Adult Jail Facilities

Commentary: Some of the policies and procedures used to manage the jail's use should be formalized so that they can continue to be used to manage existing jail populations and help avert a crowding crisis in the proposed new jail.

If the existing jail is used at a level no higher than the design capacity, with space only for the most serious of Whatcom County's offender population, then the County needs to institute durable, non-crisis driven facility population controls, including:

- 1) All probable cause and warrant arrests will be accepted into the jail
- 2) All traffic and other non-criminal arrests will be cited and released by the arresting agency
- 3) All probable cause and warrant arrests will be screened for pretrial release and released if they post bail or meet release criteria, some to supervision
- 4) All commitments appearing for booking will be accepted into the jail
- 5) All misdemeanor commitments will be screened for jail alternatives and so placed if appropriate
- 6) The Adult Probation Services Department will review all misdemeanants who have served 50 percent of their sentences for early, supervised release (parole)
- 7) All felons sentenced to the jail who have served two-thirds of their calculated jail time will be screened for alternative program eligibility

- 8) All early-release offenders will receive community-based supervision if eligible and such supervision will be provided starting with the most restrictive options and allowing the offender to move toward the least restrictive custody status
- 9) Out of state or out of county sentenced offenders will be booked into custody and immediately screened for alternative programs eligibility or returned to the jurisdiction of origin
- 10) No Federal prisoners will be accepted except in the case of an emergency
- 11) All out of county misdemeanor warrants will be booked into the jail, the responsible jurisdiction given 12 hours to respond to the booking, and the offender released under supervision after 12 hours
- 12) All offenders booked will be charged a booking fee
- 13) All offenders either housed or moved to alternative programs will be charged a per diem fee based upon the sanction

The County will also need to expand significantly community-based options to facilitate the effectiveness of the proposed jail population limits. These proposed resource enhancements are discussed above and must be in place before the internal controls are tested. Every sanction or alternative to incarceration should afford the offender, with good behavior and full participation, an opportunity to reduce the lengths of their obligations.

To combat crowding in the jail, the Sheriff's Office has shown some imagination in developing curbs on jail use. The local judiciary and some of the various municipalities have demonstrated patience in allowing jail staff to implement creative alternatives in policies and procedures. Even given the go-ahead for new facilities, population controls need to be in place to control existing jail crowding and to establish a formal basis for avoiding new facility crowding.

The Facilities Task Force noted that the existing jail is over-utilized and until given institutionalized relief either through innovative programming (like the Alternative Corrections Center) or new facilities, the existing jail will continue to be crowded. On top of this is the fact that the existing jail's physical plant is going to be prematurely degraded through overuse.

The facility is designed for 150 or less offenders, most of whom are not maximum-security inmates. The continued reliance on the existing jail for housing everyone taken into custody is going to shorten this facility's life.

As discussed earlier, the use of alternative sanctions and supervised pretrial release services should have considerable impact on the daily population of the jail. Most particularly, the increased use of electronic monitoring/home detention and work crews for eligible inmates undoubtedly will reduce the average daily population of the jail.

In view of the fact that a considerable majority of inmates as well as those under community-based supervision (e.g., those on pretrial release or on probation) have substance abuse problems, the increased use of random drug testing is clearly indicated. At the present time, however, there are three different drug-testing processes in place: those conducted at the ACC, the use of a laboratory by Probation, and a separate program for the Drug Court. This is a waste of resources and a central system should be implemented for all offenders, including juveniles.

Electronic Home detention should have twice the number of users and it should be used as a detention alternative for high-risk offenders. At least 50 bracelets could be used on a daily basis. (Electronic home detention could be used for pretrial release offenders.)

The work crews should be doubled in size also. This program should target offenders of a low to medium security risk, who are not employed, but who need to pay back fines, fees, forfeitures, restitution, and other costs.

It is also advisable to expand the availability of substance abuse and mental health treatment in the main jail. The program can identify potential clients through substance use screening by the CIU. A more thorough ADATSA assessment can provide the offender with the opportunity to volunteer for the project. A pod in the jail could be used to house these offenders in a modified form of a therapeutic community. Successful participation in the program can be used to reduce jail time and lead to the transition of the offender into probation supervision and/or alternative programs. Aftercare by a community-based, treatment agency should be provided to all 'graduating' offenders with a short stint under minimal probation supervision to prevent any crises from occurring. Failure at any stage in the program should send the offender back to a more stringent level of supervision in the community or to jail, if warranted, based on an implemented graduated sanction strategy.

There needs to be a closer coupling of probation supervision and release from jail custody, either as an un-sentenced or sentenced offender. It could be possible to have the probation or pretrial staff provide a continuum of community-based care for a sizeable proportion of offenders if staff adopts appropriate case management techniques.

If probation staff meet periodically with CIU staff to discuss case progress, it might be possible to apply the benefits of supervision at any time that a case appears to need it and drop probation supervision when the benefits are no longer needed. This would take unique collaboration between probation and CIU staff, provided there is available timely and accurate information on offender progress.

Implementation Issues: The greatest issue confronting implementation is that of directing expanded options toward the jail-bound, and only jail bound, offender population. These alternative programs should reluctantly be used to provide supervision for offenders who are not jail-bound or they may not have the desired impact on main jail use.

Obviously, some additional efforts need to occur between the Sheriff's Office, the District and Superior Courts, the Prosecuting Attorney, the Public Defender, and the Probation Services Department to make these controls work. Therefore, a committee should be established to review the policies and procedures related to jail population management controls and to institutionalize them as soon as possible.

Additionally, as inmate flow is based upon timely and accurate information, it is essential that the proposed data integration project be implemented immediately. It is still possible that these controls can be implemented at the present date without data integration. However, the proposed committee must work closely with IS to ensure that existing information systems are eventually in place in the jail and that jail staff have the training needed to use the information they need.

Since the ACC is likely to be the focal point for drug testing, the identification of possible vendors to supply appropriate testing materials should be initiated. Similarly, vendors who can provide all of the electronic monitoring supervision should be identified and one eventually selected for this service for all adults and juveniles involved in this program.

Timetable: It should be possible to implement all recommendations simultaneously though it is suggested that community-based options be funded for prescribed expansion prior to the adoption of permanent main jail population controls. Therefore, non-custodial options should be funded and staffed to prescribed levels by December 2000. The inmate-based derived population controls should be imposed or continued immediately and carefully monitored.

Staffing: The budgets suggested indicate the number of new, supervisory staff required. Doubling participants should require twice as many supervisory staff. However, except for management and security, it should not be necessary for sworn staff to operate these community-based programs; instead, civilian personnel can and should perform these supervisory functions. (Excess sworn personnel can be returned to the jail for assignments there.)

Costs – Budget: Replacing the existing maximum-security jail is a very expensive proposition as the facility is designed to provide close supervision for very serious offenders. Estimates of replacement costs reach \$100,000 per bed. State physical plant standards are being developed that likely will reduce the use (capacity) of the current jail. Though only recently released in draft form, these standards closely resemble those under which the jail was originally built. Adopting these draft standards will reduce the current jail's capacity very close to its original design capacity.

Expanded electronic home detention will cost about \$280,000 per year, though the use of this option could save 17,000 detention days that cost \$935,000 at \$55 per inmate day in the main jail. Much of the cost, however, can be re-captured through fees.

Having an annual total of 18,000 work crew days will increase program costs to about \$550,000 per year. However, if the work crews enroll only those offenders who are jail-bound, the savings will amount to \$450,000 per year.

Estimates of annual treatment client costs are about \$2,350 per offender. However, if it is assumed that without such interventions the probability is 50-50 that an offender will come back into the justice system and that if convicted the recidivist will receive a 60-day sentence, then the cost savings per inmate is about \$1,000. This estimate ignores the cost to the victim, and the costs of prosecution, defense, and court, which can add another \$1,000 to justice processing. Additionally, research suggests that substance abuse treatment, properly applied, can reduce the probability of recidivism to 30 percent or less.

Misdemeanant probation is also uniquely inexpensive at about \$700 per offender year or \$2 per day.

User fees are an essential component of this proposal. The cash outlay needed by the County includes work crew staffing, van and equipment purchases.

Applicable Standards: None, but implementation must not run afoul of state law nor alienate local system practitioners.

Management Plan: Funding should be sought in the 2001 budget for these expanded options, all of which will fall under the purview of the ACC or the Adult Probation Services Department. Actual day-to-day management should follow protocols already established by Alternative Corrections Center staff. All of the policies and procedures used to operate these programs are already in place, but should be formalized in a manual and widely circulated.

Evaluation Protocol: The evaluation of the implementation of these proposals is going to be critical. Excellent records must be kept on participation in expanded options and on the impact on the jail. There should be an evaluation design that can provide interim data on project impact and distributed to jail and options program administrators to fine-tune any option that is not having the desired impact. Additionally, there should be continuing cost-benefit analyses.



Recommendation 18. Expand Work Release

Functional Area: Adult Jail Facilities

Commentary: The Task Force and the consultants recognize the need to expand work and school release opportunities for inmate populations. The expansion of the work release facility will maximize the use of this option for those offenders who need marginal supervision, are working or attending school, and who can be released to attend treatment for substance abuse or other identified problems.

There was some discussion regarding whether the expanded work release facility should continue to be privately run or whether the County should assume the responsibility and place the expanded work release facility within the confines of the proposed minimum-security campus.

The provision of new 120 beds is a fourfold increase in beds available for this population and finally provides an opportunity for women to participate. The work release program should be run by the Sheriff or contracted out to a private vendor, as it currently is. The assignment of offenders to work release should stay a function of the jail administration and become a part of central intake's normal intra-facility classification process. The present cost of work release is \$38 per day.

The current operator of work release should be apprised of plans to expand all correctional facilities. A dialogue should be initiated with the vendor to test the willingness to provide for the expansion and determine the costs. At least initially, the vendor's participation in the planning process is strongly encouraged.

Implementation Issues: The only major implementation issue is that of determining who should run the expanded work release program. As it is believed that the County could immediately use these additional beds it is suggested that negotiations began immediately with the private vendor to see what the timing might be to begin the expansion effort.

Timetable: Start negotiations immediately and if agreeable to both parties begin expansion, with a tentative due date of July 2001.

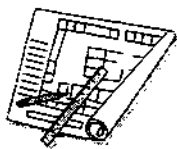
Staffing: No apparent impact on County resources.

Costs – Budget: The private vendor is a self-sufficient entity and would be required to bear the costs of expansion. Offenders would thereafter bear the costs of operations.

Applicable Standards: Follow proposed state jail standards for inmate density, mobility, and occupancy levels, as well as ACA custodial care standards.

Management Plan: The vendor with final review, over-ride, and acceptance should propose the management of an expanded program by County negotiators. Additional bed space should be phased in based on anticipated changes in the number of eligible offenders.

Evaluation Protocol: The gradual filling of work release beds by jail-bound County offenders needs to be carefully monitored. The evaluation must focus on removing appropriate offenders from jail custody. Eligibility criteria should be evaluated to determine whether persons looking for work might also be included in the expanded facility.



Recommendation 19. Study User Fees

Functional Area: System-wide

Commentary: Although not viewed by the LJC as a high priority item, a study should commence to determine the degree to which costs for services can be recaptured from offenders and families at higher levels than currently occurs. At the present time, families are not being asked to pay any of the costs for juvenile detention and/or court services; no routine fees are being assessed for booking (except those provided by contract from the cities); and more could be collected for routine probation services and for the proposed pretrial services, along with electronic monitoring, drug testing fees, and for indigent defense.

Implementation Issues: If a study group believes that fees for service should be developed for all services and programs, and if it appears that recaptured funds could be increased significantly by a collections officer or company, then at some near future date, such a person or company should be hired. It may be best at this point to make the review of user fees an integral part of implementation for it would not be difficult to examine this issue at the same time that the high priority recommendations are being developed for implementation.

Timetable: Impose the task of examining user fees and collection methods to the development of each recommendation and subject the analysis to the same timeframe as the recommendation. As a group, the due date should be no later than December 2000.

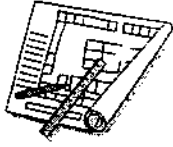
Staffing Issues: The data should be developed by those responsible for implementing any given recommendation or existing program.

Costs – Budget: There are potentially thousands of dollars to be saved through this process. It will become apparent, during the development phase, whether the costs exceed the benefits for any given recommendation.

Applicable Standards: Ethical standards apply. The issue of reparations by defendants needs to be carefully considered by the LJC, especially including failure or refusal to pay fees/assessments.

Management Plan: Committee and staff who develop implementation plans for recommended options should include as part of their tactical planning the consideration of whether fees should be sought, who should make these payments, what benefits accrue, and what costs are involved.

Evaluation Protocol: No formal evaluation is planned though the LJC should insist that each implemented recommendation provide a basis cost/benefit analysis of its activities on an annual basis.



Recommendation 20. Hire a Justice System Volunteer Coordinator

Functional Area: System-wide

Commentary: This is another position that was given a relatively low priority with regard to immediate needs of the justice system. However, in view of the fact that there are staff shortages in many of the agencies (at least according to Washington state and organizational standards), a Volunteer Coordinator should be hired for the entire justice system.

Implementation Issues: This recommendation should be taken seriously. There is great potential cost savings to the justice system if the program is developed properly. Additionally, this program could significantly improve the public's perspective of the justice system and its practitioners.

Timetable: This recommendation could start immediately so the due date is July 2000.

Staffing: One staff person dedicated to developing a cadre of persons to support criminal and juvenile justice system programs, with appropriate staff support.

Costs – Budget: An estimated budget of \$25,000.

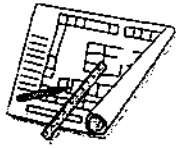
Applicable Standards: None known.

Management Plan: In other jurisdictions, such a person can recruit, select, train, place, and evaluate a cadre of volunteers who can serve agencies as administrative and case aides. They should be recruited to supplement rather than supplant budgetary requirements insofar as staff needs are concerned.

One pool of potential volunteers can come from the graduates of the Citizen Academy, currently managed by the Sheriff. If the curriculum for this program is expanded to cover in detail all aspects of the Whatcom County justice system, graduates will have even more knowledge about the system's workings and will be better able to serve as volunteers in the various agencies.

There is an important caveat to this recommendation: just as university interns require time and attention, so, too, will these volunteers require appropriate training, supervision, and meaningful task assignments. Therefore, en route to the possibility of each agency having such volunteers, it will be important for each to plan on how they will be utilized as well as supervised and evaluated.

Evaluation Protocol: None anticipated other than having volunteers periodically record their perspective of the volunteer experience.



Recommendation 21. Pursue Justice Grants

Functional Area: System-wide

Commentary: The justice system in Whatcom County has rarely been a successful applicant for Federal, state, and/or private foundation funds to help operate and innovate the justice process.

Implementation Issues: This might be another task of the Planner/Coordinator rather than a separate staff person. It is envisioned that members of the LJC will take the lead in writing grants collaboratively and use the Grant Writer and Planner to find appropriate funding sources for which proposals can be submitted.

Timetable: Tie this effort to the hiring of the Planner/Coordinator. The due date should be no later than December 2000.

Staffing: Given the massive financial constraints Whatcom County finds itself in just to bring agency staffing levels to national norms, it is suggested that the Planner/Coordinator assume responsibility for implementing this recommendation.

Costs – Budget: Considered part of the Planner/Coordinator budget.

Applicable Standards: None known.

Management Plan: Considerable funds are available from the Federal and state governments, as well as from private foundations, for all types of adult and juvenile justice programs. These funds should be sought in order to (1) create new and needed programs and (2) offset Whatcom County expenditures. Therefore a Grant Writer should be hired as soon as possible not only to identify possible funding sources, but to coordinate and otherwise write responsive proposals and to monitor those projects that are funded. This person should work closely with the staff of the Department of Human Resources, which also has the responsibility for writing selected proposals.

There is an incredible level of talent in grant writing represented on the LJC. Hopefully, some of these talented people can provide guidance – and writing assistance.

Evaluation Protocol: None envisioned though most of the grants worth pursuing will require an evaluation component (internal or external).



Recommendation 22. Conduct a County Government Space Relocation Study

Functional Area: System-wide

Commentary: As indicated throughout this report, significant increases in personnel are recommended. Many departments currently experience space shortages and therefore could not accommodate additional staff. As a consequence, it is recommended that the staff who are responsible for creating recommended Phase 2 options be charged with reviewing space requirements to determine if any departmental space is or is about to become inadequate, including future projections.

Implementation Issues: The issue is the same as that for the collection of user fees. This is one more task for the Planner/Coordinator and the committee who are developing this specific recommendation. It is apparent that adding staff to the Prosecutor's and Public Defender's Offices will alter the adequacy of existing space. The space in Adult Probation Services may be rendered inadequate when that Office increases supervised pretrial release programs. One of the major recommendations of this report is to remodel the existing jail. Adding a new jail facility may have significant implications for space availability.

Timetable: The space decisions are coupled with the timetable for the development of the specific option. The entire recommendation is due for completion by December 2000.

Staffing: No new staffing requirements are needed if the Planner/Coordinator leads the effort.

Costs – Budget: Nothing beyond the costs of implementing existing recommendations, which constitute an expensive proposition in itself.

Applicable Standards: Each recommendation has its own set of standards regarding space.

Management Plan: The LJC needs to make this a priority section of actual implementation development.

Evaluation Protocol: None



Recommendation 23. Seek Funds For Community-Oriented Policing

Functional Area: Law Enforcement

Commentary: The Sheriff should proceed immediately to develop a proposal to be submitted to the COPS Office at the Justice Department for community-oriented policing funds. Additional staff can be utilized not only to reduce response time and provide better coverage throughout the County, these trained officers can engage in problem-solving with local residents regarding quality of life issues and factors that influence the fear of crime in their neighborhoods.

Implementation Issues: A proposal must be submitted according to Federal guidelines and at an appropriate funding cycle. The Sheriff will need to determine how many positions to seek and exactly what their functions will be.

It is important to note that while COPS funds can be solicited on a cycle basis, the Sheriff should proceed to develop the proposal so that it can be submitted on a timely basis. It is also critical that the County Council appreciate that this kind of funding reduces on an early basis, which means that Whatcom County will have to assume more costs for this program over the years until the county pays 100 percent of the costs. The benefits for such a program, however, greatly outweigh the costs in that greater confidence in law enforcement accrues.

In the proposal to be developed by the Sheriff it will be necessary to identify target areas as well as target populations for COPS programming. This should be based on the kinds and locations of calls for service as well as criminal activities in certain geographical areas.

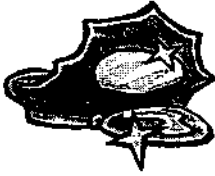
Timetable: The proposal should be submitted when allowed, although the writing of the proposal should begin immediately. A grant should be written by August 2000.

Staffing: The staffing sought should mirror the discussion in this report on bringing Sheriff's Office deputy levels up to national norms.

Applicable Standards: No standards are applicable, but attention should be given to maintaining the Sheriff's current accreditation.

Management Plan: The Sheriff should locate and download the necessary application forms for the grant. The Planner/Coordinator could make this the first grant writing task as it is of great importance.

Evaluation Protocol: Except for the assessment of the impact of these new officers on response and dispatch time, no other evaluation is indicated.



Recommendation 24. Local Law Enforcement Agencies, Judges, and Court Administrators to Meet Regularly

Functional Area: Law Enforcement/Courts/Judges

Commentary: In order to enhance communications and ongoing relationships, all chiefs of law enforcement agencies in the county, along with representatives of all state and Federal law enforcement agencies should, continue to meet at least quarterly. If the Sheriff and the Chief of Police in Bellingham issue a joint call for such routine meetings, the likelihood of attendance by the chiefs in the municipalities will increase.

Similarly, all judges as well as court administrators respectively should meet regularly to review policies, procedures, and issues of mutual concern.

Such meetings should facilitate better communications within these functional areas and especially between municipalities and Whatcom County.

Implementation Issues: The chiefs, judges, and court administrators should have appropriate and meaningful agendas in order to ensure regular attendance. These meetings should have a focus; that is, there is no need to meet unless there are appropriate agenda items, such as the sharing of intelligence information about drug trafficking, gangs, case processing, MIS developments, and results of program evaluations, etc. The Sheriff, Court Administrators, and presiding judges should provide the leadership for the creation of these groups and provide the resources needed to ensure effective and meaningful meetings.

Timetable: Some of these meetings are already underway; others need to be created.

Staffing: There are no staffing issues. The Planner/Coordinator could help facilitate these meetings.

Costs – Budget: There are no costs attached to this recommendation.

Applicable Standards: There are no applicable standards.

Management Plan: No plan is needed since the meetings for law enforcement officials are occurring already. For the other groups, leadership to initiate these meetings should be provided by the officials identified above.

Evaluation Protocol: No evaluation strategy is needed.



Recommendation 25. Develop Intensive In-Service Training for the Sheriff's Office

Functional Area: Law Enforcement/Jail

Commentary: It is not possible to guarantee high performance and productivity among staff unless they continue to be trained in "what works" and new programs that are being tested around the country. To accomplish in-service training, the Sheriff should appoint a training committee reflective of all programs and ranks for law enforcement as well as the jail. This committee should conduct an annual needs assessment concerned with what all staff (including support) believe they need to learn and/or be able to do in order to improve performance.

Implementation Issues: The Sheriff should appoint a training committee to review training needs and for the development of appropriate curricula. Issues associated with released time need to be reviewed as a result of committee recommendations. Funds will be needed to mount a meaningful training program.

Care must be made to schedule training during roll call when overtime costs will not become an issue.

Timetable: Based on resources, a 40-hour, in-service training program should be planned and implemented as soon as possible. Due date is August 2000.

Staffing: See discussion above.

Costs – Budget: To accomplish the above, it is recommended that no less than \$10,000 to \$15,000 (in addition to overtime costs if they are required) should be allocated to purchase training and trainers. However, as a result of existing expertise in Whatcom County regarding such issues as drugs, gangs, domestic violence, etc., these community-based experts should be invited to share their knowledge and provide training free of charge.

Applicable Standards: There are no applicable standards.

Management Plan: The Sheriff should ensure that a full training program is developed and implemented based on available time and resources.

Evaluation Protocol: Ideally, each training program should have an evaluation component to determine the degree to which the participants develop new knowledge or obtain new skills. Also, the instructors should be evaluated in terms of presenting/training style.



Recommendation 26. Analyze Conversion of New Staff from Overtime Funds

Functional Area: Law Enforcement

Commentary: Every law enforcement department is confronted with overtime costs since criminal activity is not geared to predictable times. Further, as a result of training time, sick leave, vacations, and special assignments, it is frequently necessary for officers to work double shifts. However, it is unacceptable from an administrative point of view that excessive overtime exists as a direct consequence of inadequate departmental staffing.

Implementation Issues: The Sheriff should review the overtime budget, determine the amount that responsibly should be retained, and convert the excess into full-time positions. This proposal should be linked to the need for other additional staff, as discussed below under "staffing" and as reviewed in the recommendation on securing COPS funds. Also, the Sheriff should consult with the County Executive to determine the feasibility of this recommendation.

It is probably unwise to add both additional deputies and continue to pay excessive overtime to deputies.

Timetable: This analysis should be conducted as soon as possible. Due date is August 2000.

Staffing: The implications for deputy staffing are pronounced though the recommendation does not require any additional staffing.

Costs – Budget: The costs for converting overtime to full time staff should save the county funds, depending upon how much can be converted.

Applicable Standards: There are no applicable standards, however this recommendation must be sensitive to union or guild perspectives.

Management Plan: See above discussion.

Evaluation Protocol: Although not a true evaluation strategy, a cost-benefit analysis should be conducted after one year of such operations.



Recommendation 27. Increase Efforts at Community Education

Functional Area: Law Enforcement

Commentary: In addition to an expansion of Watch and Citizen Patrol programs, it is recommended that the Sheriff seek volunteers from among the graduates of the Police Academy to be trained to provide citizens with burglary-proof information. With such a cadre, citizens can make appointments to have their homes evaluated and receive suggestions on how to make their dwellings more burglar-proof.

Implementation Issues: The public is entitled to learn about changes in the Sheriff's operations, especially related to COPS, changes in district locations, and changes in responses to non-emergency calls. The Sheriff should appoint a committee to develop an educational/public relations program, utilizing to the extent possible the graduates of the Citizen's Academy as well.

Timetable: Planning for the design of this educational campaign should commence immediately. Due date is September 2000.

Staffing: Depending on the intensity of this activity, it may be necessary for the Sheriff to hire a citizen to develop and manage this program, as well as seek and train volunteers.

Costs –Budget: The cost for this staff person, including part-time support is estimated to be \$35,000.

Applicable Standards: No standards are applicable.

Management Plan: See discussion above.

Evaluation Protocol: Ideally, a study to determine the impact of Sheriff Office's changes should be undertaken, but this probably will require the use of an outside expert on methodology.



Recommendation 28. Improve Tribal Relationships and Collaborative Efforts

Functional Area: Law Enforcement and Corrections

Commentary: Historically in Whatcom County there has been some friction between the Sheriff's Office (and other local government agencies) and Native Americans and their Tribal Governments in the community. There is a perception among some that there is racism, which is translated into discriminatory behavior. However, there is every indication of good will among and between these groups, which has resulted in serious discussions about improved services.

Implementation Issues: Recommendations are being made to develop "courtesy supervision" programs by probation with the two tribes in the County, though most especially with the Lummi Tribe. There is a significant population of Lummi offenders on probation who might be best supervised by Lummi probation officers.

The Sheriff should also consider collaboration in regard to cross-deputization. This is a historic problem that begs a final resolution. Other counties have been successful with cross-deputization. There are some liability issues that have to be worked out but these issues are trivial when compared to the good will and increased productivity that could be gained.

Therefore, it is recommended that the Sheriff and Director of Probation Services meet with the Chief of Police of the Lummi and the head of Nooksack Tribal Law and Order and other tribal judicial officers and review what could be done, how a demonstration project could be developed and how outcomes might be anticipated and evaluated. It is also recommended that the Sheriff and Probation Director consult with the Whatcom

County Prosecutor to review legal/liability issues so that these can honestly be placed on the table for discussion and resolution.

Timetable: Discussions related to the above should continue. Due date September 2000.

Staffing: No new staff are required.

Costs – Budget: There are no funds needed.

Applicable Standards: No standards are applicable. Potential liability issues are critical. Also setting mutually acceptable local standards for supervision and fieldwork is an essential task in support of implementation.

Management Plan: The Planner/Coordinator could facilitate this issue. Presentations need to be made to the Tribal Councils and to the Law and Justice Council regarding implementation.

Evaluation Protocol: It should be possible to design an evaluation of these proposed initiatives and determine whether objectives are met. On the law enforcement end it would be essential to determine how public attitudes change, whether levels of crime change, and if productivity (arrests and crimes cleared) change significantly pre- and post-cross-deputization. For probation supervision, the outcomes should include compliance with probation conditions and recidivism, compared pre- and post-courtesy supervision implementation.



Recommendation 29. Expand the Superior Court Drug Court Program

Functional Areas: Court, Prosecutor, and Public Defender

Commentary: Although not viewed as among the highest of priorities, the current Drug Court should be locally evaluated in terms of possible expansion; that is, inclusion of other kinds of cases. The Federal evaluation will focus on national drug court evaluation issues that may not touch upon the question of the appropriateness or expansion of the Whatcom County project. Nor will it provide useful process and recidivism data oriented toward the specific characteristics of the Whatcom County Drug Court.

Implementation Issues: In order to determine the desirability and feasibility for such an expansion, contact should be made with The American University to provide free technical assistance. Moreover, it will be important to identify additional, at-risk offenders who qualify for such an intervention.

Timetable: The timing for such expansion, if indicated, should be determined by the court and with the Prosecutor and Public Defender consulted. It is always most effective to include a strong research design at the beginning of project implementation. If data are being compiled for the national evaluation of drug courts, it could be very useful to automate these data locally and conduct an analysis of interim results immediately as a guide to program adjustment or expansion. There is no specific due date.

Staffing: The Planner/Coordinator should monitor this research agenda.

Costs – Budget: These costs should be covered by the collaborative funding provided to create the Planner/Coordinator office. The University of Washington should be contacted to see what resources it might provide to assist with the data collection and analysis.

Technical assistance from The American University comes with no cost to Whatcom County.

Applicable Standards: The same standards that apply to the existing Drug Court would apply to an expanded court. Most standards are based upon local court rules and policies. The US Office of Justice Programs does provide program standards recommendations for establishing and operating drug courts.

Management Plan: The Planner/Coordinator can start data entry of existing data but will need approval of a larger research agenda by the courts. The Planner/Coordinator will need data entry assistance and statistical analysis software to conduct a process evaluation.

Evaluation Protocol: All initiatives should be evaluated locally to the extent possible and as resources permit.



Recommendation 30. Conduct an Analysis of Failure to Appear Rates

Functional Area: The Courts

Commentary: While this issue has primary impact on law enforcement and the jail, it is an issue that requires some action in the near future for it also impinges on court workloads. Contempt cases are less likely to be released pretrial and thus crowd the jail. Contempt cases foster an attitude of indifference among offenders for the justice system, compromises public safety, and debilitate justice system's practitioner morale.

Implementation Issues: If the FTA rate can be reduced, Whatcom County can experience significant reductions in costs for its justice system as well as an improved delivery system of services for offenders, victims, and communities. The lead for this committee work, however, should come from the Sheriff, in consultation with the District Court Administrator. Efforts to contend with the contempt issue especially need to be made part of the development of the supervised pretrial release program. Great care must be made in the development of the supervised pretrial release program to accommodate this population and to create a mechanism that, with the least amount of supervision required, does not negatively impact the crowding in the county jail.

Timetable: Much of the data on Failure To Appear offenders is already available to Whatcom County as part of the output of this project. Working the FTA issue should be delegated to the committee that oversees the creation of the supervised pretrial release program. As such, the timing for both initiatives should be coincidental. The due date is October 2000.

Staffing: The Planner/Coordinator should staff the committee creating the supervised pretrial release project. The consultants to this project can provide an extensive file to the Planner/Coordinator of FTA offenders to aid the research process. The District Court judiciary, however, must provide guidance to the development of the supervised pretrial release program.

Costs – Budget: No new funds are required, other than those costs associated with the Planner/Coordinator's position and activities.

Applicable Standards: No standards are applicable except for those that govern the development of viable pretrial services programs and which are available from the National Pretrial Services Resource Center.

Management Plan: This program is targeted primarily at the District Court, but also it has implication for other contempt cases emanating from the Superior Court. This could be another item on the Planner/Coordinator's research agenda. Therefore, it is recommended that the Planner/Coordinator review data and outcomes regarding Failure to Appear, Failure to Comply, failure to pay fines, and other contempt proceedings. The intent would be to determine, in consultation with law enforcement and the jail, the specific characteristics of the target population, the impact of local release and sentencing practices that may be exacerbating the problem, and explore program and policy changes that might help alleviate the problem

Convening the committee to develop the supervised pretrial release program and funding the Planner/Coordinator will provide adequate management for this recommendation.

Evaluation Protocol: It is not a difficult task to snapshot jail populations to determine any changes in the composition of the jail's population. This evaluation protocol should include an analysis of the FTAs related to the pretrial services program



Recommendation 31. Review Cost Collections For Indigent Defense

Functional Area: Public Defender, System-wide

Commentary: Although currently perceived to be of relatively low importance, the court administrators together with the Public Defender should review and analyze the costs for indigent defense and determine if its practical to re-capture from offenders costs on ability to pay some part of the actual expense. If it appears that significantly more money can be re-captured, it is recommended that consideration be given to contracting this effort out to a collection agency or the hiring of a collections officer to improve collections.

Implementation Issues: This is another County administration issue though court guidance is required. It is in the best interests of the County to be as efficient as possible and attempt to re-capture indigent defense fees.

This could be another task for the company that the County now contracts with for similar kinds of services.

Timetable: This is a recommendation that can wait until the LJC decides to ask the County Executive to consider the issue. However, a projected due date is October 2000.

Staffing: No new staff is required, unless a collections officer is hired. An extended contract with a vendor will be needed if an agency is to engage in this activity.

Costs – Budget: This recommendation might actually generate revenue.

Applicable Standards: No standards are applicable.

Management Plan: The implementation of this recommendation is dependent upon the will of the LJC and County administration. It could be as simple as asking a vendor to provide this service or the hiring of a collections officer. Clerical support will be required.

Evaluation Protocol: If this recommendation is implemented, cost-benefit analysis will be indicated.



Recommendation 32. Assess the Consequences of "Split" Sentences

Functional Area: Courts and Prosecution

Commentary: It is highly likely that as the judges utilize more alternatives to incarceration and intermediate sanctions and as a result of additional community-based programs, the use of split-sentences will increase. This means that a number of offenders will be given some jail time, but also placed on probation subsequent to release. Further, as the proposed minimum-security facility becomes operational, more use of community-based resources will be utilized. The problem is that research has shown that split sentences are no more effective in curbing future criminal behavior and they cost significantly more. Shock incarceration, where the offender is given a short jail term and then moved onto treatment also has been proven ineffective.

Implementation Issues: The Sentencing Reform Act guides local sentencing in the Superior Court. This recommendation is a result of the need to establish a viable continuum of sanctions in Whatcom County. If local sentencing is guided by objective information on offender dangerousness and needs, judges should adopt the principle of 'least restrictive custody.' This philosophy requires the creation and movement of offenders along a graded series of sanctions and services that rewards good behaviors and sanctions bad behavior. Such a system is rendered ineffective if offenders are over-classified or given multiple sanctions that may work against one another which produce contradictory results.

Before new incarceration facilities are in place, it will be important to have this continuum in place. The continuum does not mix sanctions but rather objectively places offenders in an appropriate security classification based upon the probability of improving the offender's subsequent behavior or isolating the offender for the sake of public safety.

The courts in Whatcom County (including the major municipalities) have provided the jail's administration and the Adult Probation Services Office with great discretion through judgment and sentence orders as to when to place an offender in close custody or to release an offender into a community-based option. This policy should continue. The recommendation here is actually just a call to not wander from the philosophy of least restrictive custody and to continue to strive to reward good behaviors and save expensive secure resources for those who actually need it.

The Planner/Coordinator needs to lead this discussion with the input of the judges, Prosecutor, and Public Defender. Implementation will be the responsibility of the Central Intake Unit and the Probation Department.

Timetable: A continuum of sanctions is contained in this report. It can be fine-tuned by the Planner/Coordinator collaboratively with the other key actors described above. There is no reason to delay the development of formal referral protocols for the use of these sanctions given the nature of the offender and the seriousness of the offense. There is no specific due date.

Staffing: No additional staff is required.

Costs – Budget: There are no budgetary requirements other than funding the Planner/Coordinator.

Applicable Standards: There are no applicable standards, however, the limitations of the Sentencing Reform Act (SRA) need to be considered and the perspectives of the local judiciary and prosecutor must be included in the development of protocols.

Management Plan: Having a Planner/Coordinator is essential and convening a subcommittee of decision-makers is required. The Planner/Coordinator must become familiar with SRA requirements. There will be a large amount of policy and procedure writing to govern placements.

Evaluation Protocol: The Planner/Coordinator should coordinate the study of the impact of this proposal, which should reduce jail crowding, prevent crowding in new jail facilities, show high program completion rates for participants, demonstrate offender movement along the continuum and reduce recidivism as measured by new jail admissions and new criminal filings.



Recommendation 33. Hire An Investigator for the Prosecutor's Office

Functional Area: Prosecution

Commentary: Insofar as criminal filings are concerned, it is not possible for local law enforcement to provide the Prosecutor with all of the information the office requires to determine appropriate charges, nor can the police investigate fully all matters that require additional investigative work. Further, the need to prepare for trial requires additional background work, especially in terms of interviewing witnesses and victims. This primarily involves felony cases, but the need is also there for both misdemeanors and juveniles.

Implementation Issues: It is recommended that an experienced detective from the Whatcom County Sheriff's Office be assigned to the prosecutor for an indefinite period of time. If this recommendation is implemented, the Sheriff should be able to replace this person with a new hire; that is, the Sheriff should not lose a position that otherwise would be needed for law enforcement coverage in Whatcom County.

It is further recommended that the Prosecutor and the Sheriff devise a job description for this position, determine any position rotation if appropriate, and work out details on how this investigator will relate both to the Sheriff and other law enforcement agencies in the County, as well as Federal and State agencies.

The investigator should work on targeted crime types that have a visible impact on the community, but based on Prosecutor needs. Domestic violence, assault, or sexual assault cases are but three of the high priority types of cases whose results might be improved through the use of an investigator.

Timetable: This position should be filled as soon as resources can be obtained in order to enhance prosecutorial effectiveness, with a target year of 2001.

Staffing: One investigator by 2001; another by 2004.

Costs – Budget: The yearly cost for this position amounts to \$99,500, including salary, benefits, supplies, equipment, and support services by 2001 and \$107,000 by the year 2004.

Applicable Standards: No standards are applicable.

Management Plan: The use of the investigator should be strictly targeted for specific high priority crimes (perhaps as a precursor to differentiated case management) and not used randomly.

It is not critical that the investigator be a Sheriff's Deputy. The Prosecutor could determine who fills the position though ex-law enforcement types of experienced persons.

Evaluation Protocol: The Prosecutor should maintain data on what cases the investigator is involved in and what activities the investigator conducted. It will be important to note changes in the levels of bargaining on targeted cases where the investigator is involved. The data should also collect dispositional information from those cases and compare dispositions with similar types of cases that the investigator was not involved in to determine the impact.



Recommendation 34. Expand Victim- Witness Services

Functional Area: Prosecution

Commentary: In the recent past, considerable attention has been given to the rights and needs of victims and witnesses in criminal cases. In clear recognition of this need, many prosecutors' offices have launched victim-witness programs and increasingly have been offering additional services.

Implementation Issues: To achieve greater levels of service, it is recommended that there be a consolidation of all victim-witness services within the Prosecutor's office to provide programs not only in felony, but in misdemeanor and juvenile cases as well.

Additionally, the victim-witness unit should communicate with community-based programs to ensure that where victims and/or witnesses need special help, this can be provided. By working closely with the Probation Department, these community-based programs can be identified and intake procedures delineated.

The transfer of juvenile victim-witness services to a single program should be arranged immediately, provided a full program is outlined and agreed to by all involved agencies.

Timetable: The expansion of these services should occur as soon as a proposal can be developed and adequate resources obtained. Completion of the transfer is expected by November 2000.

Staffing: In order to provide additional services to victims and witnesses, it will be necessary to add appropriate staff, including staff support. The specific personnel needs amounts to one more FTE by the year 2001 and another FTE by 2003 on caseload activities and needs.

Costs – Budget: By 2001 the cost will total \$29,100. By the year 2003, the amount needed will be \$31,500.

Applicable Standards: The final proposal must meet all of the requirements of RCW 7.68.035, as established by the State.

Management Plan: See discussion above.

Evaluation Protocol: Although not necessary to complete in the immediate future, the Prosecutor at some time in the near future should conduct a survey among victims and witnesses to determine their satisfaction with the services provided. Such data can assist in changing any aspects of the program that are not viewed as beneficial.



Recommendation 35. Expand Deferred Prosecution

Functional Area: Prosecution

Commentary: As will be discussed in the section on pretrial services, there is a need for an expanded use of deferred prosecution. This program identifies offenders who have committed non-predatory, non-DUI offenses and who, if referred to appropriate community-based programs, potentially can be moved into law-abiding citizenship. If such offenders are released and take advantage of such services, it would then be the Prosecutor's decision to defer indefinitely prosecution, reduce the charge, or cancel further court involvement (with or without expungement of the arrest). National research shows that deferred prosecutions are inexpensive and as effective as traditional prosecution especially for youthful, first time, adult offenders.

Implementation Issues: The District Court's pretrial unit, in close working relationship with the Prosecutor's office should supervise these deferred persons. The Prosecutor, however, should determine eligibility criteria, some of which can be determined at the time of booking as a result of the assessment process. The Prosecutor and Public Defender should negotiate the conditions of the deferral of prosecution that are acceptable to the courts.

The Prosecutor should also indicate if additional staff will be required to develop and monitor this proposed program. Moreover, this proposal need not be implemented immediately and certainly not until a full proposal can be developed, including costs and operations.

Timetable: Depending on the role of Adult Probation Services with regard to the supervision and/or monitoring of offenders, plans should be developed for increasing this alternative according to available staff. No specific due date is indicated.

Staffing: Provided by either pretrial services or probation staffs.

Costs – Budget: This is included in pretrial services and expanded probation services budgets.

Applicable Standards: Standards promulgated by the National District Attorneys Association may be applicable. There also exists an immense body of evaluative literature on the benefits of deferred prosecution, which also provides specific guidelines for deferred prosecution programs. The Juvenile Services Department could provide consultation on the methods associated with conditions developed for targeted juvenile offenders.

Management Plan: The first step is to become completely familiar with programs operating elsewhere in the United States. It then becomes essential to select target populations who may benefit from deferred prosecution. The adult diversion program, if as successful as the juvenile diversion initiative, could provide immense cost and timesavings for the courts and produce results on par with more punitive prosecutions.

Evaluation Protocol: There are numerous examples of evaluation designs for diversion/deferred prosecution programs. The designs easily could be replicated in Whatcom County. The Planner/Coordinator should monitor this research agenda. The 'bottom line,' however, is the potential reduction of recidivism.



Recommendation 36. Develop Program For Driving with License Suspensions

Functional Area: Prosecution and Corrections

Commentary: This is an area that not only exasperates all adult justice agencies in Whatcom County it is an issue which requires additional attention. Many of these traffic offenders are eligible to have their licenses restored, but since they do not know how to obtain a license, they frequently are re-arrested for the same offense.

Implementation Issues: It is recommended that the Prosecutor's Office in conjunction with the Probation Service Department devise a plan to invite the Department of Motor Vehicles to detach a staff person on a regular basis, at a central location and with appropriate modem hook-up, to arrange for the restoration of eligible licenses. Through such a program, considerable law enforcement, jail, prosecution, public defense, and jail cost savings can accrue. This program, if there are costs, should be borne proportionately by all of the jurisdictions in Whatcom County. Working collaboratively, the two departments should develop a set of protocols for its implementation as soon as it is practical to do so.

Timetable: This should be implemented as soon as the Prosecutor and Public Defender can develop a program and staff is available for implementation. Due date is September 2000.

Staffing: Depending on the nature of the proposed program, perhaps a part-time clerical staff person will have to be assigned.

Costs – Budget: The cost is that of a part-time clerical person or \$16,000.

Applicable Standards: No standards are applicable.

Management Plan: The most difficult part of this proposal will be inducing DMV to participate. Even without their participation, it would be possible to have a clerical person in the Prosecutors Office or Adult Probation Services develop a list of offenders eligible to get their licenses back, contact the client, provide information on the process, and make a referral to DMV. If this work is vigorously pursued, the County may solve the backlog problem in a year and then scale back the program to informational only for new offenders. It would be simple for Probation Services to identify offenders who are about to become a part of the target population and make securing a valid driver's license part of offender "after-care."

Evaluation Protocol: When the program is implemented and the MIS is online, it will be possible to evaluate the program in terms of impact on calendars and workloads.



Recommendation 37. Assess Eligibility at the Central Intake Unit

Functional Area: Public Defense

Commentary: As a consequence of the proposal that assessments be made at the time of booking at the jail, the Public Defender, working closely with jail staff and pretrial services, should assist in developing an indigence-screening instrument based on defined criteria. Working in concert with the courts, this instrument when completed can provide a "heads-up" to the likely assignment, which will mean faster services especially for in-custody offenders.

Implementation Issues: Appropriate implementation of this recommendation will require pretrial services and/or jail staff to develop an enhanced screening instrument. Eventually this and other data collection will occur routinely at the Central Intake Unit. However, the Public Defender should develop a worksheet that will enable jail staff to alert the Public Defender to a possible assignment, pending judicial authorization. The judges should also be consulted. The data could also become part of pretrial release data collection and distributed to the Public Defender as soon as it becomes available.

Timetable: This initiative could occur immediately and in place by December 2000.

Staffing: Primarily, staffing will occur at the jail. No new staff will be needed by the Public Defender for this program.

Costs – Budget: Unless the jail requires additional staff, there will be no costs involved.

Applicable Standards: The criteria need to be explicit. NLADA and the National Association of Pretrial Services Agencies have specific criteria for determining eligibility.

Management Plan: The jail, courts, and Public Defender should create the process for early eligibility determinations. Pretrial services or jail staff can be assigned the task of collecting the data and notifying the Defender's Office.

Evaluation Protocol: When the program is in place, its impact on time lags for assignments should be assessed. It would be simple to measure elapsed times from booking to assignment pre- and post-implementation. It would also be possible to compare assignment rates pre- and post-implementation.



Recommendation 38. Develop a Juvenile Risk and Needs Assessment

Functional Area: Juvenile Justice

Commentary: As a result of HB 3900, Whatcom County has been participating in the development of an offender risk/needs assessment. This tool is also being used statewide for juvenile offenders. Currently the process is in Phase II implementation. Eventually the tool will be used to assess objectively client presenting problems and provide probation staff with a suggested strategy of providing or arranging for the provision of services to address client problems. The assessment tool is based upon the premise that delinquency problems are a combination of factors including deviancy, school adjustment, mental functioning, family functioning and other dimensions and that addressing only a single, obvious problem is ineffective in curbing future aberrant behavior; that is, the client's problems need to be addressed "holistically." This premise is supported by research and represents an essential step forward in juvenile justice in the effort to reduce delinquency.

The County currently receives \$80,000 per year in impact funds from the State to help implement HB3900. The Department has used this money to fund 1.5 FTE dedicated to implementing the risk assessment and supervising one caseload of assessed offenders.

Implementation Issues: Washington State Juvenile Court Administrators have entered into a contract with a vendor named Allvest to develop an automated system of Risk/Needs Assessment, Case Management and Outcome Measures that have been very problematic and are yet to be completed. Timetables are not being met which is causing a loss of faith and low morale.

Probation Counselors need to be trained to be case managers instead of operating only as Probation Officers and to utilize a strengths-based assessment model. This effort should be encouraged as the evaluation literature has shown that case management principles based upon objective information can reduce delinquent tendencies in clients.

The development of case plans, which indicate risk as well as need, assumes the community is prepared to provide services and interventions when indicated. While Whatcom County does have resources available for clients, there has been no systematic effort to create a collaborative network of treatment providers.

The State has not provided sufficient funding to implement effectively this plan nor is there any guarantee that the money currently provided would continue to flow to the communities.

The question of when during the court process the instrument should be utilized must be assessed (post-adjudication or pre-sentence). In some sites, an assessment is completed pre-adjudication and used to develop alternative treatment plans in lieu of adjudication. In this case, it is recommended that findings from assessments be provided to case decision-makers as soon as possible. Additionally, the items as well as the results of the assessment should be automated locally and made a part of the data integration project discussed elsewhere in this report.

It is also recommended that a Directory should be created and distributed to parents and guardians that explain the court process, Community-based supervision (probation), and available resources in the community for youth. Additionally, individual treatment agencies should describe services to be included in the directory.

Timetable: All offenders are being given the standardized Risk/Needs Assessment instrument at this time. It is difficult to underestimate how useful this data can be to probation staff. Case management training of probation officers is should be completed by the fall of 2000.

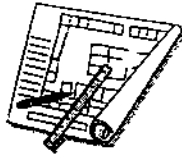
Staffing: Only the proposed additional staff at Information Services is required. The JSD plans to ask for additional staff during the 2001 budget cycle.

Costs – Budget: Staffing at IS for JSD support would cost \$70,000 per year but the costs could be shared with other County justice agencies as described earlier. Hiring the IS staff dedicated to justice issues would mean that JSD would not need to pay its normal assessment to IS and consequently could use the funds for other purposes.

Applicable Standards: The Juvenile Court Administrators in the State of Washington will likely develop Best Practices Standards for this new model of juvenile justice. None exists at this time.

Management Plan: Additional service requests for these two positions will be requested in the 2000 or 2001 County Budget request.

Evaluation Protocol: The Washington Institute for Public Policy will evaluate the new assessment process for juvenile offenders on a statewide basis and hopefully the funding deficit will be noticed and addressed by the State. Additionally, it is recommended that a local evaluation be done around the assessment and case-management approach to juvenile crime in Whatcom County. This would be an especially fruitful process if the assessment results are automated and made a part of the data integration project.



Recommendation 39. Develop A Personal Control Number

The consultants support the effort to develop a Personal Control Number (PCN) or Person Identification Number (PIN) to help link offender files among various justice agencies. The development of a local offender identifier is also encouraged. It is recommended that an analysis be performed on the various identifiers currently used by the various systems, including the State's Judicial Information Network and Judicial Information System.

Functional Area: System-wide

Commentary: Being able to link defendant files by means of a single identifier is a critical element in this entire process. The research conducted in support of the Phase I Report struggled with matching offender files between the jail, prosecutor, and court system files. The provision of a PCN that follows offenders throughout their court processing on any given criminal proceeding and that stays with the offender for use in subsequent offenses is the key to a truly integrated information system.

It is presently impossible to link offender files among the various justice system databases and it is difficult to locate local offenders in external databases. Presently locating offenders is dependent upon having several possible names for the offender, knowing the appropriate dates of the offense in question, and having access to several terminals available to the user with valid identification numbers for system access. This project links offender files across platforms based upon a unique ID number.

Implementation Issues: This State initiative will be constrained in usefulness if it does not consist of a unique ID number for offenders that becomes a part of their files throughout their criminal careers.

A case-by-case identifier that changes with each new case will not suffice. A local identifier could be automatically generated in the system by the first local justice agency to be in contact with the offender.

As part of the integration project the number could then be automatically distributed to other justice system users as the first step in the creation of case-processing files.

Timetable: Since this is a state initiative, it will be somewhat insensitive to local requirements. The local identifier should become part of the integration project and given a high priority. A local common identifier could be developed by December 2000.

Staffing: No unique staffing is required.

Applicable Standards: None other than State and Federal rules for confidentiality that will be enhanced by this initiative.

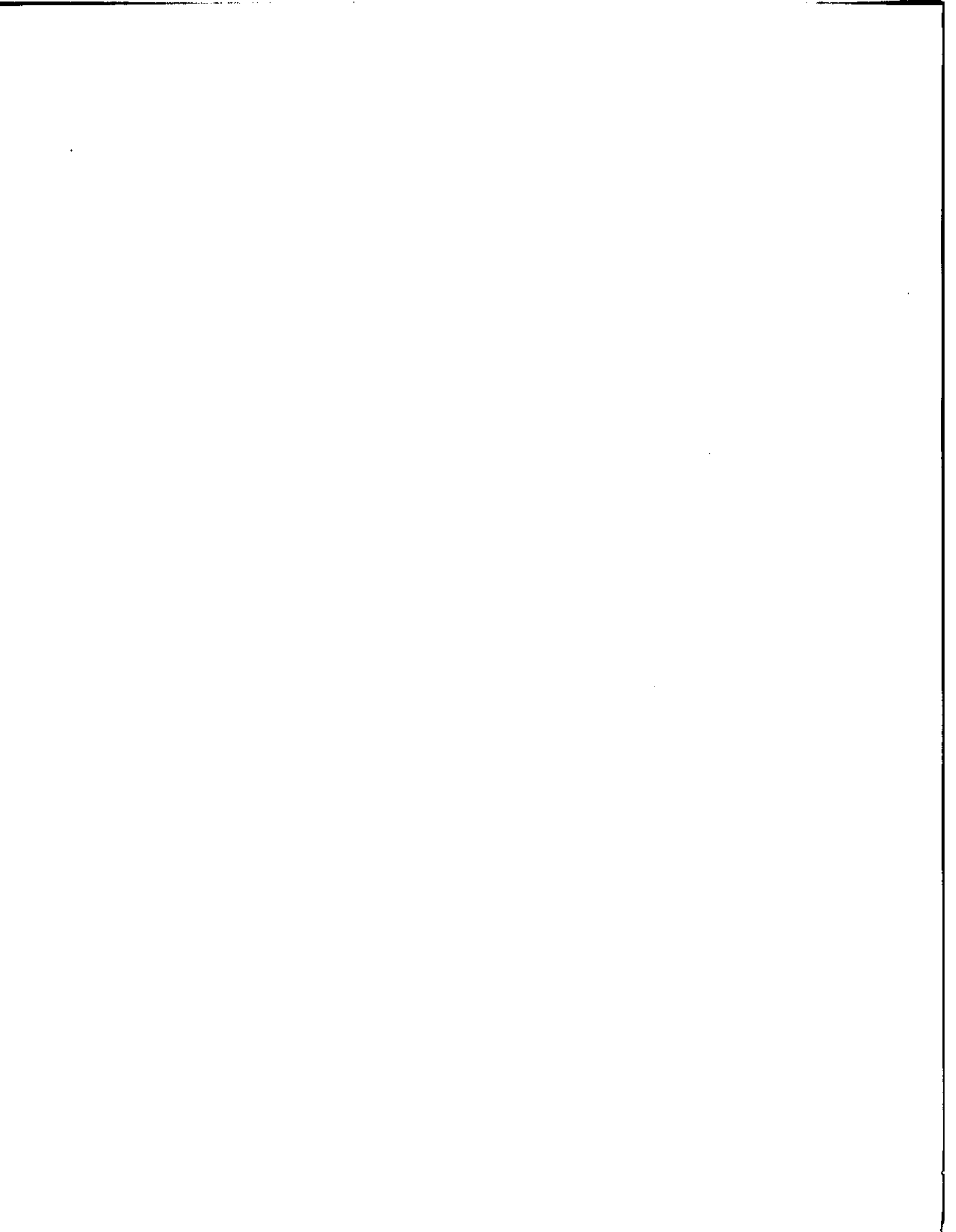
Costs – Budget: None is anticipated.

Management Plan: The MIS Committee will manage this task as supported by IS staff.

Evaluation Protocol: This initiative will significantly improve the ability of local, state, and federal researchers to conduct client level program evaluations while examining the impact on offenders of all proposed justice initiatives.

APPENDIX B:

Whatcom County: A History of Data Integration



Development History of Data Integration For Whatcom County

Phase I

Development of Case Management and Tracking Systems

In 1983 the Whatcom County Sheriff's Office went live with a computerized case management and tracking system that records information regarding incidents, citations, persons and businesses, arrest and bench warrants, and domestic violence orders. The program was custom designed, by an outside vendor, for Whatcom County to operate on an IBM System/36. It was written in RPG (primarily System/36 environment RPG) using program-defined files with some IDDU definitions.

In 1987, the Whatcom County Executive and County Council approved funding to commence the design of a computerized case management and tracking system for the Whatcom County Prosecutor's Office. The parties involved in the system design recognized even then the necessity of building a system that would eventually be fully integrated. The design concept was that of a Coordinated Integrated System that followed along department lines, with a separate subsystem for each department. The design plan anticipated the eventual building of another subsystem to handle the inter-subsystem data flows.

The subsystem development progressed in the following order:

- 1) In 1989, the Prosecutor's Office went "on-line" with a system that maintains information regarding events, persons associated with events, cases and associated documentation, and court calendars. The
- 2) In 1992, the Public Defender's Office came "on-line" with a system that maintains information regarding cases, defendants, and public defender attorneys. The data files contain information regarding approximately 16,000 persons and 37,500 cases.
- 3) In 1993, the Jail went "on-line" with a system that maintains information regarding prisoners; associated data files contain data regarding approximately 85,000 persons and 80,000 cases, including booking, housing, charges, releases, and medical. This system was designed to share some data, primarily personal information regarding prisoners, with the Sheriff's system. The system currently contains information regarding approximately 32,000 bookings.

Phase II

Whatcom County/City of Bellingham Acquired an AS/400

In 1991, an agreement was reached with the City of Bellingham, that allowed the Bellingham Police Department (BPD) to commence utilization of the Sheriff's subsystem for their case management and tracking system. To facilitate this agreement, it was necessary to acquire a second IBM AS400 that was to be dedicated specifically for criminal justice systems utilization. Once BPD was on-line, approximately 73% of all County law enforcement data became available to users on the County's AS400. All these subsystems, with the exception of the Public Defender's, permit read-only access (with some limitations) to other subsystem users.

Phase III

Integration of AS/400 Subsystems Planning Commences

The *ad hoc* Criminal Justice Working Group, made up of all the county's law and justice offices and the local office of the Department of Corrections, came to realize that 75-80% of inter-departmental/ agency problems arose from failed information-sharing (communications), ranging from the accuracy or completeness of data to the timely sharing of data. All partners recognized that it was time to commence the design of the system that would handle the inter-subsystem data flows. Creation of this integrated subsystem would result in the elimination of duplicate entries of data for about 95% of each departmental subsystem.

In 1993, the Whatcom County Criminal Justice Working Group began design development in earnest. The design presumes that the first department/agency able to capture and enter the data will own and be responsible for entering the data. Thenceforward, the data will flow to and populate the other subsystems. These subsystems will remain disparate to the extent that unique information is needed for day-to-day operations of a specific department or agency. Work by the "group" resulted in the identification and agreement on the form and content of sharable information. This evaluation process also resulted in the identification of those data fields that would remain "*confidential*," i.e. to be displayed for a password-protected user. Beginning in this same year, and each subsequent year through 1995, the Working Group submitted a budget request seeking funds to integrate the existing AS/400 subsystems, which was denied.

Phase IV

Access to the Judicial Information System Becomes Available through the AS400

In 1994, a precedent-setting agreement facilitated connectivity to the state-owned and maintained **Judicial Information System (JIS)**, containing the official court records for the Superior Court, District Court, Juvenile Court and most other courts of limited jurisdiction, through Whatcom County's Law & Justice AS/400. It was recognized that, by making this data available system-wide, via the in-place, state-of-the-art wiring and the existing AS/400 connections, a significant saving in manpower could be realized. Personnel in subsystem user offices needing case numbers, charging information, etc., could now look up the data via read-only access, without having to telephone a court for the information or submitting a written request for on-line data.

Phase V

Funding for the Data Integration Project Becomes Available

Once again, in 1996 the Criminal Justice Working Group sought funding for the data integration project. Finally, in 1997, \$50,000 was appropriated to commence the "in-house" design of a request for proposal (RFP). The design team was led by two programmer/analysts who were assigned to the project by the Director of Information Services (IS). The Criminal Justice Information System (CJIS) Request for Proposal was published May 27, 1998. The original CJIS RFP was written to ensure the County's existing subsystems, Assigned Council's and the Sheriff's Office stand-alone systems were integrated and that the following benefits were provided:

- Minimize the duplication of entries into the subsystems, thereby streamlining business processes, saving staff input time, minimizing potential data integrity problems, and increasing the efficiency and effectiveness of the County's criminal justice system;
- Capture data at the first point of entry into the criminal justice system and make common data available to all authorized staff immediately upon input, thereby reducing the lag time inherent in the existing system and minimizing data inconsistency.
- Make the subsystems and related applications Year 2000 compliant (moot accomplished in December of 1999);
- Make the criminal justice applications more user-friendly by providing an option to present information with a Windows-like graphical user interface;
- Provide a foundation for the future integration of the County criminal justice system with the State Judicial Information System (JIS)

Unfortunately, the RFP resulted in the receipt of only two proposals. The small number of responses from design firms was most likely attributable to pre-existing Y2K programming commitments which preempted their ability to timely respond. In the County's 2000 budget \$70,000 was appropriated to commence the re-write of the 1998 Criminal Justice Information System RFP. The impetus to revive the data

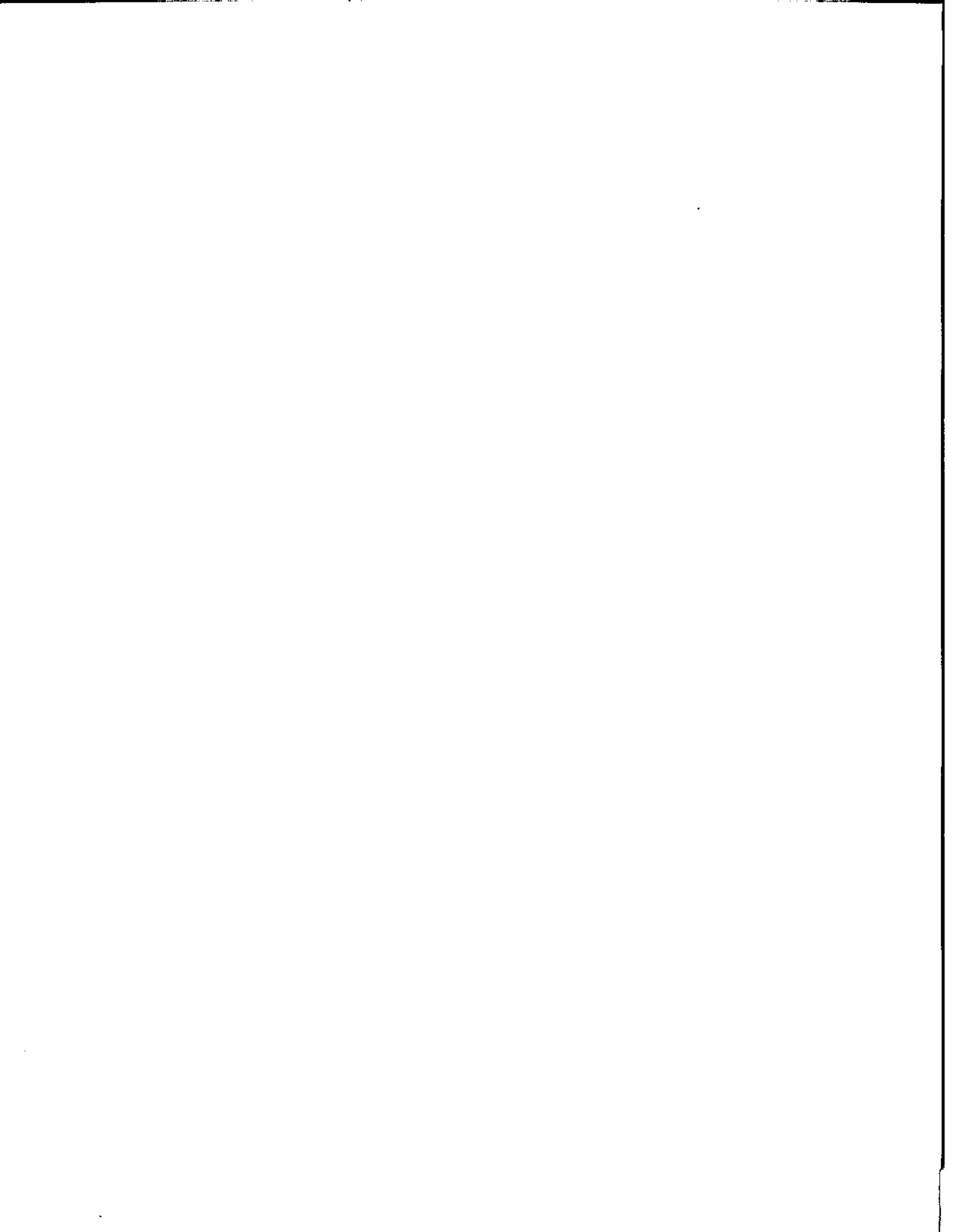
integration project came from the Law and Justice Phase I Planning Report, which recommends this project as a top priority for implementation. Further, the Law and Justice Phase II Implementation Report includes this project as "Recommendation C.2".

The 2000 CJIS RFP seeks to expand the project scope to include the following modules and requirements:

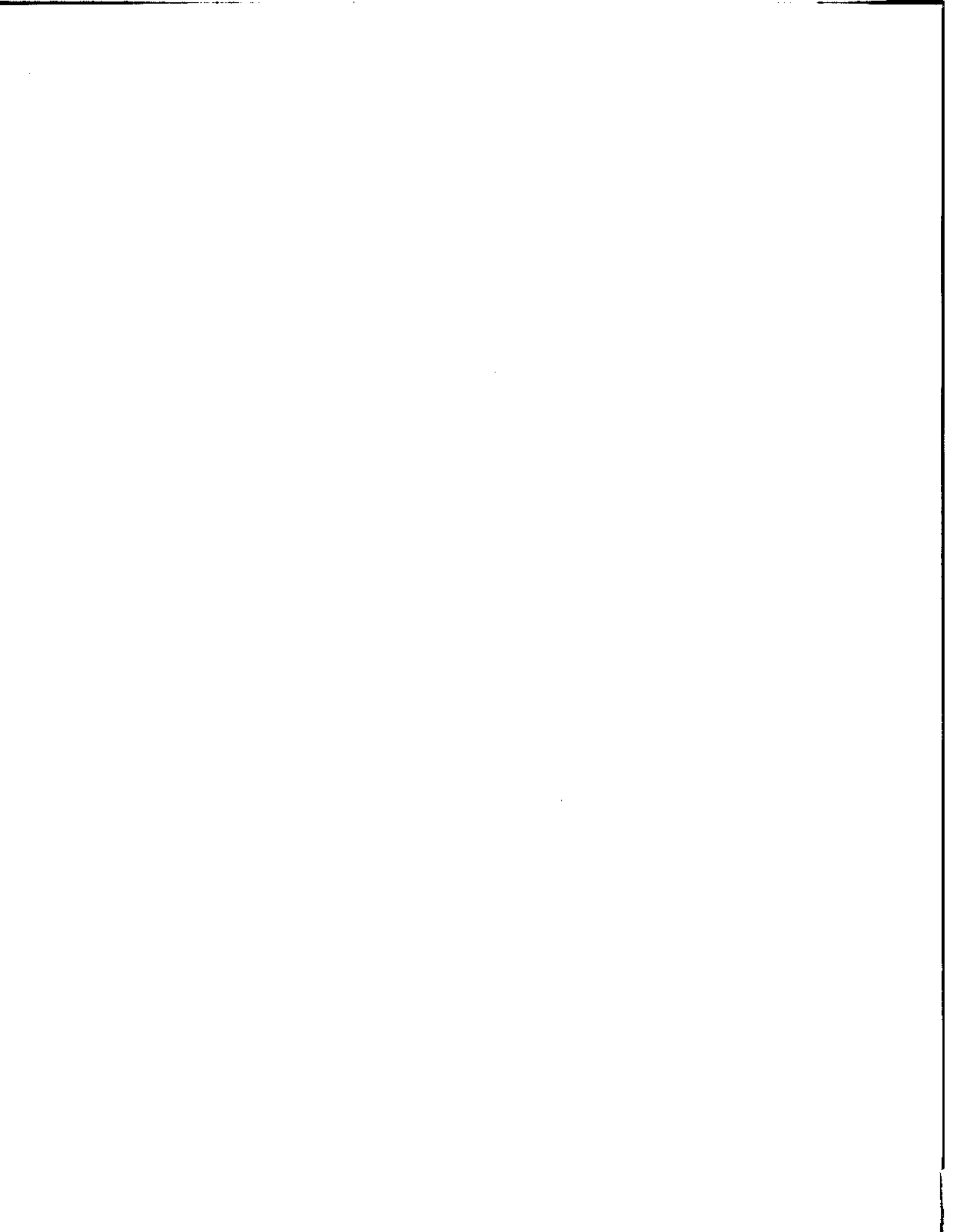
- The design of an interface that will integrate the County's criminal justice subsystems with the City of Bellingham's Judicial Information System. "middleware" (i.e. XML, eXtensible markup language) software is being explored as the most viable solution.
- Design of a Detention subsystem that mirrors the Jail subsystem.
- Design of a Probation subsystem that would be utilized by both the District and Juvenile Departments.
- Provide the foundation for the integration of the County criminal justice system with the State Justice Information Network. Again, the solution appears to be utilization of a "middleware" software, specifically XML, which is the standard being adopted by the State of Washington.

Phase VI Expansion of Integration Project with Grant Funding

The next stage of the project is to extend the integration effort to all the other municipalities and tribes within the County, and state criminal justice systems (i.e. JIS and JIN) employing the "newest technologies, such as relational database management systems, indexing and middleware, to trigger the passing of information throughout the criminal justice system". The intent is not to create a "system that requires large-scale system overhauls, data dumping into bottomless mainframe databases and two-step data transfers". It is possible that Whatcom County will be the pilot site for a "data exchange" as well as an electronic filing project. Should TOP Grant funds become available, this phase of the project could become a reality in the short-term. It is intended that the above-described, integration efforts, will continue regardless of whether grant funds are awarded, however, the implementation time frame will be lengthened due to financial constraints.



APPENDIX C:
Letter of Support Stakeholders



WHATCOM COUNTY
LAW & JUSTICE COUNCIL
County Courthouse
311 Grand Avenue
Bellingham, WA 98225-4038
(360) 738-2502



Kathleen Marshall
Chair
David McEachran
Vice Chair
Ron Peterson
Coordinator

October 17, 2002

ORIGINAL

Mr. Pete Kremen
Whatcom County Executive
311 Grand Ave., Suite 108
Bellingham, WA 98225-4082

RE: Letter of Commitment to Community Wide Law & Justice Information Access & Sharing

Dear Sir:

In March of 2001 the law enforcement agencies in Whatcom County showed their support for the concept of a virtual private network of access to and sharing of information vital to the safety of the members of this community. The support was demonstrated via individual letters of support to be included in a TOP Grant application. The grant application was not successful due to the focus of the grant being on cutting edge, biometric technologies.

The MIS project has continued to move forward and a funding opportunity is again becoming available to move this project ahead that is not in conflict with diminishing local government revenues. The purpose of this letter is to demonstrate a continued support of this type of project that facilitates all agencies keeping their own legacy records management systems while being able to access other agency information and share that vital information. It is vital not only in Whatcom County but throughout the nation that all available information regarding criminal activities is immediately available to law enforcement officers who protect and serve our communities.

Important points brought out by the law enforcement agencies in their support of the technology grant include:

"Officers with complete information on individuals can more readily evaluate a situation and determine a precise course of action, resulting in increased safety for all concerned." - Sheriff Brandland

"An informational system common to all jurisdictions within the county will dramatically reduce the frustrations, expenses, and safety loss currently experienced." Dale Baker, Chief of Police, Ferndale

"Integration and sharing of resources is vital to a cohesive and effective approach to criminal justice administration in the 21st century." - James E. Shaw, Chief of Police, Western Washington University

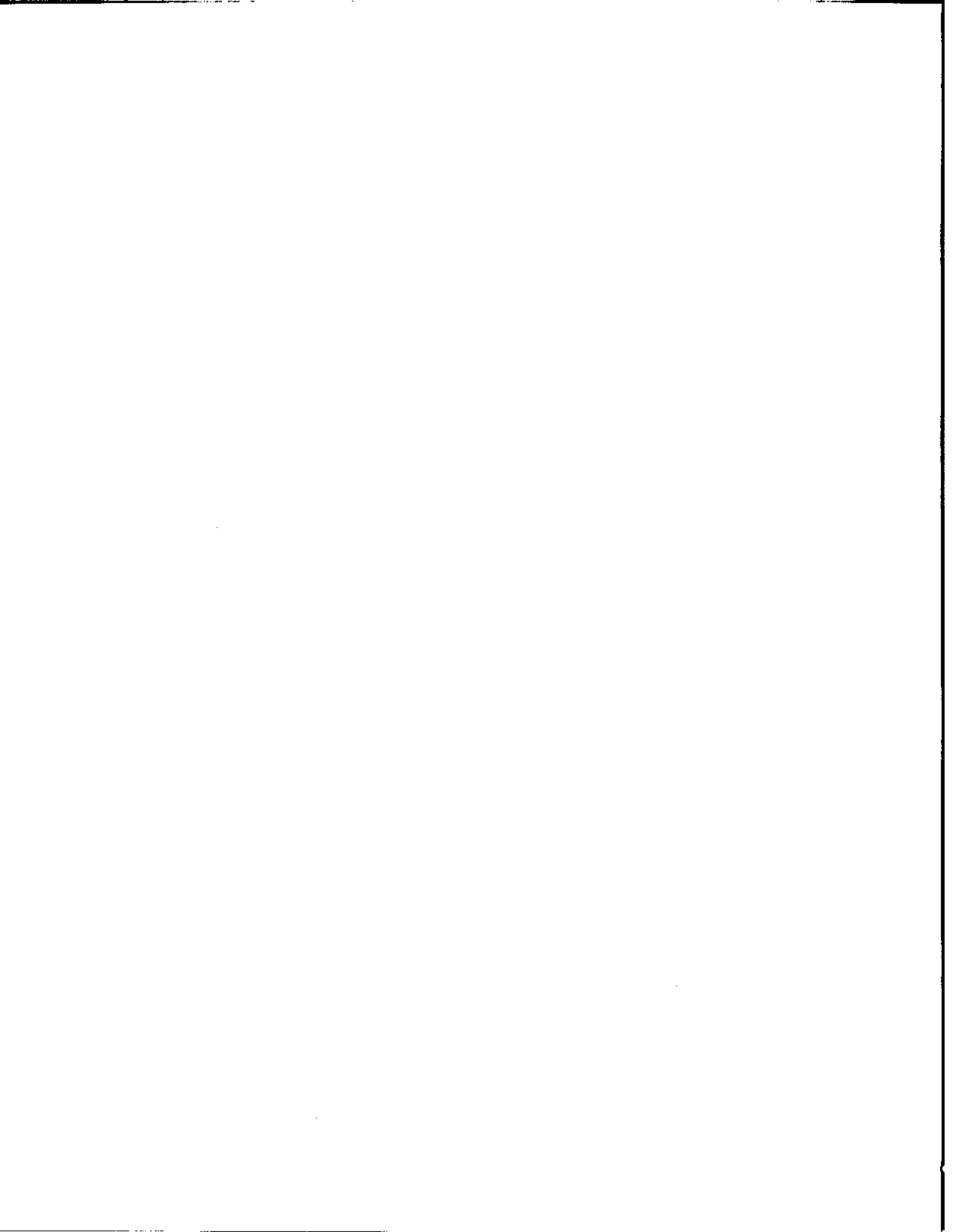
"Access to information in a timely manner can be a life-saving tool to law enforcement personnel in the field." Chris Haugen, Chief of Police, Sumas

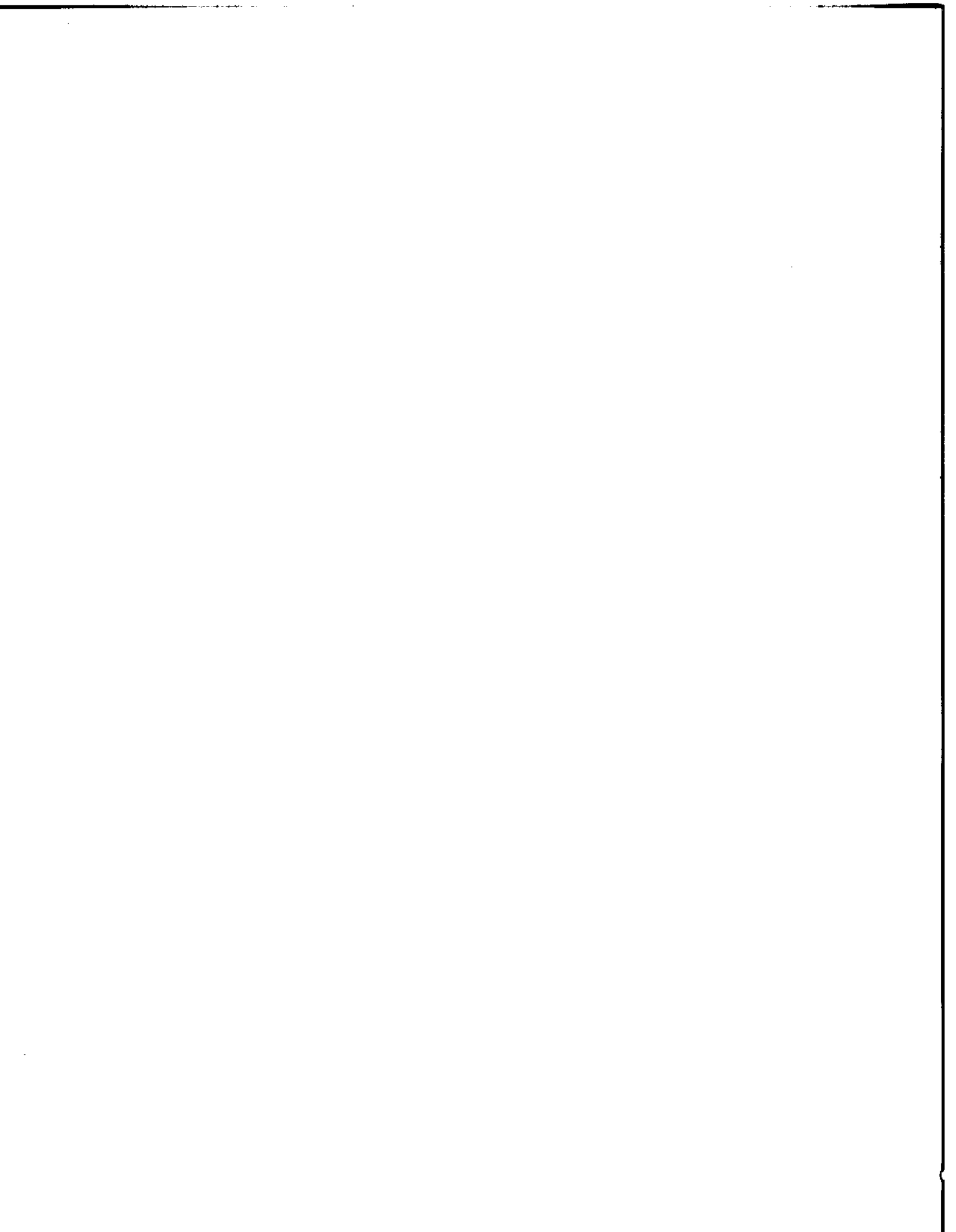
"The sharing of data between law enforcement agencies, put simply, saves lives, and saving lives is the ultimate goal for everyone involved." - Jack Foster, Chief of Police, Lynden

"The technology components of the Law and Justice Council's project are critical to the improvement of the overall county criminal justice system." - Bill Elfo, Chief of Police, Blaine

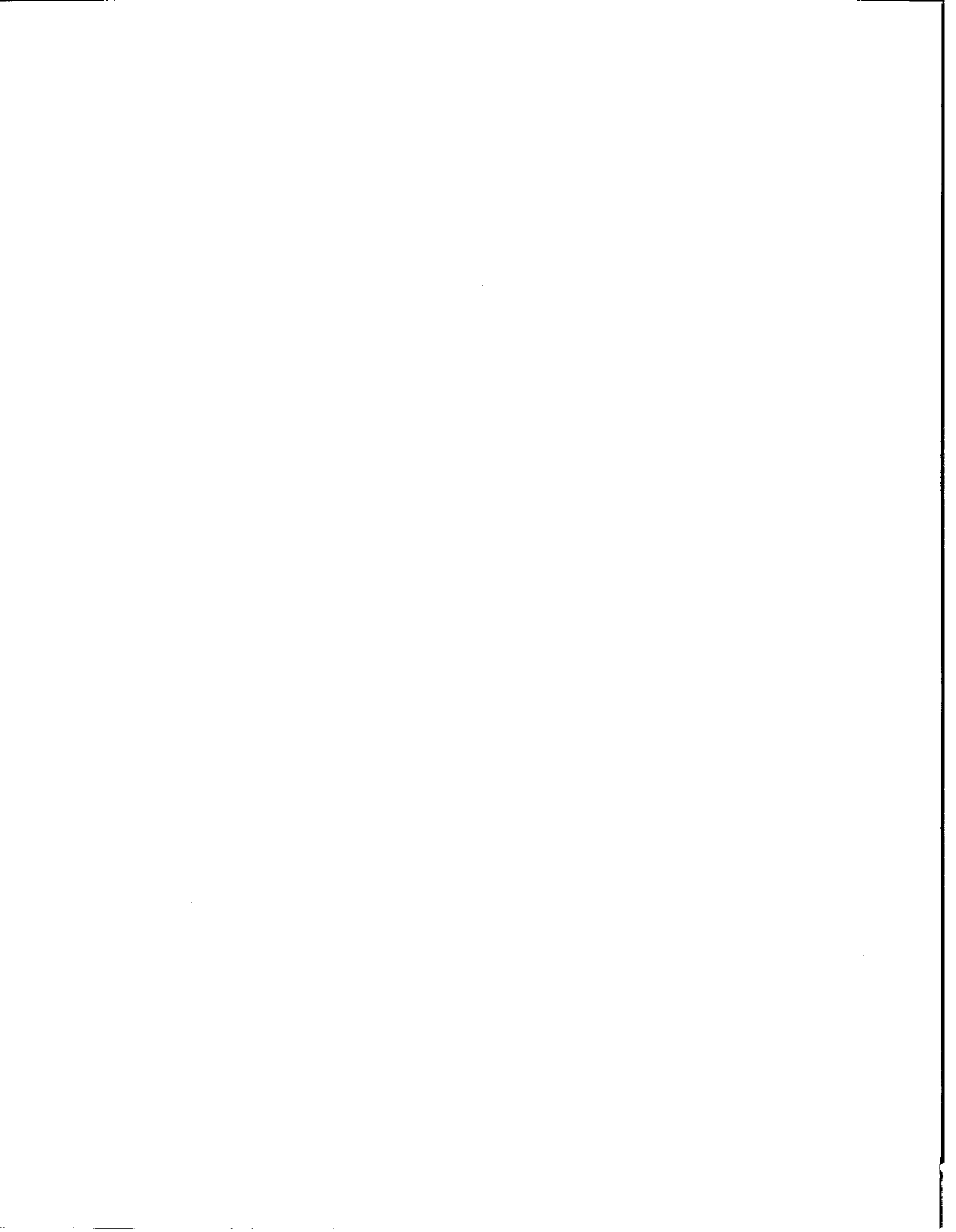
"We support the efforts that are being made through this proposed project and we are willing to participate in the program as it is developed." - Eric Ramstead, Chief of Police, Everson

"We see this collaborative effort as a means to improve the effectiveness of all of our organizations through the use of shared resources and information and to ultimately move all of us toward the same goal of saving lives, time, and money." - Randy Carroll, Chief of Police, Bellingham





APPENDIX D:
LEA COMPUTER SYSTEM
SURVEY



WHATCOM COUNT I.S. SUBCOMMITTEE

QUESTIONNAIRE

	WCSO	LUMMI	WWU	BLAINE	EVERSON	NOOKSACK	SUMAS
What kind of Records Management System (RMS) software do you currently have?	AS400	NetRMS	ARMS	LEMS, CLEMS	Crime Star	Crime Star	Crime Star
Does your RMS store data in a database? What kind of database?	AS400	SQL 2000	SQL 2000	LEMS - Priority Btrieve CLEMS - MS Access	MS Access	Unknown	MS Access
Is your database stored on a server centrally located to your facility?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
What is the capability to expand your RMS system?	Expandable	Expandable	Complete	LEMS - scalable modular CLEMS - scalable modular	Able to add new modules	Expandable	Expandable
If you do not have a db, do you use a WP based template?	Word	Word	Within ARMS	LEMS - No add on CR CLEMS - Word	Within Crime Star	Within Crime Star	Within Crime Star
If you use WP based template, where do you store original?	Shared drive in County IS dept.	Server	Server	Server	N/A	Server	Server
Who maintains your RMS?	County I.S.	Scott Graham	Dave Doughty	Mike Haslip	Russ Martin	Gary Brandt	Chris Haugen
How many people currently utilize your RMS?	151	17	20	32	12	5	7
How many people would you like to utilize the system?	250	50-75	30	50-75	16-17	10	8
Would you be willing to share RMS info. w/other LEA?	Yes	Yes	Yes	Yes	Yes	Yes	Yes, Read
Do you have a budget for maintaining your RMS?	No	Tribal Resources Grants	No	Line Item in budget	Yes	Yes	No
Are you aware of the benefits w/electronic IGN connection?	Yes	Yes	Yes	Yes	No	No	No

1. What kind of Records Management System (RMS) software do you currently have?
2. Does your RMS store data in a database? What kind of database? – SQL, Oracle, ODBC, MS Access, Custom, AS400, Other
3. If you use a database, is the database stored on a server centrally located to your facility?
4. What is the capability to expand your RMS system?
5. If you do not have a database do you use a word processor based template?
6. If you use a word processor based template where do you store the original electronic Case Report?
7. Who maintains your RMS?
8. How many people currently utilize your RMS (#)?
9. How many people would you like to utilize the system (#)?
10. Would you be willing to share RMS information with other law enforcement agencies?
11. Do you currently have a budget for maintaining your RMS?
12. Are you aware of the benefits associated with an electronic IGN connection?

Whatcom County IS Subcommittee
WCSC
Joan Defries

1. What kind of Records Management System (RMS) software do you currently have?
AS400
2. Does your RMS store data in a database? What kind of database? – SQL, Oracle, ODBC, MS Access, Custom, Other
YES
AS400
3. If you use a database, is the database stored on a server centrally located to your facility? **YES**
4. What is the capability to expand your RMS system?
It can be expanded.
5. If you do not have a database do you use a word processor based template?
Word
6. If you use a word processor based template where do you store the original electronic Case Report?
Shared drive located in Whatcom County IS Department.
7. Who maintains your RMS?
Whatcom County IS
8. How many people currently utilize your RMS (#)?
151
9. How many people would you like to utilize the system (#)?
250
10. Would you be willing to share RMS information with other law enforcement agencies?
Yes
11. Do you currently have a budget for maintaining your RMS?
No
12. Are you aware of the benefits associated with an electronic IGN connection?
Yes

Whatcom County IS Committee

Lummi PD

Scot Graham

1. What kind of Records Management System (RMS) software do you currently have?

NetRMS

2. Does your RMS store data in a database? What kind of database? – SQL, Oracle, ODBC, MS Access, Custom, AS400, Other

Yes, SQL 2000

3. If you use a database, is the database stored on a server centrally located to your facility?

Yes

4. What is the capability to expand your RMS system?

Yes

5. If you do not have a database do you use a word processor based template?

Yes, MS Word 2000

6. If you use a word processor based template where do you store the original electronic Case Report?

Server

7. Who maintains your RMS?

Scot Graham

8. How many people currently utilize your RMS (#)?

17

9. How many people would you like to utilize the system (#)?

50 -75

10. Would you be willing to share RMS information with other law enforcement agencies?

Yes

Whatcom County IS Committee
Lummi PD
Scot Graham

11. Do you currently have a budget for maintaining your RMS?

Tribal Resource Grants

12. Are you aware of the benefits associated with an electronic IGN connection?

Yes

Whatcom County IS Subcommittee

WWU PD

Dave Doughty

1. What kind of Records Management System (RMS) software do you currently have?

ARMS (Automated Records Management System)

2. Does your RMS store data in a database? What kind of database? – SQL, Oracle, ODBC, MS Access, Custom, AS400, Other

Yes, MS SQL 2000

3. If you use a database, is the database stored on a server centrally located to your facility?

Yes

4. What is the capability to expand your RMS system?

Complete

5. If you do not have a database do you use a word processor based template?

Write within ARMS

6. If you use a word processor based template where do you store the original electronic Case Report?

Server

7. Who maintains your RMS?

Dave Doughty

8. How many people currently utilize your RMS (#)?

20

9. How many people would you like to utilize the system (#)?

30

10. Would you be willing to share RMS information with other law enforcement agencies?

Yes

Whatcom County IS Subcommittee
WWU PD
Dave Doughty

11. Do you currently have a budget for maintaining your RMS?

No

12. Are you aware of the benefits associated with an electronic IGN connection?

Yes

Whatcom County IS Subcommittee
Blaine PD
Mike Haslip

1. What kind of Records Management System (RMS) software do you currently have?

LEMS (Law Enforcement system), CLEMS (Combined Law Enforcement System)

2. Does your RMS store data in a database? What kind of database? – SQL, Oracle, ODBC, MS Access, Custom, AS400, Other

**Yes, LEMS – Priority Btrieve
CLEMS – MS Access**

3. If you use a database, is the database stored on a server centrally located to your facility?

Yes to both

4. What is the capability to expand your RMS system?

**LEMS –scalable modular
CLEMS – scalable modular**

5. If you do not have a database do you use a word processor based template?

**LEMS – No add on CR
CLEMS - Word**

6. If you use a word processor based template where do you store the original electronic Case Report?

Server

7. Who maintains your RMS?

Mike Haslip

8. How many people currently utilize your RMS (#)?

32

9. How many people would you like to utilize the system (#)?

50 -75

Whatcom County IS Subcommittee
Blaine PD
Mike Haslip

10. Would you be willing to share RMS information with other law enforcement agencies?

Yes

11. Do you currently have a budget for maintaining your RMS?

Line Item in the buget

12. Are you aware of the benefits associated with an electronic IGN connection?

Yes

Whatcom County IS Subcommittee
Everson PD
Russ Martin

1. What kind of Records Management System (RMS) software do you currently have?

Crime Star

2. Does your RMS store data in a database? What kind of database? – SQL, Oracle, ODBC, MS Access, Custom, AS400, Other

Yes, MS Access

3. If you use a database, is the database stored on a server centrally located to your facility?

Yes

4. What is the capability to expand your RMS system?

Yes, able to add new modules

5. If you do not have a database do you use a word processor based template?

Within Crime Star

6. If you use a word processor based template where do you store the original electronic Case Report?

No

7. Who maintains your RMS?

Officer Russ Martin

8. How many people currently utilize your RMS (#)?

12

9. How many people would you like to utilize the system (#)?

16-17

10. Would you be willing to share RMS information with other law enforcement agencies?

Yes

Whatcom County IS Subcommittee
Everson PD
Russ Martin

11. Do you currently have a budget for maintaining your RMS?

Yes

12. Are you aware of the benefits associated with an electronic IGN connection?

No

Whatcom County IS Subcommittee

Nooksack PD

Larry Mount

1. What kind of Records Management System (RMS) software do you currently have?

Crime Star

2. Does your RMS store data in a database? What kind of database? – SQL, Oracle, ODBC, MS Access, Custom, AS400, Other

Unknown

3. If you use a database, is the database stored on a server centrally located to your facility?

Yes

4. What is the capability to expand your RMS system?

Expandable

5. If you do not have a database do you use a word processor based template?

Within Crime Star

6. If you use a word processor based template where do you store the original electronic Case Report?

Server

7. Who maintains your RMS?

Gary Brandt

8. How many people currently utilize your RMS (#)?

5

9. How many people would you like to utilize the system (#)?

10

10. Would you be willing to share RMS information with other law enforcement agencies?

Yes

Whatcom County IS Subcommittee
Nooksack PD
Larry Mount

11. Do you currently have a budget for maintaining your RMS?

Yes

12. Are you aware of the benefits associated with an electronic IGN connection?

No

Whatcom County IS Subcommittee
Sumas PD
Chris Haugen

1. What kind of Records Management System (RMS) software do you currently have?

Crime Star

2. Does your RMS store data in a database? What kind of database? – SQL, Oracle, ODBC, MS Access, Custom, AS400, Other

Yes, MS Access

3. If you use a database, is the database stored on a server centrally located to your facility?

Yes

4. What is the capability to expand your RMS system?

Yes,

5. If you do not have a database do you use a word processor based template?

Within Crime Star

6. If you use a word processor based template where do you store the original electronic Case Report?

Server

7. Who maintains your RMS?

Chris Haugen

8. How many people currently utilize your RMS (#)?

7

9. How many people would you like to utilize the system (#)?

8

10. Would you be willing to share RMS information with other law enforcement agencies?

Yes, read

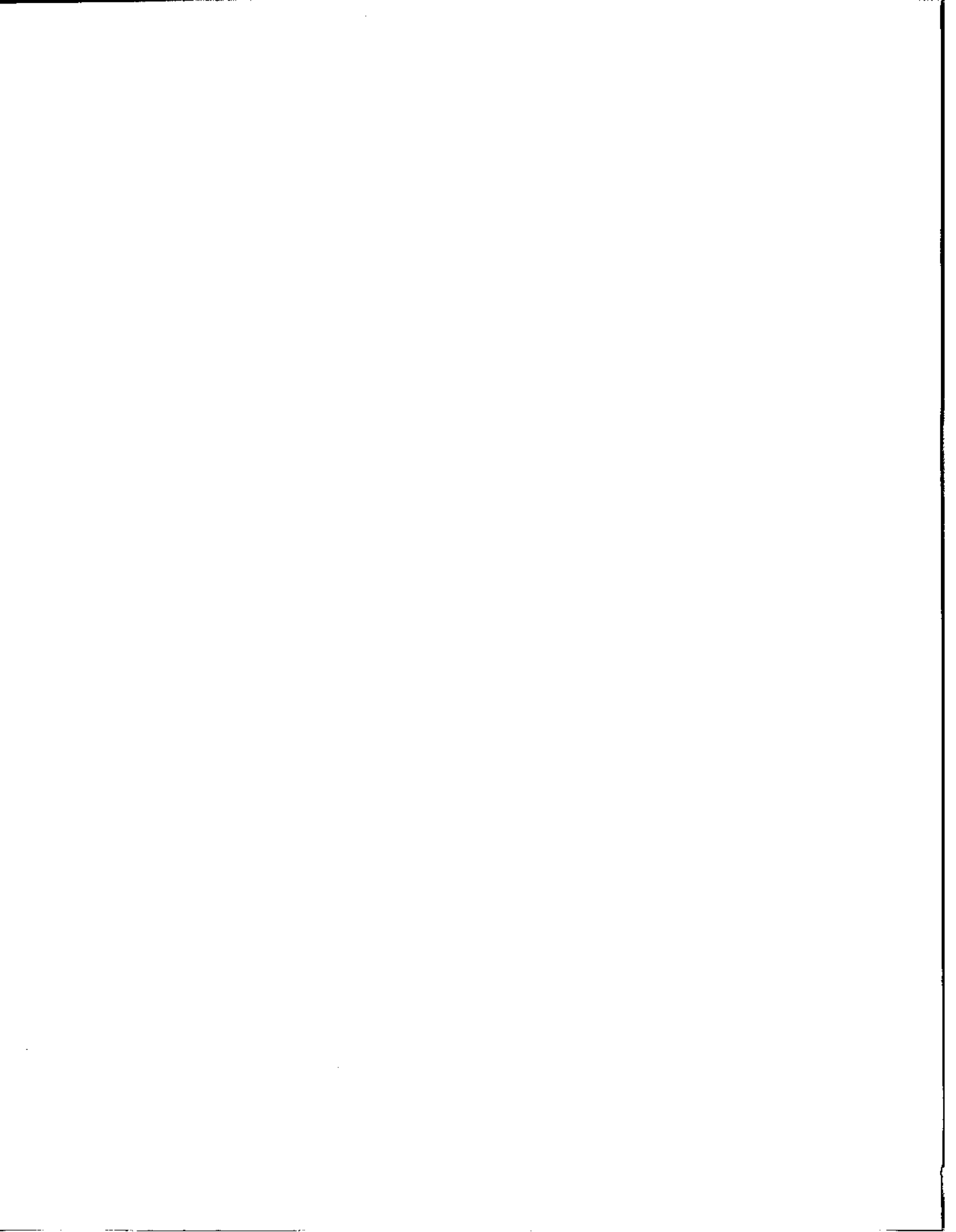
Whatcom County IS Subcommittee
Sumas PD
Chris Haugen

11. Do you currently have a budget for maintaining your RMS?

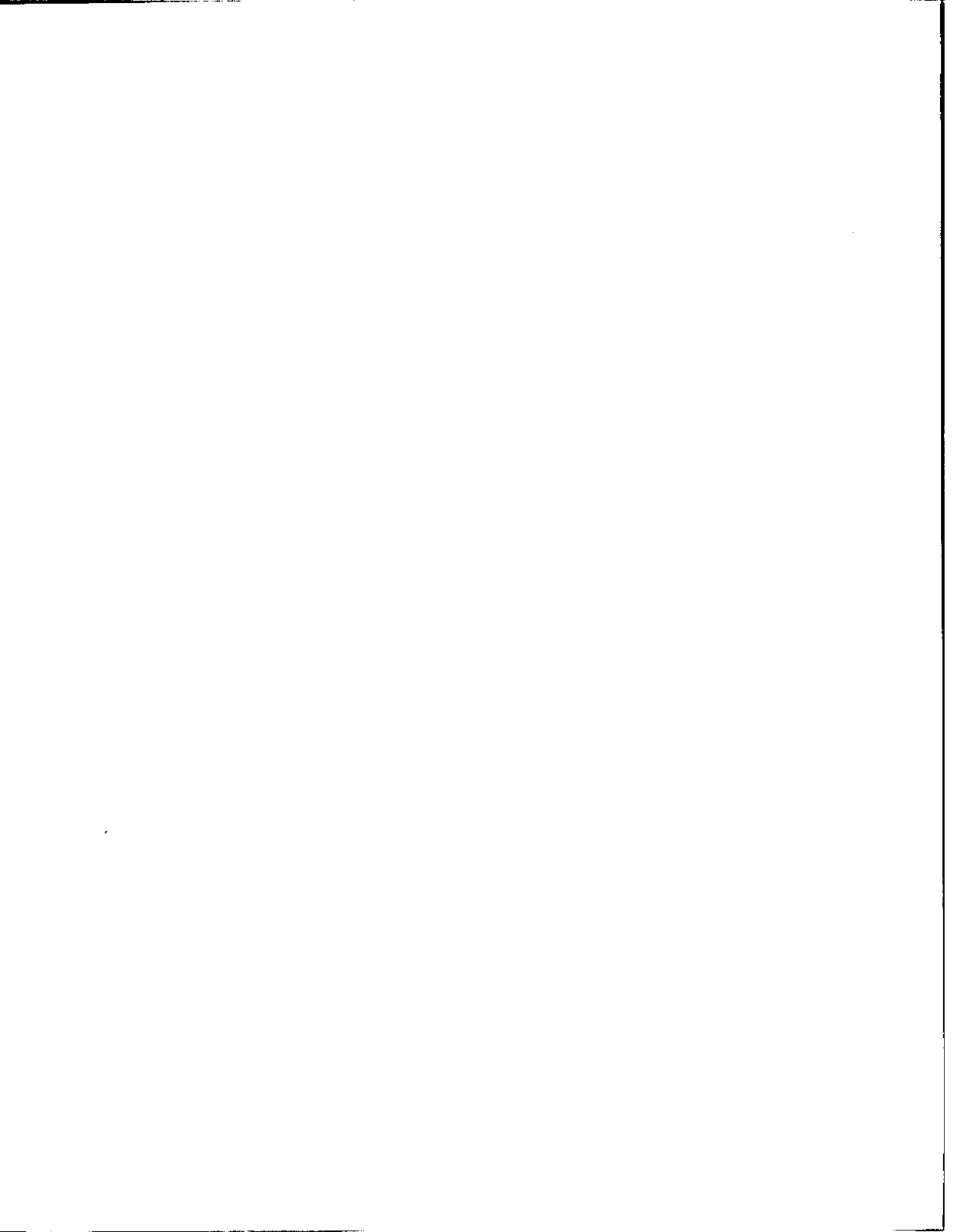
No

12. Are you aware of the benefits associated with an electronic IGN connection?

No



APPENDIX E:
MIS Committee 2000 LJC Proposal



EXECUTIVE SUMMARY

This proposal is one component of a strategy developed to achieve the objectives of the MIS Subcommittee for the Law and Justice Council. This proposal identifies the need to develop, design and implement an integrated justice system in the County of Whatcom.

This proposal specifically seeks to create tangible benefits for communities by having criminal justice agencies work together to improve the efficiency and effectiveness of operations by using information technology.

The results and benefits of this project to the justice systems in Whatcom County will create an adult and juvenile justice system that has its offender-based processes linked together and supported by a smooth flow of information thereby **eliminating processing bottlenecks and enhancing public safety** through timely sharing or exchange of information.

This funding request seeks to implement the following recommendations from the Law and Justice Plan for Whatcom County:

1. **Recommendation 3.2** – Proceed with Data Integration;
2. **Recommendation 3.3** – Expand Data Integration to Include External System Users; and
3. **Recommendation 3.4** – Hire a Justice Dedicated Information Service Staff (Project Manager).

Total budget anticipated for 2001 is \$265,000. The full cost of implementation will occur in 2002. Until the RFP proposals are analyzed and a vendor(s) are selected the total cost can only be estimated.

1.0 MISSION STATEMENT:

The mission statement of the Subcommittee of the Law and Justice Council is to "improve the efficiency and effectiveness of all adult and juvenile justice systems within Whatcom County through the use of information resource management to support the enhancement of public safety and the swift and fair administration of justice." This proposal is one component of a strategy developed to achieve this mission. *It specifically seeks to create tangible benefits for communities by having criminal justice agencies work together to improve the efficiency and effectiveness of operations by using information technology. To create an adult and juvenile justice system that has its offender-based processes linked together and supported by a smooth flow of information thereby eliminating processing bottlenecks and enhancing public safety through timely sharing or exchange of information.*

This funding request seeks to implement **Recommendations 3.2, 3.3 and 3.4** of the Law and Justice Plan (see pages 17-24).

2.0 PROBLEM STATEMENT:

The databases maintained by the justice agencies of Whatcom County were not designed to share or exchange data or case information, either between themselves or with other relevant Whatcom County justice agencies. Every state, federal, municipal and tribal entity maintains information systems from which crime, arrest, court and incarceration data is needed on a daily basis by all other Whatcom County criminal justice agencies.

Existing systems do not have a single point of entry that allows justice system user access to all information without logging onto multiple systems, or multiple terminals using multiple passwords. Therefore, the ability to apprehend, adjudicate, supervise and treat criminal defendants is constrained by the amount of time required to access information with the existing system design and infrastructure. The capacity to share or exchange information in an efficient manner between the local police agencies, sheriff, prosecutors, courts, correctional facilities and probation agencies is essential.

3.0 GOALS AND OBJECTIVES:

As a foundation to attaining a better understanding of the specific objectives set forth below, it is the view of the MIS Subcommittee that we should present **our vision** of where data sharing should ultimately lead the Whatcom County criminal justice agencies.

The Vision:

Imagine a police officer in Ferndale or a Sheriff's deputy in a remote area of Whatcom County stopping a suspicious car on a routine traffic violation early in the morning. The officer, for safety reasons, wants to know as much as possible about the driver before approaching the vehicle. Instead of calling dispatch, the officer types the vehicle license number into a mobile computer linked to a nationwide information system that includes Whatcom County. Within seconds the officer knows conviction history, warrant information, vehicle licensing and registration information, whether the individual has gang connections, is considered armed and dangerous, has mental health issues, or is currently under probation or parole supervision. This information allows the officer to decide whether to make an arrest without calling for back up assistance. Once the arrest is made the critical, data elements and the officer's narrative report are entered into the computer system from the laptop in the officer's patrol car. Automatically, the data elements are "pushed" or distributed into all linked computer subsystems and the narrative is routed for review and distribution in a digital format. This action begins the process where at key decision points, throughout the legal process, data, pleadings and reports are exchanged electronically between all justice practitioners in a timely, efficient and accurate manner.

This proposal continues the data sharing process that commenced in the late eighties and takes Whatcom County's criminal justice practitioners closer to the ideal data integration solution described above. The following sections identify the goals, objectives and the tasks required to achieve data sharing and integration in Whatcom County.

GOAL 1:

Develop a phased, systemic and multi-jurisdictional process that allows the sharing and/or exchanging of information between all law and justice administrators and staff to track offenders from the moment they enter the justice system until they are re-integrated back into the community. The solution will embody the following principles:

- That legacy (existing) databases of all participating entities are maintained.
- Ensures access to and sharing of critical information at key decision points throughout the justice process.
- Capture of data at the originating point, rather than trying to reconstruct it down line or have others capture it;
- Data is captured once and used many times, leveraging existing resources and improving data quality;
- Information is automatically exported to another agency, based on actions taken within the originating agency;

**Data Integration Application
'Management Information Systems'**

- Information is automatically imported from other systems for incorporation into the recipient agency system;
- Automatic query of local databases to assess the criminal justice status of a person;
- Generalized automatic query, importation, exportation, and publication of data are constructed as general capabilities of the system, so that, for example, additional automatic reporting can easily be implemented as additional requirements are identified.
- That the quality of the information is maintained through internal control mechanisms, that quickly identify the occurrence of inaccurate information and provide for the initiation of timely corrective action.
- That the integrity and security of the information is maintained through internal control mechanisms that prevent access by unauthorized persons and unauthorized use of information by authorized users.
- Technical architecture is based on the open system building block approach using standards such as TCP/IP, relational database management systems and computer operating systems that implement these standards.
- That the technical architecture includes the necessary technical and network infrastructure to support this system.
- That the foundation is laid to allow for the future intergovernmental sharing and/or exchanging of data;

OBJECTIVE #1: Hire Dedicated Project Coordinator [Recommendation 3.4]

TASKS:

1. Immediately commence the process of hiring a project coordinator as recommended in the Law and Justice Report. This individual needs to be on board no later than April, 2001, in order to assist with the development of the data sharing Request for Proposal (RFP) and Juvenile subsystem design.
 - a. Get authorization to hire approved.
 - b. Commence hiring process as soon as possible.

**OBJECTIVE #2: Prepare an analysis of partnering agencies database.
[Recommendation 3.2]**

TASKS:

1. Identify the process that will be used to access data.
2. Identify the various points of entry of specific data and which agency is responsible for the data entry of specific data.
3. Identify partnering agency data elements.
4. Have all affected agencies assist in the development of mutually agreed upon database standards for sharing and exchanging of specific data elements.
(To commence April 1, 2001.)
5. Begin design of the integrated subsystem for Juvenile Detention that mirrors the County jail's existing subsystem.

**Data Integration Application
'Management Information Systems'**

- a. Conduct review of Juvenile Detention's system requirements.
 - b. Review and determine options for system design and implementation.
 - c. Design a strategy for implementation. Commencing July 1, 2001.
6. Develop functional requirements and system requirements document.

OBJECTIVE #3: Identify technology solutions that will allow the sharing and exchanging of specific data elements. [Recommendation 3.2]

TASKS:

1. Project Steering Committee investigates alternative technology solutions.
2. Develop a cost and benefit analysis of the identified technology solutions to determine the most viable solution for the data sharing needs of the criminal justice environment in Whatcom County.
3. Select the best solution for the agencies.
4. Identify training needs for various agencies and staff.

OBJECTIVE #4: Develop detailed Request for Proposal (RFP) that allows multi-jurisdictional, standardized sharing and exchange of data. [Recommendation 3.2]

1. Develop data sharing matrix and ideal workflow for inclusion in RFP.
2. Development of security matrix.
3. Develop functional requirements document.
4. Design RFP that allows standardized data exchange between the County's criminal justice system and Bellingham Police Department's LONGARM System.
5. Compile all information and publish request for proposal.
6. Develop selection and evaluation criteria.
7. Select vendors with most viable solution.
8. Conduct vendor demonstrations and presentations.
9. Select and award vendor contract.

OBJECTIVE #5: Implement technology solution for the partnering agencies. [Recommendation 3.2]

TASKS:

1. Monitor the implementation of the data integration system.
2. Beta testing of system. This includes:
 - a. Data exchange testing.
 - b. Network testing.
 - c. Pilot testing.
 - d. System rollout.
3. Begin implementation of training solution for users

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GOAL 2:

Continue the second phase of development of Whatcom County's systemic data sharing system. This system will be expanded to include Juvenile Detention, Adult and Juvenile Probation, Assigned Counsel, and the Civil Division of the Sheriff's Office. [Recommendation 3.3]

TASKS:

1. Monitor the implementation of the data integration system.
2. Beta testing of subsystem. This includes:
 - a) Data exchange testing.
 - b) Network testing.
 - c) Pilot testing.
 - d) Subsystem rollout.
3. Begin implementation of training solution for users.

Timeline and Staff Responsibility Matrix:

		2001											
		Responsibility.	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Objective 1.	Hire Dedicated Pro. Manager.												
Task 1.	Project Manager Hired	County											
Objective 2. Database Analysis		Subcommittee Proj Coordin.											
Task 1.	Identify process												
Task 2.	Identify points of entry												
Task 3.	Identify agency data elements												
Task 4.	Develop database standards												
Task 5.	Develop/Design Subsystem												
Task 6.	Develop functional requirements												
Objective 3 Identify technical solutions		Subcommittee Proj Coordin.											
Task 1.	Id technical solutions												
Task 2.	Cost / Benefit Analysis												
Task 3.	Select Solution												
Task 4.	Identify Training needs												
Objective 4. Develop RFP													
Task 1	Develop data sharing matrix	Subcommittee Proj Coordin.											
Task 2	Security matrix												
Task 3.	Functional Requirements document												
Task 4.	Complete RFP												
Task 5.	Develop selection criteria												
Task 6	Vendor Selection and Demo's												
Objective 5. Implementation													

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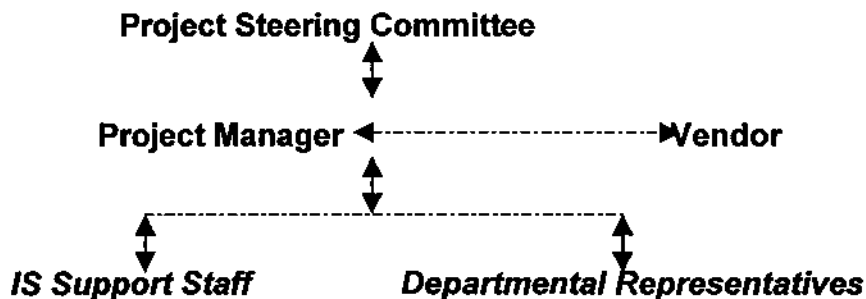
		2002						2002					
Responsibility		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Objective 5 Implementation Continue into 2 nd Year	Coordinator & Subcommittees												
Task 1 Monitor implementation	Coordin & Subcom	█	█	█	█	█	█	█	█	█	█	█	█
Task 2. Beta Testing	Proj Coor/Vendor				█	█	█	█					
Task 3 Training Solutions	Proj Coor/Vendor					█	█	█					
Subsystem Implementation	Proj Coor/Vendor												
Task 1 Monitor implementation								█	█	█	█	█	█
Task 2. Beta Testing Implementation									█	█	█	█	█
Task 3 Training Solutions											█	█	█

4.0 Performance Targets

The performance targets for this project proposal are listed below:

- to promote information sharing across all justice agencies;
- to eliminate redundant data entry;
- to minimize erroneous data;
- to support a workflow automation process to maximize efficiency and improve the management and allocation of resources;
- to provide an efficient and effective system for retrieval of critical justice information;
- to allow for data verification by a supervisor before the information is released for access by other agencies; and,
- to permit implementation of an agency/user notification process to proactively alert all users when an event requires their attention or action (e.g., prisoner movement, case scheduling, etc.).

5.0 Key Individuals



Project Steering Committee:

Responsible for providing direction to and adequate management support for the project to ensure its successful completion on time and within budget.

Specific responsibilities of the committee are:

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- Sets scope of project through the development of the RFP.
- Reviews RFP responses and recommends project vendor.
- Approves interim changes to project scope.
- Reviews and approves key project deliverables within time constraints.
- Monitors expenditures and ensures fiscal integrity of project.
- Participates in system prototype evaluation and system testing.
- Attends periodic steering committee meetings, as required.

Project Coordinator:

Responsible for ensuring successful, on time, project completion in conjunction with the Project Steering Committee. Specific responsibilities include:

- Serve as the technical adviser during the review of the RFP responses and selection of project vendor.
- Serves as the liaison, for communication and coordination, with the project vendor.
- Develops and maintains a project plan for County tasks which includes tasks, responsible party, estimated effort required, and estimated time required.
- Ensures that the vendor provides periodic (bi-weekly) status reports to the Project Steering Committee.
- Ensures that the vendor follows agreed software development standards.
- Convenes project steering committee meetings as required regarding CJIS project.
- Arranges and coordinates any needed support work to be performed by IS staff and supervises work to completion.
- Coordinates the review process for project change orders. Obtains estimates of effort required and impacts on estimated completion date from vendor and forwards all information to the Project Steering Committee.
- Reports regularly to the Project Steering Committee regarding expenditures related to the project.
- Acts as liaison between vendor and Departmental Representatives regarding design questions.
- Meets/communicates with Departmental Representatives, on an ad hoc basis, to clarify development issues.

IS Director and Technical Staff

- Provides technical support to Project Coordinator and selected vendor.
- Responsible for ensuring network infrastructure is upgraded and installation remains on track.
- Provides testing and benchmarking of system during and after implementation.

- Development of an on-going action plan for maintaining the system and ensuring that technical staff remains adequately trained in order to support the system and end-users.

6.0 Approach Rationale

The impetus to revive the data integration project came from the Law and Justice Phase I Planning Report, which recommended this project as a top priority for implementation. It was described as being a fundamental necessity to improved justice system efficiencies and effectiveness. The planning reports also called for the re-authorization and staffing of the Whatcom County Law and Justice Council. An important part of the Council's activities is the work being completed and supervised by the MIS Subcommittee of the Council that was charged with oversight of the integration project.

Recommendation 3.2 of the Phase II Law and Justice Report proposes that the County proceed with its Data Integration Project (or as it is more commonly known the Criminal Justice Information System (CJIS) project). As indicated above, this integration project seeks to create a seamless weave of justice system practitioners in Whatcom County who can share data entry responsibilities, data verification and editing, data base use for day-to-day operations, and aggregate justice system data for proactive planning and budgeting.

At the 1999 Symposium on Integrated Justice Information Systems it was stated that "the best integration results are achieved when offender processing is viewed as a continuum, rather than as a series of individual processes. The best practice, in this context, means providing accurate and complete information in a timely way to support prompt processing of offenders' cases.

The vision provided is an apparent paradox, where a set of functionally independent organizations must operate a continuous-flow offender processing system in order to succeed. The solution, to this paradox, is to make innovative use of information technology to form the continuous process while maintaining the administrative independence of the participating agencies."¹

In keeping with the foregoing, Whatcom County's solution to this paradox is to embark on a multi-year, multi-phased, justice system integration project commencing with the goals and objectives of this project proposal. This approach has a proven success rate as verified by other sites attempting to accomplish integration and data sharing between multiple agencies. The approach that is outlined in the **Goals, Objectives, & Tasks Section** of this application was recommended to Whatcom County from experts in the field of integrated system

¹ *Keynote Presentations: 1999 Symposium on Integrated Justice Information Systems*

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implementation. It is our goal to maintain the highest level of integrity with this system approach in order to provide Whatcom County's criminal justice agencies with the best avenue for integration.

7.0 Benefits to the Justice System

The following items have been identified as key benefits to the Whatcom County criminal justice system stakeholders and to its constituents.

- Immediate, accurate and timely information available to required criminal justice agencies.
- Creation of a single unique identifier across platforms that will allow systems to track individuals from point of entry into the system through disposition.
- Ability to capture justice data at the originating point, rather than trying to reconstruct it down line or have others capture it;
- Ability to capture data once and use it many times, leveraging existing resources and improving data quality;
- Automatic distribution of justice information to other relevant agencies, based on actions taken within the originating agency;
- Automatic query of local, regional, statewide and national databases to assess the criminal justice status of a person.

8.0 Risks to Implementation and Methods of Alleviating Risks

1. Project costs higher than expected.

-Project management/Project Manager to manage implementation schedule and control of expectations by users and selected vendor(s). Also, the development of a cost plan and rollout schedule for project will ensure that the project stays within budget and on schedule.

2. Integration is not as 'functional' as expected.

-Develop a realistic strategic and implementation plan. This plan should include a functional requirement component. This functional requirement component will provide the users with a listing of what the system will do for them functionally.

3. Network infrastructure upgrade is not completed.

- Maintain a multi-year budget for this upgrade in order to provide all agencies and departments of Whatcom County with reliable and secure access to the system.

9.0 Project Budget

Total Projected Budget for 2001: One-time \$265,000

Total Projected On-Going Budget for 2002: On-going \$ \$59,592 Salary and Benefits for the Project Coordinator

Total Projected Budget One-time Budget for 2002: \$655,000

Aggregate Budget 2001-2002: \$979,562

*Note: This does not include the project costs that will be solicited in the TOP Grant. 2002 Budget may change depending on the solutions and vendors chosen during the RFP process.

10. Potential Funding Resources

1. TOP GRANT: (Will be applying for this in March)

Funding Source: Department of Commerce

Grant Objectives: To develop innovative technology solutions in order to provide services to underserved communities.

Total amount of funding available:

Up to \$900,000 are available per grant application.

Funds Required from County:

Matching funds are required.

Timeframe:

Applications due March 22, 2001. Respondents are notified in September.

2. Department of Justice Grants: (maybe a potential source)

Funding Source:

Office of Justice Programs

Grant Objectives:

For the year 2001 the following initiatives are posted: Tribal Court initiatives, Violence Against Women initiatives and various other research and evaluation grants.

Total amount of funding available:

Standard awards are usually \$300,000 per year. Usually multiple year grants.

Funds Required from County:

Matching funds are required.

Timeframe:

This varies. It is recommended that the OJP web site is monitored on a weekly basis for any applicable grant opportunities.

These grant funds would be utilized to continue the next phases of the project and the matching dollars would be the is project for which funds are being sought through Whatcom County.

11. Evaluation

Project Monitoring

A template will be developed that mirrors the goals, objectives and tasks of this project. The template will be a standardized form that will be completed by the MIS/DSS Subcommittee on a quarterly basis. For each goal and objective the Subcommittee will specify the tasks completed in support of each and the time

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frames of their completion. The Subcommittee will compare these completed tasks with those originally proposed and provide a written discussion of progress. The written discussion will explain variation in tasks completed and tasks proposed, changes in time frame and any required implementation constraints and provide a plan for the remedy of these constraints.

The template will also track expenditures by quarter and goal. Any variation in expenditure patterns will be thoroughly explained in the accompanying text.

The accumulation of quarterly reports will constitute an annual report on progress that will be enhanced by the collection of key decision maker attitudes.

It will be necessary to survey key personnel in the partnering agencies who are anticipated users of the proposed system. The survey will be a retrospective post-test administered at the end of each project year. Necessarily there will be a heavy emphasis on collecting system user attitudes regarding their perspectives on progress, usefulness and satisfaction with both progress and products to date. Additionally, user recommendations regarding overall project direction and potential improvements will be collected. This aggregate information will be briefly analyzed and reported at year end with the results of the templates.

Evaluation Responsibilities

Data collection, analysis and reporting will be the responsibility of the MIS Subcommittee of the Law and Justice Committee. The Subcommittee will report quarterly to the Law and Justice Council (LJC). A summary of quarterly findings will be sent, after approval, from the Law and Justice Council to the County Council and County Executives Office for their review and comments.

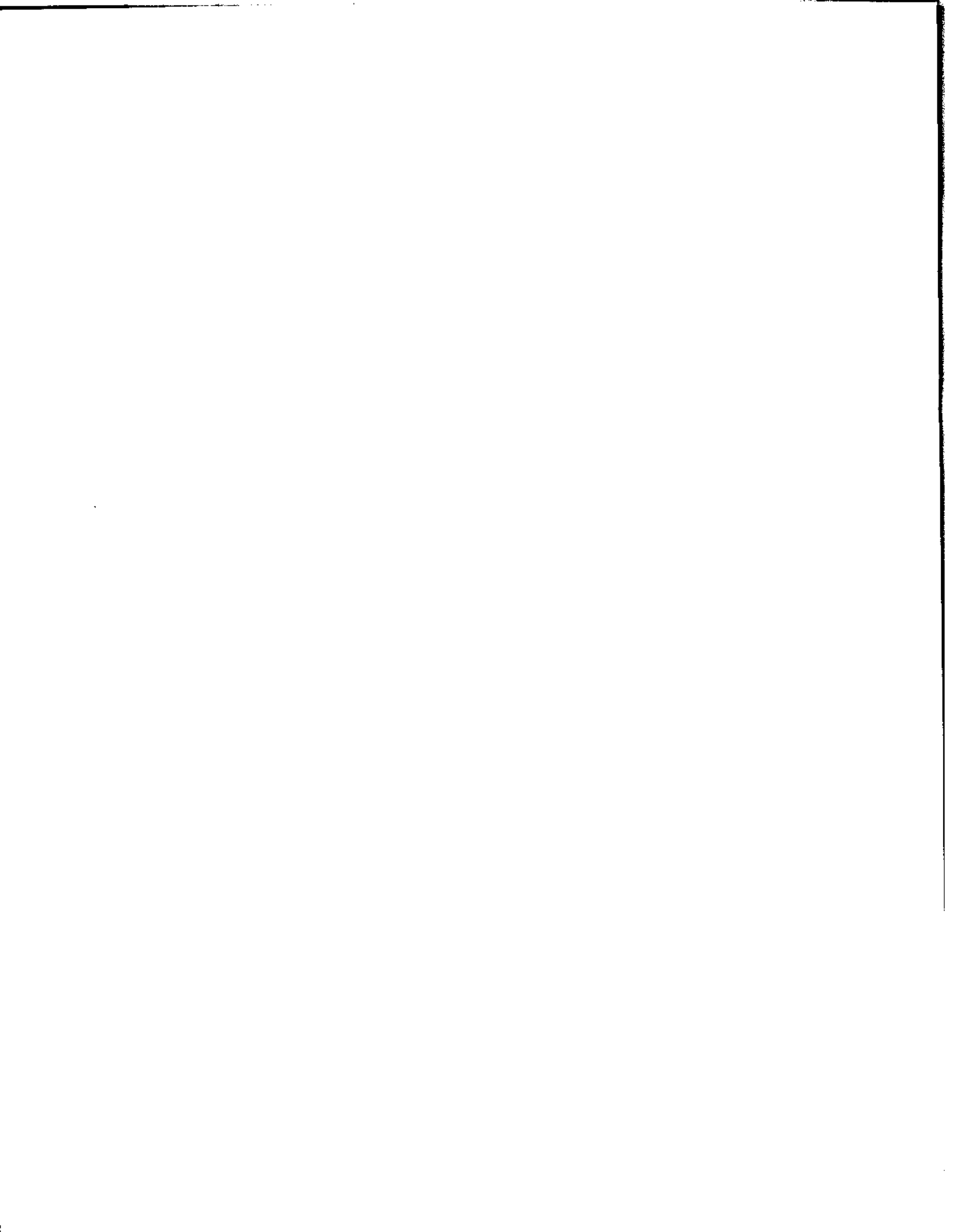
At the end of the first project year the MIS Subcommittee will collect the key decision maker survey from partnering agencies and aggregate these findings. These results will be combined with the accumulated quarterly progress and financial reports and, after review and adoption by the Law and Justice Council, be forwarded to the County Council and County Executives Office for review. A formal, public presentation by the LJC will be made to the County Council to describe annual results and project future efforts.

12.0 Sponsoring Agencies

Letters of Support From the following agencies are attached:

- Bellingham Police Department and City's IS Department (joint letter),*
- Whatcom County Sheriff*
- Whatcom County Executive's Office and County's IS Department (joint letter)*

APPENDIX F:
COMPU-TECH FINAL REPORT





compu-tech, inc.

SOLUTIONS FOR THE FUTURE ~ EXPERIENCE FROM THE PAST

April 3, 2002

Final Report on Data-sharing Analysis Table of Contents

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- B. Considerations for Sharing Data**
- C. Four Options for Interagency Data-sharing**
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 - Option 2: Shared Database**
 - Option 3: Combination of Local and Shared Database**
 - Option 4: Distributed Queries**
- D. Importing Data from Partners**
- E. Security**
- F. Summary of Recommended Interagency Data-sharing Strategy**

Part II. Interdepartmental Data-sharing

- A. General Discussion**
- B. Correlating CJIS Information Among Shared Applications**
- C. Recommended System Improvements**
- D. Connectivity**
- E. Use of Shared Data between CJIS Departments**

Figure 1: Local Database-Distributed Update

Figure 2: Shared Database

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Figure 4: Browser-based Distributed Query and Data Import Process-MS SQL Server

Figure 5: Browser-based Distributed Query and Data Import Process-AS/400 Server

Appendix A: Distributed Data Entry Using Laptop Computers

Appendix B: Data Replication between an AS/400 and a Windows NT/2K SQL Server

Appendix C: Overview of Digital Certificates

Final Report on Data-sharing Analysis

Introduction

Over the past 15 years, there has been a great deal of discussion and analysis done at Whatcom County regarding the value of establishing an integrated data-sharing system between the various Criminal Justice Information System (CJIS) departments. The value of such a project has already been unequivocally established and documented. Consequently, the purpose of this analysis is not to validate the project but to provide a recommended solution while adhering to the general design requirements delineated in the Scope of the Contract.

This report has been segregated into two parts, which are:

- Interagency Data-sharing (Whatcom County and various outside agencies)
- Interdepartmental Data-sharing (various departments within Whatcom County)

These two processes have separate system requirements in this study because of the network configurations and the environments at Whatcom County and the City of Bellingham. The real challenge in this study was to determine a data-sharing strategy that satisfies both data-sharing processes. This strategy must also be scalable to include other outside agencies and even some Whatcom County departments whose application programs and database do not currently reside on the AS/400.

The system strategy described in Parts I and II will satisfy all design goals.

Part I: Interagency Data-sharing

A. General Discussion

It's clear that any project designed to provide information between multiple agencies must allow for diverse hardware and software environments. As a result, these projects are confronted with three basic challenges:

1. Combining data from diverse software sources, often located on different computer hardware and software, for the purposes of performing inquiries, printing reports and sharing data electronically.
2. Capturing data in a timely fashion in order to keep information as current as practicable.
3. Securing access to the data to limit the access to a "need to know" basis.

There are a number of approaches to solving these concerns, some are dependent upon the diverse hardware components in the Wide Area Network (WAN) connecting the different agencies. The best solution is also determined by the data access level (view only versus import and/or export capability). For the purposes of this report, I will focus only on the data-sharing process between Whatcom County CJIS systems (Sheriff, Prosecuting Attorney and Jail) and the Bellingham Police Department Longarm System. Restricting this project is logical because these two jurisdictions own and maintain large databases while other local participating agencies provide only a fraction of the information. The recommended solution is scalable to include these smaller agencies and to ultimately communicate over the Justice Information Network.

In Section C, four general methods are discussed for sharing data strategies between multiple agencies. Section C contains an outline of four strategies including a summary of important considerations in the data-sharing process. General implementation plans for the first two methods are outlined. The third process is really a combination of two others so it is not presented in detail. The fourth method, distributed queries, is the recommended technique and is discussed in more detail.

B. Considerations for Shared Data

For any data-sharing project to succeed, the information to be shared must first be as accurate as possible when it is entered at its source. To ensure as much accuracy as possible, uniform data entry standards must be agreed upon and adhered to at all points of data entry. Also, the computer system must allow corrections to be made at the point of entry and the correction program must automatically correct all of the associated links to all of the integrated systems. Furthermore, each correction must be automatically logged in a history file. A method for performing a query on the history of changed records must be available. To compensate for data replication delays for external agencies, it is possible to generate an email notification of important changes.

Second, providing information in a timely manner is equally important to sharing data if the project is to succeed. A viable data entry capability must be available 24/7 to take advantage of the system and to support timely availability of the data. It is clear that the CJIS data entry capabilities must be expanded at Whatcom County if records are to be maintained at a level that is acceptable to all users. There are a number of possible methods that can be used individually or in combination for expediting the data entry so that information will remain as current as possible.

1. **Expand coverage of the Sheriff's Records Unit to a sufficient level of staff and facilities to provide coverage for 24/7.** By analyzing the history of events, it is possible to estimate staffing levels for all three shifts and all days of the week. Also, it may be possible to prioritize events for data entry if it is impossible to remain current with all events.

2. **Where possible, streamline the data entry process by distributing part of the data entry process to the field deputies and sergeants.** I have included a possible technique to accomplish the distributed entry of the Sheriff's Event Narrative in Appendix A. In summary, I have described a process for capturing information via a laptop computer in the field and a workflow that allows the narrative document to be approved by the Shift Sergeant. The process then allows the Shift Sergeant to electronically distribute the narrative to selected recipients. Information from coded fields in the narrative can then be extracted to populate a "skeleton" event in a "holding" file. The Records Unit can retrieve the "skeleton" event, edit it, add more information and post it to the events database. Note that a special new program will be required in this process that accepts full text names (all associated persons for the event) from the narrative and then allows the records clerk to match or add these names to the shared names database. The narrative is viewable electronically by all authorized users immediately after the Shift Sergeant has distributed the documents. Once the event is posted to the events database and replicated to the SQL Server, it would be available to all approved participants on the WAN. Please note that I have used the Event Narrative/Supplement process in this example because it would probably have the highest priority to be automated in this manner. However, there are a number of other processes that could be done in a similar manner. Specifically, the following documents could also be entered into a laptop and disseminated electronically:

- WCSO Evidence Seizure List
- WCSO Evidence/Property Release
- WCSO Officer's Certificate of Search
- WCSO Missing Person/Juvenile Report Form

A workflow analysis would have to be performed for each of the forms listed above to determine whether or not it is economically justifiable to automate each process.

3. **Participate in some kind of shared data entry pool with the City of Bellingham or some other agency.** If properly managed, pooling the initial data entry could reduce costs for all participants and result in expediting the data entry process.

C. Four Options for Interagency Data-sharing

In summary, there are four basic methods for exchanging information between multiple agencies. Specifically, these methods are:

1. Information for each agency is sent to a common repository where it is extracted by each agency and added to the database maintained by that agency. This method is depicted in **Figure 1** and will be referred to as "Local-Database Distributed Updates". Details are discussed below.
2. Information from each agency is sent to a common repository where it is extracted and maintained on a separate data warehouse computer. This method is depicted in **Figure 2** and will be referred to as "Shared Database". Each agency maintains its own local database but does not store information shared by other agencies on its local computer system. A query facility from the data warehouse computer enables all participants to view all shared information from all agencies.
3. Because of political considerations and the wide disparity between computer resources available to the participating agencies, the third alternative is really just a combination of methods 1 and 2 described above. It is quite probable that some participating agencies will want to maintain their own complete database of all shared data. I have not provided a detailed discussion of this method since the details are covered in the discussions of the other two methods.
4. Using distributed queries to simultaneously access data from multiple platforms using a single Structured Query Language (SQL) statement. Three options are shown in **Figure 3**.

In order to examine the various methods of electronically sharing data, it is important to know the basic process of data exchange includes the following four separate and equally important functions:

- **Adding New Information to the Database**

Before shared information is added to your database, a method must be in place to determine that the information is indeed new. Obviously, the information could be new for one agency but it is not new for another agency. Consequently, each agency will have to process the information according to their need if they are updating their local database. If it is new data, then the appropriate add process will be executed which depends upon the type of information (name, citation, warrant, etc) exchanged. If it is not new, then the agency will process it as a change.

- **Changing Information in the Database**
Before shared information can be changed, a method must be in place to verify that the original information to be changed is already in the database. If it is, then the information can be changed. This change process can be simple or quite complex depending on the change. For example, a name spelling change can affect a significant number of records on the database. All links to the original name in the database then have to be changed to link to the new name. However, if the original is not already in the database, an exception list or some other type of warning must be issued and then a decision of what to do with the change has to be made.

- **Deleting Information from the Database**
Obviously, extreme care must be exercised before any information is deleted from the database. Similar to the change process described above, a method must be in place to verify that the original information to be deleted must already be in the database. If the original is already in the database it can be deleted. Also similar to the change process, the procedures to delete the record can be relatively simple or very complex depending upon the type of information to be deleted. Again, deleting a name can have far-reaching consequences and can involve a significant number of database records. If the original information to be deleted is not found in the database, an exception list or some other type of warning must be generated and a decision of what to do with the deleted data request has to be made.

- **Providing an Audit Trail of Exchanged Information**
Just as important as the actual processes of adding, changing and deleting information in a database, some method of tracking the source (agency, operator, time and date) of all database modifications must be implemented. The methods used must be secure or the audit trail may be inadvertently or intentionally compromised by users.

Option 1: General Implementation Plan for “Local Database – Distributed Update” Solution

A diagram depicting this configuration is shown in **Figure 1**.

1. Define name format rules at Whatcom County (Jail/Sheriff/PA).
 - a) Implement Rules
 - i) those that apply to data entry
 - ii) those that apply to merger of names
 - b) Test & Verify Results

2. Implement names data integration project at Whatcom County.

3. Expand name format rules to apply globally (BPD, etc.).
 - a) Standardize names entry and data merge rules
 - b) Test & Verify Results

4. Define data to be exchanged and the corresponding XML documents (names/incidents/warrants/domestic orders/status alert codes/etc.).
 - a) Import Files
 - i) Define Names File
 - ii) Define all supporting transaction files
 - b) Export Files
 - i) Define Names File
 - ii) Define all supporting transaction files

5. Define process for importing information from XML shared data for Whatcom County
 - a) Schedule
 - b) Define "batch" capture files
 - c) Design, program and test system for merging stored data with local database

6. Define process for exporting information from local database to XML transport files for Whatcom County
 - a) Schedule
 - b) Design, program and test systems for extracting information and sending it to XML transport files

7. Existing query functions will work for Whatcom County since the software already supports multiple jurisdictions.

8. Management of Local Merged Database
 - a) Staffing
 - i) Training
 - ii) Coverage (two shifts/three shifts, seven days/week?)
 - b) Oversee/manage integrating procedures for Whatcom County
 - i) Data input
 - ii) Data export
 - iii) Data merge with local database
 - c) Backup/Recovery Plan
 - d) Helpdesk

9. Implementation
 - a) Contracted agreements
 - i) Define expectations
 - ii) Define areas of responsibility
 - b) Initial agency participants
 - i) Special hardware considerations
 - ii) Custom software
 - iii) Shared data process review and verification
 - c) Subsequent agency implementation
 - i) Special hardware considerations
 - ii) Custom Software
 - iii) Shared data process review and verification

Local Database-distributed update

Pros:

- Agency controls data access.
- Local database contains all names, incidents, etc. from all participating agencies.
- Each agency can develop its own query functions and data handling.

Cons:

- Requires staffing at each location for the transfer of data.
- Requires programming at each location for retrieval and integration of data.
- Requires programming for sending changes/additions of data.
- Potentially large database at each agency (speed of data access may be impaired).
- Possibility of data getting out of synchronization – Requires provision for re-synchronizing data.
- New agency participation not easily/quickly implemented since they cannot take advantage of a common historical database.
- Each agency depends upon physical and electronic security to protect data originating at any location.

Option 2: General Implementation Plan for a Shared Database Solution

A diagram showing this arrangement is detailed in **Figure 2**.

1. Define name format rules at Whatcom County (Jail/Sheriff/PA)
 - a) Implement Rules
 - i. those that apply to data entry
 - ii. those that apply to merger of names
 - b) Test & Verify Results

2. Implement names data integration project
3. Expand name format rules to apply globally (BPD, etc.)
 - c) Standardize names entry data merge rules
 - b) Test & Verify Results
4. Define data to be exchanged and the corresponding XML documents (names/incidents/warrants/domestic orders/status alert codes/etc.)
 - a) Import Files
 - i. Define Names File
 - ii. Define all supporting transaction files
 - b) Export Files
 - i. Define Names File
5. Select File Server
 - a) Security
 - b) Mirroring/Raid 5
 - c) Alternate Power Sources
 - d) Communications
 - e) System Management
6. Define shared data base files
 - a) File layouts
 - b) Integration procedures
 - c) Importing Schedule
 - d) History of changes/additions (audit trail)
 - e) Exporting procedures
7. Establish a query program
 - a) Provide for Inquiry of shared data
 - b) Define search methods
 - c) Make provisions to access from local inquiry programs
 - d) Provide for ability to copy selected shared data to local database
 - e) Implement security provisions
8. Management of shared database
 - a) Staffing
 - i. Training
 - ii. Coverage (three shifts?)
 - b) Oversee/manage integrating procedures
 - i. Data input
 - ii. Data export
 - iii. Data merge
 - c) Backup/Recovery Plan (24 hour access)
 - d) Helpdesk for local participants

9. Implementation
 - a) Contracted agreements
 - i. Define expectations
 - ii. Define areas of responsibility
 - b) Initial agency participants
 - i. Special hardware considerations
 - ii. Custom software
 - iii. Verification
 - c) Subsequent agency implementations
 - i. Hardware
 - ii. Custom software
 - iii. Verification

Shared Database Solution

Pros:

- All agencies have access to the same information
- Agency database is smaller – less disk
- No data synchronization necessary
- Uniform inquiry method
- Agency maintains control of local database
- Database and system is centrally managed
- Flexible implementation
- Shared cost of query and data integration
- Database can be optimized for the queries
- Shared security

Cons:

- Potentially slow data access
- Database would be for interactive query or copy only
- Inquiry will be standard (agency must conform to the “standard”)
- A single point of failure exists for all agencies

Option 3: Combination of “Local Database – Distributed Update” and “Shared Database”.

Some data-sharing agencies may want to maintain and control their own database while others will want to share the resources of the larger agencies. It is not reasonable at this stage to provide a general plan since there are so many combinations of variables.

Option 4: Distributed Queries

A diagram showing three possible implementations of this technique is shown in **Figure 3** (Options A, B and C).

A distributed query is a query that can simultaneously access data from multiple platforms using a single Structured Query Language (SQL) statement. In this case, we are using a distributed query to access data from an AS/400 (DB2/400) database and a Microsoft SQL Server 2000 database and combine the data from both sources to produce a single integrated result.

There are three basic options (production AS/400 to production SQL Server, SQL server to SQL Server, and a separate AS/400 file server to SQL Server) for executing distributed queries over data from both the Whatcom County AS/400 and Bellingham's Longarm System. These options are listed below.

- A. The first option for implementing distributed queries is to use IBM's SQL/400 and Microsoft's SQL Server 2000 on both of the production machines as the data source and host for the distributed queries. Specifically, this distributed query configuration depends upon using SQL Server Version 2000 to link the AS/400 database and the SQL Server database for the purposes of performing these queries. The primary advantage of this configuration is that all data would be near real time from both databases. The principle disadvantages are that the security of both production machines is exposed to the WAN and additional production computer resources are required for executing the queries.
- B. The second option is to replicate the information from the AS/400 to a separate SQL Server 2000 machine and then to link the new server to the BPD Server for the purpose of performing distributed queries. The advantage of this approach to Whatcom County is that the production AS/400 can be secured from the WAN and no production computer resources are needed to execute the queries.
- C. The third option is to replicate data from the production AS/400 to a separate AS/400 file server and then link the AS/400 database to the BPD SQL Server database for executing the queries. The advantages to Whatcom County are that there is no need for special data replication software. The WEBHOST AS/400 can, perhaps, be used provided that WEBHOST is disconnected from the Internet.

Note that all three options allow the legacy databases to remain intact and all software and servers are installed and maintained at their local IT facility. If BPD is to gain these advantages, they could optionally replicate their data from their production computer to a second server for the purpose of hosting data for the distributed queries. The main disadvantage to BPD in this scenario is that data must be replicated from the BPD production computer to the new query server. This is minor issue because BPD is merely copying from one database to an identical database and can use the existing MS SQL Server product tools (BCP).

An overview of the replication process between the AS/400 and a Windows NT/2K server is included in Appendix B. Appendix B includes a brief discussion of replication processing, an overview of when to use the various types of replication, performance considerations and a guideline of important features to use when evaluating replication software.

When implementing distributed queries, the question of whether Extensible Markup Language (XML) formatted queries should be used must be addressed. XML is rapidly becoming the de facto standard for distributing data among disparate computer platforms. The principal reason for using XML is that it provides an open system standard for describing data. It can be used for describing data elements on a Web page or in a business-to-business (B2B) document. Although it uses a tag structure similar to HTML (Hyper Text Markup Language), there is a critical distinction. HTML is used to define how the data elements are displayed whereas XML defines what the data elements contain. If XML is to be used as the data exchange vehicle for this CJIS project, standard XML formats must be defined and agreed upon by the participating partners. This process can be expedited by involving the State Justice Information Network (JIN) and the Legal communities XML standards group.

When considering XML, there are several things that should be noted:

1. XML is merely a standard specification. To implement XML, applications and processes must be developed or purchased that support XML. As noted above, data-sharing partners must define and use common XML definitions.
2. For easiest implementation, data-sharing partners must develop a common semantic vocabulary for XML tags that all partners understand. Without the common vocabulary it becomes necessary to define a unique vocabulary map in order for XML to map each partner's data in the data-sharing network. This can involve a great amount of effort as new partners join the network.
3. XML is not the fastest way to move data between two systems because of the overhead in encapsulating data in the XML documents.

The long-term advantage of XML based queries is apparent. Because XML provides a standards-based data format, XML allows heterogeneous systems to communicate while allowing the disparate systems to be isolated from one another's applications. The query requests come in XML format. They are interpreted and executed by the receiving system, the results are translated to XML format and returned to the requesting system. Since the queries and results are traded using XML, the application architecture of the systems involved can remain independent. While the process is an easy concept to envision, the actual implementation of XML formatted queries is a complex and lengthy process. The following is general discussion of implementing XML-formatted queries.

Since the data-sharing partners don't want an alien system to directly access their database, there is a need to build an abstraction layer over the database to allow each system to transparently switch data sources. A server-based program (Java servlet, VBA, C, etc.) that will accept HTTP requests must be developed. This program must be able to receive an XML-formatted request for data, process the request as an SQL query through the database and return the results formatted in XML via HTTP. To accomplish this, the following tasks must be done and the listed program components must be developed:

- Define the generic XML Document Type Definition (DTD) that will be used by the data-sharing partners
- Develop a server-based program to accept requests and write responses over HTTP
- Develop a process to convert XML-formatted SQL queries to access the local server database
- Develop a process to convert query results to XML-formatted responses

Note that even after the data-sharing partners have successfully defined a common XML DTD, the three basic programming components described above used to process the XML-formatted queries and result sets will probably be quite different on each participating system. There are tools to help convert XML formatted queries to SQL and query result sets to XML but their implementation is not trivial. Obviously, nothing can be shared until each partner is set up to exchange the data.

On the other hand, implementing distributed queries that are not in XML-format are much easier to accomplish in a short period of time when a limited number of sharing partners are involved. In this case, a set of common field descriptors and data types do not have to be agreed upon by data-sharing partners before the distributed queries can be executed. In fact, each partner only needs to know the database definitions of the other partners' systems. For example, it is possible to perform distributed queries on the Whatcom County name field (single text field formatted as last name, first name, middle name) and the BPD name (four separate fields) and to merge the result sets. Obviously the queries are easier to write and to maintain if all partners use common field descriptors and data types – but it is not a requirement.

As of Version 5 Release 1 (V5R1) of OS/400 for the IBM AS/400 (iSeries), IBM has introduced a number of features to ease the process of sharing XML documents with other platforms. Specifically, this includes:

- **DB2 for iSeries XML Extender.** This software product from IBM allows the bi-directional process of composing and decomposing XML documents passed from and to DB2/400. According to the December 2001/January 2002 issue of "XML Magazine", "XML is the key to the company's (IBM) Web Content Management Solution". IBM/Lotus has licensed a tool (Aptrix Multi-Platform from Presence Online) that provides the translation from Domino data, Java, DB2 and other formats to XML and has bundled that product into their software offerings.
- **Two-Phased Commit over TCP/IP.** This process allows trading partners to simultaneously update multiple databases running on separate platforms. This allows the IBM iSeries computers to participate in large distributed systems with SQL.

The same issue of "XML Magazine" referenced above indicates that Microsoft's Content Management Server currently has a shortfall in XML support and functionality. However, the MS SharePoint Portal Server does support XML. In addition, Microsoft has announced a strategic plan to move its products into the XML world. It is quite clear that long-term support for XML using the recommended solution (IBM and Microsoft products) does provide a sound basis for using XML documents to exchange data with outside agencies now and in the future.

In summary, using XML-formatted queries and result sets is more complex, costly and time consuming to implement for a limited number of partners. There are significant long term benefits to the XML-formatted approach and there is no question that the ultimate goal should be based on XML-formatted SQL queries and result sets. However, in the interest of getting a working system in place in a reasonable timeframe, a good strategy is to build an infrastructure capable of handling XML-formatted queries, develop and install some non-XML distributed queries and then develop the XML-formatted queries.

D. Importing Data from Partners

Importing data from sharing partners using distributed queries and making it available to the AS/400 production computer can be accomplished in several ways. One method is depicted in Figure 4 when a SQL Server is used as the query server at Whatcom County. Figure 5 shows the same process when an AS/400 is used for the query server at Whatcom County. In both cases, the browser-based queries can write a result set text file on the proposed file server. The text file can then be passed via File Transfer Protocol (FTP) to the production AS/400. If required because of security concerns, Secure File Transfer Protocol

(SFTP) can be used to encrypt the text file. Alternatively, it is possible to dynamically capture data from the data-sharing intranet by creating a client program which acts as a "data scraper" on the browser-based query results. In this case, the results would be directly downloaded to the client PC.

E. Security

Securing the information that is to be shared involves preventing unauthorized access over the wide area networks of the designated data-sharing agencies, unauthorized access to the production computers by the partnering agencies and preventing unauthorized access between departments (and/or individuals) within a single jurisdiction.

Figure 3 shows the placement of firewalls or routers with ACLs (Access Control Lists) to secure the production machines at Whatcom County and BPD. The recommended configurations (either Option 2 or Option 3 depicted in **Figure 3**) for Whatcom County uses two separate firewalls to isolate the production AS/400 from unauthorized access. In summary, the firewall between the production AS/400 and the proposed Whatcom County SQL Server or the AS/400 file server controls access between those two computers. The firewall between the Whatcom County SQL Server or the AS/400 file server and the WAN controls the access between linked databases on the WAN and the AS/400 file server. A similar configuration analysis applies to the BPD.

It is assumed that the WAN between the County and City will use the existing fiber optic cable. In a February 28, 2002 email from Patrick Lord (Network Administrator for the City of Bellingham), the fiber connection between the City and the County is physically in place. It could be activated soon after the proper agreements are in place. He cautioned that planning would have to be done regarding equipment, security requirements, application access and costs. The existing infrastructure for connecting these two entities can provide a secure WAN.

Adding other external agencies to the WAN will have to be done on a case-by-case basis. The techniques to be used to attach each individual site will have to be analyzed at each location because of the disparity in available services, equipment, resources and needs of the external agencies. See Appendix C for a discussion of digital certificates for securing the WAN.

From the responses to our questionnaires, only some of the CJIS database should not be shared for various reasons. Examples are medical screening information from the Jail and various investigative and Drug Task Force information. Restricting access to any information can be accomplished using one or any combination of methods including user passwords, user profiles, specific application program internal security options, computer resource security, etc.

The specific method for securing the information can be decided upon for each application on a case-by-case basis.

F. Summary of Recommended Interagency Data-sharing Strategy

The recommended strategy for implementing interagency data sharing is to implement hardware and software to allow distributed queries (Option 4) which link multiple databases from the different agencies. Using the linked database concept, the distributed query can simultaneously access data from the linked databases by issuing a single SQL statement. Although the proposed solution specifically addresses data exchange between an AS/400 and MS SQL Server in some configuration, it is easily scalable to include multiple disparate platforms as long as they have an ODBC (Open Database Connectivity) or an OLE DB (Object Linking and Embedding Database) compliant data source. This includes the MS SQL Server, DB2 and Oracle, which are the three most popular databases.

The recommended solution includes acquiring a query file server (either an MS SQL Server or using another AS/400) for serving the distributed queries. If an MS SQL Server is used, a data replication facility to replicate data from the production AS/400 to the SQL Server is required. There is no requirement for data replication software if another AS/400 is used. This solution provides for the following:

- The production AS/400 (and optionally the BPD production computer) would be isolated from the WAN thereby making it more secure
- The query process would be off-loaded from the production AS/400 to the new AS/400 file server subsequently freeing the production AS/400 to perform its normal application functions. A similar advantage applies to the BPD production server if BPD installs a separate SQL Server.

The distributed query technique provides a foundation that uses an open architecture approach based upon TCP/IP, RDBMS (Relational Database Management Systems) and operating systems that conform to these standards. The distributed queries can be used for inquiry only, data retrieval and for generating reports. Because the distributed queries are server-based instead of client-based, older client PCs can perform distributed queries on multiple, large databases without having to be upgraded.

The distributed queries will be launched using browser-based Web technology. The SQL queries must be presented using a graphical user interface (GUI) using a technology such as Java Server Pages (JSPs) or Active Server Pages (ASPs).

As previously noted, it is imperative to define a data-sharing system that can easily compose XML documents from the database. It must also be able to receive an XML document and then decompose the XML document.

Part II: Interdepartmental Data-sharing

A. General Discussion

The functional and technological requirements for implementing data-sharing between two departments vary considerably depending upon several basic factors including the following:

- Does the recipient department want to only view the shared data or will the shared data actually be extracted from the data source and imported into the recipient's database?
- What is the present physical connection between the two prospective data-sharing departments?
- What are the required data elements in the shared data that allow the partners to correlate and combine their data?
- What are the timing requirements for having the shared information available to each sharing partner?

B. Correlating CJIS Information Among Shared Applications

For any CJIS integrated system, the fundamental method of correlating information between multiple sources is performed via accurately matching names (and the associated personal information). Other than using the actual name, there is no unique identifier for each of the individuals comprising the names database. Other identifiers, e.g., social security number, FBI number, State ID and other numbers can be used to help uniquely identify only a minor subset of the overall individuals in the database. Consequently, the full text name (and its related aliases and a.k.a.s) must serve as the ultimate device for correlating individuals.

When a unique correlation parameter is assigned for each name, all associated information (e.g., citations, incidents, arrests, jail records, Prosecuting Attorney case records and court records) can be retrieved for that individual. For individuals to whom a State Process Control Number (PCN) has been assigned, that number can be added to the present database and queries can be performed using the PCN as the index. It should be noted that the PCN will be used for each (reportable) finger printing event. Consequently, an individual can have multiple PCNs.

The Whatcom County Prosecutor and Sheriff have already taken the first important step to data sharing by merging their names files. This step will merge obvious duplicate names from the two databases and will provide the ability to manually merge records together in the future as names are identified to be duplicates. All new applications for these departments (e.g., disciplinary tracking, inmate classification and inmate reclassification modules) are prepared to use the common names database as their source of names when they are installed. Also, the merge process has facilitated preparing common procedures for entering the names information. The three departments share a common entry point to the central

names file. As any new Whatcom County department is authorized to use this common names database (e.g., Public Defender, Civil Department, etc.), the appropriate authorization to view only, add, change, merge records and delete information can be determined and granted.

Having a single names file for all departments whose applications operate on the AS/400 provides the nexus for easily correlating the records from all of the departments. A single inquiry based upon a name can now be developed to access all aliases, incidents, citation, arrest records, domestic orders, warrants, property evidence, and the appropriate records from the Prosecuting Attorney.

C. Recommended System Improvements

During the review of the programs, several suggestions were made for capturing additional information and expanding the size of existing fields. Specifically, several new fields of information were requested to be included in the person names file. The suggested information is:

- mailing address separate from residence address
- fax number
- scars, marks, and tattoos separate from notes field

The size of the following existing fields should be increased:

- name field
- a.k.a. field

The following operational enhancements should be added:

- Allow an unrestricted number of pages to “page up” or “page down” in all search screens.
- Add on-line lookup of all valid codes for all coded fields in all data entry screens.
- Change the computer assigned person key to be a sequential series of numbers instead of attempting to assign a pseudo-meaningful alphanumeric code to each name.

A browser-based (Web-enabled) GUI (Graphical User Interface) presentation should be made available for existing queries and selected application programs.

The existing “Person History” inquiry should be expanded to include any information from the Prosecuting Attorney that is useful to the Sheriff and/or Jail. In addition, the existing “Person History” inquiry should be changed to allow “drill down” inquiry into the detail of arrests, citations and incidents from the arrests, citations and incident summary screens. The existing inquiry into domestic orders and warrants already allows this “drill down” feature. The “drill down” feature for incidents is already available as a separate menu item inquiry labeled as “Incident & Associated Persons”. At the same time, the property associated with an incident should be made available to the incident inquiry. If desired, evidence detail can

also be made available from the incident inquiry. The "drill down" feature for arrests is also already available as a separate menu item inquiry labeled as "Arrest Cards". Finally, the "drill down" capability into detailed citations information is already available from a separate menu item labeled "Inquiry by Defendant or Citation".

In summary, all information from the Sheriff's AS/400-based application programs and the Prosecuting Attorney will have a common unique correlation code in their databases when they share a common names file. Consequently, a single common AS/400 inquiry program can be created to display all approved information from the databases of the Sheriff, Jail and Prosecuting Attorney.

D. Connectivity

At present, the majority of applications used by the Whatcom County CJIS departments involved in this analysis all reside on the county's AS/400. There are minor exceptions including the Civil Papers Tracking module in the Sheriff's Office. Since all functions have not been automated in these departments, any expanded future development of new applications should either execute directly on the AS/400 or at least have the ability to interface with the AS/400 in some manner.

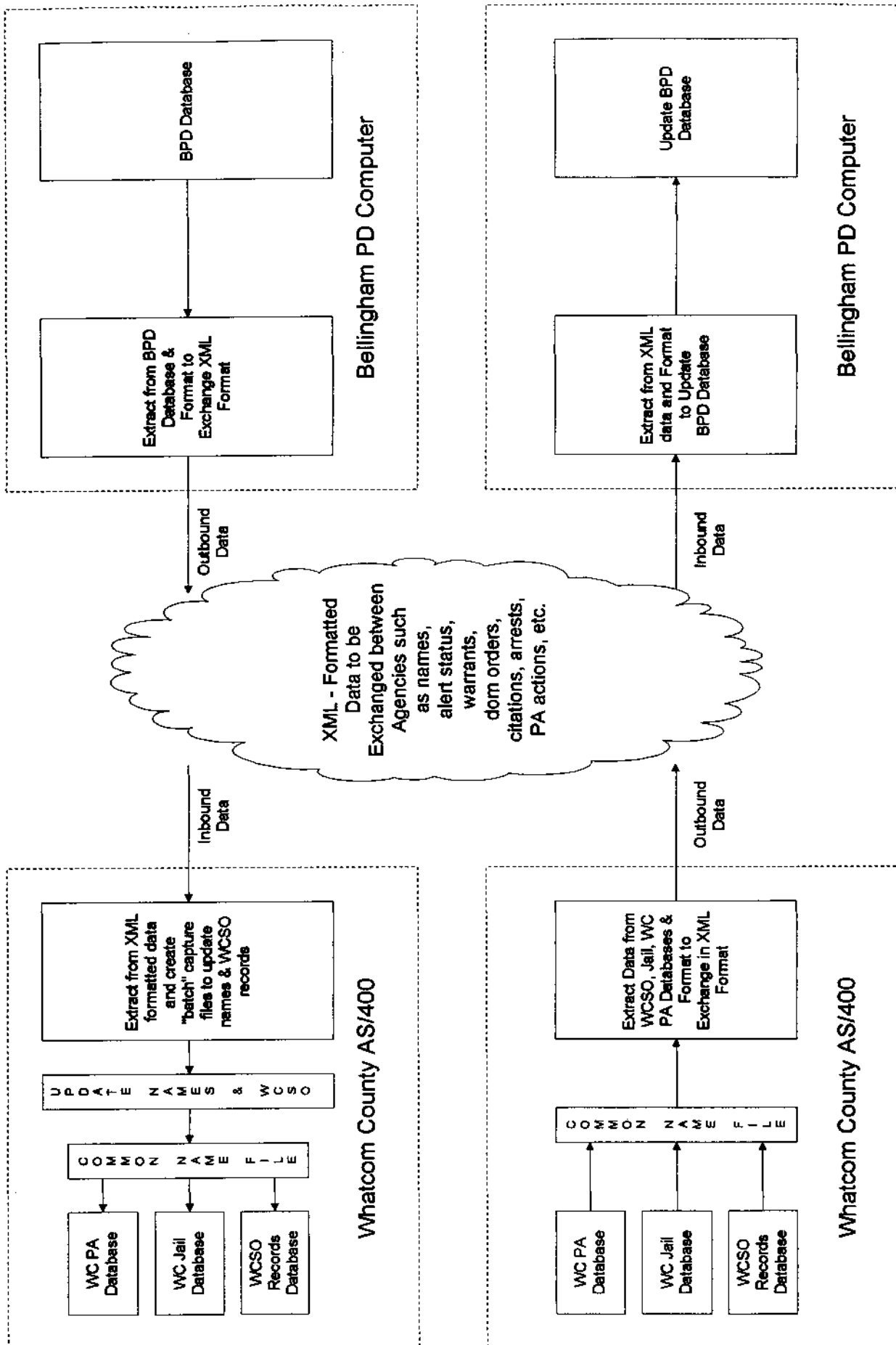
E. Use of Shared Data between CJIS Departments

Because the application programs and production data for the three departments are located on the same computer, these departments already have reciprocal inquiry access to each other's data. Furthermore, if additional inquiry access is required, it is an easy change to make that available. As previously mentioned, sharing the names file between the departments makes the inquiry capability even more seamless.

The most significant improvements to the data-sharing process between the Sheriff, Jail and Prosecuting Attorney lie in providing the ability of extracting information from one department's database and using that same data to populate their own database. This "copy and use" capability can be accomplished in either of two ways depending on the application.

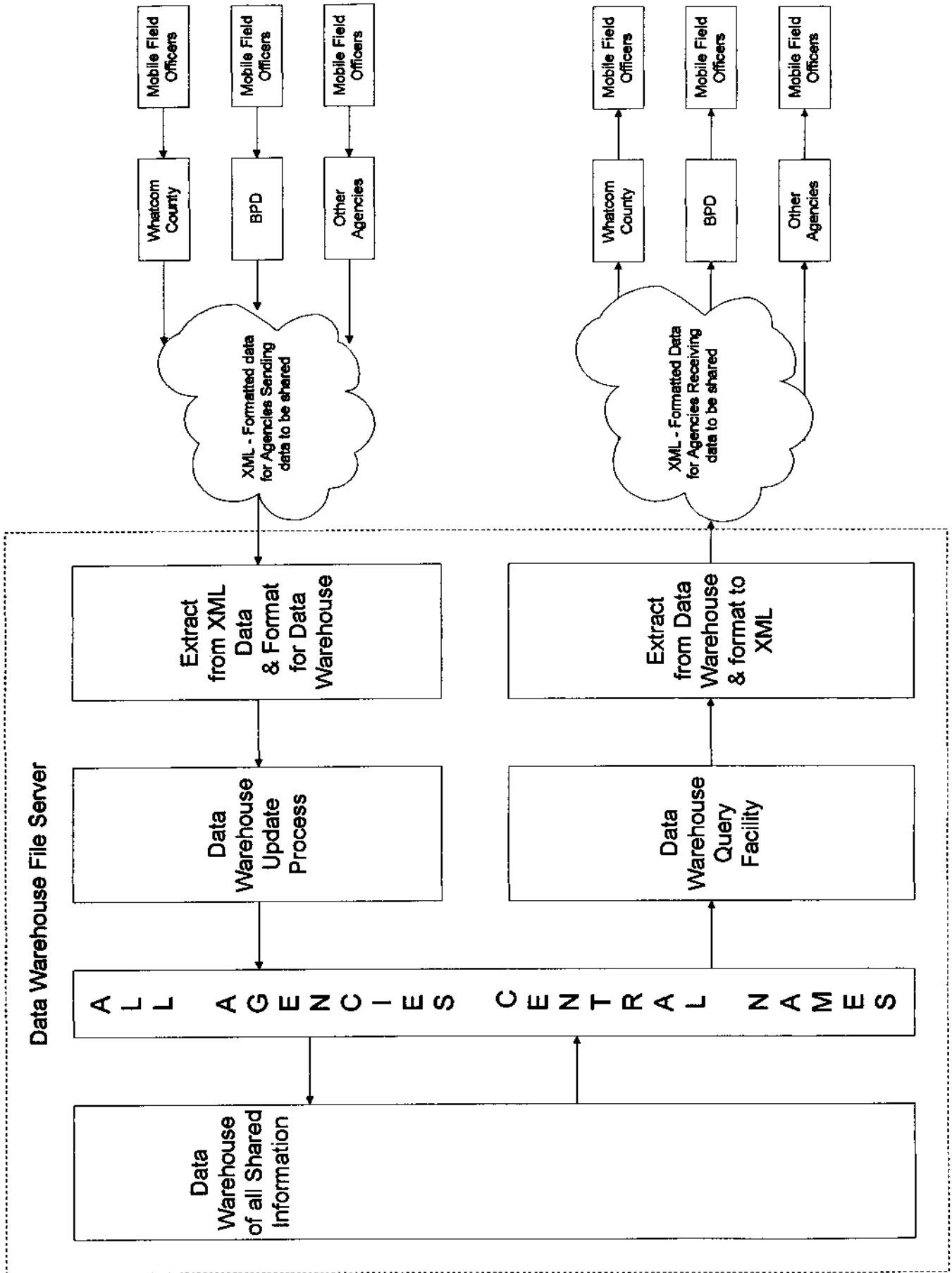
1. If it is acceptable to the receiving department for the sending department to automatically update the recipient's database, the sending department's update program can be modified to change both databases concurrently.
2. If the receiving department wants to control all changes to its own database, a function can be added to their maintenance program to review, copy and paste the information from the source database into their own database.

Both processes require software changes, however, no additional hardware is required.



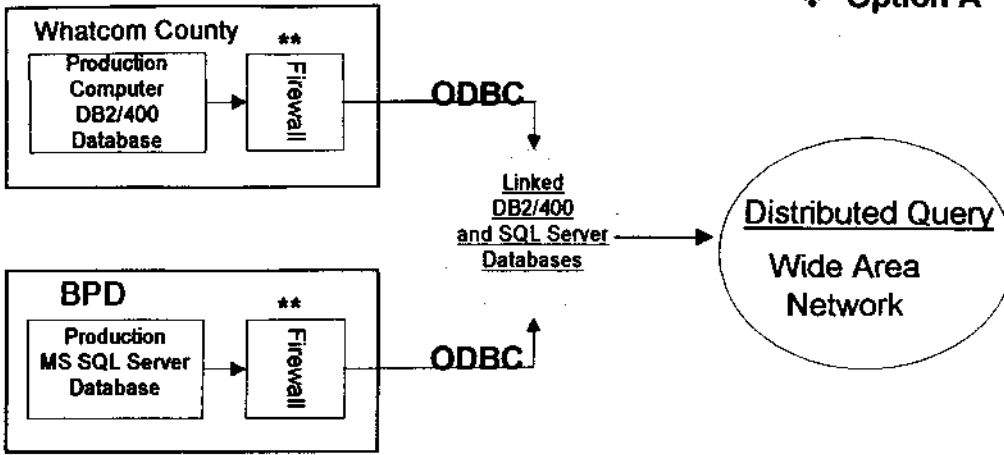
Local Database - Distributed Update

Figure 1



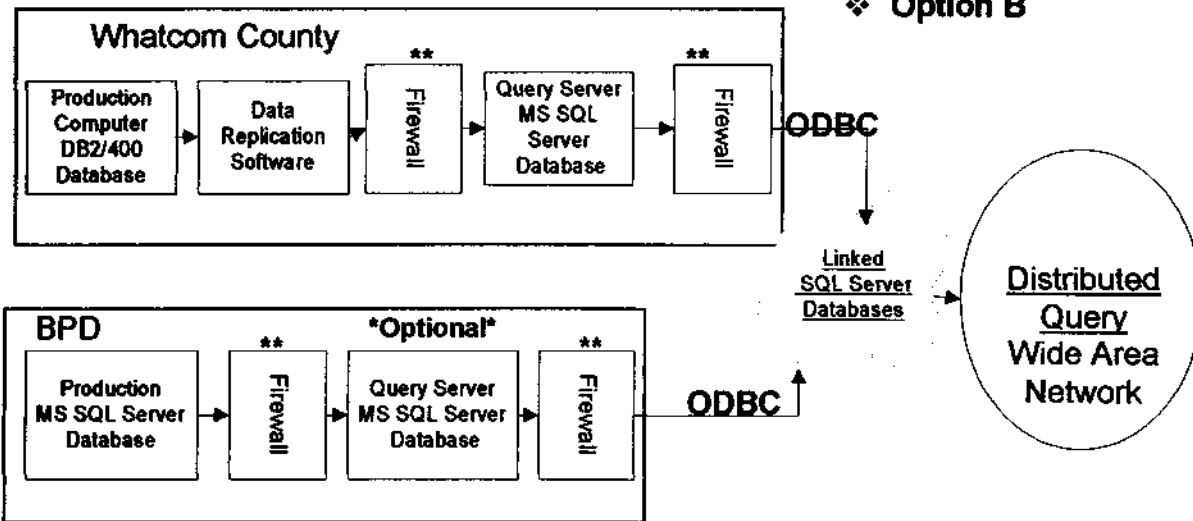
Shared Database
 Figure 2
 21

❖ Option A



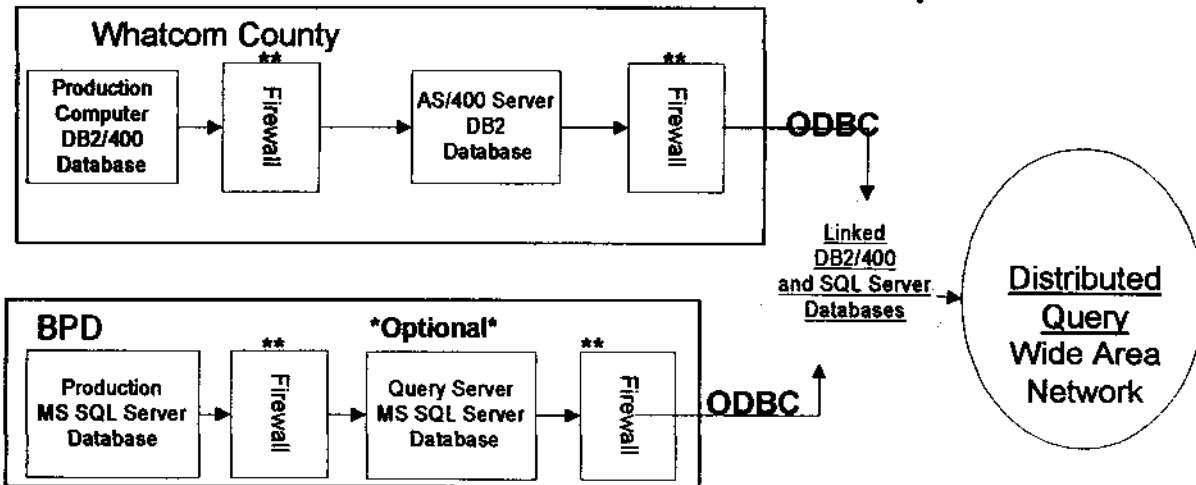
** Firewall or Router with ACLs - Access Control Lists

❖ Option B



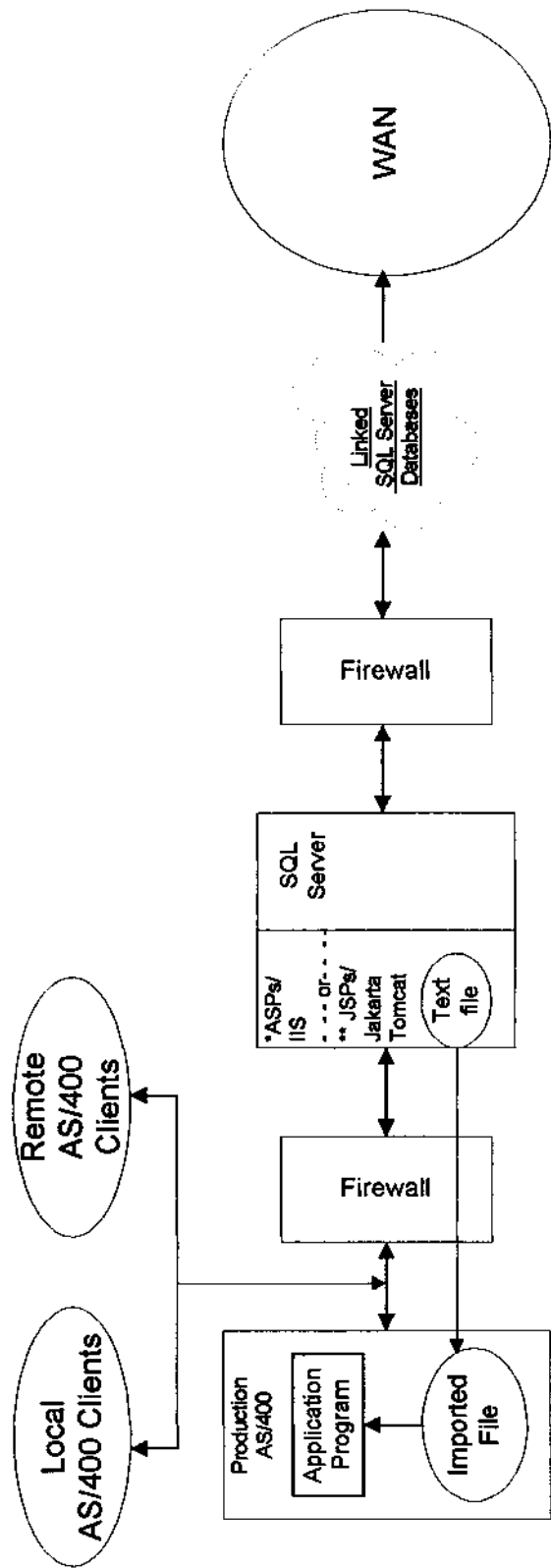
** Firewall or Router with ACLs - Access Control Lists

❖ Option C



** Firewall or Router with ACLs - Access Control Lists

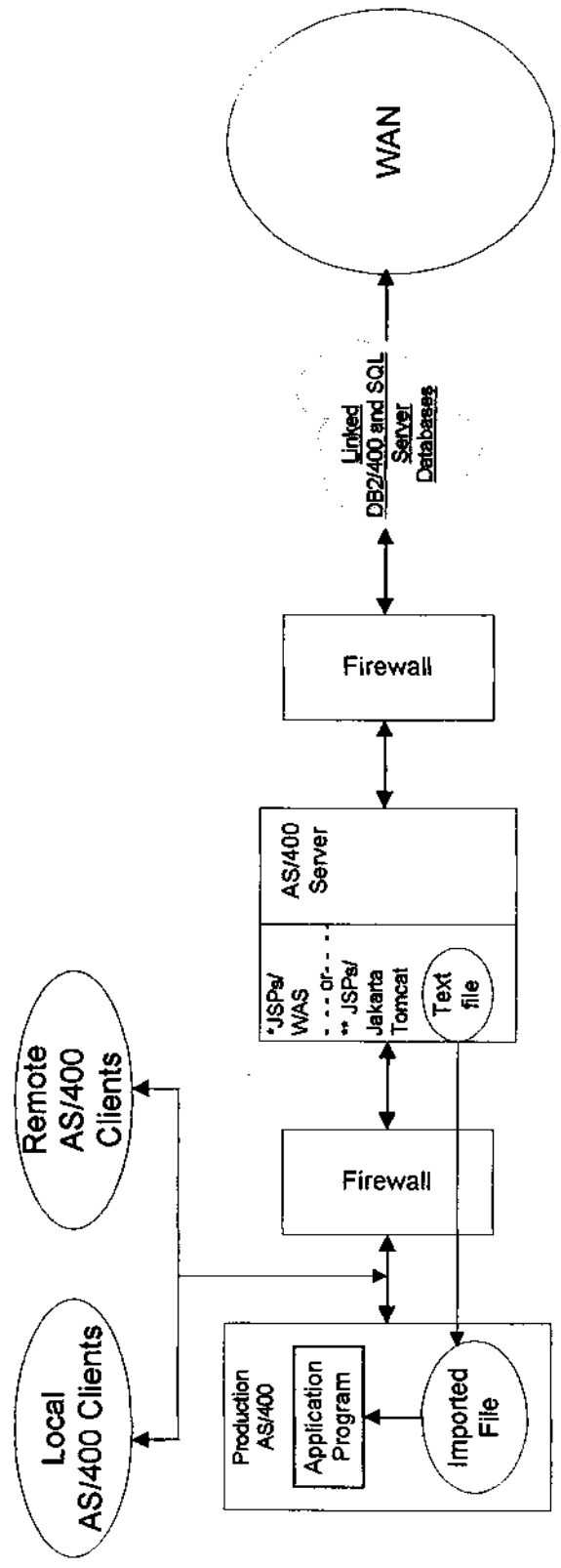
Distributed Queries
Figure 3



*Active Server Pages/ Internet Information Server
 ** Java Server Pages/ Jakarta Tomcat

Microsoft SQL Server

Browser-based Distributed Query and Data Importing Process
Figure 4



*Java Server Pages/ WebSphere Application Server
 **Java Server Pages/ Jakarta Tomcat

AS/400 File Server

Browser-based Distributed Query and Data Importing Process
Figure 5

Appendix A

Distributed Data Entry Using Laptop Computers

The following paragraphs describe a method for distributing some of the data entry process to the source of the information. Following the data entry process, the information can be passed electronically (while retaining the ability to print a hard copy on demand) in a predefined workflow process.

In order to demonstrate this process, I have used the Event Narrative/Supplement process as an example. I've included an outline of the process and the salient features that such a process would have to provide in order to be functional and to accomplish the goals of improving the speed of the data entry process and eliminating the labor currently required to distribute the paper reports to the appropriate departments and agencies.

1. 911 Computer Assisted Dispatch notifies deputy of the event and assigns an event tracking number.
2. Deputy deals with the event and collects all of the relevant information (e.g., victims, property damage, vehicles, statements, physical evidence, etc.). Digital pictures may also be taken at this time.
3. As soon as possible after the event is cleared, the officer will enter the narrative into a laptop computer using the narrative template that is provided. The template program will have at least the following features:
 - a) template format will be identical to the uniform narrative paper form
 - b) template program will provide at least the following features:
 - Graphical User Interface (GUI)
 - default reporting officer ID
 - default reviewing officer ID
 - default incident date
 - table lookup of existing offense codes used by current records system
 - support for variable length narrative in response to all of the prompted questions
 - A default value response of Not Applicable (N/A) will be initially provided for all required questions in the narrative. This will allow the officer to quickly tab through all questions that do not apply to this event.
 - c) The completed narrative will be uploaded to the AS/400 and routed to the appropriate reviewing officer. Initially this upload will be done when the officer returns to the office by diskette transfer or by attaching directly to the network. In the future, it will be transferred using dial-up telephone communications, radio frequency or secured internet transfer

- d) After the narrative is approved by the reviewing officer, the reviewing officer will route it to the appropriate place (Prosecuting Attorney, Records Department, etc).
 - e) A hard copy of the narrative can be printed on an 8 ½" x 11" page printed by a laser printer. The variable length narrative text for each question on the printed page will be printed in full. Only the applicable text will be printed. For example, questions answered by N/A will only print a single response line of "N/A". There will not be additional space on the printed page wasted by printing blank lines.
4. After a narrative report has been approved by the reviewing officer and posted to the database, changes will not be allowed. However, supplemental narratives can be added at any time in the future.
 5. The narrative (and attached digital images) can be reviewed online and/or printed at any time provided that the viewer has the authority to view and/or print the document.
 6. A batch program will be used to extract the applicable information from the narrative to create a "skeleton" event in the Records Department. This "skeleton" event will be used to provide initial information to the Records Department regarding the events that were processed during the previous shifts. The clerks in the Records Department will enter the additional information to the "skeleton" event to make it a complete record of the event in the current AS/400 records database.
 7. All narrative reports will be accessible for viewing by event number. Only personnel with the appropriate security level will be allowed to view the documents.
 8. A process must be implemented to archive selected narrative/supplement documents to an external storage medium. However, provisions must be made to retain all documents related to any designated event(s) online for the lifetime of the system.

This functional outline is only intended as an initial draft. It is intended only to describe some of the possibilities available to the system and in no way exhausts those possibilities.

Appendix B

Data Replication Between AS/400 and Windows NT/2K SQL Server

I. Introduction

A properly designed data replication paradigm can lead to both reduced IT staff costs and improved user productivity.

The task of choosing a data replication solution between an AS/400 and NT/2K servers can be difficult since it is dependent upon the level of performance required, the amount of data involved, the timeliness of the data and the flexibility required by the users.

II. Considerations When Designing a Data Replication Solution

1. Currency of data

The importance of having "up to the minute" information varies widely with the application. For the majority of cases, daily or even weekly updates are sufficient. Upon reviewing the CJIS needs, the only applications that may require more frequent update than a daily scheduled replication process appears to be arrests and jail bookings. When information is made available to the field deputies in their vehicles, other information such as warrants and domestic orders may have to be replicated more frequently.

The replication solution must allow for variable interval scheduling but must also allow for "online" (near real time) replication. It must always be remembered that "online" transaction replication takes a large toll on computer resources and may impact the production computer. Consequently, transaction replication should only be used when it's required, not because it's convenient.

2. Data Replication Techniques

There are three basic types of data replication techniques. These are:

a) File Transfer or Bulk Copy Replication

This technique is used to copy an entire data file from the AS/400 to the NT/2K server (MS SQL Server) either periodically or as an initial step when implementing transactional replication. Bulk Copy is accomplished using Bulk Copy Protocol (BCP) in MS SQL Server 2000.

b) Net Change (NC) Replication

This technique must use a monitoring system on the AS/400 to identify records from the AS/400 that have changed since the last replication transfer. Usually, this monitoring process is accomplished using AS/400 journaling, database triggers, custom programming, or some combination of these methods. Then, depending upon the schedule, only the changed transactions from the AS/400 are used to update the NT/2K SQL Server.

c) Transactional or "Near Real Time" (NRT) Replication

Similar to NC replication, this technique must also use a monitoring system to identify records changed on the AS/400 and then those changed records must be replicated on the NT/2K SQL Server in near real time. Under normal processing loads this process usually requires about a minute. However, if a high volume of changes occurs, it is possible for the replication delay to approach several hours.

3. Using the Various Data Replication Techniques

a) Bulk Copy Replication

This technique is usually used for complete file refreshes on a specific schedule. Using a 10 mbps Ethernet LAN, a product using native IP transfer between an AS/400 and using PCP in MS SQL Server 2000 can approach data transfer rates up to 30 megabytes per minute. Using IBM's APPC (Advanced Program-to-Program Communication) over the same network, the transfer rate drops to about 15 megabytes per minute and using ODBC (Open Database Connectivity) further drops the transfer rate to less than 5 megabytes per minute. Higher transfer rates can be achieved using faster network speeds and computers.

b) Net Change Replication (NC)

There can be a performance impact when monitoring for changed records on the AS/400. This monitoring is usually accomplished using journaling or triggers. Also, there is a performance impact from the process of inserting the changes in the NT/2K SQL Server database. Net change techniques are usually used with communications topologies that have a low bandwidth because the strategy is to minimize the amount of data being sent over the relatively slow line. This is frequently used for periodically updating a database at a remote site.

c) Transactional Replication (NRT)

As mentioned previously, this technique should only be implemented when there is a critical business requirement because of the resource impact on both the source server and the target computer. When real time update is required, this type of replication works best when the source and the target computers are on the same local area network (LAN). According to one study, as a general rule for relatively large databases, Bulk Copy should be used instead of NC or NRT replication if the number of changes exceeds 5% of the replicated file. This is only an estimate and varies upon the speed of the computers and the method and bandwidth of their connection. This conclusion is due to the performance impact on the source and target computers. Journal receivers can require a great deal of disk capacity for many transactions on a file. Also, there are some management issues with triggers and journals. There will be an impact on the IT staff since journal receivers must be periodically changed, backed up and deleted and triggers have maintenance considerations when copying and/or clearing files.

4. Performance Considerations

There are two separate areas that determine the performance of data replication. Specifically they are:

a) Transfer rate of the replication product.

The transfer rate depends upon the transfer topology used by the product. Depending upon the product, more than one transfer topology can be used for the bulk copy, NC and NRT replication processes. For example, the native IP with Bulk Copy Protocol may be used for bulk copy, whereas ODBC is used for the other two replication types.

b) The performance of the NT/2K based server.

The bulk copy requires up to 99% of a single CPU system. Consequently, a minimum of two CPUs with a minimum of 256 mb of memory should be used. Memory is not the bottleneck and a premium is on disk I/O. When configuring the MS SQL Server database, the database file system should be split over multiple physical devices to maintain the most efficient performance.

5. Guidelines for Data Replication Tools

The following table indicates common features that are desirable when selecting a replication tool. The relative importance of these features depends upon the types of replication that will be deployed, the amount of data being replicated and the scheduling requirements.

1. Supports multiple replication types?
 - Bulk copy
 - Net change (NC)
 - Transactional (NRT)
2. Transfer topology used by replication type (e.g., ODBC, native IP with Bulk Copy Protocol, etc.)?
 - Bulk copy
 - Net change (NC)
 - Transactional (NRT)
3. Approximate Transfer rate (mbps/min) by replication type assuming 10 mbps Ethernet LAN?
 - Bulk copy
 - Net change (NC)
 - Transactional (NRT)
4. List Communication protocols supported.
5. Describe error recovery when a communications failure occurs during replication.

6. Is user interface
 - Graphical?
 - Intuitive?
7. Does it support AS/400 source logical files?
8. Does it support file-join during the replication process of AS/400 source files?
9. Describe the replication scheduling capabilities.
10. Does it support the ability to invoke (or be invoked by) AS/400 native programs or stored procedures, API's and events?
11. Does it support automatic target table creation with column heading naming using AS/400 field text instead of the field name?
12. Does it support data transform capabilities (e.g., converting "Y" to "YES" and "N" to "NO") during the replication process?
13. Does it support data filtering using row, column and field value tests and selections?
14. Does it support replication from a single source to multiple targets?
15. Does it support replication from multiple sources to a single target?
16. Does it support bi-directional replication?
17. When monitoring records on the AS/400 for changes, does it support AS/400 journals and/or database triggers for net change and transactional replications?
Any preference?
18. Does it support DB2/400 extracts to desktop application formats?
19. Does it support extracting AS/400 spool file objects to desktop application formats?

Appendix C

Overview of Digital Certificates

Digital certificates are an electronic means of verifying the identity of an entity such as an individual, a server, a business or a particular segment or division of a business. A digital certificate is frequently explained as being analogous to a passport because they both:

- Are created by a specific issuing authority
- Are issued to a requestor after the requestor has provided sufficient proof of his identity
- Have an expiration date

Digital certificates use Public Key Infrastructure (PKI) technology to provide the vehicle for validation. PKI uses a key-pair of two unique keys, which are called public and private keys to implement their encryption. One of the keys in the key-pair is used to encrypt the message and the other key is used to decrypt the message. This means that two parties can communicate securely with each other without exchanging a secret key. Each sending partner encrypts messages for the receiving partner using the recipient's public key. Only the intended recipient holds the private key that can decipher the message.

When a digital certificate is created, the public key is actually part of the digital certificate and there is nothing particularly confidential about the public key. The private key part of the key-pair must be stored in a secure place so that no one but the owner can use it.

Digital certificates must be issued by a CA (Certificate Authority). The purpose of the CA is to act as a trusted third party that vouches for the identity of the person to whom the digital certificate has been issued. This is similar to a government vouching for the identity of a person to whom they've issued a passport. Certificates are generally purchased from a well-known CA such as VeriSign or Entrust.

There are some drawbacks to using digital certificates. Specifically,

- Certificates can cost hundreds to thousands of dollars per year depending upon the level of security provided by the certificates.
- There is a lack of standards for digital certificates. Consequently, Entrust issues certificates that contain information in proprietary fields so no other CA can generate Entrust certificates. Consequently, all entities sharing data would have to use Entrust.
- Administering digital certificates can be cumbersome if a number of different certificates are involved.

It is becoming more popular to use a PKI implementation to authenticate and maintain trust between two Virtual Private Network (VPN) endpoints.



APPENDIX G:
Nylander's Report



WHATCOM COUNTY
AS - INFORMATION SERVICES

A WEB SERVICES APPROACH TO DATA SHARING



A WEB SERVICES APPROACH TO DATA SHARING

SUMMARY

This report outlines a plan for the sharing of Law & Justice data between county agencies. There are over 18 different agencies involved in Law & Justice in Whatcom County, each with their own needs, own data systems and own focus. This plan builds upon many previous efforts at defining data sharing amongst agencies and adopts an approach called "inquire and import via web services". Central themes in the plan are utilization of existing resources, agency independence, lack of funds and implantation time.

DATA SHARING OPTIONS

There are many options available for data sharing; each has its benefits and drawbacks. The US Department Of Justice recognizing this contracted a report outlining the options and discussing in some detail the methods for bringing together law and justice agencies. The report entitled "Integrated Justice Information System Architecture, Building Blocks Construction", May 2001 by Jim Threatte of PriceWaterhouseCoopers can be found online at <http://www.it.ojp.gov/technology/files/IJIS-Architecture.pdf>.

The report outlines 3 different approaches to system architecture:

- 1) Consolidated System -- Centralized
- 2) Coordinated System -- Point to Point
- 3) Hybrid System -- Hub and Spoke

This plan proposes a Hybrid System with a central names index that "allows each entity to maintain its own operational system(s) and receive critical information from others"(Threatte, 8).

INQUIRE AND IMPORT VIA WEB SERVICES

In summary the plan proposes that the agencies develop and agree on a common inquiry application-programming interface (API) that is accessible via web services (SOAP). Each sharing agency then implements a data inquiry interface based on the API. A central server is created that handles a central names index, associates names together, authentication, authorization, and inquires the multiple systems. Each agency may then retrofits their applications to make inquiries against the central server, to import the data to their system and to present the data to the user. Users continue to use their existing applications with little end user difference except they are able to query against all of the agencies to help populate their data sets. See figure 1 for a diagram of the hub and spoke model.

API

The API is the key to the whole solution. By developing an open standard for inquiring each system, we enable the agencies to create their own software to expose the data. The API is simply a list of functions, their properties and what they return.

To allow the API to be accessible from different systems across networks we implement a platform independent API language. For the API language this plan adopts a technology called Simple Object Access Protocol or simply SOAP. SOAP was developed by industry leaders such as Microsoft, IBM and Lotus and is maintained by the World Wide Web Consortium (W3C). SOAP uses the Extended Markup Language (XML) to format the data and requests and then uses Hyper Text Transport Protocol (HTTP) or Simple Mail Transport Protocol (SMTP) to transport the requests. This adoption of established, standardized, tested and platform independent technologies makes SOAP a great API language.

XML is now an established standard with some years behind it. Unfortunately it is one of those technologies that are often misunderstood. XML defines a method of tagging data so that both the data and a reference to its definition are kept together. The XML suite of standards includes tools for defining data formats and properties. Do to the popularity of XML there are now toolsets to work with XML in almost every programming language and for every platform.

To use XML a document data type (DDT) or schema must be created which details the different fields, their use, structure, data types, defaults, ranges and relationships. This is often the most challenging step in utilizing XML.

The US DOJ Office of Justice Programs Global Justice Information Network advisory committee has already done a lot of work on XML standards. The committee has done extensive work on the XML Justice Data Dictionary which combines the efforts of the Joint Task Force Rap Sheet Standardization Project, the LegalXML Court Filing Standard Initiative and the Regional Information Sharing Systems (RISS) XML Specification (see <http://www.it.ojp.gov/global/standards/xml.html> for more info). At the state level the Washington State Office of the Administrator of the Courts is developing legal XML standards for filings and the WA Justice Information Network has developed "Justice Common Architecture". While the JIN is not XML based the efforts already done easily translate into XML.

The API itself is a list of functions, parameters and return results. This list would be constructed by a small technical committee. Each agency would implement a minimum set of functions and the ones specific to their category. For example, all would have name inquiry functions but only the Jail might implement mug shot lookup.

IMPLEMENTED INTERFACES

Once the API is finished, each agency working with its systems implements the API. Each agency is responsible for creating an implementation of the interface, securing their systems, and making the interface available to the IGN and the Central Server (also on the IGN).

CENTRAL SERVER

A central server makes it easy to query the systems. An inquiry goes to the central server with implements the entire API. The server then makes the request against each applicable system simultaneously. The central server then sorts the results and returns them together. In addition the central server handles authentication and authorization of individuals.

In addition to making distributed queries the central server stores an index of all of the names from each of the systems. It stores the person identification along with source and the source system identifier. This increases the speed of name lookups, which are the most frequent inquiry.

In January of 2002 the Whatcom County AS-IS department started a project to redesign how we provide county web based services. This project, code named Helsinki, encompasses many aspects of web services including Internet, Intranet, database connectivity, payment, authentication, authorization, look and feel, and site layouts. Of particular interest to this project are the authentication, authorization, AS400 connectivity and application space components. The Helsinki project builds a robust and flexible authentication, authorization, and security system to handle users accessing data both from a web-based interface and via other applications. Early on the Helsinki project settled on SOAP for AS400 connectivity and has been working to get the components in place to expose AS400 data via SOAP to the web server. Also planned, as part of the Helsinki project was a SOAP application system. By building upon the work of the Helsinki project over half of the central server will already be completed and the foundation for the remaining components will have been built.

PLAN BENEFITS

This plan has the following benefits:

- Each agency maintains its own complete data set
- Other agencies can inquire into the other agencies data
- A central names index includes the names from all of the agencies
- The names index allows names from different systems to be associated together representing the same person
- A central computer facilitates inquiring multiple systems at the same time
- A uniform application programming interface (API) for all data systems
- Methods local to each application for inquiry and importing data
- A central web page for inquiry into persons across all data sets
- It is as easy to connect 18 agencies as it is to connect 2
- Use of industry standards
- Recognition of the State Inter-governmental Network (IGN)
- Utilize advanced security methods that both control access and secure information
- Build upon existing projects
- Utilize existing hardware and systems to minimize investment
- Build upon existing staff skills and expertise

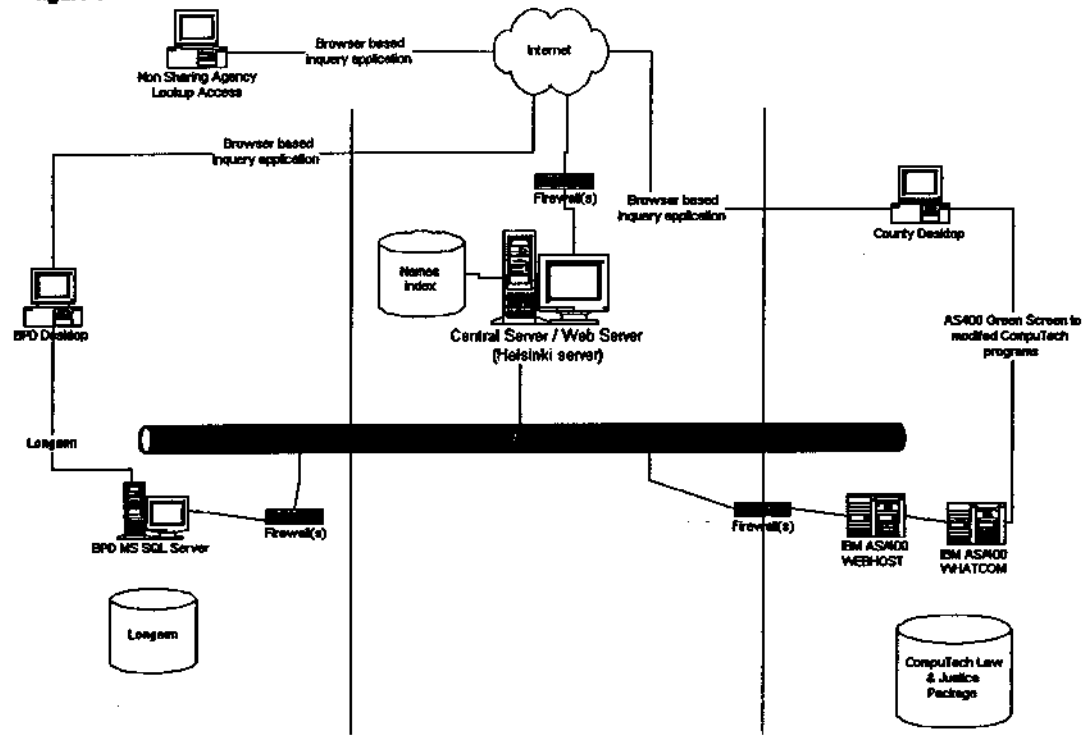
- Allow for some parts to be done quickly and others over longer timelines
- Each agency can develop their pieces along time lines that work for them and the community

CONCLUSION

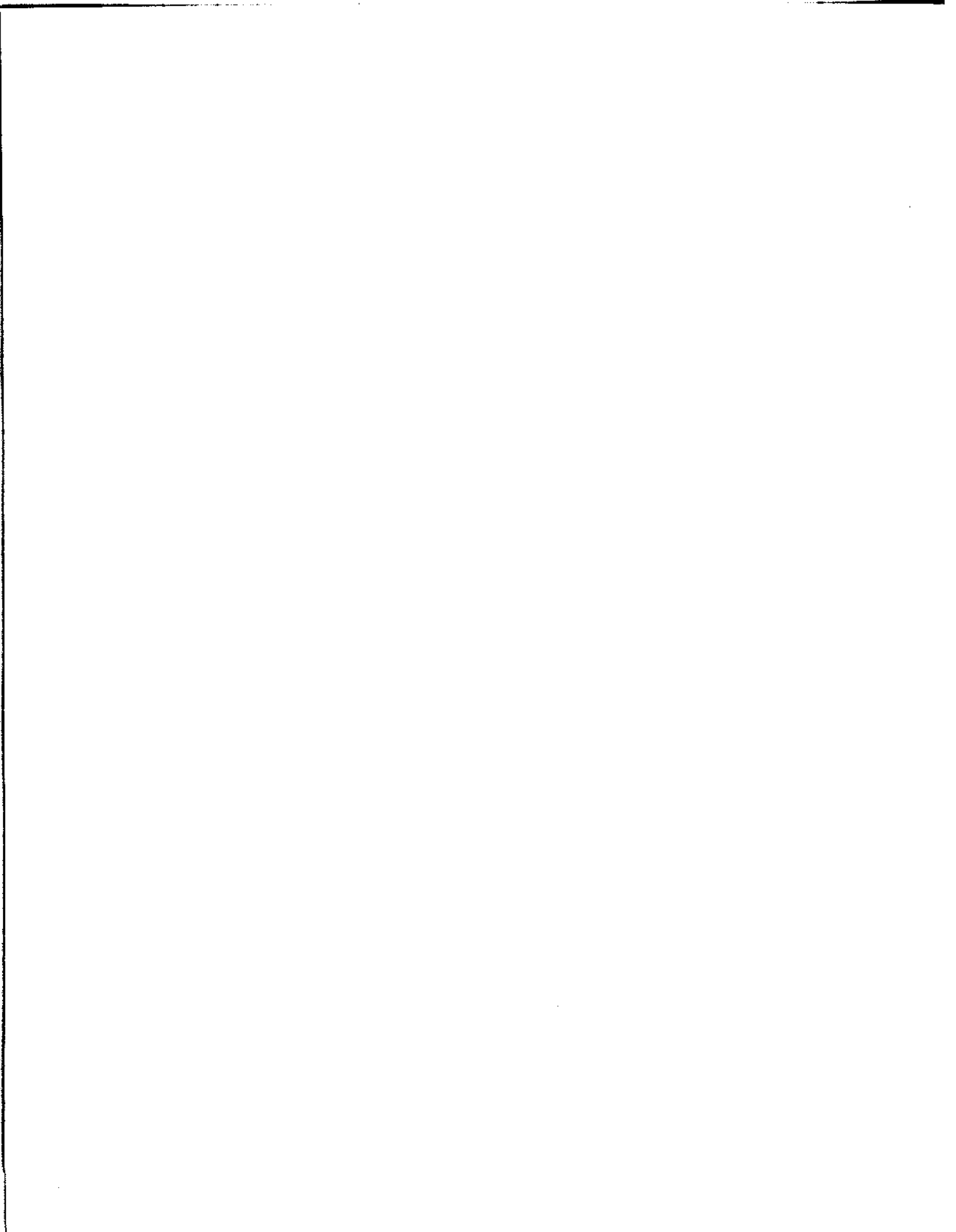
This plan, using the “inquire and import via web services” approach, works to meet the goals of utilizing existing resources, providing agency independence of both data and implementation, working in a constrained budget and in a timely manner.

A Web Services Approach to Data Sharing

figure 1

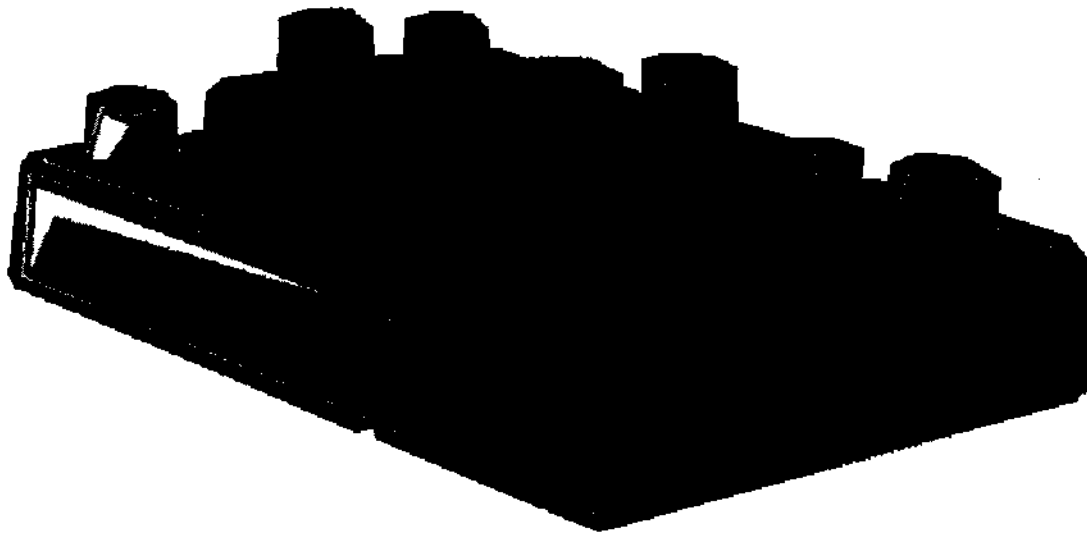


APPENDIX H:
NASIRE REPORT



Integrated Justice Information System Architecture Building Blocks Construction

May 2001



Prepared by Jim Threatte
Principal Consultant

PRICewaterhouseCOOPERS 

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The author of this report welcomes comments, questions, corrections, or any other feedback.

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1 Executive Summary

Throughout the nation, there is much enthusiasm regarding the general objectives for the integration of justice systems. Some of the general objectives include smooth and effective information sharing and use, increased public safety, enhanced justice in society, and more efficient government operations. The problems come when actual integration initiatives generate conflict over specific impacts on budgets, organizational relationships, and established procedures. These are not problems of technology or of conflicting visions. These are problems of organizational and political interests and relationships.

A recent study¹ was conducted by the Center for Technology in Government under a grant from the Department of Justice, Office of Justice Programs (OJP). This grant was provided as part of OJP's Integrated Justice Information Systems initiative. The study showed that achieving a high level of integration is feasible and has been achieved in some states and localities. The report states, "These examples of success can serve as lighthouses for integration efforts elsewhere by illustrating problems to be solved, successful strategies, and benefits to be obtained."

This report, *Integrated Justice Information System Architecture Building Blocks Construction*, provides an evaluation of optional approaches and a sample of an Integrated Justice Information System (IJIS) architecture. Because the term "architecture" has a variety of meanings, this report uses the term architecture to refer to "the definition of an information system using models."

The sample IJIS architecture established by this report is constructed using a building block approach. Each of the building block options is presented, and the selection of specific building blocks is established by providing a description of the advantages and disadvantages of the options. Because advantages and disadvantages will differ from jurisdiction to jurisdiction, the sample architecture that is constructed is only an example that was established using the decision criteria envisioned by this report. However, based on the research conducted leading up to this report, many of the decision criteria may be familiar and an appropriate selection. Therefore, the resulting sample IJIS architecture may be a close fit to one's individual needs.

The sample architecture can serve as a roadmap for the construction of an IJIS. One of the strengths of this architecture is that a "big bang" approach is not required in order to arrive at the final destination. In fact, the sample architecture provides for a variety of

¹ The Center for Technology in Government, University at Albany/SUNY published its Reconnaissance Study report at www.ctg.albany.edu/projects/doj/dojmn.html.

technology approaches to be used to allow justice entities to join the integrated system by employing small, incremental technology solutions.

The term "entity" is used throughout this report as a generic term to identify the various agencies, departments, courts, and stakeholder groups that will participate in the integrated justice information system. This includes, but is not limited to, all aspects of adult and juvenile law enforcement, prosecution, adjudication, incarceration, and supervision activities such as probation and parole.

This report first presents an overview of alternative system architectures that could be used to achieve system integration. The consolidated system approach is presented and described as a centralized concept developed to meet all functional requirements of all participating entities. This approach frequently involves a single database or central computer system. Next, the coordinated system is presented and described as one that relies on the cooperation of multiple, independent systems participating in the integration effort for their mutual good and for the direct benefit that each system participant will receive.

Finally, a hybrid system architecture is introduced and defined by this report as the most feasible approach that could be implemented by most organizations pursuing an IJIS project. Therefore, a hybrid system architecture is selected as the first building block that forms the foundation for the sample IJIS architecture.

The report then presents an overview of alternative data architectures and defines the data warehouse, data integration hub, and document exchange architectures. Each of these data architectures is reviewed, and the advantages and disadvantages of each are described. A hybrid data architecture is introduced and defined as the most feasible approach that could be implemented by most organizations pursuing an IJIS project. Therefore, this hybrid data architecture is selected as the next building block for the sample IJIS architecture.

The hybrid system and data architectures are combined to define a sample IJIS architecture that can provide the roadmap for achieving an IJIS for many jurisdictions. The specific structure for this sample IJIS is defined and named the Integrated Justice System Architecture™ (IJUSA). The critical components of the IJUSA are then described in order to further the understanding of the advantages of this approach.

2 Background and Introduction

With more than 22 years of information technology experience working primarily in the law enforcement and criminal justice domains, the author of this report has become familiar with a wide variety of law enforcement and justice systems and their implementations. Recently, he had the privilege of leading the redesign of the state criminal history repository systems for Washington and Oregon. While working on these projects, he was also provided the opportunity for close exposure to the design,

development, and deployment of the national integrated justice system. The Federal Bureau of Investigation (FBI) Interstate Identification Index (III) is the national model for the integration of arrest, court conviction, and correction/custody status data. The III model is adopted by state repositories such as Oregon and Washington and used as the foundation for integrating their state-level justice data.

While working on these projects, the author also had the opportunity to be involved with, and exposed to, the design, development, and deployment of the FBI National Instant Check System (NICS). Also known as the Brady Bill system, NICS integrates data from a variety of databases in order to provide a complete picture of a subject's involvement in the justice system that might preclude him or her from purchasing a firearm.

The author attended the 1999 BJA/SEARCH Symposium on Integrated Justice Information Systems² and regularly attends SEARCH³ membership meetings. As a founding member of the Integrated Justice Information Systems – Industry Working Group⁴ (IWG), he has been participating in its IJIS initiatives at the national level for several years. As the subcommittee chairman for the IWG standards subcommittee, he keeps in constant touch with technology and standards initiatives in the IJIS area.

This report contains the results of research and analysis over the past few years. It contains comparative information on alternative system and data architectures. In many ways, this report acts as a primer on the topics of system and data architectures. It assembles technology approaches, using a building block approach that arrives at a unique sample architecture. However, it is also possible to assemble a perfectly valid IJIS architecture using different building blocks that are each selected using different decision criteria.

The primary purpose of this report is to add substance to, and facilitate, the national dialogue regarding the technical approaches that will result in the successful integration of justice systems into a fully integrated justice solution.

This report is recommended reading for those who (1) wish to be more informed regarding justice system integration initiatives, (2) desire a different perspective regarding a technical

² The Bureau of Justice Assistance (BJA), U.S. Department of Justice and SEARCH, the national consortium for justice information and statistics, sponsored this symposium to provide practical resources to state and local justice agency representatives considering, or in the midst of implementing, integrated justice information systems.

³ SEARCH, the National Consortium for Justice Information and Statistics, is a nonprofit membership organization created by and for the states that is dedicated to improving the criminal justice system through the effective application of information and identification technology. Additional information regarding the SEARCH integration program can be found at www.search.org/integration/default.asp.

⁴ More information on the IJIS IWG is available via the Internet at www.ijis.org.

approach for establishing an Integrated Justice Information System architecture, and (3) are convinced that there is a business case for the integration of the justice systems and would like a roadmap to begin their project.

3 Business Case for Integration

There is growing attention to, and increased funding available for, justice integration initiatives at the local, state, and federal levels. As attention and resources have increased, the cost of information technology has continued to decline, bringing higher capability within the budgets for new initiatives.

A recent study, *Reconnaissance Study Developing a Business Case for the Integration of Criminal Justice Information*, was conducted by the Center for Technology in Government under a grant from the Department of Justice, Office of Justice Programs (OJP).⁵ The grant was provided as part of OJP's Integrated Justice Information Systems initiative.

The results of this study are based primarily on 26 interviews conducted with persons who were knowledgeable about specific state and local initiatives. The study also draws on published materials about the integration initiatives obtained either directly from the participants or by searching print and electronic sources. The study showed that achieving a high level of integration is feasible and has been achieved in some states and localities. As the report states, "These examples of success can serve as lighthouses for integration efforts elsewhere by illustrating problems to be solved, successful strategies, and benefits to be obtained."

Successful achievement of integration objectives was demonstrated to be clearly possible, using a number of different paths. The approaches range from a "full frontal assault" on comprehensive integration objectives to limited strategic objectives as part of a larger strategic plan. In either case, several factors played a role in success. One of the three primary factors indicated was "a building block implementation philosophy that allows systems to be constructed from a number of interrelated 'blocks' or components, guided by an overall vision or strategic plan."⁶

The technical development strategy selected by the state of Colorado was based on analysis of business requirements and an extensive business process mapping exercise of each component of the criminal justice enterprise. This resulted in a strategy of integrating existing

⁵ The Center for Technology in Government, University at Albany/SUNY published its *Reconnaissance Study* at www.ctg.albany.edu/projects/doj/dojmn.html. The executive briefing for the full report is located at www.ctg.albany.edu/resources/pdfrwp/doj_exec_briefing.pdf. The full report can be located at www.ctg.albany.edu/resources/pdfrwp/doj_guide.pdf.

⁶ Anthony M. Cresswell and David Connelly, *Reconnaissance Study, Developing a Business Case for the Integration of Criminal Justice Information*, Center for Technology in Government, University at Albany, SUNY, September 1999.

legacy systems while maintaining their own independence as much as possible. Information is passed from one agency to another with as little disruption as possible to the environment of each agency. This approach did not assume that future reengineering or migration toward more common systems would not be necessary; instead, it placed priority on achieving a quick success. Colorado's approach has provided the ability to extract and join data across the entire system for the purposes of decision support at all levels. This has allowed for a complete criminal history that has up to this point been impossible to achieve.⁷

The technical development strategy selected for Harris County, Texas, was based on several elements. The first element was that design and development decisions were based on a comprehensive and well-grounded understanding of information flow, business rules, and user needs. Another element was to incorporate an appropriate mix of centralized standards and controls with decentralized or distributed repositories and systems. The result was a mix of centralized and controlled components with flexible and adapted components for the collaborating agencies. The third element was taking an incremental (building block) approach to system development within a longer-range planning framework to develop components in smaller, more manageable steps as part of a long-range strategy.⁸

These are only two examples of projects that can provide insight and guidance toward the execution of a successful integrated justice project.

4 Alternative Integration Architectures

This section presents an overview of the alternative integration architectures that were considered when forming the sample architecture.

4.1 Alternative System Architectures

Integration architectures fit into one of three major categories. One category is the consolidated system. Another category is the coordinated system. A third option would be a hybrid version, combining both the consolidated and the coordinated systems. The following sections of this report describe the basic differences between these system architectures and identify the architecture that was selected as a sample for this report.



⁷ Ibid.

⁸ Ibid.

4.1.1 Consolidated System – Centralized

In a consolidated system, a centralized platform concept is developed in order to meet all functional requirements of all participating entities. This approach frequently involves a single database or central computer system. Alternatively, the software components and data may be distributed across different sites and entities. However, if the software and data components are tightly coupled, the resulting system is a consolidated system. The following figure depicts a sample of a consolidated system:

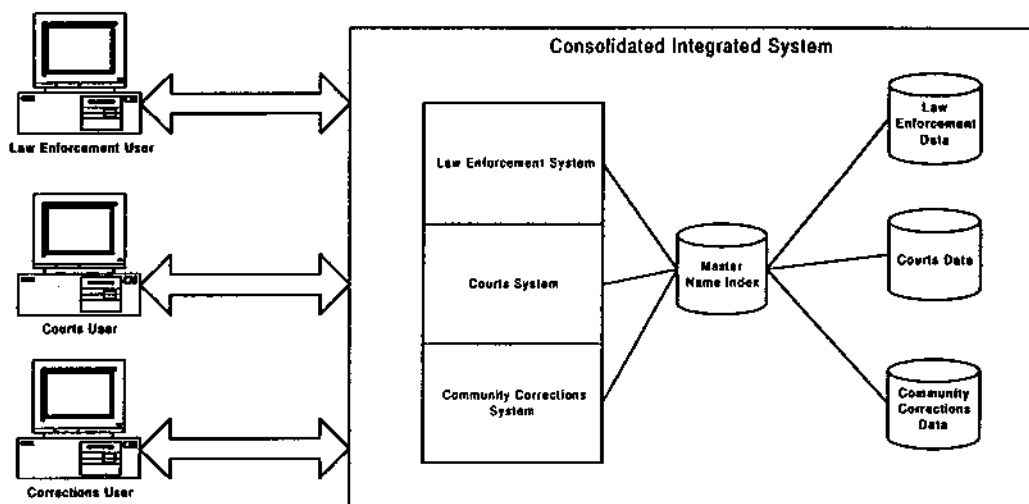


Figure 1 - Sample Consolidated System Architecture

Although a consolidated system might be the most cost-effective solution with the lowest technical risk and lowest cost of support, this solution is not usually a feasible alternative because of political, policy, and environmental issues. The existing justice information enterprise comprises separate branches of government as well as entities that have a necessarily adversarial relationship. In addition, the political and policy infrastructures that are in place make the establishment of consolidated system architecture extremely difficult, if not impossible, to achieve for most jurisdictions.

Some systems may be consolidated within their own functional area. For example, the Police Computer-Assisted Dispatch software may be consolidated with the Police Records Management and Jail Management software. However, these functionally consolidated systems are not considered consolidated from the entire IJIS enterprise perspective.

4.1.2 Coordinated System – Point-to-Point

In a coordinated system, the design and architecture follow agency lines and use different data-processing platforms, applications, and operating systems. Working in a loosely coupled

manner, the entities agree on the basic data structures and business rules necessary to exchange the information to achieve the goals of system integration. The following figure depicts a sample of a coordinated system:

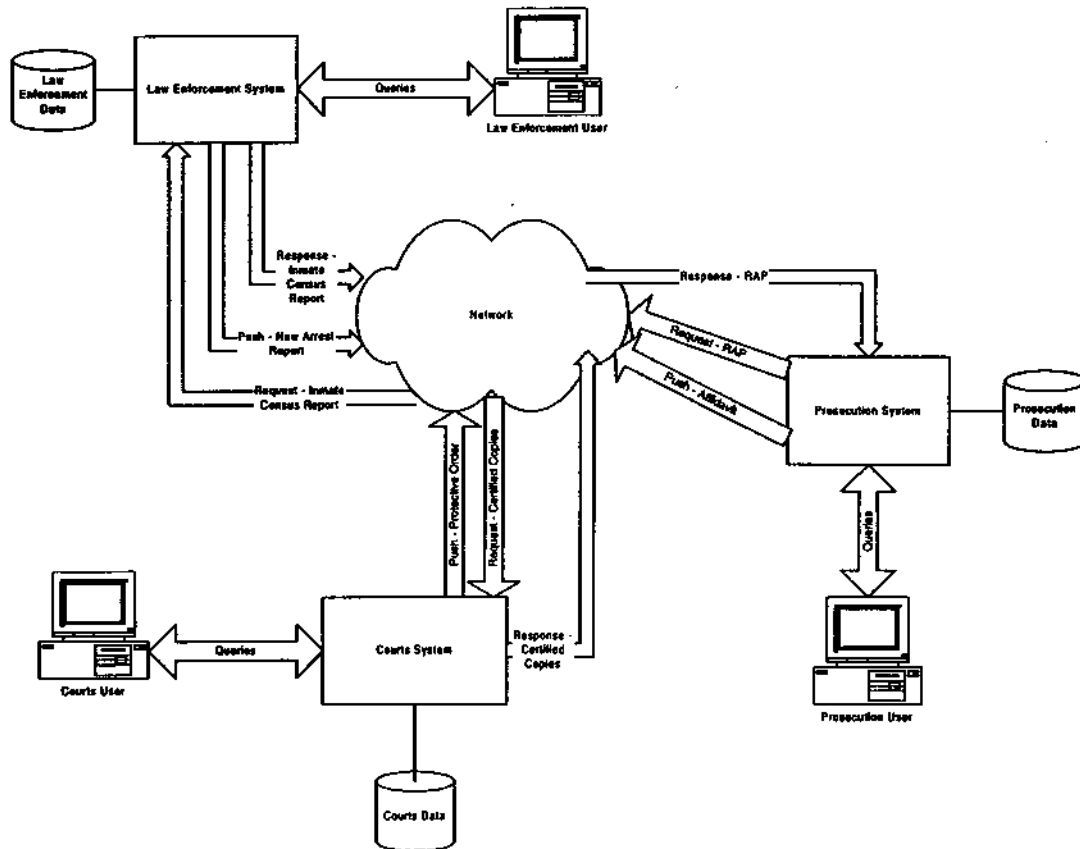


Figure 2 - Sample Coordinated System Architecture

The coordinated system relies on the cooperation of parties to participate in the integration effort for the mutual good of all and for the direct benefit that each system participant will receive. This will typically require that memorandums of understanding or similar kinds of agreements be established among all participating entities in order to facilitate the free exchange of agreed-upon information. The coordinated integrated system also allows for a diverse set of software business applications that meet the needs of each entity or agency.

Coordinated solutions have grown over time as information technology organizations have attempted to integrate information from different units of the same organization, using the technology that was available at that time. This approach suffers from a number of problems that multiply geometrically when inserted into a heterogeneous hardware and software environment. While it is initially appealing, the main problems (scalability and maintainability) end up being very costly, even for small implementations.

This approach requires that each application must write interfaces to every other application with which it needs to share data. This results in intricate, expensive, and redundant interfaces. The combination of overly complex interface schemes and redundant data entry results in errors and inefficiency in the process. In addition, substantial effort is expended in minimizing duplicate data entry, checking multiple systems to obtain information, and resolving inconsistencies in information between systems. The consequences of decisions made with incomplete, inaccurate, or untimely information are of great significance.

4.1.3 Hybrid System – Hub-and-Spoke

A hybrid architecture for integration can also be defined as one that allows the individual entities to maintain their unique data, with central master indexes and common data supported by an agency responsible for the mission of integration. In a hybrid solution, there are two principal components, and at least one of the two components is required. However, in many cases, both of the following components might be advisable:

1. A central system index that controls the flow of information from one system to another
2. A central repository of information from all entities

With a central system index, a central computer is responsible for maintaining a common reference to data contained on other systems. For example, a master name index for all individuals associated with the justice system would be an essential component of the central index. The complete data associated with an individual's involvement with each entity would be maintained on the entity's computer. For example, arrest data would be on the law enforcement computer, court convictions on the court case management system, and incarceration status on the corrections system. All systems would need to adhere to the established rules for supporting the centralized indexes (such as the master name index). They would also need to participate in a mutually agreed-upon approach allowing all authorized entities to retrieve the source data indicated by the master index.

This type of central index system allows each entity to maintain its own operational system(s) and receive critical information from others. [The FBI's current integrated national criminal history repository system, the Interstate Identification Index (III), is an example of this architecture.]

The following figure depicts a sample hybrid system configuration with a central index approach:

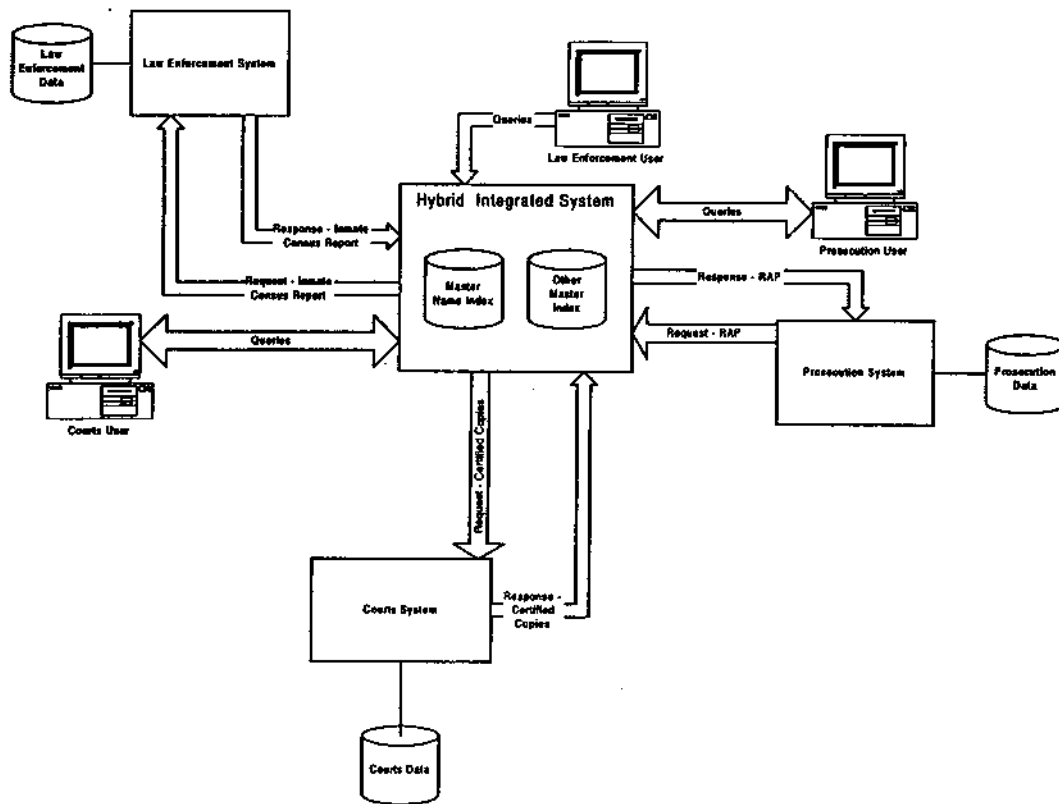


Figure 3 - Sample Hybrid System Architecture – Index Only

An alternative approach for constructing a hybrid system architecture is to use a data warehouse instead of a central system index. With a data warehouse, the complete data associated with an individual's involvement with each entity is maintained on a centralized computer. Data warehouse systems require that data must first be extracted from each of the participating operational systems. This extracted data must then be evaluated and modified in order to meet a common data model and data element definition required by the data warehouse. This process transforms the data from its original format to the common format required by the centralized data storage mechanism that is typically a relational database system. (Additional information regarding the definition of data warehouses and their options is presented later in this report.)

All participating systems would need to adhere to the established rules for supporting the extraction of all required data to the centralized data warehouse and would need to participate in the approach and rules necessary to support a centralized data warehouse.

With a data warehouse system, each entity maintains its own operational system and participates in the integration of data for query purposes by providing information to a central repository. This hybrid method of integration can allow the individual entities to

maintain their data while at the same time sharing information with one another, using the data warehouse on a central computer. [The FBI's original integrated national criminal history repository system, the Identification Division Automated System (IDAS), is an example of this architecture.]

The following figure depicts a sample hybrid system configuration using a data warehouse approach:

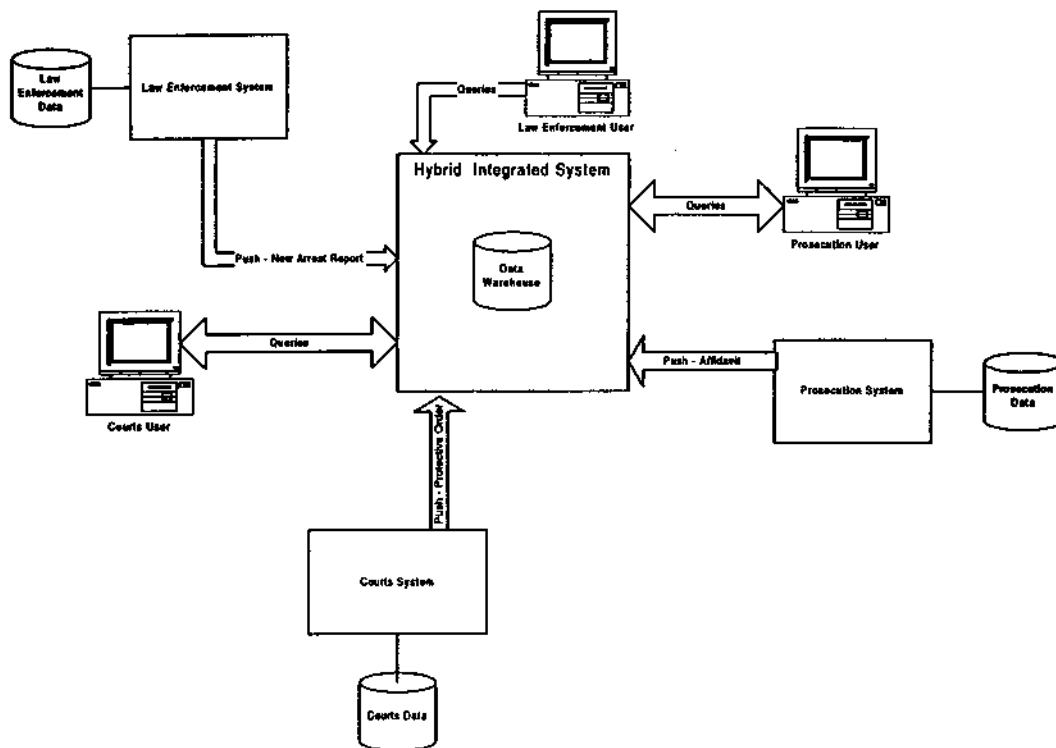


Figure 4 - Sample Hybrid System Architecture – Data Warehouse Only

Finally, the hybrid system architecture provides for a combination of both a central index and a data warehouse on a centralized computer system. This approach allows each entity to maintain its own operational system; however, each entity can participate in the integration of data, using a variety of modalities. This hybrid method of integration can allow the individual entities to maintain their data while at the same time sharing information with one another, as well as with a central computer.

The advantage of this hybrid approach is that it allows a majority of the general inquiry transactions to be serviced by the data warehouse on the central server, which reduces the impact of queries on the operational systems. For data that is difficult to place into a data

warehouse or where data security is a concern, the central index approach is available to provide access to data directly from the operational systems.

The FBI's current integrated national criminal history repository system currently operates by providing both the central index architecture of the III and the centralized data warehouse approach of its predecessor, the IDAS. Both logical architectural components are combined and are generally referred to simply as the III.

The following figure depicts a sample hybrid system configuration using both a central index and a data warehouse approach:

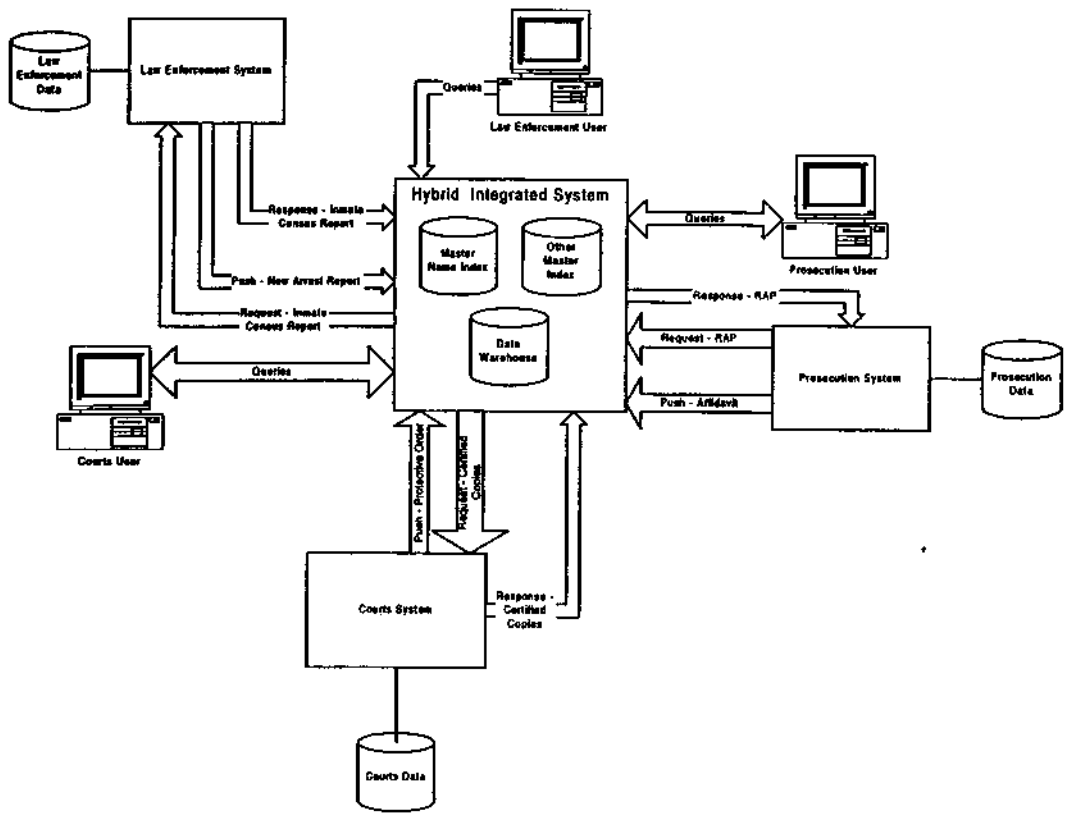


Figure 5 - Sample Hybrid System Architecture – Index and Data Warehouse

The principal advantage of the hybrid system architecture over the coordinated system architecture is that the hybrid architecture integrates disparate systems in a way that reduces the need for unique interface programs to be imbedded into each application. Each application that needs to share data does not need to write a separate interface to every other application. Instead, each application uses the services of a common, shared data exchange facility. In this model, each application “publishes” its shared data when

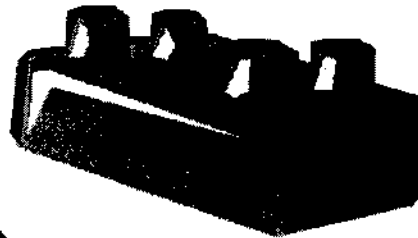
relevant events occur in its system. Other applications can then “subscribe” to the event’s data.

Because the hybrid architecture addresses shortcomings of both the consolidated and the coordinated systems, this approach was selected as the first building block of the sample IIS architecture.

4.2 Alternative Data Architectures

In addition to considering different system architectures, this report reviews three different data integration architectures. The data integration architectures fit into one of three major categories: data warehouse, data integration hub, and document exchange. The following section of this

report describes the basic differences between these data integration architectures.



4.2.1 Data Warehouse Architecture

The term “data warehouse” is intuitively understood to mean a central place (warehouse) that stores data. A more formal definition is that a data warehouse is a large electronic storage area that is structured so that the data stored in different formats is converted to a consistent format for use by a variety of users.

4.2.1.1 Data Warehouse Architecture Overview

Data warehousing provides many benefits to the process of disseminating business intelligence into the enterprise. First, by acting as a single repository for information from many applications, a data warehouse removes the burden of disparate data access from the user application. Data is presented to the user applications in an easy-to-access, typically relational database format. Second, the act of populating the data warehouse provides the opportunity to cleanse the data. In other words, before the data is put into the warehouse, it can be checked and altered to achieve the intended use. This data-cleansing function is not an inherent feature of a data warehouse, but a facility that is provided by tools and procedures used to populate data warehouses.

Because data residing with multiple sources must often be combined for effective decision making, many organizations have implemented data warehouses. This creates essentially a hub-and-spoke model, whereby each enterprise application sends information to the warehouse where it can then be accessed throughout the enterprise.

The term “data warehouse” can mean different things to different people. Six basic models can be used, and are referred to, as data warehouses. Each of the data warehouse architectures requires complex data-modeling and system integration projects to be deployed. They are neither easy nor inexpensive to build. They require system engineers to work with business users to define current and future information requirements to support decision making. They also require system engineers to piece together tools and products from multiple vendors and establish procedures and operations to manage the flow and transformation of data from legacy systems to warehouses.

4.2.1.2 Data Warehouse Architectures

This report analyzed the six basic data warehouse models. Each of these six models is defined, and the status and disposition of each, with regard to the selected sample architecture, are provided. Finally, a data warehouse architecture is identified for incorporation in the sample IJIS architecture.

4.2.1.2.1 Direct Query

The direct query model is a tools-driven architecture, rather than a data warehouse architecture; however, the end result is the same: end users gain direct access to enterprise data. The problem here is that users must know Structured Query Language⁹ (SQL) and arcane database structures, and their queries can impact the performance of operational systems. The direct query model is not considered a viable or reasonable approach for an IJIS data architecture because (1) it requires the user to know how to use the SQL language, (2) it does not provide an integrated response back to the user, and (3) the databases in many justice organizations do not support SQL access. The following figure is a diagram of a direct query data warehouse:

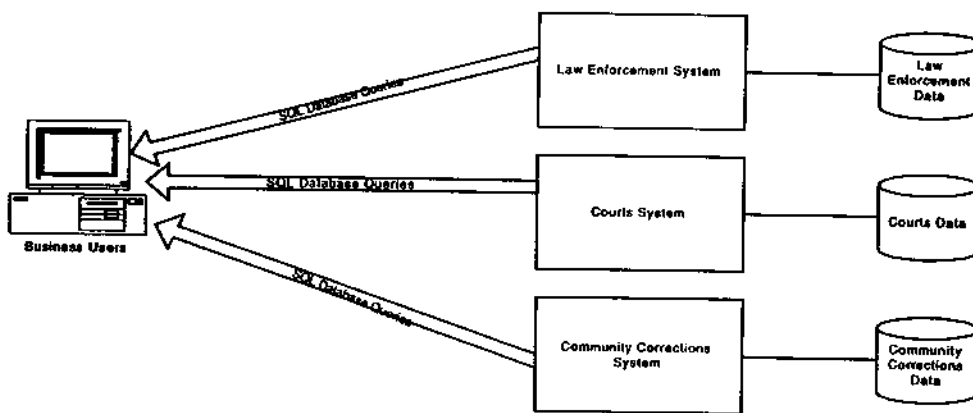


Figure 6 - Direct Query Data Warehouse

⁹ Structured Query Language (SQL) is a procedural software language used by database software to perform business logic actions.

4.2.1.2.2 *Virtual Query*

A virtual query model is supported by database gateways¹⁰ and second-generation query tools. These tools hide SQL and database structures from end users behind a semantic mapping layer that maps generic requests for business objects into proper SQL that is transparent to users. Thus users don't have to know SQL or arcane table names.

Typically, requests are directed to one data source at a time, and the results are presented separately. Most tools of this type can't combine information that is stored on different computer systems in different data formats. A significant characteristic of virtual query environments is that the back-end data source is an online system that supports the business's core operations. This causes contention between query and update activity, which may erode performance of critical online systems.

The virtual query model is not considered to be a viable or reasonable approach for an IJIS because (1) it does not provide an integrated response to the user, (2) concerns exist regarding the potential performance impact on operational systems, and (3) some of the databases in use by typical justice agencies do not support a direct SQL access. The following figure is a diagram of a virtual query data warehouse:

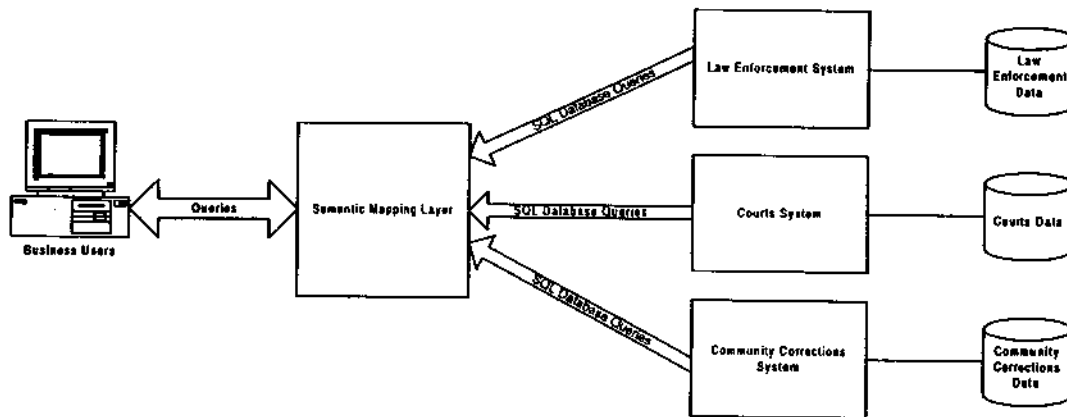


Figure 7 - Virtual Query Data Warehouse

¹⁰ A "gateway" is a generic term used to describe a system that employs business logic, procedural code, and other more complex technology to transform and translate between two or more computer systems.

4.2.1.2.3 *Single-Subject Warehouse*

The single-subject model is considered the classical data warehouse architecture. Using this approach, users directly access subject-oriented data that has been extracted and transformed from one or more operational systems and loaded into a separate computer that contains a data repository or data warehouse.

Many organizations start with a single-subject warehouse and then either expand the number of subjects in the warehouse or create new single-subject warehouses. The single-subject warehouses are often called “data marts,” depending on the volume of data and number of users supported. A number of data warehouse vendors adhere to this model, especially the major relational database vendors such as Oracle, IBM, Microsoft, Sybase, and Informix.

The single-subject warehouse has been selected as the data warehouse option for the IJIS architecture sample of this report. The following figure is a diagram of a single-subject warehouse:

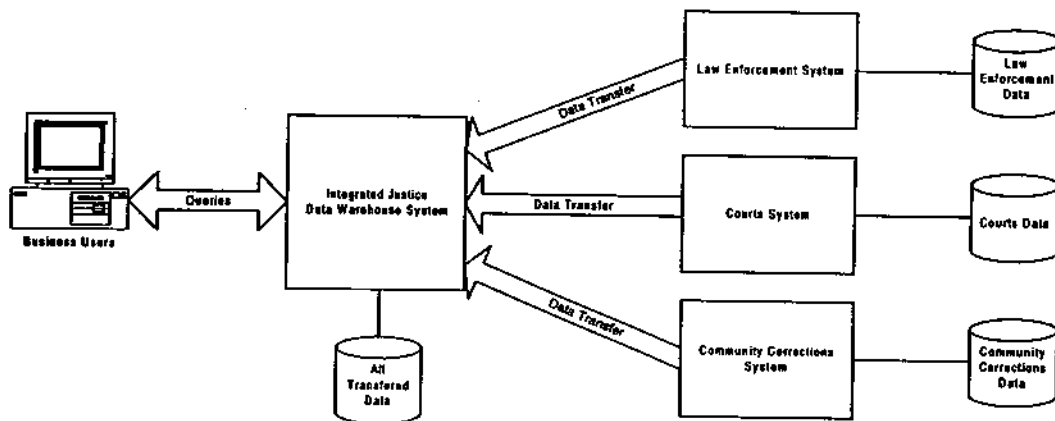


Figure 8 - Single-Subject Data Warehouse

4.2.1.2.4 *Mixed Workloads (Database Propagation)*

The mixed workload model provides support for both query and update capabilities. The architectural diagram depicts how mixed workload data warehouses evolve by spawning new operational systems, as well as smaller regional or personal data warehouses. This approach allows a warehouse to be reloaded, thus causing a change in data values that, in turn, trigger an update in a remote operational system. An example could be an inventory warehouse triggering a new, just-in-time purchasing system.

The mixed workload model is not a viable or reasonable approach because it is very complex and expensive to procure and maintain. In addition, the data warehouse features offered by this complex architecture are not required to address typical functional requirements of the integrated justice community. The following figure is a diagram of a mixed workloads data warehouse:

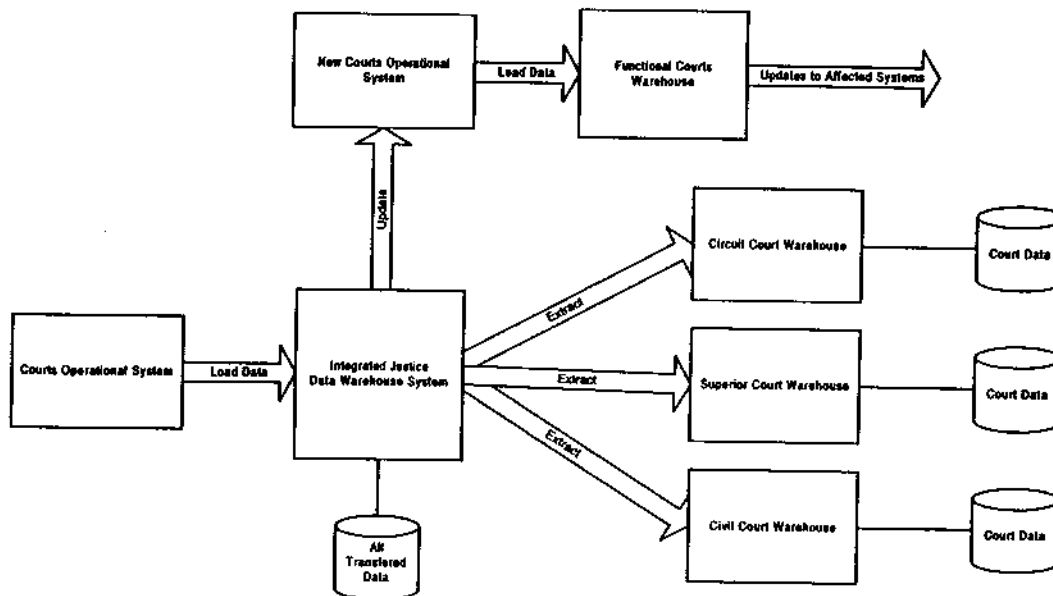


Figure 9 - Mixed Workloads Data Warehouse

4.2.1.2.5 *Virtual Global Warehouse*

The virtual global architecture integrates all subject-oriented warehouses that have cropped up willy-nilly throughout an enterprise. The virtual global warehouse enables organizations to create a global view of all data. The integration mechanism is an SQL parsing-and-mapping engine.

This is not too different from the virtual query architecture, except that the back-end data sources are all data warehouses, not operational systems. The one major requirement for virtual global warehouses is that all warehouses share identical data definitions. This is a difficult feat, involving strong doses of cross-organizational cooperation. Virtual global warehouses can also be built from the ground up, knitting together disparate groups that realize that they can each benefit more by sharing definitions and data than by trying to reinvent a global warehouse on their own.

The virtual global model is not considered an appropriate architecture for most integrated justice initiatives at this juncture. Research indicates that not many data warehouses exist in the justice environment at this time. This architecture is appropriate for integrating multiple data warehouses. For many, an IJIS project will, for the first time, create a data warehouse that may, in the future, become one of the data warehouses integrated by a virtual global model. It may be advisable to establish a vision that recognizes the ability to create a virtual global warehouse as a goal as other data warehouse projects are deployed or improved. The following figure is a diagram of a virtual global data warehouse:

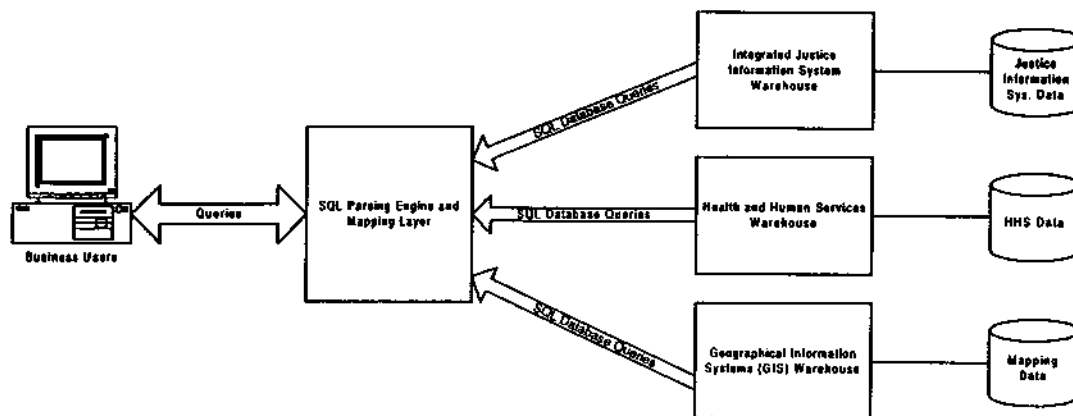


Figure 10 - Virtual Global Data Warehouse

4.2.1.2.6 *Event-Driven Warehouse*

Organizations deploy event-driven architectures in order to integrate disparate applications into an integrated system that can mimic and adapt to the business. In event-driven systems, applications typically “publish” data to an “information bus” and then “subscribe” to the data they need. Event-driven systems typically use a universal application interface implemented through some form of “middleware”¹¹ in order to transform all shared data into a common format with common terms and definitions.

This architecture has become very specialized, and a variety of software companies have developed a variety of middleware products designed specifically to accomplish the goals of the event-driven warehouse. In fact, this report has classified this model in a category by itself called the “data integration hub.”

This report has evaluated the data integration hub architecture as a unique and independent data architecture.

¹¹ “Middleware” is a generic term used to describe a variety of technological approaches for connecting systems for the purposes of data transfer and a variety of other system interoperability requirements.

4.2.1.3 Data Warehouse Architecture Evaluation

The single-subject warehouse is the classical data warehouse approach that was selected as the building block for this report. Research indicates that this data warehouse option is the most appropriate and viable data warehouse architecture for use in an IJIS solution.

The following figure depicts several critical features of the data warehouse architecture. The first critical feature is that end users are retrieving all integrated criminal justice information system data, using software designed specifically to extract and report data stored on the data warehouse. This aspect reveals some significant architectural considerations regarding client access:

- New application software must be acquired and customized to meet the user’s needs to access data on the data warehouse. This includes the screens for establishing ad hoc queries, as well as the screens necessary to run predefined reports.
- New application software must be developed to execute the ad hoc queries and predefined reports.

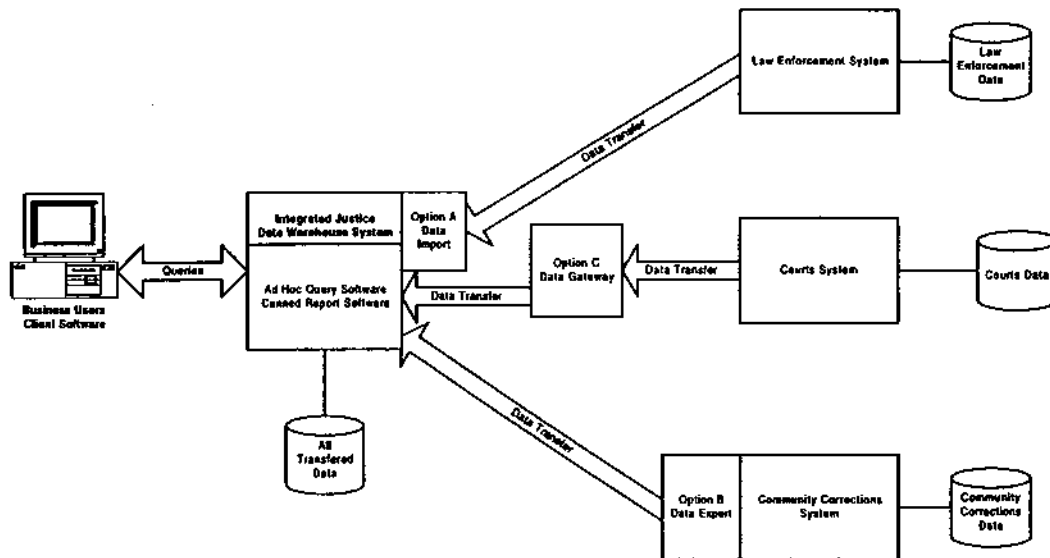


Figure 11 - Selected Data Warehouse Model

4.2.1.3.1 Client Software Alternatives

The new client software that allows users to access the data could utilize Web browser and database search engine technology that can provide an easier-to-use, lower-cost client approach. However, this “thin client” approach sometimes sacrifices the flexibility to define queries and reports. Thin client software typically uses a Web browser for the

client workstation interface where the business logic code and procedures are executed on the server. This allows for centralized maintenance of business logic code that can be frequently subject to change.

Alternatively, the client software could be a commercial off-the-shelf (COTS) query-and-report generation package. This "thick client" approach would provide the power and flexibility to define a variety of reports and queries. Thick client software incorporates business logic software operating on the client's workstation computer. This architecture requires any software changes to be propagated to each individual user workstation located throughout the enterprise. The justice entity responsible for the IJIS would need support resource(s) with expertise in data processing to provide for the more powerful, flexible thick client package. This approach is also usually more expensive because client licenses would be required for all users.

The second salient feature of the database warehouse architecture is that the operational systems' "live" databases are not accessed. Copies of operational systems' data are maintained on the separate data warehouse computer. This aspect of the architecture reveals some significant considerations regarding data access and transfer:

- Data stored in the data warehouse is not current. The data will only be as current as the last time that it was updated from each operational system.
- Data stored in the data warehouse may not be complete. Not all data from the operational systems can be adequately mapped to a common database model. This results in some data elements being orphaned by the data warehouse or stored in such an obscure way that the relevance of the data is not readily apparent.

4.2.1.3.2 *Alternative Approaches for Transferring Data*

As Figure 11 illustrates, there are three approaches (or options) for transferring the data from the operational systems to the data warehouse:

- A. Data import
- B. Data export
- C. Data gateway

For any of the three approaches for transferring data, remember that the data transfer is defined by two factors. The first factor is the data transfer interval, which is the measure of time that has elapsed since the data was last provided to the data warehouse. The second factor is the volume of the extracted data. One example of extracted data volume would be a full database snapshot. A full database snapshot will transfer all data from the operational system to the data warehouse. An alternative to a full database snapshot is to transfer a subset of the data. The subset can be a "logical subset," which provides a predefined extraction of selected data elements that are made available to the data warehouse for its use. Another data subset is a "transaction subset," which would contain the records that have been changed since the last full data transfer.

A full database snapshot takes a longer time to perform than a subset data transfer. Therefore, the relationship between volume and interval will be important factors when establishing the procedures for transferring data to the data warehouse.

Data Import

Option A depicted in Figure 11 represents the data import approach. With this approach, the data warehouse contains software that retrieves the data from the operational system and stores it in the data warehouse. This data transfer can take place periodically (e.g., weekly, daily, or hourly), based on the rules established. Performance impact to the operational system will occur when the data is transferred. In addition, this data transfer can be either an entire database import or an import of only the data that has changed since the last data import. Importing the entire database will significantly impact the operational system. Importing only the changed data will have less of an impact on the operational system. The options available for the data import depend on the type of database that resides on the operational system, as well as the likely impact of database import activity.

The strength of this approach is that many current-generation tools come with—or work with—a variety of data warehouse software. These tools are capable of attaching to a variety of legacy databases or data storage approaches. They are also capable of extracting the data and transforming it into the data warehouse database model.

Data Export

Option B depicted in Figure 11 represents the data export approach. With this approach, the operational system contains software that extracts the data from the operational system and stores it on the data warehouse. Like the data import approach, this data transfer can take place periodically (e.g., weekly, daily, or hourly), based on the rules established. In addition, this transfer can take place immediately whenever data is modified. This is especially true when the operational system uses a relational database such as Microsoft SQL Server. With a relational database, a “trigger” can be established so that whenever a single data value is modified, a “trigger program” is executed that can transfer the required data to the data warehouse.

Performance impact to the operational system will occur when the data is transferred. Exporting the entire database will significantly impact the operational system. Exporting only the changed data will have less of an impact, and responding to triggers will have the least amount of impact on the operational system. The options available for the data export depend on the type of database that resides on the operational system, as well as the likely impact of database export activity.

The strength of this approach is that sometimes it is more cost-effective to utilize current support staff to develop the software that extracts the data required by the data

warehouse. This can be required when proprietary file storage approaches have been used that do not lend themselves to a data import solution. Also, this approach is effective when the data files do not record the "changed" data and the impact of an entire database transfer to the data warehouse is not desired. Therefore, custom software designed to determine the changed data must be developed in order to provide the data warehouse with the needed data.

Data Gateway

Option C depicted in Figure 11 represents the data gateway approach. With this approach, a new computer is established that contains software that extracts the data from the operational system and then transforms and stores that data on the data warehouse. As with the other options, this data transfer can take place periodically (e.g., weekly, daily, or hourly), based on the rules established. In addition, this transfer could take place immediately whenever data is modified if the operational system contains a trigger (as described above).

Performance impact to the operational system will occur when the data is transferred. Exporting the entire database will significantly impact the operational system. Exporting only the changed data will have less of an impact, and responding to triggers will have the least amount of impact on the operational system.

The strength of this approach is that a separate computer is used to extract data and transform it into the data warehouse data model. This can reduce the time necessary to update data on the data warehouse, as well as leave the full computing power of the data warehouse always available for user inquiry needs.

Sometimes it is simply more cost-effective to utilize third-party database gateway software running on a different hardware platform to accomplish data extraction and cleansing in a cost-effective manner. For instance, some very inexpensive data gateway programs run on a personal computer. If the data warehouse or operational system is operating on a high-availability UNIX computer that only offers expensive software alternatives for database import, export, and cleansing, a PC-based gateway solution can often offer a very attractive alternative solution.

4.2.1.3.3 Advantages and Disadvantages

These are the major advantages of the data warehouse architecture:

- A well-defined, integrated data model with a full copy of the cleansed data is available to all users for query-and-reporting purposes.
- Data access response time and system availability is predictable and provides a high level of service to the users.
- A variety of COTS query-and-reporting tools are available for use by clients to create powerful queries and reports.

These are the major disadvantages of the data warehouse architecture:

- The data represents a snapshot in time and is only as current as the last update by the last system.
- The architecture provides no mechanism for data to be transferred from one system to another in order to reduce or eliminate duplicate data entry.
- This architecture can lead to thick client query-and-reporting applications that can place a significant burden on the data network and the data warehouse server.

4.2.2 Data Integration Hub Architecture

Organizations deploy event-driven architectures in order to integrate disparate applications into an integrated system that can mimic and adapt to the business. The data integration hub architecture is a unique and specialized architecture designed to address these requirements.

4.2.2.1 Data Integration Hub Overview

In event-driven systems, applications typically “publish” data to an “information bus.” They also simultaneously “subscribe” to the data they need. Event-driven systems typically use a universal application interface implemented through some form of middleware in order to transform all shared data into a common format with common terms and definitions.

This architecture has become very specialized, and a variety of software companies have developed a variety of middleware products designed specifically to accomplish the goals of the event-driven warehouse. This model exists in a classification by itself called the “data integration hub.”

This section evaluates the data integration hub architecture as a unique and independent architecture. Another name commonly given to this architecture is “virtual data warehouse.” (These terms are used interchangeably throughout this report.)

A traditional data warehouse provides a central repository for information, requires the development of metadata¹² definitions, and provides data-cleansing facilities. The data integration hub uses middleware in order to provide access to the corporate data stored in heterogeneous data sources. This middleware is used to build direct connections among disparate applications. As with the data warehouse, it relies on the creation of an independent metadata definition of the entire justice system data. It then maps the justice system data schema to each of the operational systems’ data. The essential differentiation between the data warehouse and the data integration hub is that the data integration hub

¹² “Metadata” is data about data or a description of the data that is being referenced.

accesses raw data from the operational system as it is needed. Because the raw data is accessed directly from the operational system, the data-cleansing activity that is performed in the data warehouse architecture is not performed in the data integration hub architecture.

Recently, there has been significant movement toward data integration hubs, which has implications for both information dissemination and improved decision making. Data integration hubs allow users to distill the most important pieces of data from disparate legacy applications without the time, expense, and risk to data required by traditional data warehousing. In addition, as more companies are using Web architectures as the backbone for their enterprise networks, they are moving back toward developing their own information-presentation applications. Many organizations are building, or at least considering, enterprise portals. An enterprise portal is a single information gateway, typically browser-based, that can be used to navigate and examine both internal and external data through Web technology.

Most of the major data integration hub vendors have enabled their products to be deployed and used over a Web-based architecture. Indeed, they provide a quick solution for deploying Web-based applications that are easy to implement. The Web-based development environments and growing strength of eXtensible Markup Language¹³ (XML) have contributed to their ease of implementation. XML is the standard Web-based, data-manipulation language that can make the development and deployment of custom-built applications feasible for many organizations.

The great strides made in the area of enterprise middleware now provide an interesting alternative to traditional data warehousing. Middleware can act as data hubs, allowing access to the corporate data stored in heterogeneous data sources. Whereas a traditional data warehouse provides a central repository for information, a virtual data warehouse uses middleware to build direct connections among disparate applications. This virtual approach can require less time and expense to develop and entails less risk of data being lost.

4.2.2.2 Data Integration Hub Architecture

Like data warehousing, this middleware approach to direct data access relies on the creation of an independent metadata definition of the enterprise data and therefore provides the same ease-of-use advantages. Layering data-access middleware over the enterprise data allows a user to create a virtual data warehouse, providing access to information without the complexity of building a traditional data warehouse system.

¹³ "eXtensible Markup Language (XML)" is a national standard data-tagging language that allows the data to be both identified and contained within the same document.

However, data access middleware generally will give a user access to data only in its raw form. It doesn't provide the data cleansing that is a major benefit of building an actual data warehouse. This can be a significant disadvantage to the virtual data warehouse, but the importance of it depends greatly on the requirements of the system.

The following figure depicts the data integration hub architecture. This information was developed based largely on a review of the Enterworks Content Integrator™ product; however, based on a review of similar data integration hub products, the author believes that the basic architecture exists for all products with these capabilities. (An explanation of the major components follows the diagram.)

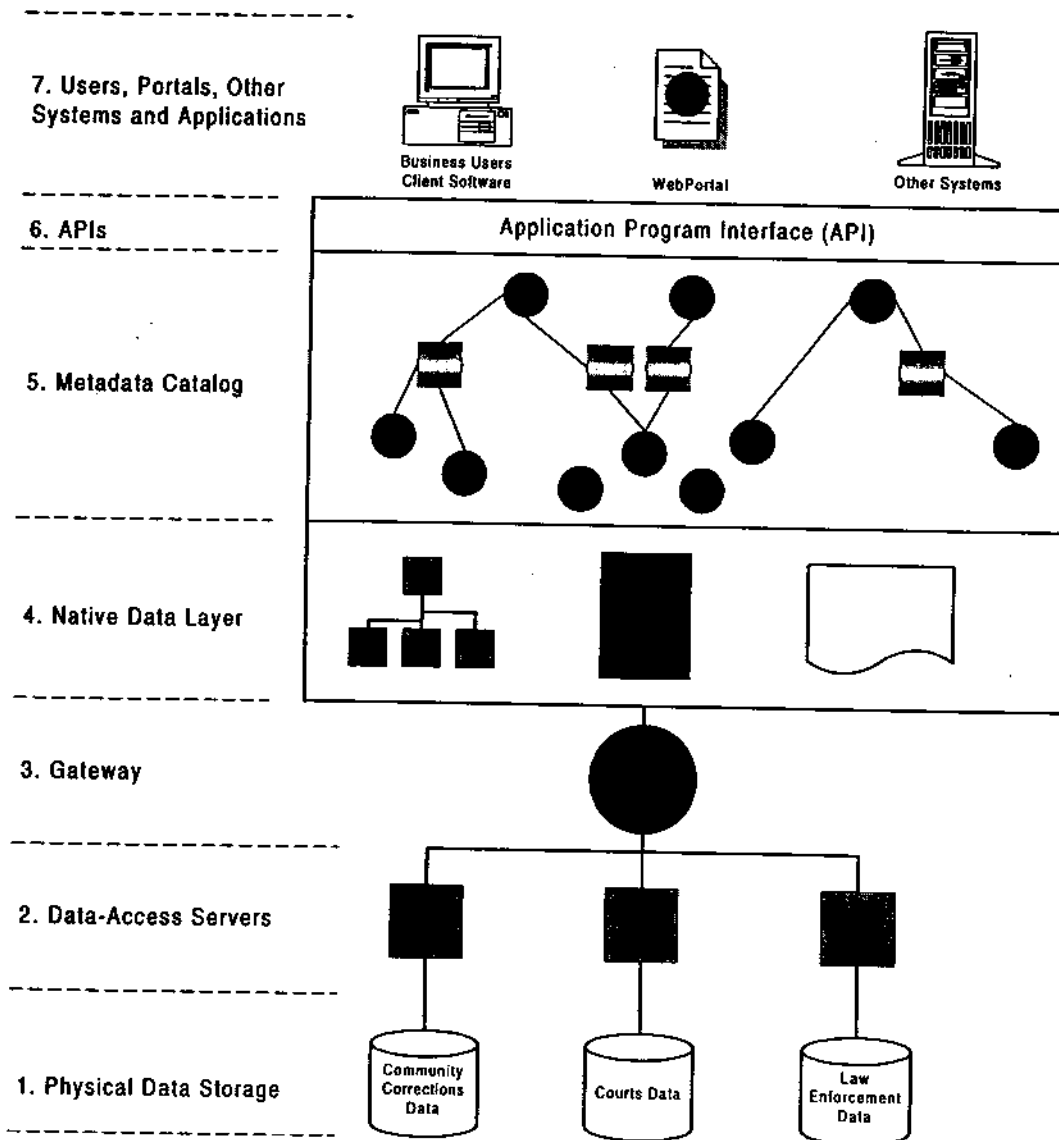


Figure 12 - Data Integration Hub Architecture

4.2.2.2.1 1. Physical Data Storage

The Physical Data Storage layer represents existing databases from which one wishes to obtain information. These databases are updated and queried by their own applications. They may be hosted on any number of platforms (e.g., mainframes, UNIX servers, and Windows NT servers). Most modern databases are controlled by DBMS (DataBase Management System) software such as the ones offered by Oracle, IBM, Microsoft, Sybase, and Informix; however, some are merely structured text files into which applications place data for future retrieval. Some DBMSs are considered proprietary because they were created long ago and are no longer supported (with bug fixes or upgrades) or because they were created to support such narrow requirements that they do not communicate through a standard language or interface.

4.2.2.2.2 2. Data-Access Servers

Each Physical Data Storage speaks its own unique language; however, the Gateway (see item 3 below) speaks only a single common language [e.g., SQL (Structured Query Language)—the standard language for relational DBMSs]. The Data-Access Servers convert the common language (SQL) into the equivalent language of the underlying Physical Data Storage. Data-Access Servers convert commands made in one language into the equivalent commands in the language that the Physical Data Storage understands. They also work in the reverse: once the data is retrieved from the Physical Data Storage, its format must be converted back into the language that the Gateway understands.

4.2.2.2.3 3. Gateway

The Gateway is the plumbing system that connects the Physical Data Storage to the Metadata Catalog (see item 5 below). Gateways provide access to heterogeneous Physical Data Storage devices. The Gateway will accept a single common language—typically SQL commands generated by any database tool. It will then

- Determine the optimal plan of execution,
- Generate the required number of lower-level, database-accessing statements (one for each participating Physical Data Storage),
- Establish a physical connection to each underlying Physical Data Storage device (through the Data-Access Servers),
- Pass any required user ID and password to each system, and
- Pass the appropriate data-access statements to each participating Physical Data Storage for execution.

When the results are returned, the Gateway passes the results back for subsequent transformation. Gateways are also capable of performing heterogeneous database joins if the Physical Data Storage devices are relational databases. Heterogeneous database joins

permit data from disparate databases to be logically merged when all of the databases contain a field in common.

4.2.2.2.4 4. Native Data Layer

The Native Data Layer is actually part of the Metadata Catalog (see item 5). The data in the underlying Physical Data Storage is mapped into the Metadata Catalog at the Native Data Layer. For each data element that the Metadata Catalog deems important, the data integration hub software creates a virtual object that points directly to the Physical Data Storage through the Gateway.

Access to any of the content stored within any of the Physical Data Storage can be gained in a standard and consistent manner through the Metadata Catalog. The Native Data Layer maps the logical database viewed by the user and user applications to the individual physical data elements that actually exist in each of the target systems.

4.2.2.2.5 5. Metadata Catalog

“Metadata” is data about data. The Metadata Catalog allows data modelers to create the logical data models they want by associating the Native Data Layer with the logical data model. The result of the Metadata Catalog is a tailored view of an organization’s data without regard to the actual physical storage of the data. The actual physical data is not stored in the Metadata Catalog—it is stored only once within the Physical Data Storage. The data integration hub uses the metadata contained within the Metadata Catalog to generate the queries necessary to populate the logical views from the actual Physical Data Storage.

4.2.2.2.6 6. APIs

The APIs (Application Program Interfaces) allow software application developers to talk to the Metadata Catalog as though it were a single data source. Different tools speak different languages. Many application development tools speak the Open DataBase Connectivity (ODBC) standard. This interface permits client software applications to access all of an organization’s data sources through a single database connection.

4.2.2.2.7 7. Users, Portals, and Other Systems and Applications

One of the strongest features of a high quality data integration hub will be its openness. Application developers can use any ODBC-compliant tool with the data integration hub in order to create custom software applications, a generalized Web search-and-reporting portal, or a direct connection to other systems and applications.

4.2.2.3 Data Integration Hub Architecture Evaluation

The following figure depicts several critical features of the data integration hub architecture. The most critical feature that differentiates this architecture from the data warehouse architecture is that end users are retrieving all integrated criminal justice information system data from the live systems as the data is requested. This fact reveals some significant architectural considerations regarding the client software:

- New application software must be acquired and customized to meet the user needs to access data from the data integration hub. This includes the screens for establishing ad hoc queries, as well as the screens necessary to run predefined reports.
- The metadata dictionary must define the relationship between the data that a user requires and the specific place where that data can be accessed on the target systems.

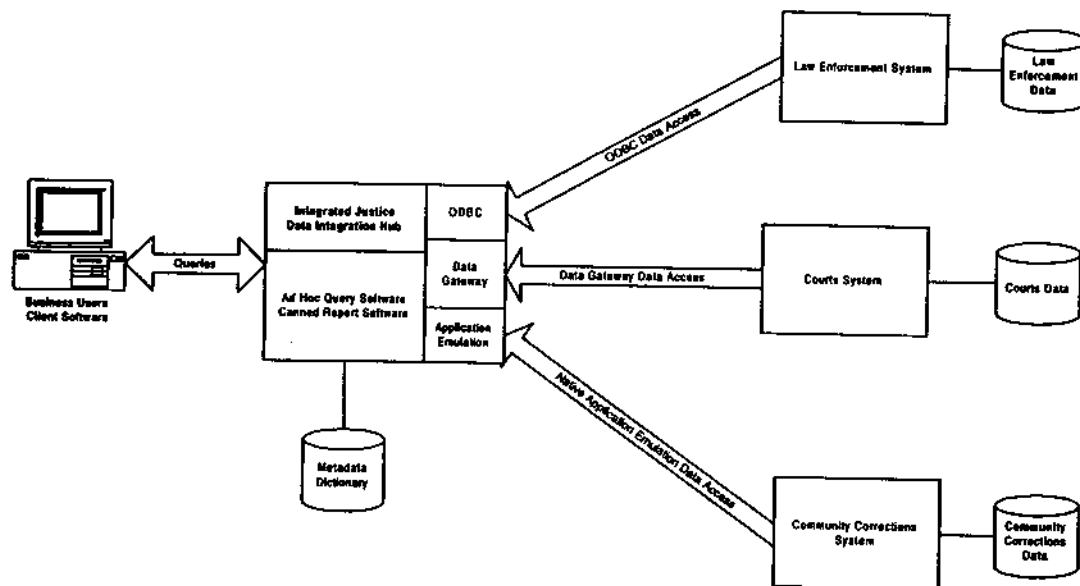


Figure 13 - Sample Data Integration Hub Model

4.2.2.3.1 Client Software Alternatives

The client software that is used by most data integration hub solution providers employs Web browser technology to access the database search-engine technology that resides on the data integration hub server computer. This client software approach can provide an easier-to-use, lower-cost client approach; however, this “thin client” approach sometimes sacrifices the flexibility to define queries and reports.

In addition to the Web-browser-searching software, purpose-built software must be developed for any complex queries or reports. This software can operate on the client computer or on the data integration hub computer. A "thick client" or "server-based" approach would provide the power and flexibility to define a variety of reports and queries; however, the entity responsible for the IJIS system would need support resource(s) with expertise in data processing to provide for the more powerful, flexible thick client approach.

The second salient feature of this architecture is that the operational systems' "live" data is accessed. This fact reveals some significant architectural considerations regarding data access:

- If a target operational system is down or responding very slowly, the response can be delayed or may be incomplete. In other words, this architecture is only as strong as its weakest link in terms of system response time and availability.
- It may not be possible to map all data elements required by the data integration hub into the data elements of a target system. (For instance, if the name of an individual is stored in a free-form text field on one system, there may be no practical way to extract that data, determine whether that name is the subject of the inquiry, and return the related record.)
- Data defined by the data integration hub may not be complete. Not all data from the operational systems can be adequately mapped to a common database model. This results in some data elements being orphaned or referenced in such an obscure way that the relevance of the data is not readily apparent.

4.2.2.3.2 Alternative Approaches for Accessing Data

As indicated above, the data integration hub accesses live data from the operational systems. Copies of the operational system data are not maintained on the data integration hub server; instead, the data integration hub server can use a variety of middleware technology approaches to access data from the live, operational systems. Middleware technologies that can be employed to access data include the following:

- Open DataBase Connectivity (ODBC) database access
- Data gateway access
- Native application emulation data access

Open DataBase Connectivity (ODBC)

Open DataBase Connectivity (ODBC) database access is an industry-accepted standard that allows a variety of relational databases to be accessed. All of the major relational database vendors (including Oracle, IBM, Microsoft, Sybase, and Informix) support the ODBC standard for their relational database products. ODBC drivers located on the data integration hub server translate requests for data into the native SQL syntax that is

supported by the target database. ODBC database access methods are very well established and consist of well-proven products from top-tier vendors. These products are inexpensive and easy to administer. If changes are made to the target systems' database environment, ODBC tools are usually easy to maintain.

Data Gateway Access

Data gateway access uses a variety of middleware software to access data that is stored in structured data files on a variety of systems. Typically, this data is not stored in a relational database, but in a variety of older industry-standard data storage mechanisms such as IBM VSAM, IDMS, IMS, COBOL-ISAM files, Adabas, and a assortment of other legacy system data storage mechanisms. A variety of middleware products are available that can access data in an assortment of legacy formats. Data-access middleware tends to be well-proven products operating in a variety of environments. However, these products can be expensive to acquire. In addition, if changes are made to the target system environment, maintenance is usually required on the middleware product.

Native Application Emulation Data Access

To acquire data from the operational system, data integration hub solution vendors use native application emulation when ODBC and data gateway access middleware solutions are not available. The native application emulation middleware is designed to access the operational system by emulating a live user. The software constructs system logon, commands, and transaction or screen parameters in order to establish the necessary paths to access the data that resides on the target system. Typically, this approach involves automating terminal emulation modes and preparing the terminal data stream recognized by the target system. This includes approaches such as VT-100 terminal emulation and 3270 terminal emulation. Because of the labor-intensive nature of this approach, this method tends to require the most resources to define and implement the target system interface. This approach is also more volatile and subject to maintenance if changes are made to the host system.

4.2.2.3.3 Advantages and Disadvantages

These are the major advantages of the data integration hub architecture:

- Data access is provided to the live, operational systems; therefore, the data returned is the most current information available.
- There is a well-defined integrated data model.
- A variety of COTS query-and-reporting tools is available for use by clients to create powerful queries and reports.

These are the major disadvantages of the data integration hub architecture:

- Live data queries to target operational systems that are unavailable or under severe loads may cause query response times to be very long, be aborted, or return incomplete results.
- The architecture provides no mechanism for data to be transferred from one system to another in order to reduce or eliminate duplicate data entry.
- Raw and uncleaned data that is not related to a common data model is provided.
- Responses to the user from multiple systems are not integrated.
- This architecture is complex to implement and requires a higher degree of maintenance than the more simple data warehouse architecture.
- This architecture can lead to thick client query-and-reporting applications that can place a significant burden on the data network and the data warehouse server.

4.2.3 NASIRE Document Exchange Architecture

In 1998, the National Association of State Information Resource Executives¹⁴ (NASIRE), which represents the chief information officers of the states, and the Office of Justice Programs (OJP) of the U.S. Department of Justice (DOJ) began a cooperative, grant-funded effort to facilitate governmental information sharing through a national information architecture. This project is part of OJP's larger, ongoing Justice System Integration Initiative. This effort was supported by a one-year grant from the Bureau of Justice Assistance (BJA) to NASIRE.

4.2.3.1 NASIRE Document Exchange Architecture Overview

The concept of the national information architecture (NIA) is based on the fact that each instance of governmental information sharing involves two sharing entities. The holder entity is always a governmental unit; the receiver entity may be a governmental entity or a private entity (e.g., private attorney, daycare center, or private citizen). The holder must be willing, able, and entitled to provide the information. The receiver must be able to demonstrate a need for the information, be able to receive it, and agree to abide by usage rules set by the holder. No holder of information is forced to share.

The focus of the NIA is on sharing dynamic, structured information. Dynamic information is information that is subject to change under the normal business processes. It includes arrest reports, wanted person reports, and parole status reports. It does not

¹⁴ The National Association of State Information Resource Executives (NASIRE) represents state chief information officers and information resource executives and managers from the 50 states, 6 U. S. territories, and the District of Columbia. State members are senior officials from any of the three branches of state government who have executive-level and statewide responsibility for information resource management. Additional information regarding NASIRE can be obtained on the Internet at www.nasire.org.

include data such as mission statements and organization charts. Structured information means that the information is rigorously defined (e.g., date of birth in a standardized format such as CCYYMMDD), rather than free text, at the point of exchange.

The NIA focus is on information used in transaction reporting (a police department reporting an arrest to a prosecutor) and data collections (monthly summary reports) and intentionally excludes batch reporting (deferred transmissions of transactions). The shared information may be character-based, photographs or graphics, fingerprints, page images or facsimiles, or any information that can be reduced to a form that can be sent between computers through a telecommunications network.

Information sharing requires several different modalities. Some information systems need the ability to push preagreed-upon information to another governmental branch or agency (prosecutor system files charges to a court system). Other information systems need the ability to pull preagreed-upon information (arrest booking system automatically retrieves subject's criminal history record). Some information system users need the ability to query systems, and these systems need the ability to respond to queries (e.g., check for outstanding warrants). Some information systems need the ability to publish notifications that their database content has changed in a way meaningful to a particular user, and the user needs a way to subscribe to such a notification service (e.g., parole officer to be notified if her client has been arrested or was the subject of a traffic stop). The NIA must be rich enough to support all these modalities.

In order for an NIA to make sense and be defensible, it must be based on open standards and it must be attuned to the technological direction of information technology—especially the Internet and Internet-like solutions.

The NIA requires a sharing vocabulary, which is a definition of terms that can be defined and understood by all entities involved in the system. This does not require a common vocabulary for internal use in any governmental branch or agency. For example, the terms “incident report,” “event report,” and “crime report” may—or may not—mean the same thing to all involved parties; therefore, a common understanding of these terms needs to be established. The sharing vocabulary does require that a common definition for the data elements must be established. These data elements make up the documents that will be exchanged.

The NIA requires the adoption of a set of common sharing documents. Document examples might include an agreed-upon inquiry format for a subject and the resulting response format for a criminal history record.

4.2.3.2 Document Exchange Architecture

The document exchange nature of the NIA is both appealing and easy to comprehend; therefore, this architecture is referred to from this point forward as a “Document eXchange Architecture (DXA).”

The simplest and most direct form of the DXA has these characteristics:

- Selecting from a library of document descriptions, each entity wishing to be a holder identifies those documents that it is willing and able to deliver.
- For each such document description, it prepares a set of transformations that map storage element formats from its internal database to the format specified for the sharing document and develops the ability to assemble the elements into the specified document format and to transmit that document.
- Selecting from the same library of document descriptions, each entity wishing to be a receiver identifies those documents that it desires to be able to receive.
- For each such document description, it prepares a set of transformations that map storage element formats to its internal database from the format specified for the sharing document and develops the ability to receive that document.
- The holder entity keeps the directory updated concerning which document descriptions it supports.

The DXA system becomes operational as soon as there are any two entities that register in the directory for the same sharing documents. Thereafter, the rollout of information sharing is completely within the control of the willing participants.

NASIRE has recommended a list of minimum open Internet standards that are appropriate for the tasks of national information sharing:

- TCP and IP telecommunications standards
- HTTP transmission protocol
- XML tagged-field data structure metalanguage
- XSL and CSS style sheets for information transformations and formatting
- LDAP to access directories for passwords and permissions
- ISO 8859-1 for character sets (a-z, 0-9, etc.)
- MIME for e-mail attachment wrapping
- IPsec for transmission security

XML is a subset of the Standard Generalized Markup Language (SGML) defined in ISO standard 8879:1986, which is designed to make it easy to interchange structured documents over the Internet. XML files always clearly mark where the start and end of each of the logical parts (called "elements") of an interchanged document occur.¹⁵

XSL and CSS are style sheets that offer precise control over the presentation of Web pages. Not only can Web designers specify the visual effects they want, but also style

¹⁵ Martin Bryan, *An Introduction to the Extensible Markup Language (XML)*, The SGML Centre, 1997.

sheets give control over voice, pitch, and other aspects of how the text will sound when rendered into speech. The eXtensible Stylesheet Language (XSL) has document manipulation capabilities beyond styling. The Cascading Style Sheets (CSS) language is evolving to provide even richer stylistic control and to ensure consistency of implementations.

The specification of XML as the data structure metalanguage is an extremely important recommendation from NASIRE. Survey results show that the states understand the value of standardized documents as the unit of information exchange. In fact, most local-to-state and local-/state-to-federal information sharing is already done in this way. The persistent problem is the proliferation of nonstandard approaches being used. The result is that most information systems must support several different information transfer data dictionaries and several information transfer document encapsulation methods.

XML provides a robust extensible encapsulation method superior to any now in use. In a related report, the organization "LegalXML"¹⁶ has published a standard for electronic court filing. The Joint Technology Committee of the Conference of State Court Administrators (COSA) and the National Association of Court Managers (NACM) both intend to use XML as the basis for a national standard that will allow court filing through the Internet.

In addition, the FBI Criminal Justice Information Services Advisory Policy Board (CJIS/APB) formed a Joint Task Force (JTF) on RAP¹⁷ Sheet Standardization. The JTF has updated its proposed electronic RAP sheet specification to use XML.

The vendor community has embraced and is expanding support for XML in Web product offerings, as well as in relational database product support.

The DXA has three document exchange modalities. The following subsections provide a brief overview of each modality.

4.2.3.2.1 Push Document Modality

The following functional diagram depicts an example of the DXA using a push modality. In these examples, the systems have agreed on which documents are to be provided without requesting them and what the content of those documents is. In this example, the law enforcement system automatically sends an arrest report through electronic means to the prosecution system whenever a new arrest report is created. The prosecution system has already established the desire and ability to receive arrest reports from the law

¹⁶ Additional information regarding LegalXML can be found on the Internet at www.legalxml.org.

¹⁷ Report of Arrests and Prosecutions (RAP)

enforcement system. The specific data elements within the arrest report have been defined and are transmitted, using the accepted standard.

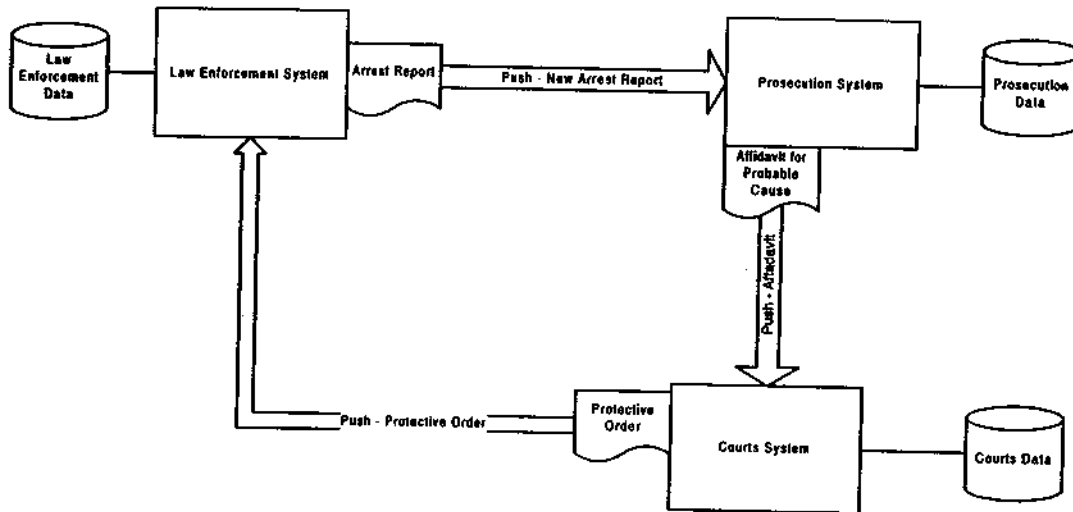


Figure 14 - Document Exchange Architecture – Push Mode

4.2.3.2.2 Pull Document Modality

The following functional diagram depicts an example of the DXA using a pull (query/response) modality. In this example, the systems have agreed on what kind of documents can be requested and which documents are to be provided in response to that request.

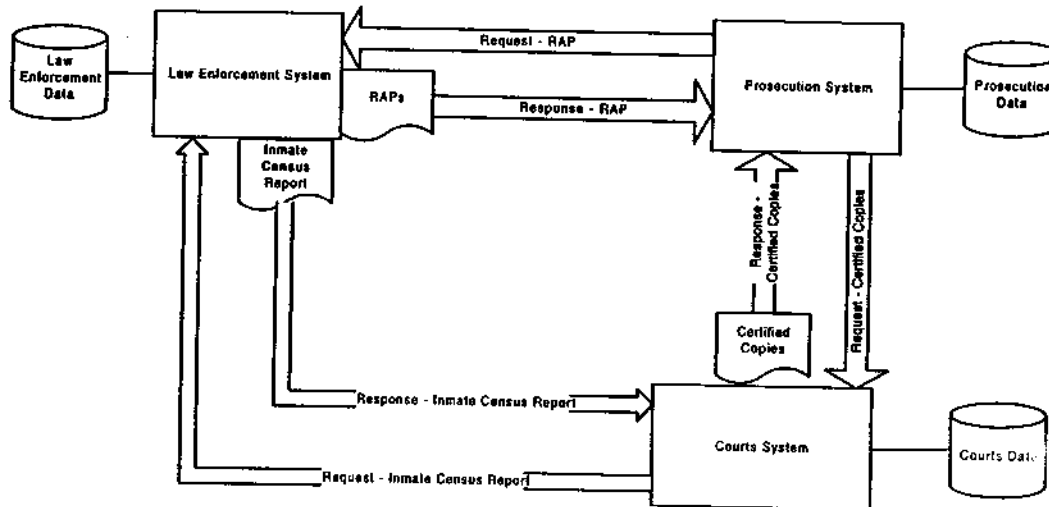


Figure 15 - Document Exchange Architecture – Pull Mode

4.2.3.2.3 Publish Document Modality

The following functional diagram depicts an example of the DXA using a publish modality. In this example, the systems have agreed on what kind of documents will be published and which systems desire to receive the published documents.

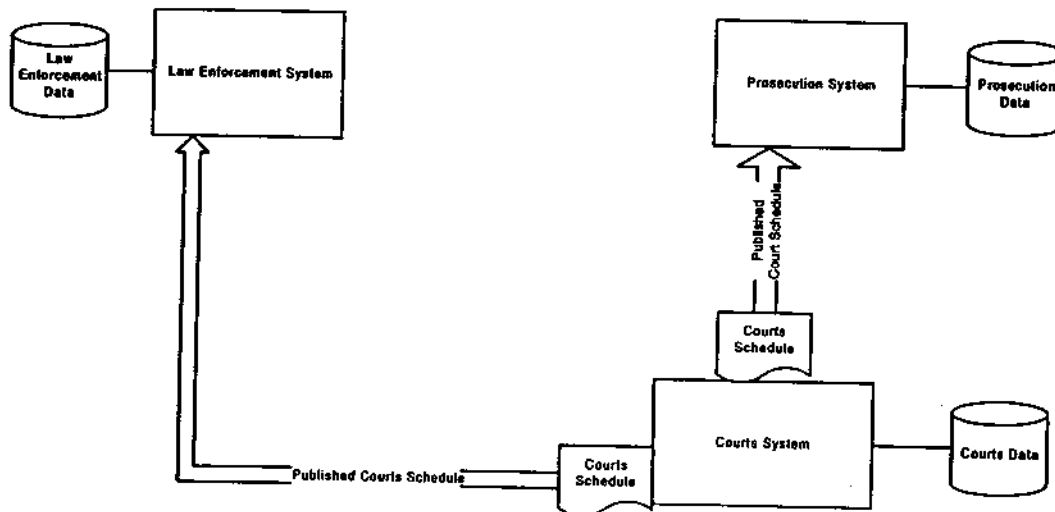


Figure 16 - Document Exchange Architecture – Publish Mode

4.2.3.3 An Evaluation of the Document Exchange Architecture

The figure below depicts several critical features of the DXA. The most critical feature that differentiates this architecture from the data warehouse and data integration hub architectures is that data is automatically provided from system to system in order to reduce or eliminate redundant data entry. In addition, this architecture provides for a variety of standard document-related queries to be automated by the application software user interface that is operating on each system; therefore, for most typical transactions, a new query-and-reporting capability is not needed. Users of legacy systems will be capable of retrieving information from other systems through their current user interface.

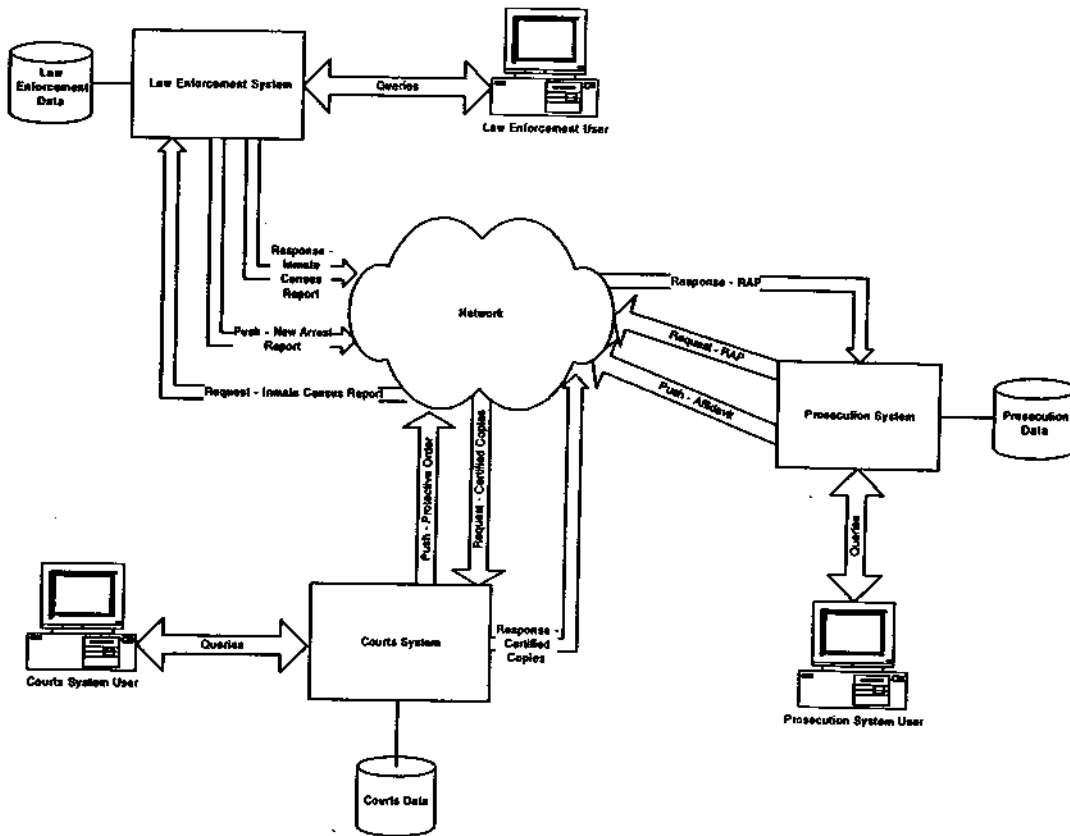


Figure 17 - Sample Document Exchange Architecture

Client Software Approach

The client software that is used by the DXA uses the existing legacy system client interface. This architecture relies on the fact that the existing software in place will be capable of retrieving the data and displaying it to the users. The data provided by other systems is processed in one of two ways:

- For data that is pushed or provided through subscription, the legacy system must store the data in its native storage mechanism. It must then provide the software necessary to retrieve this data when needed by its users and display it for their review.
- For data that is pulled, the legacy system must retrieve the response document and be able to translate it from the standard communication format to a format that is acceptable to the users on their client workstations.

The second salient feature of this architecture is that the operational systems' "live" data is provided. This aspect of the architecture reveals some significant considerations regarding the exchange of data:

- The document exchange method provides a one-to-one exchange of data between entities, based on their predefined definition of the document's data contents and the security aspects of exchanging the data. For example, if one version of a police report was provided to the prosecutor's office and another version was provided to the public defender's office, two separate document definitions would be established.
- Because the document exchanges are on a predefined system-to-system basis, if any individual operational system is down or responding very slowly, its response will not impact the response of other systems.

Alternative Approaches for Exchanging Data

As described above, data from the operational systems is provided, based on document exchange rules. This data is pushed, pulled, or published. The NASIRE report recommended that an XML approach be used for the definition of documents and the data within the documents. Web technology and current generation database technology products have recognized the importance of XML and have adopted, or are adopting, XML support in their products. The transmission of data elements is easily established and identified. For example, the data element "date of arrest" for June 8, 2000, might look like this:

```
<ArrestDate>20000608</ArrestDate>
```

The XML syntax carries both the information content (e.g., 20000608) and the semantic content.

Once a logical document is assembled by the legacy system, its transmission mechanism is less important. Again, industry standards and the NASIRE recommendations would indicate that TCP/IP data communication protocols are used. However, the document could be transmitted by any possible means available to the legacy system. This might even include attaching the document to an e-mail that is automatically processed by the receiving system.

Advantages and Disadvantages

These are the major advantages of DXA:

- Individual entities have complete freedom of their own system design, limited only by whatever state and local laws and policies may apply.

- Incremental agency participation is easy to support. A big bang approach is not required for an integrated system. System integration begins once two entities define and start to exchange data.
- A variety of strategies exists that will enable individual entities to participate in the integrated system.
- A well-defined integrated data model is not required for the entire enterprise, only between the parties that agree to define and exchange a document.
- Data access is provided to the live, operational systems; therefore, the data returned is the most current information available.

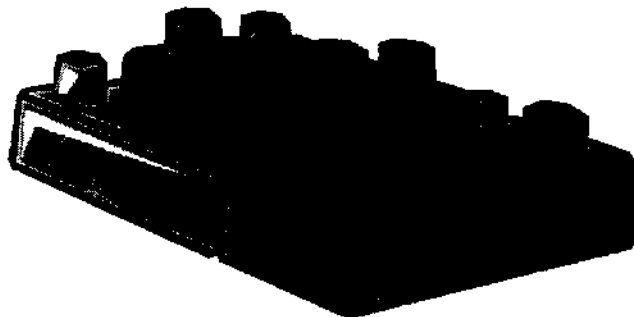
These are the major disadvantages of DXA:

- Ad hoc queries and reports are not supported. Only the predefined documents with their predefined data elements can be obtained.
- Data pull requests from operational systems that are unavailable or under severe loads may cause response times to be very long or may be aborted.
- Data published when a system is down may result in that published data being unavailable at the target system.
- This architecture only works when the application software has been modified or created to support the data exchange and the reporting of the new data.
- A national standard for document exchange that defines the documents and their data elements has not been established.

5 Sample Integrated Justice Information System Architecture

This section describes the sample integrated justice system architecture that is recommended for serious consideration by any initiative or project dedicated to the integration of justice data.

This architecture is a roadmap for a final system definition destination. One of the strengths of the architecture is that a big bang approach is not required in order to arrive at the final destination. In fact, the sample architecture provides for a variety of technology approaches to be used that will allow justice entities to join the integrated system by employing small, incremental technology solutions.



5.1 Overview

The architecture example provided below represents a unique synthesis of a variety of technology options and architectural alternatives. In order to identify this architecture in a manner that will distinguish itself and to recognize the intellectual capital invested in the research and definition of this approach, the author will refer to this architecture as the Integrated JUstice System Architecture™ (IJUSA).

The following figure depicts a sample IJUSA configuration. The remainder of this section describes the components of this sample architecture. (Please note that all figures contained in this document include only a few of the anticipated justice entities. These samples were provided as a subset of the actual participating entities in order to simplify the diagrams.)

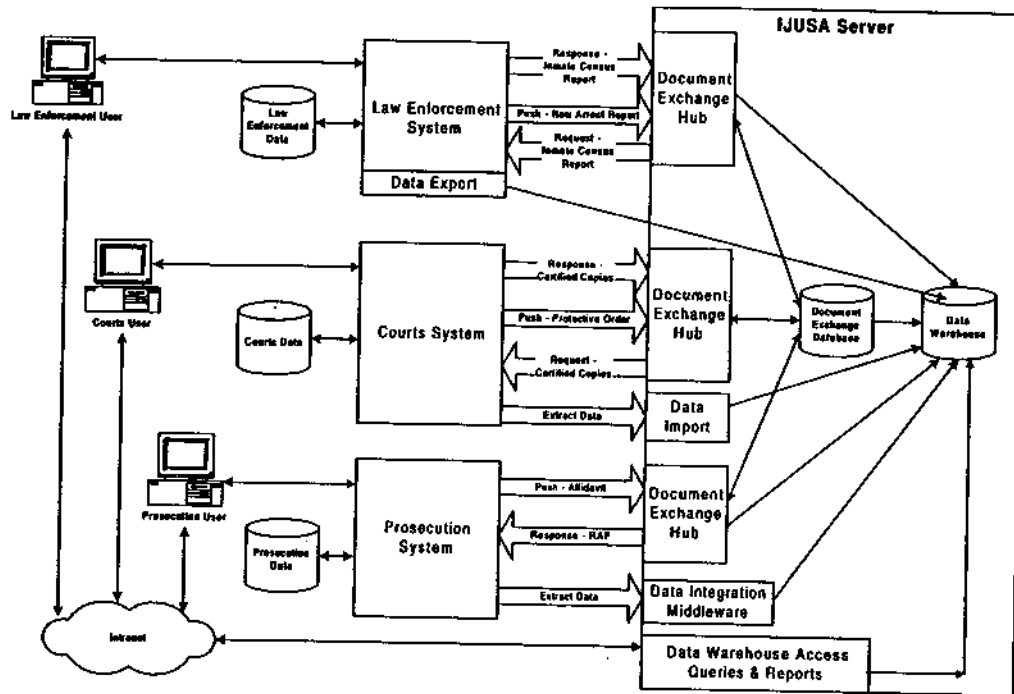


Figure 18 - Sample Architecture

One important advantage to this approach is that it reduces redundant data entry. Data that is common to many systems is entered once in the originating system. Other systems that use that data can subscribe to the appropriate document and apply the data into their systems. This process reduces the effort required to reenter the data and minimizes the errors introduced in the data-entry process.

The second component of the IJUSA is its central repository. Central repositories play two important roles in integrating justice systems: one role is to provide a resource for

inquiry-and-reporting purposes, and the other role is to provide an alternative source of operational data from which the disparate justice entity applications can draw shared data. In each of these roles, the key to the value of the repository is in the consolidation of shared justice data.

As events occur in the originating justice systems, these systems publish their shared data. The data exchange facility controls the distribution and transformation of the data based upon centrally managed business rules. Each of the subscribing applications has access to this data from a single source. One of these subscribers is the consolidated repository or data warehouse itself. An interface layer in the repository is responsible for consolidating data from many different sources into its common database.

The IJUSA can vastly simplify the integration process. By providing a single, consolidated data resource, many systems and their applications will subscribe to this single source of data, rather than the event data from the individual system that is the originating source of the data.

The IJUSA server also plays an important role as a source of integrated data for a variety of decision support, inquiry, and analysis functions. Its data warehouse provides a single resource for justice information that originated in many separate and independent systems. The IJUSA consolidated repository is the best way to provide a single, composite view of this data. The data warehouse provides a single point of reference for operational inquiries. This alleviates the inquirer from the burden of searching through multiple systems to find needed information. More important, by drawing from a single source of data, the information produced will be consistent across applications.

5.2 Critical Component 1 – Document Exchange

The first critical component of IJUSA is to fully adopt the document exchange architecture as the primary method for the exchange of justice information between entities and stakeholders. Adopting this approach provides several advantages:

- **Flexibility** – Individual justice entities can utilize software best suited for their needs. They can simply add a data extraction and import layer to the existing software in order to support the document exchange architecture.
- **Immediate, lowest-cost participation** – Individual justice entities do not have to acquire new systems to participate. They can employ one of a variety of strategies described in this report to support the document exchange architecture.
- **Maximum immediate benefit** – The document exchange methodology immediately addresses the most severe problems associated with system integration: duplicate data entry, reduced data quality and reliability, and access to critical data already available on other systems.

- Roadmap for the future – The document exchange approach will allow integrated justice projects to specify the exact requirements necessary for all future system procurements and enhancements. A requirement for any future request for proposals (RFP) can simply specify the types of documents, the data elements within the documents, and the data exchange standard as part of the procurement requirements.

Document exchange requires two major process steps: the first step is enabling the data extraction and preparing the document to be exchanged; the second step is transporting the document. The following two sections review these two process steps.

5.2.1 Enabling Data Extraction and Preparing the Document To Be Exchanged

These are the three principal technology approaches for enabling the document exchange and preparing the document to be exchanged within the IJUSA architecture for any given justice entity:

- Modify existing software
- Request that the software provider modify the existing software
- Develop a new gateway application

Each approach is described below:

Modify Existing Software

Some justice entities have access to, and rights to modify, the source code for the application software that they use. In addition, these entities have the software development resources necessary to modify the existing system. To accomplish data extraction and document preparation, new software routines are added to create a document exchange record at a variety of appropriate points within the existing business logic. Also, software would then need to be created that would transmit the document exchange record to the IJUSA server.

Request That the Software Provider Modify the Existing Software

If the justice entity does not have access to, and rights to modify, the source code for the application software, they can contact the product provider and supply them with a specification of the document extraction requirements. They would submit a request that the software provider satisfy these new requirements as an immediate product modification or as a general system enhancement included in a new release. With the national movement toward a document exchange standard, providers committed to the justice industry should be willing to make these product enhancements.

Develop a New Gateway Application

For those cases where the above two options are not feasible, a new gateway application can be developed, using the data integration hub and middleware technology necessary to extract the data from the target system. This gateway application would act as an agent of the operational system providing data to and from the LJUSA.

The LJUSA architecture allows each participating entity to select the most appropriate method for preparing the document to be exchanged. The entire LJUSA system will likely comprise a combination of the above methods.

5.2.2 Transporting the Document

Transportation of the document between systems can be accomplished in a variety of ways. The method selected will depend on the capabilities of the systems and the resources available to enable the transfer of information. These are the four principal methods for the transportation of documents between systems:

- Peer-to-peer communication
- Shared folder storage and polling
- E-mail encapsulation
- Store-and-forward server/agent

Peer-to-Peer Communication

Peer-to-peer communication is a software solution that allows computers to communicate, using custom software that connects systems. The software establishes a data communication connection between systems and ensures the reliable delivery of a document from one system to another. This approach includes SNA LU6.2,¹⁸ TCP/IP Sockets,¹⁹ and Windows Sockets²⁰ programming approaches. It requires a software development effort and is one of the most reliable, efficient, and timely methods for data communication.

Shared Folder Storage and Polling

Shared folder storage and polling is a method in which systems establish a shared "folder" on a file server where they agree that they will exchange data. A document is

¹⁸ IBM's System Network Architecture (SNA), Logical Unit (LU) 6.2, defines a peer-to-peer data communication standard.

¹⁹ Transmission Control Protocol (TCP)/Internet Protocol (IP) is a data communication standard that includes a peer-to-peer interface specification named Sockets.

²⁰ Windows Sockets is the Microsoft version of the TCP/IP Sockets standard.

added to the shared folder by the sending system. Receiving systems periodically look into the shared folder (called "polling") to see whether a new document has arrived for their use. From this shared folder, they retrieve and delete documents. This approach is very easy to implement, using standard file server technology. The receipt of documents is usually not immediate.

E-Mail Encapsulation

E-mail encapsulation is an approach whereby a document to be exchanged is provided as an attachment to an electronic mail message. However, unlike most e-mail messages, this message does not originate from a human and does not necessarily go to a human. Instead, the e-mail message is automatically processed by software on the receiving system. This method provides the reliable delivery of e-mail without the expense of a peer-to-peer software development effort. Custom software is required to process the e-mail and forward the document for extraction into the receiving system. Alternatively (although not ideal), a human can open the e-mail and process the attachment manually.

Store-and-Forward Server/Agent

A store-and-forward server/agent provides a central system repository that is responsible for receiving documents from systems and forwarding them to the appropriate receiving systems. The store-and-forward server/agent could employ a variety of software similar to the data integration hub and use middleware to effect communication among all systems.

The IJUSA architecture allows each participating entity to select the most appropriate method for transporting the document to be exchanged. The entire IJUSA system will likely comprise a combination of the above methods.

5.3 Critical Component 2 – Data Warehouse

The second critical aspect of the IJUSA is the incorporation of a data warehouse. The document exchange solution can provide great immediate value for both data entry and standard data-viewing needs. However, it does not provide access to the variety of data needed to answer questions that are more complex and support the requirements in the area of ad hoc queries. To address these requirements, a separate data warehouse needs to be provided.

The significant question to be addressed when deploying a data warehouse is how data will be received from the operational systems for storage in the data warehouse. The IJUSA addresses this, using one or more of these approaches:

- Document exchange (store-and-forward) information hub
- Data integration middleware
- Import/export processing

Document Exchange (Store-and-Forward) Information Hub

The first and principal method that will be used for the receipt and storage of data on the data warehouse is provided by an approach in which the data warehouse server computer also acts as a store-and-forward server/agent for the document exchange component of the architecture. In addition to this server providing data warehouse services, it will also be the repository for the definition of all documents that can be exchanged under the DXA. The server will manage the receipt and distribution of documents from the providers of information to all entities allowed to receive the document.

In addition to providing the store-and-forward services for all documents, the document exchange information hub will, as provided for by security and business logic, open the documents and add the data contained in the documents to the data warehouse database.

With this approach, the IJUSA server accomplishes two results for the cost of one transaction that provides both the IJUSA data warehouse and authorized receivers with the data contained in a document.

Import/Export Processing

Import/export processing would be provided as optional components that would extract data from operational systems on a timely basis and store that data on the data warehouse.

Data Integration Middleware

Another optional component of the IJUSA is the incorporation of data integration middleware. This component would be incorporated if the data from operational systems could not be acquired through any other practical method necessary to populate the data warehouse. The data integration middleware would not typically be used to capture live data when requested, but would be used to extract data from operational systems on a periodic basis and store that data on the warehouse. Real-time access to critical data on operational systems is provided by the document exchange (query/response) mechanism, not by the data integration middleware.

5.4 Public Access

The IJUSA provides the foundation for the entity responsible for integrated justice information to provide secure, controlled access to justice data to anyone on the Internet. Secure, controlled access can be provided to the data warehouse through a Web server computer that will act as an intermediary that establishes what information the public may request. The Web server also provides a secure path to the data that has been authorized to be released to the public.

There is a national trend toward using the Internet and Web technology to provide information for a variety of citizen, corporate, and nonprofit uses. Providing access to justice data can reap enormous rewards for the citizens as they find that they can “self-service” many requests on a responsive Web site that provides outstanding customer service to the citizens. Many public access requirements and needs are being met in various parts of the nation today. Additional requirements and needs have been voiced throughout the nation and will increase as federal legislation is passed. Some of these requirements involve victim notification, sex offender registration, Megan’s law²¹ registration, and background checks for a variety of purposes (including handgun purchases, childcare workers, elder care workers, health care workers, and volunteers who work with children).

In some cases, jurisdictions throughout the nation are providing information on a fee basis to organizations such as insurance companies, lawyers, for-profit agencies, and the general public.

The following figure depicts how the IJUSA supports public access through the Internet:

²¹ The Sex Offender Registration Act of 1996, more commonly known as “Megan’s law.”

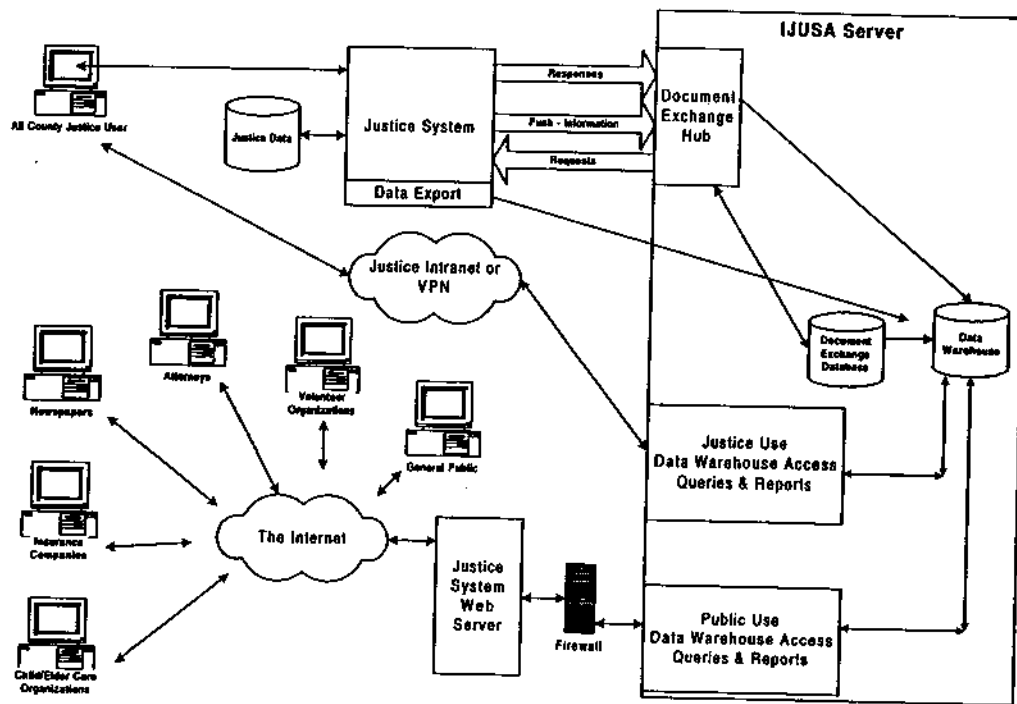


Figure 19 - Public Access

5.5 Security Considerations

The IJUSA addresses security concerns using four principal methods. The first method is that the document exchange approach is, by its very nature, secure. Only those DXA documents that have been defined for sharing with the public are made available by the IJUSA server to the public Web server. Each document and its contents are fully defined, and the provider and receiver of each document are preestablished. Data security concerns are addressed by the definition of these documents, and the authority required for the receiver to view the data is provided in the document.

The document exchange information hub will not provide documents to unauthorized systems. For example, law enforcement users might have access to a criminal history document that has been defined to include all arrests, regardless of conviction. The public Web server might have access only to a criminal history document that has been defined to include only certain classifications of arrests for which a court conviction record must be present.

The second security method is that data from operational systems is added to the data warehouse, based only on the import or export software that is developed. The specification for this software will require the review and approval of the involved

entities to ensure that only data that is allowed to be placed on the data warehouse will be stored on the data warehouse.

The third security method is that a comprehensive Relational DataBase Management System²² (RDBMS) will be used on the data warehouse server. All modern RDBMS software provides for comprehensive security of data down to the element level. System logon security is used to establish each participant (or groups of participants) in the data warehouse. For example, security can be established for the "police" group or the "public defender" group. Access to data is then defined, based on the group or individual logon.

The fourth security method employs networking hardware and software solutions such as virtual private network (VPN) technology,²³ firewalls,²⁴ and other similar technology. These methods allow for authorized, registered users to access the IJUSA server and create a strong barrier between the Internet and the IJUSA server.

5.6 Conclusion

Technology alone will not, in and of itself, result in an integrated justice information system. Other critical components will include an executive steering committee or similar body that will represent each of the entities involved in the IJIS initiative. Governance structures and organizational strategies will need to be reviewed and established. In fact, the greatest challenges to implementing an IJIS will not be problems of technology; they will arise out of conflict over the specific impacts on budgets, organizational relationships, and established procedures. These are problems of organizational and political interests and relationships that are well beyond the scope of this paper to address.

A variety of technology building blocks are available for constructing an integrated justice information system (IJIS). These building blocks are the components of the model that will represent the IJIS architecture. A variety of unique decision criteria will determine which optional building blocks are selected in order to construct the IJIS required by any given jurisdiction. Most building block combinations are valid and will represent the requirements of the entity establishing the decision criteria that selected the building block components.

²² An RDBMS is a commercial off-the-shelf software package that is used for the storage and retrieval of data. Examples include Oracle, IBM DB/2, Microsoft SQL Server, Sybase, and Informix.

²³ A VPN is one or more wide area network (WAN) links over a shared public network—typically over the Internet or an IP backbone from a network service provider (NSP)—that simulates the behavior of a secured WAN network established using dedicated leased lines.

²⁴ A firewall is a system (or group of systems) that enforces an access control policy between two networks. The actual means by which this is accomplished varies widely, but in principle, the firewall can be thought of as a pair of mechanisms: one that exists to block traffic and one that exists to permit traffic.

The roadmap established by the IJUSA architecture presented as a sample in this report provides the flexibility necessary for individual justice entities to plan and implement their migration to participate in an integrated system. The sample architecture allows for a variety of technical approaches that will enable each individual justice entity to participate in the integrated system.

Whichever IJIS architecture a user constructs with these building blocks, by creating a model, the user will create the roadmap that will be used to guide his or her IJIS program to its final destination.

APPENDIX I:
MIS POWERPOINT PRESENTATION



**Management Information Systems
Committee Report
November 2002**

The MIS Strategic Plan

Whatcom County Law & Justice Council



**Whatcom County Law & Justice Council
MIS Committee Members**



Kathy Walker	Chair (Prosecutor's Office)
Dewey Desler	Member (Director Administrative Services)
Karen Flaherty	Member (Bellingham Police Dept)
Dustin Hurlbut	Member (Whatcom County Sheriff's Office)
Dave Reynolds	Member (Juvenile Probation)
Scott Graham	Member (Lummi Law & Order)
Wendy Jones	Member (Chief of Corrections)
George Reid	Member (County Information Services Manager)
Josh Nylander	Member (County Information Services)

New Committee Members Are Welcome!!

Presentation Purpose

- **Provide Historical Information**
- **Articulate The MIS Strategic Plan**
- **Report on WENET (Whatcom Exchange Network)**
- **Provide Information**
 - **For Today's Decisions**
 - **For Tomorrow's Decisions**
 - **For the Future of Information Access & Sharing**

3

Pertinent Issues

- **Immediate Access To Maximum Amount of Information**
- **Community Safety**
- **Mutual Access To & Sharing Of Information**
- **Working Together Efficiently and Effectively**
- **Funding**

4

Pertinent Historical Information

Development of Case Management and Tracking Systems

- **1983 – Sheriff's Office Goes Live With:**
 - Computerized Case Management
 - Indexed Incident Information
 - Citations
 - Person & Business Files
 - Arrests & Bench Warrants
 - Domestic Violence Orders

- **1989 – Prosecutor Comes Online With:**
 - Information Regarding Events
 - Persons Associated With Events
 - Cases & Associated Documentation
 - Court Calendars

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Pertinent Historical Information

- **1992 Public Defender Comes Online With:**
 - Case Information
 - Defendant Files

- **1993 – Jail Comes Online With:**
 - Inmate Information
 - Bookings, Housings, Charges, Releases, Medical Screening
 - Some Data Shared

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Pertinent Historical Information

Whatcom County/City of Bellingham Acquired an AS400

- **1991 – Bellingham Police Department Comes onto the County System.**
 - **A Second AS400 Machine is purchased**
 - **Once BPD Comes Online Approx 73% of all County Law Enforcement Data Becomes Available to Law and Justice Users On The System**
 - **Majority of Files Are Read Only**
 - **Some Sharing Of Files Begins**

7

Pertinent Historical Information

Integration of AS400 Subsystems Planning Commences **1993**

- **75% of Inter-Departmental/Agency Problems Are A Result of Failed Information Sharing**
 - **Inaccurate Data**
 - **Untimely Sharing of Data**
- **All Law & Justice Partners Begin Work To Identify Common Fields of Data**
- **Data Will Populate Other Subsystems At The Point Of Entry**
- **The Budget to Fund The Integration Project Is Submitted**
- **Budget is Denied from 1993 to 1997**

8

Pertinent Historical Information

*Access To The Judicial Information System Becomes Available
Through The AS400*

1994 – Precedent setting agreement facilitated connectivity to JIS

- Made Court Info Available System Wide
- Used Existing Infrastructure for Connectivity
- Read Only
- Resulted in Savings in Manpower

9

Pertinent Historical Information

Funding for the Data Integration Project Becomes Available

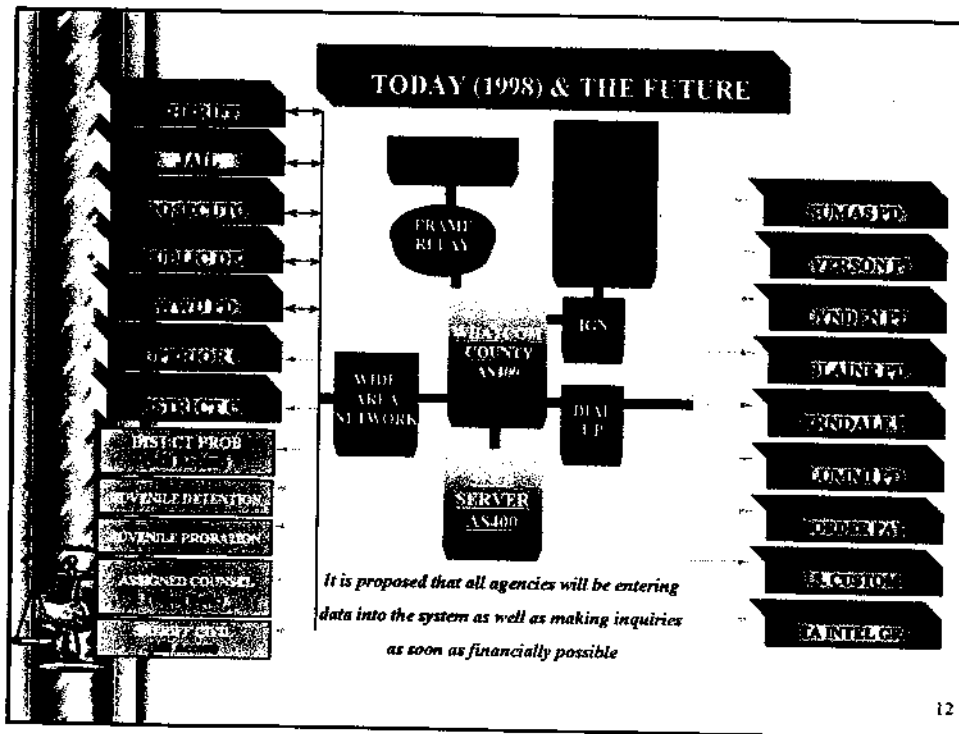
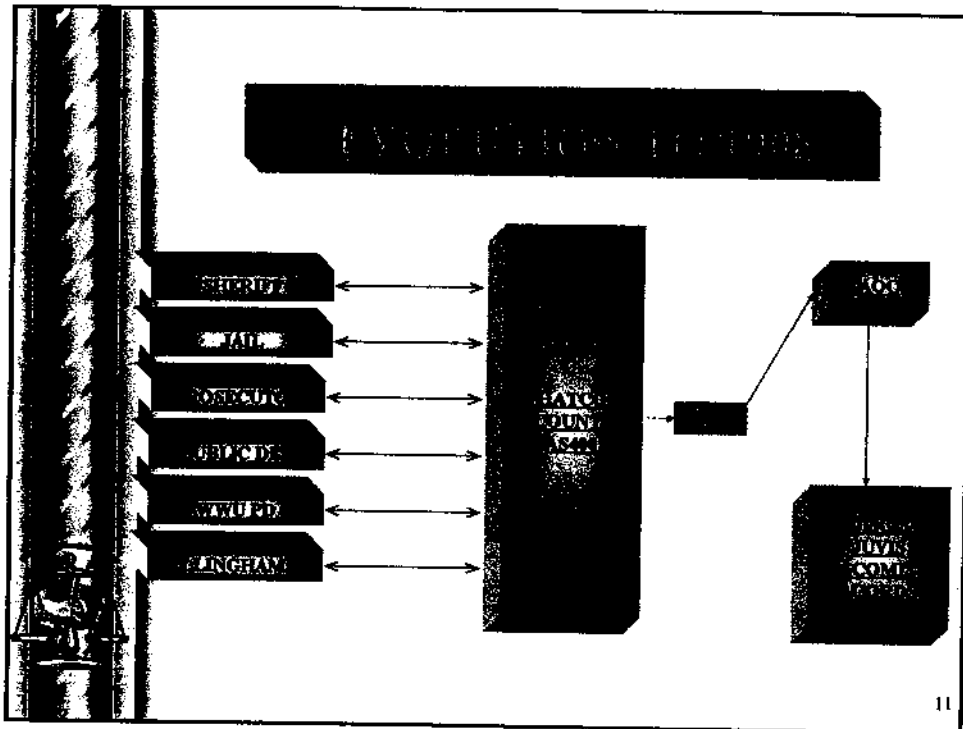
1998 - RFP Published for The Criminal Justice Information System (CJIS)

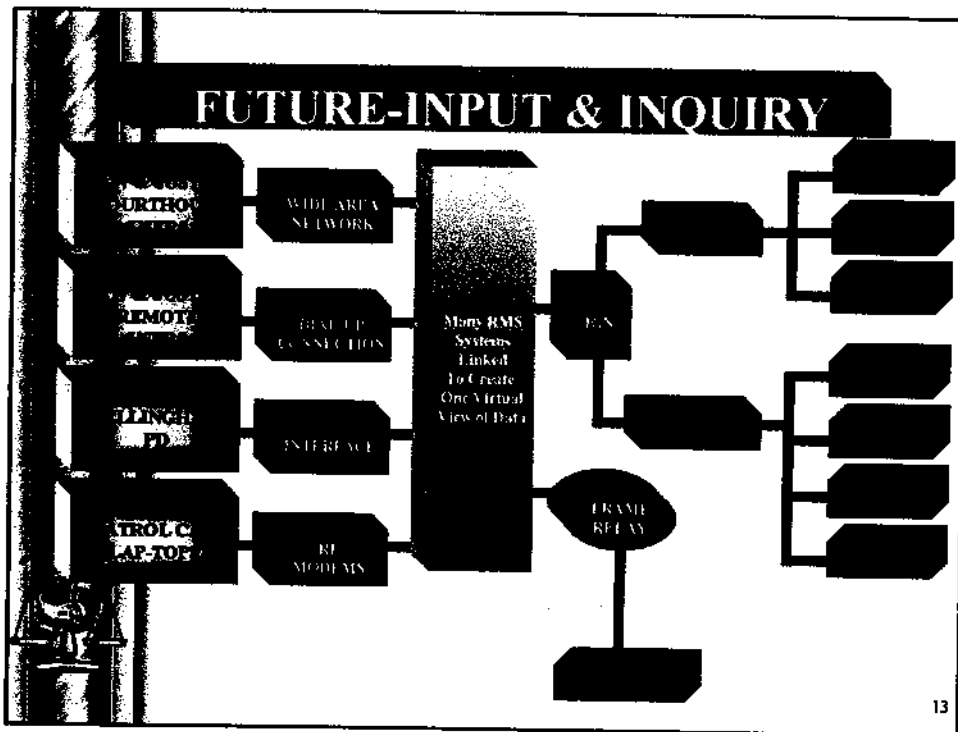
- Two Responses to RFP
- Both Substantially higher than allocated funds
- No additional funding approved/available

2000 – Enhanced LJC enacted by Ordinance

- The LJC Phase II Report recommendation C-2 results in a \$70,000 appropriation for CJIS RFP re-write

10



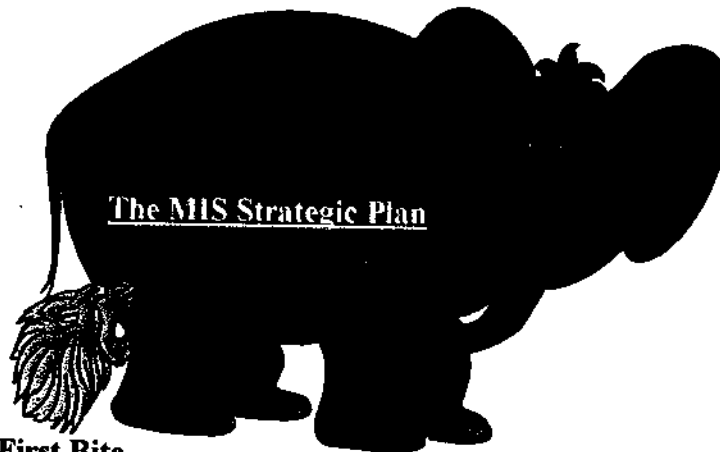


Focus Change

- **Top Priority of Community Wide Law and Justice Strategic Plan**
- **Change In Technology Solves Problems**
 - Accessing Data Is More Efficient
 - Minimal Conversion of Data
 - Maximum Amount Of Data Available

14

Eat The Elephant One Bite At A Time!!



First Bite
(WENET)

15

What is the MIS Strategic Plan

It is NOT:

- Everyone On One Database
- One Agency Managing The Information
- One Agency Controlling The Technology

It Is:

- ▶ *The Integration of Data To Eliminate Redundancies*
- ▶ *Agencies Retaining Their Legacy Systems*
- ▶ *Agencies Decide What Specific Data Elements to View and Share*

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The Strategic Plan

- **Defined the Problem**
- **Constructed A Vision**
- **Formulated Objectives**
- **Developed Integration Standards**
- **Defined System Benefits**
- **Identified Interagency Integration as the Priority Project (WENET Whatcom Exchange Network)**
- **Identified and Analyzed Technical Methodologies for WENET**
- **Identified the Solution**
 - **Import & Inquiry Via Web Services Using Document Exchange Architecture**

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14 Objectives

- **Design and deploy a computerized process that allows the sharing and/or exchanging of information between all law and justice practitioners within the county's Justice enterprise.**
- **Create and deploy an interdepartmental integration process that allows data exchange between Whatcom County government's four existing DB2/400 databases (Jail, Sheriff, Prosecutor and Public Defender)**
- **Convert Whatcom County District Court Probation's MS Access database to an integrated DB2/400 application.**

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14 Objectives

- **Develop and deploy a process that allows for the digital creation, distribution and filing of documents, forms and legal pleadings created by justice system practitioners.**
- **Design/acquire and deploy an integrated, computerized case management system for Juvenile Services and Detention.**

19

14 Objectives

- **Design an interface or convert the Assigned Counsel's and Sheriff's Office civil desktop applications (currently written in Visual Basic and MS Access, respectively) to applications that are integrated and resident on the County's AS400.**
- **Design and deploy a process that facilitates the use of mobile data computing by law enforcement agencies using either CDPD (cellular technology) and/or radio frequency.**
- **Create interfaces that will allow standardize sharing or exchange of information between Whatcom County's justice enterprise and State criminal justice entities, including but not limited to JIN (Judicial Information Network), WSP (Washington State Patrol) DOC (Washington Department of Corrections) and AFIS (Automated Fingerprint Identification System).**

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14 Objectives

- **Develop technology and processes to use fingerprints as the unique identifier for persons.**
- **Create an interface that will allow sharing or exchange of information between local justice practitioners and CAD (Computer Aided Dispatch).**
- **Design a system-wide decision support system (DSS), wherein aggregate information is routinely utilized to track information flow that allows justice system and executive administrators to monitor justice system efficiency and effectiveness within Whatcom County.**

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14 Objectives

- **Research the feasibility of data sharing with federal criminal justice entities, private sector companies and non-profit organizations that provide direct services to local justice system practitioners.**
- **Support the GIS Committee's efforts to create and implement a geographical information system.**
- **Interact with the community's public safety communications committee (WERS – Whatcom Emergency Radio Systems) to ensure data sharing compatibility.**

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15 Data Integration Standards

- Legacy (existing) database applications utilized by all participating justice entities will be maintained;
- Project design must allow for diverse hardware and software environments.
- Integration must be driven by the operating practices of participating agencies; not separate from the systems supporting the agencies;
- Data should be captured at the originating point, rather than being reconstructed down line;
- Data should be captured once and used many times, leveraging existing resources and improving data quality;
- Automatic push (export) of information to another agency, based on actions taken within the originating agency;

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15 Data Integration Standards

- Automatic pull (import) of pre-selected information from other systems for incorporation into the recipient agency system;
- Generalized automatic query, push, pull, and publish must be general capabilities of the system
- Timely capture of data in order to keep information as current as practicable, i.e. near real-time;
- The data quality must be maintained through internal control mechanisms that quickly identify any occurrences of inaccurate data and provide for the initiation of timely corrective actions.

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15 Data Integration Standards

- **System design must allow corrections to be made at the point of entry and the correction program must automatically correct all of the associated links to all of the integrated systems**
- **Each correction/change must be automatically logged in a history file. A method for performing a query on the history of changed records must be available.**
- **The integrity and security of the data must be maintained through internal control mechanisms that prevent access by unauthorized persons and unauthorized use of information by authorized users.**

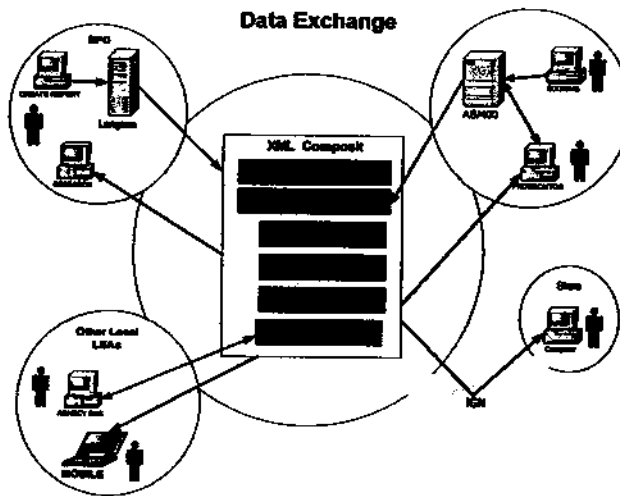
25

15 Data Integration Standards

- **The technical architecture should focus primarily on an open system building block approach using industry standards such as TCP/IP telecommunications standards, HTTP transmission protocol, XML tagged-field data structure metalanguage, XSL and CSS style sheets for information transformations and formatting, LDAP to access directories for passwords and permissions.**
- **Data transmitted in any form shall be encrypted end-to-end.**

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WENET (Whatcom Exchange Network)



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Project Schedule

- **Objective #1: (Immediate)**
 - Hire Data Integrator To Support Project Team
- **Objective #2: (Immediate & 2003)**
 - Design County/BPD Sharing Process
 - Connect Sharing Agency Servers To Extranet
 - Develop Web Based Tool For Data Inquiry
- **Objective #3: (As Soon As Possible)**
 - Extend Sharing Process To Other Agencies in County

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Outcomes

- **Increased Officer Safety Through More Timely & Accurate Data Availability**
- **Provides Critical Information On A Real Time Basis To Members of the Law & Justice Community**
- **Real Time Availability of Data in Various Categories Will Allow For Strategic and Proactive Crime Analysis**
- **Police Response Times May Be Reduced**
- **Reduce Redundancy of Data Entry**
- **Improves Accuracy of Information Due To Quality Control Standards**
- **Fewer Justice System Staff will be needed to deal with increasing caseloads**
- **Increased public safety through more accurate and timely data availability**
- **Reduction in the use of paper processes**
- **Greater percentage of warrants may be served due to composite data**

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\$\$ Project Funding \$\$

- **County Executive Pete Kremen, working with colleagues in Olympia and Washington D.C., have earmarked Federal Monies for the Data Integration Project For The Next Two Years**



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2003 Federal Budget

Crime Identification Technology Act

The Committee recommends \$45,000,000 to be used and distributed pursuant to the Crime Identification Technology Act of 1998, Public Law 105-251, of which \$11,000,000 is to be transferred to the NIJ to develop technologies to improve school safety. Under that Act, eligible uses of the funds are (1) upgrading criminal history and criminal justice record systems; (2) improvement of criminal justice identification, including fingerprint-based systems; (3) promoting compatibility and integration of national, State, and local systems for criminal justice purposes, firearms eligibility determinations, identification of sexual offenders, identification of domestic violence offenders, and background checks for other authorized purposes; (4) capture of information for statistical and research purposes; (5) developing multi-jurisdictional, multi-agency communications systems; and (6) improvement of capabilities of forensic sciences, including DNA. Within the overall amounts recommended, the OJP should examine each of the following proposals, provide grants if warranted, and submit a report to the Committees on its intentions for each proposal:

--\$500,000 Whatcom County, Washington's Multi-Jurisdictional Criminal Justice Data Integration Project to develop and implement an integrated county-wide communications system;

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Support For The Concept

- Safety Requires Cooperation
- Accurate Data Requires Cooperation
- Understanding of Other Agency Situations
- Agency Pledge of Support for Concept is Vital



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CONCEPT SUPPORT



Signed Letter of Support

- David McEachran – Whatcom County Prosecuting Attorney
- Dale E. Brandland – Whatcom County Sheriff
- Randy Carroll – Bellingham Police Chief
- James E. Shaw – Western Washington University Police Chief
- William Elfo – Blaine Police Chief
- Chris Haugen – Sumas Police Chief
- Jack Foster – Lynden Police Chief
- Erick Ramstead – Everson Police Chief
- Dale E. Baker – Ferndale Police Chief
- Larry Mount – Nooksack Tribal Police Chief

33

THANK YOU!!!!



Thank you for your continued support of LJC Projects

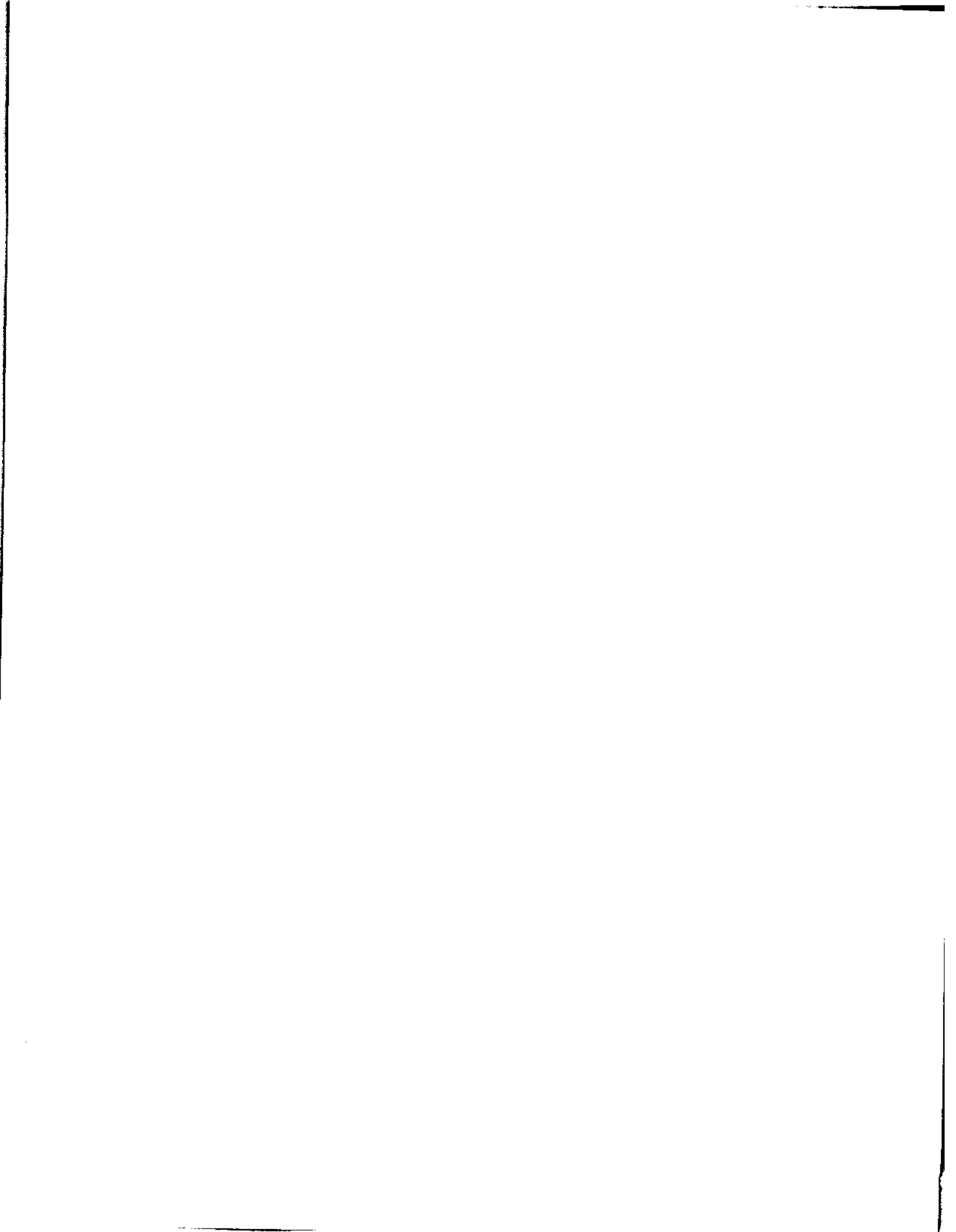


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APPENDIX J:

Glossary of terms



Glossary

The definitions provided here are meant to be specific to the information sharing environment being discussed in this report. No attempt was made to define the terms in a way applicable to the entire information technology environment.

Agency: A governmental unit; in the narrowest sense, a governmental unit of the executive branch.

ANSI: American National Standards Institute. See Standards Organizations.

Architecture: Those characteristics of a network, operating system and/or application program which facilitate information interchange.

Authentication: Any of the methods used to assure that the alleged source of the received data is the actual source, and that the message received is the same as the one sent in every respect.

Branch: In this report, this generally refers to the judicial branch of government.

CIO: Chief Information Officer. In this report, CIO is the highest state-level person responsible for policy concerning information systems and telecommunications systems.

CJIS-WAN: Criminal Justice Information Services Wide Area Network. A nationwide state-to-federal network operated by the FBI to serve fingerprint-based information exchange.

Collective Data: Distinguished from transaction data. A collective data object contains data from several transactions (e.g., an incident description plus all the outcomes of the incident, or all incidents in a time period with their outcomes).

Common Native Language: Information sharing technique which relies on multiple databases but a single data dictionary.

Concept of Operations: A description at a relatively high level of the participants in information sharing, the information flows involved and the functional requirements at each step of sharing.

ConOps: Shorthand for Concept of Operations

Consolidation: Information sharing technique that relies on tightly coupled application programs interacting with a single database.

CSS: Cascading Style Sheet, used to format structured data for display or printing. See also XSL.

CTO: Chief Terminal Officer. In each state, the single person responsible for intrastate connections with the information systems and networks provided by the FBI.

Data: The raw material of information. Data may be structured or unstructured; dynamic or static; textual or graphic. Raw data plus its associated metadata equals information.

Data Esperanto: Information sharing technique which relies on the ability of each sharing system to transform from its own database format to a single transfer format, and from that transfer format to its own format.

Data Schema: Definition of the permissible data to be included in a specified data element, or by extension to all data elements of a file, table or document. See Semantic Data.

Data Warehouse: Information sharing technique which relies on a separate database created by transforming data from several sources into a single database, along with application programs to retrieve the transformed data.

Digital Signature: Any of the methods used to assure that the alleged source of a message is the actual source, and that the attached message is the intended one.

Document: As used in this report, an information-exchange message for

structured information; the document structure, data content and edit requirements are pre-defined before the information exchange takes place. See also Message.

DTD: Data Type Declaration in SGML and XML. See Semantic Data.

Encryption: Any of the methods used to protect the contents of a message from all but the intended receiver.

Entity: An information sharing unit. All agencies (see definition above) are entities; so are courts and legislative bodies. Private organizations which share (receive) governmental information are also entities, as are private persons.

Exchange Point: An event within a process at which information sharing does or should occur; either information is collected which is useful to another entity, or information from another entity is needed, or both.

FBI: Federal Bureau of Investigation

Formatting data: Metadata which expresses the appearance of data on a page or screen. XSL and CSS style sheets contain formatting data.

Function: A capability of an application program, for example case initiation, meeting notification, decision outcome recording, etc.

Governance Model: A model associated with a specific ConOps which describes the rules for making decisions concerning ongoing operation of a system, in this case the information sharing system. Items include requirements for participation, placement of and services to be provided at the central site, expenses and payments, adoption of and changes/additions to the sharing vocabulary or document list, sanctions for inappropriate behavior.

HTML: A message tagging method used to instruct concerning the appearance of the message, primarily on screen. See Markup Language.

HTTP: Hyper Text Transmission Protocol. See Transmission Protocols.

IAFIS: Integrated Automated Fingerprint Identification System

III: Interstate Identification Index

IETF: Internet Engineering Task Force. See Standards Organizations.

Information: See Data. Data and Information are sometimes used interchangeably if that can be done without affecting clarity.

Information Architecture: See Architecture.

Information System: Computer hardware, software and personnel directed toward the collection, organization and dissemination of information.

IP: Internet Protocol. See Transmission Protocols.

ISO: International Standards Organization. See Standards organizations.

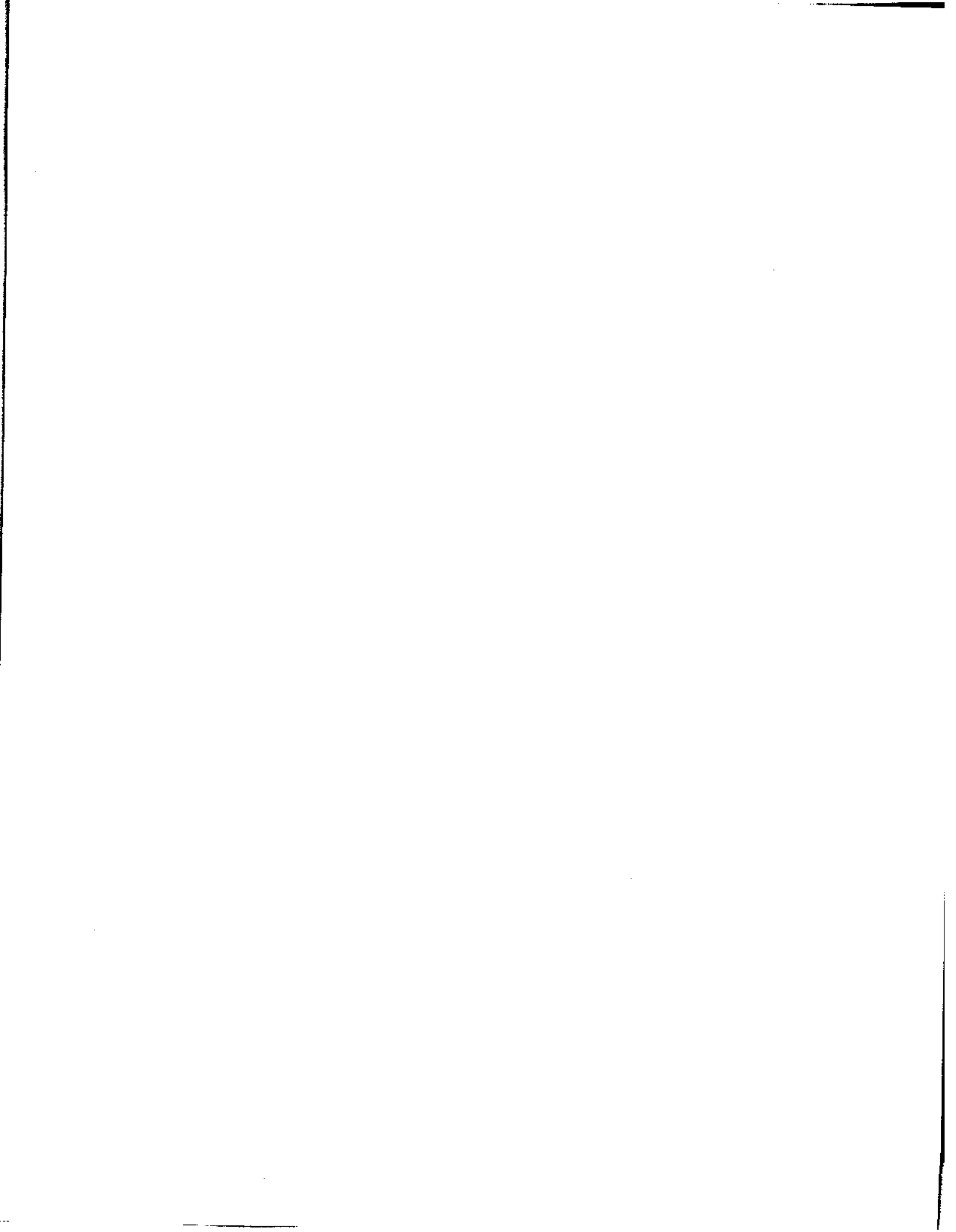
ISO 8859-1: International standard for an 8-bit character set. First 128 characters (7 bits) are the same as ANSI/ASCII codes.

LDAP: Lightweight Directory Access Protocol. A standardized way to connect with a directory which might hold passwords, addresses, public encryption keys, and other exchange-facilitating data.

Markup Language: A method of providing context to a message. The context may provide a description of how each portion of the message should appear on paper or in print (SGML, HTML, XML) or the semantic data (q.v.) for each portion of the message (XML). The method for providing the context is to enclose each message portion in beginning/end markers called tags, hence the description tagged-field formats.

Message: Means the same as Document in this report, other times can refer to unstructured data requiring human inference for interpretation.

Metadata: Data about data. There are at least three types of metadata of



interest in the context of this report: semantic data, which gives the meaning of the "raw" data; formatting data which describes the appearance of the data on-screen or on-page; and intellectual property data which describes data ownership conditions.

MIME: Multipurpose Internet Mail Extensions. A set of Internet standards used to express, in email format, data which does not fit the limitations of the basic standard.

Multi-Functional: Pertaining to an information exchange which crosses between two entities which have different operational objectives. School-to-probation exchanges are multi-functional; school-to-school district exchanges are not.

NASIRE: National Association of State Information Resource Executives, representing the chief information officers of the states.

NCIC: National Crime Information Center. An information system and nationwide network serving local, state and federal law enforcement agencies.

NLETS: National Law Enforcement Telecommunication System. Not-for-profit organization which provides a nationwide network for interstate communication among local, state and federal criminal justice agencies.

OMG: Object Management Group. See Standards Organizations.

Open Standard: Standard arrived at under the aegis of a Standards Organization (q.v.). So-called proprietary standards are not open, nor are most so-called industry standards.

Publish/Subscribe: An information sharing modality in which the subscriber user indicates a desire to be informed if certain events occur affecting a certain person, and the publisher system agrees to provide the information.

Pull: An information sharing modality in which an application program, upon sensing the occurrence of a specified event, automatically requests specified information from another information system.

Push: An information sharing modality in which an application program, upon sensing the occurrence of a specified event, automatically sends specified information to another information system.

QOS: Quality of Service. A guarantee of service quality for an information or telecommunication service; it may include promises concerning time between failures and time to repair failures, minimum bandwidth availability, database accuracy or other measurable descriptors of the service to be provided.

Query/Respond: An information sharing modality in which the human user of an application program requests specified information from another information system.

Rosetta: Information sharing technique which relies on the ability to transform from any one of many database formats to any other of the same large number of database formats; a many-to-many transformation capability.

SEARCH: SEARCH, The National Consortium for Justice Information and Statistics. Not-for-profit membership organization.

Semantic Data: Data about the meaning of the data in a message. This can be expressed as a data schema, a data dictionary, an XML or SGML DTD (Data Type Declaration).

SGML: A legacy tagging standard. Its progeny include HTML and XML. See Markup Language.

Signature, Digital: See Digital Signature.

Standards Organizations: Organizations which have defined procedures for the determination that a standard is necessary, the creation of a standard, and the periodic review of a standard. ANSI, ISO, IETF, WWWC (W3C), OMG are examples of standards organizations.

Structured Data: Data (q.v.) which carries with it the associated semantic data (q.v.) or a pointer to it.

Style Sheet: A method for describing the appearance of a document in print or on screen, such as CSS and XSL.

Tag: A marker within an information exchange document which points to a full description of the semantic data associated with the tagged data. <DateBorn> is an XML tag which points to a precise description of how to read the numbers which follow it as a date, and which date it is (the date of birth).

Tagged-field: Tagging is a method of imposing structure on a document. Each information field has a tag; each tag has a name which points to data-dictionary-like information such as meaning and edit criteria.

TCP: Transmission Control Protocol. See Transmission Protocols

Transaction Data: The descriptors or attributes of a single activity (e.g., the court disposition transaction data includes the court name, data, case, charges, decisions, sentences).

Transmission Protocols: Transmission protocols provide the mechanism for the transfer of information. IP controls transmissions between networks and is the fundamental mechanism of the Internet and many large WANs. TCP provides a mechanism for information transfer on a single WAN, and is often used with IP. HTTP is the key transmission protocol of the world wide web and provides for hot links to a URL.

URL: Universal Resource Locator. A unique address for a page on the world wide web.

USDOJ: United States Department of Justice

USDOJ/BJA: United States Department of Justice, Bureau of Justice Assistance. Administers federal grant programs for state and local criminal justice purposes.

W3C: World Wide Web Consortium. See Standards Organizations.

WAN: Wide Area Network. See Transmission Protocols.

XML: A message tagging method used to mark up a document with semantic data and style data. See Markup Language, XSL.

XSL: XML Style Sheet, used to format structured data for display or printing, and also to convert from one XML form to another.

