

ALASKA LEGISLATURE COMMITTEE FILES 1983-1984

2935

HSA

HB 33

2935

police departments throughout Northern Illinois, an area with a population of approximately 500,000. The lab's Director, Andrew Principe (312 432-8160), explained that each member municipality pays an annual assessment based on its population as illustrated in the table below.

<u>Population of City</u>	<u>Annual Fee</u>
1000	\$1500
3500	\$3100
20,000	\$11,500
50,000	\$25,800
70,000	\$29,800
100,000	\$35,800

The Northern Illinois Police Crime Lab also provides criminalistic analysis for non-member public organizations at a cost of \$75 per hour, with a one-hour minimum charge. In addition, when the lab's staff is required to testify, the charge for that service is \$200 for the first hour and \$50 per hour thereafter.

According to Mr. Principe, the lab's annual budget of about \$300,000, is primarily from the annual membership fees. The lab employs a staff of ten and the lab has \$500-600,000 worth of equipment.

Forensic Science Associates

Forensic Science Associates is a private for-profit criminalistics laboratory located in the San Francisco area that does not provide routine types of analysis; Forensic Science Associates does not do toxicology, blood alcohol analysis, or drug identification. Peter Barnett (415 653-3530) said that his firm's fee is \$75 per hour and the amount of time he spends on any one procedure varies considerably. Most of this firm's work is for private defense counsel.

Criminalistic Laboratory

Criminalistic Laboratory is also a private for-profit small volume lab in the San Francisco area. According to the lab's Chuck Morton (415 451-0767), some of their work is performed for public agencies, but most of their work is also for private defense counsel. Criminalistic laboratory charges \$75-100 per hour depending on the analysis being conducted. In addition, Criminalistic Laboratory also has some

fixed fees for standard procedures, such as paternity testing (\$70-80 per sample), blood grouping (\$75 per sample), saliva analysis (\$50 per sample) and others.

Western Laboratories

Western Laboratories, also in the San Francisco area, is primarily a private for-profit medical laboratory. However, Western Labs does perform toxicology, forensic alcohol, and autopsy service under contract to Alameda County. Dr. Paul Herman, head of the lab, said that fixed fees are charged for these services and is sending a fee schedule by mail. Dr. Herman warned, however, that Western's fees are expected to rise by about 20% in the near future.

FBI Crime Lab Update

According to Larry Nelson, the FBI's agent in charge in Alaska, in federal FY 82, FBI examiners made fifty-one trips to Alaska to testify in court. In forty-seven cases, testimony was actually given in court and four cases were resolved prior to the FBI examiner's scheduled court appearance.

The fifty-one trips made by FBI examiners to Alaska in FY 82 were to present testimony about the following analytical procedures.

<u>Type of Examination</u>	<u>Number of Examinations</u>
Firearm and Toolmark Identification	17
Hair and Fiber Analysis	15
Serology and Blood Type Examinations	13
Neutron Activation Tests	3
Paint Analysis	1
Metallurgy Analysis	1
Document Examination	1

THE LEGISLATURE OF THE STATE OF ALASKA
THIRTEENTH LEGISLATURE

FISCAL NOTE

Expenditure Type
 Revenue Type

I. REQUEST
Bill/Resolution No. House Bill No. 33
Title "An Act...for a State Trooper Facility"
Requested by House Senate Affairs Date 01/25/83

II. FISCAL DETAIL
Agency Affected Department of Public Safety
Program Category Affected Administration of Justice
BRU, Program, Or Subprogram(s) Affected AST Support & Services/Laboratory
(Note: If more than one budget component is affected, separate line-item amounts and funding for each component in the analysis section.)

EXPENDITURES (Thousands of Dollars)

	FY 83	FY 84	FY 85	FY 86	FY 87	FY 88
100 PERSONAL SERVICES						
200 TRAVEL						
300 CONTRACTUAL						
400 COMMODITIES						
500 EQUIPMENT						
600 LAND & STRUCTURES						
700 GRANTS, CLAIMS, ETC.						
TOTAL		-0-	484.9	514.0		

FUNDING (Thousands of Dollars)

	FY 83	FY 84	FY 85	FY 86	FY 87	FY 88
GENERAL FUND						
FEDERAL FUNDS		-0-	484.9	514.0		
OTHER (Specify Source)						

POSITIONS

	FY 83	FY 84	FY 85	FY 86	FY 87	FY 88
FULL TIME						
PART TIME						
TEMPORARY						

III. ANALYSIS (See Fiscal Note Preparation Instruction, Section III)

This legislation provides funds for the construction of a 30,000 sq. ft. public safety facility in Anchorage to house an expanded Statewide Crime Laboratory, the Anchorage Metropolitan Drug Enforcement Unit, and the local Alaska State Troopers and Fish & Wildlife Protection Detachments. This represents a shift in direction for the Crime Lab from being a limited service AST facility to becoming a full-service operation designed to meet the needs of all local law enforcement agencies in the State.

IV. DATE January 25, 1983 PREPARED BY Frank Allan Phone 269-5691

Original: Legislative Finance DIVISION AST Initials
cc: Budget and Management DEPARTMENT OF PUBLIC SAFETY (Mike) Initials T 1/25/83
Prime Sponsor (First Legislator Named)

DETAIL OF FISCAL DATA

		<u>FY 84</u>	<u>FY 85</u>	<u>FY 86</u>
100	Personal Services		416.6	441.6
200	Travel		10.0	10.6
300	Contractual		30.0	31.8
400	Commodities		28.3	30.0
500	Equipment			
600	Land & Structures			
700	Grants, Claims, etc.			
	TOTAL	-0-	484.9	514.0

POSITIONS

PFT		9	9
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ANCHORAGE COMBINED FACILITY
CAPITAL COSTS

Schedule 1

1) Construction Costs

Crime lab - 17,000 sq. ft.	\$3,366.0	
A.S.T. & F.W.P. Posts - 11,000 sq. ft.	1,210.0	
Metro - 2,000 sq. ft.	220.0	
DOT/PF Overhead, Architect, Planning Contingency, etc.	<u>1,472.2</u>	
Subtotal		\$6,268.2

2) Equipment

Crime Lab	859.0	
A.S.T. & F.W.P. Posts	<u>37.5</u>	
Subtotal		896.5

3) Commodities

Crime Lab - Initial stock		71.0
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4) Inflation - Through construction, start

864.3

TOTAL

\$8,100.0

ANCHORAGE COMBINED FACILITY
FY'85 OPERATING COSTS

Schedule 2

100 Personnel Services

Serologist - Range 19	\$38,124	
Trace Evidence Specialist - Range 19	38,124	
Fingerprint I.D. Specialist - Range 18	35,580	
Fingerprint I.D. Specialist - Range 18	35,580	
Firearms & Tool Marks Specialist - Range 19	38,124	
Forensic Chemist/Dep. Director - Range 21	44,508	
Administrative Ass't II - Range 14 & O.T.	29,133	
Maintenance Worker - Range 54	22,380	
Janitor - Range 59	<u>16,776</u>	
Subtotal		\$298,329
Benefits for above	<u>94,662</u>	
Subtotal		\$392,991

Subtotal - Above at 106% to reflect inflation through FY'85 \$416,570

200 Travel

In-state & out-of-state travel needed to attain and maintain professional expertise	10,000
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300 Contractual Services

Telephone	\$12,500	
Electricity	9,100	
Other Utilities	3,500	
Building Repairs & Maintenance	<u>4,900</u>	
Subtotal		30,000

400 Commodities

Heating Fuel	\$26,700	
Miscellaneous	<u>1,600</u>	
Subtotal		28,300
TOTAL		<u>\$484,870</u>

R. STEVE LEVI, LEGISLATIVE AIDE
ON. WALT FURNACE, STATE HOUSE
BUREAU

DEAR MR. LEVI:

THANK YOU FOR YOUR INQUIRY REGARDING THE BREAKOUT OF THE \$8.1 MILLION FOR A
CRIME LAB. THIS TOTAL INCLUDES \$6.043 MILLION FOR THE LAB WITH AN ADDITIONAL
2.057 MILLION FOR THE RELOCATION OF THE ANCHORAGE METRO DRUG UNIT, (WHICH IS
THE COMBINED DRUG INTERDICTION TEAM OF STATE TROOPERS AND ANCHORAGE POLICE
DEPT.); THE FISH AND WILDLIFE PROTECTION DIVISION, AND THE ANCHORAGE POST OF
THE STATE TROOPERS INTO NEW QUARTERS WITH ADEQUATE SPACE. THESE THREE AGENCIES
AND THE LAB WOULD BE COMBINED INTO A SINGLE FACILITY LOCATED ON STATE LAND
ADJACENT TO THE EXISTING TROOPERS HEADQUARTERS.

THE RELOCATION OF THESE THREE AGENCIES AND THE NEW LAB IS PART OF THE CAPITAL
IMPROVEMENT REQUEST UNDER DEVELOPMENT FOR THE PAST FOUR YEARS AS A COMBINED
PROJECT. THE LAB PLAN AND THE EXECUTIVE SUMMARY, OF COURSE, RELATE ONLY TO THE
NEW LAB. PAGES 104-110 DETAIL THE EXPECTED LAB-RELATED COSTS.

PLEASE CALL ME IF ANY ADDITIONAL INFORMATION IS NEEDED.

SINCERELY YOURS,
J. MESSICK / DD/SP11

MEMORANDUM

State of Alaska

TO: Colonel T. R. Anderson
Director
Alaska State Troopers

DATE: April 14, 1982

FILE NO:

FROM: Lieutenant John Lucking *JKL*
Acting Commander
Criminal Investigation Bureau

TELEPHONE NO:

SUBJECT: FBI Lab Services

As a matter of information to you, be advised of the following recent events this past week.

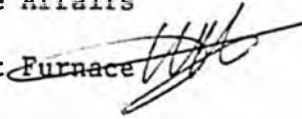
In our homicide case I82-3203 (double murder) evidence was sent to the FBI Lab for analysis. This included some hair and fiber tests. We received a phone call from the lab in which they discussed the necessity of our requested examinations.

In our homicide case I81-50020 (double murder) evidence was sent to the FBI Lab for analysis. This also included hairs and fibers for testing. Again we received a phone call from the lab in which they discussed the necessity of our requested examinations.

I believe these events demonstrate the pressure the FBI Lab is under in attempting to accomodate all requests.

RECEIVED
JAN 20 1983

To: Representative Mitch Abood, Chairman
House Committee on State Affairs

Through: Representative Walt Furnace 

From: Steven C. Levi, Staff

Date: 1/20/83

RE: HB 33

At the present time, law enforcement agencies across Alaska are facing a crisis. First, there is the 120 day rule. Upon the arrest of a suspect, the police have 120 days to build and develop a case. If they cannot build the case and take it court, within that time frame, the suspect must be freed. This is in line with the constitutional guarantee of a speedy trial.

Second, since many of the cases involved have evidence which is sent to the FBI, prosecution depends not only on the quality of evidence gathered, but on the timeliness of the FBI.

Third, over the years the FBI has expanded its crime lab facilities and services and, as a result, more and more law enforcement agencies have taken advantage of the FBI's services. At this point the FBI is so overloaded that the agency cannot assure Alaskan law enforcement agencies that the FBI can consistently provide an analysis of evidence within the 120 day time frame.

Additionally, the FBI is also facing a manpower crunch. As the volume of evidence increases and the number of manhours necessary to be in court grows, FBI specialists are spending more and more time on-the-road and in court and less and less time in the laboratory. Unfortunately, many of the matters upon which the FBI testifies are those which could reasonably be handled by local laboratories.

Alaska is thus faced with a dilemma. Alaska may 1) continue to depend on the FBI and expect to lose cases because of the time factor, 2) pay a private firm or firms to analyze evidence or 3) the State can build, maintain and run a crime lab that will handle many of the basic functions of evidence analysis.

The crime lab dilemma is made even more complicated by the fact that whichever way the State turns it is going to be expensive. It is simply a matter of spending money or losing cases. The FBI provides its analysis for free; it cannot be guaranteed that cases will not fall out of the judicial process simply because the evidence could not get back to Alaska on time.

The proposed crime lab facility, as expressed by Representative Furnace in HB 33, will contain facilities for serology, fingerprinting, trace evidence, forensic sciences, firearms and tool marks as well as basic

chemical analysis of unknown substances. The facility will also house an expanded evidence storage facility. The crime lab will not handle such specialized services as ballistics and paint samples.

Additionally, staff notes the following.

1) Since many law enforcement agencies across the state use the FBI lab for a variety of functions, an actual assessment of the evidence sent to the lab on an annual basis is not available. There is no central clearinghouse for evidence. The Alaska State Troopers, the Anchorage Police Department and the Fairbanks City Police all use the FBI but do not inform one another of that fact.

2) Estimated costs of private labs are speculative. Many labs do not want to examine sample piecemeal. Long term contracts with private labs are both reasonable and prudent. But they will also be expensive. And, since Alaska may not have many of the necessary facilities in state, there is a great likelihood that evidence will have to be sent out of state for analysis. There has been comment that this would force Alaskan dollars to be spent out-of-state on services Alaska should be developing in state.

THE DEVELOPMENT OF A FORENSIC LABORATORY IN ALASKA

EXECUTIVE SUMMARY

Within the last decade or so, a series of Supreme Court decisions relative to search and seizure, interrogation, and confessions have had the effect of limiting the scope of permissible investigative activities by law enforcement agencies nationwide. This situation has resulted in the increased attention to the use of physical evidence in criminal investigations, and the subsequent development of state and regional crime laboratories throughout the country to analyze this evidence.

The application of the natural and physical sciences to items of evidence found at a crime scene is an increasing part of modern investigations and courtroom trials, and often becomes a crucial part of judicial proceedings. The increased reliance upon analysis of physical evidence also confers upon crime laboratories the responsibility for the highest degree of professionalism in their work.

The role of the forensic laboratory is to assist both the investigator and the prosecutor in their efforts to reconstruct and explain the crime, the crime scene and information about the possible offender. The results

* This paper summarizes the more extensive report issued by the Department of Public Safety in September 1982 entitled "The Development of a Full Service Forensic Laboratory for Law Enforcement in Alaska."

of crime lab tests provide facts contributing to the exoneration of the innocent and the establishment of proof of the guilty. The modern lab requires highly trained scientists and technicians who use costly materials and sophisticated instrumentation in an expansive environment, for there can be no compromise in the quality of the work they perform.

A modern, full-services Crime Lab presents a wide array of expertise.

Some of these are:

- * Toxicology A Toxicologist detects and identifies the presence of drugs or poisons in body tissues, fluids and organs.
- * Firearms and Tool Marks Examination The Examiner can, for example, match a spent bullet to the gun that fired it by examination of the microscopic markings on the bullet caused by the irregularities on the inner surface of the gun barrel, among other capabilities. As a Tool Marks Specialist, he can identify the tire iron or other implement found in the suspect's car as the one that pried open the window or door of the victim's home by comparing and matching the microscopic nicks on the blade of the tire iron to the impressions left in the wooden window sill.
- * Forensic Serology The Forensic Serologist, through analyses of body fluids, semen, and saliva found at the crime scene, can limit the population group of the assailant to those within certain blood groups, thus eliminating persons with other blood groups and characteristics as suspects in a given crime.
- * Questioned Documents Examination The Questioned Documents Examiner can ascertain the source or authenticity of a document through the many characteristics of an individual's handwriting, as well as through the variations in typewriter letters as a function of the use and wear to the machine's moving parts, and through the analyses of inks and different types of paper.
- * Forensic Chemistry The Forensic Chemist tests and analyzes unknown substances. By testing substances thought to be illegal drugs, he can determine the type drug, its relative purity and the substances that may be mixed with the drug. He can also identify small amounts of accelerants from a suspected arson fire by testing charred and burned materials

found at the fire, as well as numerous other related tasks requiring chemical analysis.

- * Trace Evidence Examination The Trace Evidence Examiner can narrow the origin of minute bits of evidence such as human hair and fibers, that are exchanged during a violent confrontation, to a group that includes (or excludes) the suspect. The brown head hair found on the shirt of the suspect can be shown to match the hair of the victim of the assault.
- * Fingerprint Examination The Fingerprint Examiner can match fingerprints found on a gun or some other surface to those of the suspect based upon the matching of the characteristics of the fingerprint ridges that are unique to each individual. (The Automated Fingerprint Identification System, funded during the 1982 session of the legislature, and now being developed, will be placed within the Crime Laboratory.)

It is the use of carefully gathered evidence, analyzed by the latest scientific methodologies of the numerous forensic disciplines that builds both a strong case against the accused, while eliminating other persons as suspects.

Unfortunately, state and local law enforcement agencies in Alaska do not have a laboratory with such capabilities. In fact, Alaska is the only State without a statewide crime lab. The rudimentary laboratory in the Troopers building in Anchorage is limited by space, personnel and budget to only narcotics testing, fingerprint identification and crime photography. These very limited services are performed at no cost to all law enforcement agencies in Alaska.

Historically Alaska has depended upon the FBI lab to perform criminalistics tests and has done so to a greater degree than any other state. While this dependence upon the FBI has worked reasonably well in the past, the FBI has recently suffered budget cuts as part of the general decrease

in federal government services and the widespread economic malaise throughout the Nation. As a result, some test results may not be received for three to six months. Since the Speedy Trial Rule in Alaska requires trial within 120 days of the arrest, test results may not be available by the time of trial, nor can additional investigation occur as a result of the outcome of the tests. Complete investigation and prosecution is therefore adversely affected.

However, the FBI's continuing role of providing crime laboratory services may be changing. A 1980 report by the General Accounting Office charges that the Bureau's policy of providing free criminalistics services has acted to inhibit the growth of regional and state wide crime laboratories. The effect of this report creates doubt that Alaska, and the other states, can rely upon FBI lab testing to the extent they have in the past. Decreased availability of FBI laboratory services has already begun with a fee now being charged for certain services and a much closer screening of requests. Most recently the FBI questioned the need for tests in a case that involved a double Homicide. Any further curtailment of service will be even more serious since Alaska is both increasing its population and experiencing a general crime increase while crime is generally decreasing nationwide.

While Alaska has, and continues to have some of its forensic tests performed by private laboratories elsewhere, this is not a good alternative for several reasons. Alaskan law enforcement agencies have no control over the scheduling, priorities of the methodologies and techniques used by external facilities, nor is there any control over the caliber of personnel

performing the tests. Additionally, such tests are usually expensive, since a profit is being made. Finally, the state has to pay a fee for all tests performed plus the travel and expenses of the technicians from the "lower 48" states who testify during trial.

That crime is increasing in Alaska appears obvious to the public. A few statistics show the extent of increase of crime:

- * Forcible rape increased from 51 cases per 100,000 population in 1978 to 88 cases per 100,000 population in 1982;
- * Robbery increased from 87 cases per 100,000 population in 1978 to 110 cases per 100,000 population in 1982.
- * Total violent crime increased from 399 cases per 100,000 population in 1978 to 556 cases per 100,000 population in 1982.

Public attitudes as measured by recent public opinion surveys seem to reflect the growing crime statistics. Survey conclusions were that most people in Alaska believe crime is increasing faster than the population. The public further believes a basic cause of crime in Alaska is the failure of the justice system to punish criminals. A statewide forensics lab would aid the justice system in better investigation and more effective prosecution.

Perhaps the most compelling reason for a full services crime lab is the high evidentiary value of the crime scene evidence that has been analyzed and tested, for the test results provide irrefutable information about the suspect to either link him to a crime, or to eliminate him from any further investigation. Laboratory test results can thus provide a high degree of proof of guilt.

Passage of legislation aimed at increasing interdiction of illicit drugs throws a further burden upon the existing, very limited laboratory at the Troopers headquarters. The addition of five more drug investigators funded by the legislature for 1982 has caused an increasing backlog of drug related tests to perform, while the number of forensic chemists remains the same.

The continuing lack of a crime lab to service Alaska's law enforcement efforts is affecting the decisions and perceptions of some police officers. Knowing there is no facility to perform certain tests and analyses in a timely and affordable manner, some officers place a decreasing value upon physical evidence found at the crime scene and therefore tend to rely upon other means to develop their case. Therefore their case will lack the high evidentiary value that often results from forensic examinations. Any future, long term lack of a statewide lab, in the face of reduced services from the FBI, will probably result in the emergence of several small efforts by local enforcement agencies to provide their own testing facilities. These will likely be of limited scope, overlapping, and fragmented efforts of unknown value. The smaller police departments, unable to afford their own limited facilities, and unable to pay the high costs charged by private labs elsewhere will simply do without forensic tests.

If the above reasons argue forcefully for the development of a statewide crime lab to provide services for all law enforcement agencies in Alaska, the next questions are how big a facility is needed, what services need to be provided and what are the costs involved?

The term full-services lab as proposed here means the hiring of scientific personnel to the extent that the level of need in Alaska justifies a given discipline. For example, a forensic chemist could be hired immediately on the basis that the present drug-testing workload, and that of the immediate future justifies another full time forensic chemist. By contrast, a Questioned Documents Examiner would not be hired now because the workload is not sufficient to support a full-time Examiner. Each of the other forensic disciplines would be similarly evaluated. Those forensic services of an infrequent nature, or that require sophisticated instrumentation that cannot be justified in Alaska would be referred by Alaska's lab to another facility in the "Lower 48 states." To avoid the problems associated with the use of other labs, these external resource agencies would be carefully screened, evaluated, and their proficiency periodically tested, to ensure that personnel, procedures and equipment utilized are the best possible. Sufficient workload exists now, and in the in the future, for the hiring of the following forensic scientists and support personnel:

1. An additional Forensic Chemist
2. Serologist
3. Trace Evidence Technician
4. Firearms and Tool Marks Examiner
5. Administrative Assistant
6. Laboratory Director

In short, the proposed Crime Lab would hire its scientific and support personnel when the existing and forecasted workload makes such action

cost-effective while contracting with other forensic facilities to perform the balance of the work.

The lab would honor all requests by law enforcement agencies, by either performing the work in house or through contract elsewhere. This central facility would be managed by the State Troopers, as the statewide law enforcement agency, for the benefit of the entire law enforcement community in the state. Tests and related services would continue to be provided by the lab at no cost to the requesting agencies.

The proposed lab would be constructed adjacent to the Troopers Headquarters in Anchorage, on state-owned land. Substantial assistance has been obtained from the FBI Forensic Research Laboratory in Quantico, Virginia, during an intensive on-site visit to obtain their recommendations for construction requirements, space needs for scientific personnel and instrumentation, and the factors that should be used in calculating overall construction costs. (These are presented in detail in the main lab report).

Using data recommended by the FBI to provide a Crime Lab with the above professional staff, plus the staff of the existing facility of the Troopers, necessary instrumentation and the numerous support requirements, plus some space for expansion in the years ahead will require a structure of about 17,000 square feet. FBI data indicates that cost per square foot is about 180% of the cost of commercial construction (\$110/sq ft, according to the Department of Transportation and Public Facilities) due to the unique plumbing, heating, ventilation and construction aspects required by a forensic laboratory. Construction would total about \$3.266 million, with

another \$1.1 million, representing 30% of construction cost required by the State for building State buildings. Scientific instruments, furnishing and commodities will total another \$.930 million, for a total of \$5.396 million. A 12% inflation factor for construction in 1983 and 1984 brings the grand total to \$6.043 million.*

* The lab constitutes about 75% of the total cost of the FY'84 Public Safety Anchorage Combined Facility Capital Improvement Project request that has been under development through the normal budgeting process over the last four years, totaling \$8.1 million and 30,000 square feet.

STATE OF ALASKA

DEPARTMENT OF PUBLIC SAFETY

DIVISION OF STATE TROOPERS

BILL SHEFFIELD, GOVERNOR

P.O. BOX 6188 ANNEX
ANCHORAGE, ALASKA 99502
PHONE:

January 18, 1983

Ms. Carol Horos, Legislative Aide
c/o The Hon. Mitch Abood, Chairman
State Affairs Committee
State House
Pouch B
Juneau, AK

Dear Ms. Horos:

Steve Levi, of Rep. Walt Furnace's office asked me to forward reference materials concerning the Crime Lab appropriations bill (HR-33). I have enclosed herewith:

- (1) Eight Additional copies of the detailed lab report.
- (2) Eight copies of the Executive Summary of the lab report.
- (3) Eight copies of the letter from our Criminal Investigations Bureau to the Director of the State Troopers relative to the FBI lab questioning our need for certain forensic examinations in two cases of double homicide, (see p. 10 of the detailed report)
- (4) One copy - all I have left - of the General Accounting Office report which recommends decreased forensic lab services by the FBI and certain other federal agencies. Pertinent areas have been highlighted for easy reference. I think it is significant that the report continually refers to state and regional crime labs in several contexts. Clearly the assumption is that these labs already exist. Alaska, perhaps alone among the states, does not yet have such a lab.

Steve earlier asked for some cost effectiveness data as relates to the proposed new Crime Lab. Developing cost effectiveness is relatively easy to do when comparing two known quantities such as the cost of the state contracting with private enterprise to produce license plates versus to the cost of production by the State Corrections System. In this case, the pertinent cost factors — level of production, personnel, equipment etc. is all known and quantifiable. Thus the cost of the present system can be compared to the proposed one to a rather high level of accuracy.

Unfortunately since Alaska has no full services crime lab, we cannot realistically compare the cost of the state performing forensic services to the cost of the FBI and other existing labs performing these same services, even if these were viable alternatives. We cannot, for example, quote the level of forensic services (and therefore the cost), required by Alaska's law enforcement agencies because they do not have such services available. To be sure, serious crime result in evidence being shipped to the FBI lab. But for many cases involving "less serious" crimes, forensic analyses are not performed because police departments realize they would place an intolerable burden upon the FBI, which already questions examinations needed in serious cases. (See item three above). Other reasons forensic examinations are not sought is the expense involved by private labs; the long time required to receive test results (including the FBI); lack of quality control in terms of procedures, personnel and equipment employed, and so on.

Even if we could in some way determine the cost of what full utilization of forensic services would be, any comparison with an alternative such as private labs, the FBI Lab, etc. would not be meaningful since they don't represent a viable alternative to a full services statewide lab, which of course is part of our problem, for the above noted reasons.

Although qualifiable cost effectiveness figures are admittedly difficult to ascertain, the development of a full services crime lab for Alaska has many easily identified positive aspects as follows:

- A. Forensic Tests will be completed in a timely manner - Quicker test results means better investigation of the crime, particularly those crimes in which further investigation hinges upon the outcome of forensic testing. More timely test results also means more time for the prosecutor to prepare his case.
- B. Increased Use of Forensic Examinations - With the availability of a statewide lab in Alaska, police officers will become better trained in evidence recognition, collection and preservation and will therefore submit more evidence for examination, thereby building a better case.
- C. Earlier and More Efficient Elimination of the Innocent as Suspects - With the benefit of the capabilities of a forensic lab in Alaska, the innocent can be more quickly eliminated as a criminal suspect, thereby enhancing the effectiveness of the justice system.

- D. Fewer Judicial Delays - With timely receipt of the results of forensic analyses, the state will not have to request continuances from the Court because of non receipt of lab tests, thereby reducing delays in trial as well as enhancing calendaring by the Courts.
- E. Establish the Basis for a Medical Examiner Program in the future - Much of the criminal justice system considers a medical examiner preferable to the existing coronor system, particularly in the smaller communities to assure that an unattended death is in fact a natural death and not a cleverly contrived homicide. A Medical Examiner system could be co-located with the Crime Lab with benefits being derived by both agencies, in terms of professional consultation, common use of equipment, facilities, etc.
- F. High Evidentiary Values of Forensic Tests - The results of forensic tests provide irrefutable proof about an item of evidence thereby enabling more effective follow-up investigation by the police officer. In addition, lab tests have a very high evidentiary value, thereby better enabling the prosecutor to meet the high burden of proof required in Alaska. Both of these facts should result in additional numbers of successful prosecutions.
- G. Signify Legislative Intent to Reduce Crime - Funding a Crime Lab, managed by the Troopers, for use by all city and borough police departments, military police agencies and federal agencies could only be viewed as continuing support by the legislature to assist in the efforts against crime and to make existing law enforcement efforts more effective.
- H. Better Control of Existing Forensic Tests - In the absence of a statewide forensic laboratory, Alaska's law enforcement agencies will continue to experience problems in their dealings with "Outside" laboratories involving lack of "quality control" over the expertise of technicians performing tests, type of equipment used, the reluctance of non-forensic scientists to testify in Court, procedures employed, and the setting of priorities and maintaining the "chain of custody" of items of evidence analyzed. Alaska has experienced too many instances of "Outside" experts who have been discredited in court, thereby casting a cloud over forensic test results in general. Additionally there is no control over a lab suddenly deciding to go out of business as happened to the Troopers in 1977, leaving them with a lot of evidence to analyze and no lab to do it.

- I. Prudent Move in the face of Decreasing Federal Services - Developing a Crime Lab in Alaska now may be a very prudent move considering cut-backs in federal services, including the FBI Lab which have already begun. (See letter from Invest. Lucking to Dir. Anderson, State Troopers of April 14, 1982). Reduction of FBI lab services will adversely affect Alaska more than any other state, since Alaska has more requests per capita, than any other state, and even in gross numbers, more than many other states (See Map, p. 10-A of report). Coupled with increasing population and the present existing level of inadequacies in forensic testing, Alaska may not have a viable option if they do not construct a lab of their own.
- J. Support by the Criminal Justice System - The realization of the need and advantages of a full-services crime lab extends beyond the law enforcement component to include prosecutors and judges as well. All realize the justice system would be improved with a crime lab.
- K. Probable Consequences of Failure to Develop a Crime Laboratory - Beyond the inadequacies that presently exist in obtaining forensic services, the failure to develop a lab in Alaska will probably result in the emergence of several small rather restricted efforts by municipal police departments to provide their own testing facilities. They will probably be of limited scope, overlapping, fragmented efforts, costly, with test results from several facilities conducted by individuals of varying competency.
- L. Lab Would Expand as the Need Arises - the concept of a "Full Services" Lab as more completely set forth on p. 21 envisions the lab accepting all evidence for whatever tests are needed. However those tests of an infrequent nature that do not justify an in-house scientist would be performed by an external agency of proven reputation. The entire laboratory concept involves adding an additional scientific discipline, or another scientist to an existing discipline when the level of requests for tests justifies such addition, rather than gearing up for a full services lab immediately only to find that the work load does not justify the entire lab staff and that certain equipment on hand is being used only infrequently. We think this guiding principal is reasonable, addresses the problem of not being able to do a realistic cost effectiveness analysis and assures an overall cost-effective approach to the proposed new lab.

M. Cost Estimates of Alaska's Lab have been developed in conjunction with the FBI - The cost figures contained in the last of the main report and the Executive Summary, are realistic, as accurate as possible, and come from the best of all possible sources -- the FBI lab itself. Three days were spent with the Director of the FBI's Forensic Research and Training Unit, touring their new facility in Quantico, Virginia. The Director personally designed the building, developed cost criteria, determined space and equipment needs, and ultimately supervised the on-site construction. His guidance and recommendations concerning space, utilities and design are reflected in the main report and his cost factors were used in determining the cost of the proposed lab in Alaska. Inflation, the higher cost of Alaskan construction and the 30% of building cost for the Dept. of Transportation and Public Facilities as their fee, are all expenses in addition to the basic construction cost, as more completely explained in the last chapter of the main report.

Carol, I'm sorry this has been such a long letter, but the subject is both important and has many aspects to be presented. Please call me at 269-5508 if additional information or justification is required.

Thanks for all your help in this matter.

Sincerely yours,

M. James Messick
Special Assistant
to the Commissioner

cc: Mr. Steve Levi, Legislative Aide
c/o Hon. Walt Furnace

Mr. Robert R. Sundberg, Commissioner
Dept. of Public Safety

Col. Michael Kolivosky, Director
Alaska State Troopers

Enclosures

Project Justification: Continued

100 Personal Services - Maintenance & Operations

Job Class Range	Maintenance	
	Worker Range 54	Janitor Range 59
Annual Salary	\$22,380	\$16,776
One Month Overtime	- 0 -	- 0 -
Subtotal	22,380	16,776
Benefits	3,929	2,945
SBS	1,371	1,028
Health Insurance	2,400	2,400
TOTAL	\$30,080	\$23,149

Summary - Personal Services, Lab and Maintenance & Operations

	Lab	Maint & Ops	Total
Annual Salary	\$ 235,044	\$ 39,156	\$ 274,200
One Month Overtime	26,160	- 0 -	26,160
Subtotal	\$ 261,204	\$ 39,156	\$ 300,360
Benefits	45,861	6,874	52,735
SBS	14,903	2,399	17,302
Health & Ins.	20,160	4,800	24,960
TOTAL	\$ 342,128	\$ 53,229	\$ 395,357

CONTINUATION
FROM: 35b

CATEGORY Administration of Justice
 AGENCY Department of Public Safety
 PROGRAM Crime ID & Apprehension

Page 10 of 12
 Revised Date

FY 84

200 Travel

In-state & out-of-state travel to maintain

\$ 10,000

OPERATING COSTS

and develop professional expertise.

\$ 10,000

FY 85

FY 86

300 Contractual

Telephone	\$18,400	\$395,357	Line 100	\$395,357
Electricity	13,000	+ 55,000	Other	+ 87,200
Other Utilities	5,000	\$450,357	Sub-total	\$482,557
Building Repairs & Maint	7,000	+ 27,021	Inflation	+ 59,644
Subtotal		<u>\$477,378</u>	Total	<u>\$542,201</u>

\$ 43,400

400 Commodities

Heating Fuel	\$31,800	
Miscellaneous	2,000	
Subtotal		<u>\$ 33,800</u>

Total Annual Operating Costs \$482,557

IDENTIFICATION OF ALTERNATIVES CONSIDERED:

- (1) Do not expand the crime lab and thus avoid becoming involved in evidence analysis on a statewide basis. This is unreasonable and unacceptable given our statutory responsibilities.
- (2) Ship evidence to out-of-state laboratories (there is no in-state laboratory capable of performing the necessary tests). This is unacceptable for the following reasons:

CATEGORY Administration of Justice
 AGENCY Department of Public Safety
 PROGRAM Crime ID & Apprehension

CONTINUATION
FROM: 35b

Page 11 of 12

Revised Date 10/4/82

FY 84

**THE DEVELOPMENT of a FULL SERVICE
FORENSIC LABORATORY
for
LAW ENFORCEMENT IN ALASKA**



By

The Department of Public Safety

September 1982

William R. Nix, Commissioner

Thomas R. Anderson, Director
Division of State Troopers

"Criminalistics is an occupation that has all of the responsibility of medicine, the intricacy of the law, and the universality of science. Inasmuch as it carries higher penalties for error than other professions, it is not a matter to take lightly, nor to trust to luck.."

*Paul L. Kirk, Ph.D.
1902-1970*

ALASKA FORENSIC LABORATORY PLAN

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FOREWORD

The decision to develop a plan for the establishment of a full service crime laboratory for use by all law enforcement agencies in Alaska followed the realization that Alaska is experiencing a substantial increase in the need for such a facility so that law enforcement and the criminal justice system can continue functioning in a professional manner.

The project began with extensive travel throughout the state to obtain the views and opinions of the law enforcement community and the criminal justice system generally concerning the present inadequacies of the laboratory and what services they would like to see a forensic's laboratory in Alaska perform. Other travel to Seattle, Sacramento and Santa Clara County, California provided an insight into laboratories that now provide a wide range of services. A later visit to the FBI's Forensic Training and Research facility at Quantico provided information about the unique needs of a crime laboratory that must be reflected in architectural design and later facility construction. The same trip provided a visit to the Automated Fingerprint Identification System of Montgomery and Prince Georges Counties in Maryland.

The extensive narrative needed to reflect user views and explain such a facility required that this plan be divided into different sections, beginning initially with why a full-service crime laboratory is needed, and some background about the existing, but very limited laboratory. Following is an explanation of what a full services crime laboratory is and can do. These capabilities are then related to Alaska in terms of the recommended improvements in services and facilities over the next several years. These recommendations are single spaced and sequentially numbered for easier reference.

The first draft was reviewed by laboratory personnel. Their comments were then incorporated into the draft that was sent to the many different justice system agencies throughout Alaska. Their comments were then incorporated into this final version.

Persons assisting in this laboratory plan are far too numerous to list individually. However, personnel in the Crime Laboratory devoted considerable time and effort and deserve individual recognition. They are Chris Beheim, Susanne Feller, Hank Chambers, Robert LaPoint, Arnie Lind, John Sauve, Kathy Kohn, Jim Gordon, Dave Beigel, Nadia Schalk, Myrtle Homesky, and Mira Franco.

Numerous law enforcement agencies throughout the state assisted, including the police departments in Anchorage, Fairbanks, Juneau, Ketchikan, Sitka, Petersburg, North Pole, Bethel, Palmer, Soldotna, Kotai, Homer, Seward, and Seldovia.

State Troopers personnel from the Detachments at Anchorage, Bethel, Juneau, Fairbanks, Palmer, and Soldotna, plus the Criminal Investigation Bureau, the White Collar Crime Unit and personnel in the existing Crime Laboratory in Anchorage participated and offered ideas and suggestions. The office of the Director of Fish and Wildlife Protection likewise forwarded ideas and reviewed aspects of interest in their field, as did the Anchorage office of the State Fire Marshal. Crime statistics were obtained from the office of Criminal Justice Assistance in the Department of Law, Juneau. Several prosecutors offered comments as did several judges from the Alaska Court System.

A literature search and listing of references was obtained from the National Criminal Justice Reference Service, Rockville, Illinois. Other data and information was forwarded by Larry Howard of the Georgia Crime Laboratory in Atlanta; Dr. Andrew Principe of the Northern Illinois Crime Laboratory in Highland Park; David Stafford, President of the American Society of Laboratory Directors, at the University of Tennessee in Memphis; Edward Whittaker, Dade County Florida, Crime Laboratory; George Taft, Director of the Texas Department of Public Safety Crime Laboratory in Austin; Lt. George K. Matsuda, Oregon State Police Crime Laboratory in Portland; and Lowell Bradford, a California based consulting forensic scientist.

Finally, particular thanks to Colonel T. R. Anderson, Director of the State Troopers and Commissioner William R. Nix for their interest in improving forensic capabilities in Alaska and continuing support during the development of this plan.

The assistance of each is gratefully acknowledged.

M. James Messick
Assistant to the Commissioner
July 1982

INTRODUCTION

Within the last decade or so, a series of Supreme Court decisions relative to search and seizure, interrogation and confessions have had the effect of limiting the scope of permissible investigative activities by law enforcement agencies. This situation, in turn, has resulted in the increased attention to the use of physical evidence in criminal investigations, and the subsequent development of crime laboratories to analyze this evidence throughout the nation. The application of the technologies and techniques of the natural and physical sciences to items of evidence found at a crime scene is an increasing part of modern investigations and courtroom trials. The expectation that these sciences are devoid of prejudice makes the results of crime laboratory tests and analyses an often crucial part of judicial proceedings. It also confers upon crime laboratories the responsibility for the highest degree of professionalism in their work.

The role of the crime laboratory is to assist both the investigator, and the prosecutor in their efforts to reconstruct and explain the crime, the crime scene and to establish possible linkages among a number of different, but related aspects of the crime. The success of the crime laboratory working with the investigators provides facts contributing to the exoneration of the innocent, and the establishment of proof of the guilty.

The 1970's witnessed the development of a significant number of crime laboratories in the United States. Many were developed with federal assistance through the Law Enforcement Assistance Administration. Attempts were also made to provide standards within the criminalistics field, both with regard to the proficiency of laboratories and the expertise of their personnel. Professional organizations were organized, assisted and encouraged by the FBI which up to that time had handled the majority of evidence testing and analyses in their forensic crime laboratory in Washington, D.C.

Alaska, however, did not develop a statewide forensics laboratory, preferring to utilize private enterprise and the FBI laboratory for the level of services needed at that time.

By the early 1980's however, LEAA was all but disbanded, and the federal government had embarked on an era of cost cutting and retrenchment in scope of services. A recent General Accounting Office report indicated that federal assistance, while obviously beneficial to investigative efforts, was in fact fostering greater dependence upon federal laboratories, and in some cases, actually inhibiting the development of state and local laboratories. During the last two years the number of requests to the FBI laboratory has kept increasing at the same time that budget cuts were being absorbed. A general economic malaise developed throughout the country, forcing cutbacks by the states and their political subdivisions and subsequently increasing dependence upon the FBI laboratory, which in turn has increased the response time for test results requested by law enforcement agencies throughout the country.

During the latter 1970's Alaska experienced an economic boom perhaps unequalled in its history, which after a short pause following completion of the oil pipeline, carried over into the 1980's. This prosperity in conjunction with oil revenues and the promise of continued growth in the years ahead through resource development all act as a powerful impetus for additional population growth which continues today. Many new residents are following the lure of high paying, but often temporary jobs associated with the construction industry. Drug use and violent crime is now increasing at the same time that crime is showing a decrease in the rest of the country according to the FBI.

Any extensive, in-depth discussion of a forensic's laboratory leads to the subject of forensic pathology, perhaps better known as a Medical Examiner system, since the two are often closely related.

Alaska presently does not have a Medical Examiner system, but rather a Coroner-Public Administrator system. There is considerable interest particularly in the smaller communities with limited local expertise in pathology, to improve the death investigation system by instituting a state medical examiner program. There is, moreover, interest in a Medical Examiner system not only within law enforcement, but from certain prosecutors and the judges as well.

There are several significant advantages to such a system. Perhaps most important is the professional expertise of a medical examiner who has been specifically trained in forensic pathology. Such a person can better assess whether a death is indeed a suicide, a natural death or a cleverly contrived homicide.

In addition to more professional death investigations, significant advantages can develop with a medical examiner and a crime laboratory sharing the same facility, including the mutual use of certain equipment, clerical and other support personnel, vehicles, and even facilities for the different tests needed by each. Increased professionalism would occur also. The integration of these two functions within a single facility would produce substantial reinforcement for both disciplines, through the cross fertilization of ideas, methodologies, problem solving, consultation, and research concepts.

Although the medical examiner system is beyond the scope of this paper it is strongly urged that such a system be evaluated for Alaska. A later section dealing with the new facility required for an expanded laboratory recommends co-locating both functions within the same building.

The criminal justice system, and particularly law enforcement agencies and prosecutors in Alaska now seem to be at a juncture. They can continue without benefit of a statewide forensics laboratory,

thus maintaining the status quo in the face of increasing incidence of crime, or crime in Alaska can be vigorously addressed by scientists and technicians analyzing evidence with modern methods of technology, complementing the efforts of investigators and prosecutors.

This report examines the needs of law enforcement throughout Alaska and recommends the immediate deployment of resources toward a full-services crime laboratory for use by all law enforcement agencies in Alaska.

I. ALASKA'S NEED FOR A CRIME LABORATORY

What is a crime lab and why does Alaska need one? Although definitions will vary, a crime laboratory may be very basically defined as a scientific laboratory in which the natural sciences are used to test and analyze the various items of physical evidence associated with a crime.

One category of personnel in a crime laboratory are criminalists who are specialists within one or more specific disciplines. There may be chemists, toxicologists, serologists, trace evidence analysts, and numerous others. In addition, a crime laboratory may have several technical positions such as firearms identification and tool marks specialists, fingerprint examiners, photographers, explosive ordnance disposal experts, polygraph operators, questioned document examiners and others.

All are highly trained and educated, require frequent specialized training to keep abreast of changes within their fields and often use costly materials and sophisticated instrumentation in an expensive environment. There can be no compromise about the quality of the work they perform for the outcome of their tests may well determine the innocence or guilt of the accused.

Their work is often fascinating and can produce a wealth of information. A complete analysis of a white powder can establish not only whether a controlled substance is present, but its purity, if it is mixed with other drugs, or other substances. This can help establish whether or not it is possibly of the same lot as the drugs found at the home of a dealer. Analysis of a suspected stain can establish initially if it is blood, and if so if it is human or animal. Further blood grouping and enzyme analysis of the blood can eliminate certain individuals as suspects and establish probabilities of other persons as suspects. The examination of bullet holes in a pane of glass can establish from which side a bullet was fired, and the sequence and side if several shots were fired. Glass

comparisons can connect a suspect to a scene by the recovery of small chips found on the suspect and matching them to glass at the scene. Optical and physical properties along with refractive indices can yield additional data. Small fragments of glass fused to the filament of a vehicle's headlight can establish if the light was on or not when the hit and run accident occurred. Identification of latent fingerprints can establish a suspect, and so on.

The following paragraphs describe the reasons why such a facility is needed in Alaska.

A. Limitations of the Existing Lab

Beyond establishing drug identification and fingerprint comparisons which comprise almost the entire workload of the existing Troopers laboratory, Alaska has no crime laboratory with broad capabilities of the type described above. The existing "crime lab" is located in crowded quarters in the basement of the troopers headquarters building in Anchorage. Lack of additional personnel and physical limitations prevent its expansion.

Its professional personnel - chemists, fingerprint examiners and a photographer - are busy full time with the existing case load. With perhaps the exception of one other state, Alaska is the only state to not yet have a full-service crime laboratory. Some states including Alabama, Ohio, Illinois, Michigan, New Jersey, Florida, Virginia, Washington, California and others have developed a comprehensive statewide system of regional or satellite laboratories. Most states have had crime laboratories for some time. As long as nine years ago there were only four states, Alaska being one, that did not have a crime lab.¹

¹Fox, Richard & Carl L. Cunningham, "Crime Scene Search & Physical Evidence Handbook," October 1973.

B. Overview of the Crime Problem in Alaska

The following pages contain several charts that give an overview of crime in Alaska.

For data collecting purposes, the FBI has categorized crimes as Part I, (often called Index Crimes), and Part II crimes. The former includes the major crimes of murder, rape, robbery, aggravated assault, burglary, larceny, theft, arson and motor vehicle theft. The latter are the less serious, but more numerous crimes including vandalism, gambling, liquor law violations and many others.

Data about crime are submitted by 23 local police departments in Alaska and the State Troopers to the Department of Law which compiles the data for state purposes and then forwards the data to the FBI for national crime data information published each August, entitled Crime in the United States. A similar publication entitled Crime in Alaska is published annually by the Department of Law.² The data shown on the following charts has been modified from the 1981 Crime in Alaska, and for sake of brevity pertain only to Part I crimes, since they are the most serious, often the most violent, and can be assumed to involve evidence that can be analyzed in a forensics laboratory.

²Office of Law Enforcement Assistance.

Chart 1
Statewide
Number of Part I Crimes
1978-1981

	1978 ACTUAL OFFENSES	1979 ACTUAL OFFENSES	1980* ACTUAL OFFENSES	1981 ACTUAL OFFENSES
<u>Violent Crimes</u>				
Murder	50	55	35	58
Forcible Rape	216	275	228	355
Robbery	365	432	359	458
Aggravated Assault	1,046	1,059	1,145	1,372
Total Violent Crime	1,677	1,821	1,767	2,243
<u>Property Crime</u>				
Burglary	5,238	5,440	5,378	5,103
Larceny/Theft	14,179	14,501	14,356	15,237
Motor Veh Theft	2,496	2,230	2,172	2,344
Total Property Crime	21,913	22,171	21,906	22,684
TOTAL PART I CRIME	23,590	23,992	23,673	24,927

Chart 2
Anchorage Police Department
Number of Part I Crimes
1978-1981

	1978 ACTUAL OFFENSES	1979 ACTUAL OFFENSES	1980 ACTUAL OFFENSES	1981 ACTUAL OFFENSES
<u>Violent Crime</u>				
Murder	16	17	15	18
Forcible Rape	91	132	117	173
Robbery	218	343	296	380
Aggravated Assault	203	217	308	353
Total Violent Crime	528	709	736	924
<u>Property Crime</u>				
Burglary	2,049	2,478	2,611	2,797
Larceny/Theft	6,702	7,521	7,322	8,826
Motor Veh Theft	964	1,041	1,055	1,186
Total Property Crime	9,715	11,140	10,988	12,809
TOTAL PART I CRIME	10,243	11,849	11,724	13,733

*1980 offenses appear to have decreased as the result of a change in data collection and reporting.

Chart 3
Fairbanks Police Department
Number of Part I Crimes
1978-1981

	1978 ACTUAL OFFENSES	1979 ACTUAL OFFENSES	1980 ACTUAL OFFENSES	1981 ACTUAL OFFENSES
<u>Violent Crime</u>				
Murder	5	6	0	5
Forcible Rape	14	20	5	43
Robbery	41	28	20	32
Aggravated Assault	79	59	87	109
Total Violent Crime	139	113	112	189
<u>Property Crime</u>				
Burglary	334	332	384	422
Larceny/Theft	1,495	1,554	1,621	1,711
Motor Veh Theft	284	227	273	276
Total Property Crime	2,113	2,113	2,278	2,409
TOTAL PART I CRIME	2,252	2,226	2,390	2,598

With the exception of apparent decreases in 1980, the trend for Part I crimes, statewide, and for the cities of Anchorage and Fairbanks, is unmistakably upward.

Chart 4
Statewide Crime Trend Analysis
per 100,000 population
1978-1982

	1978	1979	1980	1981	1982
Projected	Crime	Crime	Crime	Crime	Crime
	Rates	Rates	Rates	Rates	Rates
<u>Violent Crime</u>					
Criminal Homicide	12.0	13.0	9.0	14.0	12.5
Forcible Rape	51.0	66.0	57.0	85.0	88.0
Robbery	87.0	104.0	90.0	109.0	110.5
Aggravated Assault	249.0	255.0	286.0	327.0	345.5
Total Violent Crime	399.0	438.0	442.0	535.0	556.5
<u>Property Crime</u>					
Burglary	1,247.0	1,307.0	1,344.0	1,218.0	1,266.5
Larceny/Theft	3,376.0	3,486.0	3,589.0	3,637.0	3,743.5
Motor Veh Theft	594.0	536.0	543.0	559.0	533.5
Total Property Crime	5,217.0	5,329.0	5,476.0	5,414.0	5,543.5
TOTAL PART I CRIME	5,616.0	5,767.0	5,918.0	5,949.0	6,100.0

The rates of serious crimes, adjusted for population increase are shown above. With but a few exceptions, the overall trend in Alaska for Part I crimes is that they have been increasing during the past four years and are forecast to rise even higher in 1982.

Chart 5
Alaska's Ranking Among the
Fifty States for Index Crimes
per 100,000 population

Crime Categories	1979 Ranking	1980 Ranking
<u>Violent Crime</u>		
Criminal Homicide	5	19
Forcible Rape	1	2
Robbery	28	34
Aggravated Assault	16	13
Total Violent Crime	19	20
<u>Property Crime</u>		
Burglary	25	30
Larceny/Theft	10	11
Motor Veh Theft	9	8
Total Property Crimes	10	14
TOTAL INDEX CRIMES	12	14
Population	50th	50th

Although still having the least population of all the states, Alaska nonetheless had the highest and second highest rate of rape in 1979 and 1980, with slightly lower rates for other crimes. On the average Alaska is the 12th and 14th highest state for incidence of Part I crimes.

Chart 6
Statewide
Part I Clearance Rates
1981

	ACTUAL OFFENSES	OFFENSES CLEARED	CLEARANCE RATE AS A PERCENT
<u>Violent Crime</u>			
Murder	60	42	70
Rape	419	168	40
Robbery	467	95	20
Aggravated Assault	1,564	1,034	66
<u>Property Crime</u>			
Burglary	5,410	872	16
Larceny/Theft	16,079	3,776	23
Motor Veh Theft	2,822	749	27
TOTAL	26,281	6,736	25%

An offense is said to be cleared when a law enforcement agency has identified the offender, there is enough evidence to charge him, and he is actually taken into custody. The arrest of one person can clear several crimes, or several persons may be arrested in the process of clearing one crime.

During 1981, only 25% of the serious crimes in Alaska were cleared. During the past several years, the clearance rate has remained almost the same.

The foregoing statistics portray the increase of crime in Alaska from several different viewpoints, also show that on a per capita basis Alaska is number 14 of the 50 states for incidence of crime and that only about one in four crimes is ever solved. With these relatively high rates of serious, often violent crime, the development of a full services forensic laboratory would aid police in apprehending suspects and district attorney's in prosecuting the accused, thereby increasing the clearance rates.

C. Public Attitudes about Crime

There can be little doubt of the public's concern about rising crime. About five years ago the Dittman study, which is the last known opinion survey about crime in Alaska, showed several significant conclusions:³

- Most people in Alaska believe crime is rising faster than the population. Urban people believe crime is rising more than rural people.
- One of the basic causes of crime in Alaska is the justice system's failure to punish criminals.

³Dittman Research Associates, Public Opinions about Crime and Criminal Justice in Alaska, 1976.

A year before the Dittman study, another attitudinal study by the Rowan Group showed that one of the four perceived causes of crime in Alaska is that "the police have failed and this has caused crime." The public believes in a toughening stance toward crime according to the Rowan report, by denying right to bail for certain offenses, by being against plea bargaining and by perceiving that the purpose of jail is to remove dangerous people from society.⁴

The preceding statistics about incidence of crime show an overall increase. One can assume the public's concern about crime has correspondingly increased and that public attitudes have remained firm.

The development of a forensics' crime laboratory in Alaska to make the job of law enforcement and prosecution more effective would therefore seem to have broad public support.

D. Increasing Delays for FBI Laboratory Tests

Perhaps the greatest reason for Alaska to develop a full services Crime Laboratory is that investigations are being hampered by the increasingly longer time required to receive results of tests now routinely being sent to the FBI laboratory in Washington, D.C. According to the Criminal Investigation Bureau of the State Troopers, and many local law enforcement agencies, the time required for laboratory tests of a routine nature from the FBI now require from four to six months.

⁴Rowan Group Report on the Criminal Justice System of Alaska, July 1976.

The apparent reasons for this situation is a general budget tightening among federal agencies, an apparent re-examination of the extent of federal assistance following a General Accounting Office (GAO) review, and an ever increasing number of requests nation-wide for FBI laboratory services.

The GAO report indicates that, among other conclusions, forensic testing by federal laboratories of the FBI, Drug Enforcement Administration, and the Bureau of Alcohol, Tobacco and Firearms, is in effect inhibiting the development of local and statewide forensic laboratories, which is contrary to the federal policy of decreasing reliance on federal laboratories.⁵ The report recommends that the Attorney General and the Secretary of the Treasury require the heads of these federal agencies develop a coordinated plan providing for a phased reduction in Federal crime laboratory assistance to State and local law enforcement agencies. Such a plan should:

- provide a time schedule which will enable the States to prepare for the phased reduction in Federal laboratory assistance;
- discontinue the practice of accepting routine requests from local law enforcement agencies, thereby bypassing laboratories where the capability exists or should be developed; and
- define the complex or sophisticated analyses which the Federal laboratories should continue to perform.

⁵U.S. Government Printing Office, General Accounting Office, "Federal Crime Laboratories Lack a Clear Policy for Assisting State and Local Jurisdictions," Sept 12, 1980.

Dramatic evidence of the situation facing the FBI laboratory were two telephone calls received by the Trooper's Criminal Investigation Bureau during mid April 1982. Both calls were from the FBI laboratory inquiring about the necessity of two examinations of hairs and fibers that had been forwarded earlier by CIB investigators. Both cases involved double murders.

Also, items sent to the FBI laboratory, if to be tested for other than fingerprints as well as for fingerprints, are not to be examined by a local laboratory for just fingerprints. The FBI wants to perform all tests, utilizing their own personnel. This policy causes additional delays in receiving examination results.

The problem of long turn-around time often collides with the speedy trial rule in Alaska, [Criminal Rule 45(b)], which requires that the trial begin within 120 days following arrest, barring any delays by the judge as may be requested by either side.

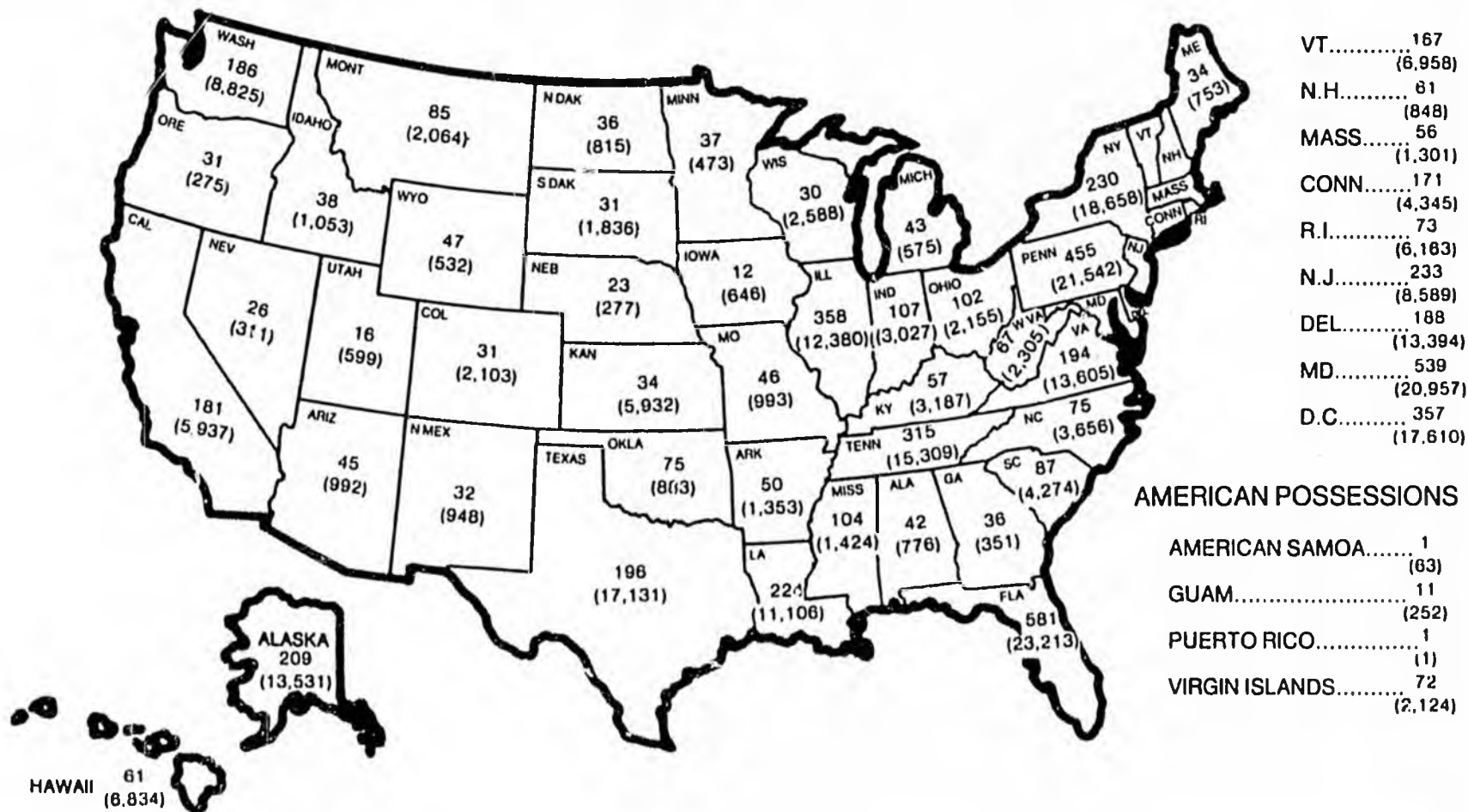
The restricting of services by the FBI will adversely affect Alaska more than any other single state because of the extreme reliance Alaska has historically placed upon FBI resources and assistance. That this is so, is in large measure a function of Alaska having the smallest population of any state, and thus Alaska is one of last states to be able to justify a crime laboratory. The almost total reliance by Alaska upon the FBI Crime Lab is shown most dramatically by the data and map shown on the following page. As is obvious, the 209 requests from Alaska are within the top ten highest of all the states. When calculated as a percentage of the population, Alaska has the highest number of requests to the FBI laboratory. Alaska, therefore, will be the state most adversely affected by the restriction of services of the FBI laboratory.

FBI LABORATORY

Assistance To Non-Federal Law Enforcement Agencies

REQUESTS RECEIVED 6,599
EXAMINATIONS CONDUCTED (297,832)

FISCAL YEAR 1981



Increased turn-around time is also occurring with the very limited capabilities of the existing laboratory. As of April 1982, the average time required for test results is up to two months for just drug-related tests, although turn-around time for fingerprint work is from one to two days.

E. Judicial Problems Caused by Delays

Investigators and prosecutors facing delay in obtaining forensic tests also face going to trial without adequate time for preparation. This is particularly true if the results of the test are needed before additional investigation can occur. While continuances can and are requested to permit additional time, they cause calendaring and scheduling problems for both the court and participants in the proceedings.

While many continuances in proceedings have occurred as the result of delays in obtaining laboratory test results, at least one judge has suppressed the states' evidence relative to the results of crime laboratory tests because of violations of Discovery. In that case, (Alaska vs. Lewis, Feb 1981) the FBI's formal laboratory report was not available until the morning of trial, for several reasons. In any event, due to this problem, several earlier discovery violations, and emphasizing that the state could have requested a continuance, the trial judge ruled that the test results and testimony concerning them would be suppressed.

Although overturned by the Appeals Court which said the results of the suppressive sanction are capricious and thus defeat the objective of Discovery it is important to note that the opinion said the Supreme Court has not completely ruled out excluding evidence from forensic tests as a possible sanction for delays by the state.

Defense attorneys can also point out that a continuance imposes a hardship on their clients because they would have a serious, felony charge pending against them for a longer period of time if a continuance is granted.

Continuances based upon lack of timely test results may also be questioned by defense attorneys who might object on the basis that there are other laboratories which can obtain test results in a timely manner, thus questioning that if the state cannot obtain timely results, they could contract with other facilities that can do so. In the future the state may be faced with an order to "show cause" as to why it doesn't use other laboratory facilities. In addition, defense attorney's have the right to examine evidence and should be afforded this opportunity without having to request a delay in the trial in order to do so. Additionally, the state should have time to prepare a rebuttal.

F. Use of Other Laboratories

Although a given test or tests within particular disciplines can be performed by private laboratories in addition to the FBI (and indeed this concept is included in this plan), it would not be feasible to rely upon other facilities for the entire range of criminalistics tests required by police and prosecutors in Alaska, for many reasons.

Use of other facilities over which the state has no control would mean that there would be no control over the caliber, background and experience of the technicians performing the work, nor of the degree of sophistication of the tests and equipment employed. There are already too many instances of less than qualified persons who have testified in Alaska to the results of tests, only to be proven wrong. Such discrediting of persons reputed to be an expert causes long

term harm to the profession of criminalistics, and casts a shadow over the result of all forensic tests.

Use of other facilities may also result in problems relating to the unbroken "chain of custody." Unless it can be shown that items of evidence have been in continuous custody of an officer, there is a question of whether the evidence has been altered. Use of a laboratory unaccustomed to the strict requirements of law enforcement may result in a break in the chain of custody, thereby permitting doubt to be cast upon the evidence by the defense attorney.

Use of other facilities will also prove to be more expensive than if the same capabilities existed in a state crime lab. Reliance upon out-of-state labs and their personnel will require the state to pay the transportation plus expenses of lab technicians to travel to Alaska to testify in court. In addition, the cost of the tests themselves can reasonably be assumed to cost more from private enterprise, since private firms exist to make a profit.

Reliance upon non-state facilities also involves the risk of the private firm going out of business and not performing any additional tests. This is exactly what occurred in late 1977 when the Alaska Medical Laboratories suddenly went out of business. As a result the Troopers were left with a number of items of evidence requiring forensic examination. With no other facility in the state and the need to have these tests performed, the Troopers formed what is now the very limited crime laboratory that exists now.

G. Value of Forensic Examinations

A major value of forensic examinations not often realized is the high evidentiary value they represent, and the positive impact they can have upon a jury.

An eye witness to a crime is often considered by the public to be the best possible evidence in determining guilt. While an eye witness is indeed important to a case, eye witnesses have to rely upon their memory, and a person's memory is fallible. The results of a carefully conducted forensics examination, however, do not rely upon memory. In cases where eye-witnesses are not available, forensic examinations are even more important, for they can present irrefutable conclusions, both to help establish the innocence or guilt of an accused. Civil rights organizations and similar groups concerned with instances of alleged unequal treatment of poor and minority persons charged with a crime should, in particular, support a professional criminalistics facility, since it offers completely unbiased evidence about a suspect.

Plainly, without a full services crime lab in Alaska the benefits of the high value of criminalistic tests will simply not be available. The efforts of police and prosecutors may therefore be less effective.

H. Support by the Criminal Justice System

One of the most compelling reasons for Alaska to develop a full service crime laboratory is the unanimity of need for such a facility by all the law enforcement agencies, district attorneys and judges. Police officers at both state and local levels consider the development of a full services crime laboratory as long overdue. They recount numerous criminal case investigations and accident scenes

that would have been enhanced if criminalistics services would have been available in a timely manner. Prosecutors and judges recall past cases in which the results of criminalistics tests were a significant part of the trial because the standard of proof is so high in Alaska. They also recall other cases that were weakened by lack of adequate criminalistics tests or in which evidence was overlooked.

I. Impact of Drug Legislation

Another reason for enhancing the existing statewide crime laboratory is the impact of legislative appropriations to detect and apprehend illicit drug violators. These funds were used for a third Trooper for the Anchorage Metro squad during 1981, the activation of a full-time narcotics investigator in Juneau during 1982, the addition of a new drug dog and trooper at the Fairbanks airport in late 1981, and the addition of five new drug investigators for the Troopers in 1982. These additional drug investigators plus increased efforts by local police departments will exacerbate the existing problem of timely drug tests by the existing crime laboratory, as additional requests for identification of suspected drug substances are received.

In summary, the following are the major reasons a full services crime laboratory is needed in Alaska:

- Increasing delays in obtaining test results from the FBI Crime Laboratory, and the existing limited state laboratory.
- Problems to the judiciary caused by delays in obtaining test results.

- Inability of the existing laboratory to perform other forensic tests, due to the number and priority of the drug tests required.
- Inability of the forensic chemistry section of the laboratory to expand their services due to physical space and personnel limitations.
- The extremely adverse affect upon Alaska resulting from cutbacks in service by the FBI laboratory.
- The numerous disadvantages inherent in using private facilities.
- The high evidentiary value of results of criminalistics tests.
- The need to address the increasing crime rate in Alaska by expanding scientific testing of crime scene evidence.
- Virtual unanimity of agreement for the need of a full services crime laboratory by criminal justice system agencies.
- The desire of society to reduce crime, resulting in a more peaceful community.

In assessing the need for a full services crime lab in Alaska, one can also attempt to foresee the consequences in the future of the failure to develop a crime laboratory. One possible result may be the emergence of several small, rather restricted efforts of local law enforcement agencies to provide their own testing facilities. These will probably be of limited scope, overlapping, and fragmented

efforts. Other penalties may be reasonably inferred, including test results from a wide array of other facilities and experts of varying degrees of competency as the larger police agencies attempt to cope with the lack of a single statewide crime laboratory. The smaller police departments probably will not be able to afford some of the prices charged by private facilities and thus will be forced to do the best they can without scientific analysis of evidence. Unfortunately, at least one consequence is already occurring. That is the decreasing importance some police officers attach to laboratory tests and analysis of crime scene evidence. This is not from a lack of appreciation of the value of such tests, but from the double frustration of knowing the value of forensic examinations and being unable to obtain professional testing in a timely manner. In many cases, police officers have no other choice than to do without forensic analyses. One can safely assume their investigations and the prosecutors efforts are less effective in proving the innocence or guilt of the accused. In an era of increasing concern about accountability of government, increasing costs of criminal justice, and rising crime rates, Alaska needs more than just additional police officers. It needs the means whereby their efforts can become more effective.

II. HISTORICAL BACKGROUND

The Alaska State Troopers Crime Laboratory, located at their headquarters building in Anchorage, is the only statewide law enforcement crime laboratory in Alaska. It is relatively new, having begun in early 1978 following the closure of the Alaska Medical Laboratories in Anchorage, which had been the primary facility for laboratory work for law enforcement in the State. Many tests, of course, continue to be handled by the FBI and other specialty laboratories throughout the "lower 48."

The laboratory presently has a staff of three chemists, two latent fingerprint examiners, a photographer, an evidence clerk and three other clerks. Two additional latent fingerprint examiners are located in Juneau.

At present the laboratory provides a relatively narrow range of services due to crowded conditions, heavy caseload and a limited staff. Most of the work involves drug testing, photographic services and fingerprint comparisons. However, some work can be done in blood alcohol, serial number restoration, limited serology and some arson related tests. Turnaround time to receive results varies according to the analyses required and section involved but may be up to four weeks or longer.

Due to existing limitations, private laboratories and in particular the FBI laboratory, are being utilized for testing of questioned documents, toxicology, serology, firearms identification and tool marks examinations, hairs and fibers and other specialized assistance. Turnaround time for FBI laboratory tests may be from four to six months.

The laboratory also receives and files duplicates of drivers licenses and personal identification cards issued by the state, as well as copies of "mug shots" from correctional facilities.

Copies of these are made by laboratory personnel upon request by law enforcement agencies to assist in their efforts in investigation.

The laboratory also prepares photographs for line-up purposes.

Major items of equipment presently available in the laboratory include an infrared and ultraviolet spectrophotometer, several chromatographs, five microscopes of varying capabilities, two comparison microscopes, a Mettler Hot Stage, balances, centrifuges and other equipment for specialized purposes. Additionally, laboratory personnel assist investigators in gathering evidence at crime scenes and testify in court.

Clients of the laboratory include the uniformed military services in the state, the Drug Enforcement Administration, the U. S. Marshal, the FBI, the entire law enforcement community at the local level, the State Troopers, the Fire Marshal, and several specialized non-law enforcement agencies such as Probation and Parole, Treatment Alternatives to Street Crime (TASC) and others.

There are no fees charged to client agencies by the laboratory for work they perform or for work they forward to another facility. Obviously tests that agencies arrange for directly with other laboratories are paid for directly by that agency with the exception of the FBI laboratory which does not charge for its laboratory services or for expert witness testimony.

To assist their clients the laboratory has printed a Crime Laboratory Manual and a small brochure which generally describes the laboratory capabilities and provides information about packaging and submittal of evidence to the laboratory. Manuals have been sent to all State Trooper posts and detachments and all local police departments and other concerned agencies.

Evidence gathering kits for field use have been developed for gunshot residue, rape, urinalysis, and blood alcohol.

As of the beginning of 1982 the chemistry section of the laboratory was experiencing an increasing delay or backlog of tests. As a result a priority system for testing has been set up to ensure that efforts are directed to the most pressing needs. In addition, extensive testing beyond establishing the identity of a substance that indicates a crime has occurred is not performed, recognizing the futility of extensive testing for a case which may not go to court or cases in which the defendant pleads guilty.

There are several private specialty laboratories and hospitals in Alaska that perform tests and analysis in specific fields, such as petroleum products, waste water, environmental concerns, toxicology and other areas.

III. GOAL STATEMENT

The goal of the proposed full-services crime Laboratory is to aid in the quality of justice in Alaska through the impartial and professional analysis of evidence obtained from the scene of a crime.

The term "full services laboratory" has broad implications. The major concept is the performance of all tests requested by investigators and prosecutors whether such tests are performed in-house or by another specialty laboratory elsewhere in Alaska or in another state.

Within this concept is the hiring of a full time professional laboratory director and sufficient staff to perform the tests routinely required by investigators. Other less frequently required tests that demand very specialized skills and sophisticated equipment and that could not be performed in a cost effective manner in Alaska would be performed by external agencies. Thus the level of need for bullet comparisons may be shown to justify hiring a Firearms Examiner now in the laboratory whereas the need for analysis of an infrequent nature, such as vehicle lubricants, would result in those tests being performed at another facility.

A full service lab would also require additional equipment, and a larger physical plant than now available. Several satellite laboratories could be established in the larger metropolitan cities in the years ahead for handling high volume work such as fingerprints and drug testing.

The concept would also include technical assistance in crime scene analysis, evidence gathering, packaging, and shipment, forensics training courses for all law enforcement agencies, and courtroom testimony by laboratory personnel.

All tests by the laboratory and external agencies would be performed on a no-cost basis to the requesting agencies.

Laboratory management would be improved in every respect. Turn-around time for test results would be measured in days rather than weeks.

The intent and philosophy of a statewide crime laboratory for Alaska is to offer the highest level of service to law enforcement through accurate and reliable tests and analyses in a timely manner while remaining flexible and capable of responding to the changing needs of the law enforcement community in the years ahead. The balance of this plan addresses the foregoing aspects in detail.

IV. CAPABILITIES OF A FULL SERVICE LABORATORY

The value and need for a modern forensics laboratory has been presented earlier. Since a laboratory is such a crucial capability for investigations and prosecutors as well as for an accused, a modern crime lab must have a broad range of scientific disciplines available, either in-house or available through an outside facility.

At this point, it is useful to consider certain definitions and terms that may not be familiar when referring to crime laboratories.

A Criminalist is an individual trained in the scientific and professional discipline of criminalistics, a science directed to the recognition, identification, individualization and evaluation of physical evidence by application of the natural sciences in the reconstruction of events related to a crime and in the connection or elimination of a suspect with that crime.

Criminalistics is a broad term that involves the application of the natural sciences and scientifically based techniques to the analyses of physical evidence. Criminalists therefore span a wide range of disciplines and perform examinations on such items of evidence as alcohol, blood, body fluids, drugs, firearms, glass, hair, fibers, paint, accelerant residues and similar evidence. Criminalists performs analyses utilizing techniques such as macro and microscopic examinations, qualitative and quantitative chemical analysis, and serological determinations. They use complex measuring, recording and testing instruments such as the gas chromatograph, and mass spectrometer, infrared and ultra-violet spectrophotometers, polarizing microscopes and others. They must be prepared to travel throughout the state to testify in court as an expert witness and to assist law enforcement officers and prosecutors in analyzing and interpreting

evidence. They also give instruction in the field of criminalistics at police officer training schools and to conduct examinations of crime scenes for physical evidence in complex cases.

Professional criminalists usually have a minimum of a BA or BS degree in criminalistics, chemistry, biochemistry, biology or other closely related natural or physical science, to prepare them as a forensic serologist, a chemist, trace evidence examiner, and related jobs. Criminalists can also be referred to as forensic chemists, forensic biologists etc, depending upon their areas of expertise. The term forensic means belonging to, used in, or suitable to courts of judicature. Thus the term forensic lab may be used synonymously with crime laboratory, or a criminalistics laboratory.

In addition to the various criminalist fields, there are other professional positions in a good crime laboratory, including the Fingerprint Examiners, the Photographer, a Police Artist, the Firearms and Tool Marks Examiner, the Polygrapher who operates and interprets the polygraph, a Questioned Document Examiner, an Explosive Ordnance Technician and possibly others. Although not all these individuals may have an academic degree, those employed in these fields are properly considered professionals within each of their respective disciplines. Each has completed substantial professional training and is accredited by his professional organization nationwide. Each may expect to become qualified as an expert witness in a court of law and offer testimony, as well as supervise and train lower ranking employees, assist law enforcement officers and prosecutors in analyzing and interpreting evidence, and travel to crime scenes to assist in gathering evidence.

The development of crime laboratories in the U. S. may be described as rapid growth accompanied by a lack of national and

regional planning and coordination."⁶ Some have developed almost solely for drug testing purposes, others for a full range of forensic services. Some work in concert with a Medical Examiner system while others are independent. While most laboratories function as an element of a law enforcement agency, others are within the prosecution function. A few are affiliated with Universities.

Laboratory staffs and their expertise also vary reflecting the size of client population served, government structure, and available resources.

The diversity of laboratories makes it impossible to select any one as typical, or as a model to follow. However, the importance of forensic skills to law enforcement is the National Advisory Commission on Criminal Justice Standards and Goals for the Police which recommended that "every state should by 1982 establish a consolidated criminal laboratory system composed of local, regional, or state facilities capable of providing the most advanced forensic science services to police agencies."⁷

Some of the more common areas of expertise within a forensics laboratory include the following:

A. Toxicology

Toxicology is the detection and identification of the presence of drugs and poisons in body fluids, tissues and organs. The Toxicologist is not restricted to crime laboratories. They are often found in hospitals to identify drug overdoses, and other medical related

⁶Saferstein, Richard, "Criminalistics, An Introduction to Forensic Science," Prentice Hall, 1977, p. 7.

⁷U.S. Government Printing Office, 1973.

facilities involved in monitoring drug usage and other potentially toxic substances such as alcohol abuse, tests on children exposed to leaded paints and urine analysis of addicts in methadone maintenance programs.

Although a Forensic Toxicologist is by definition one who is involved in work relative to violations of criminal law, the responsibility for performing toxicological services in the criminal justice system varies considerably throughout the U.S. In some areas, the Toxicologist may reside in a Medical Examiner's system whereas in other areas the Toxicologist is in a crime laboratory. Still other areas may share his services.

In Alaska, the location of a Toxicologist is yet to be determined, and is dependent upon if and when a Medical Examiner system becomes established, the relative need for Toxicological services in the crime laboratory, existing external services and available funding. Wherever ultimately located, it is a virtual certainty that a large portion of the workload will be the analysis of blood to determine the presence and amount of drugs and alcohol, since alcohol and drug abuse figures so prominently in criminal acts.

B. Firearms and Tool Marks Examination

A Firearms and Tool Mark Examiner compares the minute random markings on surfaces which can impart identification to inanimate objects, such as identifying a spent bullet to a particular firearm, a scratch, abrasion or indentation on a surface to a particular tool or object that caused such marking, or a tire track, or boot imprint to a particular tire or to a particular boot, and similar related work. As an example:

- A bullet is obtained during the autopsy in a murder case. Examination reveals it to have been fired from a .38 caliber Smith & Wesson revolver. Later a suspect found with such a weapon is arrested and the weapon submitted for examination. The gun is test-fired and the bullet compared to the bullet found during the autopsy. The examiner finds that the minute striations on the bullet caused by irregularities on the inner surface of the barrel of the revolver, match the markings on the bullet recovered from the murder victim.
- Another example relates to tool marks. The microscopic nicks and irregularities or cut marks on the jaws of a bolt cutter found in a suspects car was used to cut an identical lock as was cut during the course of a burglary at a lumber yard. The first lock was found to contain the same marks as on the lock that was cut to allow access to the lumber yard.

C. Questioned Documents Examination

A Questioned Documents Examiner examines handwriting and typewriting to ascertain the source or authenticity of a questioned document. His efforts involve both visual and microscopic comparisons to uncover all effort designed to change the content or meaning of a document, including reconstruction of written contents of charred or burned paper and indented writings on a pad of paper.

The normal handwriting of two different individuals has never been totally and exactly duplicated. Individual variations exist in angularity, slope, speed, pressure, size, letter and word spacing, connections and writing skill in addition to margins, spacing, alignment and so on.

Variations in typewritten letters occur as a function of the user and damage to the machines moving parts. Vertical alignment and spacing of the characters, defects in each typeface, pressure variations and other individualizations all combine to enable the Examiner to make comparisons between a given typewriter and the questioned document, and between samples of a given persons handwriting compared to the document in question. The Examiner will often use microphotography with a comparison microscope to produce photo enlargements to compare parts of the questioned document with perhaps a suspect's handwriting or typewriter.

D. Forensic Serology

Forensic Serology involves the analysis of body fluids, such as blood, semen, and saliva to attempt to limit the population of the source of such fluids found at a crime scene. A major key to limiting the source population is through blood grouping and identification of certain enzymes within the blood. Samples of saliva, such as found on cigarette butts and toothpicks may yield information about the blood of the individual. Identification of seminal stains on clothing and swabs may also yield information about the blood type of the individual involved, thereby limiting the population to only those persons with a certain blood identification. For example:

- A suspect is in custody following a stabbing. He has what appears to be blood stains on his clothing. The stained clothing should be submitted for examination by the evidence collector, along with known blood specimens from both the suspect and the victim. Serological examinations may reveal whether the blood stains on the clothing could have originated from the suspect, or the victim, or possibly another source.

- Stains are noted on a handkerchief in possession of a rape suspect. Analysis in the laboratory shows them to be seminal stains containing intact spermatozoa as well as two blood stains. The seminal stains are further analyzed and found to be from Group A which matches the suspect who is a secretor. The blood stains are determined to be group O, however, which differs from that of the victim.

E. Forensic Chemistry

Forensic chemistry involves the analysis and subsequent identification of unknown substances. Although testing of substances thought to be illegal drugs in terms of identifying the drug and its relative purity occupies an extensive amount of time of the Forensic Chemist, he can also perform other chemistry-related analyses such as identifying trace amounts of an accelerant from a suspected arson fire.

F. Trace Evidence Examination

Trace Evidence refers to the often very small items such as human hairs, fibers, paint chips, bits of broken glass, soil and similar items that are transferred between individuals and objects during a crime. If recovered, they can often corroborate other evidence developed during the investigation. Although in most cases trace evidence cannot by itself provide positive identification of a suspect, the results of a laboratory examination may narrow the origin of the minute bits of trace evidence to a group that includes the suspect, such as:

- A suspect with brown hair is arrested near the scene of a rape. His shirt has foreign hair and fibers on the shoulder. The blond hair on his shirt is

obviously different from his own. The foreign fibers appear to be those commonly used in rugs. It is determined by laboratory analyses that the hair could have come from the victim's head, and the nylon could have come from the rug at the scene of the rape.

- A burglary suspect is caught outside a building where entry was gained through the wall. His clothing is submitted for examination. Microscopic particles of brick, plasterboard, paint and fiberglass insulation found on his clothing match the corresponding materials from the building. It is unlikely that such a combination of materials would be from any other source than the burglarized building.

G. Fingerprint Examination

The Fingerprint Examiner attempts to match fingerprints found at a crime scene with the inked impressions of fingerprints by studying the individuality of their ridge characteristics. Acceptance of fingerprint evidence by the courts rests upon the assumption that no two individuals have identical prints, which is substantiated by the many millions of individual prints that have been classified throughout the world, and barring accidental or surgical removal of the finger, that fingerprints do not change during a person's life.

Matching of fingerprints involves the type, number, and relative location of the ridge characteristics, including the ridge endings, bifurcations or divisions of the ridge, and some that form enclosures. These are collectively referred to as "minutae."

The work of the Examiner also includes elimination of individuals as suspects, establishing the identity of a

deceased person through their fingerprints, conducting training sessions for law enforcement officers and testifying as an expert witness in court. The Examiner will also utilize photographic enlargements to demonstrate to the court how comparisons are made and identification effected.

A major goal of the Examiners is to be able to identify fingerprints found at a crime scene. However without a suspect the tedious manual matching of latent prints from a crime scene to inked impressions on ever increasing number of fingerprint cards effectively precludes the use of latent prints as a significant tool for the investigator. Within the last few years, several jurisdictions nationwide and some foreign countries have purchased an automatic fingerprint identification system using minutae-based technology which holds considerable promise as an aid to the fingerprint examiner. Funding for such a system in Alaska was appropriated by the 1982 Legislature.

H. Photography

The Photographer in a crime laboratory requires considerable artistic, creative, and special technical skills, independent interpretation of equipment needs and techniques. He makes contact and projection prints, enlargements, slides, transparencies, overlays, and cuts and edits film. Forensic photography includes accident scene coverage, photographing various aspects of a crime scene using specialized techniques such as close-up photography to record small items of trace evidence including fibers and particles, tire and boot impressions, and related items. He may use special photographic techniques to record fingerprints, utilize other special techniques for surveillance work and generally respond with appropriate equipment and techniques to whatever situation is confronted.

The foregoing are the task skills of a larger Forensic Laboratory. They may involve one or more specialists within each field depending upon the type caseload experienced in the region the lab serves. Smaller labs will have correspondingly smaller staff and capabilities reflecting smaller number of clientele and availability of resources.

V. IMPROVING FORENSIC SERVICES IN ALASKA

This section - the largest in the plan - deals with the many perceived inadequacies with the present level of forensic services in Alaska by addressing each of the aspects that comprise a full services laboratory, initially describing the existing situation and problems and then presenting recommendations to solve these problems. (For ease in reference all the recommendations have been single spaced). Some problem descriptions relate to forensic disciplines and how they can be initiated or improved, while others deal with the internal administrative aspects needed for a successful crime laboratory. All, however, have a substantial bearing upon improving forensic services in Alaska.

A. Additional Forensic Skills

At present, the lab has three chemists whose time is devoted almost entirely to drug and alcohol analyses, although the senior chemist can perform serial number restoration, limited serological tests and some arson related work. Four other personnel perform fingerprint work, another handles photographic work, and four clerical personnel provide support services, including evidence storage. Beyond the fingerprint and photographic services, the existing laboratory is essentially a drug identification facility rather than a broadly based forensics laboratory.

Law enforcement agencies, judges and prosecutors throughout the state desire a far broader array of analytical expertise. Interestingly, the needs of smaller police departments initially appeared different than their more urban counterparts. Their interests are primarily in fingerprints, drug testing, photography and questioned documents while the larger departments, State Troopers and

prosecutors want the additional expertise of serology, toxicology, identification of hairs and fibers, firearms and tool mark examinations. The two views are actually compatible when one considers that the larger departments experience the more complex and serious crimes, which by contrast occur only infrequently in the smaller towns. In addition, the smaller departments often call upon the State Troopers for assistance when major crimes or complex problems arise.

The result of the lack of greater forensic capabilities in the laboratory, the familiar long turn around time to receive test results from the FBI, and general lack of knowing where to turn or what else to do has all acted to dampen the importance of physical evidence. Many times, police officers commented that they don't send items to the FBI because of the delay involved, and their desire to not further contribute to the backlog problem by requesting laboratory analysis in "minor" cases. As the result, one may conclude that lack of in-state forensic capabilities results in the less than effective use of crime scene evidence, particularly in the more routine cases.

The decreasing reliance upon analysis of crime scene evidence, for numerous and varying reasons and the very narrow range of services available in-state has in turn contributed to a decrease in appreciation at the local level of the value of forensic services. In part, this may be traced to a lack of training that should be afforded by a full services lab, as well as not having a broader range of services available. Thus not only does law enforcement not really have access to forensic services, they are also experiencing a decreasing realization of the value of those services.

Another situation encountered in the field is the lack of any usable data and statistics to determine the extent of

need for additional forensic skills by the law enforcement community. Neither police or prosecutors could quantify their relative needs. They could offer only "gut level" assessments, such as "we really need a ballistics expert", and " I hope you can get a questioned documents examiner because we're really having a problem with forgeries". Or, "the lab could really help us in traffic investigations by obtaining a Trace Evidence Technician", and similar observations.

A review of statistics kept by the laboratory are not particularly useful because they cannot reflect the impact that will occur in the future as the result of expanded forensic capabilities and services, a professional directions, and of training offered to the law enforcement community in the techniques and values of forensic examinations.

Notwithstanding the foregoing, several conclusions can be made:

- Although current field and laboratory data are not adequate to determine the extent of need in terms of the number of criminalists needed in a given discipline, there is general agreement on the type of expertise needed.
- Similarly, current data from the lab showing tests performed on an agency by agency basis are not going to be good predictors of when the quantity of specialized laboratory tests would justify the hiring of additional laboratory personnel.
- The fact that additional, new, forensic expertise will become available along with overall laboratory improvement and a new facility will in itself generate additional requests for laboratory services.

- Conducting training relative to crime scene analysis and the value and potential of forensic tests to the investigator, will have the effect of raising the visibility of forensic services, and consequently an increase in laboratory services.

One may safely conclude that the potential need for a full services laboratory is substantially out of proportion to the level of work now being performed within existing disciplines.

Recognizing the inherent difficulties posed by lack of empirical data, and the consequent need to rely upon subjective assessments, the following recommendations are made pertaining to additional forensic skills within the laboratory:

1. Develop Additional Forensic Disciplines

Based upon a surprising degree of uniformity from within the law enforcement community it is recommended that three additional criminalists be hired at the earliest possible time to handle forensic examinations in:

- a. Serology
- b. Trace Evidence
- c. Firearms and Tool Marks Identification

The development of serological examinations is particularly important since unlike most physical evidence - hairs, fibers, bullets, etc. - blood and other biological tissues and body secretions routinely encountered in violent crimes, continue to degrade even after collection. Physical and chemical changes in aged blood and bloodstains can preclude the possibility of successful analysis. Since these changes cannot be reversed, it is imperative the analysis of serological evidence be conducted as soon as possible if the most information from a given specimen is to be obtained. In addition, some instrumentation is available in the existing lab and assuming space could be made available, serological examinations could begin soon. Moreover the chemist of the states Fish and Wildlife Laboratory in Palmer has had extensive serological experience and can provide technical assistance and consultation.

Although there is substantial interest in Toxicology as well, the state presently is using the services of the Fairbanks Memorial Hospital to perform examinations on body fluids. Although some logistical problems occur, there is in-state capability to perform these tests, whereas there is no facility for serological tests in Alaska. Thus those needs must all be performed out-of-state. In addition, any development of a Medical Examiner system in Alaska would have to include toxicological capabilities, which may be available to the Crime Laboratory. These new criminalists should be hired consistent with the recommended qualifications contained in this report.

2. Hire Additional Criminalist for Forensic Chemistry

Based upon the current forensic chemistry workload and the anticipated increase in requests for drug testing arising from increasing suppression efforts against illicit drugs, there is the need to provide an additional Forensic Chemist. If the three personnel in the new forensic fields have experience in drug analysis they could assist in drug testing while their specialty workload increases. If the individuals hired do not have that experience, it will be necessary to hire another Criminalists for drug testing. The hiring of the forensic chemist could be delayed if one or more of the three Criminalists has drug testing experience. By FY 85, it is anticipated that the serology, firearms and tool marks and trace evidence workload will have increased beyond the point of any continued help in drug testing.

3. Determine the Extent of the Need for Questioned Documents Examiner

There is a need for a Questioned Documents Examiner by numerous law enforcement agencies, although such need was seen as less pressing than the need for a Toxicologist/Serologist, Trace Evidence and Firearms Identification and Tool Marks Examiner. In addition, the use of a highly respected individual from Seattle has also assisted Alaska in major cases. On the other hand, the fact that the Questioned Documents Examiner in the Anchorage Police Department is working full time on just local matters seems to indicate that a serious need exists.

It is therefore recommended that the laboratory undertake an effort to better determine the extent of this need. It may be that a Questioned Documents Examiner should be hired before the Trace Evidence Examiner, or the Firearms Identification and Tool Mark

Examiner. Regardless of the sequence of hires, it is reasonable to project that all these skills will be needed by the laboratory within five years.

4. Hire Administrative Assistant

With the hiring of additional professional personnel the hiring of an experienced, full-time laboratory director who may also perform forensic tests, and the anticipated increase in the number of agencies being served by the laboratory, there will be a substantial increase in administrative and clerical work to be completed with a minimum of administrative oversight and direction. It is recommended an Administrative Assistant be hired who would serve as a personal assistant to the director, performing and supervising numerous interrelated administrative and clerical duties directly concerned with the work of the Director and the image of the laboratory. The wide range of future activities the Director will be involved in requires he have a staff member who is aware of everything that is happening in the laboratory and outside the laboratory that relate to it.

It is recognized that the present space limitations in the existing laboratory will preclude the immediate hiring of all the additional laboratory staff as recommended in this section. While some additional space can be reclaimed by cleaning out one evidence room and by possibly co-locating the OL Photo section with the White Collar Crime Unit, space problems will still remain.

5. Part-time Internships

It is recommended that the Laboratory Director contact the University of Alaska in Anchorage and Fairbanks to determine the feasibility of developing an internship program involving natural and physical science majors working part-time in the laboratory to help fulfill their course-work requirements. Appropriate security measures would need to be developed.

Initial contact with the Director of the Criminal Justice Center in Anchorage and his inquiries within the University system resulted in very positive response and the feeling that a student internship program involving a nominal stipend for work in the laboratory could be developed. Such assistance could be part of an Independent Studies Program within the University, or to complement existing course requirements.

The advantages of being able to obtain perhaps half day assistance from a graduate biology student in forensic chemistry could be significant, not only in terms of reducing the workload, but also to familiarize students with the field of forensics and possibly developing interest in later employment as a staff member in a crime laboratory.

6. Identify External Resource Agencies

Based upon the expressed need for other less frequent, often highly sophisticated forensic skills that cannot be justified in-house, it is recommended that the lab develop a directory of specialized facilities and individuals it wishes to employ from time to time. These facilities and individuals must have their credentials verified so that every test of whatever nature can be submitted immediately with every confidence that the personnel and procedures utilized will reflect the highest order of professionalism and that the tests will be performed and returned in a timely manner.

Once the directory has been completed, it may be necessary to make arrangements with the Department of Administration whereby the laboratory is authorized to deal directly with these external agencies, if the expense exceeds a certain figure.

Completion of determination of external resource agencies and personnel will hopefully enable the laboratory to develop procedures whereby client agencies can ship evidence directly to the specialty agency rather than shipping to the laboratory, which then reships to the specialty agency. The existing procedure is subject to extensive field criticism since it entails a longer time to receive test results and extends the Chain of Custody.

Present laboratory policy is apparently a manifestation of lack of expertise in the field in evidence handling. This problem should be met by the impact of the training team as described elsewhere. When lab concerns have been met, it is recommended that a procedure be developed whereby the requesting agency can send the evidence directly to the testing facility, perhaps through a telephoned authorization from the laboratory, or other means.

B. Satellite Laboratories

Within the concept of a full service forensics' laboratory is the idea of one or more satellite laboratories elsewhere

in the state to address the most numerous types of local requests for assistance - by any calculation, fingerprints and drug testing. The work level for drug testing in the existing laboratory already keeps the three forensic chemists at work full time. Existing and planned increases in identification of illicit drugs will increase the lab work load. Fingerprint personnel in Juneau now devote full-time attention to routine processing of fingerprint cards and associated administrative work, as well as training and the priority, on-scene response to crime scenes. The Anchorage fingerprint personnel are essentially in the same situation.

With the addition of the computerized fingerprint identification system, estimated to be completed by January 1984, there will be an increase in the fingerprint associated workload due to inputting the latent prints in the automated system and the comparisons required as the result of the respondents identified by the system. Up to 15% of the latent prints entered into the system are expected to result in a "hit". In addition there are numerous latents on file from earlier crimes awaiting system completion so that they can be entered. One may readily expect that additional court testimony by the examiners will be required as the result of increased identification of latent prints.

The question concerning this anticipated increase in workload is whether it should all be handled within the laboratory in Anchorage, or whether the advantages of regionalizing at least the most common services would be the better approach.

7. Needs Assessment

It is recommended that planning efforts be undertaken leading to the possible establishment of a satellite laboratory in Fairbanks and Juneau. Planning efforts

should include determination of drug testing and fingerprint identification workload that could be handled on a regional basis in those two cities, the impact of the automated identification system in Anchorage, and other factors that would justify establishing one or more regional laboratories of limited services and a date to open such satellite facilities. Cost estimates of personnel, laboratory space, equipment, and related information would also have to be determined.

On the basis of information available now, it appears that fingerprint identification would be required first, followed by forensic chemistry to handle regional drug testing. Two latent Fingerprint Examiners would be required in each satellite laboratory in order that each can verify the conclusions of the other regarding identification of latent fingerprints. Similarly two Forensic Chemists will be required in each satellite laboratory.

Planning should also include provision whereby the transmittal of fingerprint cards from Anchorage to the satellite laboratory(s) can be accomplished more expeditiously and easier than is now the case, which involves taking four photographs of each card.

A clerk-typist would also be required in a satellite laboratory. If the satellite laboratory can be initially be co-located with a local police department or Trooper Detachment, it may be possible to obtain existing space and clerical assistance there, until the workload requires separate facilities and support personnel.

C. Fingerprint Examination

The present crime laboratory has four Latent Fingerprint Examiners. Two, including the Supervisor of the Section are located in Juneau and the other two in the laboratory in Anchorage. Anchorage services all of the state except southeast which is serviced by the Juneau personnel.

Fingerprints from all police and correctional agencies in the state plus applicants for 18 different job categories from Janitors to Attorneys are taken on two "10 print cards," which are forwarded to the Juneau based fingerprint

examiners where extensive processing occurs. In the case of offenders, one card is forwarded to the FBI for classification and entry into the national fingerprint files. The second card is maintained Juneau and file jackets and index cards are prepared. Case dispositions are entered into AJIS. Rap sheets are kept current. Duplicates are screened out and statistical data is developed. Information relative to job applicants is sent to the requesting agency. Rap sheet information is passed on to police and prosecutors, including inquiries from the "lower 48," and related clerical functions. A significant amount of clerical processing is performed by the two Juneau fingerprint examiners, including substantial typing.

All four latent print personnel examine evidence obtained at crime scenes to determine the presence of fingerprints as well as comparing latent prints with inked impressions of fingerprints of a suspect, if a suspect exists. Persons with a valid reason to be at the scene are also examined as suspects. On occasion, they are called to assist in obtaining fingerprints at a crime scene. They also print the fingers of dead bodies, conduct training courses, and testify in court.

Since the 10 print cards are all on file in Juneau, it is an easy matter for the Juneau latent examiners to compare crime scene prints with the fingerprint card of a suspect. However, the Anchorage based examiners whose case load averages about 60 per month compared to the 15 or so per month in Juneau, must call or teletype the Juneau examiners when they need to make a comparison with the inked impressions on the fingerprint card. To do so, high resolution polaroid photographs (four for every card at \$1.75 for each photograph) are made in the darkroom in Juneau by the latent examiners and sent to Anchorage. The process also costs the price of a phone call if used, plus a minimum of two or three days for delivery.

The examiners also photograph latents developed on evidence in their darkroom as well as prepare enlargements of latent and inked prints to demonstrate how comparisons are made for use in court. The Juneau Examiners also prepare duplicates of mug shots in their darkroom, thus duplicating to some extent the function of the OL photo section in the Anchorage laboratory.

A by-product of having the fingerprint section supervisor in Juneau is that when the Laboratory Director, who is in Anchorage, wants to contact the supervisor about an issue relating to Anchorage latent print personnel, the Director must contact the supervisor in Juneau, who then contacts the Anchorage personnel about the matter. Predictably the Director has gone directly to the Anchorage personnel, thus by-passing the section supervisor, and creating a management problem.

Collection of fingerprints in Alaska began essentially at Statehood. Initially very few were involved. By the mid 1960's, only 50 or so fingerprint cards were being received each week. Ten years later, the flow of prints had increased by five-fold to about 250 per week. By 1980, this had increased to 350 per week until the present flow of almost 400 per week was reached. This is expected to increase to about 600 in 1983.

Although an estimated 90,000 fingerprint cards are on file, (or 900,000 separate prints) these are of little practical value to an investigator who is successful in raising latent prints at a crime scene if he cannot develop a suspect whose prints he can have compared with those prints found at the scene. The only way, at present, to compare latent prints found at the scene with those on file is to manually examine each file print against the latent. Although successful in a few instances in years past, it is

increasingly impractical to do as the number of file prints increases. Thus there are several thousand latent prints that have been obtained at crime scenes over the years that have simply been filed in both Juneau and Anchorage. The possibility of computer entry and matching of these numerous latent prints with the thousands of fingerprint cards on file in Juneau holds the promise of solving hundreds of crimes throughout the state.

There is general agreement by the examiners that the current level of training for Troopers and municipal officers at the Sitka Academy is inadequate. Presently, four hours is allotted to fingerprint related training which permits little more than teaching fingerprint patterns and taking and developing prints. In some cases only two or three hours have been available, whereas eight hours is recommended as a minimum by the section supervisor.

A major need for both state and local police agencies, plus correctional institutions, is for training to take higher quality fingerprints. Although in the past, inadequate prints on the 10 print cards were sent back to be redone so that they could be classified, this is no longer done. All prints are now filed but those that cannot be classified are so noted. This is a problem of some magnitude. Approximately one out of six prints received is unable to be classified.⁸ This will be a significant problem when the Automated Fingerprint Identification System is installed in Alaska, since the ability of the computer to match the ridge characteristics requires that these aspects be clear and identifiable. The greater the input into the data base of smudged or otherwise unclear prints, the lesser the probability of matching the latent print to the file prints within the data base.

⁸Data Compiled by Robert LaPoint, Fingerprint Section Supervisor, AST, Juneau for the year 1981.

In addition to the need for taking better prints, there is the related need for training of both state and local law enforcement officers in the handling, packaging, and shipping of items sent to the laboratory for latent print searches.

A problem expressed by some in the field is the less than total acceptance of results of fingerprints being developed on items of evidence in the laboratory. Complaints seem to arise from items being sent to the laboratory that the officers "know" have prints, but too often the results of the laboratory are "negative". To some officers that term means there was virtually nothing on the evidence, which is contrary to what they perceive to be the case. Hence the problem.

The following are recommendations pertaining to fingerprints:

8. Relocate Juneau Fingerprint Section to Anchorage Laboratory

Since half or more of the states population is located in the Anchorage bowl area, the Anchorage laboratory would be the most logical and reasonable place for the states fingerprint section, particularly when the automated identification system is to be implemented. It is therefore recommended that the fingerprint supervisor and the Latent Examiner I, the clerical positions supporting the Juneau fingerprint section and all fingerprint records and files be moved to the crime laboratory in Anchorage. Since the dispatchers in Juneau now assisting the fingerprint section cannot be moved, it may be necessary to hire a clerk in Anchorage for this purpose. An additional advantage of this move will be to physically locate the fingerprint supervisor in the same facility with all his staff, resulting in better overall control by the supervisor and the Laboratory Director.

9. Develop Implementation Plan for Automated Fingerprint Identification System

A further recommendation is that a plan for implementation be developed by the fingerprint section supervisor to identify the tasks to be completed with

the FY83 appropriation, the amounts of funding needed in future years and the tasks to be completed in each year until the system is complete. The implementation of the system should also include periodic information going to all potential users to keep them apprised of system progress.

10. Personnel for the Automated Fingerprint Identification System

The potential for assistance in crime investigations by being able to identify a latent print at a crime scene with prints on file to yield a suspect is obviously significant. In addition there are many latent prints on file from previous crimes that might clear up many more crimes. The latents could be identified to the inked print file.

The Automated Fingerprint Identification System (AFIS) which has been approved and funded by the 1982 legislature, holds the promise of substantially improving law enforcement in Alaska through the identification of latent prints with those on file.

Encoding of Ten-Print cards and latent prints will be required in order to make the automated system operational. These tasks will require additional personnel. Latent prints are manually encoded and require the knowledge of a Fingerprint Examiner to make accurate ridge detail determinations. Although the encoding of the 10-print cards does not require the background of a certified Examiner, the automated system would benefit most by hiring only certified personnel. To input the system data now on hand, and to input continuing data, and to generally address additional work generated by the automated system, it is recommended that two additional Fingerprint Examiners be hired.

11. Improve Quality of Fingerprints

Upon implementation of AFIS, there will be the need to improve the quality of fingerprints obtained from some of the local police departments and jail facilities. According to the supervisor of the Fingerprint Examiners, one out of six "10 print" fingerprint cards are unable to be classified. The Troopers should offer training courses in obtain quality prints.

12. Explain "Negative" Response

To attempt to build confidence in the field regarding latent prints on items of evidence submitted to the laboratory, it is recommended that the present

terminology of "NEGATIVE RESULTS" be explained somewhere on the standard response format, as not necessarily meaning "nothing", but rather that it could mean that a print was developed but lacked the number of identifying points needed for use in court; that a print was obtained, but too smudged to be of value or whatever. It is expected that increased training efforts, as explained elsewhere, and better rapport between the laboratory and the field will also ameliorate this problem.

13. Upgrade Academy Fingerprint Training

Fingerprint personnel in the laboratory consider the various training courses at the Sitka Academy to be inadequate. The time for fingerprint training should be increased to the minimum required time of eight hours rather than the four hours or less as is the case now and include a mock crime scene for developing latent prints. This will also permit greater time for individual instruction. The Anchorage police department currently devotes six hours to fingerprint training at their academy.

D. Photography

At present, the Photography Section of the Crime Laboratory is a one-man operation. The photographer performs forensic related tasks as well as substantial non-laboratory related tasks.

As the result of his many duties the photographer can do little more than receive and record information pertaining to film received from the field, (which is picked up twice weekly for developing by a local fast-photography service) return the film to the field after commercial development, inventory and order supplies, respond to crime scenes upon request, and mix and replace photography chemicals daily that he uses for custom printing, (photographs larger than 3" x 5"). Regular 3" x 5" photographs are printed commercially by the same photography firm. It is estimated that he handles some 1500 to 2000 rolls of film each year. Commercial processing cost \$2.50 per roll for developing.

Turnaround time to receive developed film in the field varies from three to seven days plus mailing, reflecting the twice weekly pickup by the commercial firm, and whether or not the photographer is away from the laboratory which may cause further delay in return of the film.

The lab does not process all film used by the State Troopers. Detachments and Posts often utilize local photography shops for processing film, and in many cases this is to their advantage. A commercial 24 hour service available in the larger urban areas is a more expeditious way to process film than to send it by mail to the laboratory, which under the best of circumstances, will almost always require a minimum of 24 hours by mail each way. In addition a local shop is preferable if negatives must be reviewed prior to enlargement, rather than sending film to the laboratory for developing, then returning it for review, then sending back to the laboratory for the enlargements, and then finally the lab sending them back to the officer. In other circumstances, however, such as at remote bush outposts, it may be most expeditious for the laboratory to process their film.

Unfortunately the total number of rolls of film used annually by law enforcement in Alaska is not available to determine whether the expense of commercially processing the film would justify a large processing operation within the Laboratory, which might also reduce existing turnaround time to receive processed film.

When the photographer is in the field, on vacation, or otherwise not in the Laboratory, a clerk receives and disperses the film, but no custom printing is done, and even then, delays may occur in shipping and receiving film.