

**4 / 9 / 09**  
**UPDATE :**  
**STATE**  
**CRIME**  
**LAB**  
**PROPOSAL**

<target><bill></bill><subject>4-9-09 UPDATE STATE CRIME LAB  
PROPOSAL</subject><comm>HFIN26</comm></target>

**USER AGENCY**

State of Alaska Department of Public Safety (DPS)  
Alaska State Scientific Crime Detection Laboratory  
Anchorage, AK

**PROJECT MANAGEMENT**

State of Alaska Department of Transportation  
and Public Facilities (DOT/TPF)  
Statewide Facilities Branch  
Anchorage, AK

**DESIGN TEAM**

Prime Architects  
Public Safety Associates Architects  
Structural Engineers  
Mechanical/Electrical/Plumbing

Livingston Stone Inc., Anchorage, AK  
Madison Wilson, Lewis Inc., Houston, TX  
CSC Middleton, Inc., Anchorage, AK  
AMC Engineers, Anchorage, AK

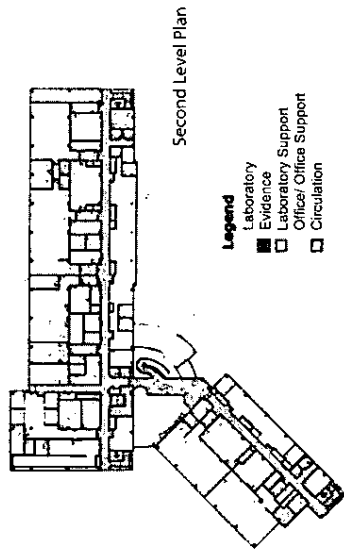
**CONSTRUCTION TEAM**

Construction Manager/  
General Contractor: Nease Construction, Inc., Anchorage, AK  
Mechanical/Contractor: Udelhoven, Inc., Anchorage, AK  
Electrical/Contractor: Mega-Wire Electric, Inc., Anchorage, AK

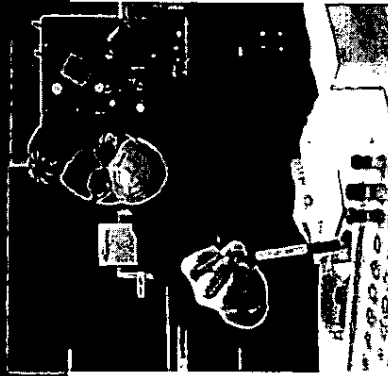


**Why is the timing of funding urgent?**

The new crime lab is in the design phase, with design completion scheduled for March, 2009. The site work design is completed and is "shovel-ready"; building construction could start summer of 2009 if funding is approved during the current 2009 Legislative session. Occupancy is scheduled for the Fall of 2011. Appropriated funding to date provided for design and site work, with a remaining \$94M still needed to complete this project on time. Any delays in funding will add additional costs to the project. A one-year delay will add \$7M to the project's cost.

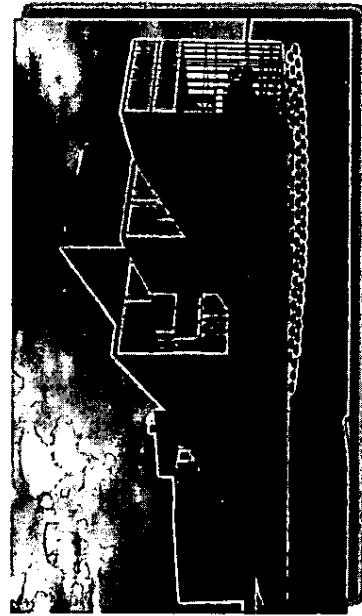
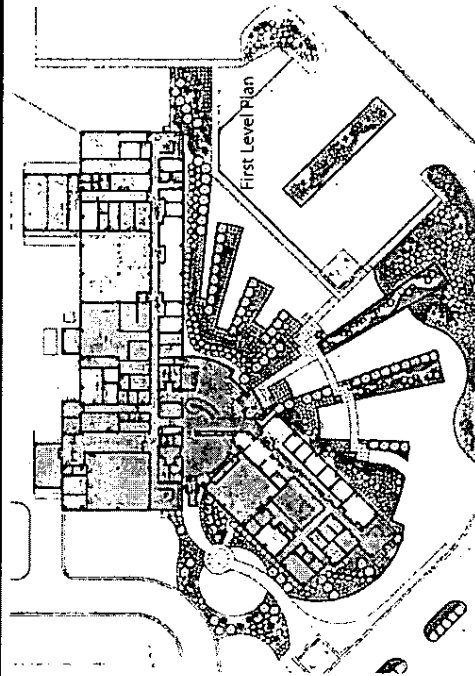


**SAFETY, SECURITY AND JUSTICE**



"The bottom line is that average citizens are not concerned about forensic science until they, or someone they love, become the victim of a crime. As a result, crime laboratories do not receive the public attention and support that they deserve. This negligence results in low staffing, low salaries, outdated equipment, and eventually, high backlogs."  
~ Crime Lab Report, 2008 (www.crimelabreport.com)

**ALASKA STATE SCIENTIFIC CRIME  
DETECTION LABORATORY**



## NEW ALASKA STATE SCIENTIFIC CRIME DETECTION LABORATORY

### How will the new Crime Lab affect livability in Alaska?

Department of Public Safety (DPS) personnel will be equipped to perform their services efficiently. Criminals will no longer be emboldened to repeat burglaries, rapes, and violent crimes without apprehension. The forcible rape rate in Alaska should decrease while the safety of our roads increases (toxicology tests will be performed here, in a timely manner). Home and vehicle break-ins should decrease as investigations of these crimes lead to more convictions. In addition to being and feeling safer, Alaskans will reap near term benefit from the economic stimulus of this large construction project.

### Why do we need a new crime lab?

The existing Crime Lab was built in the early 1980's and is 19,200 SF, designed to accommodate up to 20 staff. Current staff is 39. Serving the entire State of Alaska, the lab is unable to keep pace with caseloads, emergent forensic technologies, and requisite staffing levels. These issues have a direct and measurable effect on Alaska's crime rate, livability and economy. Recent legislation adds to the caseload and storage issues of the lab: HB90 generates an additional 6,000 samples per year; The pending Innocence Project legislation will require retaining all biological evidence; Anonymous Reporting of Sexual Assaults requires storing sexual assault kits indefinitely. Alaska holds the unfortunate statistic of having the highest forcible rape rate in the U.S. Due to the current lab's storage and caseload issues, rape cases that do not have an immediately-identifiable suspect go to the bottom of the pile, adding to the probability that these cases remain unsolved.

Due to the lack of space needed to process crime scene evidence and a backlog of cases, law enforcement officers no longer collect burglary crime scene evidence. The lab's scientists have been forced to prioritize which cases to investigate and must limit this to serious violent crimes.

A study by the Urban Institute Justice Policy Center cited a 40% likelihood that burglaries and non-violent crimes are committed by someone who has already committed a violent crime or even murder, or an 80% chance that they will eventually commit a violent crime. 40% of these non-violent crime scenes could have evidence that would lead us to a match with evidence from a serious assault, rape or murder.

Although current lab staff are highly productive, the existing lab's limited space inhibits the scientific and technological growth required to keep pace with current caseloads. This results in unsolved crimes remaining unsolved due to case prioritization. New DNA forensic technologies are emerging, which would allow old, unsolved cases to be reworked. This technology could allow the investigation of 500-700 existing unsolved cases, but increases the caseload of the existing lab beyond current capacity. In addition to rape and burglary evidence not being submitted, over approximately 300 toxicology cases per year are not submitted to the lab for analysis (and possible later prosecution). Alaskan defense attorneys vigorously challenge the collection and processing of forensic evidence. All of these problems, unalleviated, will get worse with time. Funding is needed now to move this project forward and ensure safety, security and justice for all Alaskans.

### How will the new crime lab improve Alaska's criminal justice system?

The new full-service lab will contain nine forensic sections including three new-to-Alaska sections: Toxicology, Question Documents and enhanced DNA Analysis. Unsubmitted evidence will be submitted and processed. The new lab will include training classrooms so that officers from around the State can learn cutting-edge crime scene evidence collection procedures. The facility will accommodate future changes in forensics, improve turnaround time on submitted cases, and allow room to grow as the state's population grows beyond the year 2020. The site will also allow for building expansion, without relocation, after the lab reaches its capacity.

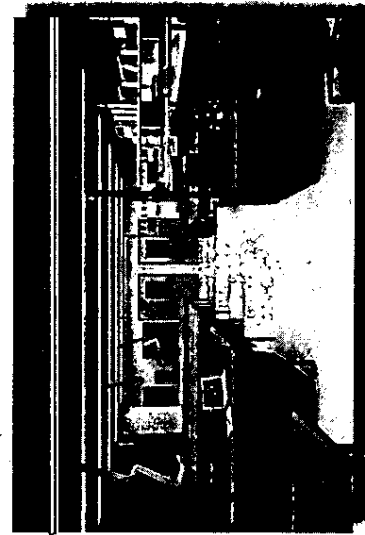
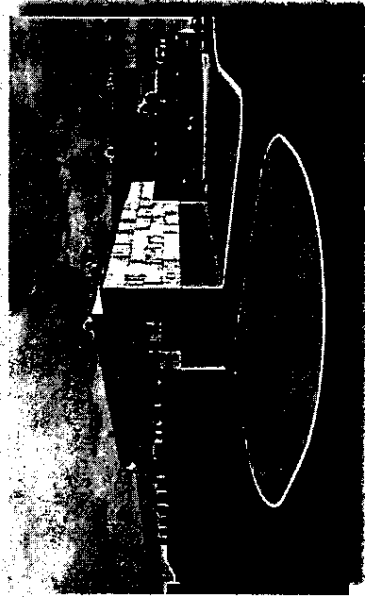
### Size and Cost of the new lab

Our crime lab provides services to the entire state of Alaska. Labs in the lower 48 are often part of a multi-lab grouping that overlap service areas and share the workload, thereby able to function with individual smaller-sized labs. In order to provide Alaskans with a fully functioning, self-sufficient lab, we need space for services which are outsourced to the lower 48 or not done at all. The new lab will analyze question documents, trace and toxicology analysis, YSTR/DNA, and Mitochondrial DNA in-house. Trace and QD are currently sent to the FBI; turnaround can take years. Outsourced toxicology takes four months and requires experts from the outsourced labs to be flown to Alaska to testify in criminal trials, at a cost of approximately \$2,000 per day. The crime lab's goal is to process 90% of crime scene evidence within 30 days. Outsourcing costs us money (financed through a limited scope, dwindling grant) and delays during which the guilty escape conviction and the innocent may languish in legal limbo.

A full-service lab requires discrete forensic lab spaces staffed with corresponding lab staff. Several of the labs within the new crime lab will be staffed part-time with cross-discipline-trained staff. For example: trace evidence, a new service in the new lab, requires a discrete lab space, but will be staffed with analysts from other sections, causing a zero net effect to actual projected staff count.

Climatic conditions in Alaska directly affect construction costs. More space is required to accommodate oversized HVAC and heating equipment, space for entry/exit vestibules, evidence drop-off/sallyport, a vehicle examination sallyport, and additional exterior wall thickness.

Alaska is considered a "high-growth" service area, with projected average population growth to the year 2020 at 19%, well above the rate for similar population areas in the lower 48. Growth is anticipated to continue at 19% to the year 2020, without the gas pipeline. Add the pipeline, and growth will be well beyond the projected average 19%.



**Crime Laboratory Expansion**

**FY2007 Request: \$4,800,000**  
**Reference No: 41600**

**AP/AL:** Appropriation  
**Category:** Law and Justice  
**Location:** Statewide

**Project Type:** Construction

**House District:** Statewide  
**Estimated Project Dates:** 07/01/2006 - 06/30/2010

**Contact:** Dan Spencer, Director, Administrative Services  
**Contact Phone:** (907)465-5488

**Brief Summary and Statement of Need:**

This project will provide funding for the design phase of a new 38,000 square foot Scientific Crime Detection Laboratory in Anchorage.

The current crime lab facility was constructed in 1986 to house the state's forensic laboratory functions that serve all law enforcement agencies in the state. The facility is no longer physically capable of housing the personnel and instrumentation necessary to meet the state's forensic analysis demands. This project is designed to address current and near-future space requirements while at the same time enhancing the lab's ability to contribute to the successful prosecution of criminals in Alaska.

<b>Funding:</b>	<b>FY2007</b>	<b>FY2008</b>	<b>FY2009</b>	<b>FY2010</b>	<b>FY2011</b>	<b>FY2012</b>	<b>Total</b>
Gen Fund	\$4,800,000						\$4,800,000
<b>Total:</b>	<b>\$4,800,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$4,800,000</b>

<input type="checkbox"/> State Match Required	<input type="checkbox"/> One-Time Project	<input checked="" type="checkbox"/> Phased - new	<input type="checkbox"/> Phased - underway	<input type="checkbox"/> On-Going
0% = Minimum State Match % Required		<input type="checkbox"/> Amendment	<input type="checkbox"/> Mental Health Bill	

**Operating & Maintenance Costs:**

	<u>Amount</u>	<u>Staff</u>
Project Development:	0	0
Ongoing Operating:	0	0
<u>One-Time Startup:</u>	<u>0</u>	<u>0</u>
<b>Totals:</b>	<b>0</b>	<b>0</b>

**Additional Information / Prior Funding History:**

None

**Project Description/Justification:**

This project will provide funding for the design phase of a new 38,000 square foot Scientific Crime Detection Laboratory in Anchorage.

The current crime lab facility was constructed in 1986 to house the state's forensic laboratory functions that serve all law enforcement agencies in the state. The facility is no longer physically capable of housing the personnel and instrumentation necessary to meet the state's forensic analysis demands.

The crime lab is responsible for the statewide breath and blood alcohol testing program which includes maintaining breath testing instruments from across the state and providing the materials and documentation for insuring instrument accuracy and reliability for legal evidence gathering purposes. The lab provides forensic analysis to all local, state, and federal law enforcement agencies in Alaska in the areas of latent fingerprints, firearms, trace evidence, and other criminalistics services, drug analysis, and DNA analysis. Additionally, the crime lab provides crime scene response and courtroom testimony.

**Crime Laboratory Expansion**

**FY2007**

**\$4,800,000**

**Request:**

**41600**

**Reference No:**

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All sections of the lab are experiencing ever increasing backlogs of requests for forensic exams. This is due in part to agencies increasing the number of police personnel and in part to the success of new technologies such as DNA. Both increase the demands on the lab.

This project is designed to address current and near-future space requirements while at the same time enhancing the lab's ability to contribute to the successful prosecution of criminals in Alaska.

**Crime Lab Replacement**

**FY2009 Request: \$100,000,000**  
**Reference No: 41600**

**AP/AL: Appropriation**

**Project Type: Construction**

**Category: Law and Justice**

**Location: Statewide**

**Contact: Dan Spencer, Director, Administrative Services**

**House District: Statewide (HD 1-40)**

**Contact Phone: (907)465-5488**

**Estimated Project Dates: 07/01/2008 - 06/30/2010**

**Brief Summary and Statement of Need:**

This project would fund a new crime laboratory building.

<b>Funding:</b>	<b>FY2009</b>	<b>FY2010</b>	<b>FY2011</b>	<b>FY2012</b>	<b>FY2013</b>	<b>FY2014</b>	<b>Total</b>
G/O Bonds	\$100,000,000						\$100,000,000
<b>Total:</b>	<b>\$100,000,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$100,000,000</b>

<input type="checkbox"/> State Match Required	<input checked="" type="checkbox"/> One-Time Project	<input type="checkbox"/> Phased - new	<input type="checkbox"/> Phased - underway	<input type="checkbox"/> On-Going
0% = Minimum State Match % Required		<input type="checkbox"/> Amendment	<input type="checkbox"/> Mental Health Bill	

**Operating & Maintenance Costs:**

	<b>Amount</b>	<b>Staff</b>
Project Development:	0	0
Ongoing Operating:	0	0
<u>One-Time Startup:</u>	<u>0</u>	<u>0</u>
<b>Totals:</b>	<b>0</b>	<b>0</b>

**Additional Information / Prior Funding History:**

Sec 1, Ch 82, SLA 2006, Page 81, Lines 15-16 \$4,800,000 General Funds

**Project Description/Justification:**

The current crime lab facility was constructed in 1986 to house the state's forensic laboratory functions that serve all law enforcement agencies in the state. The facility is no longer physically capable of housing the personnel and instrumentation necessary to meet the state's forensic analysis demands.

The lab provides forensic analysis to all local, state, and federal law enforcement agencies in Alaska in the areas of latent fingerprints, firearms, trace evidence, and other criminalistics services, blood and breath alcohol analysis, drug analysis, and DNA analysis. Additionally, the crime lab provides crime scene response and courtroom testimony.

The advent of DNA analysis and its use in solving crimes has resulted in establishment of an entire new section, including personnel, instrumentation, and evidence analysis, whose space has to be fit into a facility that was already crowded at best. With new laws requiring large classes of convicted criminals to provide DNA samples, the expansion of interconnected DNA databases nationwide, and significant improvements in DNA technologies, this section will only continue to grow in both importance to the law enforcement community and in its physical space requirements.

Bringing this section into the lab has already forced other sections of the lab into spaces such as the garage and maintenance areas that were previously available for processing large items of evidence such as vehicles and for dealing with large quantities of evidence such as from a major crime scene.

All sections of the lab are experiencing ever increasing backlogs of requests for forensic exams. This is due in part to agencies increasing the number of police personnel and in part to the success of new technologies such as DNA and electronic fingerprint processing. Both increase the demands on the lab.

**Crime Lab Replacement**

**FY2009 Request: \$100,000,000**  
**Reference No: 41600**

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In simple terms, we have outgrown the current facility. The existing space is 18,000 square feet and houses 42 full time employees. The building is at the limits of its ability to house staff and equipment. Without more space, the capacity of the laboratory to perform analyses and meet their desired end result of expanding their forensic databases, such as the Combined DNA Index System (CODIS) database, is limited.

The department has begun site selection and preliminary design work, using funding from a FY2007 capital appropriation. A site within the Municipality of Anchorage has been identified and the department is working with the Municipality to acquire a long-term lease.

**HOUSE BILL NO. 313**

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-FIFTH LEGISLATURE - SECOND SESSION

BY THE HOUSE RULES COMMITTEE BY REQUEST OF THE GOVERNOR

Introduced: 1/16/08

Referred: State Affairs, Finance

**A BILL**

**FOR AN ACT ENTITLED**

1 "An Act providing for and relating to the issuance of general obligation bonds for the  
2 purpose of paying the cost of a scientific crime detection laboratory; and providing for  
3 an effective date."

4 **BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:**

5 \* Section 1. The uncodified law of the State of Alaska is amended by adding a new  
6 section to read:

7 GENERAL OBLIGATION BONDS. For the purpose of paying the cost of design  
8 and construction of a scientific crime detection laboratory, general obligation bonds of the  
9 state in the principal amount of not more than \$100,000,000, if ratified by a majority of the  
10 qualified voters of the state who vote on the question, shall be issued and sold. The full faith,  
11 credit, and resources of the state are pledged to the payment of the principal of and interest  
12 and redemption premium, if any, on the bonds. The bonds shall be issued under the  
13 provisions of AS 37.15 as those provisions read at the time of issuance.

14 \* Sec. 2. The uncodified law of the State of Alaska is amended by adding a new section to

1 read:

2           SCIENTIFIC CRIME DETECTION LABORATORY PROJECT FUND. If the  
3 issuance of the bonds is ratified by a majority of the qualified voters of the state who vote on  
4 the question, a special fund of the state to be known as the "scientific crime detection  
5 laboratory project fund" shall be established, to which shall be credited the proceeds of the  
6 sale of the bonds described in sec. 1 of this Act except for the accrued interest and  
7 premiums.

8    \* Sec. 3. The uncodified law of the State of Alaska is amended by adding a new section to  
9 read:

10           DEPARTMENT OF PUBLIC SAFETY. The amount of \$100,000,000 of general  
11 obligation bond proceeds deposited to the scientific crime detection laboratory project fund  
12 and up to \$6,000,000 in anticipated investment earnings in the scientific crime detection  
13 laboratory project fund is appropriated to the Department of Public Safety to be allocated to  
14 the design and construction of a scientific crime detection laboratory in Anchorage, Alaska.

15    \* Sec. 4. The uncodified law of the State of Alaska is amended by adding a new section to  
16 read:

17           STATE BOND COMMITTEE. If the issuance of the bonds is ratified by a majority  
18 of the qualified voters of the state who vote on the question, the amount of \$500,000 or as  
19 much of that amount as is found necessary is appropriated from the general fund of the state  
20 to the state bond committee to carry out the provisions of this Act and to pay expenses  
21 incident to the sale and issuance of the bonds authorized in this Act. The amounts expended  
22 from the appropriation authorized by this section shall be reimbursed to the general fund  
23 from the proceeds of the sale of the bonds authorized by this Act.

24    \* Sec. 5. The uncodified law of the State of Alaska is amended by adding a new section to  
25 read:

26           ADVANCE PLANNING. The amount withdrawn from the public facility planning  
27 fund (AS 35.10.135) for the purpose of advance planning for the capital improvements  
28 financed under this Act shall be reimbursed to the fund from the proceeds of the sale of  
29 bonds authorized by this Act.

30    \* Sec. 6. The uncodified law of the State of Alaska is amended by adding a new section to  
31 read:

1 LAPSE; REDEMPTION; REIMBURSEMENT. The unexpended and unobligated  
2 balance of the appropriation made in sec. 3 of this Act lapses under AS 37.25.020 and is  
3 appropriated to the state bond committee to redeem bonds sold under this Act. The amounts  
4 expended from the general fund to pay the principal, interest, and redemption premium on  
5 bonds issued under this Act shall be reimbursed to the general fund from the appropriation  
6 made under this section to the extent that the money is not needed to redeem the bonds.

7 \* Sec. 7. The uncodified law of the State of Alaska is amended by adding a new section to  
8 read:

9 BALLOT QUESTION. The question whether the bonds authorized in this Act are to  
10 be issued shall be submitted to the qualified voters of the state at the next general election  
11 and shall read substantially as follows:

12 PROPOSITION

13 State General Obligation Scientific Crime Detection  
14 Laboratory Bonds \$100,000,000

15 Shall the State of Alaska issue its general obligation bonds  
16 in the principal amount of not more than \$100,000,000 for  
17 the purpose of paying the cost of design and construction of  
18 a scientific crime detection laboratory?

19 Bonds Yes [ ]

20 Bonds No [ ]

21 \* Sec. 8. This Act takes effect immediately under AS 01.10.070(c).



State of Alaska  
Department of  
**Public Safety**

Sarah Palin, Governor  
Walt Monegan, Commissioner

February 12, 2008

The Honorable Kevin Meyer, Co-Chair  
House Finance Committee  
State Capitol Building, Room 515  
Juneau, Alaska 99801-1182

Dear Representative Meyer:

Following is the response to your request for information concerning costs associated with construction of the new Crime Laboratory in Anchorage.

Some of these figures are estimates of actual costs that may be different. The costs were determined by using other existing labs. These comparison labs are the Public Health Lab/Medical Examiners in Anchorage and the Virology Lab in Fairbanks.

We estimate that operational costs for the 83,000 square foot building will be \$1.3 million. This figure reflects cost of utilities, cleaning services, and IT costs. The current operating cost for the existing lab is \$236,000. The actual cost will be significantly changed based on the configuration of the final design.

The following is a breakdown provided by Department of Transportation and Public Facilities Engineer Matt Tanaka of the construction costs for the building as you requested. Again, the figures are estimates. The final determination will be based on the final design.

*"Public Safety through Public Service"*

Department of Public Safety  
Office of the Commissioner  
P.O. Box 111200, Juneau, AK 99811-1200  
Voice (907) 465-4322 – Fax (907) 465-4362

**PROJECT BUDGET**

**Design**

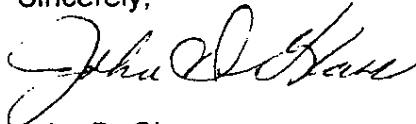
A/E Design	\$7,319,707
Design Management, Administration	\$492,740
CM/GC Contractor Pre-Construction Services	\$329,820
Building Permit	\$749,084
Subtotal:	\$8,891,000

**Construction**

Construction Contract	\$85,214,999
Wetlands Mitigation	\$600,000
Construction Management, A/E Inspection, Testing, Startup	\$6,880,679
Laboratory Equipment	\$4,429,860
Artwork	\$851,200
Laboratory Staff and Office Move	\$80,000
Project Contingency	\$3,327,095
Land Lease	\$0
Cost of Bond Issuance	\$525,580
Subtotal:	\$101,909,414
Project Total:	\$110,800,000
Less Prior Appropriation:	(\$4,800,000)
FUNDING REQUEST:	\$106,000,000

I hope that this is the information that you requested. If I may be of further assistance, please do not hesitate to have one of your staff or yourself contact me directly.

Sincerely,



John D. Glass  
Deputy Commissioner

*"Public Safety through Public Service"*

Department of Public Safety  
Office of the Commissioner  
P.O. Box 111200, Juneau, AK 99811-1200  
Voice (907) 465-4322 - Fax (907) 465-4362

## **Overview- What are the Facts; What do They Mean**

The purpose of this report, and attached compilation of detailed facts and figures is to;

- Illustrate the actual versus assumed comparable costs of a Crime Lab built in Bismarck North Dakota in 2007, to the new Alaska DPS Crime Lab to be built in Anchorage, AK in 2010/2011
- Describe why the North Dakota and Alaska projects are dissimilar and therefore not suited for a size/price comparison
- Explain why the Alaska lab is designed to be over 84,000 square feet in size, and the process undertaken to determine the appropriate size
- Substantiate the cost of the new Alaska DPS Crime Lab

This overview will respond to the above stated purposes in an abridged "snapshot" format so that the reader can get a complete and easy to understand presentation of the facts that can be quickly digested. Much of the volume behind this overview is detailed information supporting the statements made in this overview, and can be referenced at the readers discretion. There are a few Tabbed sections that are short and easy to read, and provide very important information that goes a necessary step beyond "snapshot". **We respectfully ask that you take the time to read through:**

- **Tab A; direct responses to questions from the Governors staff**
- **Tab B; a comprehensive comparison of the ND and AK projects.**
- **Tab D-d1; briefly explains the Space Needs Analysis method and basis.**

### **Quick Facts Check**

- Forcible Rape; AK ranks 1<sup>st</sup> in the nation, ND is 26<sup>th</sup>
- Murder; AK ranks 13<sup>th</sup> in the nation, ND is 43<sup>rd</sup>
- Violent Crime; AK ranks 9<sup>th</sup> in the nation, ND is 49<sup>th</sup>
- Property Crimes; AK ranks 24<sup>th</sup> in the nation, ND is 49<sup>th</sup>
  
- The scope of the work in the ND construction contract budget is not equal to the scope of work in the AK construction contract budget
- The AK budget is a turnkey budget; the ND budget is for construction only
- Only 56% of the ND facility is constructed with typical density of spaces; 44% is only finished at the shell walls, with no interior partitioning
- The ND lab out sources 6 space and staff intensive forensic procedures that will be done in house in the AK lab
  
- The AK lab is comparable in size and SF per staff ratio to similar labs in: WA, IN, CA, VA, NY
- ND population will decline by 1.9% while AK population increases by 19.25% btw 2009 and 2020; crime rate mirrors population fluctuation; the AK lab will accommodate the projected growth
- Attempting to reduce facility size through re-design would have to begin with yet another (3<sup>rd</sup>) Space Needs Analysis, and if warranted, redesign, re-estimating along with another extended period of pre-construction reconciliation work; all of

which would be a duplication of good money already well spent. Millions of dollars and a lost construction season later, the outcome would almost assuredly result in a validation of the project sized as it is now designed

- It will cost as much to redesign and build the lab to a smaller size therefore it would be fiscally irresponsible to do so

**Comparable Cost of the North Dakota and Alaska Crime Labs**The analysis in the table below is based on an “apples to apples” comparison considering only construction contract costs. It is presented this way since the cost information provided to us for the North Dakota project was limited to construction only, and was not as complete in the scope of work as the Alaska project.

Construction Costs Comparison ACL 2010 vs NDCL 2007	Multiplier	ND Adjusted	ACL Adjusted
<b>PUBLISHED BASE BUDGET PER SF</b>		\$254	\$888
Only 56% of the ND lab was built out; 44% had very little tenant improvements adjust for improved SF (\$254+\$72)		\$326	
Escalation for 2007 to 2010 Construction (\$326 x 1.36%) *A	1.36	\$443	
RS Means Regional Cost Variation AK vs ND (\$443 x 1.56%) *B	1.56	\$692	
Contractors Contingency / Escalation (\$692 x 1.07%) + \$48 *D	1.07	\$788	
<b>Square Foot Price after Regional Adjustments</b>		\$788	
<b>Additions to Bismarck site to bring to Alaska Standards:</b>			
Extensive site development/wetlands mitigation		\$48	
Primary Utilities Services to Site		\$20	
Structural Upgrades to meet Zone 4 Seismic *C		\$22	
		\$876	\$888
*A Based on a recent design of a Crime Lab in N Dakota			
*B Based on RS Means Building Const. Data 2009			
*C Bismarck N.D. is in the minimum Seismic Zone			
*D Bismarck N.D. was based on completed Construction costs			
Pre-construction Services , design, FFE , admin, etc (as noted elsewhere in this document)			\$398
<b>Total Budget</b>			<b>\$1,288</b>

**The North Dakota and Alaska facilities/budgets are dissimilar and therefore not suited for a size/price comparison**

**Comparison of Services Covered in the Alaska Construction Budget versus the Services Covered in the North Dakota Construction Budget**

<b>Costs Covered within Published Budgets</b>	<b>Alaska</b>	<b>North Dakota</b>
	<b>Included?</b>	<b>Included?</b>
<b>Design</b>		
A/E Design	Yes	No
Design management and Administration (DOT)	Yes	No
CM/CG Contractor Pre-Construction Services	Yes	No
Building Permit	Yes	No

<b>Construction</b>		
Construction Contract	Yes	Yes
Wetlands Mitigation	Yes	No
Construction Management (DOT)	Yes	No
Special Inspections	Yes	No
Testing	Yes	No
Facility Start Up	Yes	No
Furniture, Fixtures, Equipment (Group II)	Yes	No
Laboratory Equipment (Group II)	Yes	No
Record Drawings	Yes	No
Artwork	Yes	No
Laboratory Staff and Office Move to New Lab	Yes	No
Legal Fees	Yes	No
Cost of Bond Issuance	Yes	No
DOT/PF Overhead	Yes	No

The \$4.8mil cost for the North Dakota lab covers only the value of the construction contract. The 17 other services/tasks that are included in the Alaska budget are not accounted for in the North Dakota budget provided. However, almost all of those other services/tasks would have been necessary to achieve a completed, functional facility in North Dakota. **The costs for these services would have to be added to the (adjusted) North Dakota construction cost in order to reasonably compare the total North Dakota budget to the total Alaska budget.**

**Comparison of North Dakota and Alaska: Crime Statistics, Population Growth Projections, and Staffing Comparisons**

<b>CRIME STATISTICS, NORTH DAKOTA AND ALASKA</b> <i>(From the US Dept. of Justice, FBI, Criminal Justice Information Services Division, Crime Statistics for 2007, Universal Crime Reporting Statistics):</i>	
<b>North Dakota</b>	<b>Alaska</b>
State population: 639,715	State Population: 683,478
Violent crimes: 911	Violent crimes: 4,519
State ranking, violent crimes: 49	State ranking, violent crimes: 9
Violent crime rate per 100K inhabitants: 142.4	Violent crime rate per 100K inhabitants: 661.2
Murder rate per 100K inhabitants: 1.9	Murder rate per 100K inhabitants: 6.4
Forcible rapes per 100K inhabitants: 32.4	Forcible rapes per 100K inhabitants: 77.4
Aggravated assault per 100K inhabitants: 97.2	Aggravated assault per 100K inhabitants: 492.0
Robberies per 100K inhabitants: 10.9	Robberies per 100K inhabitants: 85.3
Property crime rate per 100K inhabitants: 1,889.6	Property crime rate per 100K inhabitants: 3,379.5
Burglary rate per 100K inhabitants: 338.3	Burglary rate per 100K inhabitants: 538.7
Larceny-theft rate per 100K inhabitants: 1,408.4	Larceny-theft rate per 100K inhabitants: 2,487.0
Motor vehicle theft per 100K inhabitants: 142.9	Motor vehicle theft per 100K inhabitants: 353.8
<i>Note: All of the violent crimes in the above list (bold font), as stated in the Blood Alcohol section of this document, require greater forensic lab space, officer and lab scientist training, staffing requirements, and specimen storage space than non-violent crimes.</i>	

<b>STATE POPULATION GROWTH PROJECTIONS</b>	
<b>North Dakota</b>	<b>Alaska</b>
Median population growth rate from 2009 to 2020: negative 1.9%.	Median population growth rate from 2009 through 2020: 19.25% (without gas pipeline; higher with pipeline).
According to the North Dakota State Data Center at North Dakota State University (a branch of the US Census Bureau), North Dakota's " At 642,200 in 2000, North Dakota has shown a 5.7 percent decrease in population since its peak in 1930 at 680,845." The US Census Bureau projects a continuation of this trend, with a population decrease of 30, 057 by 2020.	According to "Alaska Population Projections: 2007-2030", Alaska Department of Labor and Workforce Development, Research and Analysis Section, population growth projections for the beginning of 2011 (move-in date for new lab) through the end of 2020 show an increase of 1.7% - 1.75% per year, using the high range values.

<b>STAFFING COMPARISONS</b>	
<b>North Dakota Lab</b>	<b>Alaska Lab</b>
<p>Current staff, according to an organization chart provided by Hope Olsen, Director of the ND lab:                      Total staff = 11, including the Lab Director. This represents 20 staff positions. 6 staff members are cross-trained to fill more than one position within the 5 forensic areas of this lab (firearms, DNA, arson, trace and drug chemistry). 5 staff members work only one function within the DNA section, and of these 5, 2 are listed as "temporary".                      The staff of the ND lab does not process these additional forensics, which will be fully processed in the Alaska lab:</p> <ol style="list-style-type: none"> <li>1. Full latent print processing (ND only does partial)</li> <li>2. Toxicology</li> <li>3. Question Documents</li> <li>4. Crime scene</li> <li>5. Bio screening</li> <li>6. Controlled substances</li> </ol>	<p><b>Projected staff at move-in, 2011:</b> 45 (8 new + 37 current) needed to match projected workload to achieve 30-day forensics turn-around in accordance with current/future forensic and government standards and practices.</p> <p><b>Projected staff through 2020:</b> 60 (15 new + 45 current) to meet projected population growth factors, technological advancements, crime trends, future/unmet needs, and further development of new lab sections (toxicology and QD/DE). These new sections will require 5 of the 15 new staff. High-growth lab sections are anticipated to be DNA, controlled substances and latent prints, adding the other 10 new staff at a rate of 1 new staff/year for 10 years. This equates to a 2%/year growth rate, consistent with AK statewide population growth. If the gas pipeline project becomes a reality, population and crime is projected to increase well beyond these figures.</p>

The above section has a lot of information to absorb. There is additional interesting and important information on these topics under **TAB B**.

The short story bottom line regarding these crime statistics is;

1. Based upon FBI statistics the rate of crime in Alaska is much higher than the crime rate in North Dakota by no less than 1.6 times greater to more than 7.8 times greater, depending on the type of crime. The largest disparities are between the more serious and violent crimes.
2. Between now and 2020 the population of North Dakota is projected to decline by 1.9% while the population of Alaska is projected to grow by 19.25%. This correlates directly to the space and staffing requirement projections.
3. The North Dakota facility/staff does not process all the forensics that the Alaska facility will process. North Dakota outsources six of the more; space, staff, and technically intensive processes that will be done in-house at the Alaska facility.

**Why is the Alaska lab designed to be 84,379 square feet in size?**

1. In 2005 a study to expand the existing Crime lab was done. Subsequently, a competition for design services for a new lab was held. The Livingston Stone Inc (LSI) team won the competition. The contract requirements included having a forensic crime lab specialists on the design team, and to complete a space needs analysis. McClaren, Wilson & Lawrie (MW&L) fills that position on the LSI team. MW&L is recognized as the premier crime lab specialist firm in the U.S., having designed 90 different crime labs nationwide, and overseeing construction of 45 different crime labs nationwide.
2. A modern forensic lab must meet the test of time. In 2007 MW&L did an extensive Space Needs Assessment, as required by the design contract. The MWL program identifies every room, the space components within each room, the numbers of staff, future lab sections and staff, etc.
3. The resultant design square footage proves out against similar labs in Washington, Indiana, California, Virginia, and New York (to name a few). See table below:

Building Area to Staff Ratio Comparison			
Lab Type & Location	Gross Building Area (GSF)	Number of Staff (FTE)	GFS/FT E
<b>Average for WA, IN, CA, VA, NY</b>	<b>70,213</b>	<b>62</b>	<b>1,169</b>

Both the Gross Building Area and the Gross Building Area to Number of Staff Ratio are more efficient than the referenced sample projects from other states.

The space needs for the Alaska crime lab have been rigorously analyzed and reported on by the most qualified crime lab program and design professionals to be found in the U.S. The depth of the study cannot easily be conveyed in a snapshot. Please see TAB D.d1 for a summary of the study, and d2 through d5 for a thorough review of how the space needs were arrived at, and the mathematical results that define the facility size.

### Why does the new Alaska Crime Lab Cost So Much?

It only appears to be overly costly when compared to projects out of state that have very little in common with the Alaska Crime Lab. The cost question was asked using a facility in North Dakota as a comparison. Not with-standing the regional cost differences and escalation in costs from 2007 to 2010, the SF figure for ND represented only the construction contract value. The AK budget is all inclusive; from the 2005 and 2007 space needs through the cost of relocating the staff. Apples and Oranges is a closer comparison than this.

When compared to other complex labs built in Alaska in recent years, the cost is dead-on:

ELEMENT	CRIME LAB**	CRIME LAB***	VIROLOGY LAB	ENVIRONMENTAL HEALTH LAB
Admin as % of Lab Space	21%	16%	32%	27%
Project Cost per Square Feet	\$1,258		\$1,136	\$949
Project Cost per Square Feet*	\$1,050			
	Note: Admin = lab offices and admin areas			
	**includes break room, classroom			
	***not including break room, classroom			
	*Less Crime Lab Features, Sitework @ \$11M			

### Conclusions

- Comparing the North Dakota project to the Alaska project is no more valid than comparing apples to Oldsmobile's
- The Alaska Crime Lab is appropriately sized based on an exhaustive space needs study performed by the most knowledgeable forensic crime lab designer in the U.S. and is comparable to labs in WA, ID, CA, VA, and NY
- The cost per square foot is unquestionably in line with other labs recently constructed in Alaska

**This facility should be constructed as designed without further delay**

Prepared by *Nacvor Construction Inc.*  
March 02, 2009 Questions/concerns from Mr. Randy Ruaro; and responses thereto:

**Concern Expressed:** *"The design costs for the Alaska lab so far are substantially close to what taxpayers in North Dakota paid for an entirely new laboratory facility (\$5.1 million / 19,000 square feet)."*

5.1M for 19,000 sf equates to \$268/sf. For the Alaska lab we are spending \$7M just for the site preparation work (excavation of peat, import of gravel, utilities). This alone equates to \$83/sf and helps to explain why one cannot randomly compare cost statistics between projects in different areas.

Furthermore, another reason why such comparisons are invalid is that a close inspection of the published facts about Alaska and North Dakota shows the two states share little in common beyond similar population size and winter weather. Regarding design costs, case composition/numbers and lab size comparison of North Dakota to Alaska we offer the following.

The major disparity in the type of crime and the crime rates between the two states shows why the labs are not directly comparable. The data does show, however, that Alaska's crime problem is orders of magnitude more severe than North Dakota's, giving rise to significantly more caseload, and the need for a much larger lab.

A comparison of the two states based on crimes per 100,000 persons reveals the following stark differences. (Data taken from the FBI 2007 crime statistics for the fifty United States, District of Columbia and Puerto Rico - see the website at [http://www.fbi.gov/ucr/cius2007/data/table\\_05.html](http://www.fbi.gov/ucr/cius2007/data/table_05.html)).

Forcible Rape; AK ranks 1<sup>st</sup> in the nation, ND is 26<sup>th</sup>.  
Murder; AK ranks 13<sup>th</sup> and ND is 43<sup>rd</sup>.  
Violent Crime; AK ranks 9<sup>th</sup> and ND is 49<sup>th</sup>.  
Property Crimes; AK ranks 24<sup>th</sup> while ND is 49<sup>th</sup>.

Over all Alaska reported 27,617 crimes in 2007 while ND reported 12,999 crimes in 2007. Alaska's violent crime rate is more than 4.6 times that of ND. There is no category where Alaska is less than 1.6 times and it goes as high as 7.8 times ND.

The statistics above show that public safety issues and crime data comparisons between the two states is the basis for determining the size, cost and staffing for each state's respective crime lab needs.

The costs of any services including design services are based on the scope of work required, level of effort needed to accomplish a given task and the local prevailing labor costs. The state negotiated an equitable contract with the design team that is fair to both parties and provides the required services for a reasonable price.

According to the State of ND published wage rate schedules labor cost for government projects are at best half of Alaska published rates and less in some cases. (For instance, the ND published rate for a carpenter is \$15.54/hour while Anchorage is \$33.30 W/O benefits.)

An interesting observation is that the new ND lab has a current staff of twelve and is 19,000 SF. When built in 1985 the AK crime lab had a staff of seven and was 18,000 SF.

**Concern expressed: "And the North Dakota lab processes twice as much (or more work) as the Alaska lab."**

Regarding the assertion that the ND lab produces twice the work of Alaska we offer the following information.

<b>Specific 2008 ND-AK caseload comparison</b> (these statistics were provided by the North Dakota Crime Lab's current Director, Hope Olsen, and the AK Crime Lab Manager, Orin Dym):	
<b>North Dakota Lab</b>	<b>Alaska Lab</b>
<b>Latent prints:</b> ND doesn't engage in full latent print identification, partially processing 36 latent prints (developing only).	<b>Latent prints:</b> AK fully analyzed 1,000 latent prints, including developing, comparison, and AFIS searches.
<b>Firearm/toolmark:</b> Received 41 cases; 5 were from violent crimes	<b>Firearm/toolmark:</b> Received 130 cases, nearly all from violent crimes
<b>DNA:</b> Received 200 cases for DNA analysis	<b>DNA:</b> Received 450 cases for DNA analysis
<b>CODIS:</b> Received 4,200 database samples	<b>CODIS:</b> Received 10,000 database samples
<b>Breath Alcohol:</b> Performed 3,500 breath tests	<b>Breath Alcohol:</b> Performed 6,000 breath tests
<b>Controlled Substances:</b> Received 2,000 cases; 75% were Marijuana only (requiring less analysis time), while 500 were solid dosage drug cases.	<b>Controlled Substances:</b> Received 1,200 cases; 15% were Marijuana only, while 1,000 were solid dosage drug cases (requiring more analysis time).
<b>Blood Alcohol:</b> Received 3,800 cases.*  *NOTE: The ND lab receives many more minor offense crimes (drugs/alcohol) which are processed via simpler and faster highly automated analysis than violent crimes, thereby requiring less lab staff and lab space.	<b>Blood Alcohol:</b> Received 600 cases.**  **NOTE: The AK lab processes less BA cases but more violent crime cases. Violent crime case analysis (DNA, firearms, latent prints) are more labor and space intensive. The new AK lab can process 3,000 additional BA cases per year w/o additional space due to the highly automated analysis process.

As you can see above, caseload and case type are not directly comparable between the two labs. Alaska's greater number of more complex cases means that far more staff and lab space are needed than in ND. Given the variation in complexity it is impossible to draw a simple, direct correlation between the numbers of cases worked per staff by each lab.

**Statement: *"We will continue to review and analyze the questions surrounding the sizing and costs of the proposed Alaska lab until we have reasonable responses."***

The North Dakota crime lab is not a full service lab: it contains only four of the nine forensic scientific sections of a full service lab, plus a breath alcohol lab. Upon a review of the floor plan for the ND lab, many lab areas are very compressed, done to meet a restricted construction budget. In terms of the planning window for the ND lab, it was designed for needs occurring only a few years beyond the 2002 -2003 programming effort, compared to the year 2020 for the Alaska lab. There is nearly two decades of time between the planning windows of these two projects, which translates to a **major** size and cost differential between the two, further explaining the small size of the ND lab. The ND lab, if programmed and designed today, at the same time as the Alaska lab, would be much larger and designed much differently.

In terms of planning and design, one sees that the ND plan does not contain a standalone latent prints/AFIS section, standalone trace evidence section, or standalone CODIS DNA lab section, but rather these functions are merged within other sections. The ND lab does not have a Bioscreening section, Questioned Documents / Digital Evidence section or significant Crime Scene support facilities beyond a small vehicle exam bay. (The latter being the same size as Alaska's current lab.) Also, evidence storage has been reduced to a single relatively small room, remote from the central evidence receiving area. The ND lab plan does not have a firing range or any kind of enclosed mechanical space for rooftop equipment. Another example of the compression we see in the ND lab is that there is a distinct lack of separation between public access to the classroom and evidence flow from the evidence receiving room, presenting a serious security concern, which may render its data subject to court challenge. To avoid these types of planning issues requires substantially *more space*. The trends in design of forensic labs nationwide is to have separate and distinct lab sections for each lab section, to avoid potential cross contamination issues between lab disciplines and afford greater quality control, a more specialized and controlled lab environment. Another trend is for forensic labs to have in-process evidence storage rooms in each section plus a large central evidence storage room to accommodate governmental mandates for longer and longer retention times for evidence, particularly violent crime evidence ( a crime type nearly five times more prevalent in Alaska). Forensic labs are undergoing greater and greater scrutiny by defense attorneys and this will lead to increased demands on the nation's crime labs in the future. Crime Labs must be designed to produce court defensible data when subjected to higher court scrutiny. This all translates to more space to assure separation of work areas and scientific reliability.

By comparison, the new Alaska crime lab is a full service lab, housing eleven forensic scientific sections in distinct standalone laboratory sections (DNA/Forensic Biology, CODIS DNA, Bioscreening, Trace Evidence, Firearms / Toolmarks, Controlled Substances, Latent Prints/AFIS/impressions / Toxicology, Breath Alcohol, Crime Scene / Vehicle Exam, Questioned Documents / Digital Evidence). Each lab section has its own in-process evidence storage rooms and there is a central evidence storage room within the evidence receiving section designed for long term retention of evidence. The Alaska lab is designed with a firing range and rooftop enclosed mechanical rooms to protect sensitive mechanical equipment. The Alaska lab has been designed to design standards and forensic science standards, which are much different from those that existed when the ND lab was programmed in the early 2000's. Bottom line, it is more economic for Alaska to have a full service lab that is designed to stand the test of time and be able to meet future growth needs of this dynamic State, than to scrimp now, only to have a new lab that begins in obsolescence on opening day. The State of Alaska is unique, being a World transportation hub and energy hub. This places a whole different set of crime and socioeconomic parameters on Alaska as compared to North Dakota. Additionally, the Alaska

crime lab is more remote from other supporting (outsourced) labs, our geographic service area is by far the largest in America and Alaska's case load and case profiles demand full services.

The size of any crime lab is determined by the types of forensic science sections to be accommodated (DNA, Firearms, etc.) and staff size for each section. Consideration for potential growth, new processes and advancement in detection techniques needs to be accommodated as well.

The ND Lab was sized based on a six year old needs assessment/space program to accommodate current needs only. In a state with a negative population growth factor no consideration was made for future expansion or added services. In fact, at the beginning of the construction the firing range was deleted by change order thus reducing the capability of the lab firearms section.

The new Alaska Crime Lab was planned to accommodate future growth to the year 2020-a mere eight years after occupancy, with a provision for it to serve with space compression through 2030. This planning assumption is based on historical information, caseload projections, and median population growth according to official state demographic data. Throughout the design and planning stages of the project the staffing numbers were reexamined, discussed and revised by the Lab Manager and the design team to insure that we had not oversized or undersized the individual forensic sections. The staffing growth plan is described in detail in the attached document "ACL Planning for Staff Growth" which is an expanded version of Part 1 of the project's Space Needs Assessment submittal.

When planning a major new state facility it is fiscally prudent and responsible to plan to accommodate some growth and allow for some future compression. To that end the new Alaska Crime Lab is designed to accommodate additional staff beyond the planned 60 up to 65 staff without compression. Note that five lab workstations are used from the date of move-in by cross trained personnel until full time positions are necessitated by growth in caseloads. This takes the building beyond the 2020 planning window, through 2030 without further capital expenditure. Further, the building is designed to easily accommodate expanded services through compression without major remodeling. Specific lab sections have been designed so that two workstations can be converted to three workstations by removing two movable tables. Surface utility raceways allow for additional power and data connection to be added without any major disruption. This compression ability will allow the facility to grow and change, functioning efficiently past the 2020 without major expansion or construction.

**March 12, 2009 Questions from Mr. Randy Ruaro; and responses thereto:**

**1 (a)** How did we arrive at a determination that we need 86,000 square feet? **(b)** To answer this question I think we need the workload data and assumptions that DPS provided to Mr. Sloane and **(c)** a breakdown of the 86,000 square feet by the type of work and other areas included in the design. **(d)** For instance, if the design allocates 5,000 square feet to room to park the crime lab van that has been outside for the past 20 years we need to know why this is required and why it has to be 5,000 square feet. **(e)** If the design allocates 5,000 square feet of space to Orin Dym for a new office, we need to know why this is required? **(f)** Couldn't the 18,000 feet being vacated as the current lab be used for administrative space or at least part of the administrative space) and why does it have to be 5,000 square feet. **(g)** If 20,000 square feet is allocated for room to perform latent finger print work, why does it have to be this big? How many cases per analyst does this assume? How does this compare to other labs? **(h)** How do other labs manage to perform 4 times more latent finger print work in an area 1/4th size allocated in the current design with 1/2 as many analysts/

**Response:**

**1(a)&(c):** Please note that the new lab is a 84,379 SF building with a roof top vertical equipment enclosure of 10,000 SF. Please see the facility space needs assessment dated October 2007 (Tab D) for a list of rooms and net area planned for each. Also refer to the Space needs assessment supplement for a more detailed discussion of the staffing for each lab section.

**1 (b):** Please refer to the ACL Space Needs Supplement for a complete discussion of the basis for staffing projections.

**1(d):** This area is actually 500 SF not 5000 SF and serves as a second vehicle inspection bay. The existing AK crime lab originally had two inspection bays until one was turned into the maintenance office and breathalyzer equipment fill station.

**1(e):** The Lab Director Office is 180 SF not 5000 SF. During the early design phase it was reduced from 250 SF at Orin's request. He felt he did not need a conference area in his office and he would utilize the admin conference room. Please see the facility space needs assessment dated October 2007 (**TAB D**) for a list of rooms and net area planned for each.

**1(f):** See Mr. Ruaro's question No. 3 below for answers to these two similar questions.

**1(g):** The current design has 4,250 SF for latent prints, AFIS, footwear impressions and tire impressions. The latent section was programmed for eight criminalists and two supervisors. Refer to the Final Space Program revised January 11, 2008, which shows 4,586 SF was programmed for the lab space.

**1(h):** This concern cannot be evaluated with the information furnished. What other lab does this refer too? Do they do impression and comparison work?

The Alaska Lab has been managed, designed by the same team as three recent State Labs: Public Health Lab, DEC Food Safety Lab and Virology Lab. The contractor for the new crime lab built the Public Health Lab. This team has unparalleled Alaska Lab experience.

2 (a) How did we arrive at a square foot cost of \$1,250 a square foot? (b) the next most expensive lab in the nation is Orange County at \$500 a square foot.

**Response:**

**2(a):** It should be noted that the \$1,250 figure is for the total cost of the facility from conceptual design through supply and placement of furnishings and equipment. **Actual construction cost, including a construction contingency of \$2,697,271, and a materials and labor escalation budget of \$2,103,871 is \$74,941,642, or \$871 per SF. Cost per SF without the contingencies is \$813 per SF. Of this amount we are spending \$83/SF (\$7M) on site preparation work alone. So effectively the Alaska lab's construction cost is \$730/sf.**

It should also be noted that the referenced \$1,250 per square foot cost is quite close to the cost projection stated in the DPS Statewide Services Crime Lab Expansion Study; December 2005 (TAB E). The 2005 study estimated \$1,210/SF was based on a 2008 construction start. The current all inclusive budget is based on a 2010 (vertical) construction start. The cost difference represents less than 2% per year. Our budget was developed not from the 2005 study but from our findings in the space needs assessment (TAB D) and the actual design.

To date we have employed three estimators: two from separate estimating companies, and one from the construction contractor. All three are in agreement. Our construction cost was determined using a professional construction cost estimator that specializes in Alaska projects; and independent estimates by the actual construction contractors. At three stages in the project's development we have had each of these estimators develop discrete, independent parallel construction cost estimates. At each of these estimate phases the design and construction team spent hundreds of man-hours reviewing the detail of the estimates. Then over a three day period at each stage with the full design team, construction team and DOT&PF representatives reconciled the material quantities, labor hours and rates and all other incidental costs between these two estimates. This exhaustive effort insured that the state was getting exactly what was designed for a price that was reasonable and appropriate. The process also served to insure that the project was on or under the projected budget.

**2(b):** Regarding the lab in Orange County; First, without a complete description of what costs were included (were design, permitting, project management by the State, and FF&E included?). Second, what services does the Orange County facility provide; is it full service as is the proposed Alaska facility? Third; when was it constructed, has the cost been prorated/escalated in time to mirror the construction schedule anticipated for the Alaska facility? Was a Means regional cost differential applied? In summary, the cost to build facilities in Alaska are real costs and are not fabricated. As such, there are thousands of buildings erected worldwide that, if investigated, will validate Alaska's construction costs because the Alaska Lab's costs are real. Therefore efforts to make judgments based upon comparisons with other buildings elsewhere are not of relevance or value.

**3) Could the current design be reduced from to 68,000 (almost \$20 million in cost per square foot) if the 18,000 square feet at the current lab continued to be used for latent finger prints and other functions?**

**Response:**

**1(f) above and 3):** Re-design to a 68,000 sf size will not result in any savings and it will delay the lab's completion by 3 years. This is because escalation, redesign costs, and delays will offset any savings in construction of a smaller building. Aside from this fact, with regard to the dollar figures listed above in question 3, do not take into account the additional cost of the remodel construction work and other project costs so the \$20mil "savings" value noted above is not factually supportable. And the \$20mil figure as presented includes static costs that are not impacted by building size. If it were practical to drop 18,000SF from the project (which it is not) the only costs that would be impacted are construction costs. Irrespective of the fact that the \$20mil figure does not include remodel costs for the existing lab, the differential is overstated by a minimum of \$241 per SF.

Please note that remodeling of the existing building for reuse by the crime lab was evaluated by the current design team with DPS, DOT&PF and determined to be undesirable and not cost effective for several reasons. Note also that the 2005 study developed by a separate team of professional designers came to the same conclusion.

- The on-going forensic science activity cannot be stopped during a remodel so the new crime lab would have to be built and move-in completed prior to the start of work. Temporary work space would have to be rented or found in existing facilities for the services planned to be housed in the existing facility.
  - The costs of rental space and two moves plus the cost of remodel design and construction would be close to the cost of building new space in one building.
- Separating the Administration or other lab functions from the single building would create extra ordinary operating inefficiencies rendering this concept infeasible.
  - Would supervisors be in the lab or admin building?
  - Reception staff would be needed in each building.
  - Where would case files be housed?
  - Administrators would need to drive back and forth between the buildings several times a day to view operations.
  - If a lab section is separated you would need two evidence storage areas and additional staff to cover the satellite evidence operation?

The USKH study was commissioned specifically to investigate the feasibility of expanding the existing lab at the existing site. The state did not seek the services of a true expert in the field of forensic lab design for that effort, as it was merely a quick 4 week study of order of magnitude feasibility and it was not intended to be used for actual design. The architect that performed the study had designed research labs and police facilities but had designed only one crime lab.

When the study was underway it became evident that it was infeasible to expand the existing lab a temporary lab would need to be built first to enable the scientists to continue working during construction. Renovation of the old lab would likewise be expensive. The cost was astronomically high. So the consultant was asked to take a quick look at building a standalone

facility elsewhere. That option was determined to be the best course. However a full needs assessment study for a new lab was beyond the scope of the study. The study was used to justify the creation of a standalone lab project and to initiate funding requests to properly plan and design a new crime lab.

Further, the projections made by that quick study in 2005, by an inexperienced lab architect, that had little crime lab experience, were grossly under-projected. For instance, the study's 2020 staff projections were realized in 2007. **Our space needs today for the staff currently in place already exceeds what the study projected for 2020.** Obviously the space projections were incorrect.

Subsequently AK DOT/PF solicited the services of a laboratory architect, teamed with McClaren, Wilson & Lawrie, Inc (MW&L). MW&L is recognized by their peers, to be the premier crime lab architect in the country (90 crime labs designed, 45 built). In contrast, other crime lab architects around the country can claim to have designed a few crime labs, meaning that nobody comes close to having the same level of experience as the crime lab architect retained to plan and design the Alaska Lab.

## Prepared by Neeson Construction Inc.

### Cost Comparisons to Projects Outside of Alaska

To people that are not familiar with construction it may seem that a simple commodity comparison of costs for facilities outside of Alaska, that appear to provide the same services as similar facility in Alaska, would be a reliable way to assess the validity of a budget in Alaska (or vice versa). There are a number of reasons why this doesn't work; and it would be very unusual for a person outside of the industry to understand the various impacts that effect cost differentials without taking sufficient time to be well informed.

**Here are some impact issues that have a huge effect on cost differentials that to the untrained person might seem insignificant. I will restrict this discussion to construction issues only;**

**The time at which a facility comes on line has no bearing on construction costs; the important factor is; when did construction start?** Example: there was a request for comparative data on a state Crime Lab in Edmond Oklahoma. The questioner referred to it as being recently constructed which is true if you related it to the year completed/opening dates. This doesn't tell us a start date. It is safe to say that the Oklahoma project started no more recently than 2006; a 5 year start differential from the anticipated start of the ACL. Construction cost escalation of 5/6% per year, compounded yearly must be added to the Oklahoma start to normalize it and begin to make an accurate comparison.

**Regional cost differentials** are tracked, calculated, and published annually by RSMeans in the RSMeans Building Construction Cost Data Book. This is the **industry standard** for cost data research. Means has several uses, one being to be able to adjust for location using City Cost Indexes. The indexes are established against a national average (the average being 100) that has been determined through Means research. Here are the indexes published for Anchorage, AK and Oklahoma City, OK:

Anchorage	Labor: 131.4/100	Material: 114/100	Weighted Average: 124/100
OK City	Labor: 97.3/100	Material: 61.5/100	Weighted Average: 82/100
Differential	Labor: 1.35	Material: 1.85	Weighted Average: 1.51

When Oklahoma is adjusted by the 5 year spread in start dates, and then by the Means differential, Oklahoma City increases from \$349 to \$706.26 PSF, more than twice what the difference would appear to be to an untrained eye. Research indicates that the published OK City costs were "construction only". The Anchorage budget for "construction only", including the extraordinary sitework is \$888 PSF. There are additional adjustments that should be made that will reduce the cost difference even further.

**What the City Cost Index Does Not Indicate:** As good as RSMeans is they recognize, and advise the user that, "The weighted average for each city is a total of the divisional components weighted to reflect typical usage, but it does not include the productivity variations between trades or cities. In addition, the CCI does not take into consideration factors such as the following: managerial efficiency, competitive conditions, automation\*, restrictive union practices, unique local requirements, or regional variations due to specific building codes." The highlighted issues are very important to consider, each one of them adds costs to work in Anchorage that cities like Oklahoma City do not contend with; there is no avoiding winter work in Anchorage, weather dependent, productivity loss is between 25 and 40 percent in cold weather. Davis Bacon wages are established by union scale parity, this may not be restrictive but it

certainly escalates the cost of labor. Overtime work necessary to get a building closed in before winter cost of tenting and heating (labor, materials, heating equipment, and heating fuel), cost of snow removal etc. 1. Anchorage is in the equivalent of a seismic zone 4, this equates to big costs; Oklahoma City is in the equivalent of a seismic zone 2, so there are no associated extra structural costs. 2. Anchorage is a subarctic region where minimum footing depths are 42" we are researching OK City but likely 24" depth. 3. Anchorage has a minimum snow load requirement of 50 pounds per SF; Oklahoma City has a snow load minimum of less than 10 pounds per SF. 4. Anchorage wind resistance requirement is 120# (45#); OK City wind resistance requirement is 95# (42#).

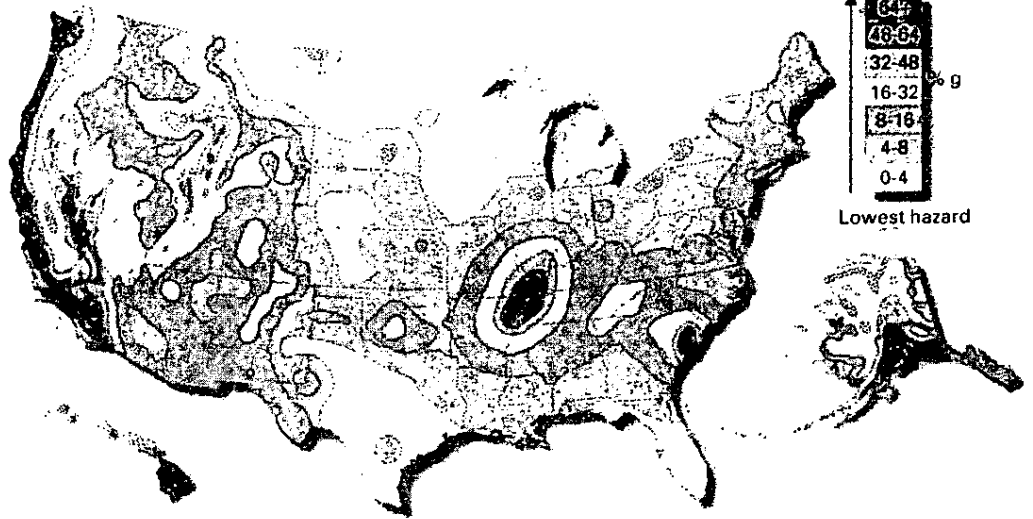
When you compound the escalation adjustment for construction start time lapse; Means regional adjustment, and the 4 highlighted special circumstances, the differential between Anchorage and Oklahoma City disappears, or more than likely begins to make our Anchorage project look more cost effective than the OK City project. There are more issues that add to the difference but this is not a 5 minute discussion. If someone could give 30 minutes of concentrated time to listen, it would make a big difference in their understanding of construction costs.

This narrative was begun to hopefully help the folks asking the questions to understand that they are asking questions that won't give them true comparisons; questions along the lines of; why does a 2x4 cost more in Alaska, why does a toilet cost more, a run of ductwork etc. These things mean nothing without understanding that these components don't define the differentials between Anchorage and any other place in the USA without applying the industry standard adjustments discussed above; as any competent estimator would.

\*the first three considerations which CCI does not address were inconsequential to this discussion.

## 2008 United States National Seismic Hazard Maps

**T**he U.S. Geological Survey's National Seismic Hazard Maps are the basis for seismic design provisions of building codes, insurance rate structures, earthquake loss studies, retrofit priorities, and land-use planning. Incorporating these hazard maps into designs of buildings, bridges, highways, and critical infrastructure allows these structures to withstand earthquake shaking without collapse. Properly engineered designs not only save lives, but also reduce disruption to critical activities following a damaging event. By estimating the likely shaking for a given area, the maps also help engineers avoid costs from over-design for unlikely levels of ground motion.



Colors on this map show the levels of horizontal shaking that have a 2-in-100 chance of being exceeded in a 50-year period. Shaking is expressed as a percentage of  $g$  ( $g$  is the acceleration of a falling object due to gravity).

### Changes to the Maps

#### The Update Process

The U.S. Geological Survey recently updated the National Seismic Hazard Maps by incorporating new seismic, geologic, and geodetic information on earthquake rates and associated ground shaking. These 2008 maps supersede versions released in 1996 and 2002. Updating the maps involved interactions with hundreds of scientists and engineers at regional and topical workshops. USGS also solicited advice from working groups, expert panels, State geological surveys, Federal agencies, and hazard experts from industry and academia. The Pacific Earthquake Engineering Research Center developed new crustal ground-motion models; the Working Group on California Earthquake Probabilities revised the California earthquake rate model; the Western States Seismic Policy Council submitted recommendations for the Intermountain West; and three expert panels were assembled to provide advice on best available science.

The most significant changes to the 2008 maps fall into two categories, as follows:

- Changes to earthquake source and occurrence rate models:
  - In California, the source model was updated to account for new scientific information on faults. For example, models for the southern San Andreas Fault System were modified to incorporate new geologic data. The source model was also modified to better match the historical rate of magnitude 6.5 to 7 earthquakes.
  - The Cascadia Subduction Zone lying offshore of northern California, Oregon, and Washington was modeled using a distribution of large earthquakes between magnitude 8 and 9. Additional weight was given to the possibility for a catastrophic magnitude 9 earthquake that ruptures, on average, every 500 years from northern California to Washington, compared to a model that allows for smaller ruptures.

- The Wasatch fault in Utah was modeled to include the possibility of rupture from magnitude 7.4 earthquakes on the fault.
- Fault steepness estimates were modified based on global observations of normal faults.
- Several new faults were included or revised in the Pacific Northwest, California, and the Intermountain West regions.
- The New Madrid Seismic Zone in the Central U.S. was revised to include updated fault geometry and earthquake information. In addition, the model was adjusted to include the possibility of several large earthquakes taking place within a few years or less, similar to the earthquake sequence of 1811–1812.
- Source models for the region near Charleston, S.C., have been modified to include offshore faults that are thought to be capable of generating earthquakes.
- A broader range of earthquake magnitudes was used for the Central and Eastern U.S.
- Earthquake catalogs and seismicity parameters were updated.

2. Changes to models of ground shaking (that show how ground motion decays with distance from an earthquake's source) for different parts of the U.S., based on new published studies.

- New ground-motion prediction models developed by the Pacific Earthquake Engineering Research Center were adopted for crustal earthquakes beneath the Western U.S. These new models use shaking records from 173 global shallow crustal earthquakes to better constrain ground motion in western States.
- Several new and updated ground-shaking models for earthquakes in the Central and Eastern U.S. were implemented in the maps. One of the new ground-shaking models accounts for the possibility that ground motion decays more rapidly from the earthquake source than was previously considered.
- New ground-motion models were applied for earthquake sources along the Cascadia Subduction Zone.

## Significance of Results

The new National Seismic Hazard Maps show, with some exceptions, similar or lower ground motion compared with the 2002 edition. For example, ground motion in the Central and Eastern U.S. has been generally lower by about 10–25 percent due to the modifications of the ground-motion models. Ground motion in the Western U.S. is as much as 30 percent lower for shaking caused by long-period (1-second) seismic waves, which affect taller multistory buildings, and ground motion is similar (within 10–20 percent) for shaking caused by short-period (0.2-second) waves, which affect structures of one or a few stories.

The new 2008 maps represent the best available science as determined by the USGS from an extensive information-gathering and review process. Changes will be made in future versions of the maps as new information on earthquake sources and resulting ground motion is gathered and processed.



San Francisco, Calif., Earthquake, April 18, 1906. Fault trace 2 miles north of the Skinner Ranch at Olema. View is north. 1906. Plate 10, U.S. Geological Survey Folio 193; Plate 3-A, U.S. Geological Survey Bulletin 324. (USGS Photo Library). Photograph by G.K. Gilbert.

## For Further Information

To learn more about the National Seismic Hazard Mapping Project, go to URL <http://earthquake.usgs.gov/hazmaps/>. Working Group on California Earthquake Probabilities, go to URL <http://pubs.usgs.gov/of/2007/1437/>. Or you may also contact Mark Petersen: [mpetersen@usgs.gov](mailto:mpetersen@usgs.gov).

Prepared by Neeson Construction Inc.

**Alaska Crime Lab Replacement Facility**

**Importance of commencing site work by March 10, 2009**

The current FY2010 request for \$94M assumes site work construction commencing before March 10, 2009. The project's site work must occur this winter while the site is frozen in order to economically excavate the peat moss. The cost of this early site work construction is currently funded. If the site work does not start before March 10, 2009 at the latest, the project will be impacted in the following ways:

**Scenario: Full Funding Appropriated this Legislative Session (FY10)**

FY10 CIP Amount: **\$100.2M**

Start Construction: August 2, 2009

Move-in: June 2012 (delay of ½ year)

Comment – Original FY10 CIP request of \$94M increased by **\$6.2M** to accommodate higher costs from excavating in unfrozen wetlands, tenting and heating foundations in winter construction. Space needs to mitigate the backlog of crime evidence are not met for at least 3-1/2 years from now.

**Scenario: Full Funding Appropriated next Legislative Session (FY11)**

FY11 CIP Amount: **\$105.4M**

Start Construction: August 2, 2010

Move-in: June 2013 (delay of 1-1/2 year)

Comment – Original FY10 CIP request of \$94M increased by **\$11.4M** to accommodate higher costs from excavating in unfrozen wetlands, tenting and heating foundations in winter construction, and one year of escalation. Space needs to mitigate the backlog of crime evidence are not met for at least 4-1/2 years from now.

February 16, 2009