



North Carolina State Crime Laboratory

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ATTORNEY GENERAL

Department of Justice
121 E. Tryon Road
Raleigh, North Carolina 27603

VANESSA MARTINUCCI
DIRECTOR

February 1, 2023

Co-Chairs of the House Justice and Public Safety Appropriations Committee
Co-Chairs of the Senate Appropriations on Justice and Public Safety Committee

North Carolina General Assembly
Raleigh, NC 27601-1096

Re: Report on the study of an Eastern Regional Laboratory

Dear Members,

Section 18.9 of North Carolina Session Law 2021-180 directed the Department of Justice to “conduct a study, in partnership with Elizabeth City State University, on the siting of an Eastern Regional Laboratory to be located on the campus of Elizabeth City State University.” The General Assembly directed the report to be transmitted to the Chairs of the House Justice and Public Safety Appropriations Committee, the Chairs of the Senate Appropriations on Justice and Public Safety Committee, and the Fiscal Research Division.

The attached report covers the estimated costs and timeline of completing the laboratory and the estimated cost of operating the laboratory during its first five years of operation.

Please let me know if you have any questions or would like to discuss the report in greater detail.



Sincerely,

Vanessa Martinucci

Vanessa Martinucci
Director, North Carolina State Crime Laboratory

Attachment: Eastern Regional Crime Laboratory Feasibility Study Report

Cc: Fiscal Research Division
Seth Dearmin, Chief of Staff
Laura Brewer, Deputy Chief of Staff
Steven Mange, Director of Policy and Legislative Affairs

The North Carolina State Crime Laboratory has three locations – the main laboratory in Raleigh, the Triad Regional Laboratory in Greensboro, and the Western Regional Laboratory in Edneyville. Controlled substance cases are the largest percentage of cases submitted to the laboratory, and as expected are by far the largest number of submissions in eastern North Carolina. Entry of test fires and crime scene evidence into NIBIN (National Integrated Ballistic Integration Network) is of particular interest given an initiative by ATF to increase the size of the database to provide additional investigative information to law enforcement.

A map of North Carolina counties. The map is color-coded to show regional divisions: Northeast counties are shaded yellow, and Southeast counties are shaded blue. Elizabeth City State University is marked with a red star in Currituck County. The legend below the map identifies the color-coding and the location of Elizabeth City State University.

Legend:

- Northeast Counties (Yellow)
- Southeast Counties (Blue)
- ★ Elizabeth City State University

Department of Justice Crime Laboratory

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NCSC/cfc

The number of drug chemistry case submissions in the Southeast counties were greater than the number of drug chemistry case submissions in the Northeast counties for FY 2017-2022. The Northeast counties

accounted for 6% of the total drug chemistry case submissions for the entire state whereas the Southeast counties accounted for 18%.

DRUG CHEMISTRY SUBMISSIONS FY 2017-2022						
Submission Trends by Proposed Eastern Crime Laboratory Counties						
County	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	TOTALS
1 Beaufort	291	290	240	204	240	1265
2 Pitt	803	75	100	134	135	1247
3 Dare	166	145	154	182	189	836
4 Halifax	107	139	197	170	148	761
5 Martin	95	74	64	93	230	556
6 Pasquotank	127	96	76	82	72	453
7 Hertford	47	85	51	54	106	343
8 Currituck	80	57	48	50	56	291
9 Bertie	66	60	29	38	18	211
10 Washington	15	13	14	78	66	186
11 Perquimans	23	34	31	36	48	172
12 Chowan	19	18	12	49	21	119
13 Tyrrell	39		11	24	23	97
14 Northampton	14	10	10	22	2	58
15 Gates	7	8	12	1	11	39
16 Camden	1	2	4	9	18	34
17 Hyde	8	6		1	5	20
Totals	1908	1112	1053	1227	1388	6688

DRUG CHEMISTRY SUBMISSIONS FY 2017-2022						
Submission Trends by Southeast Counties						
County	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	TOTALS
1 Onslow	599	602	534	666	580	2981
2 Brunswick	499	493	541	474	659	2666
3 Wayne	469	496	501	576	427	2469
4 Craven	311	364	360	637	546	2218
5 New Hanover	244	472	453	375	149	1693
6 Sampson	224	303	293	331	266	1417
7 Duplin	303	322	227	200	264	1316
8 Carteret	315	154	305	190	181	1145
9 Lenoir	180	241	274	146	167	1008
10 Columbus	60	90	98	196	257	701
11 Pamlico	215	108	114	80	74	591
12 Bladen	22	174	82	58	16	352
13 Pender	17	28	67	82	32	226
14 Jones	24	46	59	23	23	175
15 Greene	12	19	18	30	11	90
Totals	3494	3912	3926	4064	3652	19048

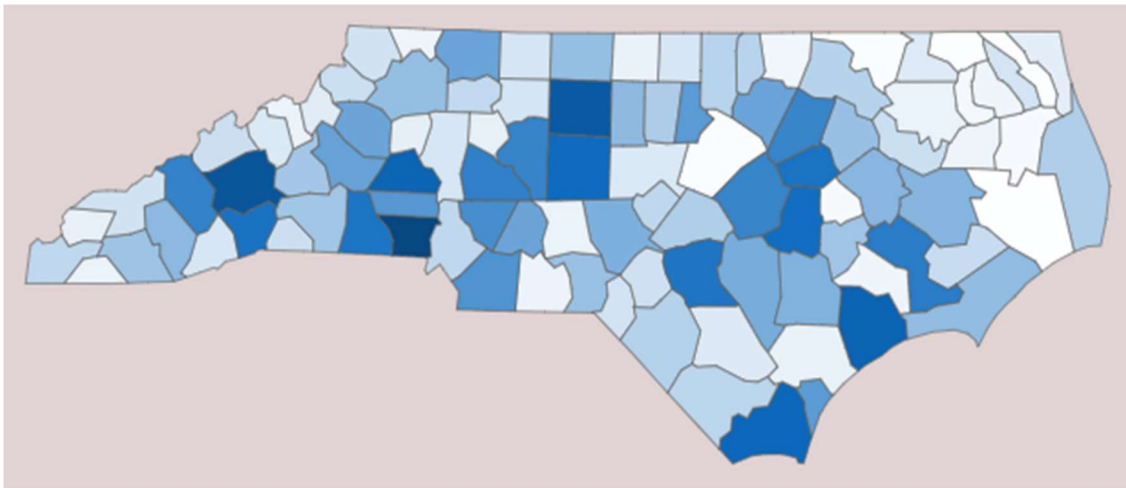


Figure 2 FY 2017-2022 case submissions for Drug Chemistry state-wide distribution map

The number of NIBIN submissions in the Southeast were also greater than the number of NIBIN submissions in the Northeast for FY 2017-2022. The Northeast counties accounted for 6% of the total NIBIN submissions for the entire state whereas the Southeast counties accounted for 28%.

**NIBIN SUBMISSIONS FY 2017-2022 Submission Trends by Proposed Eastern
Crime Lab Counties**

	County	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	TOTALS
1	Pasquotank	2	27	61	52	63	205
2	Pitt	23	11	16	27	52	129
3	Perquimans			5	14	24	43
4	Hertford			2	18	13	33
5	Martin	5	3		2	14	24
6	Halifax	1	2	4	1	6	14
7	Northampton	1	2	5	2		10
8	Gates	1		1	1	1	4
9	Dare					3	3
10	Chowan	1			2		3
11	Bertie			2	1		3
12	Beaufort		1	1	1		3
13	Washington		1	1			2
14	Currituck	1			1		2
15	Tyrrell					1	1
16	Camden				1		1
17	Hyde						0
	Totals	35	47	98	123	177	480

NIBIN SUBMISSIONS FY 2017-2022 Submission Trends by Proposed Southeast Counties						
County	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	TOTALS
1 New Hanover	170	179	246	232	169	996
2 Wayne	34	31	31	162	192	450
3 Lenoir	85	80	59	101	92	417
4 Onslow	37	32	88	88	79	324
5 Sampson	3	2	9	44	13	71
6 Craven	1	4	10	6	6	27
7 Greene		1	3	6	4	14
8 Carteret		1	3	1	2	7
9 Duplin		1	1	2	3	7
10 Columbus		1		2	3	6
11 Bladen	1		1	1		3
12 Pender					2	2
13 Brunswick	1					1
14 Pamlico				1		1
15 Jones						0
Totals	332	332	451	646	565	2326

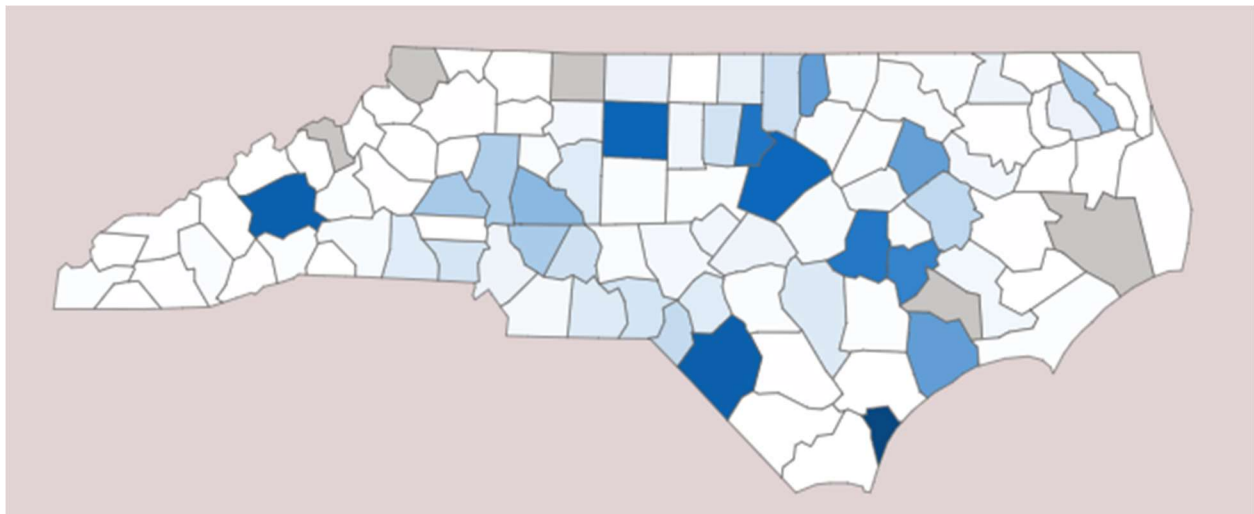


Figure 3 FY 2017-2022 case submissions for NIBIN state-wide distribution map

As seen below, the case submissions over all disciplines performed at the laboratory are higher in the Southeast region of the state versus the Northeast region.

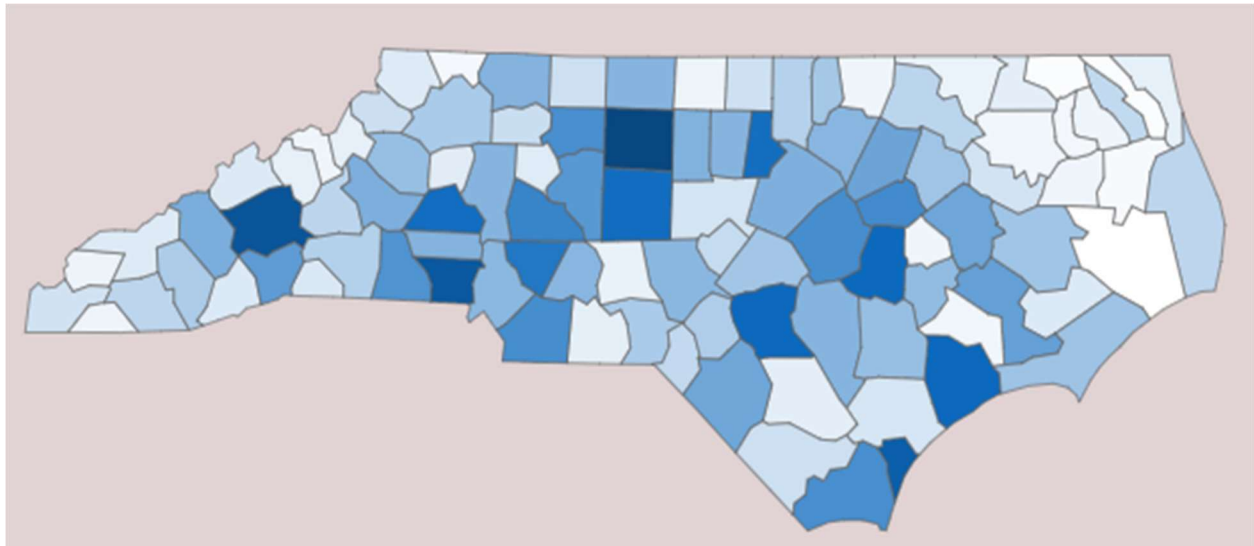


Figure 4 FY 2017-2022 total case submissions state-wide distribution map

The Crime Laboratory strives to be good stewards of the funding provided by the General Assembly. Given the case submission data and the construction and operating costs, an Eastern Regional Laboratory located in a central location in the east could be a more fiscally responsible use of state funds.

North Carolina State Crime Laboratory – Eastern Regional Laboratory Study

Pursuant to Section 18.9 of North Carolina Session Law 2021-180, the North Carolina State Crime Laboratory partnered with Elizabeth City State University, RND Architects, MWL Architects, McKim and Creed Engineers, CLH Designs, and Gardner & McDaniel Consulting Engineers to create a feasibility study for siting an Eastern Crime Laboratory at Elizabeth City State University.

This information was gathered in a series of intensive programming meetings conducted by the design team including leadership from the North Carolina State Crime Laboratory (NCSCCL) and Elizabeth City State University (ECSU).

ECSU offered two potential sites, one on-campus and one off-campus. Three options were determined to be considered for feasibility – 1) renovation of the Cardwell-Hoffler Infirmary Building on the main campus of ECSU, 2) demolition of the Cardwell-Hoffler Infirmary Building and construction of a new crime laboratory building on the site, and 3) construction of a crime laboratory building at a site on Aviation Center Parkway approximately 4 miles from the main campus that is owned by the State of North Carolina.

It was determined that it is not feasible to renovate the existing infirmary building into a crime laboratory. There are many reasons, not least of which is that the current building condition is beyond repair due to the many years of sitting vacant with no maintenance or repairs.

The construction of a new crime laboratory facility following demolition of the infirmary building is feasible but presents significant challenges. One such challenge is the lack of parking for law enforcement officers near the building. This could require walking long distances with sensitive evidence. The most concerning challenge is maintaining and monitoring necessary security in an on-campus location. [This site will be known as site A.2 in the rest of this document].

The site on Aviation Center Parkway was determined to be most feasible for several reasons. [This site will be known as site B in the rest of this document].

Site B provides law enforcement agencies ease of access to drop off and pick up evidence. It also provides for increased security and monitoring. The evidence, controlled substances and firearms, that is taken to and from the laboratory must be heavily monitored with sufficient security to maintain the integrity of the evidence. It is not feasible to have these items going in and out of a university, as the necessary restriction of access would be difficult to obtain.

Site B provides for design flexibility that allows for growth as the field of forensic science is constantly changing. The current design of the building includes the disciplines of drug chemistry and NIBIN entry. If there is demand for additional services, this location would allow for the required expansion. The new laboratory will also provide for tours by including viewing windows of certain laboratory areas.

Estimated Completion Cost:

This statement of probable cost reports on two specific site projects:

Option 1 for the siting of a new Eastern Crime Laboratory is a new single-story building of 15,191 square feet on site A.2. Total construction costs are \$21,704,999 equal to \$1,428.81 per square foot. The total project budget is \$24,788,159.

Option 2 is also a new single-story building, but slightly larger at 16,613 square feet on site B. Total construction costs are \$24,819,623 equal to \$1,493.99 per square foot. The total project budget is \$27,996,212.

The estimated total design fee is \$2,152,000.00.

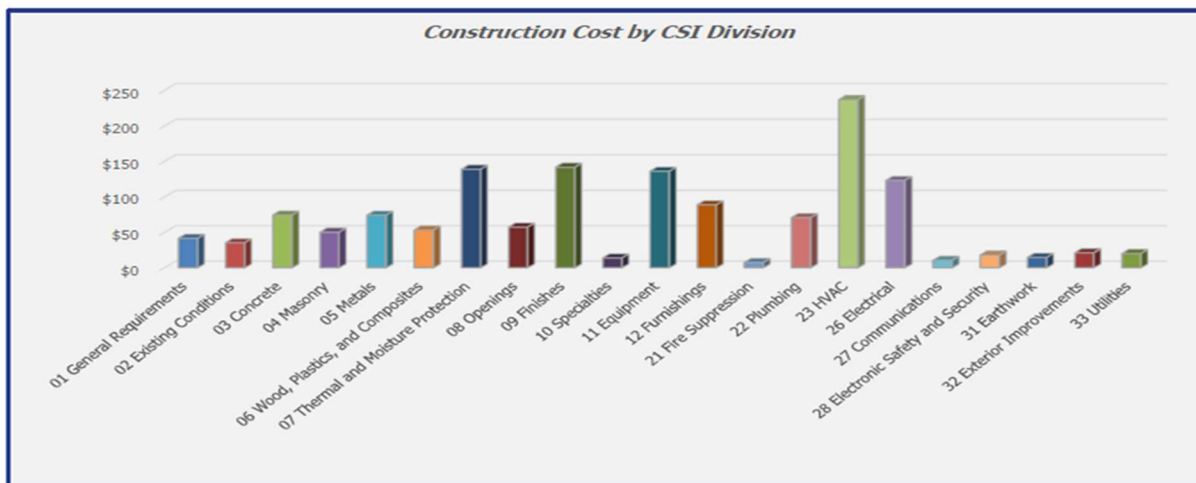


Figure 5 Construction Cost by CSI Division

As opposed to commercial office space, forensic crime laboratories cost significantly more to construct and operate. Air ventilation systems serving lab spaces where biological or chemical hazards exist, as well as in the evidence storage spaces, are recommended to be served with independent air handling systems with 100% exhausted airflow. Sinks need to be equipped with chemical resistant waste lines throughout the laboratory. The security of the facility, as it contains forensic evidence apprised mostly of controlled substances, requires robust security features such as hardened wall construction, motion detection, video surveillance, and monitored key card access. Instrumentation consumes large amounts of power and requires greater electrical loading and back-up power generation. The building must be designed to minimize vibration due to requirements of the sensitive scientific instrumentation in use. Acoustic design must be considered due to noise emanating from HVAC and lab instruments. These are only a subset of the multiple reasons that forensic crime laboratories cost significantly more to construct and operate than a commercial office space.

Initial Furniture, Fixtures and Equipment Cost Estimate:

The initial costs for furniture, fixtures, and equipment are estimated to be in the range of \$1.7 million to \$1.9 million based on the initial costs incurred during the outfitting of the Western Regional Crime Laboratory, allowing for differences in the scientific instrumentation expected to be installed and the current acquisition costs the Crime Laboratory has been experiencing for comparable items. Actual costs are highly dependent upon the specific configuration of the instrumentation and the availability of inventory once the procurement process commences.

New Equipment Costs:

Eastern Lab	Instrument or Software	Cost	Number of Units	Total Cost
Drug Chemistry	GCMS	\$ 164,000.00	3	\$ 492,000.00
	FTIR	\$ 25,000.00	3	\$ 75,000.00
	Eastern Drug Chemistry Total			\$ 567,000.00
Firearms	Brass Trax	\$ 140,000.00	1	\$ 140,000.00
	NIBIN Match Point System	\$ 68,000.00	1	\$ 68,000.00
	Eastern Firearms Total			\$ 208,000.00
	Eastern Lab Equipment Cost			\$ 775,000.00
	Calculated with 5% Inflation Annually			\$ 998,119.00

Figure 6 Eastern Lab Equipment Cost

Estimated Timeline for Completion of the Laboratory:

It will take approximately 22 months for design and approximately 30 months for construction of the new building.

Estimated Operating Costs for the first five years:

The total estimated operating costs for the first five years are approximately \$1.7 million.

The estimated cost of operating the laboratory building systems during its first five years of operation for Site A.2 is \$617,143 and for Site B is \$610,365. The breakdown of these costs can be found in Figure 7 Building Operating Costs.

Site A.2 On-Campus Hollowell Drive

Year	Electrical	Water	Campus Steam	Campus Chilled Water	Yearly Totals
2028**	\$16,540	\$3,000	\$4,500	\$3,750	\$27,790
2029	\$68,145	\$12,600	\$18,900	\$15,750	\$115,395
2030	\$70,189	\$13,230	\$19,845	\$16,540	\$119,804
2031	\$72,295	\$13,895	\$20,835	\$17,365	\$124,390
2032	\$74,463	\$14,590	\$21,880	\$18,230	\$129,163
2033**	\$57,523	\$11,489	\$17,229	\$14,360	\$100,601

Site B Off-Campus Aviation Center Parkway

Year	Electrical	Water	Propane	Yearly Totals
2028**	\$18,077	\$4,500	\$5,000	\$27,577
2029	\$74,475	\$18,900	\$21,000	\$114,375
2030	\$76,709	\$19,845	\$22,050	\$118,604
2031	\$79,011	\$20,835	\$23,152	\$122,998
2032	\$81,381	\$21,880	\$24,310	\$127,571
2033**	\$62,867	\$17,229	\$19,144	\$99,240

Figure 7 Building Operating Costs

**The estimated annual operating costs are based on the building becoming operational in October 2028 and estimates the energy costs for five (5) years through October 2033. A cost increase of 5% per year has been included for all utilities with exception of Electrical which includes a cost increase of 3% per year.

The estimated costs for maintenance, repairs, office, and scientific supplies for the laboratory totals \$1,081,000.

	Eastern Lab Approximate Operating Costs
Year 1	\$196,000.00
Year 2	\$205,000.00
Year 3	\$216,000.00
Year 4	\$226,000.00
Year 5	\$238,000.00

Figure 8 Estimated Operational Costs for Maintenance, Repairs and Office and Scientific supplies

*Years 2-5 are calculated based on 5% inflation annually.