

<b>AGENCY NAME:</b>	The Citadel		
<b>AGENCY CODE:</b>	H09	<b>SECTION:</b>	13



**Fiscal Year 2018-19  
Agency Budget Plan**

**FORM A - BUDGET PLAN SUMMARY**

**OPERATING REQUESTS (FORM B1)**

<b>For FY 2018-19, my agency is (mark "X"):</b>	
<input checked="" type="checkbox"/>	Requesting General Fund Appropriations.
<input type="checkbox"/>	Requesting Federal/Other Authorization.
<input type="checkbox"/>	Not requesting any changes.

**NON-RECURRING REQUESTS (FORM B2)**

<b>For FY 2018-19, my agency is (mark "X"):</b>	
<input checked="" type="checkbox"/>	Requesting Non-Recurring Appropriations.
<input type="checkbox"/>	Requesting Non-Recurring Federal/Other Authorization.
<input type="checkbox"/>	Not requesting any changes.

**CAPITAL REQUESTS (FORM C)**

<b>For FY 2018-19, my agency is (mark "X"):</b>	
<input checked="" type="checkbox"/>	Requesting funding for Capital Projects.
<input type="checkbox"/>	Not requesting any changes.

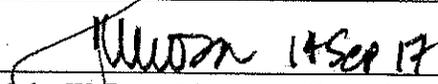
**PROVISOS (FORM D)**

<b>For FY 2018-19, my agency is (mark "X"):</b>	
<input type="checkbox"/>	Requesting a new proviso and/or substantive changes to existing provisos.
<input type="checkbox"/>	Only requesting technical proviso changes (such as date references).
<input checked="" type="checkbox"/>	Not requesting any proviso changes.

Please identify your agency's preferred contacts for this year's budget process.

	<i>Name</i>	<i>Phone</i>	<i>Email</i>
<b>PRIMARY CONTACT:</b>	Col James N. Openshaw	(843)953-7184	openshawj2@citadel.edu
<b>SECONDARY CONTACT:</b>	Jeremy S. Mackey	(843)953-7183	jmackey@citadel.edu

I have reviewed and approved the enclosed FY 2018-19 Agency Budget Plan, which is complete and accurate to the extent of my knowledge.

	<i>Agency Director</i>	<i>Board or Commission Chair</i>
<b>SIGN/DATE:</b>		
<b>TYPE/PRINT NAME:</b>	John W. Rosa, Lieutenant General, USAF (Retired), President	Fred L. Price, Colonel, SCM, Board of Visitor's Chairman

*This form must be signed by the agency head – not a delegate.*

Fiscal Year 2018-19 Budget Request Executive Summary

Agency Code: H09  
 Agency Name: The Citadel  
 Section:

BUDGET REQUESTS			FUNDING					FTES				
Priority	Request Type	Request Title	State	Federal	Earmarked	Restricted	Total	State	Federal	Earmarked	Restricted	Total
1	B1 - Recurring	Faculty and Operating Support for New Engineering Program	500,000				500,000	4.00				4.00
2	B1 - Recurring	Cyber Security Program Support	400,000				400,000	2.00				2.00
3	B2 - Non-Recurring	Outreach and Marketing for new Construction Engineering program	100,000				100,000					0.00
4	C - Capital	Daniel Library HVAC Replacement	1,500,000				1,500,000					0.00
5	C - Capital	Byrd Hall Renovation	5,000,000				5,000,000					0.00
6	C - Capital	Capers Hall Replacement	52,000,000				52,000,000					0.00
7							0					0.00
8							0					0.00
9							0					0.00
10							0					0.00
11							0					0.00
12							0					0.00
13							0					0.00
14							0					0.00
15							0					0.00
16							0					0.00
17							0					0.00
18							0					0.00
19							0					0.00
20							0					0.00
21							0					0.00
22							0					0.00
23							0					0.00
24							0					0.00
25							0					0.00
26							0					0.00
27							0					0.00
28							0					0.00
29							0					0.00
30							0					0.00
<b>TOTAL BUDGET REQUESTS</b>			<b>59,500,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>59,500,000</b>	<b>6.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>6.00</b>

<b>AGENCY NAME:</b>	The Citadel		
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**FORM B1 – RECURRING OPERATING REQUEST**

<b>AGENCY PRIORITY</b>	<b>1 – Form #13098</b>
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*Provide the Agency Priority Ranking from the Executive Summary.*

<b>TITLE</b>	<b>Faculty and operating support for new engineering programs</b>
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*Provide a brief, descriptive title for this request.*

<b>AMOUNT</b>	<b>General: \$500,000</b> <b>Federal:</b> <b>Other:</b> <b>Total: \$500,000</b>
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*What is the net change in requested appropriations for FY 2018-19? This amount should correspond to the total for all funding sources on the Executive Summary.*

<b>NEW POSITIONS</b>	<b>4 positons: 2 Mechanical Engineering; 2 Construction Engineering</b>
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*Please provide the total number of new positions needed for this request.*

<b>FACTORS ASSOCIATED WITH THE REQUEST</b>	<b>Mark “X” for all that apply:</b>	
	<input type="checkbox"/>	Change in cost of providing current services to existing program audience
	<input checked="" type="checkbox"/>	Change in case load/enrollment under existing program guidelines
	<input type="checkbox"/>	Non-mandated change in eligibility/enrollment for existing program
	<input type="checkbox"/>	Non-mandated program change in service levels or areas
	<input checked="" type="checkbox"/>	Proposed establishment of a new program or initiative
	<input type="checkbox"/>	Loss of federal or other external financial support for existing program
	<input type="checkbox"/>	Exhaustion of fund balances previously used to support program
	<input type="checkbox"/>	IT Technology/Security related
	<input type="checkbox"/>	Consulted DTO during development
<input type="checkbox"/>	Related to a Non-Recurring request – If so, Priority # _____	

<b>STATEWIDE ENTERPRISE STRATEGIC OBJECTIVES</b>	<b>Mark “X” for primary applicable Statewide Enterprise Strategic Objective:</b>	
	<input checked="" type="checkbox"/>	Education, Training, and Human Development
	<input type="checkbox"/>	Healthy and Safe Families
	<input type="checkbox"/>	Maintaining Safety, Integrity, and Security
	<input type="checkbox"/>	Public Infrastructure and Economic Development
<input type="checkbox"/>	Government and Citizens	

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<b>ACCOUNTABILITY OF FUNDS</b>	<p>Strategic Initiative Supporting Outcomes:  #2. Enhance the Learning Environment  #8. Provide Outreach to the Region and Serve as a resource in its Economic Development.</p> <p>The Mechanical Engineering BS degree launched in fall 2014 has grown exponentially meeting needs within the lowcountry and the state. The growth (third year as second largest incoming freshman major, in three years second largest department on campus, 50-80 graduates/year going forward) has outpaced the ability to request, hire, and fund faculty lines.</p> <p>The new Construction Engineering BS degree will provide talent for the construction industry that is not able to locate the talent needed to support the construction needs for the lowcountry, the state, and the nation.</p> <p>The growth of Mechanical Engineering will continue to be in double-digit percentage. The growth of the new Construction Engineering program will outpace anticipated growth models for new programs.</p>
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*What specific agency objective, as outlined in the agency's accountability report, does this funding request support? How would this request advance that objective? How would the use of these funds be evaluated?*

<b>RECIPIENTS OF FUNDS</b>	<p>The School of Engineering at The Citadel.</p>
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*What individuals or entities would receive these funds (contractors, vendors, grantees, individual beneficiaries, etc.)? How would these funds be allocated – using an existing formula, through a competitive process, based upon predetermined eligibility criteria?*

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**JUSTIFICATION OF REQUEST**

- a. The Citadel, specifically the School of Engineering, has taken to heart the challenge by leading legislators to increase the number of engineers ready to begin work immediately after graduation, especially in SC and the Lowcountry, where some of the largest manufacturing and engineering firms are located and being constructed.
- b. The Citadel is currently graduating on average 125 engineers each year.
- c. Through invigorated recruiting efforts and the addition of Mechanical Engineering, the School of Engineering has experienced a nearly 50% increase in enrollments and an associated increase in graduation numbers over the last five years.
- d. Engineering has become the largest major at the Citadel; The Citadel is becoming an engineering-centric school.
- e. The Citadel School of Engineering programs have nearly a 100 percent employment rate within 2 months of graduation.
- f. The Citadel School of Engineering programs are unique in that they offer a full-time day undergraduate program to cadets, veterans, and active duty as well as a full-time evening undergraduate program for the non-military focused students of the Lowcountry as part of workforce development. We will be offering the four-year construction engineering degree in a similar manner. It will be offered both as a full-time day undergraduate program to cadets, veterans, and active duty as well as a full-time evening undergraduate program for the non-military focused students with Trident Technical College offering the first two years and The Citadel offering the second two years in the evening.
- g. Through initiation of numerous retention efforts, the School of Engineering has increased retention from freshman to sophomore year by nearly 40 percent.
- h. Throughout this growth, the School of Engineering has retained a top 25 ranking according to US News and World Report for engineering schools with the master's degree as the highest degree – currently ranked number 13. An interesting note is that the four service academies and two other California public schools are the only public schools ranked higher than The Citadel, the rest are private schools.
- i. Current classroom facilities support a maximum of 20 students and the laboratories facilities support a maximum of 14. These faculty-to-student ratios directly translate to the quality of our graduates and the fact that nearly all graduates are fully employed within two months of graduation through either entering the military (approximately 33%), attending graduate school, or entering the workforce as engineers.
- j. Over 84% of the civil engineering and 71% of the electrical engineering students stay in the state of SC after graduation. Mechanical Engineering just recently had its first graduates in May 2016 and 2017 and has 88% staying in the state of SC.
- k. The Citadel received approval in 2015 and launched in three new master's degrees in civil, electrical, and mechanical engineering to enhance workforce development in the Lowcountry. These programs have already offered 12 graduate courses in the past year.
- l. Third year in a row Mechanical Engineering is the second largest incoming freshman class (behind pre-Business)
- m. Launched both day and evening undergraduate programs in the first year of existence requiring all faculty to prepare multiple new courses each semester for over two years. Unheard of for new assistant professors (5 assistant professors).

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	<ul style="list-style-type: none"> <li>n. Developed new Master's degree in Mechanical Engineering during second year and launched it during the third year (taught three masters courses while teaching both day and evening 2+2 undergraduate courses, many times for the first time).</li> <li>o. There are five American Society of Engineering Education faculty awards at the regional level, School of Engineering faculty were selected for four of them with ME faculty taking three of the faculty awards at this Regional Annual Conference.</li> <li>p. In only three years, Mechanical Engineering is the second largest single major on campus.</li> <li>q. All eight members of the faculty have been through the on-line academy as they prepare to move the master's degree to being available on-line as well as face-to-face to meet even greater engineering educational needs for our alumni throughout the world serving our nation in the military.</li> <li>r. Diversity example on campus in an academic department (two females, one African American, one Native American, one Asian, three Caucasians).</li> <li>s. Promoted student experiential development with internships in local industries up to national level research organizations (i.e., Boeing, Applied Physics Lab) resulting in many students asked to return or offered employment.</li> <li>t. Carved out a location and ordered an autoclave setting up the program to be one of the few undergraduate institutions with a hands-on composites experience for all undergrads (a noted key missing component in current Boeing hires from across the nation).</li> <li>u. Students (freshmen through juniors) engaged in undergraduate research and presentations at national and regional conferences in both the second and third year of existence.</li>   <li>v. Construction trades had the largest percentage increase in enrollment at four-year institutions between spring 2016 and spring 2017 – 26.4 percent – according to a recent report (<a href="https://nscnews.org/undergraduate-enrollments-down-300000-for-spring-2017">https://nscnews.org/undergraduate-enrollments-down-300000-for-spring-2017</a>) from the National Student Clearinghouse Research Center. The nonprofit organization collects and distributes education data. "They're not learning how to drive a nail or twist wires or dig a hole," says Michael Holland, president of the American Council for Construction Education. "They're learning how to manage that process from a business perspective."</li> <li>w. The Association of General Contractors (<a href="https://www.agc.org/industry-priorities/workforce-development">https://www.agc.org/industry-priorities/workforce-development</a>): <u>2016 Workforce Survey Results</u>: Stephen Sandherr, chief executive officer for the Associated General Contractors, noted that construction employment expanded in 239 out of 358 metro areas that the association tracks between July 2015 and July 2016, according to a new analysis of federal construction employment data. Forty-eight percent of firms report they are doing more in-house training to cope with workforce shortages while 47 percent report they are increasing overtime hours due to shortages.</li> <li>x. Looking at North Carolina specific results from the workforce study (South Carolina did not participate), 50% noted having a hard time filling both salaried and hourly workers; 74% noted that it will be difficult to find construction professionals; 58% noted using higher base pays, 29% provided incentives and bonuses to recruit salaried professionals and 19% considering increases in the future; 48% noted increase in investment and developmental training; 57% noted worker shortages as biggest concern and 43% noted worker quality; 56%</li> </ul>
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see workforce shortage and training as a huge challenge in the safety and health of workers; 35% noted the increased use of BIM and the need for more training; nearly all were investing in new types of software to increase productivity and accuracy.

- y. The National Science Board, Science and Engineering (S&E) indicators 2016:
- Between 1960 and 2013, the number of workers in S&E occupations grew at an average annual rate of 3%, compared to the 2% growth rate for the total workforce.
  - Data from more recent years indicate that trends in S&E employment compared favorably to overall employment trends during and after the 2007–09 economic downturn. Between 2008 and 2014, the number of workers employed in S&E occupations rose by about half a million, whereas the total workforce stayed relatively steady.
  - Half of the workers in S&E occupations earned \$81,000 or more in 2014, which is more than double the median salaries (\$36,000) of the total workforce.
  - Employed college graduates with a highest degree in S&E earn more than those with non-S&E degrees (median salaries in 2013 were \$65,000 and \$52,000, respectively). For the most part, the earnings premium associated with an S&E degree is present across early, mid, and later career stages.
  - The S&E labor force is less likely than others to experience unemployment. Unemployment rates for college-educated individuals in S&E occupations tend to be lower than those for all college graduates and much lower than those for the overall labor force: In February 2013, about 3.8% of scientists and engineers and 4.3% of all college-educated individuals in the labor force were unemployed, about half the official unemployment rate for the entire U.S. labor force (8.1%).

We are fund raising to support the Mechanical Engineering and the new Construction Engineering programs. However, the funds are barely keeping up with the requirements for student development through conference attendance, competitions, and service. The hallmark of the programs at The Citadel are the low student to teacher ratios (13:1 at The Citadel). However, the unprecedented growth of ME and the local and state demand for Construction Engineering have resulted in large student to teacher ratios (30:1) in critical upper division courses.

As the student population decides on the majors of choice, the vacancies are redistributed to support the programs with growth. However, engineering is meeting the needs of the lowcountry and state through engineering undergraduate day programs for cadets, active duty, and veterans; evening undergraduate engineering programs (part of 2+2) for the local residents not able to move to Clemson or Columbia and not desiring a military environment as well as employees in the lowcountry working to advance their careers; engineering master's degrees for employees of the lowcountry; online master's degrees for local employees of the lowcountry that cannot attend during available evening courses (shift work at Boeing) or our graduates serving in the military around the world. These demands do not allow for existing vacancies to fully meet/provide for the quality of education required in SC.

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*Please thoroughly explain the request to include the justification for funds, potential offsets, matching funds, and method of calculation. Please include any explanation of impact if funds are not received. If new positions have been requested, explain why existing vacancies are not sufficient.*

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**FORM B1 – RECURRING OPERATING REQUEST**

<b>AGENCY PRIORITY</b>	<b>2 – Form #13099</b>
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*Provide the Agency Priority Ranking from the Executive Summary.*

<b>TITLE</b>	<b>Cyber Security Program Support</b>
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*Provide a brief, descriptive title for this request.*

<b>AMOUNT</b>	<b>General: \$400,000</b> <b>Federal:</b> <b>Other:</b> <b>Total: \$400,000</b>
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*What is the net change in requested appropriations for FY 2018-19? This amount should correspond to the total for all funding sources on the Executive Summary.*

<b>NEW POSITIONS</b>	<b>Two (2)</b>
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*Please provide the total number of new positions needed for this request.*

<b>FACTORS ASSOCIATED WITH THE REQUEST</b>	<b>Mark “X” for all that apply:</b>	
	<input type="checkbox"/>	Change in cost of providing current services to existing program audience
	<input type="checkbox"/>	Change in case load/enrollment under existing program guidelines
	<input type="checkbox"/>	Non-mandated change in eligibility/enrollment for existing program
	<input type="checkbox"/>	Non-mandated program change in service levels or areas
	<input checked="" type="checkbox"/>	Proposed establishment of a new program or initiative
	<input type="checkbox"/>	Loss of federal or other external financial support for existing program
	<input type="checkbox"/>	Exhaustion of fund balances previously used to support program
	<input checked="" type="checkbox"/>	IT Technology/Security related
	<input type="checkbox"/>	Consulted DTO during development
	<input type="checkbox"/>	Related to a Non-Recurring request – If so, Priority # _____

<b>STATEWIDE ENTERPRISE STRATEGIC OBJECTIVES</b>	<b>Mark “X” for primary applicable Statewide Enterprise Strategic Objective:</b>	
	<input checked="" type="checkbox"/>	Education, Training, and Human Development
	<input type="checkbox"/>	Healthy and Safe Families
	<input type="checkbox"/>	Maintaining Safety, Integrity, and Security
	<input type="checkbox"/>	Public Infrastructure and Economic Development
	<input type="checkbox"/>	Government and Citizens

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<b>ACCOUNTABILITY OF FUNDS</b>	<p>Accountability Report Objective 2.2.5: School of Humanities &amp; Social Sciences to develop a center of excellence for criminal justice, homeland security and intelligence analysis.</p>
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*What specific agency objective, as outlined in the agency’s accountability report, does this funding request support? How would this request advance that objective? How would the use of these funds be evaluated?*

<b>RECIPIENTS OF FUNDS</b>	<p>The Citadel: The Military College of South Carolina</p>
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*What individuals or entities would receive these funds (contractors, vendors, grantees, individual beneficiaries, etc.)? How would these funds be allocated – using an existing formula, through a competitive process, based upon predetermined eligibility criteria?*

<b>JUSTIFICATION OF REQUEST</b>	<p>The Citadel has addressed South Carolina’s needs in the areas of cybersecurity and intelligence security studies through the creation of a nationally recognized program that is prepared to meet the state’s workforce demands. We are asking for \$400,000 in recurring funds to increase the number of qualified faculty to teach in this growing curriculum, the recruitment and retention of students in the fields of cybersecurity and intelligence studies; to support the renovation of existing space into a cyber-range to foster the development of skills in cyber defense; and to provide enrichment and advanced academic opportunities for Citadel undergraduate and graduate students. We strongly believe our outcomes support this request and offer the following observations:</p> <ul style="list-style-type: none"> <li>• The increasing reliance of our daily activities on the Internet has been accompanied by the rising danger of potentially crippling cyberattacks which cause devastating effects on the social and economic system of our country. It has also spawned the proliferation of an unprecedented level of threats from “rogue states,” “lone wolves,” and other features of the ever more interconnected world of the twenty-first century. As a senior military college in the state of South Carolina, The Citadel aims to produce principled leaders with expertise in cybersecurity and intelligence who can defend our country against these threats and attacks.</li> <li>• The Citadel has been designated as National Center of Academic Excellence in Cyber Defense Education (CAE-CD-E) by National Security Agency and Department of Homeland Security. The Citadel is one of the only two colleges in South Carolina to earn this designation. CAE-CD-E institutions receive formal recognition from the U.S. Government as well as opportunities for prestige and publicity for their role in securing our Nation's information systems. The designations will make the Cybersecurity Programs at The Citadel more visible. Students attending CAE-CD-E schools are eligible to apply for scholarships and grants through the Department of Defense Information Assurance Scholarship Program and the Federal Cyber Service Scholarship for Service Program.</li> <li>• The Citadel has applied for designation as an Intelligence Community (IC) Center</li> </ul>
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for Academic Excellence. Achieving this designation will make students available for special enrichment opportunities (e.g., IC sponsored-seminar seminar programs and conferences) as well as provide funding for study abroad opportunities and scholarships.

- The Citadel currently offers an undergraduate minor on cybersecurity, M.S. in Computer Science with cybersecurity concentration and Graduate Certificate in Cybersecurity. The Citadel is also in the process of designing a new interdisciplinary minor in Cyber Systems and a new B.S. degree in Computer Information Systems.
- The Citadel currently offers an online Master’s degree in Intelligence and Security Studies. As part of the degree, students can opt for two concentrations (Cybersecurity or Leadership), both of which also lead to a certificate.
- The Citadel offers two graduate certificates (intelligence analysis and homeland security) as well as a minor in intelligence studies. We have also added a new major (BA) in Intelligence and Security Studies. Demand for this program is expected to be high, given The Citadel’s highly successful record of placing students in military intelligence and the Intelligence Community:
  - In 2016, 12 Citadel graduates were hired by the FBI; this is an extraordinary number, given the size of the student body and the fact that the FBI generally does not hire graduates without experience.
  - Over the past five years, between 20 and 25 Citadel graduates per year received commissions in the intelligence branches of the armed forces (in 2016, the number was 16). The Citadel has graduated between 20 and 25 graduates.
- The Citadel has established Center for Cyber, Intelligence, and Security Studies (CCISS) which is an interdisciplinary initiative that provides the educational opportunities necessary to train the rapidly growing number of skilled professionals in governmental agencies, the armed forces, and the private sector that are required to safeguard the nation.
- To date, the CCISS has established many strong contacts in the public and private cybersecurity and intelligence community (IC). For example, graduate students from The Citadel, one of a few elite college and universities (others included Harvard and West Point), recently completed a project for National Counterterrorism Center. In addition, in late 2015, The Citadel completed an open source research project at the request of the Columbia Office of the FBI concerning the Port of Charleston; the project provided direct benefit for the city of Charleston and the state of South Carolina.
- The Citadel has formed a Cybersecurity Industry Advisory Board that includes members from SPAWAR, Scientific Research Corporation, Phishlabs, SAIC, Honeywell, Life Cycle Engineering, South Carolina Port Authority, Ishpi Information, Technologies, and Sourcefire.
- In the summer of 2016, The Citadel hosted a weeklong GenCyber Camp “CyberCitadel: Cybersecurity Training for Middle / High School teachers”. The event was funded by National Security Agency and National Science Foundation. 23 Middle/High School teachers from different schools in the state attended the camp. Last summer, The Citadel hosted “CyberCitadel 2017: Cybersecurity Training for Middle/High School Teachers.” 12 Middle/High School teachers from the tri-county area attended the camp.
- Since the attacks of 9/11, the Department of Homeland Security and the Intelligence Community (IC) have grown dramatically; federal security jobs alone

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grew by 377 percent (Howard Scripps News Service). These are high paying opportunities: Payscale.com reports that at present the intelligence analyst's median salary is \$71,597 per annum. South Carolina has myriad cybersecurity and intelligence related opportunities, both in the public and private sectors.

- For example: Sumter, South Carolina is listed by Payscale.com as one of the top 15 cities with the highest salaries for Intelligence Analysts (\$60,000-\$80,393); the positions in Sumter are staffed by contractors from CACI International, SAIC, and the military.
- Corporations such as Booz Allen Hamilton, BAE, SAIC, SRA, SPAWAR, and Northrup Grumman have robust operations in South Carolina. In 2013, there were 3,573 defense contractors (i.e., firms) operating in the state, which were awarded \$3,495,871,419 in funding ([http://www.governmentcontractswon.com/department/defense/south\\_carolina\\_counties.asp](http://www.governmentcontractswon.com/department/defense/south_carolina_counties.asp)).
- Current South Carolina data on protective service occupations indicate that 46,240 positions exist in the state and that there are 24,641 jobs per 1,000 jobs in the state in the area of protective services (Bureau of Labor Statistics [http://www.bls.gov/oes/current/oes\\_sc.htm](http://www.bls.gov/oes/current/oes_sc.htm)).
- Other South Carolina private sector occupations that value an intelligence education and background include peacekeeping and humanitarian operations support, Cybersecurity, management consulting, business intelligence, strategic intelligence, and state and local law enforcement intelligence.

With additional funding, The Citadel would provide the following:

- Two faculty members to support programmatic growth;
- Study Abroad opportunities. The Citadel has recently established a relationship with the University of Tartu in Estonia to pursue cybersecurity and Russian studies programs;
- Research/volunteer activities with an impact on South Carolina;
- Non-residential summer program/camp in intelligence and cybersecurity for high school students and teachers in historically underserved populations;
- Student enrichment events (e.g., *Days of Intrigue* cybersecurity/intelligence exercise, funding for students to attend national conferences);
- Development of Cybersecurity and Intelligence certificate programs for the South Carolina National and State Guard;
- Expansion of Cyber Range for cyber offense and defense practices to prepare next generation of cyber warriors.

Potential Offsets: Potential offsets would be either in tuition rate increases or donor support.

Matching Funds: The Citadel currently has no external source for matching funds and must rely on institutional resources (tuition, targeted fees and fundraising efforts).

Method of Calculation: Salary and fringe for two full-time faculty (\$230,350; \$85,000 salary + \$30,175 fringe each) and \$169,650 to support a comprehensive program to recruit and retain students in the areas of cybersecurity and intelligence studies to meet the workforce demands in South Carolina. The Citadel participates annually at Palmetto Cyber Defense Contest (PCDC) which is organized by SPAWAR. The Citadel also

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participates in Southeast Region Collegiate Cyber Defense Competition (SECCDC). The Citadel Cybersecurity Industry Advisory Board provides opportunities for the students with internship positions in the cybersecurity industry. The Citadel has recently established a study abroad relationship with University of Tartu, Estonia which will include course units on cybersecurity.

*Please thoroughly explain the request to include the justification for funds, potential offsets, matching funds, and method of calculation. Please include any explanation of impact if funds are not received. If new positions have been requested, explain why existing vacancies are not sufficient.*

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**FORM B2 – NON-RECURRING OPERATING REQUEST**

<b>AGENCY PRIORITY</b>	<b>3 – Form #13100</b>
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*Provide the Agency Priority Ranking from the Executive Summary.*

<b>TITLE</b>	<b>Outreach and Marketing for new Construction Engineering BS degree</b>
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*Provide a brief, descriptive title for this request.*

<b>AMOUNT</b>	<b>\$100,000</b>
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*What is the net change in requested appropriations for FY 2018-19? This amount should correspond to the total for all funding sources on the Executive Summary.*

<b>FACTORS ASSOCIATED WITH THE REQUEST</b>	<b>Mark “X” for all that apply:</b>
	<input type="checkbox"/> Change in cost of providing current services to existing program audience
	<input type="checkbox"/> Change in case load/enrollment under existing program guidelines
	<input type="checkbox"/> Non-mandated change in eligibility/enrollment for existing program
	<input type="checkbox"/> Non-mandated program change in service levels or areas
	<input checked="" type="checkbox"/> Proposed establishment of a new program or initiative
	<input type="checkbox"/> Loss of federal or other external financial support for existing program
	<input type="checkbox"/> Exhaustion of fund balances previously used to support program
	<input type="checkbox"/> IT Technology/Security related
	<input type="checkbox"/> Consulted DTO during development
	<input checked="" type="checkbox"/> Request for Non-Recurring Appropriations
	<input type="checkbox"/> Request for Federal/Other Authorization to spend existing funding
<input type="checkbox"/> Related to a Recurring request – If so, Priority # <u>  1  </u>	

<b>STATEWIDE ENTERPRISE STRATEGIC OBJECTIVES</b>	<b>Mark “X” for primary applicable Statewide Enterprise Strategic Objective:</b>
	<input checked="" type="checkbox"/> Education, Training, and Human Development
	<input type="checkbox"/> Healthy and Safe Families
	<input type="checkbox"/> Maintaining Safety, Integrity, and Security
	<input type="checkbox"/> Public Infrastructure and Economic Development
<input type="checkbox"/> Government and Citizens	

<b>ACCOUNTABILITY OF FUNDS</b>	Strategic Initiative Supporting Outcomes: #2. Enhance the Learning Environment #8. Provide Outreach to the Region and Serve as a resource in its Economic Development.
	The new Construction Engineering BS degree will provide talent for the construction industry that is not able to locate the talent needed to support the construction needs for the lowcountry, the state, and the nation.
	The growth of the new program against anticipated growth models for new programs.
	<i>What specific agency objective, as outlined in the agency’s accountability report, does this funding request support? How would this request advance that objective? How would the use of these funds be evaluated?</i>

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<b>RECIPIENTS OF FUNDS</b>	<b>The Citadel School of Engineering and The Citadel External Communications Section</b>
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*What individuals or entities would receive these funds (contractors, vendors, grantees, individual beneficiaries, etc.)? How would these funds be allocated – using an existing formula, through a competitive process, based upon predetermined eligibility criteria?*

<b>JUSTIFICATION OF REQUEST</b>	<ol style="list-style-type: none"> <li>a. The Citadel, specifically the School of Engineering, has taken to heart the challenge by leading legislators to increase the number of engineers ready to begin work immediately after graduation, especially in SC and the Lowcountry, where some of the largest manufacturing and engineering firms are located and being constructed.</li> <li>b. The Citadel is currently graduating on average 125 engineers each year.</li> <li>c. Through invigorated recruiting efforts and the addition of Mechanical Engineering, the School of Engineering has experienced a nearly 50% increase in enrollments and an associated increase in graduation numbers over the last five years.</li> <li>d. Engineering has become the largest major at the Citadel; The Citadel is becoming an engineering-centric school.</li> <li>e. The Citadel School of Engineering programs have nearly a 100 percent employment rate within 2 months of graduation.</li> <li>f. The Citadel School of Engineering programs are unique in that they offer a full-time day undergraduate program to cadets, veterans, and active duty as well as a full-time evening undergraduate program for the non-military focused students of the Lowcountry as part of workforce development. We will be offering the four-year construction engineering degree in a similar manner. It will be offered both as a full-time day undergraduate program to cadets, veterans, and active duty as well as a full-time evening undergraduate program for the non-military focused students with Trident Technical College offering the first two years and The Citadel offering the second two years in the evening.</li> <li>g. Through initiation of numerous retention efforts, the School of Engineering has increased retention from freshman to sophomore year by nearly 40 percent.</li> <li>h. Throughout this growth, the School of Engineering has retained a top 25 ranking according to US News and World Report for engineering schools with the master's degree as the highest degree – currently ranked number 13. An interesting note is that the four service academies and two other California public schools are the only public schools ranked higher than The Citadel, the rest are private schools.</li> <li>i. Current classroom facilities support a maximum of 20 students and the laboratories facilities support a maximum of 14. These faculty-to-student ratios directly translate to the quality of our graduates and the fact that nearly all graduates are fully employed within two months of graduation through either entering the military (approximately 33%), attending graduate school, or entering the workforce as engineers.</li> <li>j. Over 84% of the civil engineering and 71% of the electrical engineering students stay in the state of SC after graduation. Mechanical Engineering just recently had its first graduates in May 2016 and 2017 and has 88% staying in the state of SC.</li> <li>k. The Citadel received approval in 2015 and launched in three new master's</li> </ol>
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degrees in civil, electrical, and mechanical engineering to enhance workforce development in the Lowcountry. These programs have already offered 12 graduate courses in the past year.

- l. Construction trades had the largest percentage increase in enrollment at four-year institutions between spring 2016 and spring 2017 – 26.4 percent – according to a recent report (<https://nscnews.org/undergraduate-enrollments-down-300000-for-spring-2017>) from the National Student Clearinghouse Research Center. The nonprofit organization collects and distributes education data. "They're not learning how to drive a nail or twist wires or dig a hole," says Michael Holland, president of the American Council for Construction Education. "They're learning how to manage that process from a business perspective."
- m. The Association of General Contractors (<https://www.agc.org/industry-priorities/workforce-development>): 2016 Workforce Survey Results: Stephen Sandherr, chief executive officer for the Associated General Contractors, noted that construction employment expanded in 239 out of 358 metro areas that the association tracks between July 2015 and July 2016, according to a new analysis of federal construction employment data. Forty-eight percent of firms report they are doing more in-house training to cope with workforce shortages while 47 percent report they are increasing overtime hours due to shortages.
- n. Looking at North Carolina specific results from the workforce study (South Carolina did not participate), 50% noted having a hard time filling both salaried and hourly workers; 74% noted that it will be difficult to find construction professionals; 58% noted using higher base pays, 29% provided incentives and bonuses to recruit salaried professionals and 19% considering increases in the future; 48% noted increase in investment and developmental training; 57% noted worker shortages as biggest concern and 43% noted worker quality; 56% see workforce shortage and training as a huge challenge in the safety and health of workers; 35% noted the increased use of BIM and the need for more training; nearly all were investing in new types of software to increase productivity and accuracy.
- o. The National Science Board, Science and Engineering (S&E) indicators 2016:
  - Between 1960 and 2013, the number of workers in S&E occupations grew at an average annual rate of 3%, compared to the 2% growth rate for the total workforce.
  - Data from more recent years indicate that trends in S&E employment compared favorably to overall employment trends during and after the 2007–09 economic downturn. Between 2008 and 2014, the number of workers employed in S&E occupations rose by about half a million, whereas the total workforce stayed relatively steady.
  - Half of the workers in S&E occupations earned \$81,000 or more in 2014, which is more than double the median salaries (\$36,000) of the total workforce.
  - Employed college graduates with a highest degree in S&E earn more than those with non-S&E degrees (median salaries in 2013 were \$65,000 and \$52,000, respectively). For the most part, the earnings premium associated with an S&E degree is present across early, mid, and later career stages.
  - The S&E labor force is less likely than others to experience unemployment. Unemployment rates for college-educated individuals in S&E occupations

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tend to be lower than those for all college graduates and much lower than those for the overall labor force: In February 2013, about 3.8% of scientists and engineers and 4.3% of all college-educated individuals in the labor force were unemployed, about half the official unemployment rate for the entire U.S. labor force (8.1%).

We are fund raising to support the new Construction Engineering programs. However, the current fund raising are barely keeping up with the requirements for student development through conference attendance, competitions, and service in existing programs. The hallmark of the programs at The Citadel are the low student to teacher ratios (13:1 at The Citadel). However, the unprecedented growth of ME and the local and state demand for Construction Engineering have resulted in large student to teacher ratios (30:1) in critical upper division courses.

The challenge of initiating any new program is monumental. The ability to market and conduct outreach throughout the state with construction engineering companies is invaluable. The personal touch of how the program can influence their bottom line as well as how best to engage their employees into the Construction Engineering program takes time to nurture.

Once the program matures, the graduates of the program will be the best marketers of the program within the companies that will employ them. This method has been impactful in the unprecedented growth of the Mechanical Engineering degree initiated in fall 2014.

*Please thoroughly explain the request to include the justification for funds, potential offsets, matching funds, and method of calculation. Please include any explanation of impact if funds are not received. Does this non-recurring appropriation request create an annualization or need for recurring funds?*

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**FORM C – CAPITAL REQUEST**

<b>AGENCY PRIORITY</b>	<b>4 – Form #13101</b>
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*Provide the Agency Priority Ranking from the Executive Summary.*

<b>TITLE</b>	<b>Daniel Library HVAC Replacement</b>
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*Provide a brief, descriptive title for this request.*

<b>AMOUNT</b>	<b>\$1,500,000</b>
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*How much is requested for this project in FY 2018-19? This amount should correspond to the total for all funding sources on the Executive Summary.*

<b>CPIP PRIORITY</b>	1 of 2 – FY18 (2017-2018)
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*Identify the project's CPIP plan year and priority number, along with the first year in which the project was included in the agency's CPIP. If not included in the agency's CPIP, please provide an explanation. If the project involves a request for appropriated state funding, briefly describe the agency's contingency plan in the event that state funding is not made available in the amount requested.*

<b>OTHER APPROVALS</b>	None Additional approvals: CHE, JBRC, SFAA
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*What approvals have already been obtained? Are there additional approvals that must be secured in order for the project to succeed? (Institutional board, JBRC, SFAA, etc.)*

<b>LONG-TERM PLANNING AND SUSTAINABILITY</b>	The Citadel is addressing maintenance needs of E&G buildings by creating a Capital Improvement Fee in 2018 to support our asset management plan for excellence in maintenance of The Citadel campus. The college's Asset Management plan will provide more effective tracking and assistance of maintenance needs with funding allocation.
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*What other funds have already been invested in this project (source/type, amount, timeframe)? Will other capital and/or operating funds for this project be requested in the future? If so, how much, and in which fiscal years? Has a source for those funds been identified/secured? What is the agency's expectation with regard to additional annual costs or savings associated with this capital improvement? What source of funds will be impacted by those costs or savings? What is the expected useful life of the capital improvement?*

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<b>SUMMARY</b>	<p>Daniel Library was constructed in 1959 (58 years old) and is approximately 56,075 SF. The original HVAC systems are still in operation although it had an expected lifespan of only 20 years. The building houses the Library, Citadel Museum, Faculty and Staff offices, the Rare Book Room and Archives.</p> <p>This project would encompass asbestos abatement, replacement of the steam lines, chilled water lines, five air-handling units and controls, and a new specialized air-handling unit in the archive area.</p> <p>The existing HVAC system is in poor condition with antiquated controls which are beyond repair. The deteriorated condition of the existing HVAC systems has a negative effect on interior air quality for the students and faculty. System failures would preclude the use of the building and cause damage to the contents and historic artifacts due to humidity and temperature. This project is desperately needed to provide proper heating and air-conditioning in all three floors of the building. There are no alternative options.</p>
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*Provide a summary of the project and explain why it is necessary. Please refer to the budget guidelines for appropriate questions and thoroughly answer all related items.*

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**FORM C – CAPITAL REQUEST**

<b>AGENCY PRIORITY</b>	<b>5 – Form #13102</b>
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*Provide the Agency Priority Ranking from the Executive Summary.*

<b>TITLE</b>	<b>Byrd Hall Renovation</b>
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*Provide a brief, descriptive title for this request.*

<b>AMOUNT</b>	<b>\$5,000,000</b>
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*How much is requested for this project in FY 2018-19? This amount should correspond to the total for all funding sources on the Executive Summary.*

<b>CPIP PRIORITY</b>	1 of 2 - FY19 (2018-2019)
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*Identify the project's CPIP plan year and priority number, along with the first year in which the project was included in the agency's CPIP. If not included in the agency's CPIP, please provide an explanation. If the project involves a request for appropriated state funding, briefly describe the agency's contingency plan in the event that state funding is not made available in the amount requested.*

<b>OTHER APPROVALS</b>	None Additional approvals: CHE, JBRC, SFAA
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*What approvals have already been obtained? Are there additional approvals that must be secured in order for the project to succeed? (Institutional board, JBRC, SFAA, etc.)*

<b>LONG-TERM PLANNING AND SUSTAINABILITY</b>	The Citadel is addressing maintenance needs of E&G buildings by creating a Capital Improvement Fee in 2018 to support our asset management plan for excellence in maintenance of The Citadel campus. The college's Asset Management plan will provide more effective tracking and assistance of maintenance needs with funding allocation.
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*What other funds have already been invested in this project (source/type, amount, timeframe)? Will other capital and/or operating funds for this project be requested in the future? If so, how much, and in which fiscal years? Has a source for those funds been identified/secured? What is the agency's expectation with regard to additional annual costs or savings associated with this capital improvement? What source of funds will be impacted by those costs or savings? What is the expected useful life of the capital improvement?*

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<b>SUMMARY</b>	<p>Byrd Hall was constructed in 1968 (49 years old) and is approximately 49,675 square feet. The building houses the Chemistry department, classrooms, laboratories, a small auditorium, and faculty &amp; staff offices. This project would encompass an interior renovation and reprogramming/reutilization of the spaces in the building as well as HVAC replacement. Scope includes reallocation of spaces for better classroom &amp; office utilization, upgrade laboratory spaces, interior finishes and upgrade electrical, lighting &amp; HVAC systems.</p> <p>The majority of this building remains in its original 1968 condition. The original HVAC systems are still in operation and are in poor condition with antiquated controls beyond repair. The deteriorated condition of the existing HVAC systems has a negative effect on interior air quality for the students and faculty. System failures of the HVAC would preclude the use of the building.</p>
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*Provide a summary of the project and explain why it is necessary. Please refer to the budget guidelines for appropriate questions and thoroughly answer all related items.*

<b>AGENCY NAME:</b>	<b>The Citadel</b>		
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## FORM C – CAPITAL REQUEST

<b>AGENCY PRIORITY</b>	<b>6 – Form #13103</b>
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*Provide the Agency Priority Ranking from the Executive Summary.*

<b>TITLE</b>	<b>Academic Building Replacement (Capers Hall)</b>
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*Provide a brief, descriptive title for this request.*

<b>AMOUNT</b>	<b>\$52,000,000</b>
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*How much is requested for this project in FY 2018-19? This amount should correspond to the total for all funding sources on the Executive Summary.*

<b>CPIP PRIORITY</b>	1 of 8 FY20 (2019-2020) Capers will be funded through state institutional bonds, gifts, and tuition-funded accounts.
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*Identify the project's CPIP plan year and priority number, along with the first year in which the project was included in the agency's CPIP. If not included in the agency's CPIP, please provide an explanation. If the project involves a request for appropriated state funding, briefly describe the agency's contingency plan in the event that state funding is not made available in the amount requested.*

<b>OTHER APPROVALS</b>	Phase 1 A1 – Modification submitted to CHE and JBRC on 29 August 2017. Phase 2 A1 – To be submitted in Spring of 2018 to CHE, JBRC, and SFAA
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*What approvals have already been obtained? Are there additional approvals that must be secured in order for the project to succeed? (Institutional board, JBRC, SFAA, etc.)*

<b>LONG-TERM PLANNING AND SUSTAINABILITY</b>	This Academic Building Replacement is being funded primarily with state institution bonds. The Citadel is actively fundraising for the building and currently has \$1.8M in cash for the project. In addition, we have \$2.5M set aside for the project; we have successfully completed payment of previous capital bonds of \$255K annually; and, as a result, we are prepared to take on new bond payment without increasing tuition.
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*What other funds have already been invested in this project (source/type, amount, timeframe)? Will other capital and/or operating funds for this project be requested in the future? If so, how much, and in which fiscal years? Has a source for those funds been identified/secured? What is the agency's expectation with regard to additional annual costs or savings associated with this capital improvement? What source of funds will be impacted by those costs or savings? What is the expected useful life of the capital improvement?*

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<b>SUMMARY</b>	<p>This project replaces the existing Capers Hall academic facility. It is the number one project request in our FY19/20 CPIP and has been in our CPIP since the 2008 submission for year two (2009/2010). Capers Hall is a 75,116 SF facility, which currently houses much of the School of Humanities &amp; Social Sciences. The existing Capers Hall was constructed in two phases in the 1940s &amp; 1970s. The facility does not meet the requirements of current teaching techniques and the physical structure has outlived its useful life. A comprehensive engineering Structural Building Evaluation was completed on this facility in June 2014 to understand the feasibility of modifying the existing structure to meet current seismic standards which led to the decision that it was a more financially sound decision to replace the 1940s wing as well in order to best meet current seismic codes and modern standards for teaching methods and techniques. Also, there is not sufficient existing facility space to house all of the School of Humanities &amp; Social Sciences departments for current and future requirements. The replacement 104,000 SF academic building is to be located directly behind the existing facility initially displacing the 1970s wing, and then demolishing the 1940s wing after relocation of remaining faculty and classrooms.</p>
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*Provide a summary of the project and explain why it is necessary. Please refer to the budget guidelines for appropriate questions and thoroughly answer all related items.*

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**FORM E – AGENCY COST SAVINGS AND GENERAL FUND REDUCTION  
CONTINGENCY PLAN**

<b>TITLE</b>	Agency Cost Savings and General Fund Reduction Contingency Plan
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<b>AMOUNT</b>	<b>\$322,513</b> <i>What is the General Fund 3% reduction amount (minimum based on the FY 2017-18 recurring appropriations)? This amount should correspond to the reduction spreadsheet prepared by EBO.</i>
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<b>ASSOCIATED FTE REDUCTIONS</b>	None
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*How many FTEs would be reduced in association with this General Fund reduction?*

<b>PROGRAM/ACTIVITY IMPACT</b>	All programs of The Citadel would be impacted by a 3% reduction.
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*What programs or activities are supported by the General Funds identified?*

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<b>SUMMARY</b>	<p>The Citadel would make cuts to programs' operational budgets. Reducing the funding for programs would reduce student travel and participation in programs, such as undergraduate research, leadership development, civic engagement and service learning.</p> <p>Limited faculty and staff professional development to ensure best practices in higher education in use at The Citadel.</p>
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*Please provide a detailed summary of service delivery impact caused by a reduction in General Fund Appropriations and provide the method of calculation for anticipated reductions. Agencies should prioritize reduction in expenditures that have the least significant impact on service delivery.*

<b>AGENCY COST SAVINGS PLANS</b>	<table> <tr> <td colspan="2">Cost savings through FY17:</td> </tr> <tr> <td>- EAB study (collapsing courses, Spring semester):</td> <td style="text-align: right;">\$150,000</td> </tr> <tr> <td>- Organizational Alignment</td> <td style="text-align: right;">\$345,000</td> </tr> <tr> <td>- <u>Voice Over Internet Protocol</u></td> <td style="text-align: right;"><u>\$84,000</u></td> </tr> <tr> <td><b>Total for FY17</b></td> <td style="text-align: right;"><b>\$579,000</b></td> </tr> <tr> <td colspan="2">Projected cost savings for FY18:</td> </tr> <tr> <td>- EAB study (+ Fall semester)</td> <td style="text-align: right;">\$150,000</td> </tr> <tr> <td>- Organizational Alignment (additional savings)</td> <td style="text-align: right;">\$100,000</td> </tr> <tr> <td>- TERI Program</td> <td style="text-align: right;">\$750,000</td> </tr> <tr> <td>- Miscellaneous</td> <td style="text-align: right;">\$250,000</td> </tr> <tr> <td>- <u>Reduction in uniform requirements</u></td> <td style="text-align: right;"><u>\$209,000</u></td> </tr> <tr> <td><b>Total for FY18</b></td> <td style="text-align: right;"><b>\$1,459,000</b></td> </tr> <tr> <td><b>Total projected savings through FY18</b></td> <td style="text-align: right;"><b>\$2,038,000</b></td> </tr> </table>	Cost savings through FY17:		- EAB study (collapsing courses, Spring semester):	\$150,000	- Organizational Alignment	\$345,000	- <u>Voice Over Internet Protocol</u>	<u>\$84,000</u>	<b>Total for FY17</b>	<b>\$579,000</b>	Projected cost savings for FY18:		- EAB study (+ Fall semester)	\$150,000	- Organizational Alignment (additional savings)	\$100,000	- TERI Program	\$750,000	- Miscellaneous	\$250,000	- <u>Reduction in uniform requirements</u>	<u>\$209,000</u>	<b>Total for FY18</b>	<b>\$1,459,000</b>	<b>Total projected savings through FY18</b>	<b>\$2,038,000</b>
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<b>Total projected savings through FY18</b>	<b>\$2,038,000</b>																										

*What measures does the agency plan to implement to reduce its costs and operating expenses by more than \$50,000? Provide a summary of the measures taken and the estimated amount of savings. How does the agency plan to repurpose the savings?*

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**FORM F – REDUCING COST AND BURDEN TO BUSINESSES AND CITIZENS**

<b>TITLE</b>	<b>Reduction of Cost &amp; Burden to SC Businesses &amp; Citizens</b>
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*Provide a brief, descriptive title for this request.*

<b>EXPECTED SAVINGS TO BUSINESSES AND CITIZENS</b>	<b>The Citadel helps save time and money by providing a steady source of qualified, and highly-capable, STEM professionals for SC businesses while limiting the cost of online students and reviewing its policies to find savings for cadets.</b>
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*What is the expected savings to South Carolina’s businesses and citizens that is generated by this proposal? The savings could be related to time or money.*

<b>FACTORS ASSOCIATED WITH THE REQUEST</b>	<b>Mark “X” for all that apply:</b>
	<input type="checkbox"/> Repeal or revision of regulations.
	<input type="checkbox"/> Reduction of agency fees or fines to businesses or citizens.
	<input type="checkbox"/> Greater efficiency in agency services or reduction in compliance burden.
	<input checked="" type="checkbox"/> Other

<b>METHOD OF CALCULATION</b>	Cost savings through FY17:	
	- EAB study (collapsing courses, Spring semester):	\$150,000
	- Organizational Alignment	\$345,000
	- <u>Voice Over Internet Protocol</u>	<u>\$84,000</u>
	Total for FY17	\$579,000
	Projected cost savings for FY18:	
	- EAB study (+ Fall semester)	\$150,000
	- Organizational Alignment (additional savings)	\$100,000
	- TERI Program	\$750,000
	- Miscellaneous	\$250,000
- <u>Reduction in uniform requirements</u>	<u>\$209,000</u>	
Total for FY18	\$1,459,000	
Total projected savings through FY18	\$2,038,000	

*Describe the method of calculation for determining the expected cost or time savings to businesses or citizens.*

<b>REDUCTION OF FEES OR FINES</b>	N/A
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*Which fees or fines does the agency intend to reduce? What was the fine or fee revenue for the previous fiscal year? What was the associated program expenditure for the previous fiscal year? What is the enabling authority for the issuance of the fee or fine?*

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<b>REDUCTION OF REGULATION</b>	N/A
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*Which regulations does the agency intend to amend or delete? What is the enabling authority for the regulation?*

<b>SUMMARY</b>	<p>The Citadel has multiple initiatives to create new programs as an effort to address, and meet, the ever-growing demands of business leaders, as evidenced by the prioritization of requests.</p> <p>Construction trades had the largest percentage increase in enrollment at four-year institutions between spring 2016 and spring 2017 – 26.4 percent – according to a recent report (<a href="https://nscnews.org/undergraduate-enrollments-down-300000-for-spring-2017">https://nscnews.org/undergraduate-enrollments-down-300000-for-spring-2017</a>) from the National Student Clearinghouse Research Center. The nonprofit organization collects and distributes education data. "They're not learning how to drive a nail or twist wires or dig a hole," says Michael Holland, president of the American Council for Construction Education. "They're learning how to manage that process from a business perspective."</p> <p>Over 84% of the civil engineering and 71% of the electrical engineering students stay in the state of SC after graduation. Mechanical Engineering just recently had its first graduates in May 2016 and 2017 and has 88% staying in the state of SC.</p> <p>The Citadel, on average, has 70% (69.3 %) in state employment for cadets. When evening students are included, The Citadel has 79% (78.8%) in state employment. Companies such as:  <b>Boeing, Davis and Floyd, Duke Energy, Mercedes Benz, Dewberry, Santee Cooper, SAIC, SPAWAR, SCE&amp;G, Google, Cummings, Texas Instruments, Gulfstream, etc.</b></p> <p>Expense reduction is a high priority for the college. Our Strategic Financial Plan 2018 charts targets for revenue growth and controlling expenses. The college has a goal to generate cost savings of \$2M by the end of FY18.</p> <p>Cost savings through FY17:</p> <table border="0"> <tr> <td>- EAB study (collapsing courses, Spring semester):</td> <td style="text-align: right;">\$150,000</td> </tr> <tr> <td>- Organizational Alignment</td> <td style="text-align: right;">\$345,000</td> </tr> <tr> <td>- <u>Voice Over Internet Protocol</u></td> <td style="text-align: right;"><u>\$84,000</u></td> </tr> <tr> <td><b>Total for FY17</b></td> <td style="text-align: right;"><b>\$579,000</b></td> </tr> </table> <p>Projected cost savings for FY18:</p> <table border="0"> <tr> <td>- EAB study (+ Fall semester)</td> <td style="text-align: right;">\$150,000</td> </tr> <tr> <td>- Organizational Alignment (additional savings)</td> <td style="text-align: right;">\$100,000</td> </tr> <tr> <td>- TERI Program</td> <td style="text-align: right;">\$750,000</td> </tr> <tr> <td>- Miscellaneous</td> <td style="text-align: right;">\$250,000</td> </tr> <tr> <td>- <u>Reduction in uniform requirements</u></td> <td style="text-align: right;"><u>\$209,000</u></td> </tr> <tr> <td><b>Total for FY18</b></td> <td style="text-align: right;"><b>\$1,459,000</b></td> </tr> </table> <p><b>Total projected savings through FY18</b> <span style="float: right;"><b>\$2,038,000</b></span></p> <p>More detail for the various initiatives are shown below:</p>	- EAB study (collapsing courses, Spring semester):	\$150,000	- Organizational Alignment	\$345,000	- <u>Voice Over Internet Protocol</u>	<u>\$84,000</u>	<b>Total for FY17</b>	<b>\$579,000</b>	- EAB study (+ Fall semester)	\$150,000	- Organizational Alignment (additional savings)	\$100,000	- TERI Program	\$750,000	- Miscellaneous	\$250,000	- <u>Reduction in uniform requirements</u>	<u>\$209,000</u>	<b>Total for FY18</b>	<b>\$1,459,000</b>
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<b>AGENCY NAME:</b>	<b>The Citadel</b>		
<b>AGENCY CODE:</b>	<b>H09</b>	<b>SECTION:</b>	<b>13</b>

- **Education Advisory Board (EAB) academic performance solutions project (\$300,000):** The Citadel was one of the early partners with EAB in developing a comprehensive platform/dashboard to streamline classroom cost management while improving student outcomes.

This academic year, the Provost collapsed numerous courses that had minimal enrollment. The estimated cost savings are \$150,000. We anticipate additional savings in course and faculty management as we fully implement the EAB platform by this summer.

- **Organizational Alignment (\$445,000):** The Vice Presidents continue to seek efficiencies in their use of manpower resources. For example, the Provost eliminated several positions in the academic programs, leading to an estimated cost savings of \$225,000. The VP for Finance and Business eliminated a position in Procurement, generating \$60K in cost savings annually. When the manager of the cadet store retired, instead of backfilling the position, the Laundry Manager was given this additional function. The college saved \$60K annually in labor costs.

- **Teacher and Employee Retirement Incentive (TERI) review (\$750,000):** The *TERI* Program is designed for *employees* who retire from the South Carolina Retirement Systems, but wish to continue employment with the agency. The college is undergoing a thorough review of these positions to determine mission requirements moving forward.

- **Non-Labor Efficiencies:** The college is pursuing numerous other initiatives to control costs.

*Transition to Voice Over Internet Protocol (VOIP):* By transition from land lines to VOIP, the college will save \$84,000 annually in telephone communication charges.

*Reduction in uniform requirements:* By continuously reviewing uniform requirements, the college pursues savings that can keep tuition costs low. For this fiscal year, a uniform item was removed that resulted in deposits being reduced by \$95 per student. Estimated savings is \$209,000.

- The Citadel has not increased online tuition for two-years in in-state undergraduate and graduate programs.

*Provide an explanation of the proposal and its positive results on businesses or citizens. How will the request affect agency operations?*