CapitalBudgetRequest

Renovate and Expand Chemistry/Physics Facilities

Overview

Agency	Virginia Polytechnic Institute and State University (208)
Project Code	none
Project Type	New Construction/Improvement
Biennium	2024-2026
Budget Round	Initial Bill
Bill Version	Regular Session
Request Type	Previously Submitted
Project Location	Roanoke Area
Facility/Campus	Blacksburg Main Campus
Source of Request	Agency Request
Infrastructure Element	Laboratory / Classroom

Contains O & M costs? Yes

Contains significant technology costs? No

Contains significant energy costs? No

Possible that project will be used by other than a state or local governmental entity, or for research under sponsored programs (higher education)? No

Agency Narrative

Agency Description

Executive Summary:

Virginia Tech leads the state in STEM-H degree production with over 5,550 degrees awarded annually. This represents 58 percent of Virginia Tech's total degree production and 26 percent of the statewide STEM-H degree production in 4-year public universities.

The fields of Chemistry and Physics are fundamental courses for STEM-H degrees. Physics is a required core course for all undergraduates majoring in engineering, including those in the Tech Talent Pipeline Initiative, and many of those majoring in the life sciences. The Chemistry department teaches at least one class to 70 percent of all students at Virginia Tech.

Beyond instructional coursework and training, these departments generate significant research activity that produces outside investment in the Commonwealth. The Chemistry department's sponsored research activity is approximately $12 million, and the Physics department's sponsored research activity is approximately $8.5 million annually.

Two primary university facilities for chemistry and physics were constructed in the 1960s and 1980s and are too small, outdated, and have become a choke point for time to degree completion for STEM-H degrees.

This project will construct 53,000 gross square feet of new space and renovate 71,100 gross square feet of existing space to provide the facilities required to meet the enrollment, course scheduling, and research demands of the university's STEM-H programs. In particular, this project is critical to advance the "Top Jobs Act" of 2011 and the Tech Talent Pipeline Initiative. Without this space, the progression of degrees for enrollments in the sciences and programs such as engineering will be impacted.

Project Description:

This capital project includes a new construction component and a renovation component as described below.

Renovate Chemistry Facilities at Hahn Hall South

The renovation work includes a 71,100 gross square feet complete refurbishment of Hahn Hall South. The building was constructed in 1988 and serves as a major chemistry instruction and research facility. The building's mechanical, electrical, and plumbing systems require a complete overhaul, including a complete replacement of the fume exhaust system.

The utilization of Hahn Hall is declining because the facility's systems and interior configurations do not support the modern practices for instruction, training, or research. The renovations will swing the facility to a high utilization to meet demand for STEM-H training and research and will extend the service life of the asset as a critical science building.

The renovated space will consist of 32,400 ASF of research laboratories; approximately 5,000 ASF of faculty, staff, and student office spaces; approximately 2,700 ASF of collaboration, studio, and support space; and approximately 6,000 ASF of storage, shops, and receiving space. The renovation will also include an upgrade of all building systems and infrastructure to support modern instrumentation that is now the standard expectation for research.

Expand Physics Facilities

The construction of a new four-story building will add approximately 53,000 gross square feet for physics classrooms and laboratories, including a cleanroom laboratory.

Specific spaces will include approximately 7,800 assignable square feet (ASF) of classrooms and instructional laboratories; 12,000 ASF of research laboratories, 4,300 ASF of faculty, staff, and student office spaces; 2,500 ASF of collaboration, studio, and support space; and approximately 900 ASF of storage, shops, and receiving space; and 7,000 ASF of cleanroom space. The cleanroom space will advance research capabilities, keep the university competitive with other institutions nationwide, and help attract and retain top faculty.

Key building performance elements will include classrooms and laboratories to support training students for high demand and specialized areas including nanoscience, nanomedicine, quantum information science, soft matter and biological physics, and experimental high energy and nuclear physics. Critical building features will include a high bay space with a crane to build equipment for experimental high energy and nuclear physics such as a Deep Underground Neutrino Experiment and an Electron Ion Collider.

This expansion will be clad in a combination of Hokie Stone, architectural precast concrete panels and trim, and a combination of point-supported glazing and punched opening windows, complementing the architectural materials in the existing core campus facilities. The expansion is expected to provide a strong contribution to the campus' collegiate gothic architecture and sense of place through its orientation, massing, and landscape.

The new construction is consistent with the 2018 master plan. Site considerations will include accessible and universal design; site interventions; appropriate building configuration, scale and massing; stormwater mitigation and site integration; and long-term energy management.

Justification

Program Description:

The Chemistry program and Physics program are fundamental underpinnings to prepare Virginians for the high demand STEM-H degrees of the Commonwealth growing economy.

Chemistry program

Entering the 2023-2024 academic year, the Chemistry department will be comprised of 30 tenure-track faculty, 22 non-tenure track faculty, 13 part-time and full-time instructional faculty, 14 postdoctoral research fellows, and at least 21 part-time and full-time staff members. These faculty members have been nationally and internationally recognized through numerous university, state, national and international awards including: one University Distinguished Professor, 14 NSF Career or NIH FIRST awardees, four Research Corporation Cottrell Scholars, four Camille and Henry Dreyfus awardees, three Sloan Fellows, two Kavli Fellows of the US National Academy of Sciences, two Dirac Medalists, and one Medal winner of the International Academy of Quantum Molecular Sciences.

The Chemistry department teaches at least one class to 70 percent of all students at Virginia Tech. During the 2022-2023 academic year, the department had a total enrollment of approximately 242 undergraduate students and approximately 142 graduate students. Chemistry faculty mentored another 20 graduate students in the interdisciplinary Macromolecular Science and Engineering Degree program. In the 2022-2023 academic year, the chemistry faculty graduated 33 B.S. and B.A. students and 27 Ph.D. and 5 M.S. students. The department now offers two new majors, Polymer Chemistry and Molecular Chemistry, under the chemistry degree.

The faculty also provide leadership to the Macromolecules and Innovation Institute, the Macromolecular Science and Engineering Degree program, the Economical and Sustainable Materials Strategic Growth Area, and the Virginia Tech Center for Drug Discovery. The department also oversees multiple university service centers that serve the faculty and students at Virginia Tech as well as local and national industrial partners. Facilities in Hahn Hall South include nuclear magnetic resonance spectroscopy and mass spectrometry, a Surface Analysis Laboratory, and a laboratory glass shop.

The Chemistry department promotes university-based research that produces outside investment in the Commonwealth. The Chemistry department's annual sponsored research activity is approximately $12 million.

Physics Program

The Physics department is comprised of 44 tenure-track faculty, part-time and full-time instructors, 21 postdoctoral research fellows, and 15 staff members. The department currently has a total enrollment of 262 undergraduate students and 91 graduate students. The department graduated 51 B.S. and B.A. students in 2023 and is in the top 21 departments in the country in physics bachelor's degree production according to the most recent American Institute of Physics survey in 2021. In the most recently completed academic year 2022-2023, the Physics department delivered 27,936 student credit hours of instruction.

The Physics department provides a wide range of courses, including large service courses at the introductory level and a complete set of courses providing preparation for physics undergraduate and graduate students. Physics is a required core course for all undergraduates majoring in engineering, including those in the Tech Talent Pipeline Initiative, and many of those majoring in the life sciences. Along with the Biological Sciences department, the Physics and Chemistry departments won a University Exemplary department Award in 2017 for "developing and sustaining effective large-class instruction." For physics undergraduate majors, the department offers programs leading to the B.S. and B.A. degrees, with graduates going on to a wide range of options including graduate education and immediate employment in the private sector. In addition, the Physics Teachers Education Coalition program prepares students to be high school physics teachers.

The Physics department promotes university-based research that produces outside investment in the Commonwealth. Its sponsored research program has grown from $2 million in 2008 to $8.5 million in FY2022. Recent research accomplishments from the department include: the creation of the Virginia Tech Center for Quantum Information Science and Engineering, a $1.8 million Department of Energy funded collaboration with the Chemistry department to perform simulations of molecules on small, custom built superconducting quantum computers, development of a compact, mobile neutrino detector with potential applications to nuclear reactor monitoring for security reasons, and significant federal funding obtained in the area of critical dynamics theory.

New and growing areas of the physics program include high demand Nanoscience and Nanomedicine degree programs. These programs involve materials at the smallest length scales at which matter can be controlled. The new degrees have applications in the technology areas of electronics, information technology, medicine, renewable energy, aerospace, and advanced materials.

The Expand Physics Facilities project will help prepare Virginians for a knowledge-based economy by providing innovative STEM-H instructional excellence through cost efficient operation.

Strategic Planning:

The university's strategic plan includes the following goals and objectives that will be supported by the Renovate and Expand Chemistry/Physics Facilities project:

• Increase extramural research expenditures.
• Increase and sustain excellence in research, discovery, and creativity.
• Increase teaching and learning excellence for a holistic education.
• Increase institutional impact and visibility.
• Achieve top US public land-grant ranking.
• Increase the four-year graduation rate for all undergraduate students to 70 percent as well as the three-year graduation rate for all undergraduate transfer students to 75 percent.
• Building upon existing and emerging strengths.
• Reduce the student average student loan debt per graduating senior to $25,000.
• Increase representational diversity, cultural competency, and address critical societal issues impacting humanity and equity.
• Attract, retain, and develop the talents of students, faculty and staff prepared to serve both the local and global communities while also supporting lifelong engagement and learning.
• Continue to develop the physical campus and technology infrastructure.
• Increase the number of programs recognized as among the best internationally.
• Increase the number of post-doctoral positions in STEM-H research areas.
• Increase undergraduate involvement in meaningful research experiences and experiential learning through hands on minds on.
• Continue to investigate, develop, and utilize current and emerging technologies to enhance traditional classrooms, provide mobile access, and expand high-quality distance-learning opportunities.
• Identify opportunities during construction and renovation to create flexible classroom spaces that fully support e-learning components.
• Implementing the Climate Action Commitment and Sustainability Plan as appropriate.

Existing Facilities:

Chemistry Facilities at Hahn Hall South

Hahn Hall South was constructed in 1988. The building is four stories tall and totals approximately 71,100 gross square feet, with a facility condition index of 58 percent in the FICAS system as of April 2023. The building houses laboratories, laboratory support spaces, offices, study space, and building systems space with a three-story atrium that provides connection to Robeson Hall on multiple levels.

Hahn Hall South is located near the center of the Blacksburg campus and close to other science facilities. The facility is physically connected to two other science facilities: Hahn Hall North connects through a lobby and stairs, and Robeson Hall connects through a three-story atrium.

Hahn Hall South is four stories tall and totals approximately 71,100 gross square feet, with a facility condition index of 58 percent in the FICAS system as of April 2023. The building houses research laboratories, laboratory support spaces, and building systems space with a three-story atrium that provides connection to Robeson Hall on multiple levels. Hahn Hall South also includes offices, study space, and an open area for symposia and related activities.

The use of scientific equipment, including computing and specialized laboratory equipment, exceeds the capabilities of the existing mechanical, electrical, plumbing, and environmental control systems, particularly the building's system for hooded ventilation. Hahn Hall South's condition has progressed beyond the scope of normal operations and maintenance reserve repairs. In its current condition, the building no longer provides the instructional and research infrastructure to meet the demands for modern training expected by industry and government.

Renovating the existing building, with a focus on the laboratory research environment, is the most efficient and cost-effective option for providing functional space for chemistry programs.

Physics Facilities
The Physics programs are housed in two facilities: Hahn Hall North and Robeson Hall. Combined, these facilities provide approximately 45,000 gross square feet of total instructional and research space. Hahn Hall North was constructed in 2002, is in good condition, and is highly utilized. Combined, these facilities provide approximately 45,000 gross square feet of total instructional and research space. Robeson Hall was constructed in 1960 and has not benefited from a major renovation since its construction. Its building systems and laboratory environments are now substantially out-of-date. The building has extensive egress and ADA deficiencies and a facility condition index of 39 percent in the FICAS system as of April 2022.

The utilization of Robeson Hall is steadily declining because its existing mechanical, electrical, plumbing, and environmental control systems do not support the use of scientific equipment, including computing and specialized laboratory equipment required for modern job training or research.

The new construction will modernize the physics program facilities and will significantly increase space utilization.

Funding Plan:

The total project cost is $141.4 million. The funding plan calls for $100.5 million of General Fund support for the instructional program and 50 percent of the research program. The remaining $40.9 million of nongeneral fund authorization is for the university's 50 percent support of the research program. The nongeneral fund component is requested as a revenue bond authorization that will be repaid by overhead revenue generated from the research program.

Options Considered:

Options considered but not pursued include new construction of all the required space on campus or leasing the required space at an off-campus location. These approaches would cost more than the proposed combination of renovation and new construction, would not use the existing space inventory to its highest capacity use, and would leave a significant space asset unserviceable. Further, the dispersion of instructional and research programs across multiple locations, required by each of these alternative approaches, would negatively impact students and faculty. Leasing an off-campus location is not feasible because of the lack of suitable leasable inventory.

CAPITAL RESPONSE TO QUESTIONS FROM THE OPERATION SIX YEAR PLAN

A. Question D6. Provide information about your institution's highest-priority E&G capital projects and requests (including new construction as well as renovations) over the six-year plan period and how they align to your enrollment trajectory, student outcomes improvement plans, or other strategic priorities.

Renovate/Expand Chemistry and Physics Facilities: Virginia Tech leads the state in STEM-H degree production with over 5,550 degrees awarded annually. This represents 58 percent of Virginia Tech's total degree production and 26 percent of the Commonwealth's STEM-H degree production in public universities. The fields of Chemistry and Physics are fundamental courses for STEM-H degrees. The university's facilities for these disciplines were constructed in the 1960s and 1980s and are too small, outdated, and have become a choke point for time to degree and the type of instruction demanded by fields such as engineering. These departments also promote university-based research that produces

outside investment in the Commonwealth. In the 2022 fiscal year, the Chemistry Department generated approximately $12 million in extramural research expenditures, and the Physics Department generated approximately $8.5 million of research activity. However, the age and size of the existing chemistry and physics buildings are constraining the amount and type of research work that can be conducted.

This project will construct 53,000 gross square feet of new space and renovate 71,100 gross square feet of existing space to provide the space required to meet the enrollment and research demands of the university's STEM-H programs. Without this space, the progression of degrees for enrollments in the sciences and programs such as engineering will be impacted.

B. Please also reflect on your current E&G facilities utilization (especially classrooms, labs and student service areas), particularly in light of any recent trends that might impact space needs (e.g., enrollment trends, shifting learning modalities). How has square footage per student changed over time and why?

Over the past decade, 2014 to 2023, the university has become increasingly more efficient in terms of space per student. During this period, undergraduate enrollments grew by 6,100 while classroom space grew by 23,600 square feet and instructional laboratory space grew by 81,000 square feet. In terms of ratios, over the decade, classroom and class laboratory spaces shrank from 26.7 square feet per student down to 24.7 square feet per student.

The university has managed during this period primarily by expanding its schedule slots to use facilities for more hours in the day, renovating older classroom inventory to accommodate new instruction practices, and shifting certain courses online.

The COVID-19 period provided an extraordinary opportunity to stress test the efficacy of alternative instruction methods, including online courses. During this period of operations, the university concluded that online instruction is a viable alternative for certain types of course material; however, the vast majority of the university's academic programs require in-person programming. This proved especially true for the STEM-H programs. The "hands-on", in-person approach is necessary to provide the experiential learning, team, and laboratory exercises required to train the work force expected to fulfill Commonwealth objectives such as the Top Jobs 21 goals and the Tech Talent pipeline. Thus, appropriate facilities to support instruction remain critical for the university.

C. What efforts have you made to reassess and further optimize the use of your existing facilities, and what has been the impact of those efforts to date? What do you intend to do in the next six years to increase utilization?

The key long-term strategy for the university is to renovate outdated and underutilized assets in the core of campus to improve utilization and to enhance operational efficiency. As part of the university's biennial Six-Year Capital Planning process, it evaluates its existing inventory of assets for service and utilization and then prioritizes assets with the highest potential for impact on its Six-Year Capital Outlay Plan.

Over the past decade, the university has been shifting its capital outlay focus toward renovations of existing assets, in some cases demolishing deteriorated space and replacing in situations with new construction. As an illustration, there have been recent STEM-H projects such as the renovation of Davidson Hall in 2015, the renovation of Holden Hall in 2022, and the renovations of Randolph Hall that are underway. These types of projects provide a dramatic improvement to space utilization with minimal impact to operations and maintenance costs.

Looking forward, the university's 2024–2030 Capital Outlay Plan that was approved by the Board of Visitors in March 2023 includes seven (7) capital projects and six (6) are to renovate existing buildings and assets in the core of campus. This strategy is essential to meet the long term requirements for STEM-H majors credit hours and completion of degrees in a timely manner.

A second key strategy are the continuous process improvements for course scheduling including making use of the earlier and later hours in the day and redistributing course assignments to optimize each available instruction seat/station in the inventory.

Methodology

Cost Explanation and Methodology:

A. Methods Used to Estimate Costs:

The method for estimating costs for the Renovate and Expand Chemistry/Physics Facilities project includes: 1) using unit costs in the Division of Engineering and Building's Construction Costs Database updated February 2023 with a regional market multiplier and a multiplier for soft costs; and 2) comparables as shown in the CR-1. Both methods are escalated to a construction midpoint of 2027 in accordance with the instructions for developing the Six-Year Capital Outlay Plan and the rate utilized in the most recent CR-1 Project Planning form.

The total project cost, inclusive of design, construction, and equipment, is $1,139 per gross square foot. The construction cost is $844 per gross square foot. The building types in this request are wet laboratory, dry laboratory, and classroom spaces in the Division of Engineering and Building's Virginia Construction Costs Database.

The university's project cost estimates are derived from a database of historical on-campus construction costs of comparable project types. The estimates include the cost of technology, specialized instruction and research requirements, and energy efficiency goals of the institution.

Construction Manager at Risk is the intended delivery method for this project.

B. This section is presented in two parts: i) Renovate Chemistry Facilities at Hahn Hall South and ii) Expand Physics Facilities to depict cost specific to each of the components of this project request. The proposed costs include the following considerations to ensure the project fully meets the needs of the program and the university:

Renovate Chemistry Facilities at Hahn Hall South
1) Complete refurbishment of the building envelope. This includes extensive repointing of exterior masonry, installation of new windows, and replacement of the roofing system. The costs for this are included in the construction budget line item.
2) Complete replacement of mechanical, plumbing, electrical systems, and building automation systems. This includes installation of sprinklers, fire alarm systems, distributed antenna systems, and accessibility improvements.
3) Complete interior renovations including building structural support systems and raised floor systems.
4) Installation of secured, high-capacity wireless networks to support multiple devices and instruments (laptop computer, tablet computer, smartphone, and other WIFI devices) used simultaneously by students and faculty to connect information and to communicate digitally.
5) Power outlets corresponding to the seat/station count and power outlets in common areas will exceed the minimum code requirements by approximately 30 percent.
6) Automated audiovisual and lighting controls are included for all classroom and class laboratory spaces.
7) Climate controlled technology server rooms, 10 feet by 10 feet, on each floor of the building or as required to provide efficient distribution of services.
8) Communications infrastructure, wired and wireless, is installed by a university operated auxiliary; thus, these costs are shown in the Other Costs section of the proposed budget.
9) Restricted site access in a dense and active part of campus will increase mobilization and site logistics costs.

Expand Physics Facilities
1) The building envelope will be comprised primarily of Hokie Stone and precast concrete which is consistent with university standards as affirmed by the Board of Visitors. The stone is a four-inch thick nominal stone thickness with a two-inch nominal air barrier over moisture resistant sheathing. Stainless steel anchoring straps and load bearing shelf angles and stainless steel flashings comprise the structural support and flashings system. The university owns the stone quarries and provides the cut materials to the building; thus, the material costs along with intensive quality insurance inspection costs are carried in the Other Costs section of the proposed budget, while the construction budget carries all erection, final stone dressing, and installation costs.
2) Mechanical equipment and building automation systems are designed and selected to meet performance requirements and to optimize total costs of ownership inclusive of energy costs and operations and maintenance costs. System selections are justified based on a 30-year economic life cycle analysis. Mechanical equipment will be covered and secured to maximize equipment life and service.
3) Academic buildings include interior glazing for energy efficiency, lighting for academic work, and to enhance learning while maintaining a secure room envelope.
4) Ceiling heights will be appropriate for proper sound attenuation in large lecture and assembly environments as required for effective pedagogy.
5) Building structural support systems will accommodate large open and unimpeded interior spaces to maximize long-term programmatic functionality and adaptation to new program space and technology arrangements. The structure is additionally designed to reduce vibrations that would negatively impact scientific research.
6) High-capacity wireless networks to support multiple devices and instruments (laptop computer, tablet computer, smartphone, and other WIFI devices) used simultaneously by students and faculty to connect information and to communicate digitally.
7) Power outlets corresponding to the seat/station count and power outlets in common areas will exceed the minimum code requirements by approximately 30 percent.
8) Automated audiovisual and lighting controls are included for all classroom and class laboratory spaces.
9) Climate controlled technology server rooms, 10 feet by 10 feet, on each floor of the building.
10) Communications infrastructure, both wired and wireless, is installed by a university operated auxiliary; thus, these costs are shown in the Other Costs section of the proposed budget.
11) Site development costs in this region are historically in the medium to high range and require generally significant subsurface rock excavation and removal and deep foundations. This site may require extensive subsurface rock excavation and removal.
12) Utilities (power, chilled water, domestic water, sanitary sewer, natural gas, technology, and storm water infrastructure) do not terminate at the building site and their extension or on-site provision is anticipated to be a sizable cost driver for this project.
13) Restricted site access in a dense and active part of campus will increase mobilization and site logistics costs. Limited material lay-down areas increase material costs and risks due to necessitating just in time delivery and/or off-site storage.

Funding Request

Phase	Year	Subobject	Fund	Amount
Full Funding	2025	2411 - Unallotted Capital Amount	01000 - General Fund	$100,500,000
Full Funding	2025	2411 - Unallotted Capital Amount	08150 - 9(D) Rev Bonds-Construction	$40,900,000
			Total	$141,400,000

Project Costs

Cost Type	Requested Funding
Acquisition Cost	$0
Building & Built-in Equipment	$104,818,862
Sitework & Utility Construction	$0
Construction Cost Total	**$104,818,862**
DESIGN & RELATED SERVICE ITEMS	
A/E Basic Services	$9,657,213
A/E Reimbursables	$900,964
Specialty Consultants (Food Service, Acoustics, etc.)	$450,482
CM Design Phase Services	$290,936
Subsurface Investigations (Geotech, Soil Borings)	$75,080
Land Survey	$37,540
Archeological Survey	$0
Hazmat Survey & Design	$0
Value Engineering Services	$178,316
Cost Estimating Services	$9,385
Other Design & Related Services	$150,160
Design & Related Services Total	**$11,750,076**
INSPECTION & TESTING SERVICE ITEMS	
Project Inspection Services (inhouse or consultant)	$1,022,970
Project Testing Services (conc., steel, roofing, etc.)	$797,729
Inspection & Testing Services Total	**$1,820,699**
PROJECT MANAGEMENT & OTHER COST ITEMS	
Project Management (inhouse or consultant)	$1,049,540
Work By Owner	$206,471
BCOM Services	$46,925
Advertisements	$0
Printing & Reproduction	$0
Moving & Relocation Expenses	$37,540
A/V Cabling	$0
IT Cabling	$0
Telephone Cabling	$0
A/V Equipment	$0
IT Equipment	$1,276,366
Telephone Equipment	$0
Signage	$65,695
Demolition	$0
Hazardous Material Abatement	$4,693
Utility Connection Fees	$0
Utility Relocations	$131,391
Commissioning	$750,804
Miscellaneous Other Costs	$3,810,328
Project Management & Other Costs Total	**$7,379,753**
Furnishings & Movable Equipment	$13,534,233
Construction Contingency	$2,096,377
TOTAL PROJECT COST	**$141,400,000**

Size and Scope

Cost Type	Cost	Unit of Measure	Units	Cost Per Unit

Acquisition Cost			0	$0
Construction Cost	$141,400,000	GSF	124,147	$1,139
New Construction Cost	$67,500,000	GSF	53,040	$1,273
Improvement Cost	$73,900,000	GSF	71,107	$1,039

Operating and Maintenance Costs

Cost Type	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
GF Dollars	$0	$0	$0	$1,107,268	$1,140,486	$1,174,700
NGF Dollars	$0	$0	$0	$0	$0	$0
GF Positions	0.00	0.00	0.00	5.06	5.06	5.06
NGF Positions	0.00	0.00	0.00	0.00	0.00	0.00
GF Transfer	$0	$0	$0	$0	$0	$0
GF Revenue	$0	$0	$0	$0	$0	$0
Layoffs	0	0	0	0	0	0

Planned start date of new O&M costs (if different than the beginning of the fiscal year):---

Supporting Documents

File Name	File Size	Uploaded By	Upload Date	Comment
Chem Physics Program Chart 6.2.2023.pdf	92,131	Rob Mann	6/22/2023	
CR-1 Physics Expansion and Chemistry Renovation 6.2023.xlsx	619,355	Rob Mann	6/22/2023	

Workflow History

User Name	Claimed	Submitted	Step Name	Submit Action
Rob Mann	05/24/2023 01:54 PM	05/24/2023 01:54 PM	Enter Capital Budget Request	Continue Working
Rob Mann	05/24/2023 01:54 PM	05/24/2023 01:54 PM	Continue Drafting	Continue Working
Matthew Digman	06/09/2023 02:34 PM	06/09/2023 02:39 PM	Continue Drafting	Continue Working
Matthew Digman	06/16/2023 01:18 PM	06/16/2023 01:19 PM	Continue Drafting	Continue Working
Matthew Digman	06/16/2023 02:03 PM	06/16/2023 02:08 PM	Continue Drafting	Continue Working
Matthew Digman	06/21/2023 11:55 AM	06/21/2023 12:51 PM	Continue Drafting	Continue Working
Matthew Digman	06/21/2023 12:52 PM	06/21/2023 12:54 PM	Continue Drafting	Continue Working
Matthew Digman	06/21/2023 03:16 PM	06/21/2023 03:35 PM	Continue Drafting	Continue Working
Matthew Digman	06/21/2023 03:43 PM	06/21/2023 03:45 PM	Continue Drafting	Continue Working
Matthew Digman	06/21/2023 04:05 PM	06/21/2023 04:06 PM	Continue Drafting	Continue Working
Matthew Digman	06/21/2023 04:21 PM	06/21/2023 04:22 PM	Continue Drafting	Continue Working
Rob Mann	06/21/2023 07:05 PM	06/21/2023 07:28 PM	Continue Drafting	Submit for Agency Review
Rob Mann	06/22/2023 11:17 AM	06/22/2023 02:00 PM	Agency Review Step 1	Ready for DPB Bulk Submit
Rob Mann	06/22/2023 05:11 PM	06/22/2023 05:11 PM	Ready for DPB Submission	Submit to DPB
			DPB Review	