University of Alabama System
Board Rule 415 (2/2005)
Board Submittal Checklist Criteria

COPY

* Board Submittal Checklist No. 2
Capital Project – Stage I and Stage II Submittals/1
(General Information Package and Architect Ranking) /8

Campus: The University of Alabama
Project Name: Central Campus Thermal Energy Connections
Meeting Date: September 22 – 23, 2016

* ☒ 1. Completed Board Submittal Checklist No. 2
☒ 2. Transmittal Letter to Chancellor from Campus President requesting the project be placed on the agendas for the forthcoming Physical Properties Committee and Board of Trustees (or Executive Committee) meetings
☒ 3. Proposed Board Resolution requesting approval of Stage II Submittal (Architect Ranking, Project Scope and Project Budget; authority to proceed with Owner/Architect contract negotiations)
☒ 4. Campus correspondence/photos providing supporting project information
☒ 5. Completed Executive Summary – Proposed Capital Project. /2
☐* 6. Executive Summary - Architect, Engineer, Selection process (include Interview Outline). /3, /4, /5
☐* 7. Campus letter requesting approval of the ranking of firms and authority to submit to the Physical Properties Committee for approval – signed by the Chair of the Physical Properties Committee and signed by the UA System Executive Vice Chancellor and Chief Operating Officer. /6
☒ 8. Project Planning Report /2
☐ 9. Preliminary Business Plan (if applicable) /7
☒ 10. Campus map(s) showing Project site

*Request for Waiver of the Consultant Selection process

Additional document for Stage I:

☒ 11. Completed Supplemental Project Information Worksheet – Exhibit "K", Board Rule 415

Prepared by: _____

Approved by: Tim Leopard

/1 Reference Tab 3H - Board Rule 415 Instructional Guide
/2 Reference Tab 3E - Board Rule 415 Instructional Guide
/3 Reference Tab 3K - Board Rule 415 Instructional Guide
/4 Reference Tab 3L - Board Rule 415 Instructional Guide
/5 Reference Tab 3M - Board Rule 415 Instructional Guide
/6 Reference Tab 3N – Board Rule 415 Instructional Guide
/7 Reference Tab 3V – Board Rule 415 Instructional Guide
/8 After completion of negotiations on Owner/Architect Agreement provide notification to Chair of the Physical Properties Committee and UA Executive Vice Chancellor and Chief Operating Officer. Reference Tab 3-O-Board Rule 415, Instructional Guide

* Basic documents required for this Board Submittal Package. Include other supporting materials, correspondence, etc., as may be required to fully describe or illustrate project being submitted for approval to Physical Properties Committee and Board of Trustees.

Division of
Financial Affairs

MEMO

August 16, 2016

To: Stuart R. Bell

From: Lynda Gilbert

Subject: Board Item – Action: Stage I and Stage II, Waiver of Consultant Selection Process Submittals: Central Campus Thermal Energy Connections

Pursuant to Board Rule 415, The University of Alabama ("University") is requesting approval of The Board of Trustees of The University of Alabama ("Board") of the Stage I submittal for the Central Campus Thermal Energy Connections project ("Project") at a projected total Project budget amount of $10,000,000.

As part of the University's master plan for thermal energy distribution, this proposed Project will address deferred maintenance issues and improve system efficiency and reliability through utilization of the existing East Quad and Shelby Energy Plant distribution systems and infrastructure.

In recognition of the differences in the site work requirements and Project delivery timelines between the two major portions of the Project, the Project has been separated into two (2) packages: Package A – East Core Campus Thermal Energy Expansion and Package B –Steam Replacement and Heating System Upgrade.

Package A – East Core Campus Thermal Energy Expansion will consist of the replacement of existing steam service and aged chilled water generation systems with connections to the Central Thermal Energy Systems at Rodgers Library, Nott Hall, Gallalee Hall, Mary Harmon Bryant Hall, Smith Hall, and Lloyd Hall.

Package B – Steam Replacement and Heating System Upgrade will consist of the replacement of the existing steam heating systems serving Bruno Library, Carmichael Hall, Bidgood Hall, Alston Hall, Bibb Graves Hall and McClure Library with local heating hot water systems. The piping configuration of these local heating hot water systems will be configured to allow for connection to the future B. B. Comer Central Energy Plant upon its completion.

Burns and McDonnell, Raleigh, North Carolina, were the design-build engineering firm and engineer of record for the East Quad Energy Plant project. As a result, Burns and McDonnell has exclusive

knowledge of the design and construction of the Project as well as detailed information regarding installed thermal energy infrastructure locations and configurations. Further, Burns and McDonnell's knowledge of preferred equipment, University Standards, design principles, and procedures will greatly facilitate the design and administrative process. Burns and McDonnell is committed to completing the design to allow the Project to proceed as scheduled to complete site trenching prior to the start of the 2017 academic year with Project completion by spring 2018. As a result, Burns and McDonnell has been engaged by the University to perform due diligence, programming, and schematic design services for the Package A – East Core Campus Thermal Energy Expansion of this project ("Package A").

Additionally, HHB Engineers, P.C. of Prattville, AL, has been engaged by the University to perform engineering guidance for the Central Campus Thermal Energy Connections, Package B – Steam Replacement and Heating System Upgrade ("Package B").

As HHB Engineers have worked with the University on preliminary design services, the firm has gained knowledge of the programmatic needs and important engineering considerations for the Project. HHB Engineers is committed to completing the design to allow the Project to proceed as scheduled. Additionally, HHB Engineers has experience designing similar projects and has a unique understanding of the needs of the University. Finally, HHB Engineers has knowledge of preferred equipment, University standards, design principles, and procedures that will greatly facilitate the design and administrative process. An efficient transition from the due diligence phase to the design phase facilitates advancing the Project.

Therefore, pursuant to Board Rule 415, the University is requesting approval to waive the Consultant Selection process and to proceed with engineering services utilizing Burns and McDonnell for Package A and HHB Engineers for Package B for this Project.

Furthermore, the University has negotiated a design fee of 6.2% of the cost of construction for Package A and Equipment with Burns and McDonnell, and a design fee of 6.8% of the cost of construction for Package B – Steam Replacement and Heating System upgrade with HHB Engineers. These proposed fees are consistent with the Alabama Building Commission fee for this type of project and reflect an overall savings as they have agreed that the 25% major renovation factor is not applicable due to their knowledge of the Projects. In addition, the fee is comparable to the cost of engineering services for similar recent projects, specifically the Central Campus Thermal Piping Extension. The University is requesting acceptance of the negotiated engineering fees associated with this Project.

This Project will be funded from the 2017 Bond Issue in the amount of $10,000,000 and will eliminate $10,000,000 in deferred maintenance liability.

This Project location and program have been reviewed and are consistent with the Campus Master Plan, University Design Standards, and the principles contained therein.

I have attached an Executive Summary, Resolution, Project Planning Report, Project Summary, Approval Waivers for the Consultant Selection process, and a Location Map for your review. Subject to your approval, I recommend this item be forwarded to the Chancellor for inclusion as an Action item on the agenda for the Physical properties Committee at the Board of Trustees meeting scheduled for September 22 – 23, 2016

LG/ccj

Attachments

pc w/atchmts: Michael Rodgers
Michael Lanier
Tim Leopard
Ben Henson
Shanwei Chen
Steven Mercado

RESOLUTION

CENTRAL CAMPUS THERMAL ENERGY CONNECTIONS

WHEREAS, in accordance with Board Rule 415, The University of Alabama ("University") is requesting approval for a Stage I submittal for the Central Campus Thermal Energy Connections project ("Project"); and

WHEREAS, as part of the University's master plan for thermal energy distribution, the University has previously completed the East Quad Energy Plant and the interconnection of the system with the Shelby Energy Plant; and

WHEREAS, the East Quad Energy Plant Project included space capacity for future boilers and chillers so that the University could connect to additional buildings in alignment with capital projects and deferred maintenance needs in facilities; and

WHEREAS, the University desires to proceed with the connection of additional buildings at this time so as to coordinate with the need to replace systems that have reached the end of their functional service life, install piping in advance of campus paving and hardscape improvement projects, and to provide heating capacity to buildings prior to the retirement of the steam distribution system; and

WHEREAS, due to the different project delivery schedules to align with shutdowns at the seasonally appropriate time, different geographic areas of campus, and the varying nature of construction, the University has deemed it appropriate to separate construction into two packages: Package A - East Core Campus Thermal Energy Expansion and Package B - Steam Replacement and Heating System Upgrades; and

WHEREAS, Package A – East Core Campus Thermal Energy Expansion ("Package A") will consist of the replacement of existing steam service and aged chilled water generation systems with connections to the Central Thermal Energy System at Rodgers Library, Nott Hall, Gallalee Hall, Mary Harmon Bryant Hall, Smith Hall, and Lloyd Hall; and

WHEREAS, Package B – Steam Replacement and Heating System Upgrade ("Package B") will provide heating systems with inherent redundant capacity for Bruno Library, Carmichael Hall, Bidgood Hall, Alston Hall, Bibb Graves Hall and McClure Library; and

WHEREAS, based on the firm's previous programming experience and preliminary design work on the Project and their ability to deliver Package A of the Project by April 18, 2018, the University is requesting approval to waive the

Consultant Selection process and to proceed with design utilizing the services of Burns and McDonnell of Raleigh, North Carolina for Package A and HHB Engineers, P.C. of Prattville, Alabama for Package B; and

WHEREAS, the University further requests approval to accept a negotiated fee of 6.2% fee of the construction cost for Package A and 6.8% of the construction cost of Package B; and

WHEREAS, the Project location and program have been reviewed and are consistent with the master plan, University Design Standards, and the principles contained therein; and

WHEREAS, the Project will be funded from 2017 Future General Revenue bonds in the amount of $10,000,000; and

WHEREAS, the preliminary budget for the Project is as stipulated below:

BUDGET:		PRELIMINARY
Package A – East Core Campus Thermal Energy Expansion	$	6,000,000
Package B – Steam Replacement and Heating System Upgrade	$	1,500,000
Equipment – Chiller	$	800,000
Landscaping	$	385,529
Telecommunication/Data	$	83,001
Contingency* (5%)	$	434,276
UA Project Management Fee** (3%)	$	273,594
Architect/Engineer Fee*** (~6.3%)	$	523,600
TOTAL PROJECT COST	**$**	**10,000,000**

*Contingency is based on 5% of the cost of construction for Package A – East Core Campus Thermal Energy Expansion, Package B – Steam Replacement and Heating System Upgrade, Equipment and Landscaping.

**UA Project Management Fee is based on 3% of the cost of construction for Package A – East Core Campus Thermal Energy Expansion and Package B – Steam Replacement and Heating System Upgrade, Equipment, Landscaping, and Contingency.

***Architect/Engineer Fee of approximately 6.3% is based on a blended fee of 6.2% of the cost of construction Package A – East Core Campus Thermal Energy Expansion and 6.8% of the cost of construction of Package B – Steam Replacement and Heating System Upgrade and Equipment.

WHEREAS, officials at The University of Alabama have determined that the Board will incur certain costs in connection with the acquisition, construction, and installation of the Project prior to the issuance of the Bonds, and the Board intends to allocate a portion of the proceeds of the Bonds to reimburse the Board

for certain of the costs incurred in connection with the acquisition, construction, and installation of the Project paid prior to the issuance of the Bonds; and

NOW, THEREFORE, BE IT RESOLVED by The Board of Trustees of The University of Alabama that:

1. The University of Alabama does hereby declare that it intends to allocate a portion of the proceeds of the Bonds to reimburse the Board for expenses incurred after the date that is no more than sixty days prior to the date of the adoption of this resolution, bur prior to the issuance of the Bonds in connection with the acquisition, construction, and installment of the Project. This portion of this resolution is being adopted pursuant to the requirement of Treasury Regulations Section 1.150-2(e).

BE IT FURTHER RESOLVED that:

2. The Stage I submittal package for the Project is hereby approved.

3. The preliminary budget for the Project as stipulated above is hereby approved.

4. Stuart R. Bell, President, Lynda Gilbert, Vice President for Financial Affairs and Treasurer, or those officers named in the most recent Board resolutions granting signature authority for the University be, and each hereby is, authorized to act for and on behalf of the Board to execute an architectural agreement with Burns and McDonnell of Raleigh, North Carolina and HHB Engineers, P.C. of Prattville, Alabama for engineering services in accordance with Board Rule 415 for this Project.

EXECUTIVE SUMMARY
PROPOSED CAPITAL PROJECT

BOARD OF TRUSTEES SUBMITTAL

Meeting Date: September 22-23, 2016

CAMPUS: The University of Alabama, Tuscaloosa, Alabama

PROJECT NAME: **Central Campus Thermal Energy Connections**

PROJECT LOCATION: Hackberry Drive/Colonial Drive areas

ARCHITECT: Requesting in this submittal

THIS SUBMITTAL:	**PREVIOUS APPROVALS:**
☒ Stage I	
☒ Stage II, Waiver of Selection process	
☐ Stage III	
☐ Stage IV	

PROJECT TYPE	**SPACE CATEGORIES**	**PERCENTAGE**	**GSF**
☐ Building Construction			
☐ Building Addition			
☒ Campus Infrastructure		100%	N/A
☐ Equipment			
☐ Other			
	TOTAL	**100%**	**N/A**

BUDGET	**Percentage**	**Preliminary**
Package A – East Core Campus Thermal Energy Expansion		$ 6,000,000
Package B – Steam Replacement and Heating System Upgrade		$ 1,500,000
Equipment - Chiller		$ 800,000
Landscaping		$ 385,529
Telecommunication/Data		$ 83,001
Contingency*	5%	$ 434,276
UA Project Management Fee**	3%	$ 273,594
Architect/Engineer Fee***	~6.3%	$ 523,600
TOTAL PROJECT COST		**$ 10,000,000**

*Contingency is based on 5% of the cost of construction for Package A – East Core Campus Thermal Energy Expansion, Package B – Steam Replacement and Heating System Upgrade, Equipment and Landscaping.
**UA Project Management Fee is based on 3% of the cost of construction for Package A – East Core Campus Thermal Energy Expansion and Package B – Steam Replacement and Heating System Upgrade, Equipment, Landscaping, and Contingency.
***Architect/Engineer Fee of approximately 6.3% is based on a blended fee of 6.2% of the cost of construction for Package A – East Core Campus Thermal Energy Expansion and 6.8% of the cost of construction for Package B – Steam Replacement and Heating System Upgrade and Equipment.

ESTIMATED ANNUAL OPERATING AND MAINTENANCE (O&M) COSTS:		
(Utilities, Housekeeping, Maintenance, Insurance, Other)		
Per GSF: gsf x~$ /GSF	$	N/A*
TOTAL ESTIMATED ANNUAL O&M COSTS:	**$**	**N/A***

*Project replaces existing local utility infrastructure with centralized equipment. Central utility O&M costs are neither assigned at a facility level nor by GSF.

FUNDING SOURCE:

Capital Outlay:

2017 Future General Revenue Bonds	$	10,000,000
O&M Costs:	$	N/A

NEW EQUIPMENT REQUIRED:

(1) 1,200 Ton Chiller w/ Associated Cooling Tower and Pumps

Hydronic Heating Boilers

RELATIONSHIP & ENHANCEMENT OF CAMPUS PROGRAMS:

The Central Campus Thermal Energy Connections project ("Project") will improve the teaching, learning, and working environments of campus constituents by providing reliable and efficient thermal energy to facilities by replacing systems which have reached the end of their functional service life. By centralizing equipment in the energy plants, the Project will free campus exterior space currently occupied by existing equipment for other uses including, but not limited to, parking, landscaping and hardscape improvements. Furthermore, reducing the cost to provide heating and cooling to buildings will support The University of Alabama ("University") in maintaining a competitive cost of attendance.

Package A – East Core Campus Thermal Energy Expansion of the Project will allow the University to heat and cool buildings more efficiently and reduce the quantity of equipment that requires maintenance thereby reducing HVAC system downtime and increasing occupant comfort. Removal of localized equipment such as cooling towers and air cooled chillers will lower ambient noise nearby key facilities and improve campus appearance. This package will impact Rodgers Library, Smith Hall, Lloyd Hall, Mary Harmon Bryant Hall, Nott Hall and Gallalee Hall.

Package B – Steam Replacement and Heating System Upgrade of this proposed Project will provide heating systems with inherent redundant capacity, ensuring building heating during the coldest periods of the year to Bruno Library, Carmichael Hall, Bidgood Hall, Alston Hall, Bibb Graves Hall and McClure Library.

THE UNIVERSITY OF ALABAMA | Division of Financial Affairs

August 15, 2016

Mr. C. Ray Hayes
Executive Vice Chancellor and Chief Operating Officer
Sid McDonald Hall
500 University Boulevard, East
Tuscaloosa, AL 35401

Mr. James W. Wilson, III
Chair, Physical Properties Committee
Chairman and CEO
Jim Wilson & Associates, LLC
2660 Eastchase Lane, Suite 100
Montgomery, AL 36117

RE: Waiver of Consultant Selection Process
Central Campus Thermal Energy Connections, Package A – East Core Campus Thermal Energy Expansion

Dear Mr. Hayes and Trustee Wilson,

Burns and McDonnell, Raleigh, North Carolina, have previously been engaged by The University of Alabama ("University") to perform due diligence programming, and schematic design services for the Central Campus Thermal Energy Connections project ("Project"), Package A – East Core Campus Thermal Energy Expansion project ("Package A"). Package A will consist of the replacement of existing steam service where applicable and aging chilled water generation systems with connections to the Central Thermal Energy System at Rodgers Library, Nott Hall, Gallalee Hall, Mary Harmon Bryant Hall, Smith Hall, and Lloyd Hall.

Burns and McDonnell was the design-build engineering firm that was the engineer of record for the East Quad Energy Plant project and associated thermal piping work. As a result, Burns and McDonnell has exclusive knowledge of the design and construction of the Project. This knowledge includes detailed information regarding exact installed thermal energy infrastructure locations, materials used, and design assumptions used to determine these materials and configurations. Application of this knowledge will speed design, increase design accuracy, and reduce overall risk to the University during execution of the Project. Burns and McDonnell is committed to completing the design to allow the Project to proceed as scheduled to complete site trenching prior to the start of the 2017 academic year with Project completion by spring 2018.

Therefore, pursuant to Board Rule 415, the University is requesting approval of the waiver of the Consultant Selection process and to proceed with engineering services utilizing Burns and McDonnell for Package A of this Project.

The University has negotiated a fee of 6.2% of the cost of construction of Package A and Equipment. Since Burns and McDonnell has in depth knowledge of The University's Central Campus Thermal Piping System, the 25% major renovation factor was not included in the engineering fee. Accordingly, the University is requesting acceptance of this negotiated fee.

Approval is hereby requested for:

1. Waiver of Consultant Selection process.
2. Burns and McDonnell of Raleigh, North Carolina, as the engineering service provider for Package A – East Core Campus Thermal Energy Expansion at a fee of 6.2% of the cost of construction of Package A and Equipment.
3. Submittal to the Physical Properties Committee for review and approval.

If you have any questions or concerns, please feel free to contact me.

Sincerely,

Lynda Gilbert
Vice President for Financial Affairs
and Treasurer

LG/ccj

Attachment

pc/atchmt: Michael Rodgers
Michael Lanier
Tim Leopard
Ben Henson
Shanwei Chen
Steven Mercado

****

The above request for waiver of the Consultant Selection process and request for Burns and McDonnell of Raleigh, North Carolina to provide engineering services at a negotiated fee of 6.2% of the cost of construction of Package A – Core Campus Thermal Energy Expansion and Equipment is hereby approved. By executing this document, the request is approved for inclusion in the Board materials to the Physical Properties Committee.

****

Mr. C. Ray Hayes: **Recommend For Approval**
Executive Vice Chancellor and Chief Operating Officer

Trustee James W. Wilson, III: **Approval Recommended**
Chair of the Physical Properties Committee

THE UNIVERSITY OF ALABAMA | Division of Financial Affairs

August 15, 2016

Mr. C. Ray Hayes
Executive Vice Chancellor and Chief Operating Officer
Sid McDonald Hall
500 University Boulevard, East
Tuscaloosa, AL 35401

Mr. James W. Wilson, III
Chair, Physical Properties Committee
Chairman and CEO
Jim Wilson & Associates, LLC
2660 Eastchase Lane, Suite 100
Montgomery, AL 36117

RE: Waiver of Consultant Selection Process
Central Campus Thermal Energy Connections, Package B – Steam Replacement and Heating System Upgrade

Dear Mr. Hayes and Trustee Wilson,

HHB Engineers, P.C. of Prattville, AL, has been engaged by The University of Alabama ("University") to perform due diligence and preliminary engineering for the Central Campus Thermal Energy Connections project ("Project"), Package B – Steam Replacement and Heating System Upgrade project ("Package B). Package B will consist of the replacement of existing steam heating systems serving Bruno Library, Carmichael Hall, Bidgood Hall, Alston Hall, Bibb Graves Hall and McClure Library with local heating hot water systems configured to facilitate connection to the future BB Comer Central Energy Plant.

As HHB Engineers has worked with the University on preliminary services, the firm has gained knowledge of the programmatic needs and important engineering considerations for Package B of the Project. HHB Engineers is committed to completing the design to allow the Project to proceed as scheduled so that the heating systems can be installed in the off season (summer). Additionally, HHB Engineers has experience designing similar projects and has a unique understanding of the needs of the University. Finally, HHB Engineers has knowledge of University standards, design principles, and procedures that will greatly facilitate the design and

administrative process. An efficient transition from the planning and programming phase to the design phase facilitates advancing the Project.

Therefore, pursuant to Board Rule 415, the University is requesting approval of the waiver of the Consultant Selection process and to proceed with engineering services utilizing HHB Engineers, P.C. for Package B of this Project.

Furthermore, the University has negotiated a design fee of 6.8% of the cost of construction of Package B – Steam Replacement and Heating System Upgrade. Since HHB has in-depth knowledge of the University's preferred boiler equipment, design standards, and campus procedures, the 25% major renovation factor was not included in the engineering fee. Accordingly, the University is requesting acceptance of this negotiated fee.

Approval is hereby requested for:

1. Waiver of Consultant Selection process.
2. HHB Engineers, P.C., Prattville, Alabama, as the engineering service provider for Package B – Steam Replacement and Heating System Upgrade at a negotiated fee of 6.8% of the cost of construction of Package B.
3. Submittal to the Physical Properties Committee for review and approval.

If you have any questions or concerns, please feel free to contact me.

Sincerely,

Lynda Gilbert
Vice President for Financial Affairs
and Treasurer

LG/ccj

Attachment

pc/atchmt: Michael Rodgers
Michael Lanier
Tim Leopard
Ben Henson
Shanwei Chen
Steven Mercado

****

The above request for waiver of the Consultant Selection process and request for HHB Engineering, P.C., Prattville, Alabama to provide engineering services at a negotiated fee of 6.8% of the cost of construction of Package B – Heating System Upgrade is hereby approved. By executing this document, the request is approved for inclusion in the Board materials to the Physical Properties Committee.

****

Mr. C. Ray Hayes: **Recommend For Approval**
Executive Vice Chancellor and Chief Operating Officer

Trustee James W. Wilson, III: **Approval Recommended**
Chair of the Physical Properties Committee

THE UNIVERSITY OF ALABAMA SYSTEM
PROJECT PLANNING REPORT
DATE: September 22 - 23, 2016

X INITIAL REPORT
__ INTERIM REPORT
__ FINAL REPORT
1 REPORT NO.

TO: OFFICE OF THE CHANCELLOR
BOARD OF TRUSTEES OF THE UNIVERSITY OF ALABAMA

FROM: OFFICE OF THE PRESIDENT
THE UNIVERSITY OF ALABAMA

1. PROJECT: Central Campus Thermal Energy Connections

2. LOCATION: Hackberry Drive/Colonial Drive Area

3. ARCHITECT/ENGINEER: Requesting in this submittal

4. PROJECT STATUS:

A. SCHEMATIC DESIGN	DATE INITIATED	TBD
	% COMPLETE	0%
	* DATE COMPLETED	TBD
B. PRELIMINARY DESIGN:	DATE INITIATED	TBD
	% COMPLETE	0%
	* DATE COMPLETED	TBD
C. CONSTRUCTION DOCUMENTS:	DATE INITIATED	TBD
	% COMPLETE	0%
	* DATE COMPLETED	TBD
D. SCHEDULED BID DATE:		April, 2017

5. CURRENT PROJECT BUDGET:

	PRELIMINARY
A. PACKAGE A - EAST CORE CAMPUS THERMAL ENERGY EXPANSION	$ 6,000,000
B. PACKAGE B - STEAM REPLACEMENT AND HEATING SYSTEM UPGRADE	$ 1,500,000
C. EQUIPMENT - CHILLER	$ 800,000
D. LANDSCAPING	$ 385,529
E. TELECOMMUNICATION/DATA	$ 83,001
F. CONTINGENCY* (5%)	$ 434,276
G. UA PROJECT MANAGEMENT FEE** (3%)	$ 273,594
H. ARCHITECT/ENGINEER FEE*** (~6.3%)	$ 523,600
I. TOTAL PROJECT COST	**$ 10,000,000**

*Contingency is based on 5% of the cost of construction for Package A - East Core Campus Thermal Energy Expansion and Package B - Heating System Upgrade, Equipment, Landscaping and Telecommunication/Data.

**UA Project Management Fee is based on 3% of the cost of construction for Package A - East Core Campus Thermal Energy Expansion, Package B - Heating System Upgrade, Equipment, Landscaping and Telecommunication/Data.

***Architect/Engineer Fee of approximately 6.3% is based on a blended fee of 6.2% of the cost of construction for Package A - East Core Campus Thermal Energy Expansion and Equipment and 6.8% of the cost of construction for Package B - Heating System Upgrade.

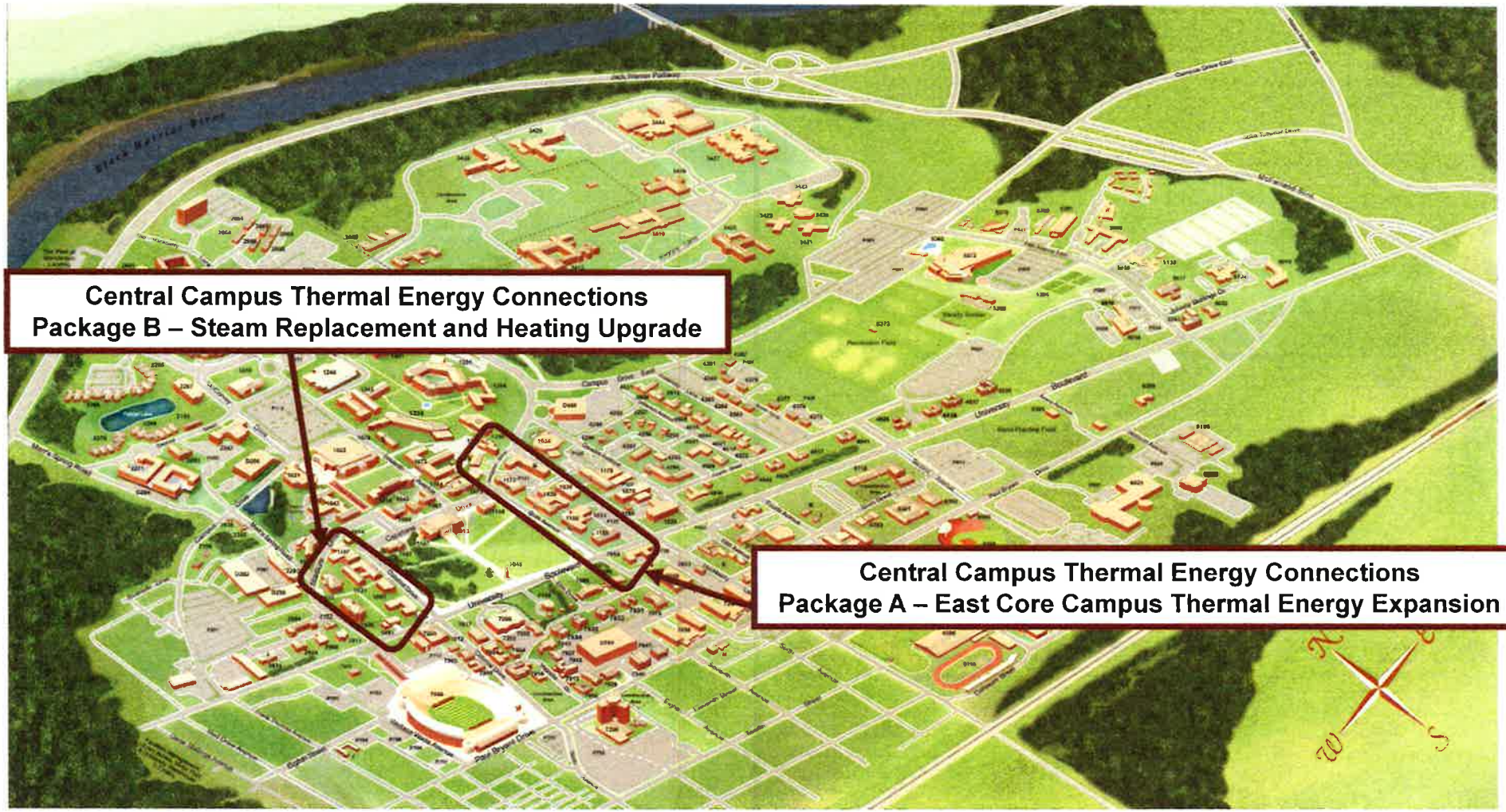
6. FUNDING/RESOURCES: 2017 Future General Revenue Bonds - $10,000,000

7. REMARKS: This Project will address $10,000,000 in deferred maintenance liabilities and improve the reliability and efficiency of building HVAC systems.

* FINAL AGENCY APPROVAL

SUBMITTED BY: Tim Leopard

LOCATION MAP



Attachment K to Board Rule 415

Supplemental Project Information Worksheet
Annual Capital Development Plan

FY: 2016-2017

Project Name/Category: Central Campus Thermal Energy Connections
Hackberry Drive/Colonial Drive Area
Tuscaloosa, Alabama

Campus: The University of Alabama

1. **Will this Project increase the current space inventory on campus or replace existing space?**

☐ increase space inventory	_____	% increase	_____	GSF
☐ replace space inventory	_____	% replacement	_____	GSF
☐ renovation of existing space only			_____	GSF

Not applicable – work limited existing mechanical spaces.

2. **If this Project will replace existing space inventory, how will vacated space be utilized or assigned after this Project is completed?**

Comments:

Not applicable.

3. **Is the proposed Project location consistent with the Campus Master Plan and University Design Standards and the principles contained therein?**

☒ Yes ☐ No, Campus Master Plan Amendment Required

If Campus Master Plan amendment required, explain:

4. **Provide information on classification of new space provided by this Project and latest utilization data on similar type space on campus.**

Comments/Notations:
Not applicable. The Central Campus Thermal Energy Connections project ("Project") will connect existing buildings to the Central Campus Thermal Energy System or install new boilers and piping using existing mechanical space.

5. How will this Project enhance existing/new programs and undergraduate/graduate enrollments?

Estimated new Funds from Tuition/Programs $ N/A Yr.

Comments:

The project will improve the teaching, learning, and working environments of campus constituents by providing reliable and efficient thermal energy to facilities by replacing systems that have reached the end of their functional service life. By centralizing equipment in the energy plants, the project will free campus exterior space currently occupied by existing equipment for other uses including, but not limited to, parking, landscaping, and hardscape improvements. Furthermore, reducing the cost to provide heating and cooling to buildings will support the University in maintaining a competitive cost of attendance.

As part of the University's master plan for thermal energy distribution, this proposed Project will address deferred maintenance issues and improve system efficiency and reliability through utilization of the existing East Quad and Shelby Energy Plant distribution systems and infrastructure.

In recognition of the differences in the site work requirements and Project delivery timelines between the two major portions of the Project, the Project has been separated into two (2) packages: Package A – East Core Campus Thermal Energy Expansion and Package B –Steam Replacement and Heating System Upgrade.

Package A – East Core Campus Thermal Energy Expansion will consist of the replacement of existing steam service and aging chilled water generation systems with connections to the Central Thermal Energy Systems at Rodgers Library, Nott Hall, Gallalee Hall, Mary Harmon Bryant Hall, Smith Hall, and Lloyd Hall.

Package B – Steam Replacement and Heating System Upgrade will consist of the replacement of the existing steam heating systems serving Bruno Library, Carmichael Hall, Bidgood Hall, Alston Hall, Bibb Graves Hall and McClure Library with local heating hot water systems. The piping configuration of these local heating hot water systems will be configured to allow for connection to the future B. B. Comer Central Energy Plant upon its completion.

6. Has a facility user group been established to provide input for planning, programming, and design purposes? ☒ Yes ☐ In-Progress

If yes, list key members of user group:

Greg McKelvey – Executive Director, Maintenance Operations and Energy Management
Frank Struss – Director of Facilities Engineering
Tim Leopard – Associate Vice President for Construction Administration
Shanwei Chen – Staff Engineer
Steven Mercado – Project Manager

7. Source(s) of funding for Total Project Development Costs.

Source(s)	New Funds (FY 2017)	Reserves	Status /7
Tuition			
Student Fees			
Investment Income			
Auxiliary Income • External • Internal			
Education Sales/Services • External • Internal			
Direct Grants			
Gifts			
Bonds	$10,000,000		Pending
Existing Net Assets			
Other			
Totals	**$10,000,000**		**Pending**

/7 Approved, allocated, pending

Comments:
This Project will be funded from 2017 Future General Revenue bonds in the amount of $10,000,000.

8. Estimate of operations and maintenance (O&M) costs for the initial occupancy year and projections for succeeding five (5) year period.

Operations and Maintenance (O&M)Annual Costs Projections			
Expense	**FY 2015- 2016 Base Data /8**	**First Full /YR** Occupancy FY 2018	**Successive Five (5) Year Projections /9**
Maintenance			
Elevator Service			
Building Repairs			
Building Services			
Electric, Natural Gas, Steam			
Chilled Water			
Water and Sewer			
Insurance			
Safety Support			
Operations Staff Support Funding			
Other – Supply Store expenses			
Totals			

/8 Latest Fiscal Year Data used as Base Year for Projections
/9 Combined Costs for next Five (5) Years of Occupancy

Comments:
The O&M costs for this Project will not be associated with individual buildings.

Package A will reduce maintenance costs by eliminating chillers, boilers and steam heat exchange equipment in Rodgers Library, Smith Hall, Lloyd Hall, Mary Harmon Bryant Hall, Nott Hall and Gallalee Hall. Replacement of existing individual air cooled chillers at these buildings, with service by Central Plant water cooled chillers, will result in energy savings of approximately 40% for the cooling load.

Package B will replace building steam system maintenance costs with local boiler maintenance costs in Bruno Library, Carmichael Hall, Bidgood Hall, Alston Hall, Bibb Graves Hall and McClure Library. Elimination of existing leaking steam lines will result in savings of approximately 15% plus elimination of repair labor.

9. Source of funds for projected ongoing operations and maintenance (O&M) costs for this project.

Source(s)	Occupancy Yr /9 (FY 2018)	Future Years /10	Status /7
Tuition			
Student Fees			
Investment Income			
Auxiliary Income • External • Internal			
Educational Sales & Services • External • Internal			
Direct Grant(s)			
Reallocated Funds /11			
Gifts			
Other			
Total/YR			

/9 Initial Full Yr of Occupancy
/10 Next Five (5) Yrs Occupancy
/11 Funds Reallocated from other sources
/7 Approved, allocated, pending

Comments:
Ongoing O& M cost will be funded from the annual operating budget. Savings resulting from the execution of these projects will help offset future energy inflation cost and additional energy cost from campus growth.

10. Are development expenditures for this Project being used to reduce the current deferred maintenance/facilities renewal liabilities for the Campus?

$ 10,000,000 **100** % of Total Development Costs

Comments:
Package A will eliminate replacement costs of chillers, boilers and steam heat exchange equipment at Rodgers Library, Smith Hall, Lloyd Hall, Mary Harmon Bryant Hall, Nott Hall and Gallalee Hall.

Package B will replace the existing steam heating equipment and piping at Bruno Library, Carmichael Hall, Bidgood Hall, Alston Hall, Bibb Graves Hall and McClure Library with equivalent hot water systems.

11. What other development alternatives were considered in the planning process for this Project? /13

Comments:
Continued use of existing equipment was considered. The buildings currently supplied with thermal energy by independent boilers and chillers are less efficient and more maintenance intensive than buildings served by central plants.

Replacement of the central steam system with a central hot water heating system was considered. However, disruption to the landscape and hardscape in the service area caused by piping replacement would be extensive and cost prohibitive.

/13 Renovation vs. new construction, adaptive reuse of underutilized buildings, etc.

12. Explain how the project will promote adequacy of campus facilities in relation to the University's Mission and scope of programs and/or services:

Connection of East Core Campus buildings to the Central Thermal System and installation of redundant local boilers in the West Campus buildings will eliminate equipment single point of failures that result in complete heating and/or cooling system failures at any given facility whereby increasing facility uptime and comfort.

13. How does the project correlate to the University's strategic goals?

Maintaining comfortable, pleasant and continuously operating facilities is an important part of recruiting and retaining top tier students, faculty and staff. Reducing the quantity of noisy and unsightly mechanical equipment and increasing the reliability of the overall systems helps achieve this goal.

14. What would be the immediate impact on campus programs and enrollment if this project is not approved?

Comments:

The immediate impact is the loss of an opportunity to:

1. Reduce risk of campus program downtime due to failure of antiquated equipment and systems with single point of failure conditions.
2. Enhance the environment of the University of Alabama Campus by removal of unsightly and noisy mechanical equipment.