

AGENDA ITEM BRIEFING

Submitted by: Michael K. Young, President
Texas A&M University

Subject: Approval of the Project Scope and Budget, Appropriation for Pre-Construction and Construction Services, and Approval for Construction for the Krueger Hall HVAC Project, Texas A&M University, College Station, Texas

Proposed Board Action:

- (1) Approve the project scope and budget.
- (2) Appropriate \$9,939,305 for pre-construction and construction services and related project costs.
- (3) Approve construction of the Krueger Hall HVAC Project at Texas A&M University with a total project budget of \$9,939,305.

Funding/Planning Amount:

<u>Funding Source</u>	<u>Planning Amount</u>	<u>Average Estimated Annual Debt Service</u>	<u>Debt Service Source</u>
Revenue Financing			Housing
System Debt Proceeds	<u>\$9,939,305</u>	\$712,450	Revenue
Total Project Funding	<u>\$9,939,305</u>		

Project Justification:

Originally constructed in 1972, Krueger Hall has an existing Heating Ventilation Air Conditioning (HVAC) system consisting of a constant volume air handling system with zone reheat coils in each room. There are four Air Handler Units (AHUs) per floor on each of the four floors of this building, 16 total AHUs. Outside Air (OA) intakes are located on the roof with OA ductwork routed down to each of the mechanical rooms that house the AHUs. The mechanical room serves as an OA/Return Air (RA) mixing plenum with evidence of moisture related issues caused by condensation from humid OA being introduced directly into the room. Each pair of dorm rooms shares a restroom which is exhausted by a fan that serves the stacked restrooms.

The HVAC system has reached the end of its useful life and is in need of replacement. There have been significant maintenance issues resulting from aged heating water piping which is routed throughout this facility.

Scope:

This project will replace all 16 AHUs, associated supply and exhaust ductwork and hot water piping to the zone reheat coils. The proposed system will consist of four Energy Recovery Units

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Agenda Item Briefing

(ERUs) to be installed on the roof above the stack mechanical rooms. A positive means of introducing conditioned OA will be provided to improve Indoor Air Quality (IAQ). The restroom exhaust will be manifolded on the roof and routed to an ERU to capture the energy that is currently being exhausted. The 16 new AHUs will be located in the existing mechanical rooms on each floor and will be double duct systems. This will eliminate the need to route hot water piping throughout the facility. The existing chilled water pump (CHP) and Hot Water Pump (HWP) will be replaced with Variable Frequency Drive (VFD) driven pumps. The existing Chilled Hot Water (CHW) and Hot Water (HW) mains from the pump room up to the roof will remain. New CHS/R and HWS/R headers will be added on the roof to serve utilities to each of the ERUs and to backfeed a new set of HW risers in each mechanical room and to connect to the existing CHW risers to remain. A new Direct Digital Control (DDC) system will be provided and tied into the campus-wide control system for better energy management and control by Utilities and Energy Services.

General construction shall consist of the removal and replacement of existing ceilings to facilitate mechanical work. In lieu of cleaning and reinstalling existing light fixtures, this project will install new, more energy efficient light fixtures.

The current schedule calls for substantial completion of the Krueger Hall HVAC Project in July 2016. The total project budget is \$9,939,305.

Other Major Fiscal Impacts:

None.

TEXAS A&M UNIVERSITY

Office of the President

December 17, 2015

Members, Board of Regents
The Texas A&M University System

Subject: Approval of the Project Scope and Budget, Appropriation for Pre-Construction and Construction Services, and Approval for Construction for the Krueger Hall HVAC Project, Texas A&M University, College Station, Texas

I recommend adoption of the following minute order:

“The project scope along with a project budget of \$9,939,305 for the Krueger Hall HVAC Project is approved.

The amount of \$9,939,305 is appropriated from Account No. 01-083536-Revenue Financing Debt Proceeds (Housing Revenue) for pre-construction and construction services and related project costs.

The Krueger Hall HVAC Project, Texas A&M University, College Station, Texas, is approved for construction.

The Board of Regents of The Texas A&M University System (Board) reasonably expects to incur debt in one or more obligations for this project, and all or a portion of the proceeds received from the sale of such obligations is reasonably expected to be used to reimburse the account(s) for amounts previously appropriated and/or expended from such account(s).

As required by Section 5(a) of the Master Resolution of the Revenue Financing System, the Board hereby determines that it will have sufficient funds to meet the financial obligations of The Texas A&M University System, including sufficient Pledged Revenues to satisfy the Annual Debt Service Requirements of the Revenue Financing System and to meet all financial obligations of the Board relating to the Revenue Financing System and that

the Participants, on whose behalf the debt is issued, possess the financial capacity to satisfy their Direct Obligations.”

Respectfully submitted,

[ORIGINAL SIGNED BY]

Michael K. Young, President
Texas A&M University

Approval Recommended:

[ORIGINAL SIGNED BY]

John Sharp
Chancellor

[ORIGINAL SIGNED BY]

Billy Hamilton
Executive Vice Chancellor and
Chief Financial Officer

Approved for Legal Sufficiency:

[ORIGINAL SIGNED BY]

Ray Bonilla
General Counsel

KRUEGER HALL HVAC PROJECT TEXAS A&M UNIVERSITY PROJECT NO. 2014-04566	PROJECT BUDGET
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Construction (Complete CSI Breakout Tab).....	\$8,775,285
Construction Contingency @ 10%	536,500
Architect/Engineer (A/E) Fee	328,000
A/E Additional Fees.....	3,000
Asbestos/Lead Survey.....	3,525
SSC Support (Keying/Fire Alarms/Utilities Support/Etc.).....	3,500
SSC Project Management Fees.....	289,495
TOTAL ESTIMATED COST OF PROJECT.....	<u>\$9,939,305</u>

1. Design Start..... April 27, 2015
2. 95% Design Review..... July 9, 2015
3. Solicitation of Bids August 12, 2015
4. Bid Opening October 2, 2015
5. Contract Award/Notice to Proceed October 30, 2015
6. Electrical Upgrades & Roof Work..... December 20, 2015
7. Board of Regents Approval for Construction February 11, 2016
8. Begin HVAC Replacement..... May 16, 2016
9. HVAC Replacement Project Completion July 30, 2016

**TEXAS A&M UNIVERSITY
REVENUE FINANCING SYSTEM
Krueger Hall HVAC Replacement
Housing Revenue**

Dates	Outstanding Principal	Principal Amount	Interest Amount	Annual Total	Coverage 1.15x
BONDS	10,040,000.00				
YEAR 1	9,830,000.00	210,000.00	502,000.00	712,000.00	818,800.00
YEAR 2	9,610,000.00	220,000.00	491,500.00	711,500.00	818,225.00
YEAR 3	9,380,000.00	230,000.00	480,500.00	710,500.00	817,075.00
YEAR 4	9,135,000.00	245,000.00	469,000.00	714,000.00	821,100.00
YEAR 5	8,880,000.00	255,000.00	456,750.00	711,750.00	818,512.50
YEAR 6	8,610,000.00	270,000.00	444,000.00	714,000.00	821,100.00
YEAR 7	8,330,000.00	280,000.00	430,500.00	710,500.00	817,075.00
YEAR 8	8,035,000.00	295,000.00	416,500.00	711,500.00	818,225.00
YEAR 9	7,725,000.00	310,000.00	401,750.00	711,750.00	818,512.50
YEAR 10	7,400,000.00	325,000.00	386,250.00	711,250.00	817,937.50
YEAR 11	7,055,000.00	345,000.00	370,000.00	715,000.00	822,250.00
YEAR 12	6,695,000.00	360,000.00	352,750.00	712,750.00	819,662.50
YEAR 13	6,315,000.00	380,000.00	334,750.00	714,750.00	821,962.50
YEAR 14	5,920,000.00	395,000.00	315,750.00	710,750.00	817,362.50
YEAR 15	5,505,000.00	415,000.00	296,000.00	711,000.00	817,650.00
YEAR 16	5,065,000.00	440,000.00	275,250.00	715,250.00	822,537.50
YEAR 17	4,605,000.00	460,000.00	253,250.00	713,250.00	820,237.50
YEAR 18	4,120,000.00	485,000.00	230,250.00	715,250.00	822,537.50
YEAR 19	3,615,000.00	505,000.00	206,000.00	711,000.00	817,650.00
YEAR 20	3,085,000.00	530,000.00	180,750.00	710,750.00	817,362.50
YEAR 21	2,525,000.00	560,000.00	154,250.00	714,250.00	821,387.50
YEAR 22	1,940,000.00	585,000.00	126,250.00	711,250.00	817,937.50
YEAR 23	1,325,000.00	615,000.00	97,000.00	712,000.00	818,800.00
YEAR 24	680,000.00	645,000.00	66,250.00	711,250.00	817,937.50
YEAR 25	-	680,000.00	34,000.00	714,000.00	821,100.00
		<u>\$ 10,040,000.00</u>	<u>\$ 7,771,250.00</u>	<u>\$ 17,811,250.00</u>	<u>\$ 20,482,937.50</u>

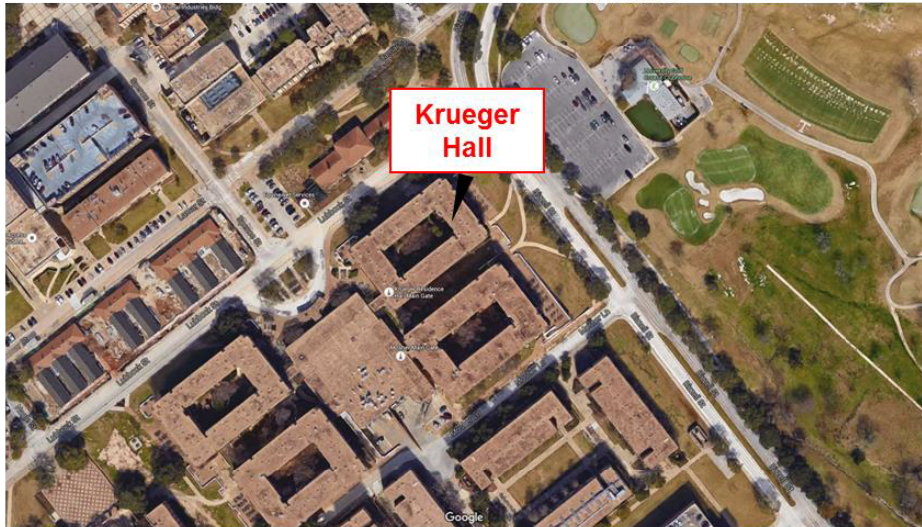
Estimated issuance costs and rounding of \$100,696 are included in this schedule.
 Long-term rates are assumed to be 5.00%. Rates are subject to market change.
 Prepared by the Office of the Treasurer - Treasury Services 12/11/15

Rates are subject to market change. Amounts are preliminary estimates that will be revised at the time bonds are issued.

Physical
Plant

Physical Plant

Physical Plant



Krueger Hall HVAC Project

Texas A&M University

Project No. 2014-04566

AGENDA ITEM BRIEFING

Submitted by: Michael K. Young, President
Texas A&M University

Subject: Approval of the Project Scope and Budget, Appropriation for Pre-Construction and Construction Services, and Approval for Construction for the Legett Hall HVAC Project, Texas A&M University, College Station, Texas

Proposed Board Action:

- (1) Approve the project scope and budget.
- (2) Appropriate \$5,534,408 for pre-construction and construction services and related project costs.
- (3) Approve construction of the Legett Hall HVAC Project at Texas A&M University with a total project budget of \$5,534,408.

Funding/Planning Amount:

<u>Funding Source</u>	<u>Planning Amount</u>	<u>Average Estimated Annual Debt Service</u>	<u>Debt Service Source</u>
Revenue Financing	\$5,534,408	\$396,640	Housing Revenue
Total Project Funding	<u>\$5,534,408</u>		

Project Justification:

Originally constructed in 1911, renovated in 1979, Legett Hall is a four story concrete structure consisting of approximately 95 dorm rooms. Legett Hall’s current Heating Ventilation Air Conditioning (HVAC) system was installed in 1972. The system consists of seven Air Handler Units (AHUs) that serve primary air (conditioned outside air [OA]) to either induction air units (IAUs) or fan coil units (FCUs) located in each of the spaces. There are three chilled water pumps (CHPs) and two hot water pumps (HWPs) each serving different building zones.

The HVAC system has reached the end of its useful life and is in need of replacement.

Scope:

This project will replace all FCUs/IAUs in each dorm room as well as all AHUs, CHPs and HWPs. The entire chilled water and heating water piping will be replaced. Each room will have a thermostat and humidistat to implement a humidity control strategy at the room level. Conditioned OA will be provided via a new roof mounted Energy Recovery Unit (ERU). Existing exhaust fans will be removed and new exhaust ductwork will be routed to each of the

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ERUs to capture energy currently being exhausted. New OA and exhaust duct risers will be installed to introduce conditioned fresh air to each new AHU. A new direct digital control (DDC) system will be provided and will be tied into campus-wide control system for better energy management and control by Utilities and Energy Services (UES). General construction shall consist of the removal and replacement of existing ceilings to facilitate mechanical work. In lieu of cleaning and reinstalling existing light fixtures, this project will install new, more energy efficient light fixtures. It will also include replacement of the electrical switchgear to provide additional distribution of the existing electrical services.

The current schedule calls for substantial completion of the Legett Hall HVAC Project in July 2016. The total project budget is \$5,534,408.

Other Major Fiscal Impacts:

None.

Agenda Item No. 3.4

TEXAS A&M UNIVERSITY

Office of the President

December 18, 2015

Members, Board of Regents
The Texas A&M University System

Subject: Approval of the Project Scope and Budget, Appropriation for Pre-Construction and Construction Services, and Approval for Construction for the Legett Hall HVAC Project, Texas A&M University, College Station, Texas

I recommend adoption of the following minute order:

“The project scope along with a project budget of \$5,534,408 for the Legett Hall HVAC Project is approved.

The amount of \$5,534,408 is appropriated from Account No. 01-083536-Revenue Financing Debt Proceeds (Housing Revenue) for pre-construction and construction services and related project costs.

The Legett Hall HVAC Project, Texas A&M University, College Station, Texas, is approved for construction.

The Board of Regents of The Texas A&M University System (Board) reasonably expects to incur debt in one or more obligations for this project, and all or a portion of the proceeds received from the sale of such obligations is reasonably expected to be used to reimburse the account(s) for amounts previously appropriated and/or expended from such account(s).

As required by Section 5(a) of the Master Resolution of the Revenue Financing System, the Board hereby determines that it will have sufficient funds to meet the financial obligations of The Texas A&M University System, including sufficient Pledged Revenues to satisfy the Annual Debt Service Requirements of the Revenue Financing System and to meet all financial obligations of the Board relating to the Revenue Financing System and that

the Participants, on whose behalf the debt is issued, possess the financial capacity to satisfy their Direct Obligations.”

Respectfully submitted,

[ORIGINAL SIGNED BY]

Michael K. Young, President
Texas A&M University

Approval Recommended:

[ORIGINAL SIGNED BY]

John Sharp
Chancellor

Approved for Legal Sufficiency:

[ORIGINAL SIGNED BY]

Ray Bonilla
General Counsel

[ORIGINAL SIGNED BY]

Billy Hamilton
Executive Vice Chancellor and
Chief Financial Officer

LEGETT HALL HVAC PROJECT TEXAS A&M UNIVERSITY PROJECT NO. 2015-05017	PROJECT BUDGET
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Construction (Complete CSI Breakout Tab).....	\$4,598,671
Construction Contingency @ 10%	459,867
Architect/Engineer (A/E) Fee	171,600
A/E Additional Fees.....	3,000
Asbestos/Lead Survey.....	2,068
Asbestos Abatement.....	134,505
SSC Support (Keying/Fire Alarms/Utilities Support/Etc.).....	3,500
SSC Project Management Fees	161,197
TOTAL ESTIMATED COST OF PROJECT.....	<u>\$5,534,408</u>

1. Design Start.....July 24, 2014
2. 95% Design Review..... March 3, 2015
3. Solicitation of Bids August 12, 2015
4. Bid Opening.....October 2, 2015
5. Contract Award/Notice to ProceedOctober 30, 2015
6. Electrical Upgrades & Roof Work..... December 20, 2015
7. Board of Regents Approval for Construction February 11, 2016
8. Begin HVAC Replacement..... May 16, 2016
9. HVAC Replacement Project CompletionJuly 30, 2016

**TEXAS A&M UNIVERSITY
REVENUE FINANCING SYSTEM
Legett Hall HVAC Replacement
Housing Revenue**

Dates	Outstanding Principal	Principal Amount	Interest Amount	Annual Total	Coverage 1.15x
BONDS	5,590,000.00				
YEAR 1	5,415,000.00	175,000.00	265,525.00	440,525.00	506,603.75
YEAR 2	5,235,000.00	180,000.00	257,212.50	437,212.50	502,794.38
YEAR 3	5,045,000.00	190,000.00	248,662.50	438,662.50	504,461.88
YEAR 4	4,845,000.00	200,000.00	239,637.50	439,637.50	505,583.13
YEAR 5	4,635,000.00	210,000.00	230,137.50	440,137.50	506,158.13
YEAR 6	4,415,000.00	220,000.00	220,162.50	440,162.50	506,186.88
YEAR 7	4,185,000.00	230,000.00	209,712.50	439,712.50	505,669.38
YEAR 8	3,945,000.00	240,000.00	198,787.50	438,787.50	504,605.63
YEAR 9	3,695,000.00	250,000.00	187,387.50	437,387.50	502,995.63
YEAR 10	3,430,000.00	265,000.00	175,512.50	440,512.50	506,589.38
YEAR 11	3,155,000.00	275,000.00	162,925.00	437,925.00	503,613.75
YEAR 12	2,865,000.00	290,000.00	149,862.50	439,862.50	505,841.88
YEAR 13	2,560,000.00	305,000.00	136,087.50	441,087.50	507,250.63
YEAR 14	2,245,000.00	315,000.00	121,600.00	436,600.00	502,090.00
YEAR 15	1,915,000.00	330,000.00	106,637.50	436,637.50	502,133.13
YEAR 16	1,565,000.00	350,000.00	90,962.50	440,962.50	507,106.88
YEAR 17	1,200,000.00	365,000.00	74,337.50	439,337.50	505,238.13
YEAR 18	820,000.00	380,000.00	57,000.00	437,000.00	502,550.00
YEAR 19	420,000.00	400,000.00	38,950.00	438,950.00	504,792.50
YEAR 20	-	420,000.00	19,950.00	439,950.00	505,942.50
		<u>\$ 5,590,000.00</u>	<u>\$ 3,191,050.00</u>	<u>\$ 8,781,050.00</u>	<u>\$ 10,098,207.57</u>

Estimated issuance costs and rounding of \$55,593 are included in this schedule.
Long-term rates are assumed to be 4.75%. Rates are subject to market change.
Prepared by the Office of the Treasurer - Treasury Services 12/11/15

Rates are subject to market change. Amounts are preliminary estimates that will be revised at the time bonds are issued.

Physical
Plant



Legett Hall HVAC Project

Texas A&M University

Project No. 2015-05017

AGENDA ITEM BRIEFING

Submitted by: Michael K. Young, President
Texas A&M University

Subject: Approval of the Project Scope and Budget, Appropriation for Pre-Construction and Construction Services, and Approval for Construction for the Neeley Hall HVAC Project, Texas A&M University, College Station, Texas

Proposed Board Action:

- (1) Approve the project scope and budget.
- (2) Appropriate \$6,803,145 for pre-construction and construction services and related project costs.
- (3) Approve construction of the Neeley Hall HVAC Project at Texas A&M University with a total project budget of \$6,803,145.

Funding/Planning Amount:

<u>Funding Source</u>	<u>Planning Amount</u>	Average <u>Estimated Annual Debt Service</u>	<u>Debt Service Source</u>
Revenue Financing	<u>\$6,803,145</u>	\$468,837	Housing Revenue
Total Project Funding	<u>\$6,803,145</u>		

Project Justification:

Originally constructed in 1980, Neeley Hall is a four-story concrete structure consisting of 144 modular rooms/spaces (the majority being dorm rooms). Total square footage is approximately 70,000 gsf.

Each room is conditioned by an individual Fan Coil Unit (FCU) served by a four-pipe Chilled Hot Water/Hot Water (CHW/HW) piping distribution system. Each room has a thermostat and fan speed control switch (Hi/Med/Lo). Corridors are conditioned by floor-mounted FCUs and plenum-mounted FCUs located at each end of the hall. The FCUs at the end of the hall draw Outside Air (OA) through an exterior louver to serve fresh air to corridors. OA is introduced to each room via door undercut using toilet exhaust to draw. Each stairwell has wall-mounted FCUs located on the 2nd and 3rd floor landings.

The Heating Ventilation Air Conditioning (HVAC) system has reached the end of its useful life and is in need of replacement.

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Agenda Item Briefing

Scope:

This project will replace all FCUs with new four-pipe FCUs with HW coils in the re-heat position. Each room will have a thermostat and humidistat to implement a humidity control strategy at the room level. Conditioned OA will be provided via new roof-mounted Energy Recovery Units (ERUs). Existing exhaust fans will be removed and new exhaust ductwork will be manifolded on the roof and routed to each of the ERUs to capture energy currently being exhausted. New OA and exhaust duct risers will be installed to introduce conditioned fresh air into each room. A new Direct Digital Control (DDC) system will be provided and tied into the campus-wide control system for better energy management and control by Utilities and Energy Services.

General construction shall consist of the removal and replacement of existing ceilings to facilitate mechanical work. In lieu of cleaning and reinstalling existing light fixtures, this project will install new, more energy efficient light fixtures. It will also include replacement of the existing electrical switchgear to provide additional distribution of the existing electrical services.

The current schedule calls for substantial completion of the Neeley Hall HVAC Project in July 2016. The total project budget is \$6,803,145.

Other Major Fiscal Impacts:

None.

Agenda Item No. 3.5

TEXAS A&M UNIVERSITY

Office of the President

December 18, 2015

Members, Board of Regents
The Texas A&M University System

Subject: Approval of the Project Scope and Budget, Appropriation for Pre-Construction and Construction Services, and Approval for Construction for the Neeley Hall HVAC Project, Texas A&M University, College Station, Texas

I recommend adoption of the following minute order:

“The project scope along with a project budget of \$6,803,145 for the Neeley Hall HVAC Project is approved.

The amount of \$6,803,145 is appropriated from Account No. 01-083536, Revenue Financing Debt Proceeds (Housing Revenue) for pre-construction and construction services and related project costs.

The Neeley Hall HVAC Project, Texas A&M University, College Station, Texas, is approved for construction.

The Board of Regents of The Texas A&M University System (Board) reasonably expects to incur debt in one or more obligations for this project, and all or a portion of the proceeds received from the sale of such obligations is reasonably expected to be used to reimburse the account(s) for amounts previously appropriated and/or expended from such account(s).

As required by Section 5(a) of the Master Resolution of the Revenue Financing System, the Board hereby determines that it will have sufficient funds to meet the financial obligations of The Texas A&M University System, including sufficient Pledged Revenues to satisfy the Annual Debt Service Requirements of the Revenue Financing System and to meet all financial obligations of the Board relating to the Revenue Financing System and that

the Participants, on whose behalf the debt is issued, possess the financial capacity to satisfy their Direct Obligations.”

Respectfully submitted,

[ORIGINAL SIGNED BY]

Michael K. Young, President
Texas A&M University

Approval Recommended:

[ORIGINAL SIGNED BY]

John Sharp
Chancellor

Approved for Legal Sufficiency:

[ORIGINAL SIGNED BY]

Ray Bonilla
General Counsel

[ORIGINAL SIGNED BY]

Billy Hamilton
Executive Vice Chancellor and
Chief Financial Officer

NEELEY HALL HVAC PROJECT TEXAS A&M UNIVERSITY PROJECT NO. 2014-04614	PROJECT BUDGET
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Construction (Complete CSI Breakout Tab).....	\$5,716,000
Construction Contingency @ 10%	571,600
Architect/Engineer (A/E) Fee	292,850
A/E Additional Fees.....	3,000
Asbestos/Lead Survey.....	3,725
Asbestos Abatement.....	14,320
SSC Support (Keying/Fire Alarms/Utilities Support/Etc.).....	3,500
SSC Project Management Fees	<u>198,150</u>
TOTAL ESTIMATED COST OF PROJECT.....	<u>\$6,803,145</u>

1. Design Start..... April 27, 2015
2. 95% Design Review..... July 9, 2015
3. Solicitation of Bids August 12, 2015
4. Bid Opening October 2, 2015
5. Contract Award/Notice to Proceed October 30, 2015
6. Electrical Upgrades & Roof Work..... December 20, 2015
7. Board of Regents Approval for Construction February 11, 2016
8. Begin HVAC Replacement..... May 16, 2016
9. HVAC Replacement Project Completion July 30, 2016

**TEXAS A&M UNIVERSITY
REVENUE FINANCING SYSTEM
Neeley Hall HVAC Replacement
Housing Revenue**

Dates	Outstanding Principal	Principal Amount	Interest Amount	Annual Total	Coverage 1.15x
BONDS	6,875,000.00				
YEAR 1	6,730,000.00	145,000.00	343,750.00	488,750.00	562,062.50
YEAR 2	6,580,000.00	150,000.00	336,500.00	486,500.00	559,475.00
YEAR 3	6,420,000.00	160,000.00	329,000.00	489,000.00	562,350.00
YEAR 4	6,255,000.00	165,000.00	321,000.00	486,000.00	558,900.00
YEAR 5	6,080,000.00	175,000.00	312,750.00	487,750.00	560,912.50
YEAR 6	5,895,000.00	185,000.00	304,000.00	489,000.00	562,350.00
YEAR 7	5,700,000.00	195,000.00	294,750.00	489,750.00	563,212.50
YEAR 8	5,495,000.00	205,000.00	285,000.00	490,000.00	563,500.00
YEAR 9	5,280,000.00	215,000.00	274,750.00	489,750.00	563,212.50
YEAR 10	5,055,000.00	225,000.00	264,000.00	489,000.00	562,350.00
YEAR 11	4,820,000.00	235,000.00	252,750.00	487,750.00	560,912.50
YEAR 12	4,575,000.00	245,000.00	241,000.00	486,000.00	558,900.00
YEAR 13	4,315,000.00	260,000.00	228,750.00	488,750.00	562,062.50
YEAR 14	4,045,000.00	270,000.00	215,750.00	485,750.00	558,612.50
YEAR 15	3,760,000.00	285,000.00	202,250.00	487,250.00	560,337.50
YEAR 16	3,460,000.00	300,000.00	188,000.00	488,000.00	561,200.00
YEAR 17	3,145,000.00	315,000.00	173,000.00	488,000.00	561,200.00
YEAR 18	2,815,000.00	330,000.00	157,250.00	487,250.00	560,337.50
YEAR 19	2,470,000.00	345,000.00	140,750.00	485,750.00	558,612.50
YEAR 20	2,105,000.00	365,000.00	123,500.00	488,500.00	561,775.00
YEAR 21	1,725,000.00	380,000.00	105,250.00	485,250.00	558,037.50
YEAR 22	1,325,000.00	400,000.00	86,250.00	486,250.00	559,187.50
YEAR 23	905,000.00	420,000.00	66,250.00	486,250.00	559,187.50
YEAR 24	465,000.00	440,000.00	45,250.00	485,250.00	558,037.50
YEAR 25	-	465,000.00	23,250.00	488,250.00	561,487.50
		<u>\$ 6,875,000.00</u>	<u>\$ 5,314,750.00</u>	<u>\$ 12,189,750.00</u>	<u>\$ 14,018,212.50</u>

Estimated issuance costs and rounding of \$71,855 are included in this schedule.
Long-term rates are assumed to be 5.00%. Rates are subject to market change.
Prepared by the Office of the Treasurer - Treasury Services 12/11/15

Rates are subject to market change. Amounts are preliminary estimates that will be revised at the time bonds are issued.



Neeley Hall HVAC Project

Texas A&M University

Project No. 2014-04614

AGENDA ITEM BRIEFING

Submitted by: Michael K. Young, President
Texas A&M University

Subject: Approval of the Project Scope and Budget, Appropriation for Pre-Construction and Construction Services, and Approval for Construction for the Underwood Hall HVAC Project, Texas A&M University, College Station, Texas

Proposed Board Action:

- (1) Approve the project scope and budget.
- (2) Appropriate \$6,583,840 for pre-construction and construction services and related project costs.
- (3) Approve construction of the Underwood Hall HVAC Project at Texas A&M University with a total project budget of \$6,583,840.

Funding/Planning Amount:

<u>Funding Source</u>	<u>Planning Amount</u>	Average Estimated Annual <u>Debt Service</u>	Debt Service <u>Source</u>
Revenue Financing System Debt Proceeds	<u>\$6,583,840</u>	\$471,880	Housing Revenue
Total Project Funding	<u>\$6,583,840</u>		

Project Justification:

Originally constructed in 1981, Underwood Hall is a four-story concrete structure consisting of 160 modular rooms/spaces (the majority being dorm rooms). Total square footage is approximately 77,000 gsf.

Each room is conditioned by an individual Fan Coil Unit (FCU) served by a four-pipe Chilled Hot Water/Hot Water (CHW/HW) piping distribution system. Each room has a thermostat and fan speed control switch (Hi/Med/Lo). Corridors are conditioned by floor-mounted FCUs and plenum-mounted FCUs located at each end of the hall. The FCUs at the end of the hall draw outside air (OA) through an exterior louver to serve fresh air to the corridors. OA is introduced to each room via door undercut using toilet exhaust to draw. Each stairwell has wall-mounted FCUs located on the 2nd and 3rd floor landings.

The HVAC system has reached the end of its useful life and is in need of replacement.

Agenda Item No. 3.6
Agenda Item Briefing

Scope:

This project will replace all FCUs with new four-pipe FCUs with HW coils in the re-heat position. Each room will have a thermostat and humidistat to implement a humidity control strategy at the room level. Conditioned OA will be provided via new roof-mounted Energy Recovery Units (ERUs). Existing exhaust fans will be removed and new exhaust ductwork will be manifolded on the roof and routed to each of the ERUs to capture energy currently being exhausted. New OA and exhaust duct risers will be installed to introduce conditioned fresh air into each room. A new Direct Digital Control (DDC) system will be provided and tied into the campus-wide control system for better energy management and control by Utilities and Energy Services.

General construction shall consist of the removal and replacement of existing ceilings to facilitate mechanical work. In lieu of cleaning and reinstalling existing light fixtures, this project will install new, more energy efficient light fixtures.

The current schedule calls for substantial completion of the Underwood Hall HVAC Project in July 2016. The total project budget is \$6,583,840.

Other Major Fiscal Impacts:

None.

TEXAS A&M UNIVERSITY

Office of the President

December 17, 2015

Members, Board of Regents
The Texas A&M University System

Subject: Approval of the Project Scope and Budget, Appropriation for Pre-Construction and Construction Services, and Approval for Construction for the Underwood Hall HVAC Project, Texas A&M University, College Station, Texas

I recommend adoption of the following minute order:

“The project scope along with a project budget of \$6,583,840 for the Underwood Hall HVAC Project is approved.

The amount of \$6,583,840 is appropriated from Account No. 01-083536, Revenue Financing Debt Proceeds (Housing Revenue) for pre-construction and construction services and related project costs.

The Underwood Hall HVAC Project, Texas A&M University, College Station, Texas, is approved for construction.

The Board of Regents of The Texas A&M University System (Board) reasonably expects to incur debt in one or more obligations for this project, and all or a portion of the proceeds received from the sale of such obligations is reasonably expected to be used to reimburse the account(s) for amounts previously appropriated and/or expended from such account(s).

As required by Section 5(a) of the Master Resolution of the Revenue Financing System, the Board hereby determines that it will have sufficient funds to meet the financial obligations of The Texas A&M University System, including sufficient Pledged Revenues to satisfy the Annual Debt Service Requirements of the Revenue Financing System and to meet all financial obligations of the Board relating to the Revenue Financing System and that

the Participants, on whose behalf the debt is issued, possess the financial capacity to satisfy their Direct Obligations.”

Respectfully submitted,

[ORIGINAL SIGNED BY]

Michael K. Young, President
Texas A&M University

Approval Recommended:

[ORIGINAL SIGNED BY]

John Sharp
Chancellor

Approved for Legal Sufficiency:

[ORIGINAL SIGNED BY]

Ray Bonilla
General Counsel

[ORIGINAL SIGNED BY]

Billy Hamilton
Executive Vice Chancellor and
Chief Financial Officer

UNDERWOOD HALL HVAC PROJECT TEXAS A&M UNIVERSITY PROJECT NO. 2015-05018	PROJECT BUDGET
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1. Construction (Complete CSI Breakout Tab).....	\$5,529,778
2. Construction Contingency @ 10%	552,977
3. Architect/Engineer (A/E) Fee	245,700
4. A/E Additional Fees.....	3,000
5. Asbestos/Lead Survey.....	1,200
6. Asbestos Abatement.....	18,395
7. Building Dehumidification	30,000
8. UES Outages.....	53
9. Water Damage Repairs	7,475
10. SSC Support (Keying/Fire Alarms/Utilities Support/Etc.).....	3,500
11. SSC Project Management Fees.....	191,762
12. TOTAL ESTIMATED COST OF PROJECT.....	<u>\$6,583,840</u>

1. Design Start.....July 7, 2014
2. 95% Design Review.....July 21, 2015
3. Solicitation of Bids August 12, 2015
4. Bid Opening.....October 2, 2015
5. Contract Award/Notice to Proceed.....October 30, 2015
6. Electrical Upgrades & Roof Work..... December 20, 2015
7. Board of Regents Approval for Construction February 11, 2016
8. Begin HVAC Replacement..... May 16, 2016
9. HVAC Replacement Project CompletionJuly 30, 2016

**TEXAS A&M UNIVERSITY
REVENUE FINANCING SYSTEM
Underwood Hall HVAC Replacement
Housing Revenue**

Dates	Outstanding Principal	Principal Amount	Interest Amount	Annual Total	Coverage 1.15x
BONDS	6,650,000.00				
YEAR 1	6,510,000.00	140,000.00	332,500.00	472,500.00	543,375.00
YEAR 2	6,365,000.00	145,000.00	325,500.00	470,500.00	541,075.00
YEAR 3	6,210,000.00	155,000.00	318,250.00	473,250.00	544,237.50
YEAR 4	6,050,000.00	160,000.00	310,500.00	470,500.00	541,075.00
YEAR 5	5,880,000.00	170,000.00	302,500.00	472,500.00	543,375.00
YEAR 6	5,700,000.00	180,000.00	294,000.00	474,000.00	545,100.00
YEAR 7	5,515,000.00	185,000.00	285,000.00	470,000.00	540,500.00
YEAR 8	5,320,000.00	195,000.00	275,750.00	470,750.00	541,362.50
YEAR 9	5,115,000.00	205,000.00	266,000.00	471,000.00	541,650.00
YEAR 10	4,900,000.00	215,000.00	255,750.00	470,750.00	541,362.50
YEAR 11	4,675,000.00	225,000.00	245,000.00	470,000.00	540,500.00
YEAR 12	4,435,000.00	240,000.00	233,750.00	473,750.00	544,812.50
YEAR 13	4,185,000.00	250,000.00	221,750.00	471,750.00	542,512.50
YEAR 14	3,920,000.00	265,000.00	209,250.00	474,250.00	545,387.50
YEAR 15	3,645,000.00	275,000.00	196,000.00	471,000.00	541,650.00
YEAR 16	3,355,000.00	290,000.00	182,250.00	472,250.00	543,087.50
YEAR 17	3,050,000.00	305,000.00	167,750.00	472,750.00	543,662.50
YEAR 18	2,730,000.00	320,000.00	152,500.00	472,500.00	543,375.00
YEAR 19	2,395,000.00	335,000.00	136,500.00	471,500.00	542,225.00
YEAR 20	2,045,000.00	350,000.00	119,750.00	469,750.00	540,212.50
YEAR 21	1,675,000.00	370,000.00	102,250.00	472,250.00	543,087.50
YEAR 22	1,285,000.00	390,000.00	83,750.00	473,750.00	544,812.50
YEAR 23	880,000.00	405,000.00	64,250.00	469,250.00	539,637.50
YEAR 24	450,000.00	430,000.00	44,000.00	474,000.00	545,100.00
YEAR 25	-	450,000.00	22,500.00	472,500.00	543,375.00
		<u>\$ 6,650,000.00</u>	<u>\$ 5,147,000.00</u>	<u>\$ 11,797,000.00</u>	<u>\$ 13,566,550.00</u>

Estimated issuance costs and rounding of \$66,160 are included in this schedule.
 Long-term rates are assumed to be 5.00%. Rates are subject to market change.
 Prepared by the Office of the Treasurer - Treasury Services 12/11/15

Rates are subject to market change. Amounts are preliminary estimates that will be revised at the time bonds are issued.

Physical
Plant

Physical Plant



Underwood Hall HVAC Project

Texas A&M University

Project No. 2015-05018