

FACILITIES MASTER PLAN / CAPITAL PROJECT REQUEST
CAPITAL REQUIREMENTS SUMMARY AND NEEDS ASSESSMENT FORM
(Form A)

Institution: The University of Alabama in Huntsville
Name of Respondent: Michael S. Finnegan

Telephone Number: 256-824-6480
E-Mail Address: michael.finnegan@uah.edu

A. IMMEDIATE CAPITAL REQUIREMENTS - YEAR 1 (FY 2016-2017)

	Institutional Priority	Funding Sources			Estimated Total Cost	Specify Source(s) Other State	Specify Source(s) Other Funds	Building Number (If existing Facility or Facilities)	Space Utilization Description (If more than 1 Code used include % for each Code. Click here to view Codes)	Projected Gross Square Feet. (Should be used only for Subsection 1 or 2 Projects)	Projected Net Assignable Square Feet. (Should be used only for Subsection 1 or 2 Projects)	Space Category (If more than 1 Code used include % for each Code. Click here to view Codes)	Change in Purpose (Yes or No Depending on Project)	Projected Start/ Acquisition Date (Date reported cannot be before the start of the fiscal year to be reported on the form. Fiscal Years run from Oct. 1 - Sept. 30)	Projected Completion Date	Basis of Requirement (Use no more than 2 Codes. Click here to view Codes) USE LETTER OF CODE ONLY
		Education Trust Fund	Other State Funding	Other Funds												
1. New Construction/Acquisition Projects																
1. Innovation Center	1			\$12,000,000	\$12,000,000				17	45,000	30,000	Other		10/1/2016	1/1/2018	A,H
2. Engineering/Technology Research Bldg, Phase 1	11	\$35,000,000			\$35,000,000			2	2R	100,000	65,000	E&G	No	10/1/2016	1/1/2018	B,E
3. Acquisition of Property Near Campus	17	\$2,500,000			\$2,500,000				16	5 acres		Other	No	10/1/2016	1/1/2018	D,J
4. Fraternity/Sorority House	18			\$2,500,000	\$2,500,000	Gifts & Auxiliary		13	5,000	3,500		Auxiliary	No	10/1/2016	1/1/2018	B
Subtotal		\$37,500,000		\$14,500,000	\$52,000,000											
2. Renovation/Remodeling Projects																
1. CTC: Repurpose	2	\$4,000,000			\$4,000,000			61	1	27,000	27,000	E&G	No	10/1/2016	7/1/2017	C,E
2. University Place School; Repurpose	3	\$2,000,000			\$2,000,000				2T - 17 (daycare)	25,000	25,000	E&G	No	10/1/2016	1/1/2018	A
Subtotal		\$6,000,000			\$6,000,000											
3. Major Capital Equipment Projects																
1. IT Infrastructure Improvements	4	\$2,500,000			\$2,500,000			all	17-infrastructure			E&G	No	10/1/2016	9/30/2017	E,G
Subtotal		\$2,500,000			\$2,500,000											
4. Deferred Maintenance/Facilities Renewal (See Instructions)																
1. BEV: Replace Cooling Tower	5	\$110,000			\$110,000			63	17 (hotel)			Aux	No	10/1/2016	1/1/2018	E
2. Campus: Implement Energy Savings Projects	6	\$100,000			\$100,000			all	1			E&G	No	10/1/2016	1/1/2018	L-Energy Savings
3. Campus: Replace Worn Carpets & Ceiling Tiles	7	\$100,000			\$100,000			all	1			E&G	No	10/1/2016	1/1/2018	E
4. Campus: Standardize Exterior Door Locks	8	\$100,000			\$100,000			all	1			E&G	No	10/1/2016	1/1/2018	J
5. Campus: Upgrade Walkways & Lighting	9	\$100,000			\$100,000			all	17-infrastructure			E&G	No	10/1/2016	1/1/2018	E,F
6. CTC: Replace Roof	10	\$600,000			\$600,000			61	8			E&G	No	10/1/2016	1/1/2018	E
7. ENG: Replace HVAC Equip & Controls, Phase 3 of 3	12	\$300,000			\$300,000			62	1			E&G	No	10/1/2016	1/1/2018	E
8. ENG, WLRH: Replace Roof	13	\$600,000			\$600,000			62, 64	1, 17 (radio station)			E&G/WLRH=Aux	No	10/1/2016	1/1/2018	E
9. MOR: Upgrade HVAC Systems, Phase 2 or 3	14	\$250,000			\$250,000			1	1			E&G	No	10/1/2016	1/1/2018	E
10. NUR: Replace Roof	15	\$225,000			\$225,000			30	1			E&G	No	10/1/2016	1/1/2018	E
11. OKT, Lowe House: Replace Roof	16	\$675,000			\$675,000			89,110	1, 13 (Lowe House)			E&G/LH= Aux	No	10/1/2016	1/1/2018	E
12. OKT: Replace Floor Tile 2nd Floor	19	\$125,000			\$125,000			89	1			E&G	No	10/1/2016	1/1/2018	E
13. ROB: Replace Chiller	20	\$300,000			\$300,000			17	1			E&G	No	10/1/2016	1/1/2018	E
14. SPR: Modernize Elevator, Repair Rock Wall	21	\$100,000			\$100,000			31	5			E&G/AUX	No	10/1/2016	1/1/2018	E,F
15. UFC: Replace PoolPak	22	\$300,000			\$300,000			94	6-Fitness Center			AUX	No	10/1/2016	1/1/2018	E
16. VBH: Replace Chiller	23	\$350,000			\$350,000			2	2R			E&G	No	10/1/2016	1/1/2018	E
17. VBH M10: Replace HVAC System	24	\$150,000			\$150,000			2	17-Data Center			E&G	No	10/1/2016	1/1/2018	E
Subtotal		\$4,485,000			\$4,485,000											
Total Immediate Year 1 Capital Requirements		\$50,485,000		\$14,500,000	\$64,985,000											

A brief description and justification must be attached for each project listed above. If the descriptions/justifications are listed below adjust the print range so they print out properly
Provide a succinct but thorough justification of the need for the capital project. This information may be included in a separate Word Processing document. See instructions for further information.

FACILITIES MASTER PLAN / CAPITAL PROJECT REQUEST
CAPITAL REQUIREMENTS SUMMARY AND NEEDS ASSESSMENT FORM
(Form B)

Institution: The University of Alabama in Huntsville
Name of Respondent: Michael S. Finnegan

Telephone Number: 256-824-6480
E-Mail Address: michael.finnegan@uah.edu

B. INTERMEDIATE CAPITAL REQUIREMENTS - YEAR 2 (FY 2017-2018)

	Institutional Priority	Funding Sources			Estimated Total Cost	Specify Source(s) Other State	Specify Source(s) Other Funds	Building Number (If existing Facility or Facilities)	Space Utilization Description (If more than 1 Code used include % for each Code. Click here to view Codes)	Projected Gross Square Feet. (Should be used only for Subsection 1 or 2 Projects)	Projected Net Assignable Square Feet. (Should be used only for Subsection 1 or 2 Projects)	Space Category (If more than 1 Code used include % for each Code. Click here to view Codes)	Change in Purpose (Yes or No Depending on Project)	Projected Start/ Acquisition Date (Date reported cannot be before the start of the fiscal year to be reported on the form. Fiscal Years run from Oct. 1 - Sept. 30)	Projected Completion Date	Basis of Requirement (Use no more than 2 Codes. Click here to view Codes) USE LETTER OF CODE ONLY
		Education Trust Fund	Other State Funding	Other Funds												
1. New Construction/Acquisition Projects																
1. Engineering/Technology Research Bldg, Phase 2	1	\$35,000,000			\$35,000,000			2	2R	100,000	65,000	E&G	No	10/1/2017	1/1/2019	B,E
2. Acquisition of Property Near Campus	14	\$1,000,000			\$1,000,000				16	5 Acres		Other	No	10/1/2017	1/1/2019	D
3. Fraternity/Sorority House	15			\$1,200,000	\$1,200,000				13	5,000	3,500	Auxiliary	No	10/1/2017	1/1/2019	B
4. North Campus Parking Facility	16	\$2,500,000		\$12,000,000	\$14,500,000				17(Parking)	200,000	200,000	Other	No	10/1/2017	1/1/2019	D,J
Subtotal		\$38,500,000		\$13,200,000	\$51,700,000											
2. Renovation/Remodeling Projects																
1. Ben Graves Drive-Road Relocation	2	\$2,500,000			\$2,500,000				17-infrastructure			E&G	No	10/1/2017	1/1/2019	F
Subtotal		\$2,500,000			\$2,500,000											
3. Major Capital Equipment Projects																
1. IT Infrastructure Improvements	3	\$1,500,000			\$1,500,000			all	17-infrastructure			E&G	No	10/1/2017	1/1/2019	E,G
Subtotal		\$1,500,000			\$1,500,000											
4. Deferred Maintenance/Facilities Renewal (See Instructions)																
1. BAB: Repave Parking Lot & Upgrade Lighting	4	\$195,000			\$195,000			75	17-infrastructure			E&G	No	10/1/2017	9/30/2018	E,F
2. Campus: Implement Energy Savings Projects	5	\$100,000			\$100,000			all	1			E&G	No	10/1/2017	9/30/2018	L-energy projects
3. Campus: Repave Ben Graves Drive	6	\$380,000			\$380,000				17-infrastructure			E&G/AUX	No	10/1/2017	9/30/2018	E
4. Campus: Replace Worn Carpets & Ceiling Tiles	7	\$100,000			\$100,000			all	1			E&G/AUX	No	10/1/2017	9/30/2018	E
5. Campus: Standardize Outside Lighting & Add Sidewalk	8	\$150,000			\$150,000				17-infrastructure			E&G	No	10/1/2017	9/30/2018	F,J
6. CCH: Replace 50 Water Source Heat Pumps, Phase 1 of 2	9	\$225,000			\$225,000			83	14			AUX	No	10/1/2017	9/30/2018	E,F
7. CPB: Upgrade Mechanical/Electrical	10	\$360,000			\$360,000			80	9			E&G	No	10/1/2017	9/30/2018	G
8. CTC: Replace Boiler	12	\$250,000			\$250,000			61	8			E&G/AUX	No	10/1/2017	9/30/2018	E,F
9. CRH: Replace Roof, Phase 1	11	\$400,000			\$400,000			91	17(Research)			E&G	No	10/1/2017	9/30/2018	E
10. ENG: Upgrade Interior Lighting, Phase 1 of 2	13	\$250,000			\$250,000			62	1			E&G	No	10/1/2017	9/30/2018	E,F
11. JRC, REC, PPB: Install EMCS	17	\$125,000			\$125,000			29,32,58	17			E&G	No	10/1/2017	9/30/2018	E,L
12. LIB: Replace Boiler, Phase 1	18	\$125,000			\$125,000			14	4			E&G	No	10/1/2017	9/30/2018	E
13. MSB: Upgrade Auditorium Lighting & Landscaping	19	\$200,000			\$200,000			81	1-25%, 2T-25%, 2R-50%			E&G	No	10/1/2017	9/30/2018	E,F
14. MSB: Replace Carpet Offices & Classrooms	20	\$175,000			\$175,000			81	1-25%, 2T-25%, 2R-50%			E&G	No	10/1/2017	9/30/2018	E
15. MSB: Upgrade Lab Control System, Phase 3 of 3	21	\$160,000			\$160,000			81	1-25%, 2T-25%, 2R-50%			E&G	No	10/1/2017	9/30/2018	E, J
16. MOR: HVAC Upgrade, Phase 3 of 3 Chiller Replacement	22	\$400,000			\$400,000			1	1			E&G	No	10/1/2017	9/30/2018	E
17. OKT: Replace Floor Tile 3rd Floor	23	\$125,000			\$125,000			89	1			E&G	No	10/1/2017	9/30/2018	E
18. OPB: Upgrade Fire Alarm System	24	\$100,000			\$100,000			82	1			E&G	No	10/1/2017	9/30/2018	E, F
19. ROB: Upgrade General Mechanical & Electrical	25	\$340,000			\$340,000			17	1			E&G	No	10/1/2017	9/30/2018	E, F
20. SCH: General Upgrades	26	\$175,000			\$175,000			129,130,131	14			AUX	No	10/1/2017	9/30/2018	E, F
Subtotal		\$4,335,000			\$4,335,000											
Total Intermediate Year 2 Capital Requirements		\$46,835,000		\$13,200,000	\$60,035,000											

A brief description and justification must be attached for each project listed above. If the descriptions/justifications are listed below adjust the print range so they print out properly
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FACILITIES MASTER PLAN / CAPITAL PROJECT REQUEST
 CAPITAL REQUIREMENTS SUMMARY
 (Form C)

Institution: The University of Alabama in Huntsville

Name of Respondent: Michael S. Finnegan

Telephone Number: 256-824-6480 E-Mail Address: michael.finnegan@uah.edu

C. LONG TERM CAPITAL REQUIREMENTS - YEARS 3-5
 (FY 2018-2019 through FY 2020-2021)

	Estimated Total Cost
1. New Construction/Acquisition Projects	
1. Acquisition of Property	\$ 4,000,000
2. Tennis Center	\$ 6,000,000
3. Fraternity/Sorority House	\$ 1,200,000
4. Greenway, Phase 4	\$ 2,500,000
5. Multifunction Facility	\$ 50,000,000
6. On-campus Apartments	\$ 10,000,000
7. Residence Hall, Phase 2	\$ 23,000,000
8. Track & Field Complex	\$ 2,000,000
9. Multi-sport Arena	\$ 12,000,000
Subtotal	\$ 110,700,000
2. Renovation/Remodeling Projects	
1. Expansion of University Fitness Center	\$ 5,000,000
2. IMF: Expand Parking Facility	\$ 4,000,000
3. SKH: Renovate Interior	\$ 4,000,000
Subtotal	\$ 13,000,000
3. Major Capital Equipment Projects	
1.	\$ _____
2.	\$ _____
Subtotal	\$ -
4. Deferred Maintenance/Facilities Renewal (See Instructions)	
1. BEV: Replace AHU1 and Cooling Tower	\$ 165,000
2. BEV: Pressure Wash & Re-caulk Building	\$ 200,000
3. BEV: Replace 100 Heat Pumps	\$ 200,000
4. BEV: Upgrade Lighting in Meeting Rooms	\$ 200,000
5. Campus: Implement Energy Saving Initiatives	\$ 300,000
6. Campus: Improve Landscaping	\$ 100,000
7. Campus: Replace Roofs - 4 Buildings	\$ 805,000
8. Campus: Standardize Outside Lighting	\$ 200,000
9. CCH: 3-Modernize Elevators, EMCS Upgrade	\$ 440,000
10. CCH: Replace 50 Water Sorce Heat Pumps PH2 of 2	\$ 250,000
11. CRH: Install Sub-surface Drainage along Sparkman	\$ 100,000
12. SKH: Upgrade HVAC and Electrical, 3rd Floor South	\$ 900,000
13. ENG: Upgrade Interior Lighting, Phase 2 of 2	\$ 250,000
14. CRH: Replace CRU in Room 4021	\$ 150,000
15. LIB I and UC: Modernize Elevators	\$ 150,000
16. LIB II: Replace Boiler	\$ 140,000
17. OKT: Upgrade Lighting	\$ 885,000
18. UFC: Replace Chiller	\$ 375,000
19. MSB: Install Emergency Power for Sub-zero Freezers	\$ 250,000
20. VBH: Replace MCC	\$ 300,000
21. OPB: Replace All Lab Exhaust Fans	\$ 275,000
22. SEH: Replace Indoor Blower Sections, Phase 1 & 2	\$ 200,000
23. SKH: Replace Carpet	\$ 100,000
24. SPR: Replace HVAC Units on Lower Roof	\$ 225,000
25. ROB, LIB I, OKT: Replace Chiller	\$ 625,000
26. OKT: Replace Hallway Floor Tile	\$ 150,000
27. CTC: Replace Exhibit Hall Floor	\$ 100,000
28. CTC: Replace Main Electrical Switch Board and MCC	\$ 350,000
29. BSB, CPB: Modernize Fire Alarm System	\$ 125,000
Subtotal	\$ 8,510,000
Total Long Term Capital Requirements	\$ 132,210,000
Funding Source for All Long Term Projects:	
Education Trust Fund	\$ 102,210,000
Other State Funding	\$ _____
Other Funds	\$ 30,000,000
Total Long Term Funding	\$132,210,000

D. TOTAL ALL CAPITAL PROJECTS **\$ 257,230,000**
 (The total of Form A, B and C
 should be reported here)

STATEMENT OF BONDED INDEBTEDNESS AS OF SEPTEMBER 30, 2015

Institution: The University of Alabama in Huntsville

Component (E&G, Auxiliary, Hospital, Health, Other) _____

Name of Respondent: Ray M. Pinner, CPA

Telephone Number: 256-824-6350 E-Mail Address: ray.pinner@uah.edu

NAME OF BOND ISSUE	PROJECT USE (Briefly describe project)	DATE OF ORIGINAL ISSUANCE	ORIGINAL VALUE	AMOUNT OUTSTANDING As of 9/30/2015	AMOUNT OF DEBT SERVICE As of 9/30/2015			SOURCE OF DEBT SERVICE PAYMENT	DATE OF MATURITY
					PRINCIPAL	INTEREST	TOTAL		
Dorm Revenue Bond 1980	SE Campus Housing Ph2	5/1/1980	\$2,180,000	\$445,000	\$80,000	\$15,750	\$95,750	Housing Fees	5/1/2020
Dorm Revenue Bond 1981	SE Campus Housing Ph3	7/23/1982	\$2,602,000	\$591,000	\$95,000	\$20,580	\$115,580	Housing Fees	5/1/2021
Revenue Bond 2005-A	Fitness & NSSTC Annex	10/1/2005	\$8,580,000	-	\$400,000	\$120,497	\$520,497	Stu Tuition/Fees	6/1/2025
Revenue Bond 2009-A	Wilson Hall Renovation	8/4/2009	\$8,115,000	\$6,260,000	\$325,000	\$260,181	\$585,181	Stu Tuition/Fees	7/1/2029
Revenue Bond 2010-A	Charger Village Resid Hall	7/14/2010	\$27,990,000	\$26,820,000	\$400,000	\$1,088,886	\$1,488,886	Stu Tuition/Fees	6/1/2042
Revenue Bond 2012-A	Franz Resid Hall Ph1/Eng Bldg	4/3/2012	\$11,170,000	\$9,740,000	\$490,000	\$316,949	\$806,949	Housing Fees & Tuition Fees	10/1/2031
Revenue Bond 2012-B	Several Campus Bldgs	9/5/2012	\$13,700,000	\$11,415,000	\$760,000	\$355,332	\$1,115,332	Stu Tuition/Fees	12/1/2026
Revenue Bond 2013 A-1	Nursing Bldg Renovation	4/4/2013	\$7,550,000	\$6,125,000	\$715,000	\$101,775	\$816,775	Stu Tuition/Fees	4/1/2023
Revenue Bond 2013 A-2	Charger Union Stu Center	4/4/2013	\$24,455,000	\$24,455,000	-	\$978,200	\$978,200	Stu Tuition/Fees	4/1/2043
Revenue Bond 2014-A	NCRH PH2/CCRH	12/18/2014	\$11,860,000	\$10,670,000	\$1,190,000	\$318,350	\$1,508,350	Stu Tuition/Fees	9/1/2034
Revenue Bond 2015-A	Fitness & NSSTC Annex	3/25/2015	\$5,175,000	\$5,175,000	-	\$18,596	\$18,596	Stu Tuition/Fees	6/1/2025
Total			\$123,377,000	\$101,696,000	\$4,455,000	\$3,595,094	\$8,050,094		

Please be as specific as possible regarding the sources of debt service payments.

2013 A-2 Bond principal payment due 4/1/2024.
2015-A Bond is the refinanced 2005-A Bond.

**FACILITIES MASTER PLAN / CAPITAL PROJECT REQUEST
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The University of Alabama in Huntsville

1. New Construction/Acquisition Projects

1. Innovation Center. The proposed Innovation Center will house a multi-tenant business incubation facility and program that provides young or start-up businesses with affordable space, shared support services, and business assistance to foster successful entrepreneurial development. It will link these companies to a network of services from University and community sources and will assist in providing the infrastructure for small businesses to develop, sustain, and begin to prosper. UAH will have the unique opportunity to offer support to entrepreneurs during start up and/or expansion and can increase the probability of survival and growth at the most precarious time for the businesses. The overall impact expected is small business formation and job creation, establishment of an entrepreneurial environment, and contribution to the diversification of local economy.
2. Engineering/Technology Research Building, Phase 1. Von Braun Research Hall contains the Offices for Research Administration, offices and research laboratories for the Center for Microgravity & Materials Research, and the Center for Automation and Robotics. Additionally, it houses the University's mainframe computer facility and the Office of Information Technology. The building was constructed in 1964 with an addition in 1987, and all original infrastructures are still in use. This equipment has reached the end of its life cycle and needs replacement. However, because of the high levels of asbestos used in original construction, new construction is significantly more cost effective than abatement and renovation.
3. Acquisition of Property near Campus. The expansion anticipates future needs as UAH continually seeks new federal research dollars that require additional facilities. Established residences lie adjacent to the campus on the east; the campus is bounded by an interstate highway to the south; the west campus boundary is Research Park; and the north campus boundary is a major highway and a city school. High priority must be given to acquiring property in close proximity as it becomes available to meet future expansion needs.
4. Fraternity/Sorority House. The addition of fraternity and sorority housing has created an exciting new dimension for campus life. Fraternities and sororities play important roles on campus by enhancing the quality of academic and social lives of their members and by creating the social fabric that bonds the campus together. An additional house will help anchor the eastern edge of the new campus green and will continue the development of UAH as a traditional residential campus.

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The University of Alabama in Huntsville

2. Renovation/Remodeling Projects

1. Conference Training Center Renovation. Student services currently housed in the Conference Training Center (formerly known as the University Center) will be permanently relocated to the new Student Services Building, once complete. This will leave space in the Conference Training Center to enhance conference and outreach training programs on campus. The Conference Training Center has been identified as the best location for this effort with its adjacency to the on campus hotel.
2. University Place School Repurpose. The University will occupy University Place School after the completion of the school year ending in May 2016. The building will be repurposed to house the Rise School and the University Preschool.

3. Major Capital Equipment Projects

1. IT Infrastructure Improvements. IT Infrastructure Improvements will occur annually in order to provide an integrated IT environment that advances the core missions of UAH, operational processes that support these missions, and to position the network for future technology changes. Increased enrollment will cause growth in infrastructure needs that will require additional resources; however, enrollment will not be the only reason for a rise in basic infrastructure requirements. The technologies used to provide today's services are constantly and quickly evolving. To remain competitive in student and faculty recruitment, UAH must stay current in its technology infrastructure. The University must maintain a robust infrastructure, and stay ahead of the demand for new infrastructure services so that basic infrastructure is never an issue or an obstacle to faculty or student needs. Security continues to be a substantial issue, especially for the data network and server infrastructure. Information Technology must provide secure access for wired, wireless and remote users; implement monitoring and detection to identify security breaches; implement safeguards and remedies to lessen the possibility of security exploits in applications and systems; and provide encryption for mobile data.

4. Deferred Maintenance/Facilities Renewal

1. Bevill Center: Replace Cooling Tower. The cooling tower has recurring issues and is at the end of its life cycle.
2. Campus: Implement Energy Savings Projects. These initiatives will develop and implement energy conservation measures and energy saving operations and maintenance procedures, utilize an extensive University-wide building energy management system, and seek to develop a University-wide commitment to modifying local behavior to decrease energy consumption and promote the use of sustainable energy alternatives. The

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funding is used for energy savings projects that will show a payback of three years or less such as replacing obsolete T12 florescent light fixtures with LED type fixtures.

3. Campus: Replace Worn Carpets and Ceiling Tiles. Carpet and ceiling tiles in various facilities have deteriorated to the point that they will soon need to be replaced.
4. Campus: Standardize Exterior Door Locks. Converting exterior door locks to keyless entry provides several advantages. In case of an emergency or threat, buildings can be locked down quickly from a remote location. Employees and students no longer have to safeguard mechanical keys; so a lost building entrance key would no longer create an extended liability or risk. In addition, after-hours entry becomes controlled access with an automatic record of anyone who enters after-hours.
5. Campus: Upgrade Walkways & Lighting. The outdoor lighting system originally installed in campus parking areas has become obsolete making it nearly impossible to replace failing parts. The system's overall candle power has fallen well below the current code for parking lot lighting. Due to safety and energy concerns, the system needs to be fully replaced. The installation of a cohesive lighting system with unique, consistent, recognizable characteristics will improve campus aesthetics, save time, and enhance building and personnel security. Portions of the asphalt walkways throughout campus have deteriorated to the point that they are no longer ADA-compliant and will soon need to be repaved.
6. Conference Training Center: Replace Roof. The facility's roof has deteriorated to the point that it will soon need to be replaced.
7. Engineering Building: Replace HVAC Equip. & Controls, Phase 3 of 3. The current HVAC equipment has exceeded its life cycle resulting in frequent needed repairs and indoor air quality problems. The system has a low efficiency rating compared to modern equipment. This upgrade will replace the deteriorated equipment with high efficiency new equipment.
8. Engineering Building and WLRH: Replace Roof. The roof of each of these facilities has deteriorated to the point that it will soon need to be replaced.
9. Morton Hall: Upgrade HVAC System, Phase 2 of 3. Morton Hall was constructed in 1961 with an expansion to the building in 1977. The equipment, over 50 years old, has exceeded its life cycle, and failures occur often. Because the system has low efficiency rating compared to modern equipment, it is expensive to operate and maintain. This upgrade will replace the deteriorated equipment with high efficiency new equipment.
10. Nursing Building: Replace Roof. The roof of this facility has deteriorated to the point that it will soon need to be replaced.

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11. Olin B. King Technology Hall and Lowe House: Replace Roof. The roof of each of these facilities has deteriorated to the point that it will soon need to be replaced.
12. Olin B. King Technology Hall: Replace Tile, 2nd Floor. Floor tiles in this facility have deteriorated to the point that they will soon need to be replaced.
13. Roberts Hall: Replace Chiller. The chiller has exceeded its life cycle resulting in inefficiency and frequent needed repairs and has a low efficiency rating compared to modern equipment. This upgrade will replace the deteriorated equipment with high efficiency new equipment.
14. Spragins Hall: Modernize Elevators & Repair Rock Wall. As funds become available, elevators will be scheduled as part of the ongoing program to modernize and upgrade all of the campus elevators. Priority is placed on the elevators with the old-style, single-bottom jacks. Spragins Hall was built in 1977 and has a large rock retaining wall on the north side of the building. Over the past 28 years this wall has deteriorated from surface water running off an adjacent piece of property. From observation, the wall's design was based more on aesthetics than retaining capabilities. Therefore, this project will replace the existing wall with a poured-in-place concrete wall both for appearance and soil retention.
15. University Fitness Center: Replace Pool Pak. The equipment has exceeded its life cycle resulting in inefficiency and frequent needed repairs. This upgrade will replace the deteriorated equipment with high efficiency new equipment.
16. Von Braun Research Hall: Replace Chiller. The chiller has exceeded its life cycle resulting in inefficiency and frequent needed repairs and has a low efficiency rating compared to modern equipment. This upgrade will replace the deteriorated equipment with high efficiency new equipment.
17. Von Braun Research Hall M10: Replace HVAC System. The HVAC system in M10 has exceeded its life cycle resulting in inefficiency and frequent needed repairs and has a low efficiency rating compared to modern equipment. This upgrade will replace the deteriorated equipment with high efficiency new equipment.

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1. New Construction/Acquisition Projects

1. Engineering/Technology Research Building, Phase 2. Von Braun Research Hall contains offices for Research Administration, offices and research laboratories for the Center for Microgravity & Materials Research, and the Center for Automation and Robotics. Additionally, it houses the University's mainframe computer facility and the Office of Information Technology. The building was constructed in 1964 with an addition in 1987, and all original infrastructures are still in use. This equipment has reached the end of its life cycle and needs replacement. However, because of the high levels of asbestos used in original construction, new construction is significantly more cost effective than abatement and renovation.
2. Acquisition of Property near Campus. The expansion anticipates future needs as UAH continually seeks new federal research dollars that require additional facilities. Established residences lie adjacent to the campus on the east; the campus is bounded by an interstate highway to the south; the west boundary of the campus is Research Park; and the north campus boundary is a major highway and a city school. High priority must be given to acquiring property in close proximity as it becomes available to meet future expansion needs.
3. Fraternity/Sorority House. The addition of fraternity and sorority housing has created an exciting new dimension for campus life. Fraternities and sororities play important roles on campus by enhancing the quality of academic and social lives of their members and by creating the social fabric that bonds the campus together. An additional house will help anchor the eastern edge of the new campus green and will continue the development of UAH as a traditional residential campus.
4. North Campus Parking Facility. Enrollment, housing and athletic program growth has rendered a need for additional parking support in the northern portion of campus.

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2. Renovation/Remodeling Projects

1. Ben Graves Drive: Road Relocation. A portion of Ben Graves Drive will be removed between Morton Hall and Frank Franz Hall to extend the Greenway. This will greatly enhance safety as pedestrians travel between Frank Franz Hall and North Campus Residence Hall to the central core of campus.

2. Major Capital Equipment Projects

1. IT Infrastructure Improvements. IT Infrastructure Improvements will occur annually in order to provide an integrated IT environment that advances the core missions of UAH, operational processes that support these missions, and to position the network for future technology changes. Increased enrollment will cause growth in infrastructure needs that will require additional resources; however, enrollment will not be the only reason for a rise in basic infrastructure requirements. The technologies used to provide today's services are constantly and quickly evolving. To remain competitive in student and faculty recruitment, UAH must stay current in its technology infrastructure. The University must maintain a robust infrastructure, and stay ahead of the demand for new infrastructure services so that basic infrastructure is never an issue or an obstacle to faculty or student needs. Security continues to be a substantial issue, especially for the data network and server infrastructure. Information Technology must provide secure access for wired, wireless and remote users; implement monitoring and detection to identify security breaches; implement safeguards and remedies to lessen the possibility of security exploits in applications and systems; and provide encryption for mobile data.

3. Deferred Maintenance / Facilities Renewal

1. Business Administration Building: Repave Parking Lot & Upgrade Lighting. The parking lot that serves the Business Administration Building has deteriorated to the point that it will soon need to be repaved.
2. Campus: Implement Energy Savings Projects. These initiatives will develop and implement energy conservation measures and energy saving operations and maintenance procedures, utilize an extensive University-wide building energy management system, and seek to develop a University-wide commitment to modifying local behavior to decrease energy consumption and promote the use of sustainable energy alternatives.

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3. Campus: Repave Ben Graves Drive. Ben Graves Drive serves the portion of the campus that is located north of Holmes Avenue. The pavement has deteriorated to the point that it will soon need to be repaved. It was last repaved in 1986.
4. Campus: Replace Worn Carpets and Ceiling Tiles. Carpet and ceiling tiles in various facilities have deteriorated to the point that they will soon need to be replaced
5. Campus: Standardize Outside Lighting and Add Sidewalk. The outdoor lighting system originally installed in campus parking areas has become obsolete, making it nearly impossible to replace failing parts. The system's overall candle power has fallen well below current code for parking lot lighting. Due to safety and energy concerns, the system needs to be fully replaced. The installation of a cohesive lighting system with unique, consistent, and recognizable characteristics will improve campus aesthetics, save time, and enhance building and personal security. A sidewalk will begin at the intersection of Sparkman and Technology Drives. It will be built along the south side of Technology Drive and continue along John Wright Drive until it ties to the sidewalk already in existence just west of the Athletic Complex. This sidewalk is needed to ensure pedestrian safety.
6. Central Campus Residence Hall: Replace Fifty Water Source Heat Pumps, Phase 1 of 2. The water source heat pumps were installed during original construction and are at the end of their life cycle resulting in frequent needed repairs. They will be replaced with high efficiency, more sustainable pumps.
7. Central Plant Building: Upgrade Mechanical/Electrical. The Central Plant provides hot water and chilled water for over 750,000 square feet of space. This space includes classroom buildings, research space, student union, and residence hall space. It is of the upmost importance the equipment in this building operates efficiently and 100% of the time. This funding would be used to replace one cooling tower, air-dryer, and maintenance on the high-voltage switch gear.
8. Conference Training Center: Replace Boiler. The existing boiler was installed as part of the original building construction thus is not very energy efficient. A non-condensing type boiler would be installed which operates with as high as 98% efficiency.
9. Cramer Hall: Replace Roof, Phase 1. The roof has exceeded its life cycle and has recurring leaks. The roof has been patched many times but is in need of replacement.

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10. Engineering Building: Upgrade Interior Lighting, Phase 1 of 2. The Engineering Building contains T12 lights, which are no longer manufactured. The interior lighting will be upgraded to be more energy efficient and sustainable.
11. Johnson Research Center, Central Shipping & Receiving, Physical Plant Building: Install EMCS. The installation of an up-to-date computerized system will allow us to monitor and control HVAC equipment remotely to provide building occupants comfort and optimize the use of energy.
12. Library: Replace Boiler, Phase 1. The existing boiler is 45 years old and has an efficiency rating of approximately 80%. A non-condensing type boiler would be installed which operates with as high as 98% efficiency.
13. Materials Science Building: Auditorium Lighting Upgrade & Landscaping. The Materials Science Building was constructed in 1991 and operates as a teaching research facility that requires mechanical supportive of the research environment. The original existing fixtures are inefficient, and the bulbs have a short life cycle typical of incandescent type bulbs. Due to the stadium-style classroom setting, a scaffold has to be assembled to change the bulbs which is quite labor intensive. The new fixtures would be of the LED type and have a life cycle of approximately 20 years.
14. Materials Science Building: Replace Carpet-Offices & Classroom. This carpet is worn out. By replacing carpet, the classroom environment would be much improved.
15. Materials Science Building: Upgrade Lab Control System, Phase 3 of 3. The Materials Science Building was constructed in 1991 and operates as a teaching research facility that requires mechanical systems supportive of the research environment. The aforementioned equipment is part of the original installation and has reached the end of its life cycle and needs replacement.
16. Morton Hall: HVAC Upgrades, Phase 3 of 3. Morton Hall was constructed in 1961 with an expansion to the building in 1977. The equipment, over 50 years old, has exceeded its life cycle, and failures occur often. Because the system has low efficiency rating compared to modern equipment, it is expensive to operate and maintain. This upgrade will replace the deteriorated equipment with high efficiency new equipment.
17. Olin B. King Technology Hall: Replace Tile, 2nd Floor. Floor tiles in this facility have deteriorated to the point that they will soon need to be replaced.

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18. Optics Building: Upgrade Fire Alarm System. The fire alarm system is outdated and needs to be modernized to meet today's codes and standards.
19. Roberts Hall: General Mechanical & Electrical Upgrade. The building's general mechanical/electrical infrastructure installed during original construction has exceeded its life cycle resulting in inefficiency and frequent needed repairs. The air handler units, motor control centers, and breaker panels will be upgraded with high efficiency new equipment.
20. Southeast Campus Housing: General Upgrades. This complex, built in the late 1970s, is in need of several upgrades. These upgrades include roofs, a sub-surface drainage system, and landscaping.