NC STATE UNIVERSITY

Campus Development Committee

Monday, August 26, 2024
Holladay Hall, Conference Room 18
1:30 PM – 3:00 PM

Attendance and Distribution
Members Present: Warwick Arden; Charles Maimone; Alyson Wilson

Subcommittee representatives present: Alicia Knight; Allen Boyette; Barbara Moses; Bill Davis; Cameron Smith; Dana Harris; Doug Morton; Lisa Johnson; Patrick Deaton; Sumayya Jones-Humienny

Guests: Peter Fedkiw; Abhinav Gupta

Approval of the Minutes
The minutes of the June 24, 2024 meeting were approved and have been posted.

Approval of the Consent Agenda: N/A

Campus Planning Subcommittee Information Items – see the associated *"2024-08-26 CamDevCmte Pres Rev1"* and *"2024-08-26 CamDevCmte MSL-Aug25-2024"* [pdf slide presentations] for additional information.

1. Delegated Authority Determinations:
    a. CED, Belk Center Lease Extension, Lease Extension Space Request #18-22: *The Campus Planning Subcommittee approved the lease extension request.*

2. Action Items:
    a. Campus Development Call for Needs (Info Item 24.03)
        i. Recommended Priorities for Appropriated and Non-appropriated Needs:
            1. L. Johnson presented the Campus Development planning process, indicating that we are at the milestone where the Committee gives informed guidance and solidifies the priorities for the University's long-range Capital Development Plan and for the UNC System Office's biennial FY 2025-27 Six-Year Capital Plan submission, which is due by October 4, 2024, for the state funding request.
            2. She presented the Immediate Needs list for appropriated and non-appropriated funding categories, including the associated infrastructure and timelines, and requested the Committee formally approve these.

        ii. FY 2025-27 Six Year Capital Plan Submission:
            1. L. Johnson presented the five categories of projects plus Building Reserves, explaining the requirements of each.
            2. D. Morton stated although the Poe Hall Renovation is the top priority as it had to be vacated by the College of Education (CED) and the College of Humanities and Social Sciences' (CHASS) Psychology Department, who were displaced into swing space. It was not added to this list until it became an emergency. The memo to the UNC System Office will specifically call it out as an emergency project and the required UNC Capital Project Authorization form will accompany the memo to request $180M.
            3. The next immediate priority is to request an additional $15M to complete renovations on the 3rd and 4th floors of 111 Lampe Drive, where the CHASS will relocate permanently. This move will provide adequate space for them and allow CED to grow in Poe.
                a. C. Smith noted although $42M was requested for renovations several cycles ago, steep escalation requires an additional $15M this cycle to finish

the comprehensive renovations, including building systems and window replacements. *C. Maimone indicated fitting the Psychology Department into this building is the priority.*

b. L. Johnson added the eight generally-scheduled classrooms must remain for instructional programmatic needs.

4. The Engineering Classroom Building for the College of Engineering's growth requires Central Utility Plant (CUP) expansion and distribution regardless of where the new building is sited. The Physical Master Plan shows several options on Centennial Campus, but the former and current deans prefer completing the Oval for proximity to the other engineering buildings per the original plan for relocating engineering to Centennial Campus.
5. Two projects already underway, Dabney Hall and Mann Hall Renovations, are also underfunded and will request additional funds for completion.
6. The 110 Classroom Renovations and Growth for generally-scheduled classes need course scheduling evaluation. The Campus Planning Subcommittee will make a request to the Committee to form a task force to lead this evaluation.
7. Holladay Hall renovations are also included in the six-year plan and are slated to start as late as FY 2026-27.
8. For non-appropriated projects, Athletics is not ready to submit the Carter-Finley renovation as they need to first determine available resources for the project. All other non-appropriated projects will be included in the six-year capital plan in some manner. The Cates West development is the largest request, and costs will be presented at the next Committee meeting.

iii. *The Committee approved the prioritized list of projects for the University's Capital Development Plan and for the UNC System Office's FY 2025-27 Six-Year Capital Plan submission. They requested the order be shown as discussed, putting the Education Building first with "New Building" corrected to "Renovation" and 111 Lampe Drive Renovation for the Department of Psychology shown second. [Subsequent to the meeting, these corrections were made as the "Rev1" version of the presentation.]*

b. COE Molten Salt Loop Renewable Energy Research Facility Study Request, Info Item 24.10 (Related to Nuclear Research Facility Feasibility Study #202314002):

i. Guests P. Fedkiw and A. Gupta presented the proposed study, which can be independent of the Nuclear Research Feasibility Study underway, but a bonus to it for development of new materials using energy sources such as nuclear, solar, geothermal, electrical, etc. Its potential impact is social, economic, and the achievement of net zero carbon goals. This integrated energy research will focus on scaling up this technology and can elevate NC State's profile.

ii. COE has socialized this internally and with a few industry partners to some degree. Potential partners include: EPRI (Electrical Power Research Institute); Duke Energy; Dominion Energy; Southern Energy Management NC; and Flowserve Corporation.

iii. The preferred location is near the new nuclear reactor, and it may need additional space to grow later. The configuration of the loop may be horizontal, needing about 30,000 GSF, or vertical to save space.

iv. The study cost is approximately $200,000 and will be partially funded by at least one industry partner with some contribution from COE.

v. *The Committee approved proceeding with the study.*

3. <u>Planning Updates:</u>

a. Confidential: RDU Padel Club Proposal (Info Item 24.09): A. Knight presented an opportunity for consideration and informational purposes. The Committee provided feedback that recreational uses that have the opportunity to increase the level of activity and sense of place on Centennial Campus were uses the committee would be open to considering. Knight will work with the Subcommittee to identify a potential path forward for such items.

b. EVA Specifications Real Estate (Info Item 24.10): A. Knight presented an opportunity for consideration and informational purposes to develop an EVA immersive technologies gaming experience on campus. The proposal would be for the University to provide the land, but not fund the project. *The Committee determined this is not a priority, given the university's many other competing priorities.*

c. AI Data Center Requirements: L. Johnson explained that artificial intelligence will have a significant impact on the University as it continues to develop. A study is underway to determine costs and space needs. Discussion ensued, noting that there are three aspects to high performance computing:
    i. CPU driven.
    ii. GPU driven for AI – this takes eight times more energy than CPU driven.
    iii. Both of the approaches above require storage.
d. *The Committee is concerned about long-term implications and recommended producing a plan with a view to sourcing future needs.* OIT is developing a plan with three separate sets of hardware as the University must address all three aspects above.

Project Execution Subcommittee Info Items

1. Project Status Updates - see the associated *"2024-08-26 CamDevCmte Pres Rev1"* [pdf slide presentation] by C. Smith for additional information.
    a. Relocate Small Ruminant and Metabolism Units #202220017: C. Smith presented an update to the project required to relocate these units from Reedy Creek to Lake Wheeler.
        i. The University is now approximately in year four of the ten-year lease that expires in 2031.
        ii. The latest cost estimate for the entire scope is $30M, which exceeds the resources allocated by the Executive Vice Provost for the Office of Finance and Administration (OFA).
        iii. The OFA has allocated $10M in funding from central resources for this project; therefore, the scope must be reduced to meet this limit, or additional resources must be identified by CALS. C. Smith proposed a partial relocation of the program while CALS fundraises for additional monies, which would only partially vacate the site. He requested permission to capitalize the $10M to move this project forward.
        iv. The Committee asked whether the current lease could be extended as the ten-year timeline requires mitigation of hog waste. C. Smith noted hog waste lagoons are related to the Metabolism Unit, which cannot be relocated to new facilities at Lake Wheeler within the $10M budget, whereas the Small Ruminants unit could be relocated within the $10M budget.
        v. A. Knight stated the University does not have the rights to extend the lease and the new owner may not entertain this request, as the expectation is that the University will have vacated the site by 2031.
        vi. The Committee asked whether this program is critical to the College of Agriculture and Life Sciences (CALS) and recommended the Provost and the CALS Dean determine the parameters to change the scope to fit within the budget.

Other Business

1. N/A

Next Meeting: Monday, September 23, 2024, 1:30 PM – 3:00 PM

Meeting Adjourned: 3:04 PM

2024-08-26 Campus Development Committee Meeting

Campus Planning Updates

- Campus Dev. Call For Needs
  - Recommendations
  - Infrastructure
  - Scoping and Budgeting
  - 2025-26 Six-Year Capital Submission
- Molten Salt Loop Study Request
- Centennial Campus Opportunities
- AI Data Center Impacts

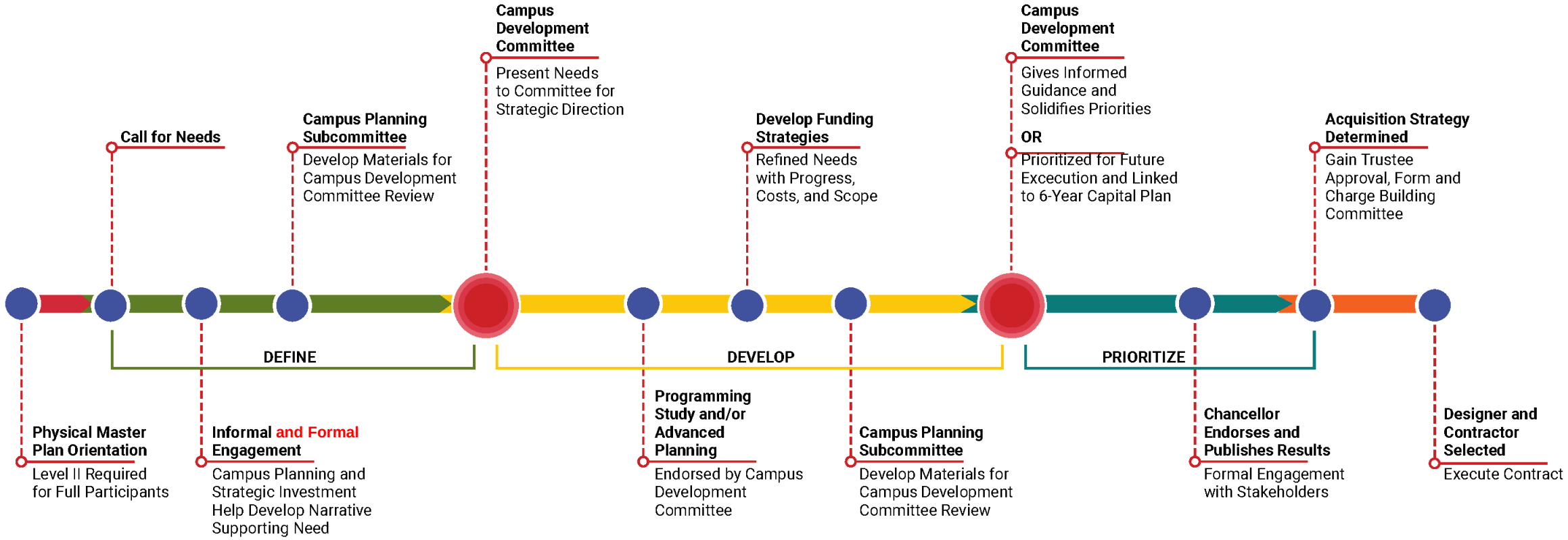
Project Execution Updates

- Small Ruminants & Metabolism Project

Campus Planning Updates

CAMPUS DEVELOPMENT PROCESS | **PLANNING**

● **Stakeholder Involvement**



Campus Development Needs Requests

Immediate Needs

- Education Building Renovation at NC State University (CED)
- Department of Psychology – 111 Lampe Renovation (CHASS)
- Engineering (Growth) Classroom Building - Applied AI – CUP expansion/distribution
- Critical Campus Infrastructure - Repair and Expansion (Facilities)
- Cates-West Redevelopment (DASA and CE) - CUP expansion/distribution
- 110 Classroom Maintenance and Renovation (EMAS)
- Brooks/Kamphoefner Renovations (combined COD requests)
- Connect Toxicology to the Centennial Central Utility Plant (COS)
- Permanent Home for Testing Services Center (DELTA)
- PCOM New Building (Business School) CUP expansion/distribution

2024 Capital Development Needs Recommendations

Immediate Needs	Recommendation		Estimated Budget
Education Building Renovation (Poe Hall)	State Appropriations Emergency Request - Begin visioning with college		$180,000,000
Psychology Department - 111 Lampe Drive	Renovate floors for Psych: coord classrm renovs w/ R&R & DELTA, request addl fundg (currently $42M)		$15,000,000
Engineering (Growth) Classroom Building	Planning funding FY2026-27 ($20M)		$200,000,000
Campus Infrastructure	Centennial Utility Plant Expansion supports buildout of the PMP (1M+ GSF)	*	$24,400,000
Campus Infrastructure	Steam/chilled water extension (Oval site)	*	$15,000,000
Critical Campus Infrastructure	See separate spreadsheet		
Cates Utility Plant -Campus Infrastructure	State Appropriations Priority- PMP Buildout North and Central Campus Precincts - required for Cates West and PCOM New Building	*	$23,000,000
Cates West Development	Complete financial model and funding strategies to move project forward.		TBD
110 Classroom Renovations & Growth	Request via USBI recurring funding for classroom maintenance/renovations - establish a task force to develop a growth strategy - evaluate course scheduling options		TBD
Toxicology/Partners II connect to Centennial Utility Plant/ HVAC Upgrade	State Appropriations Priority (failing systems impacting research, centers, and animals)	*	$22,308,000
Brooks/Kamphoefner Renovations	Combine the two college requests - Include Brooks (Matsumoto Wing) as an State Appropriations Priority - develop phasing options for completing renovations over time		$15,000,000
DELTA Testing Permanent Home	DH Hill study/evaluation underway that will determine viability and budget		$7,000,000
PCOM New Building	Legislative priority: $4.5M funded to initiate design		$200,000,000
Underfunded Projects			
Dabney Hall Renovations			$60,000,000
Mann Hall Renovations			$10,000,000

Critical Campus Infrastructure - Phase I Projects	FY25-31 Project Sequencing						Total Cost (2024)	Immediate Need
	25-26	26-27	27-28	28-29	29-30	30-31		
DISTRICT ENERGY								
Toxicology and Partners II steam and chilled water connection							$22,308,000	$22,308,000
Cates Utility Plant addition to enable growth							$23,000,000	$23,000,000
Centennial Utility Plant addition and equipment to enable growth							$24,400,000	
Electrical power system upgrades (CBC) and extension (Centennial)							$24,230,800	$11,000,000
Steam/chilled water connections - Engineering Growth Bldg. (Oval site)							$15,000,000	
Steam, condensate, water and sewer line repairs							$16,030,000	$5,000,000
Brooks, Kamphoefner, Winslow, Holladay chilled water connection							$8,000,000	
Poulton steam connection and MRC to Oval steam/chilled water loop							$21,230,000	
Central Utility Plants equipment replacement							$12,300,000	
BUILDING SYSTEMS								
Chiller and boiler replacement at CMAST, Method, Dearstyne, RBI							$2,108,000	$2,108,000
Replacement of 22 failing elevators							$9,820,000	$3,500,000
Upgrades of BAS and Lighting Control Systems							$22,000,000	$3,600,000
Brooks Hall comprehensive building systems replacement							$63,300,000	$15,000,000
Holladay Hall comprehensive building systems replacement							$59,000,000	$15,000,000
Biltmore Hall comprehensive building systems replacement							$64,200,000	
BUILDING ENVELOPE								
Replacement of 10 roofs							$14,402,000	$4,800,000
Envelope repairs including waterproofing and window replacements							$9,232,000	
Total Phase I							$410,560,800	$105,316,000

Draft Infrastructure Story Map

Campus Development Needs Requests

Non-Appropriated

- Cates-West Redevelopment (DASA and CE) - CUP expansion/distribution
- Wolfline Bus Operations and Maintenance Facility
- Student Centers Renovations Addressing Enrollment Growth & Enhanced Functionality
- Dining Renovations Addressing Enrollment Growth & Support Hub Concept in PMP
- Varsity Drive Streetscape Connectivity Project (CC Trust Fund)
- South Main Campus Drive Multimodal Improvements (CC Trust Fund)
- Partners I Lab Co-Working Incubator Project (CC Trust Fund)
- Carter-Finley Stadium East Side Renovation
- Basketball Practice Facility

FY 2025-27 Six-Year Capital Budget Priorities Submission

I. **SCIF Major Repairs and Renovation Projects**

- Repair and replacement of major building systems and infrastructure not exceeding $15M

II. SCIF Minor Repairs and Renovation Projects

- Traditional R&R (roofs, electrical, plumbing, HVAC, ADA, fire safety, utilities, etc.) projects less than $4M

III. Named and New Direct-Appropriated Capital Improvement Projects

- New buildings and comprehensive renovations – funding to complete current authorized projects given priority over new capital projects.

IV. Non-appropriated major R&R and New Capital Improvement Projects (including self- liquidating)

- New construction, comprehensive renovations, and major R&R projects – financed by the institution

V. Non-Appropriated Minor R&R Projects

- Minor R&R projects typically under $4M

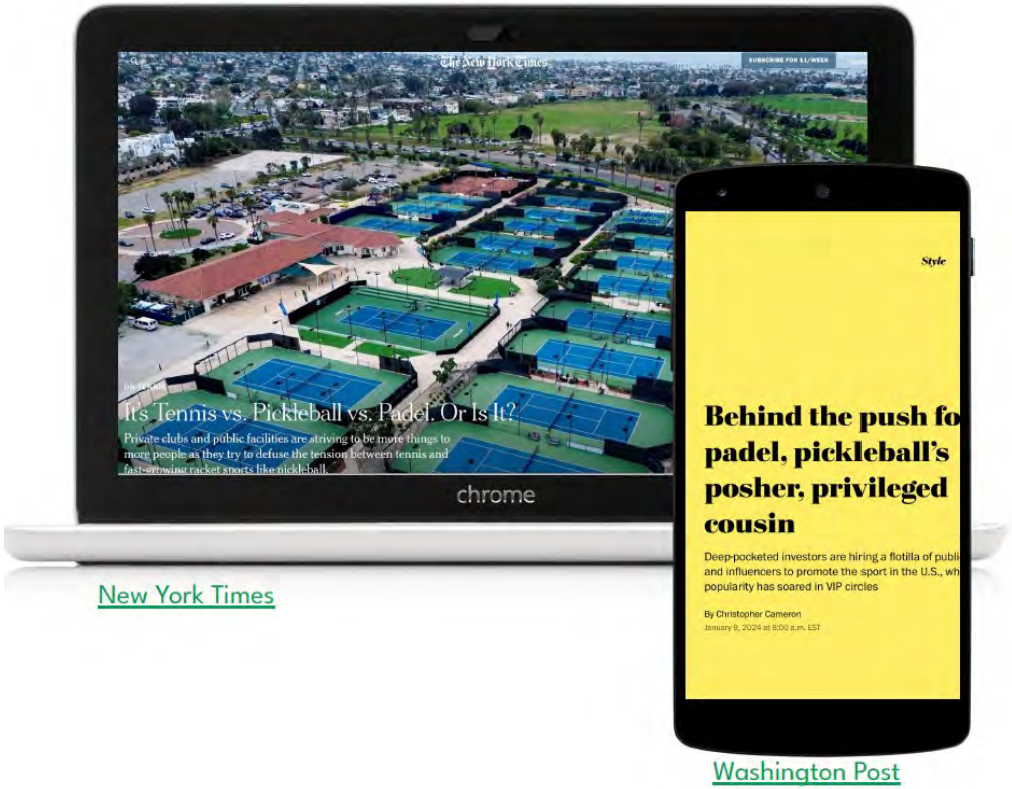
FY25-27 Building Reserves (Reserve funding request for projects completed and occupied before June 30, 2027)

Submission due to UNC System Office – Friday, October 4, 2024

Centennial Campus Opportunities

EVA Immersive Technologies Gaming Experience

- Arenas for competitive gaming and fun
- Synergies with retail and eSports



New York Times

Washington Post

Confidential: RDU Padel Club Proposal

- “The posh cousin of Pickleball “ is gaining traction in the US

Project Execution Subcommittee Updates

- **Small Ruminants (SREU) and Metabolism Education Unit (MEU) Relocation**
  - Replaces 22 existing buildings (67K-sf) with 9 proposed buildings (51K-sf)
  - Designed to meet housing and care standards (IACUC and USDA)
  - Addresses biosecurity, facility security and ADA compliance

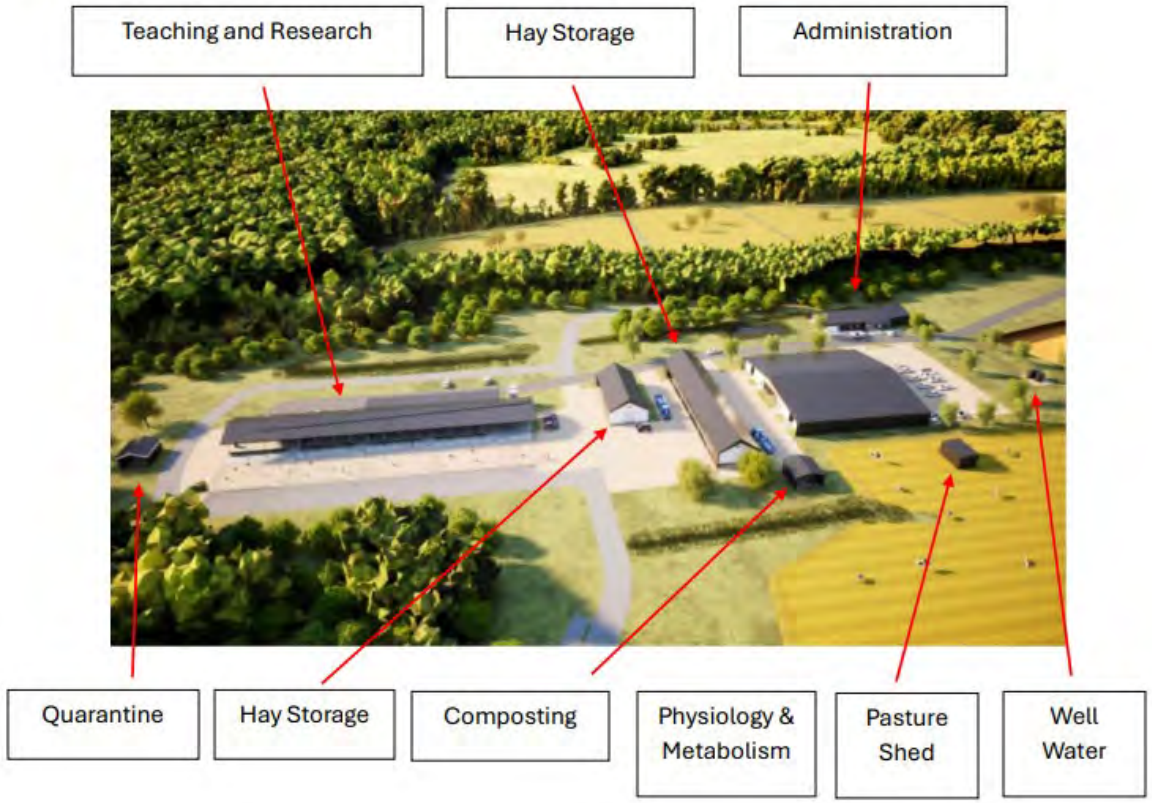
- **Relocate SREU first with the $10M**
  - CALS continues to fundraise for MEU
  - May require an extension of the lease
  - Lease land on Trenton Road reduced by 55%

Table 1.

Proposed Units and Buildings (Total GSF = 51,383) compared to programmatic mapping of existing GSF

				SREU				Shared			MEU	
				Teaching & Research	Hay Storage	Quarantine	Composting	Administration	Well Water	Hay Storage	Physiology & Metabolism	Pasture Shed
			Proposed GSF	12,627	3,302	761	761	5,209	650	6,987	20,654	432
Unit	Building	Building Description	Curent GSF									
SREU	822G	CALS Sheep Barn UFL 190 - Reedy Creek	10,138	9,532				606				
SREU	820K	CALS Shepherds Stor UFL 110 - Reedy Creek	198							198		
SREU	820A	CALS Dwelling - SEU UFL D12 - Reedy Creek	1,265					1,265				
SREU	820T	CALS Pavillon/Storage UFL 123 - Reedy Creek	3,658		3,658							
SREU	820U	Well Pumphouse UFL 124 - Reedy Creek	148						148			
SREU	820I	CALS Livestock Work Shelter UFL 108 - Reedy Creek	1,176	1,176								
SREU	820S	CALS Sheep Nutrition UFL 122 - Reedy Creek	3,217					245		2,972		
SREU	821X	CALS Sheep Shed UFL 168 - Reedy Creek	345			345						
SREU	821W	CALS Wingo Goat Lounge UFL 167 - Reedy Creek	345			345						
SREU	821Y	CALS Sheep Shed UFL 169 - Reedy Creek	1,028	1,028								
MEU	822B	CALS Rumen Physiology UFL 183 - Reedy Creek	4,773					1,505			3,268	
MEU	821Z	CALS Small Ruminant Bldg UFL 180 - Reedy Creek	6,300								6,300	
MEU	822A	CALS Hay Barn - MEU UFL 182 - Reedy Creek	7,500	2,350							5,150	
MEU	822	CALS Forage-Metabolism Res. UFL 181 - Reedy	7,537					84		1,825	5,628	
MEU	820Y	CALS Diet Mix Lab UFL 131 - Reedy Creek	512							512		
MEU	820X	CALS Beef Barn Feed Barn UFL 130 - Reedy Creek	14,490				2,377			10,218		1,895
MEU	821B	Well Pumphouse UFL 135 - Reedy Creek	154						154			
MEU	821A	CALS Hay/Feed Storage UFL 134 - Reedy Creek	1,464							1,464		
MEU	821	CALS Feed Mill Bldg UFL 133 - Reedy Creek	1,096							1,096		
MEU	822H	Well Pumphouse UFL 192 - Reedy Creek	112						112			
MEU	820	CALS Dwelling - MEU UFL D11 - Reedy Creek	1,053					1,053				
MEU	821U	CALS Garage - MEU UFL 164 - Reedy Creek	600							600		
		Total	67,109	14,086	3,658	690	2,377	4,758	414	18,885	20,346	1,895
		GSF Difference	(15,726)	(1,459)	(386)	71	(1,616)	451	236	(11,898)	308	(1,463)

Figure 1. Proposed Small Ruminant and Metabolism Unit Buildings



Small Ruminants (SREU) and Metabolism Education Unit (MEU) Relocation from Reedy Creek to Lake Wheeler

Figure 3.

Lease dating back to 2004 originally for 96.8 acres, reduced to 27.6 acres in 2006 , And further reduced to the outlined 7.19 Acres in 2014. Is currently on a year to year lease. This lease would be terminated and property vacated upon relocation of Small Ruminant Unit.

Part of 10-year lease ending in 2031 that solely supports Small Ruminant Unit. Would be ended and property vacated with relocation of Small Ruminant Unit. Approximately 32 acres. Lagoon on this Property has not been used for over 5 yr.

Part of 10-year lease ending in 2031 that predominantly supports Metabolism Unit. Lease would need to be extended until funding is raised for relocation. Approximately 32 acres. This lagoon is currently in use.

The Case for:
Molten Salt Loop at NC State University

Prof. Abhinav Gupta, Director CNEFS
Prof. Peter Fedkiw, Interim Assoc. Dean for Res. & Infra.

College of Engineering
North Carolina State University
Raleigh, NC 27695-7908

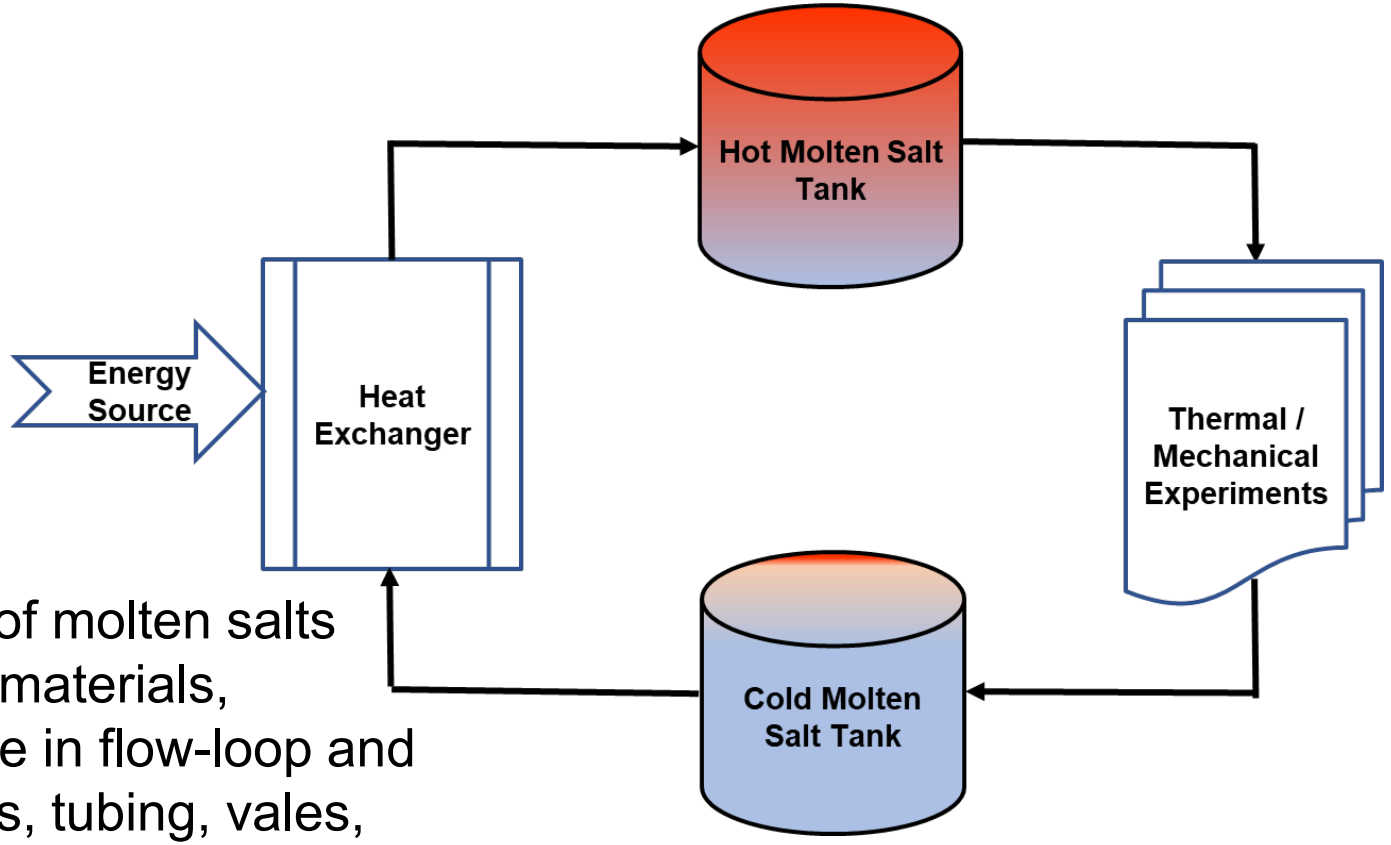
CNEFS

What are Molten Salts; What is a Molten Salt Loop

- **Molten Salt:** Compounds that are solid at ambient temperature and pressure but melt to a liquid at high-temperature (e.g., NaCl with a m.p. of 801°C)

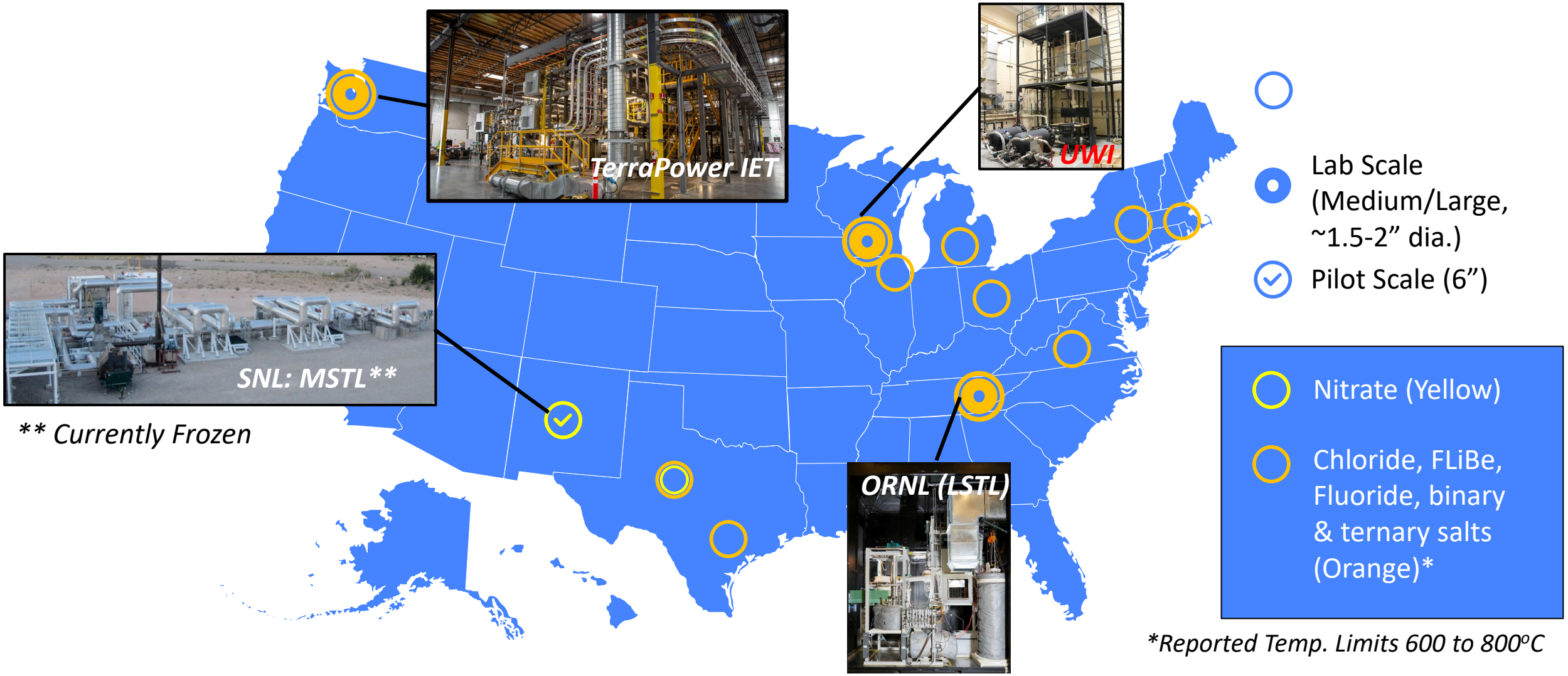
- **Bulk Storage of energy:** Option for the storage of thermal energy produced by renewable solar and nuclear energy

- **Pipe Loop:** Heat not used immediately for electricity generation is diverted to a molten salt via a **piped loop** for storage in an insulated tank. Heat is later released when needed to produce steam and generate electricity, and the cooled molten salt is returned to the loop/tank to be reheated



- **Challenges:** Highly corrosive environment of molten salts requires research and development of new materials, demonstration at scale, and licensing for use in flow-loop and heat-exchanger components such as pumps, tubing, vales, fittings, sensors, control systems, etc.

National Need for an At-Scale Size Molten Salt Loop



** Currently Frozen

*Reported Temp. Limits 600 to 800°C

Existing Test Loops are Small, Limiting the Ability to Scale to Commercial Size

Proposal and Request

- Conduct a **feasibility study** focused on:

  - Initial layout, conceptual design, capital cost estimate, and siting requirements

  - Understanding of the associated operational requirements, staff, and facilities

  - Utility needs for startup, operation and shutdown of the test loop

  - Business plan for operational costs and long-term sustainability of operations

  - Risks associated with operational environment and safety measures needed

  - Identification of stakeholders as well as their expectations and requirements

  - Integration with **NC State's larger mission of research and education**

- Study in large-part funded by external partners

Impact on Research Areas at NC State

- Opportunity for NC State community of researchers and students in multiple fields of expertise:

Concentrating Solar Power

Development of New Materials

Advanced Nuclear Reactors

Digital Twin for Construction

Autonomous Operation

AI/ML for Structural Health

Advanced Modeling and Simulation

Bulk Energy Storage and Micro Grid

Sensor Development

Fusion Research

Computer Vision and Thermal Imaging

Cyber Physical Systems Cyber Security

Design Code Development

Alternative Energy Storage

Mission and Vision of NC State Based Molten Salt Loop

- Opportunity for NC State to be a **world-leader** on molten salt research for energy storage and production.
- NC State would host a state-of-art research facility for **faculty from several departments and colleges.**
- Serve as an **educational facility** to develop and train the next-generation workforce in STEM-related careers.
- Strengthen **engagement with public and private partners** as well as establish opportunities for leadership in social, economic, and technological development across the **state of North Carolina**, the country, and around the world.
- Help achieve the nation's goal of **net-zero carbon emission** through research, licensing, and development of the next-generation work force.

Small Ruminant and Metabolism Education Units

These farms play an important role in undergraduate and graduate instruction in not only Animal Science, but also support student instruction in Crop and Soil Science, Veterinary Medicine and Biology. Twelve hundred NC State students have classes on these farms each academic year with summer camp and extension programs bringing another 400 visitors.

Active research programs using pigs, sheep, goats, and cattle are sponsored by contracts and grants from USDA, NIH, commodity organizations, and company partners. Current active projects encompass physiology, nutrition, health, green house gas emissions, and production management.

NOTES on the Relocation

- The proposed plan replaces the current programmatic activities spread across the 22 existing buildings (67,109 GSF) to 9 proposed buildings (51,383 GSF) resulting in a 23% reduction in GSF and a 60% reduction in structures (Figure 1, Figure 2, and Table 1).
- The Metabolism Education Unit (MEU) and Small Ruminant Education Unit (SREU) are both designed to meet the housing and care standards enforced by the Institutional Animal Care and Use Committee (IACUC).
    - The SREU falls under the "Guide for the Care and Use of Agricultural Animals in Research and Teaching, commonly known as the Ag Guide, which is applied to agricultural species used for food and fiber research that are excluded from the Animal Welfare Act. These facilities are inspected only by the IACUC.
    - The MEU falls under the highest standard the Animal Welfare act and is inspected by USDA. This is because research can be either biomedical or agricultural. The 'Guide for the Care and Use of Laboratory Animals" is applied to the agricultural animals that are used in biomedical research and has specific standards for sanitation, temperature control and humidity that requires surfaces and air handling systems that are greater than would be applied in an agriculture only facility. This is a requirement for research projects funded by NIH or NSF. Existing facilities were constructed prior to the application of the Animal Welfare Act and have been retrofitted. The design team considered the current regulatory requirements and recommended an HVAC system and finishes that for comparison purposes are 10x and 5x, respectively, of that needed in the Teaching and Research Building.
- Neither the Physiology & Metabolism Building nor the Administration Building achieved a reduction in GSF. This would appear to be due to the collection of traditionally distinct research, and administrative/teaching activities from multiple buildings. The proposed designs control biosecurity and facility security through circulation corridors (2,212 ASF Physiology & Metabolism and 403 ASF Administration) which are currently not present in existing buildings. In addition, the Administration Building so an increase in space to meet current standards and ADA compliance for the restrooms and changing area.
- Immediate relocation of the SREU while CALS fund raises for the MEU relocation would allow the leased land on Trenton Rd. to be reduced by 55% (Figure 3).

Figure 1. Proposed Small Ruminant and Metabolism Unit Buildings

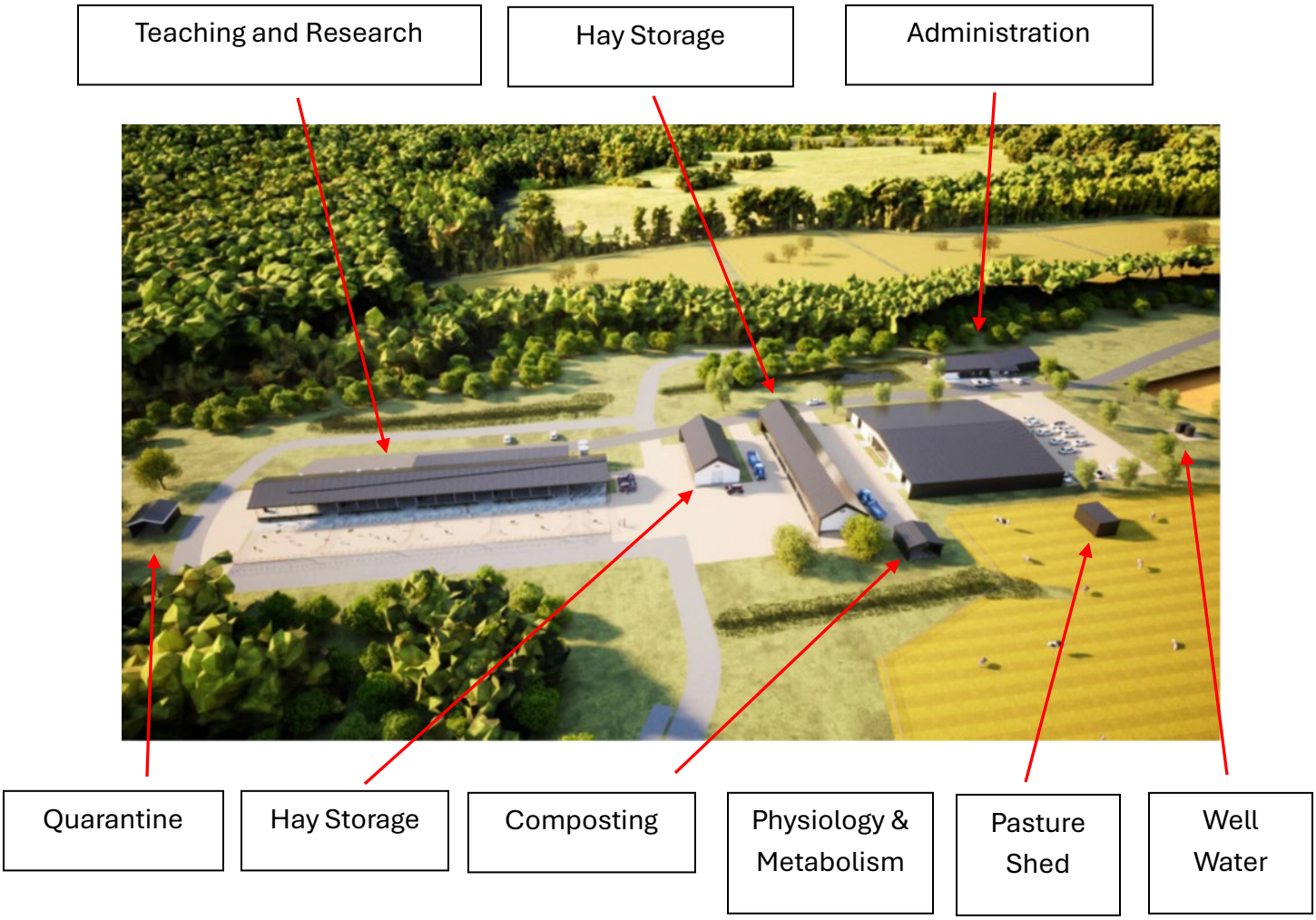


Figure 2. Existing Small Ruminant and Metabolism Unit Buildings

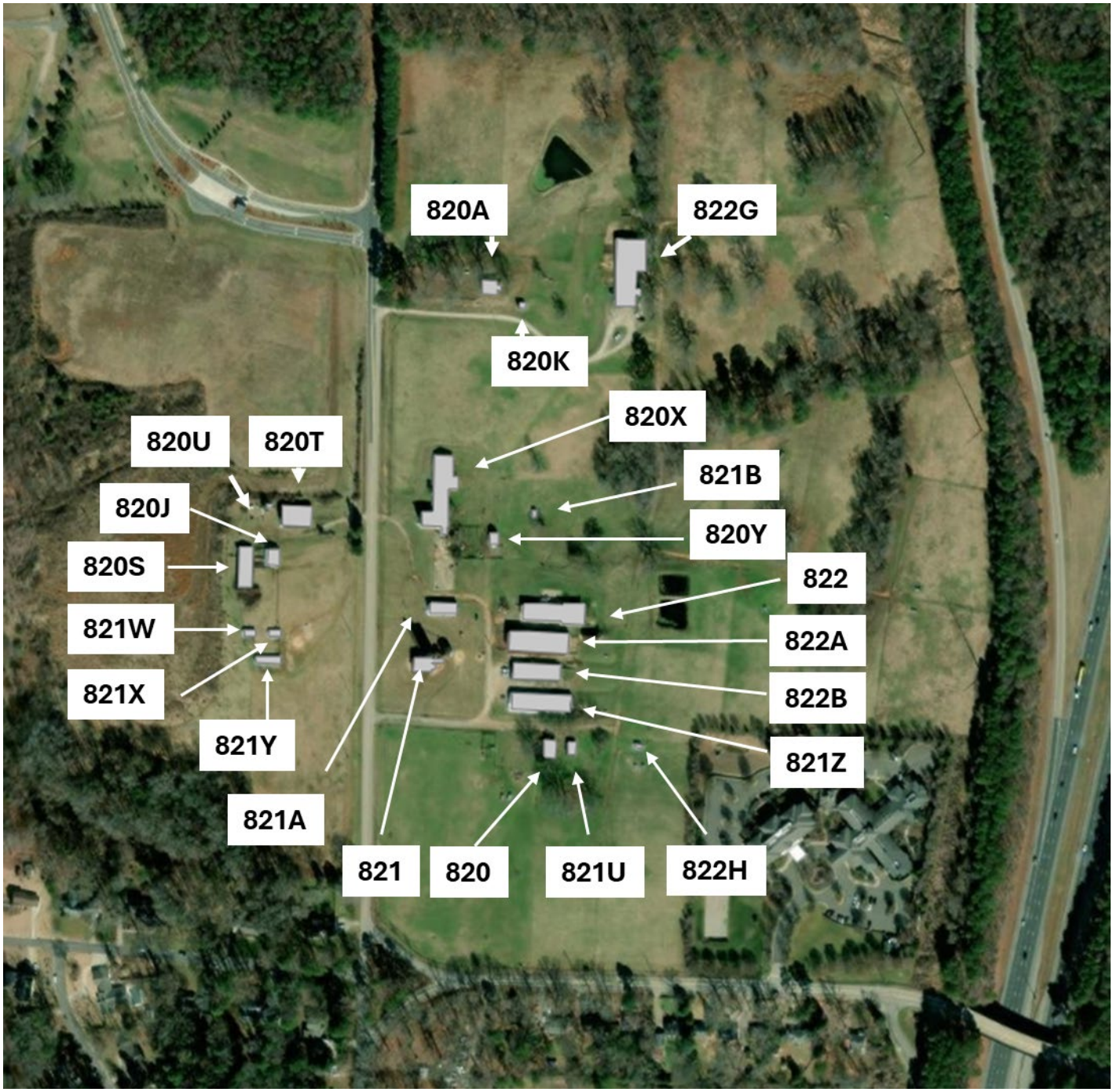


Table 1.

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				Teaching & Research	**Hay Storage**	**Quarantine**	**Composting**	**Administration**	**Well Water**	**Hay Storage**	**Physiology & Metabolism**	**Pasture Shed**
			Proposed GSF	12,627	3,302	761	761	5,209	650	6,987	20,654	432
Unit	**Building**	**Building Description**	**Curent GSF**									
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SREU	821W	CALS Wingo Goat Lounge UFL 167 - Reedy Creek	345			345						
SREU	821Y	CALS Sheep Shed UFL 169 - Reedy Creek	1,028	1,028								
MEU	822B	CALS Rumen Physiology UFL 183 - Reedy Creek	4,773					1,505			3,268	
MEU	821Z	CALS Small Ruminant Bldg UFL 180 - Reedy Creek	6,300								6,300	
MEU	822A	CALS Hay Barn - MEU UFL 182 - Reedy Creek	7,500	2,350							5,150	
MEU	822	CALS Forage-Metabolism Res. UFL 181 - Reedy	7,537					84		1,825	5,628	
MEU	820Y	CALS Diet Mix Lab UFL 131 - Reedy Creek	512							512		
MEU	820X	CALS Beef Barn Feed Barn UFL 130 - Reedy Creek	14,490				2,377			10,218		1,895
MEU	821B	Well Pumphouse UFL 135 - Reedy Creek	154						154			
MEU	821A	CALS Hay/Feed Storage UFL 134 - Reedy Creek	1,464							1,464		
MEU	821	CALS Feed Mill Bldg UFL 133 - Reedy Creek	1,096							1,096		
MEU	822H	Well Pumphouse UFL 192 - Reedy Creek	112						112			
MEU	820	CALS Dwelling - MEU UFL D11 - Reedy Creek	1,053					1,053				
MEU	821U	CALS Garage - MEU UFL 164 - Reedy Creek	600							600		
		Total	67,109	14,086	3,658	690	2,377	4,758	414	18,885	20,346	1,895
		GSF Difference	(15,726)	(1,459)	(356)	71	(1,616)	451	236	(11,898)	308	(1,463)

Figure 3.

Lease dating back to 2004 originally for 96.8 acres, reduced to 27.6 acres in 2006 , And further reduced to the outlined 7.19 Acres in 2014. Is currently on a year to year lease. This lease would be terminated and property vacated upon relocation of Small Ruminant Unit.

Part of 10-year lease ending in 2031 that solely supports Small Ruminant Unit. Would be ended and property vacated with relocation of Small Ruminant Unit. Approximately 32 acres. Lagoon on this Property has not been used for over 5 yr.

Part of 10-year lease ending in 2031 that predominantly supports Metabolism Unit. Lease would need to be extended until funding is raised for relocation. Approximately 32 acres. This lagoon is currently in use.