BOARD OF VISITORS BUILDINGS AND GROUNDS COMMITTEE
MINUTES

Joint Open Session with the Finance and Resource Management Committee
The Buildings and Grounds Committee and the Finance and Resource Management Committee of the Board of Visitors of Virginia Polytechnic Institute and State University convened on Monday, March 20, 2023 at 8:37 a.m. in joint open session in Latham Ballroom C, D, E, F of the Inn at Virginia Tech and Skelton Conference Center (901 Prices Fork Rd, Blacksburg, VA 24061). A quorum of the joint Committee was present.

Board of Visitors Members Present:
- Tish Long (Rector)
- Ed Baine (Vice Rector and Committee Chair)
- Shelly Butler Barlow (Committee Chair)
- Sandy Cupp Davis
- Carrie Chenery
- Greta Harris (Committee Member)
- C.T. Hill (Committee Member)
- Brad Hobbs (Committee Member)
- Anna James (Committee Member)
- Chris Petersen (Committee Member)
- Jeff Veatch

Constituent Representative(s) Present:
- Robert Weiss (Faculty Representative)
- Serena Young (Staff Representative)

Also present were the following Virginia Tech staff members and guests:
- President Tim Sands, Callan Bartel, Lynsay Belshe, Bob Broyden, Brock Burroughs, Cyril Clarke, Al Cooper, David Crotts, Corey Earles, Jeff Earley, Alisha Ebert, Ted Faulkner, Mark Gess, Emily Gibson, Suzanne Griffin, Kay Heidbreder, Tim Hodge, Elizabeth Hooper, Travis Hundley, Frances Keene, Chris Kiel, Chris Kiwus, Sharon Kurek, Jack Leff, Lauren Malhotra, Rob Mann, Meghan Marsh, Elizabeth McClanahan, Nancy Meacham, Scott Midkiff, Jeff Mitchell, Liza Morris, Justin Noble, Kim O’Rourke, Mark Owczarski, James Perkins, Charlie Phlegar, Zo Qazi, Amy Sebring, Brennan Shepard, Oliver Shuey, Ken Smith, John Tarter, Dwyn Taylor, Jon Clark Teglas, Rob Viers, Tracy Vosburgh, Michael Walsh, Melinda West, Chris Wise, and Nick Woods

1. Approval of the 2024-2030 Capital Outlay Plan: In November, the Board of Visitors approved an update to the 2047 Campus Master Plan which made adjustments to its long-term land use plans. Today, the Committees reviewed for approval the Six-Year Capital Outlay Plan.

Capital Outlay Plans identify the university’s top priorities for future facility improvements and ensure debt capacity would be sufficient for the plan, but do not authorize action or spending for individual projects listed on the plan. The
The university prepares an updated Six-Year Capital Outlay Plan every two years as part of its normal planning and budgeting cycle. The Plan is a critical component of positioning the university for state support of major Educational and General projects and for advancing high priority projects that may be funded entirely with nongeneral fund resources. Thus, in the future, we may expect separate requests for planning and construction of projects for consideration, and we will make those decisions when the time is appropriate. The next state capital outlay plan will be for 2024-2030 and will be established in the 2024 budget development process. Traditionally, the state requires each institution to submit a capital plan in June of the year before a new biennium begins. Based on that timetable, a plan from the university for 2024-2030 will be due to the state in June of 2023.

The university will provide an update to the status of the 2024-2030 Plan at a future Board of Visitors meeting.

The Committees recommended the 2024-2030 Capital Outlay Plan to the full Board for approval.

There being no further business, the meeting adjourned at 8:46 a.m.

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**Open Session Meeting**

The Buildings and Grounds Committee of the Board of Visitors of Virginia Polytechnic Institute and State University convened on Monday, March 20, 2023 at 9:01 a.m. in open session in the Smithfield Room of the Inn at Virginia Tech and Skelton Conference Center to depart for a campus tour (901 Prices Fork Rd, Blacksburg, VA 24061). A quorum of the Committee was present.

**Board of Visitors Members Present:**
- Tish Long (Rector)
- Shelly Butler Barlow (Committee Chair)
- Greta Harris (Committee Member)
- C.T. Hill (Committee Member)
- Chris Petersen (Committee Member)

**Constituent Representative(s) Present:**
None

Also present were the following Virginia Tech staff members and guests:
- President Tim Sands, Bob Broyden, Corey Earles, Alisha Ebert, Ted Faulkner, Mark Gess, Emily Gibson, Alan Grant, Patrick Hilt, Mary-Ann Ibeziako, Chris Kiel, Chris Kiwus, Kayla Lambert, Jack Leff, Meghan Marsh, Daniella Miller, Jeff Mitchell, Liza Morris, Saied
Agenda Item
1. Consent Agenda: The Committee approved the items listed on the Consent Agenda.
   a. Approval of the Minutes from the November 2022 Meeting: The Committee approved the minutes from the November 14, 2022 meeting.
   
   * b. Resolution to Approve a Corrected Deed Easement for Town of Blacksburg Water Line: The Committee reviewed for approval a resolution to approve a corrected deed easement for Town of Blacksburg water line. As part of a residential housing project that is in support of the Virginia Tech Corporate Research Center, a water line easement to the Town of Blacksburg to connect with a main water line on Virginia Tech’s property in the area of the Wood Processing Lab has been requested to be corrected.

   The Committee recommended the Resolution to Approve a Corrected Deed Easement for Town of Blacksburg Water Line to the full Board for approval.
   
   c. Acceptance of the Quarterly Capital Project Status Report: The Committee accepted the quarterly capital project status report.

   * 2. Approval of a Resolution for Conveyance of Easements: The Committee reviewed for approval a resolution for conveyance of easements. The university on occasion has the need to convey easements to outside entities to support its mission. The university is requesting that the Executive Vice President and Chief Operating Officer or her/his designee be authorized to approve the conveyance of easements.

   The university will provide a recurring update of easements conveyed at future Board of Visitors meetings.

   The Committee recommended the Resolution for Conveyance of Easements to the full Board for approval.

   ** 3. Update on Agricultural Facilities and Partnerships: The Committee received an update from Alan Grant, dean of the College of Agriculture and Life Sciences, and Paul Winistorfer, dean of the College of Natural Resources and Environment, on agricultural facilities planning and construction.

   ** 4. Update on the Utilities Master Plan: The Committee received an update on the Utilities Master Plan from Mary-Ann Ibeziako, assistant vice president for
infrastructure and chief sustainability officer. In 2018, Virginia Tech completed its most recent master planning effort resulting in 'Beyond Boundaries 2047: The Campus Plan.' In 2020, Virginia Tech revised its Climate Action Commitment, setting sustainability goals and milestones thru 2050. The Utilities Master Plan will provide a comprehensive framework to ensure that future programmatic needs are met and that the university remains a leader in the field of higher education infrastructure. The project is underway and expected to be completed in late 2024.

5. Future Agenda Items and Closing Remarks: The Committee discussed potential topics for inclusion on future meeting agendas.

There being no further business, the meeting adjourned at 10:02 a.m.

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Open Session Dedication Ceremony
The Buildings and Grounds Committee of the Board of Visitors of Virginia Polytechnic Institute and State University reconvened on Monday, March 20, 2022 at 10:15 a.m. in open session in the Lobby of the Inn at Virginia Tech and Skelton Conference Center (901 Prices Fork Rd, Blacksburg, VA 24061) to depart for a dedication ceremony at the Merryman Center. A quorum of the Committee was present.

Board of Visitors Members Present:
   Ed Baine (Vice Rector)
   Sharon Brickhouse Martin
   Shelly Butler Barlow (Committee Chair)
   Greta Harris (Committee Member)
   C.T. Hill (Committee Member)
   Chris Petersen (Committee Member)

Constituent Representative(s) Present:
None

Also present were the following Virginia Tech staff members and guests:
Whit Babcock, Joseph Barlow, Jr., Dave Cianelli, John Dooley, Jerry Gaines, Reyna Gilbert-Lowry, Matt Goff, Angela Hayes, Chris Helms, Chris Kiwus, Charlie Phlegar, Sue Rowdon, Jon Clark Teglas, Paul Winistorfer, Danny White, and additional invited guests

Agenda Item
6. **Dedication Ceremony:** The Committee attended the dedication of the track and field/cross country head coach’s office in Cassell Coliseum for Dr. Jerry Gaines, '71.

The Committee returned to the Inn at Virginia Tech and Skelton Conference Center at 11:25 a.m.

**************************************************
Open Joint Session Agenda

FINANCE AND RESOURCE MANAGEMENT COMMITTEE
AND BUILDINGS AND GROUNDS COMMITTEE

Latham CDEF, the Inn at Virginia Tech

8:00 a.m.

March 20, 2023

Agenda Item

*#+ 1. Approval of the 2024-2030 Capital Outlay Plan

Reporting Responsibility

Ken Miller
Chris Kiwus
Bob Broyden

* Requires full Board approval
# Discusses Enterprise Risk Management topic(s)
+ Discusses Strategic Investment Priorities topic(s)
Open Session Agenda

BUILDINGS AND GROUNDS COMMITTEE

Monday, March 20, 2023

Open session meeting resumes at 9:00 a.m. in the Smithfield Room of the Inn at Virginia Tech and Skelton Conference Center.

<table>
<thead>
<tr>
<th>Agenda Item</th>
<th>Reporting Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Consent Agenda</td>
<td>Committee Chair</td>
</tr>
<tr>
<td>a. Approval of the Minutes from the November 2022 Meeting</td>
<td></td>
</tr>
<tr>
<td>b. Resolution to Approve a Corrected Deed Easement for Town of Blacksburg Water Line</td>
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<tr>
<td>c. Acceptance of the Quarterly Capital Project Status Report</td>
<td></td>
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</table>

| 2. Approval of a Resolution for Conveyance of Easements | Bob Broyden |

| 3. Update on Agricultural Facilities and Partnerships | Alan Grant      |
|                                                       | Paul Winistorfer|
| College of Agriculture and Life Sciences              |                |
| College of Natural Resources and Environment          |                |

| 4. Update on the Utilities Master Plan               | Mary-Ann Ibeziako|

| 5. Future Agenda Items and Closing Remarks           | Committee Chair  |

Bus departs for ceremony at 10:15 a.m. from the Lobby of the Inn at Virginia Tech and Skelton Conference Center.

<table>
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<tr>
<td>6. Dedication Ceremony</td>
<td>Committee Chair</td>
</tr>
</tbody>
</table>
Consent Agenda

BUILDINGS AND GROUNDS COMMITTEE

Monday, March 20, 2023

The Committee will consider for approval and acceptance the items listed on the Consent Agenda.

Consent Agenda
a. Approval of the Minutes from the November 2022 Meeting

* b. Resolution to Approve a Corrected Deed Easement for Town of Blacksburg Water Line

  c. Acceptance of the Quarterly Capital Project Status Report

* Requires full Board approval.
CAPITAL PROJECTS UPDATE

PREPARED FOR THE BUILDINGS AND GROUNDS COMMITTEE OF THE BOARD OF VISITORS

MARCH 20, 2023
Project Portfolio

- 18 authorized projects -- active and complete (w/in 1-year warranty phase)
- Total value of ~$1.3B
- Adds ~1.6M gross square feet (GSF) of new construction
- Renovates nearly 300K GSF of existing space
# Progressive Capital Construction Executive Summary

Date Prepared: 20 FEB 2023

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Total Project Budget ($M)</th>
<th>Construction Budget ($M) (Construction contract value)</th>
<th>New Const (GSF)</th>
<th>Renovation (GSF)</th>
<th>CY 2022</th>
<th>CY 2023</th>
<th>CY 2024</th>
<th>CY 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve Kentland Facilities (Phase II) -- Various Locations</td>
<td>$12.5</td>
<td>$10.1</td>
<td>28,403</td>
<td></td>
<td>Q2 Q1</td>
<td>Q4 Q1</td>
<td>Q2 Q1</td>
<td>Q4 Q1</td>
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<tr>
<td>Creativity &amp; Innovation District Living Learning Community</td>
<td>$105.5</td>
<td>$85.3</td>
<td>232,000</td>
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<td>Q2 Q1</td>
<td>Q2 Q1</td>
<td>Q2 Q1</td>
<td>Q2 Q1</td>
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<tr>
<td>Gas-Fired Boiler at Central Steam Plant</td>
<td>$8.2</td>
<td>$3.8</td>
<td>N/A</td>
<td></td>
<td></td>
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<tr>
<td>Holden Hall Renovations</td>
<td>$74.9</td>
<td>$58.5</td>
<td>82,905</td>
<td>20,240</td>
<td>Q2 Q1</td>
<td>Q2 Q1</td>
<td>Q2 Q1</td>
<td>Q2 Q1</td>
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<td>Chiller Plant Phase II</td>
<td>$42.9</td>
<td>$32.7</td>
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<td>Q2 Q1</td>
<td>Q2 Q1</td>
<td>Q2 Q1</td>
<td>Q2 Q1</td>
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<tr>
<td>Livestock &amp; Poultry Research Facilities (Ph I) -- Various Locations</td>
<td>$25.3</td>
<td>$18.2</td>
<td>129,100</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Dietrick Renovation</td>
<td>$9.1</td>
<td>$6.8</td>
<td>6,298</td>
<td>11,960</td>
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<td>Data &amp; Decision Sciences Building (D&amp;DSS)</td>
<td>$79.0</td>
<td>$58.9</td>
<td>120,000</td>
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<tr>
<td>Corps Leadership &amp; Military Science Building</td>
<td>$52.0</td>
<td>$37.9</td>
<td>65,428</td>
<td>8,449</td>
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<td>Multi-Modal Transit Facility</td>
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<td>13,606</td>
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<td>New Upper Quad Residence Hall</td>
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<td>56,650</td>
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<tr>
<td>HITT Hall</td>
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<td>$65.5</td>
<td>101,000</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovation Campus - Academic Building</td>
<td>$302.1</td>
<td>$226.3</td>
<td>299,733</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Undergraduate Science Laboratory Building</td>
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<td>$69.5</td>
<td>102,746</td>
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<tr>
<td>Student Wellness Improvements</td>
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<td>217,708</td>
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<tr>
<td>Life, Health, Safety, Accessibility and Code Compliance</td>
<td>$10.4</td>
<td>$3.9</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building Envelope Improvements</td>
<td>$47.2</td>
<td>$41.9</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mitchell Hall (Replace Randolph Hall)</td>
<td>$248.0</td>
<td>$186.0</td>
<td>284,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planning: New Business Building -- Design Only</td>
<td>$8.0</td>
<td>$60.6M</td>
<td>104,000</td>
<td></td>
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</tbody>
</table>

**Note 1:** Non-VT project  
**Note 2:** Multiple GMPs results in design/construction overlap (fast track)  
**Note 3:** Project will be executed in prioritized sub-projects
<table>
<thead>
<tr>
<th>Prior BOV (NOV 2022)</th>
<th>Current BOV (MAR 2023)</th>
<th>Changes since last report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building</td>
<td>Building</td>
<td></td>
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<tr>
<td>Envelope</td>
<td>Envelope</td>
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<tr>
<td>Improv</td>
<td>Improv</td>
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<tr>
<td>U/G Science Labs</td>
<td>U/G Science Labs</td>
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<td>Student Wellness</td>
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</tr>
<tr>
<td>New Business Building</td>
<td>New Business Building</td>
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<tr>
<td>Innova Campus Acad Bldg</td>
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<td></td>
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<tr>
<td>Data &amp; Decision Sciences</td>
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<td>Livestock &amp; Poultry Research</td>
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<tr>
<td>ADA Life Health Safety</td>
<td>ADA Life Health Safety</td>
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<tr>
<td>Relocate Hampton Rds AREC</td>
<td>Relocate Hampton Rds AREC</td>
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<tr>
<td>Student Wellness</td>
<td>Student Wellness</td>
<td></td>
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<tr>
<td>GBAC LLC</td>
<td>GBAC LLC</td>
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<tr>
<td>Mitchell Hall</td>
<td>Mitchell Hall</td>
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<tr>
<td>Corps Ldrship &amp; Mil Sci</td>
<td>Corps Ldrship &amp; Mil Sci</td>
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</tr>
<tr>
<td>NUQ Residence Hall</td>
<td>NUQ Residence Hall</td>
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</tr>
<tr>
<td>Improve Kentland Facilities</td>
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<td></td>
</tr>
</tbody>
</table>

**Legend:**
- Prior BOV (NOV 2022)
- Current BOV (MAR 2023)
- Changes since last report

**State/BOV Authorized Projects**
In Design
Projects In Design

New Business Building

Mitchell Hall
**Mitchell Hall (Replace Randolph Hall)**

**Status:**
- Project fully authorized for construction by General Assembly
- Preliminary Design cost estimates under development
- CMaR pre-construction services contract is underway

**Next Actions:**
- Transition to Working Drawings design phase

**Legend:**
- **SD** = Schematic Design
- **PD** = Preliminary Design
- **WD** = Working Drawings

**Construction Budget ($M)**

<table>
<thead>
<tr>
<th>Project Title</th>
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<td>$248.0</td>
<td>$186.0</td>
<td>284,000</td>
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</table>

**Designer:** Perkins & Will

**Builder:** Skanska
**Planning: New Business Building**

**Legend:**
- SD = Schematic Design
- PD = Preliminary Design
- WD = Working Drawings

**Status:**
- Schematic Design underway
- Negotiating CMaR contract

**Next Actions:**
- Execute CMaR contract
- Targeting BOV Construction Authorization in summer 2023

**Project Title:** Planning: New Business Building -- Design Only

<table>
<thead>
<tr>
<th></th>
<th>CY 2022</th>
<th>CY 2023</th>
<th>CY 2024</th>
<th>CY 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Project Budget (M)</strong></td>
<td>FY22</td>
<td>FY23</td>
<td>FY24</td>
<td>FY25</td>
</tr>
<tr>
<td>Total Project Budget (M)</td>
<td>$8.0</td>
<td>$60.6M</td>
<td>$104,000</td>
<td>$258,357</td>
</tr>
<tr>
<td><strong>Construction Budget (M) (Construction contract value)</strong></td>
<td>$1,312.5</td>
<td>$1,625,869</td>
<td>$258,357</td>
<td></td>
</tr>
</tbody>
</table>

**Design:**
- Moseley

**Builder:** TBD
Under Construction
Active Construction Projects

- Multi-Modal Transit Facility (ToB project)
- Data & Decisions Science Building
- Undergraduate Science Laboratory Building
- HITT Hall
- Corps Leadership & Military Science Building
- New Upper Quad Residence Hall
- Life, Health, Safety, Accessibility
- Dietrick Renovation
- Innovation Campus Academic Building (Alexandria, VA)
- Livestock & Poultry Research Facilities (Various locations)
- Student Wellness Improvements
**Innovation Campus - Academic Building**

**Status:**
- Project on track (55% complete)
- Structural steel topped out on 7 FEB 2023

**Next Actions:**
- Anticipated completion in spring/summer 2024

### Table: Construction Budget ($M)

<table>
<thead>
<tr>
<th>Project Title</th>
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**Legend:**
- **SD** = Schematic Design
- **PD** = Preliminary Design
- **WD** = Working Drawings

**Notes:**
1. Multiple GMPs results in design/construction overlap (fast track)

**Designer:** SmithGroup  
**Builder:** Whiting-Turner
**Status:**
- Phase 1: (Derring Steps Elevators) Construction contract awarded
- Contractor mobilizing and initiating construction
- Note: Overall capital project will be executed in multiple phases

**Next Actions:**
- Anticipated completion in spring 2024

### Design-Bid-Build
State Authorized

**Life, Health, Safety, Accessibility & Code Compliance**

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Total Project Budget (SM)</th>
<th>Construction Budget (SM) (Construction contract value)</th>
<th>New Const (GSF)</th>
<th>Renovation (GSF)</th>
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<th>CY 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life, Health, Safety, Accessibility and Code Compliance (Note 3)</td>
<td>$10.4</td>
<td>$3.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
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</table>

**Legend:**
- SD = Schematic Design
- PD = Preliminary Design
- WD = Working Drawings
- SD = Schematic Design
- PD = Preliminary Design
- WD = Working Drawings

**Designer:** Quinn Evans

**Builder:** WM Jordan
Status:
• Envelope improvements planned for four buildings
• Contract for first building awarded and underway

Next Actions:
• First building targeted for completion in completion winter/spring 2024

Design-Bid-Build
BOV Authorized

LEGEND:  
SD = Schematic Design  
PD = Preliminary Design  
WD = Working Drawings

<table>
<thead>
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<th>Project Title</th>
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<th>CY 2025</th>
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<td>$41.9</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Designer: Quinn Evans  
Builder: WM Jordan
### Student Wellness Improvements

**Status:**
- Interior demolition essentially complete
- Project on track (15% complete)

**Next Actions:**
- Anticipated completion in July 2024

---

**Legend:**
- SD = Schematic Design
- PD = Preliminary Design
- WD = Working Drawings

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Total Project Budget ($M)</th>
<th>Construction Budget ($M) (Construction contract value)</th>
<th>New Const (GSF)</th>
<th>Renovation (GSF)</th>
<th>CY 2022 FY22</th>
<th>CY 2022 Q3</th>
<th>CY 2022 Q4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Wellness Improvements</td>
<td>70.0</td>
<td>56.3</td>
<td>217,708</td>
<td></td>
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</tbody>
</table>

**CM at Risk**
**BOV Authorized**

**Designer:** Cannon Design

**Builder:** Whiting-Turner
**Undergraduate Science Laboratory Building**

**Status:**
- Project tracking at 30% complete

**Next Actions:**
- Anticipated completion in June 2024

**Legend:**
- SD = Schematic Design
- PD = Preliminary Design
- WD = Working Drawings

<table>
<thead>
<tr>
<th>Project Title</th>
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<td>Q4</td>
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<tr>
<td>Undergraduate Science Laboratory Building</td>
<td>$90.4</td>
<td>$69.5</td>
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</table>

**Designer:** ZGF

**Builder:** Skanska
Dietrick Renovation
(& Quillen Spirit Plaza)

Status:
- Project on track (95% complete)
- Interior renovations complete

Next Actions:
- Anticipated plaza completion spring 2023

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<tr>
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<th>CY 2024</th>
<th>CY 2025</th>
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</thead>
<tbody>
<tr>
<td>Dietrick Renovation</td>
<td>$9.1</td>
<td>$6.8</td>
<td>6,298</td>
<td>11,960</td>
<td>FY22</td>
<td>FY23</td>
<td>FY24</td>
<td>FY25</td>
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<td>Q4</td>
<td>Q4</td>
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<td>Q1</td>
</tr>
</tbody>
</table>

LEGEND: Design: • Project on track (95% complete) • Interior renovations complete

PD = Preliminary Design
WD = Working Drawings

Status:
- Project on track (95% complete)
- Interior renovations complete

Next Actions:
- Anticipated plaza completion spring 2023

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<tr>
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<td></td>
<td>Q4</td>
<td>Q4</td>
<td>Q4</td>
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</tr>
</tbody>
</table>

Designer: Hanbury
Builder: Branch Builds
**Hitt Hall**

**Status:**
- Project on track (35% complete)

**Next Actions:**
- Anticipated completion in March 2024

---

**LEGEND:**
- SD = Schematic Design
- PD = Preliminary Design
- WD = Working Drawings

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Total Project Budget ($M)</th>
<th>Construction Budget ($M) (Construction contract value)</th>
<th>New Const (GSF)</th>
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<td></td>
<td>JAN-MAR</td>
<td>APR-JUN</td>
<td>OCT-DEC</td>
<td>JAN-MAR</td>
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<tr>
<td>HITT Hall</td>
<td>($85.0)</td>
<td>($65.5)</td>
<td>101,000</td>
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<td>Q3</td>
<td>Q4</td>
<td>Q1</td>
<td>Q2</td>
</tr>
</tbody>
</table>

**Note 2:** Projects will be executed in prioritized sub-projects
## Corps Leadership & Military Science Building

**Status:**
- Project on track (80% complete)

**Next Actions:**
- Anticipated completion in July 2023

### Designer
- Clark - Nexsen

### Builder
- Vannoy

---

### Project Title

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Total Project Budget ($M)</th>
<th>Construction Budget ($M) (Construction contract value)</th>
<th>New Const (GSF)</th>
<th>Renovation (GSF)</th>
<th>CY 2022</th>
<th>CY 2023</th>
<th>CY 2024</th>
<th>CY 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corps Leadership &amp; Military Science Building</td>
<td>$52.0</td>
<td>$37.9</td>
<td>65,428</td>
<td>8,449</td>
<td>FY22</td>
<td>FY23</td>
<td>FY24</td>
<td>FY25</td>
</tr>
</tbody>
</table>

**Legend:**
- SD = Schematic Design
- PD = Preliminary Design
- WD = Working Drawings

**Construction Budget ($M):**
- FY22: Q3, Q4
- FY23: Q1, Q2, Q3, Q4
- FY24: Q1, Q2
- FY25: Q3, Q4
- FY26: Q1, Q2

**Design:**
- Corps Leadership & Military Science Building

**Construction:**
- Corps Leadership & Military Science Building

**Legend: CM at Risk**
- BOV Authorized
**New Upper Quad Residence Hall**

**Legend:**
- SD = Schematic Design
- PD = Preliminary Design
- WD = Working Drawings

**Status:**
- Project on track (75% complete)

**Next Actions:**
- Anticipated completion in fall 2023

**Design Construction Budget ($M)**

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Total Project Budget ($M)</th>
<th>Construction Budget ($M) (Construction contract value)</th>
<th>New Const (GSF)</th>
<th>Renovation (GSF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Upper Quad Residence Hall</td>
<td>$42.0</td>
<td>$32.0</td>
<td>$6,650</td>
<td></td>
</tr>
</tbody>
</table>

**Next Actions:**
- Anticipated completion in fall 2023

**Status:**
- Project on track (75% complete)

**Designer:** Clark - Nexsen

**Builder:** Vannoy
Status:
• Project on track (98% complete)

Next Actions:
• Anticipated completion in April 2023

LEGEND:
SD = Schematic Design
PD = Preliminary Design
WD = Working Drawings

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Total Project Budget ($M)</th>
<th>Construction Budget ($M) (Construction contract value)</th>
<th>New Const (GSF)</th>
<th>Renovation (GSF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data &amp; Decision Sciences Building</td>
<td>$79.0</td>
<td>$58.9</td>
<td>120,000</td>
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</table>

<table>
<thead>
<tr>
<th>CY 2022</th>
<th>CY 2023</th>
<th>CY 2024</th>
<th>CY 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAN-MAR</td>
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<tr>
<td>FY22</td>
<td>Q3</td>
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<td>Q1</td>
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<td>Q1</td>
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<td>FY24</td>
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</tr>
<tr>
<td>FY26</td>
<td>Q2</td>
<td>Q1</td>
<td>Q2</td>
</tr>
</tbody>
</table>

Designer: Moseley

Builder: Kjellstrom & Lee
## Livestock & Poultry Research Facilities (Phase I)

### Status:
- Construction underway on 4 of 6 bid packages:
  - Poultry: 99% complete
  - Swine: 99% complete
  - Equine: 100% complete
  - Beef: 99% complete
- Hay barns: 0% complete

### Next Actions:
- Bids package #5 for 3 new hay barns under procurement

### LEGEND:
- SD = Schematic Design
- PD = Preliminary Design
- WD = Working Drawings

### Table: Construction Budget ($M) & Project Timeline

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Total Project Budget (SM)</th>
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<th>New Const (GSF)</th>
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<th>CY 2022</th>
<th>CY 2023</th>
<th>CY 2024</th>
<th>CY 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livestock &amp; Poultry Research Facilities (Ph I) - Various Locations</td>
<td>$25.3</td>
<td>$18.2</td>
<td>129,100</td>
<td></td>
<td>FY22 Q3</td>
<td>FY23 Q4</td>
<td>FY24 Q1</td>
<td>FY26 Q2</td>
</tr>
</tbody>
</table>

**Designer:** Spectrum Design

**Builder:** (Various)
Chiller Plant (Phase II)

Status:
- Project complete

Next Actions:
- Close out project

Legend:
- SD = Schematic Design
- PD = Preliminary Design
- WD = Working Drawings

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Construction Budget ($M)</th>
<th>New Const (GSF)</th>
<th>Renovation (GSF)</th>
<th>Construction Budget ($M)</th>
<th>New Const (GSF)</th>
<th>Renovation (GSF)</th>
<th>FY23-Q1</th>
<th>FY23-Q2</th>
<th>FY23-Q3</th>
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<th>FY25-Q3</th>
<th>FY25-Q4</th>
<th>FY26-Q1</th>
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</thead>
<tbody>
<tr>
<td>Chiller Plant Phase II</td>
<td>$42.9</td>
<td>$32.7</td>
<td>N/A</td>
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<td>Q4</td>
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<td>Q3</td>
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<td>Q3</td>
<td>Q4</td>
<td>Q1</td>
<td>Q2</td>
</tr>
</tbody>
</table>

Designer: AEI

Builder: Faulconer
Gas-Fired Boiler at Central Steam Plant

Status:
• Project complete; full DEQ compliance

Next Actions:
• Close out project

<table>
<thead>
<tr>
<th>LEGEND: Design</th>
<th>Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD - Schematic Design</td>
<td>PD - Preliminary Design</td>
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</table>

<table>
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<tbody>
<tr>
<td>Gas-Fired Boiler at Central Steam Plant</td>
<td>$8.2</td>
<td>$3.8</td>
<td>N/A</td>
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</tbody>
</table>

**FY22** | **FY23** | **FY24** | **FY25** |
| Q1 | Q2 | Q3 | Q4 |
| Q1 | Q2 | Q3 | Q4 |

Designer: AEI
Builder: Southern Air
**Holden Hall Renovation**

**Status:**
- Warranty period complete

**Next Actions:**
- Close out project

**LEGEND:**
- SD = Schematic Design
- PD = Preliminary Design
- WD = Working Drawings

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<th>Renovation (GSF)</th>
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<tbody>
<tr>
<td>Holden Hall Renovations</td>
<td>$74.9</td>
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<td>82,905</td>
<td>20,240</td>
<td>Warranty</td>
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<td>Warranty</td>
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</tbody>
</table>

**Designer:** Moseley

**Builder:** WM Jordan

**ATTACHMENT G**
## Status:
- Warranty period complete

## Next Actions:
- Close out project

### Project Title: Creativity & Innovation District Living Learning Community

<table>
<thead>
<tr>
<th>Design</th>
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</thead>
<tbody>
<tr>
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### LEGEND:
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### Construction Budget ($M)

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<td>Q4</td>
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<td>Q4</td>
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</tbody>
</table>

### Creativity & Innovation District Living Learning Community
- Total Project Budget: $105.5 M
- Construction Budget: $85.3 M
- New Construction (GSF): 232,000

### Warranty

- Warranty period complete

### Close out project

**Design: Hanbury**

**Builder: WM Jordan**
**Improve Kentland Facilities (Phase II)**

**Status:**
- APR Building construction complete
- BETR Building construction complete
- MRL Building construction complete

**Next Actions:**
- APR Building: None -- warranty period complete)
- BETR Building: None -- warranty period complete)
- MRL Building: Resolve manure treatment issue (design/warranty issue)

**Designer:** Spectrum Design

**Builder(s):** APR = Snyder; MRL & BETR = CPPI
**Multi-Modal Transit Facility**

Status:
- Construction underway (approx 60% complete)

Next Actions:
- Anticipated completion in fall 2023

**Site Plan**

**Design-Bid-Build**

**Town of Blacksburg (ToB) Project**

**Designer:** Wendel (ToB contract)

**Builder:** WM Schlosser (ToB contract)
Definitions

• **State Authorized:** Authorized and funded (whole or in part) by the Virginia General Assembly

• **BOV Authorized:** Authorized and funded by the Virginia Tech Board of Visitors

• **Schematic Design Phase** = 0% to approx 20% design complete

• **Preliminary Design Phase** = Approx 20% to approx 50% design complete

• **Working Drawing Phase** = Approx 50% to 100% design complete

• **GMP** = Guaranteed Maximum Price
Construction Methods

**Design-Bid-Build (DBB):**
- A/E completes full design
- Invitation For Bid (IFB) issued…contract awarded to lowest bidder

**Construction Manager at Risk (CMaR):**
- A/E completes full design
- Prospective CMaR’s compete for project during early stage of design
- CMaR selected based upon “best value” during Schematic Design phase
- When final designs are complete, CMaR develops Guaranteed Maximum Price (GMP)

**Design-Build (D/B):**
- A/E completes partial design ("criteria docs")
- D/B teams (builder + A/E) compete for project and propose full price for project delivery
- Selection based upon “best value”
- D/B team completes design and executes construction
UPDATE ON AGRICULTURAL FACILITIES AND PARTNERSHIPS

Alan L. Grant, Ph.D.
Dean of the College of Agriculture and Life Sciences

Paul M. Winistorfer, Ph.D.
Dean of the College of Natural Resources and Environment

March 20, 2023
Completed projects:

• Eastern Shore AREC Exterior Building Repairs
• Quarantine Lab Room 8 Renovation at Prices Fork Research Center
• 2nd feed mixer at Kentland Dairy Center
• 7 minor projects
NON-CAPITAL PROJECT PROGRESS

Active projects

- 10 projects in construction
- 19 projects in design
- 9 new unit-funded projects in planning or design
- Working with the Division of Campus Planning, Infrastructure, and Facilities on new Dam Safety program for ponds at ARECs
- Collaborating with the university’s Zero Waste Consultant for updates to Compost Facility planning
LIVESTOCK AND POULTRY RESEARCH FACILITIES, Phase 1, Bid Package Updates:

- BP 1 Swine: 99% complete. Target Substantial Completion: March 2023
- BP 2 Beef Nutrition and Kentland Hay Shed: 99% complete. Target Substantial Completion: April 2023
- BP 3 Turkey and Broiler Grow-out Facilities: 99% Complete (buildings). Target Substantial Completion: March 2023
- BP 4 Equine and Equipment Storage: 100% complete. Substantial Completion: February 2023
- BP 5 Three Hay Sheds: Bidding to begin March 2023
- BP 6 Final Demolition: Drawings being finalized for bidding.
Hampton Roads AREC Relocation Study:
- Complete and delivered to General Assembly December 2022.
- Three sites reviewed; $102M-$116M building and land development cost (2022 dollars)
- Six-year timeline to design, build, and move.

- Agency 229 Six-year Capital Outlay Plan development
  - Center Woods Complex Improvements
  - System-wide AREC Improvements, Phase 1
  - Glade Road Research Center Replacement
  - HABB-II Plant and Environmental Sciences Research Facility
  - Livestock and Poultry Research Facilities, Phase 2
Technology and Connectivity

- Kentland Dark Fiber project complete; upgraded bandwidth from 200MB to 10GB and lowered monthly charges
- Network Equipment Upgrade and Expansion Project:
  - All equipment has arrived except for the wireless access antennas
  - Staff is now installing, configuring, and testing the backend equipment needed to get some of the equipment onto the network
  - Installations have started and will continue for much of the year
Technology and Connectivity

- AREC Bandwidth Upgrade Project complete; significant upgrades in fiber connectivity to most of the locations
- AREC Audio Visual upgrades:
  - Phase I complete
  - A new phase is in project initiation to look at upgrading some of the smaller AREC offices
VIRGINIA’S AGENCY 229
AGRICULTURAL EXPERIMENT STATION
COOPERATIVE EXTENSION

VIRGINIA-MARYLAND
COLLEGE OF
VETERINARY
MEDICINE

COLLEGE OF
AGRICULTURE
AND LIFE
SCIENCES

COLLEGE OF
NATURAL
RESOURCES AND
ENVIRONMENT
College of Natural Resources and Environment

PAUL M. WINISTORFER, DEAN
CNRE Locations on Blacksburg Campus

- Center Woods
- Brooks Center
- Cheatham Hall
- Wallace Hall
- Steger Hall
- Torgersen Hall
- Latham Hall
- Integrated Life Sciences Building
CNRE Locations in Blacksburg - Arlington

Leased space in University City Blvd Mall for the Conservation Management Institute –
• $2.5 million research expenditures per year; since Year 2000 $40 million in expenditures
• $40,000 annual lease

VT Research Center Arlington – The Center for Leadership In Global Sustainability; The Center for Environmental Security
• 175 master students enrolled
• $80,947 annual lease for four offices and two cubicles
The classroom rentals for the XMNR are additional
**CNRE Locations in Blacksburg - Fishburn Forest**

- 1200 acres located on Price Mountain
- 8 miles West of Campus
- Access via Prices Fork Road (north side)
- Access via State Hwy 114 (South Side)
- Used weekly for forestry teaching, research, outreach

- Cell tower lease income
- All management, road, improvement costs born by the college

- Critical for our forestry program long term
Reynolds Homestead Forestry Field Station - Critz, Virginia - 70 miles from Blacksburg
Cheatham Hall - Dedicated 1973 - at capacity

Cheatham Hall is fully occupied; college investment of $2 million over a decade to upgrade labs, offices, classrooms, advising center, student lounge, hallways,
Cheatham Hall - Dedicated 1973 - at capacity

Recently completed renovation:
- Classroom 317 – ceiling, lights, paint, projection, glass boards, seating - $75,000
- Biomaterials chemistry lab – hoods, benches, cabinets, floor, lights - $300,000
- Major renovation project each year since 2010
Wallace Hall - CNRE Department of Geography - Home to Meteorology Program

Wallace Hall; relocated Department of Geography to Wallace Hall in 2019 at a cost of $400,000 to the college; offices, GIS labs, classrooms
Thomas M. Brooks Forest Products Center

- Home to the Department of Sustainable Biomaterials
- The first building in what is now the Corporate Research Center
- 40,000 sq. ft. of offices, classrooms, high bay engineering labs – 3 separate building projects/additions
- Home to Center for Packaging and Unit Load Design – Ikea and Amazon certified test labs
- Student instruction in labs and classrooms; travel back-and-forth to campus is an obstacle

The very first endowed professorship at Virginia Tech was the Brooks Professorship
Wood Engineering Lab is a high-bay lab with fork truck access, large test frames for testing wood assemblies, and conditioning chambers.

Innovation Lab Renovated to become a clean, well-equipped lab for student instruction in packaging.
Thomas M. Brooks Forest Products Center

- Additional lab and classroom space is needed
- Flat roof, plywood siding is a maintenance issue continually
- Electrical, HVAC, windows are end of life
- Additional parking is needed
- Cosmetic upgrade throughout is needed
- A shipping container was purchased to provide secure external storage
Student access from bus stop is challenging – sidewalk is needed from Kraft Drive to the Brooks Center. Covered bus stop is needed. It can take students up to 30 minutes to travel from campus to the Brooks Center.
Center Woods - 39 Acre Forest and Infrastructure
Adjacent to Campus and Route 460

- Aviary constructed at a cost of $700,000 with college resources
- Faculty purchase storage sheds for field equipment – sheds on skids from Lowes/Home Depot
- Fleet of boats need indoor storage – some theft in the past (more than 20 boats and trucks)
- Road maintenance is an issue
- Well water

Free-standing metal building
Being retrofitted for lab use ~$100,000

- Freshwater Aquaculture Lab
- Boat Storage
- Boat and Truck Storage
- Sheds on Skids
- Aviary
- Mussel Propagation Lab
Center Woods - 39 Acre Forest and Infrastructure
Adjacent to Campus and Route 460

- Free-standing metal building
  - Being retrofitted for lab use ~$100,000
- Freshwater Aquaculture Lab
- Boat Storage
- Boat and Truck Storage
- Mussel Propagation Lab
- Sheds on Skids
- Aviary

- Agency 229 Capital Priority is to construct a 28,000 sq. ft. metal building with labs, offices, maintenance facility, indoor storage
- Relocate Conservation Management Institute from Univ. City Mall and eliminate lease payment
- Provide needed space for researchers, post doctoral researchers, staff
- Long term preservation and use of Center Woods by college faculty, staff, and students
College of Natural Resources and Environment

- CNRE facilities are at capacity, in every building, every space.
- College continues to make internal investments in renovations.
- Facilities and Infrastructure are not nationally competitive at a time of significant faculty retirements and recruitment.
- Center Woods is priority #1; Brooks Center is priority #2.
- Advocate for multiple smaller capital projects/renovations at the state level rather than one large capital request. $20-25 million addition to Cheatham Hall would prepare us for the decades ahead and be a good return on investment.
College of Natural Resources and Environment

Thank You!

PAUL M. WINISTORFER, DEAN
### CAPITAL PROJECTS

**Projects in Construction**

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Project Description</th>
<th>Estimated Total Project Cost</th>
<th>Fund Source</th>
<th>Project Terms</th>
<th>Contract Completion Date</th>
<th>Project Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve Kentland Facilities, Phase II</td>
<td>Applied Reproduction Facility (APF). 4.510 SF barn at Vet Med for embryo production.</td>
<td>$32,463,000</td>
<td>Capital Outlay</td>
<td>Spectrum</td>
<td>Fall 2020</td>
<td>All projects have reached substantial completion and have certificate of occupancy. Minor corrective work is ongoing.</td>
</tr>
<tr>
<td>New Virginia Seawood AREC Building</td>
<td>1,590 SF, 2-story building to replace existing aging and structurally unsound facility in Hampton, Virginia with state of the art aquaculture research and extension facilities. Facility owned and developed by Virginia Tech Foundation.</td>
<td>$9,260,000</td>
<td>Various</td>
<td>RMAM</td>
<td>April 2023</td>
<td>Certificate of Occupancy has been received. Remaining punch list and change order items are nearly complete. Commissioning continues for final and address issues. New equipment connections pending delivery and startup. Move in is complete and old building vacated.</td>
</tr>
<tr>
<td>Livestock and Poultry Research Facilities, Phase I</td>
<td></td>
<td>$21,074,000</td>
<td>Capital Outlay</td>
<td>Spectrum</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pig 1: New Swine Center at Kentland Farm</td>
<td>Package 1-4: Winter 2022/23</td>
<td></td>
<td></td>
<td></td>
<td>Packages 1-4 are under construction and progressing toward completion this winter. Priority 1 Equipment buyout is nearly complete. Occupancy to occur over spring and summer. Packages 5-6: Package 5 is being prepared for bidding to secure funding. Package 6 will follow once the existing swine center is fully vacated.</td>
</tr>
<tr>
<td></td>
<td>Pig 2: New Beef Nutrition Facility &amp; Hay Shed at Kentland Farm</td>
<td>Package 1-4: Winter 2022/23</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pig 3: New chicken &amp; turkey growout facilities at the Turkey Research Center (Glade Rd.)</td>
<td>Package 1-4: Winter 2022/23</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pig 4: New Equine Barn &amp; Equipment Storage Building at Livestock Center (Plantation Rd.)</td>
<td>Package 1-4: Winter 2022/23</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pig 5: 3 New Hay Sheds at Certified Home Center, Fields west of US 460, and Heth Farm</td>
<td>Package 1-4: Winter 2022/23</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pig 6: Final demolition of remaining facilities</td>
<td>Package 1-4: Winter 2022/23</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

### Projects in Design

<table>
<thead>
<tr>
<th>Project Name</th>
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<th>Project Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>System-wide AREC Improvements, Phase I</td>
<td>Renovate and expand aging and deteriorating AREC facilities. Revised phasing will add address all capital needs at specific ARECs during each phase.</td>
<td>TBD</td>
<td>Capital Outlay</td>
<td>TBD</td>
<td>TBD</td>
<td>Reviewing priority needs to determine 2-3 ARECs for inclusion in Phase I scope.</td>
</tr>
<tr>
<td>Relocation of Hampton Roads AREC</td>
<td>Study requested by the General Assembly to evaluate possible relocation of the Hampton Roads AREC to a new site. Report to assess existing asset inventory, programmatic needs, new site requirements and possible alternatives.</td>
<td>$100,000</td>
<td>Capital Outlay</td>
<td>AECOM</td>
<td>Dec-22</td>
<td>Study is complete. Final report delivered to General Assembly in December 2022.</td>
</tr>
<tr>
<td>Human and Agricultural Biosciences Building II</td>
<td>Construct new research lab facility for the School of Plant and Environmental Sciences to co-locate numerous research teams in one location with modernized facilities to focus on studying climate change.</td>
<td>$69,900,000</td>
<td>Capital Outlay</td>
<td>EYP</td>
<td>TBD</td>
<td>Re-programming effort completed with a $335.5M construction target. Draft Feasibility report is under review for inclusion on 2024-2030 CALS' six-year capital outlay plan request.</td>
</tr>
</tbody>
</table>

### NON-CAPITAL PROJECTS

**Projects Completed Since Last Report**

- Minor Projects ($<25,000 each)
  - Middlebrook AREC House 106 Parking Repairs
  - Shenandoah Valley AREC Outage Improvements
  - Shenandoah Valley AREC FPI Installation
  - Southwest ARRC Power Upgrades for Smart Feeders
  - Tidewater AREC Emergency Diesel Motor Replacement
  - Tidewater AREC Hog Barn Electrical Repairs
  - Employee House 105 Interior and Exterior Repairs
- Minor Improvements to improve workflow and safety within Entomology Quarantine Facility at Prices Fork Research Center.

<table>
<thead>
<tr>
<th>Project Name</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Repairs to deteriorated piping, hot water heater, and laundry facilities. Minor grading and new underdrain to correct drainage problems around main barn area. Installation of equipment to manage increased water service pressure from county. Additional power and data circuits in Cattle Barn for new feeding equipment. Emergency installation of new electric meter base after new smart meter began to overhead.</td>
<td>$49,000</td>
<td>CALS / VAES</td>
<td></td>
<td>Winter 2022/23</td>
<td>Complete</td>
</tr>
<tr>
<td></td>
<td>Miscellaneous electrical and lighting repairs in swine area. Wall damage repairs and exterior maintenance.</td>
<td>$37,000</td>
<td>CALS</td>
<td></td>
<td>Winter 2022/23</td>
<td>Work is complete</td>
</tr>
</tbody>
</table>

**Projects in Review**

- TBD
- TBD
- TBD
- TBD
- TBD
Eastern Shore AREC - Exterior Building Repairs
- Multiple buildings are in need of exterior repairs. Head House (1214) and Shop Building (1215) is in need of structural repairs to walls and repointing. Implement Shed (1216), Sweet Potato Storage (1217), Produce Grading (1218), and Insectary (1220) need exterior waterproofing, door repair, pointing repairs and gutters. Eastern Shore AREC - Exterior Building Repairs

- $596,000 Maintenance Reserve Winter 2022/2023 Work is complete.

Kenbend Farm Dairy Center 2nd Feed Mixer Installation
- An additional feed mixer has been purchased by the School of Animal Sciences for use at the Dairy to increase capacity and feed variability. This project is to provide necessary electrical upgrades to run the equipment.

- $18,000 CAIS - Winter 2022/2023 Work is complete.

PROJECTS IN CONSTRUCTION

Minor Projects (<$25,000 each):
- Reynolds Homestead FRRC Exterior Repairs
- Shenandoah Valley AREC Working Pens
- Middleburg AREC Laundry Hookup
- Middleburg AREC Freeze Damage Repairs

- Multiple $49,000 CAIS / VAES - Ongoing TBD Structural repairs underway due to additional design required for mechanical and electrical repairs.

ABCD Exterior Signage Upgrades
- Installation of 2 new exterior signs at each ABCD with refreshed design to match current branding.

- Multiple $81,000 CAIS / VAES - TBD

Beef Barn Repairs
- Exterior and interior demolition followed by the installation of new roofing, bay led footing, doors, windows and lighting. This work was originally included in URF Phase I, but removed due to scope concerns.

- Multiple $1,064,000 Maintenance Reserve Thar, SEC Summer 2023 Construction is underway. Project extended due to additional design required for mechanical and electrical repairs.

Eastern Virginia AREC - Experiment Building Renovation
- Renovation and upgrade of existing under-utilized office, workshop and meeting space. Building HVAC system has failed and is not working. Electrical and plumbing are outdated. Building is not ADA accessible. General condition is deteriorating.

- Multiple $195,000 Maintenance Reserve Structures Group Eagle River Spring 2023 Construction is underway. Project extended due to additional design required for mechanical and electrical repairs.

Tidewater AREC - Water system repair
- Water line from well to main office complex is failing in multiple locations and requires frequent repairs, creating water quality concerns. Project is to connect to public water system with 2-inch water line, add backflow preventer, and re-connect non-potable water line to well for irrigation purposes.

- Multiple $40,000 Maintenance Reserve Lewis Construction Spring 2023 City water line is complete to new meter. New water line from meter to building installed November 2022. Remaining work to occur Spring 2023.

Prices Fork Quarantine Lab-Emergency Generator
- Installation of new backup generator for operational reliability at Entomology Quarantine Facility at Prices Fork Research Center.

- Multiple $66,000 CAIS Gibson Engineering Spring 2023 Generator has been ordered. Projected ship date is April 2023. Installation to follow.

Southern Piedmont AREC - Packhouse Restroom Repairs
- Packhouse (0897) restroom is in need of plumbing repairs and upgrade to be reconfigured for ADA access. Packhouse roof is leaking and needs repair.

- Multiple $122,000 Maintenance Reserve Thompson & Listen Sklar Construction Spring 2023 Work is underway, nearing final completion.
<table>
<thead>
<tr>
<th>PROJECT NAME</th>
<th>PROJECT DESCRIPTION</th>
<th>ESTIMATED TOTAL PROJECT COST</th>
<th>FUND SOURCE</th>
<th>PROJECT TEAM</th>
<th>CONTRACT COMPLETION DATE</th>
<th>PROJECT STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>UMC Projects ($500,000 each)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tidewater AREC Peanut Storage Shed</td>
<td>900 square foot prefabricated structure for field storage of harvested peanuts.</td>
<td>$52,000</td>
<td>CALS/VAES</td>
<td>Multiple</td>
<td>Various</td>
<td>In Progress</td>
</tr>
<tr>
<td>Eastern Virginia AREC RTK Tower Installation</td>
<td>Power and data connections for new GPS and Wi-Fi tower.</td>
<td>TBD</td>
<td>Maintenance Reserve</td>
<td>TBD</td>
<td>TBD</td>
<td>Final cost is being developed with term contract greenhouse contractor.</td>
</tr>
<tr>
<td>Tidewater AREC RTK Tower Installation</td>
<td>Power and data connections for new GPS and Wi-Fi tower.</td>
<td>TBD</td>
<td>Maintenance Reserve</td>
<td>TBD</td>
<td>TBD</td>
<td></td>
</tr>
<tr>
<td>Southern Piedmont AREC RTK Tower Installation</td>
<td>Extend existing lean-to shed for additional feed pens, bunk space, holding pens and loadout.</td>
<td>TBD</td>
<td>-</td>
<td>TBD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Southwest AREC Ram Barn Shed Extension</td>
<td>End wall of Greenhouse F5 at the Lutz Greenhouse Complex on Washington Street has deteriorated and needs to be repaired, along with mechanical equipment installed in the wall. Electrical repairs are also required.</td>
<td>TBD</td>
<td>Maintenance Reserve</td>
<td>TBD</td>
<td>TBD</td>
<td>Lead and asbestos study complete. Obtaining quotes and permits for demolition.</td>
</tr>
<tr>
<td>Greenhouse F5 Structural and Mechanical Repairs</td>
<td>Dismantle two structures that are currently unsafe and operationally unnecessary</td>
<td>TBD</td>
<td>CALS</td>
<td>TBD</td>
<td>TBD</td>
<td></td>
</tr>
<tr>
<td>Hermitage Farm Shed and Silo Demolition</td>
<td>Exterior and interior demolition followed by installation of new flooring, doors, windows, HVAC system, lighting, a covered walkway and exterior paint. This work was originally included in UMF Phase 3, but removed due to scope concerns.</td>
<td>$362,000</td>
<td>Maintenance Reserve</td>
<td>TBD</td>
<td>TBD</td>
<td>Scope review with University Building Official (UBO) is necessary to resolve code requirements and funding eligibility. Project deferred to 2023.</td>
</tr>
<tr>
<td>Judging Pavilion Repairs</td>
<td>New enclosure of the existing open-air steel structure constructed of metal panel siding over steel girts and posts. This work was originally included in UMF Phase 3, but removed due to scope concerns. Existing equitation barn to be repurposed for small animal research and extension activities.</td>
<td>$93,000</td>
<td>Maintenance Reserve, CALS</td>
<td>Hughes</td>
<td>TBD</td>
<td>U/E Proposal development underway.</td>
</tr>
<tr>
<td>Hampton Roads AREC Chiller Replacement</td>
<td>Existing chiller failed and must be replaced before cooling season.</td>
<td>$150,000</td>
<td>Maintenance Reserve</td>
<td>TBD</td>
<td>TBD</td>
<td>Bid documents being finalized.</td>
</tr>
<tr>
<td>H. Smith Jr. AREC Chilled Water System repairs</td>
<td>Existing chillers are leaking and utilize a refrigerant that is no longer readily available. System condition is deteriorating and in need of major repair and replacement.</td>
<td>$150,000</td>
<td>Maintenance Reserve</td>
<td>TBD</td>
<td>TBD</td>
<td>Contractor quote under review.</td>
</tr>
<tr>
<td>Middleburg AREC Stable exterior repairs</td>
<td>Existing roof is leaking causing damage to main lobby interior walls and classroom area.</td>
<td>$100,000</td>
<td>Maintenance Reserve</td>
<td>TBD</td>
<td>TBD</td>
<td>Design work underway.</td>
</tr>
<tr>
<td>Middleburg AREC Clinic/Admin Building HVAC repairs</td>
<td>New enclosure of the existing open-air steel structure constructed of metal panel siding over steel girts and posts. This work was originally included in UMF Phase 3, but removed due to scope concerns. Existing equitation barn to be repurposed for small animal research and extension activities.</td>
<td>TBD</td>
<td>Maintenance Reserve, CALS</td>
<td>Hughes</td>
<td>TBD</td>
<td>U/E Proposal development underway.</td>
</tr>
<tr>
<td>Prince Fork Quarantine Lab Autoclave Installation</td>
<td>Installation of new 3-phase electric service and new autoclave for more reliable sterilization process.</td>
<td>TBD</td>
<td>CALS</td>
<td>TBD</td>
<td>TBD</td>
<td>Design work underway.</td>
</tr>
<tr>
<td>Tidewater AREC Main Office and Lab Roof Replacement</td>
<td>Two existing heat pump systems have failed during critical and ongoing research projects.</td>
<td>$40,000</td>
<td>Maintenance Reserve</td>
<td>TBD</td>
<td>TBD</td>
<td>Design work underway.</td>
</tr>
<tr>
<td>Tidewater AREC Entomology Lab Heat Pump Replacement</td>
<td>Two existing heat pump systems have failed during critical and ongoing research projects.</td>
<td>$15,000</td>
<td>Maintenance Reserve</td>
<td>TBD</td>
<td>TBD</td>
<td>Seeking contractor quotes (3-list)</td>
</tr>
<tr>
<td>Southern Piedmont AREC - Building Repairs</td>
<td>Repair/replacement siding and five deteriorated lean-to equipment storage sheds attached to four tobacco curing barns (BRBA, BRWC, BRHC, BRIG)</td>
<td>$51,000</td>
<td>Maintenance Reserve</td>
<td>TBD</td>
<td>TBD</td>
<td>U/E Proposal development underway.</td>
</tr>
<tr>
<td>Turfgrass Research Center Equipment Shed</td>
<td>New 1,440 square foot open-front pole shed at the Turfgrass Research Center for weather-protected storage</td>
<td>$78,000</td>
<td>Maintenance Reserve</td>
<td>TBD</td>
<td>TBD</td>
<td>U/E Proposal development underway.</td>
</tr>
</tbody>
</table>
## PROJECT INITIATION / PLANNING STAGE

### California Agriculture and Life Science (CALS)
- **Project Name**: Upgrade to support main campus & surrounding farms
  - **Estimated Total Cost**: $1,823,000
  - **Fund Source**: CALS

### Compost Facility
- **Project Name**: Existing main parking lots (3) and primary internal roadways are deteriorating and in need of repair.
  - **Estimated Total Cost**: $56,000
  - **Fund Source**: Maintenance Reserve

### Turkey Farm Processing Building Repair
- **Project Name**: Moore Farm Barn 0501 Repairs
  - **Estimated Total Cost**: $56,000
  - **Fund Source**: Maintenance Reserve

### Turkey Farm Shed 0508 Repairs
- **Project Name**: Moore Farm Barn 0501 Repairs
  - **Estimated Total Cost**: $56,000
  - **Fund Source**: Maintenance Reserve

### Shenandoah Valley AREC - Renovate Carriage House
- **Project Name**: Shenandoah Valley AREC - Renovate Carriage House
  - **Estimated Total Cost**: $126,000
  - **Fund Source**: CALS / VAES

### Smithfield Equine Complex
- **Project Name**: Smithfield Equine Classroom Renovations, Phase 2
  - **Estimated Total Cost**: $110,000
  - **Fund Source**: Maintenance Reserve, CALS

### Southern Piedmont AREC
- **Project Name**: Southern Piedmont AREC - Pavement repairs
  - **Estimated Total Cost**: $126,000
  - **Fund Source**: CALS / VAES

### PROJECT DESCRIPTION
- **Alpha-Grant Arena Parking Lot paving**: Paving over existing gravel parking area to reduce annual maintenance, solve drainage problems, expand number of spaces, and provide all-weather parking surface. Heavy duty asphalt section to be installed for possible future bus turnaround.
- **Alson H. Smith AREC - Repair paving and parking**: Approximately 1,300 square feet of milling and 8,400 square yards of 2-inch asphalt overlay required.
- **Southern Piedmont AREC - Pavement repairs**: Existing main parking lots (3) and primary internal roadways are deteriorating and in need of repair. Approximately 1,300 square feet of milling and 6,000 square yards of 2-inch asphalt overlay required.
- **Shenandoah Valley AREC - Repair/Replace Sheep Barn**: Sheep Barn (350') has rotten posts at ground level and leaking roof. The building should be evaluated for repair or replacement.
- **Smithfield Equine Complex**: Develop new facilities for Equine Complex on Plantation Road including covering outdoor arena, add bleachers, restrooms, annuancer roof, fencing, quarantine facility.
- **Smithfield Equine Classroom Renovations, Phase 2**: Completion of building envelope repairs, restroom repairs, accessibility improvements.
- **Southern Piedmont AREC - Greenhouse Controls User Interface**: Minor assist to make power connections for new Smart Greenhouse controls in two greenhouse ranges.

### CONTRACT COMPLETION DATE
- **Alpha-Grant Arena Parking Lot paving**: TBD
- **Alson H. Smith AREC - Repair paving and parking**: TBD
- **Southern Piedmont AREC - Pavement repairs**: TBD
- **Shenandoah Valley AREC - Repair/Replace Sheep Barn**: TBD
- **Smithfield Equine Complex**: TBD
- **Smithfield Equine Classroom Renovations, Phase 2**: TBD
- **Southern Piedmont AREC - Greenhouse Controls User Interface**: TBD
### PROJECTS COMPLETED

<table>
<thead>
<tr>
<th>PROJECT NAME</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Shenandoah Valley AREC Security Camera Installation</td>
<td>Minor project to add security camera for monitoring historic property.</td>
<td>$13,000</td>
<td>CALS</td>
<td>-</td>
<td>TBD</td>
<td>Proposal under review by Security Oversight Committee and Office of University Planning.</td>
</tr>
<tr>
<td>Alson H. Smith Jr. AREC Fuel Containment Pit Sealing</td>
<td>Minor project to seal concrete joints and cracks, and add a liner to secondary containment pits around two fuel tank areas.</td>
<td>$15,800</td>
<td>CALS</td>
<td>-</td>
<td>TBD</td>
<td>Contractor quote under review.</td>
</tr>
<tr>
<td>Kentland Farm Road Repairs</td>
<td>Pavement condition is deteriorating in areas of high traffic and poor drainage at Kentland Farm. Several sections will need spot repairs and pavement overlay. Other areas in better shape only need seal coat. Additionally, the Kentland UAV runway needs an overlay.</td>
<td>$250,000</td>
<td>CALS, ICTAS</td>
<td>TBD</td>
<td>TBD</td>
<td>Refining phasing plan</td>
</tr>
</tbody>
</table>

### PROJECTS IN PROGRESS

<table>
<thead>
<tr>
<th>PROJECT NAME</th>
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</thead>
<tbody>
<tr>
<td>AREC Audiovisual (AV) Upgrades - Phase I</td>
<td>Installation of new audio and video equipment for ARECs to provide enhanced conferencing abilities in classrooms.</td>
<td>$70,000</td>
<td>CALS/VAES</td>
<td>CALL IT</td>
<td>December 2023</td>
<td>Ongoing</td>
</tr>
<tr>
<td>AREC Bandwidth and Internet Connectivity Updates</td>
<td>Project to significantly upgrade the bandwidth for all eleven locations. Connectivity has been limited and unable to meet emerging requirements and ongoing systems support.</td>
<td>$225,000 Annual Service Charges</td>
<td>CALS/VAES</td>
<td>CALL IT</td>
<td>December 2023</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Bandwidth and Internet Connectivity Improvements (Non-AREC)</td>
<td>Identify and implement bandwidth upgrade opportunities across campus locations to enhance research and address emerging requirements.</td>
<td>Various</td>
<td>CALS/VAES</td>
<td>CALL IT Division of IT</td>
<td>Ongoing</td>
<td>Ongoing</td>
</tr>
<tr>
<td>AREC Voice Over Internet Protocol (VOIP) Conversion</td>
<td>Convert legacy telephone systems at all ARECs to unified Voice Over Internet Protocol (VOIP) systems to match the voice service on campus.</td>
<td>$75,000</td>
<td>CALS/VAES</td>
<td>CALL IT Division of IT</td>
<td>Ongoing</td>
<td>On Hold</td>
</tr>
<tr>
<td>Network Equipment Upgrades and Expansion</td>
<td>This project replaces or upgrades aging local area network (LAN) equipment as well as expand in building wire lines and other wireless capabilities. This effort also includes the procurement and installation of new &quot;backbone&quot; equipment that will be installed on campus to manage and operate the networks at the ARECs and other extension offices.</td>
<td>$114,000</td>
<td>CALS/VAES</td>
<td>CALL IT</td>
<td>Ongoing</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Real Time Kinematic (RTK)</td>
<td>This project installs Real-Time Kinematic (RTK) systems at selected ARECs. RTK enables the ARECs to implement precision agriculture research practices by increasing the precision of standard GPS from an accuracy of 2-4 meters to ~5 centimeter.</td>
<td>$213,000</td>
<td>CALS/VAES</td>
<td>CALL IT John Deere Trimble</td>
<td>Ongoing</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>

### INFORMATION TECHNOLOGY (IT) PROJECTS

#### Updates through February 28, 2023. New information is in bold.

- **Virginia is more than sufficient to meet current and ongoing needs, so no updates planned for that location.**
- **Other locations, but Eastern Shore doubled the bandwidth to 100MB and Reynolds Plantation nearly quadrupled bandwidth to 1GB.**
- **The existing service contract expires in two years and the Division of IT has announced that a new 5-year plan will be awarded to replace the existing system. It does not make sense to migrate any additional offices to the legacy system, and instead wait to migrate those to the new Zoom offering once it becomes available.**
<table>
<thead>
<tr>
<th>PROJECT NAME</th>
<th>PROJECT DESCRIPTION</th>
<th>ESTIMATED TOTAL PROJECT COST</th>
<th>FUND SOURCE</th>
<th>PROJECT TEAM</th>
<th>CONTRACT COMPLETION DATE</th>
<th>PROJECT STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern Virginia AREC Field-level Wireless (SmartFarm Project)</td>
<td>Installation of new technology, similar to Wi-Fi but with better exterior coverage and security management, in fields at Eastern Virginia AREC to study the effectiveness of this equipment for supporting data-intensive agricultural, plant-based research as well as providing ready access to the internet and data network.</td>
<td>$53,000</td>
<td>CALS / VAES</td>
<td>CALS IT, Dell, AAR, Pierson Wireless</td>
<td>TBD</td>
<td>After further analysis, this project may not provide the wireless coverage as expected. In addition, costs for new devices (current equipment is not compatible) and annual service charge questions have led to a temporary pause in the project pending clarification from the vendor.</td>
</tr>
<tr>
<td>Kentland 5G Proposal (SmartFarm Project)</td>
<td>A project has been initiated to potentially install new technology in fields that is similar to Wi-Fi but with better exterior coverage and security management. The proposal is to study the effectiveness of this equipment for supporting data-intensive agricultural, animal-based research. This initial project is to create a 5G/CBRS testbed at Kentland Farm.</td>
<td>TBD</td>
<td>TBD</td>
<td>CALS IT, Division of IT, MAAP, VTNSI, 5G Consortium</td>
<td>TBD</td>
<td>5G Consortium toured Kentland Farms and learned of potential 5G agricultural applications on January 30 and 31. Continued discussions required to determine roles and responsibilities, funding, and opportunities. Previous efforts have been stymied due to the inability to get tower installation approval at Kentland.</td>
</tr>
<tr>
<td>AREC Audiovisual (A/V) Upgrades - Phase 2</td>
<td>Installation of new audio and video equipment for ARECs to provide enhanced conferencing abilities in classrooms. Much of this second phase is focused on some of the smaller AREC offices.</td>
<td>$130,000</td>
<td>CALS / VAES</td>
<td>CALS IT, Vendor: Lee Harman and Sons</td>
<td>TBD</td>
<td>This phase is reviewing the potential for adding A/V systems to Eastern Virginia, Eastern Shore, Middleburg, Shenandoah, and Southwest Virginia AREC offices.</td>
</tr>
</tbody>
</table>
Utilities Master Plan

Mary-Ann Ibeziako  
Assistant Vice President for Infrastructure and Chief Sustainability Officer  
March 20, 2023
The Utilities Master Plan will provide a comprehensive framework to ensure that future programmatic needs are met and that the university remains a leader in the field of higher education infrastructure.

<table>
<thead>
<tr>
<th>Thermal Systems</th>
<th>Civil Utilities</th>
<th>Electrical Utilities</th>
<th>Technology Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Steam</td>
<td>· Sanitary Sewer</td>
<td>· VTES Campus Distribution</td>
<td>· Network Infrastructure &amp; Services Outside Plant (Data/Telecom Infrastructure)</td>
</tr>
<tr>
<td>· Chilled Water</td>
<td>· Storm Water</td>
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</tbody>
</table>
In 2018, Virginia Tech completed its most recent master planning effort resulting in ‘Beyond Boundaries 2047: The Campus Plan.’

The Utilities Master Plan will provide a comprehensive roadmap to align campus wide utility systems with the strategies of the Campus Master Plan and the sustainability goals of the Climate Action Commitment.

In 2020, Virginia Tech revised its Climate Action Commitment, setting sustainability goals and milestones thru 2050.
EXPECTED OUTCOMES

- Campus-wide stakeholder collaboration and alignment (academic & operational)
- Asset management centric program that is responsive to capacity, condition, performance, etc.
- Future-looking prioritization of service-level risks and opportunities
- Alignment with existing strategic facilities investment programs (facilities renewal, maintenance reserve, capital outlay, etc.)
- Sustainable, programmatic utility planning framework
PHASED APPROACH

Implementation

PHASE 1: Assess existing capacity and condition of utility systems to meet current levels of service

PHASE 2: Evaluate utility needs for 2047 Plan & CAC

PHASE 3: Identify specific strategies, projects and programs for utility systems to meet the future levels of service

PHASE 4: Compilation of Final Utility Plan
## PHASES & SCHEDULE

<table>
<thead>
<tr>
<th>Phase</th>
<th>Description</th>
<th>2023</th>
<th>2024</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1</td>
<td>Field Investigation</td>
<td>■ ■ ■</td>
<td>■ ■ ■</td>
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<tr>
<td>Phase 2</td>
<td>Existing Conditions Assessment</td>
<td>■ ■ ■</td>
<td>■ ■ ■</td>
</tr>
<tr>
<td>Phase 3</td>
<td>Analysis and Future State</td>
<td>■ ■ ■ ■ ■</td>
<td>■ ■ ■ ■ ■</td>
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<tr>
<td>Phase 4</td>
<td>Master Planning Process</td>
<td>■ ■ ■</td>
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</tr>
</tbody>
</table>

- Collaborative workshop with stakeholders
- Briefing to BOV Buildings and Grounds Committee
The Utilities Master Plan will provide a comprehensive framework to ensure that:

- Future programmatic needs are met in sync with the institution’s Strategic Plan, Campus Master Plan, and Climate Action Commitment
- Virginia Tech remains a leader in the field of higher education infrastructure