

# Climate Action, Sustainability, and Energy Committee Meeting Minutes

April 29th, 2024, 2:00pm

Zoom: <https://virginiatech.zoom.us/j/86285064063>

**Present:** Nathan King (proxy for Chair), Teresa Sweeney, Gia Ha, Zhuo Fu, Josh Clemons, Nick Quint for Carrie Cox, Autumn Timpano, Nam Nguyen, Diane Bonsall, Matt Stolte, Ben Thomas, Lam Vuong for Liza Morris, Erin Poff, Luke Goodman, Nick Woods for Ken Miller, Leslie Stevens, Emily Williams, Paul Winistorfer, Cameron Hadley, Annie Lawrence, Isabelle Largen, Lane Robertson, Todd Schenk, Mae Hey

**Absent:** Jamie King (prior notice given), Wesley Gwaltney, Pat Donovan (prior notice given), Nidhi Gangadharan, Kendra Paisley (prior notice given), Katie Smith

**Guests:** Kristina Cook, Emily Vollmer, Carol Davis, Jack Leff, Paul Ely, Ann Raridon, Alisha Ebert, Anthony Watson, Sean McGinnis, Steve Durfee, Adia Long, Meghan Marsh, Charul Agrawal, Simona Fried, S.B Chandler, Ralph Hall, Ron Meyers, Lizeth Jaramillo Taborda, Mark Witt, Gillian Eastwood

Nathan King called the meeting to order at 2:00 pm. A quorum was present.

## 1. Adoption of Agenda

A motion was made and seconded to adopt the agenda. The motion carried.

## 2. Announcement of approval and posting of minutes of March 25<sup>th</sup> 2024

Nathan King noted that these minutes have been voted on electronically and can be publicly accessed on the Governance Information System on the Web (<http://www.governance.vt.edu>).

## 3. Membership Updates

Members completing their terms were recognized during the presentation.

## 4. Presentation

Nathan King (Campus Sustainability Manager), Emily Vollmer (Sustainability Coordinator), Teresa Sweeney (Waste and Recycling Manager), Nick Quint (Transportation Network Manager), Kristina Cook (Program Coordinator), Sean McGinnis (Associate Professor of Practice and Director, Green Engineering Program), Simona Fried (Manager of Energy Projects and Analytics), Gia Ha (Office of Sustainability Graduate Assistant), Steve Durfee (Assistant Director of CASE and Campus Energy Manager), and Jack Leff (Climate Fellow) gave presentations that covered all agenda items for the committee meeting (attached). Subcommittees gave their Spring semester reports.

## 4. Open Discussion and Announcements

- Announcements [GAs]
  - Green Grads Pledges
    - Sign-up deadline May 1<sup>st</sup>
    - Pledge information being advertised on social media
  - Y-Toss
    - Collections open for students 10am-7pm from May 3<sup>rd</sup> – May 8<sup>th</sup>
    - An excellent volunteer opportunity to keep waste out of our community landfill and helpful to students who can buy items for their residential space for less of a cost in the fall.

- Open Discussion
  - Possible Agrivoltaic Initiatives
    - Nam Nguyen: We currently have a small solar array on the Perry Street parking garage. Currently in process of installing 4 additional rooftop solar arrays on campus. Aiming to commission into service by end of 2024. A few sessions ago I did a presentation on some possible options to incorporate renewable energy when VTES goes into our renewal of our wholesale energy purchase in 2027. We are in the early stages of engagement with some key academic stakeholders to explore other solar projects on VT-owned land. These early explorations involve options for agrivoltaics (leveraging the land not only for the use of solar but implemented in such a way that allows for multi-use of the land for traditional crops and grazing as well. Working with some of our esteemed professors on campus, this presents us with some great opportunities for us to consider as they serve both the needs of sustainable energy while preserving the mission of the land grant university for agriculture research. Additionally, the recent Inflation Reduction Act also presents some opportunities for us to mitigate some of the high cost of implementation through investment tax credits now eligible for tax exempt entities like us. Anytime you implement projects with this level of complexities there are numerous challenges that we must thoroughly analyze. I'll be working with our stakeholders to perform some preliminary technical and financial feasibility studies over the summer and then report back our findings on a path forward this fall. This will really inform us of our approach as well as inform us of the process of reaching out to the broader stakeholder group to engage and participate in the process as well. I look forward to presenting to you sometime when we reconvene in the fall.
    - Ralph Hall: To add to what Nam said, we have secured some funding for a workshop this summer on agrivoltaics. So, we are currently about to start planning that. We will open that up to interested people who want to come in and learn about it. It will probably be in second part of July TBD. This will be a chance to explore what is agrivoltaics. There may be some training on various programs- models that can be used to study ideas for particular plots of land. Might go look at various sites around VT to see what it might look like on those areas. It's very much a learning stakeholder activity: we'll invite colleagues around the university, policy makers perhaps, and developers to sites so we can have an informed conversation around this concept. It's the Center for Advanced Innovation in Agriculture (<https://caia.cals.vt.edu/>) pairing with the Center for Future Work Places and Practices (<https://cfwpp.icat.vt.edu/>) and a few other groups; so it's a collective effort. And, Nam's group is involved as part of that team.

## 6. Adjournment

There being no further business, the meeting adjourned at 3:04 pm.



Climate Action, Sustainability, and Energy Committee

**April 29<sup>th</sup>, 2024 – 2:00 PM**





# Agenda

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- Welcome, Opening Remarks, and Membership Updates
- Approval of Proposed Agenda (if a quorum is present)
- Meeting Minutes: Electronic Vote Results
- Business
  - Earth Week Overview
  - Subcommittee General Updates and 2020 CAC Implementation Progress Updates
- Recognitions
- Announcements and Open Discussion

# Earth Week 2024

- Events held April 15-26
  - First time attempting a "split week" - turned into two weeks
- Collaboratively planned and hosted ~25 events
  - Included students, staff, faculty, and community members
  - Events both on and off campus; in person and virtual; educational and social
- Lots of firsts!
  - CALL Showcase
  - The Big Clean
- Some quick stats
  - 600+ attendees at the Sustainable Fashion Show (doubled from last year)
  - 170 plants planted
  - 15+ hours of educational talks, tours, presentations, workshops
  - 18 partnering organizations
- And even some classics!
  - Arbor Day Celebration
  - VT Bee Day
  - Sustainable Fashion Show



A scenic view of a lake surrounded by lush green trees, with a white rectangular box overlaid in the center containing the text 'Zero Waste'. The background shows a calm body of water reflecting the sky, framed by dense green foliage and tree branches. The text is centered within the white box in a dark red, serif font.

# Zero Waste

# Zero Waste Subcommittee

**Members:** Teresa Sweeney (convener), Nathan King, Reed Nagel, Emily Williams, Emily Vollmer, Jack Leff

**Update:** The zero waste subcommittee continues to build on the foundation established through our campus zero waste audit in 2022. We continued outreach and engagement efforts through campus race to zero waste again and improved from 85<sup>th</sup> to 78<sup>th</sup> in the Per Capital Classic. Also, stakeholders were brought together in November 2023 to discuss the development of a composting facility. We are now trying to identify funding sources for a development plan and business case (grants, corporate networks, etc). Lastly, we are working on new labels for campus waste/recycling bins that will hopefully be deployed this summer.

# Review of 2020 CAC Progress

## **Progress Toward Specific CAC Goal(s) Implementation Steps:**

- 1. Establish a waste management committee – completed**
- 2. Conduct a campus waste audit – complete (more in-depth audit in future...)**
- 3. Develop compost facility at Kentland – in progress**
- 4. Update comprehensive waste management plan – complete 2021 (could be updated again)**

**Implementation Steps That Have Proven Challenging:** Audit recommendations require broad changes to infrastructure and elevating waste mgmt. Compost facility is a sizeable up-front investment. Targeted communication efforts for waste and recycling in all the various areas of campus.

**Resources and/or Changes Needed to Address Challenges and Meet the Goal(s):** Additional funding is needed and elevating waste/recycling messaging to campus



A scenic view of a lake surrounded by lush green trees, with a white text box overlaid in the center. The text box contains the title "Carbon-Neutral Commuting and Carbon-Neutral Fleet" in a dark red, serif font. The background shows a calm lake reflecting the sky, with large, leafy trees in the foreground and middle ground. The sun is visible in the distance, creating a bright glow and lens flare effect.

# Carbon-Neutral Commuting and Carbon-Neutral Fleet

# Carbon-Neutral Commuting & Carbon-Neutral Fleet

**Members:** Mike Dunn, Durelle Scott, Erik Olsen, Jack Leff, Will Heltzel, Yasmin Momenian, Adam Stitt, and Nick Quint (convener)

## Review of 2020 CAC Progress

### **Progress Toward CAC Goal 9 Implementation Steps:**

- Provide better data on student and employee commuting behavior.
- Infrastructure improvements.

### **Implementation Steps That Have Proven Challenging:**

- Develop a 5-year Sustainable Transportation Master Plan (including a fleet vehicle transition plan).
- Policy changes.

# Review of 2020 CAC Progress

## **Resources and/or Changes Needed to Address Challenges and Meet Goal 9:**

- Funding
  - New Mobility Master Plan
  - Dedicated funding to implement approved master plan
  - EV charging infrastructure (particularly installation costs)
- Collaborate with the Town to provide affordable workforce housing proximate to campus, and build more on-campus housing to free up off-campus housing for faculty and staff.
- Cultural shift away from a drive-first mindset.
- Continued commitment toward sustainability from university leadership.

A scenic view of a lake surrounded by lush green trees. The foreground is filled with large, vibrant green leaves, some in sharp focus and others blurred. In the background, a calm lake reflects the sky, with more trees lining the far shore. A white rectangular text box is centered over the middle of the image.

# Agricultural, Forestry, and Land Use Operations

## VT Urban Forestry Advisory Committee

### Updates:

- The committee has agreed to meet once a season (4 total): Spring, Summer, Fall, and Winter.
- A student has proposed the possible creation of a food forest:
  - Questions were raised on the spraying/maintenance of forest.
  - Could the food forest be put in Catawba?
- Use of yard signs for outreach on areas that Grounds has worked on was discussed. The purpose would be to help spread awareness about work done and to keep foot traffic off of certain areas.
- Discussion of wildlife aspects during the implementation of the Bartlett plan led to a discussion of the ongoing Stroubles Creek restoration. The public is concerned about Stroubles Creek restoration.
- VT spends an annual average of \$30 per tree. Peer universities spend \$40-\$50 per tree. VT's urban forest value has decreased.
- There are limited resources for the VT Urban Forestry Team and Responsive Tree Care is the majority of the Urban Forestry Team's production.
- Funding has been received for interns to carry out a project in VT's Old Growth Forest.
- Arbor Day Celebration occurred on April 24<sup>th</sup>. 14 new trees were planted along the planting strip between Sterrett Center and Fleet Services.
- The Urban Forest Master Plan is completed. It completed review processes with stakeholders and was submitted for approval in 2023 but has not yet been approved.

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# GHG Inventory and Carbon Offset and Management

# Greenhouse Gas Inventory and Carbon Offsets and Management

**Members:** Simona Fried (co-convener); Sean McGinnis (co-convener); Cameron Hadley; Rob Lowe; Steve Durfee; Kristina Cook; Gary Ruppert; Emily Murray; Rachel Maizel

## Update:

- Calendar Year 2023 Greenhouse Gas Inventory and Report: In Progress
- Calculating the “cost” to be carbon neutral (\$ RECS)
  - *Need industry expertise. Please connect us to any industry connections and/or alumni contacts*
- Dining Hall Food Upstream Emissions Pilot Project was done using an Independent Study course (Fall 2022 - McGinnis)
  - *Big Data project that needs additional work as the food vendor database is hundreds of thousands of lines of data for all food purchases for campus*
  - *Need student/faculty member to continue work*
- Carbon Sequestration Options including the VT Campus Tree Inventory was completed using an Independent Study course (Fall 2023 - McGinnis)
  - *VT Campus Tree CO<sub>2</sub> sequestration is a very small reduction, but there are many other benefits of trees on campus*
  - *Need student to continue work*

A scenic view of a lake surrounded by lush green trees, with a white text box overlaid in the center. The text box contains the title "VT-Blacksburg Sustainability Collaboration" in a dark red, serif font. The background shows a large tree trunk in the foreground, with its branches and leaves framing the view of the water. The sun is visible in the background, creating a bright, hazy glow over the lake.

# VT-Blacksburg Sustainability Collaboration



**Sustainable Blacksburg:** <https://sustainableblacksburgva.org/>

### **Sustainability Through the Seasons Meetings Update:**

- Town of Blacksburg is working on grants for invasive species clearing projects in Heritage Park. A 2-acre pilot project began in March and was followed by a replanting of native trees and shrubs in early April.
  - Saturday, May 11, Bittersweet Removal Blitz, 9 am-1 pm, Meadowbrook parking lot
  - Bring tools, gloves, water bottle, wear closed toe shoes
- 2 new community gardens are under development in Blacksburg! One is located in lower Heritage Park. The location for the other garden is TBD: <https://liveworkeatgrow.org/community-gardens/future-community-gardens/>
- Lunch and Learn events are held on the 4<sup>th</sup> Wednesday of the month from 12-1pm at the Blacksburg Library. The April meeting was “Gardening with Southwest VA Native Plants” and March was “Living with Bears in Virginia”. May 22 program is “Bluebirds in Blacksburg.” Stay tuned for summer and fall lunch and learns subjects. We are looking for speakers! Recordings of previous sessions are accessible from the SB website.
- NRV Tree Rescuers host ongoing Third Friday work days to remove invasive vines from trees on Blacksburg land: <https://sustainableblacksburgva.org/nrv-tree-rescuers/>
- Bradford Tree Bounty: Remove a Bradford Pear tree from your property and receive a young, native tree with a protective tree tube in return (limit 2): <https://sustainableblacksburgva.org/bradford-pear-tree-bounty/>
- **May 3<sup>rd</sup>-May 9<sup>th</sup>: Volunteers needed for YToss**, contact: [sydneykehl@vt.edu](mailto:sydneykehl@vt.edu) (Sydney Kehl), [volunteer signup link](#)



Water



**Charles Dietz**

## Members

1. Gia Ha
2. Kristina Cook
3. Yugasha Bakshi
4. Chuck Dietz
5. Mark Witt
6. Katelyn Muldoon
7. Andy Gould
8. Nisha Polk
9. Nathan King
10. Emily Vollmer
11. Yasmin Momenian
12. Simona Fried
13. Jamie King
14. Charul Agrawal
15. Meghan Childress
16. Jordan Lavey
17. Avery Krivis
18. Leilani Hyatt
19. Hannah Worthy

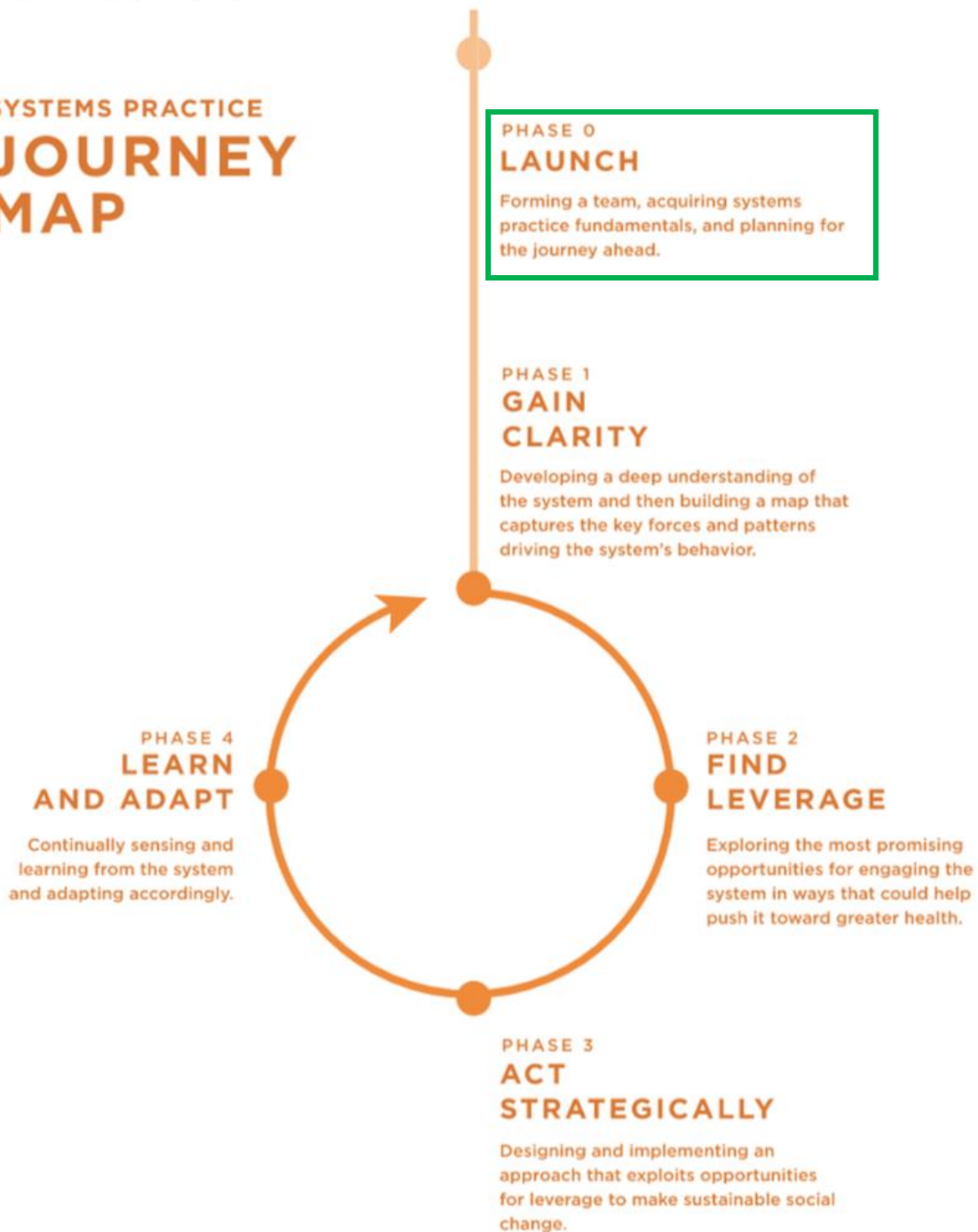
## **VT's Land Acknowledgement**

*Virginia Tech acknowledges that we live and work on the Tutelo / Monacan People's homeland, and we recognize their continued relationships with their lands and waterways. We further acknowledge that the Morrill Land-Grant College Act (1862) enabled the commonwealth of Virginia to finance and found Virginia Tech through the forced removal of Native Nations from their lands in California and other areas in the West.*

## **VT's Labor Recognition**

*Virginia Tech acknowledges that its Blacksburg campus sits partly on land that was previously the site of the Smithfield and Solitude Plantations, owned by members of the Preston family. Between the 1770s and the 1860s, the Prestons and other local White families that owned parcels of what became Virginia Tech also owned hundreds of enslaved people. Enslaved Black people generated resources that financed Virginia Tech's predecessor institution, the Preston and Olin Institute, and they also worked on the construction of its building.*

# SYSTEMS PRACTICE JOURNEY MAP



## Our Mission

Improve water sustainability on campus through *collaborative leadership*



Water Use, Water Distribution, and Energy

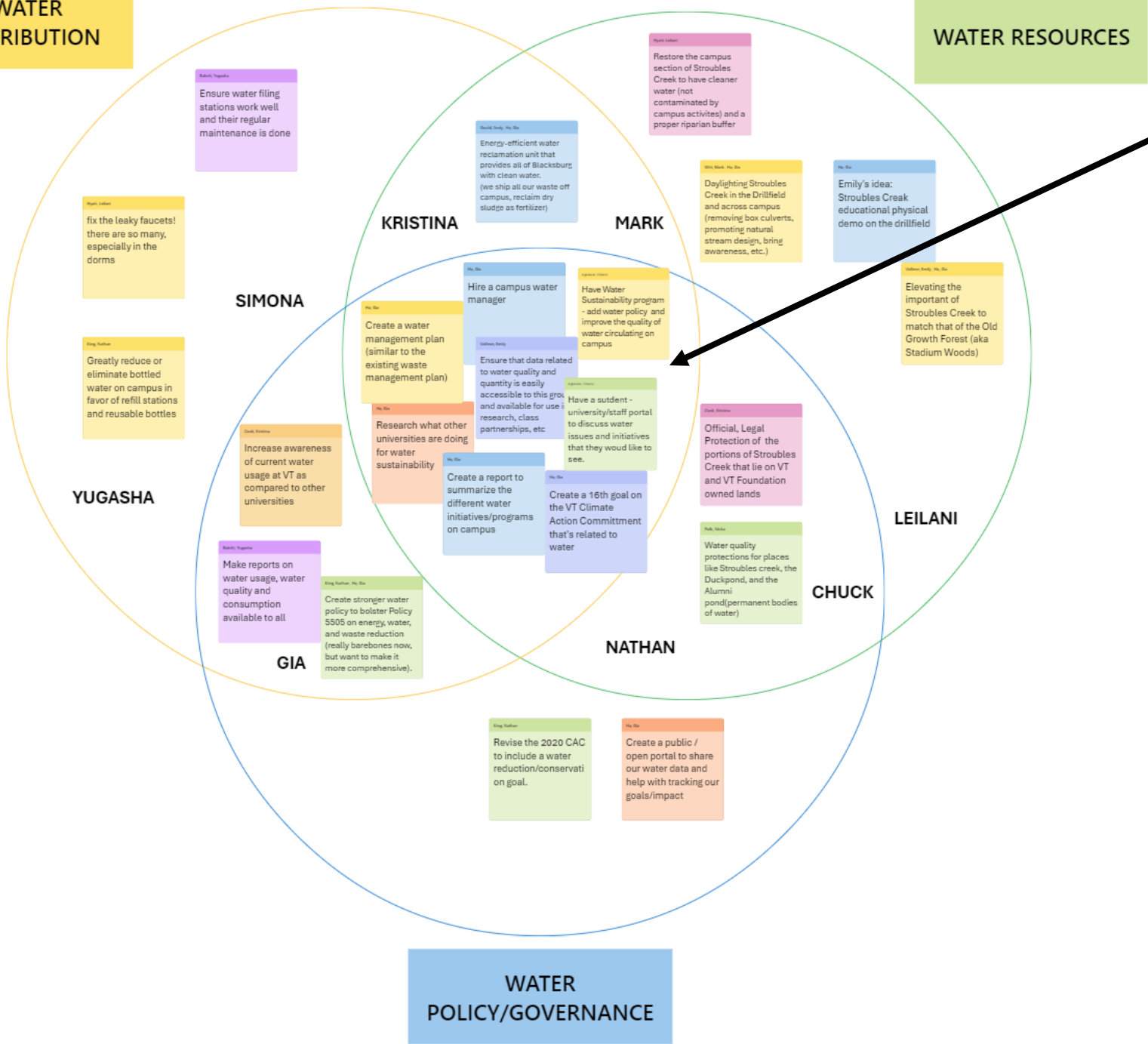
Water Natural Resources,  
Preservation/Conservation

Water Policy and Governance

## WATER DISTRIBUTION

## WATER RESOURCES

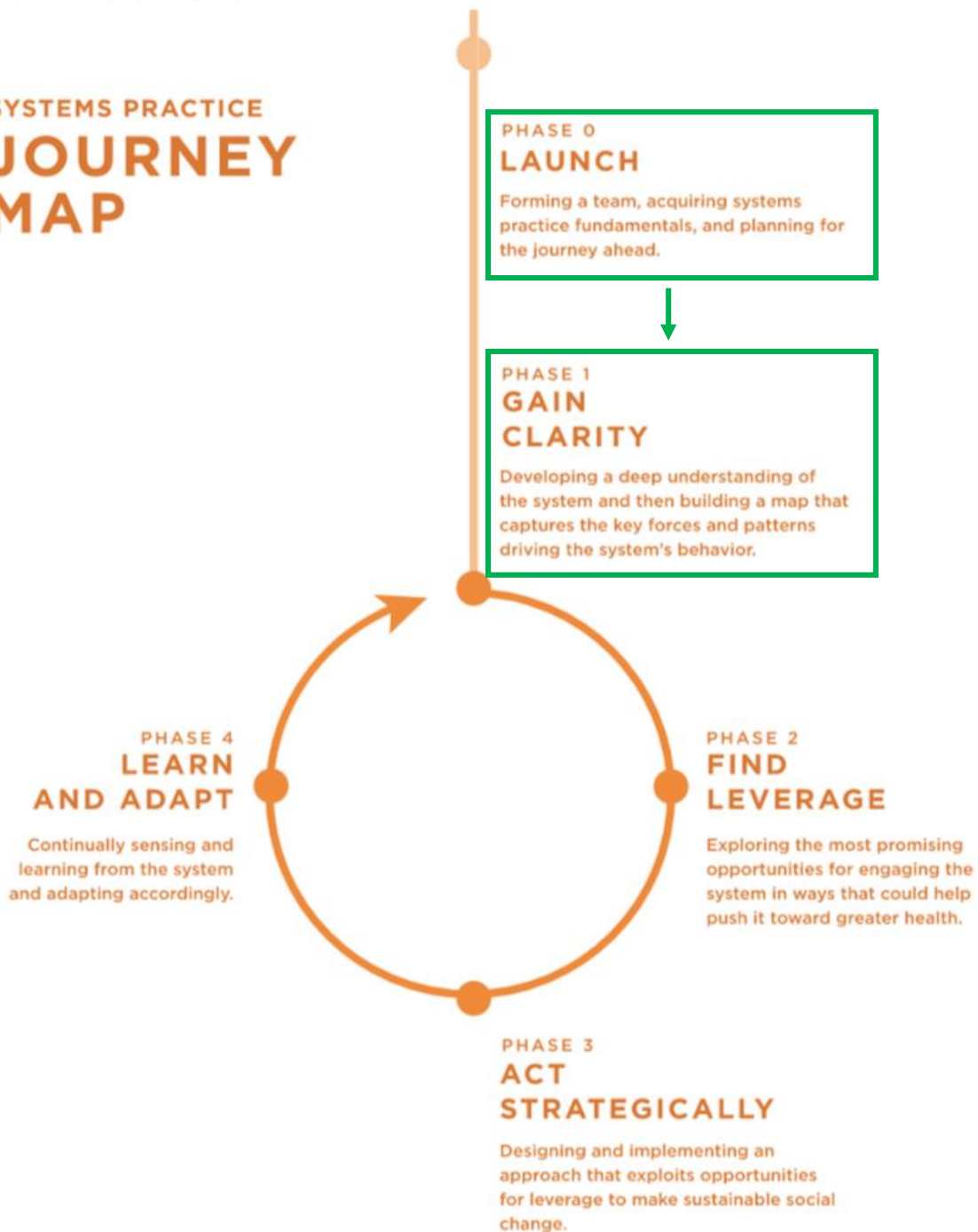
## WATER POLICY/GOVERNANCE



## Central Goals

- Water management plan
- Campus water manager
- Internal and external benchmarking
- 16<sup>th</sup> CAC goal related to water sustainability
- Water sustainability program
- Live water data portal (campus operations + research)

# SYSTEMS PRACTICE JOURNEY MAP



## Benchmarking

Process of evaluating + comparing our performance metrics against comparative standards to identify areas for improvement and adopt best practices

Understanding what we do and how we do it

Applying creative adaptation

Breakthrough improvement

Understanding what others do and how they do it.



# Water-related findings from VT's 2020 Climate Action Commitment Agricultural, Forestry, and Land Use Subcommittee Report:

## **Cost and benefits of Tree Policy and Urban Tree Canopy Goal**

### **Ecological and Community Values**

Virginia Tech's trees sequester and store enough carbon every year to offset approximately 3% of the carbon produced through total university operations. As trees are removed through management operations, the wood may be utilized in construction and woodcraft, continuing the storage of carbon for much longer.

**These trees also slow the runoff of stormwater on campus, resulting in less severe flooding events and cleaner streams.** The leaves on campus trees filter particulates and pollution from the air, this cleaner air allows the community to experience fewer respiratory health problems.

## Climate Action Living Laboratory benefits

Campus trees and shrubs are used for instruction in best arboriculture practices, and the Stroubles Creek watershed is used to teach hydrology and aquatic ecology.

## VT reputational benefits

Implementing the measures described would consolidate Virginia Tech's reputation as a socially responsible institution on the cutting edge of implementing sustainable practices, as well as enhance the university's position as a premiere university at which to study and research these and similar initiatives, the demand for which is growing with each passing year. Adapting in these ways is central to the university's role as a land grant institution and as a leader in agricultural and natural sciences and in ethical management of natural resources.

# VT's Urban Forest Master Plan

- Completed CPIF Review in 2021
- Completed Arboretum Committee Review in 2022
- Public Review in 2023
- Submitted for CPIF approval in 2023

The Urban Forest Master Plan holds ecological and community value which includes the fact that trees **slow the runoff of stormwater on campus, resulting in less severe flooding events and cleaner streams**

A scenic view of a lake surrounded by lush green trees. The foreground is filled with large, vibrant green leaves, some in sharp focus and others blurred. In the background, a calm lake reflects the sky, with more trees lining the far shore. A white rectangular box is centered in the image, containing the word "Energy" in a dark red, serif font.

Energy

# Energy Subcommittee Focused on CAC Goals 1-5

## Members:

- Stephen Durfee, *A.D. for CASE & Campus Energy Manager (Convener)*
- Simona Fried, *Manager of Energy Projects & Analytics*
- Charul Agrawal, *Energy Engineer*
- Nam Nguyen, *Executive Director of Energy & Utilities*
- Scott Hebdon, *Electrical Engineer*
- Todd Robertson, *A.D. for Power Plant Operations*
- Chris Tedder, *Chilled Water Plant Supervisor*
- Nathan King, *Campus Sustainability Manager*
- Sean McGinnis, *Associate Professor, Director, Green Engineering Program*
- Paul Ely, *A.D. for Capital Construction*
- Scott Kerklo, *Senior Mechanical Engineer*
- Shannon Maner, *Building Automation Analyst*
- Justin Lucas, *A.D. for Facilities Maintenance (DSA)*
- Brittany Lee, *A.D. for Facilities Maintenance & Finance (Ath)*

# Energy Subcommittee Topics Thus Far

## **GHG Report Review**

- **Latest report just released**

## **2020 CAC Financial Plan Review**

- **Revisit for 2025**

## **Energy Management Business Plan**

- **Energy supply-side management and demand-side management planning**
- **Use utility master plan + building energy investment grade audit (IGA in FY25)**

## **A Net Zero Building**

- **Understanding what's feasible for VT**

## **Energy Action Plans 6 & 7**

- **Implementing and tracking progress**

# Energy Action Plan 6 Update

## LEDs

- 9 buildings, 600k sqft, \$1.2m project with a 10-year energy payback period
- Completing 7/24

## 11 Lab Buildings' HVAC & Controls Retro-commissioning

- \$1m project with 2-year payback period
- Completing 9/24

## ICTAS 2 HVAC Controls Modernization & Optimization

- \$650,000 project with a 15-year payback period
- Completes 6/24

# Energy Action Plan 7 Update

## **Continued Building LED Retrofits**

- **25 additional buildings, 1.4m sqft, \$3m project with 10-year energy payback period**
- **Begins 5/24, completes 9/25**

## **Steam Trap Performance Management Program Startup**

- **Steam trap testing & inventorying for all buildings on steam. \$500k repair budget with an estimated 1.4-year payback period**
- **Begins 10/24, completes 8/25**

## **Laboratory Buildings' Occupancy Based Temperature and Ventilation Control**

- **\$500k for HVAC energy reduction based off motion detection. 5.1-year payback period**
- **Begins 7/24, completes 8/25**

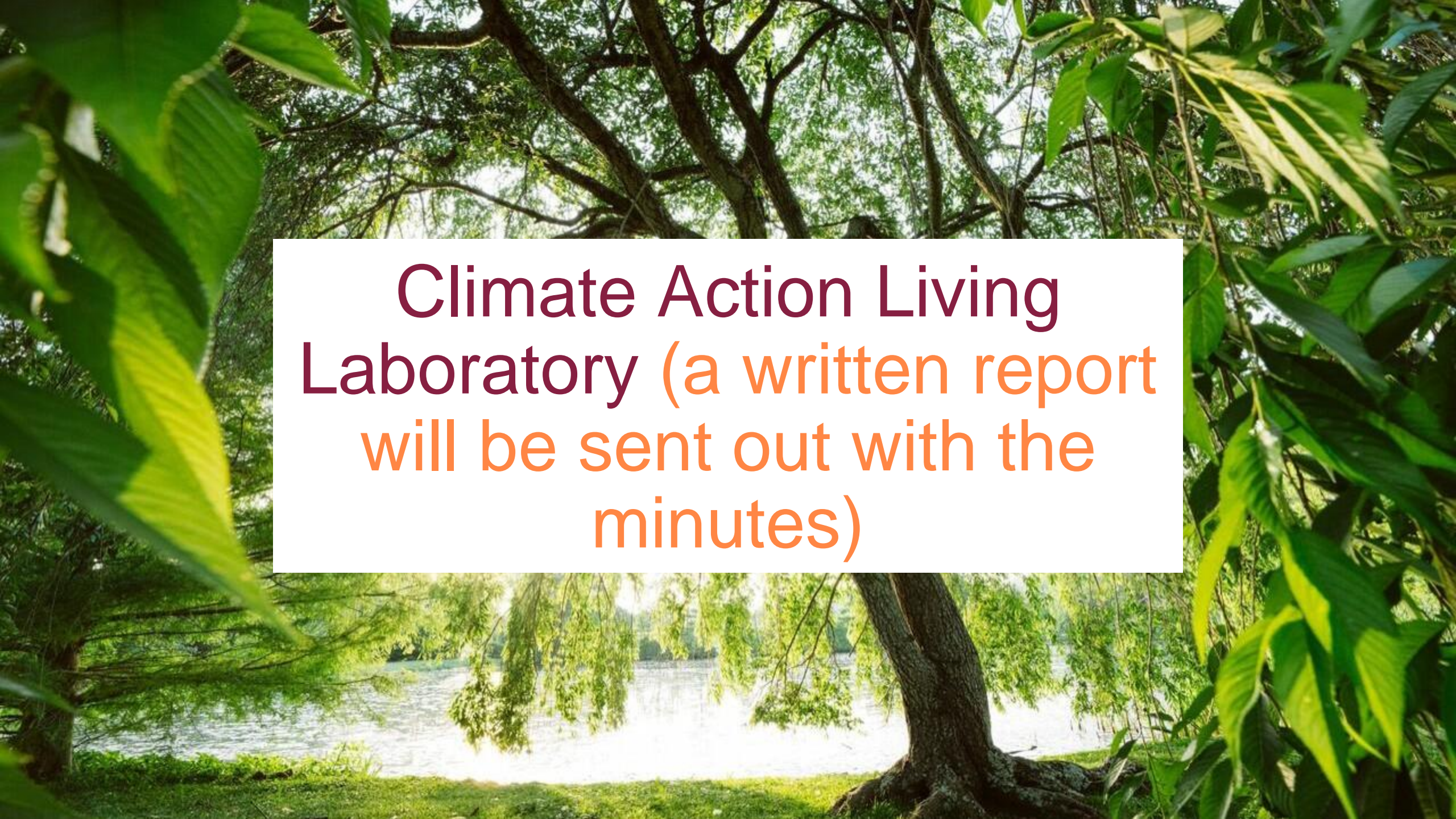
## **E&G Buildings' Investment Grade Energy Audit**

- **\$300k for comprehensive building energy efficiency**
- **FY25**




A scenic view of a lake surrounded by lush green trees, with a white text box overlaid in the center. The text is centered and reads: Sustainable Campus Culture, Engagement, and Sustainable Choices (a written report will be sent out with the minutes).

Sustainable Campus  
Culture, Engagement, and  
Sustainable Choices (a  
written report will be sent  
out with the minutes)

A scenic view of a lake surrounded by lush green trees. The foreground is filled with large, vibrant green leaves, some in sharp focus and others blurred. In the background, a calm lake reflects the sky, framed by a dense canopy of trees. A white rectangular text box is centered over the image, containing the following text:

Climate Action Living  
Laboratory (a written report  
will be sent out with the  
minutes)

A scenic view of a lake surrounded by lush green trees. The foreground is filled with large, vibrant green leaves, some in sharp focus and others blurred. In the background, a calm lake reflects the sky, framed by a dense canopy of trees. A white rectangular text box is centered over the middle of the image.

Climate Justice (a written report will be sent out with the minutes)



# Agenda

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- Welcome, Opening Remarks, and Membership Updates
- Approval of Proposed Agenda (if a quorum is present)
- Meeting Minutes: Electronic Vote Results
- Business
  - Earth Week Overview
  - Subcommittee General Updates and 2020 CAC Implementation Progress Updates
- **Recognitions**
- Announcements and Open Discussion

## Recognitions

- Nam Nguyen
- Todd Schenk
- Erin Poff
- Paul Winistorfer
- Luke Goodman
- Benjamin Thomas
- Nidhi Gangadharan
- Lane Robertson
- Izzy Largen
- Katie Smith
- Cameron Hadley
- Gia Ha



Thank you for your service!

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# Announcements

## **Green Grads Pledges**

- **Sign up deadline is May 1st**
- **Pledge information is being advertised on social media. Please spread the word!**

## Seeking Volunteers for Y-Toss!

- **Collection will be open for students 10 am – 7pm throughout May 3rd- May 8<sup>th</sup>**
- **Sign up here:**  
<https://www.signupgenius.com/go/4090449AFA929AAFA7-48241287-ytoss#/>





the **Y-TOSS**  
**DONATE**  
**HERE**

## Y-Toss

- Coordinated by the YMCA
- Collects gently used items during move-out for re-use
- We need help staffing drop off locations near residence halls during move-out
- Coordinate with your supervisor to use volunteer hours

# Open Discussion

**Have a great summer and we'll  
see you in the Fall!**

