

Climate Action, Sustainability, and Energy Committee Meeting Minutes
March 27th, 2023
2:00pm

Zoom: <https://virginiatech.zoom.us/j/84989941195?from=addon>

Present: Nathan King for Mary-Ann Ibeziako, Rachel Maizel, Teresa Sweeney, Pat Donovan, Annie Lawrence, Zhuo Fu, Lindsay Fisher for Katie Smith, Rob Lowe, Scott Nachlis, Nam Nguyen, Paul Ely, Wesley Gwaltney, Todd Schenk, Ken Miller, Nathaniel Humphreys, Matt Stolte, Claudia Budzyn, Isabelle Largen, Nick Quint, Gia Ha, Emily Williams, Jon Clark Teglas for Christopher Kiwus, Mae Hey,

Absent: Amy Hogan, Dean Paul Winistorfor, Gwyneth Martin, Lilian Prins, Madison Betts, Princess Merritt, Dana Hawley, Liza Morris

Guests: Emily Vollmer, Jack Leff, Brandon Senior, Adia Long, Larissa Gimmy, Lizeth Jaramillo Taborda, Ted Faulkner, Nick Woods, Sean McGinnis, Wendy Halsey, Barbara Wise, Jennifer Benning,

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 February 27, 2023 and Membership Updates

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

He also shared the following membership updates:

Welcome to new member Emily Williams. Emily is the new Sustainability Manager for Dining and Housing and is an ex-officio member.

3. Presentation

Matt Stolte (Director of Engineering Services), Nam Nguyen (Senior Director of Electric Services and Deputy to the AVP for Infrastructure), and Emily Vollmer (Sustainability Coordinator, Office of Sustainability) gave presentations that covered all agenda items for the committee meeting (attached).

4. Open Discussion

- VT Utility Master Plan (Nam Nguyen and Matt Stolte)
 - Scott Nachlis: In the Project Management and Stakeholders slide you mentioned Group 3 comprised of an Academic Advisory. At this high level of usage with buildings, is there a benefit to having a student affairs representative directly involved given how buildings/spaces managed by student affairs (dining halls, student centers, residence halls, rec center, health center) might have different needs than other academic spaces? I am not sure if this is needed, but rather just a general consideration if needed.
 - Matt Stolte: They're not on the academic advisory board, but they're in the stakeholder group that deals with operations in what I call the community and operational side. So, we have two folks from the DSA (Frances Keene and Ken Belcher) involved in that stakeholder committee, and that's where we're soliciting as much input as we can from Student Affairs. We're trying to get all levels of the organization and obviously, the ones that provide the service provide essentially the educational product, not just on the degree, but also all the other amenities that come with that we are reaching out to them as well. Athletics is also on that committee.
- Earth Week and CAC Day (Emily Vollmer)

- Nathan King: It's great to have a few extra incentives for students to join in for events- consider extra credit for them to attend the CAC Day.
- Matt Stolte: I noticed there are a couple goals not being covered- like goal 5. Or is that embedded in a group of goals?
 - Emily Vollmer: Yes, goals 5 and 8 do not have presentations scheduled. If anyone is interested on presenting on goals 5 or 8, reach out to me because we do have, I think, two open time slots still that we can fill.

5. Announcements

- Nathan King: Spring 2023 Green Graduates
 - Sign up deadline is Wednesday, May 10th
 - Pledge information advertised on social media- spread the word! Scan QR code on attached presentation (announcements section).
- Nathan King: Subcommittee and CASE Team written reports week of May 22nd
 - April agenda is packed and so subcommittees are asked to provide written reports on progress in lieu of a presentation.
 - CASE team to provide campus progress on CAC goals

6. Adjournment

There being no further business, a motion was made and seconded to adjourn the meeting at 2:53pm.



Climate Action, Sustainability, and Energy Committee

March 27th, 2023 – 2:00 PM





Agenda

- Welcome, Opening Remarks, and Membership Updates
- Approval of Proposed Agenda (if a quorum is present)
- Meeting Minutes: Electronic Vote Results
- New Business
 - VT Utility Master Plan
 - Earth Week 2023
 - CAC Education Day, April 19th
- Announcements and Open Discussion

Overview & Engagement with Utilities Master Plan

March 27, 2023 2PM

Climate Action Sustainability and Energy Meeting

Matt Stolte (Director Eng. Services)

Nam Nguyen (Sr. Director/Deputy Assist VP)



Utility Master Planning

- 1 Overview
- 2 Current Tasks
- 3 Upcoming Tasks
- 4 Schedule
- 5 CAC Engagement

- Drivers for Campus Planning Priorities
- 2047 Campus Master Plan – growth
- 2020 Climate Action Commitment – Stewardship
- Infrastructure Systems long life cycles
- Bridging campus goals and Objectives



Bridging Goals and Objectives

Campus Master Plan

In 2018, Virginia Tech completed its most recent master planning effort resulting in 'Beyond Boundaries 2047: The Campus Plan.'

Utilities Master 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.

Climate Action Commitment

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

Campus Utility Systems

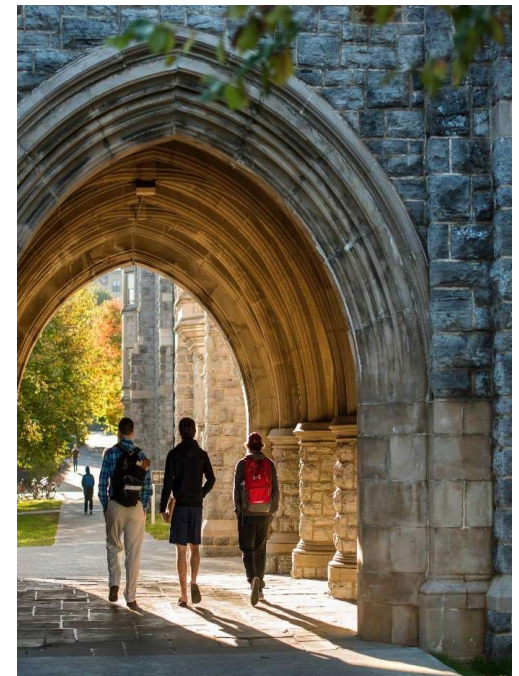
The University Operates and Maintains:

- Co-generation Power Plant (Electricity & Steam Generation)
- Central Compressed Air Utility
- Central Domestic Hot Water
- Electric Distribution Infrastructure
- Central Chilled Water Plants
- Back-up diesel generators
- Air Handling and HVAC Systems
- Stormwater BMP's
- Associated Distribution Systems Required to Transport Utility Services
 - Central Utilities Listed Above
 - Potable Water, Sanitary Sewage, and Storm Water



Expected Benefits & Outcomes

- Stakeholder collaboration campus wide on a regularly scheduled and reoccurring basis throughout the project.
- Development of a Asset Management centric program to evaluate the Capacity and Condition of major utilities.
- Development of a methodology to prioritize service level risks regarding systems performance, sustainability and resilience.
- Prioritize projects to align with existing capital & renewal programs (MR fund, 6yr & 10yr capital planning programs)
- Programmatic structure embedded into a CPIF strategy for utility planning process that can be used into the future.



Utility Master Planning

- 1 Overview
- 2 Process
- 3 Upcoming Tasks
- 4 Schedule
- 5 CAC Engagement

- Project Management & Stakeholders
- 4 Phases to the Project
- Implementation



Project Management & Stakeholders



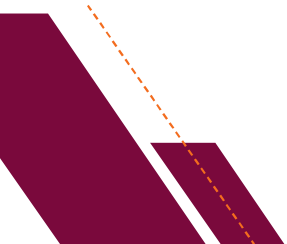
- Engineering Services – manages the project and Consultant for VT
- Three Groups of Stakeholder are vital to Project

Group -1: Utility and Planning

- Engineering Services – Sector Project Managers
- Utility Enterprises
- Strategic Planners

Group-2 : Organization & Community

Group-3 : Academic Advisory



Utility Master Plan 4 Phases (1 & 2)

- Phase -1: Assess existing capacity and condition of utility systems to meet Current Levels of Service – (Primary Partners input)
 - Engage Utilities to capture & compile existing data
 - Field Investigate Critical Features & Attributes
 - Evaluate Risk for Current Operations
 - Identify Operational/Maintenance/Capital options
 - Existing conditions report for review
- Phase-2: Evaluate utility needs for 2047 Plan & CAC
 - Engage the OUP and CASE Partners for latest plans
 - Determine future capacity and condition for utilities



Utility Systems

- Electrical
- Chillers
- Steam
- Communications
- Potable water
- Wastewater
- Stormwater

Utility Master Plan Phases (3 & 4)

- Phase -3: Identify specific strategies, projects and programs for utility systems to meet the Future Levels of Service –
 - Develop Operational/Maintenance/Capital options
 - Provide evaluation of system risks
 - Identify performance, sustainability and resilient metrics.
 - Evaluate capital improvements to align with capital planning intervals.
- Phase-4: Compilation of Final Utility Plan
 - Inclusion of Stakeholder feed back
 - Structure for continual Utility Evaluation & Programing

Utility Systems



- Electrical
- Chillers
- Steam
- Communications
- Potable water
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Utility Master Planning

- 1 Overview
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- Fieldwork
- 4–6 Months
- Baseline Data for all Utilities
- Example VT Electric Services
- Monthly Zoom 10AM last Tuesday of Month





UTILITIES MASTER PLAN FIELD SURVEYS

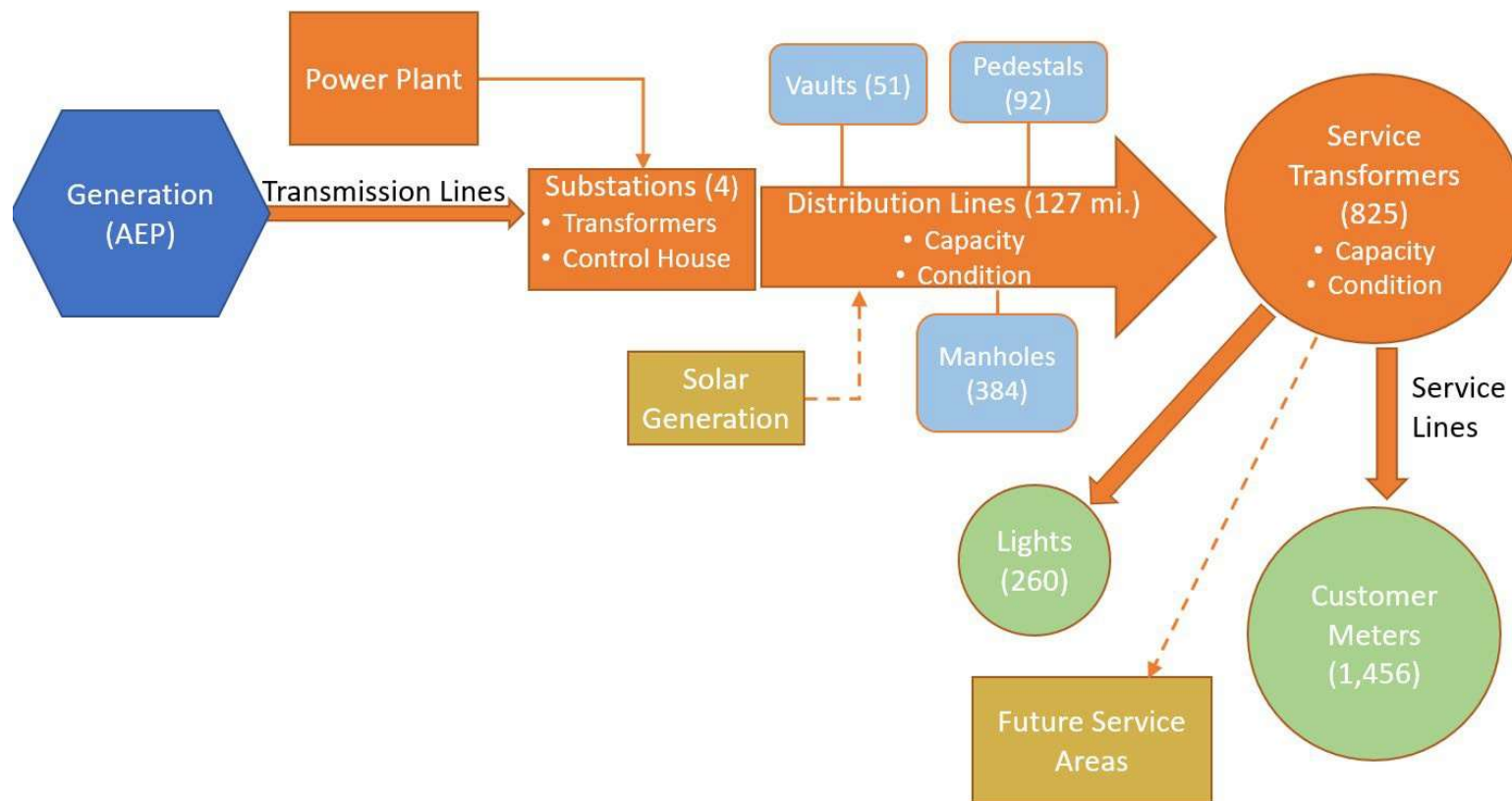
- Comprehensive asset inventory
 - Power Plant survey completed
 - Currently surveying VTES and water sewer systems
- Cataloging equipment nameplates and attributes
- Capacity and Condition assessments
- Join Monthly Stakeholder Update Via Zoom Tuesday, 10 AM



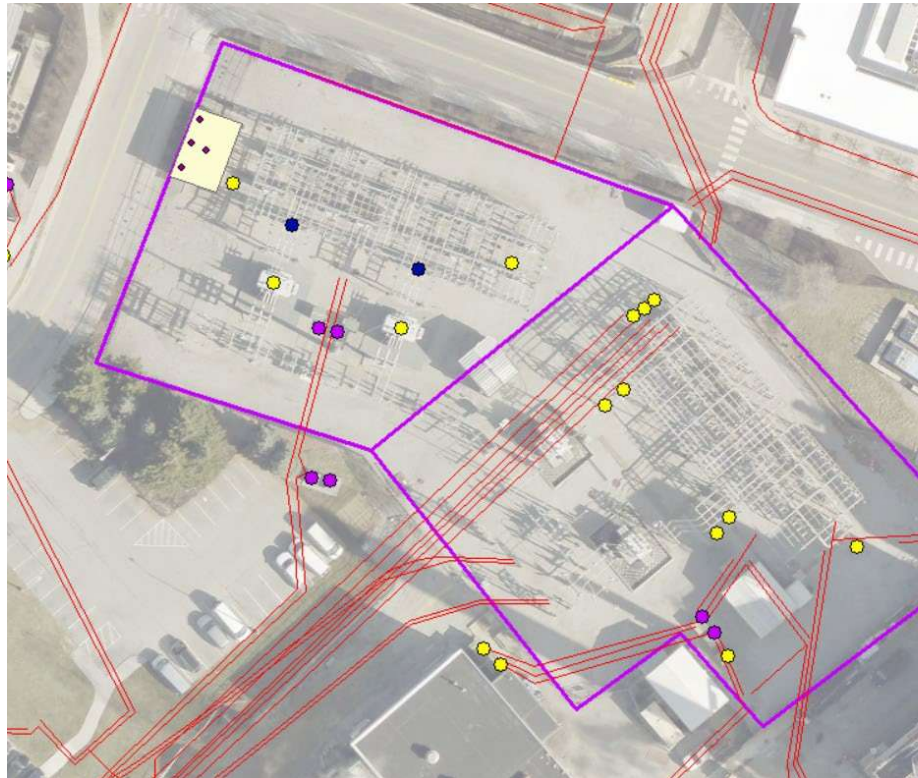
CHECK OUT PROGRESS ON WEBSITE:

<https://www.facilities.vt.edu/planning-documents/utilities-master-plan.html>

INVENTORY OF FEATURES & ATTRIBUTES EXAMPLE - VTES



GEOSPATIAL MAP FEATURES/ATTRIBUTES



PAD MOUNTED SWITCHGEAR

SURVEY INFO		EXISTING CONDITIONS		COMPARTMENT 1		COMPARTMENT 2		COMPARTMENT 3	
DESIGNATION:		EQUIPMENT GRADE:		CIRCUIT NAME:		CIRCUIT NAME:		CIRCUIT NAME:	
LOCATION:		EXTERIOR		SWITCH		SWITCH		SWITCH	
SURVEY BY:		PHYSICAL DAMAGE:		RATED AMPS:		RATED AMPS:		RATED AMPS:	
SURVEY DATE:		RUST/DISCOLORATION:		MOM. ASYM:		MOM. ASYM:		MOM. ASYM:	
SWITCHGEAR		ANCHORAGE:		1-SEC RATING:		1-SEC RATING:		1-SEC RATING:	
MANUFACTURER:		ALIGNMENT:		MOTOR OPERATOR:		MOTOR OPERATOR:		MOTOR OPERATOR:	
CATALOG #:		PAD/WELL MATERIAL:		VOLTAGE SENSORS:		VOLTAGE SENSORS:		VOLTAGE SENSORS:	
TYPE:		PAD/WELL CONDITION:		FAULT INDICATOR:		FAULT INDICATOR:		FAULT INDICATOR:	
MODEL #:		PHYSICAL PROTECTION:		SURGE ARRESTERS:		SURGE ARRESTERS:		SURGE ARRESTERS:	
SERIAL #:		INTERIOR		CT:		CT:		CT:	
MANUFACTURE DATE:		WATER INGRESS:		PHYSICAL CONDITION:		PHYSICAL CONDITION:		PHYSICAL CONDITION:	
RATED VOLTAGE:		DIRT/WEEDS/RODENTS:		BARRIERS:		BARRIERS:		BARRIERS:	
RATED BILL:		INTERIOR CLEARANCES:		OPEN/CLOSED:		OPEN/CLOSED:		OPEN/CLOSED:	
RATED AMPS:		OIL/GAS LEVEL:		FUSE		FUSE		FUSE	
SC RATINGS:		GROUNDING		MANUFACTURER:		MANUFACTURER:		MANUFACTURER:	
CODE ISSUES		CONNECTIONS PRESENT:		TYPE / CATALOG #:		TYPE / CATALOG #:		TYPE / CATALOG #:	
DEPTH OF WORK SP:		PHYSICAL CONDITION:		RATED VOLTAGE:		RATED VOLTAGE:		RATED VOLTAGE:	
WIDTH OF WORK SP:		SOURCE TRANSFER CONTROLLER		RATED AMPS:		RATED AMPS:		RATED AMPS:	
HEIGHT OF WORK SP:		TYPE:		MAX FUSE RATING:		MAX FUSE RATING:		MAX FUSE RATING:	
CLEAR SPACES:		PHYSICAL CONDITION:		INTERRUPT RATING:		INTERRUPT RATING:		INTERRUPT RATING:	
ENTRANCE / EGRESS:		SCADA BOX PHOTO:		PHYSICAL CONDITION:		PHYSICAL CONDITION:		PHYSICAL CONDITION:	
ILLUMINATION:		SKETCH (IF NEEDED)		BARRIERS:		BARRIERS:		BARRIERS:	
				CONDUCTOR		CONDUCTOR		CONDUCTOR	
				TYPE:		TYPE:		TYPE:	
				VOLTAGE CLASS:		VOLTAGE CLASS:		VOLTAGE CLASS:	
				SIZE:		SIZE:		SIZE:	
				MATERIAL:		MATERIAL:		MATERIAL:	
				INSULATION:		INSULATION:		INSULATION:	
				CONDUCTOR AGE:		CONDUCTOR AGE:		CONDUCTOR AGE:	
				SHIELD GROUNDED:		SHIELD GROUNDED:		SHIELD GROUNDED:	
				TERMINATION TYPE:		TERMINATION TYPE:		TERMINATION TYPE:	
				TERMINATION COND.:		TERMINATION COND.:		TERMINATION COND.:	
				PHYSICAL CONDITION:		PHYSICAL CONDITION:		PHYSICAL CONDITION:	
				SETTINGS/REMARKS		SETTINGS/REMARKS		SETTINGS/REMARKS	
				ADDITIONAL COMMENTS		ADDITIONAL COMMENTS		EQUI	
								GRADE A = LIKE NEW CONDITION	
								GRADE B = GOOD CONDITION	
								GRADE C = AVERAGE CONDITION	
								GRADE D = WORKABLE CONDITION	
								GRADE E = POOR CONDITION	
								GRADE F = CRITICAL CONDITION	

1 Overview

2 Process

3 Upcoming Tasks

4 Schedule

5 CAC Engagement

Utility Master Planning

- Phase -1: Assess existing capacity and condition of utility systems.
Spring 2023
- Phase-2: Evaluate utility needs for 2047 Plan & CAC
Fall 2023
- Phase -3: Identify specific strategies, projects and programs
Spring 2024
- Phase-4: Compilation of Final Utility Plan
Fall 2024



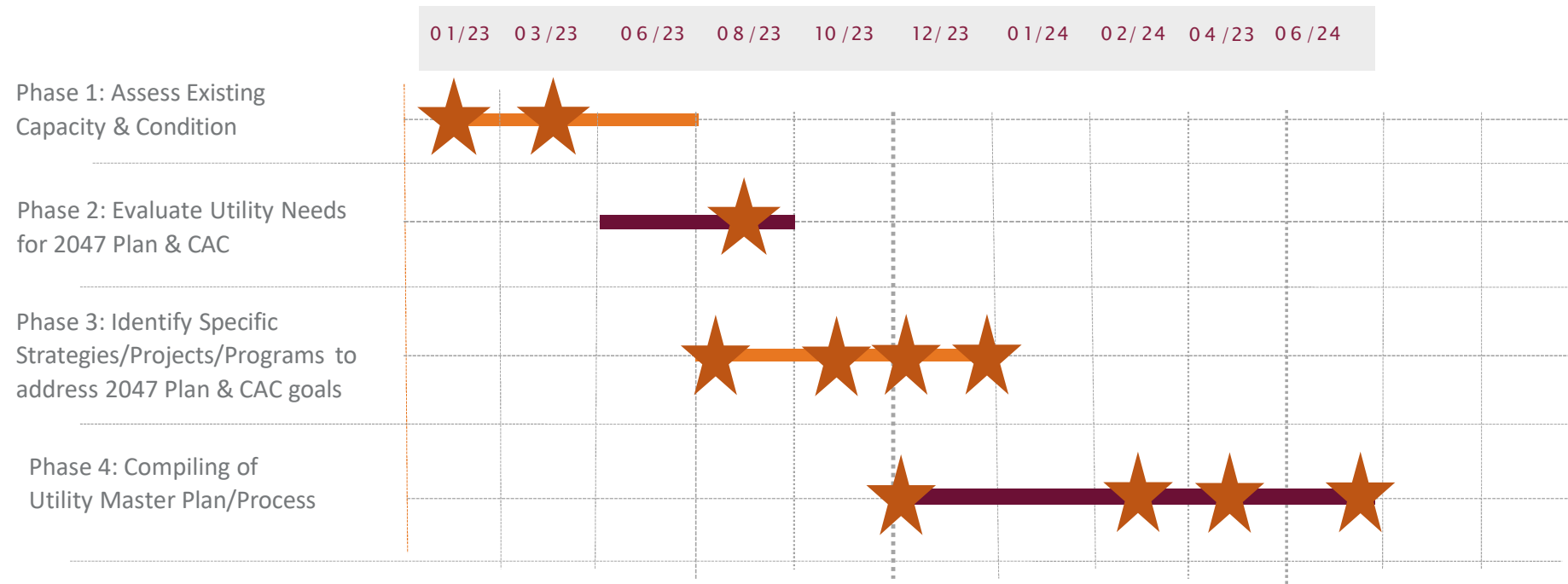
Project Task Dashboard



Phase 1: Field Investigation

UMP Progress Dashboard	Kick Off		Data Requests			Field Investigation	
Thermal Generation	100%	1	49%	19	17%	6	
Steam and Condensate Return	100%	1	33%	3	17%	6	
Chilled Water Distribution	100%	1	33%	3	17%	6	
Domestic Hot Water	100%	1	100%	1	N/A		
Electrical Distribution	100%	1	30%	10	20%	25	
Telecom OSP	100%	1	50%	2	0%	20	
Potable and Fire Protection	100%	1	25%	4	8%	24	
Sanitary Sewer	100%	1	33%	3	8%	24	
Stormwater	100%	1	33%	3	8%	24	

Project Outreach & Workshops



Tuesday May 2, 2023 – 8:30-12:00 PM Workshop: Aligning Master Plan with Campus Plan & CAC

2020 CAC GOALS

2006 = 316,000 tons CO₂

2019 = 228,512 T (28% reduction)

2025 = 205,660 T (48% reduction) Coal NG conversion

2030 = 159,000 T (50% reduction) Waste/Transport/land use

2030 = 44,744 T (86% reduction) 100% renewable electricity

2030 = 0 T (100% reduction) Carbon Offsets

HOW DO WE ACHIEVE THRU UTILITY MASTER PLAN?

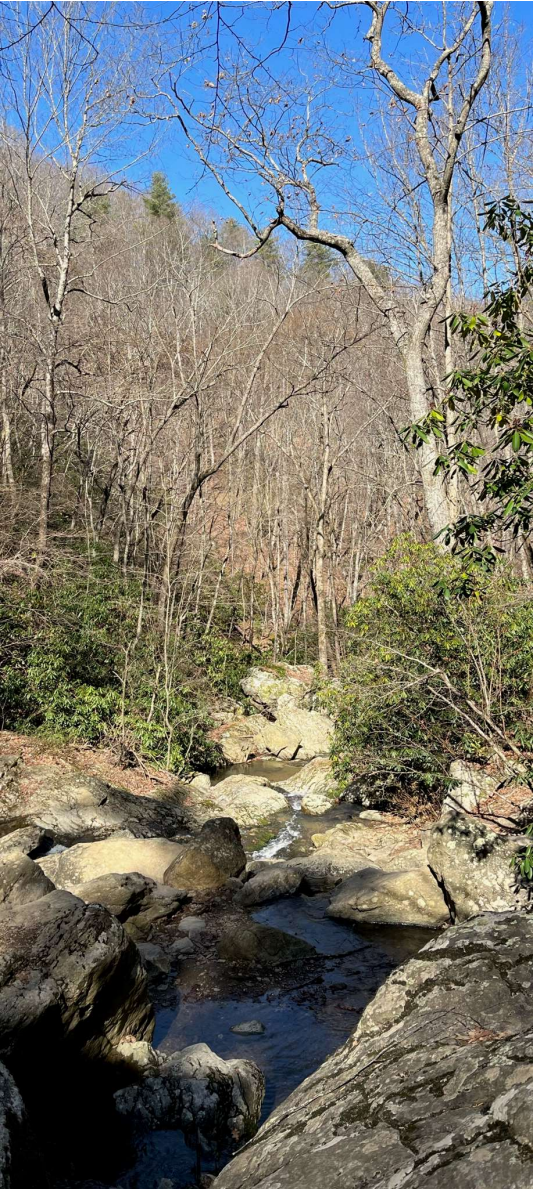
- 1 Status
- 2 Current Tasks
- 3 Upcoming Tasks
- 4 Schedule
- 5 CAC Engagement



Discussion or Questions

Matt Stolte, PE Director, Engineering Services

Virginia Tech | Campus Planning, Infrastructure, and Facilities
230 Sterrett Drive, Office 71B
Blacksburg, VA 24061
540-231-3939 (o) | mstolte@vt.edu



Agenda

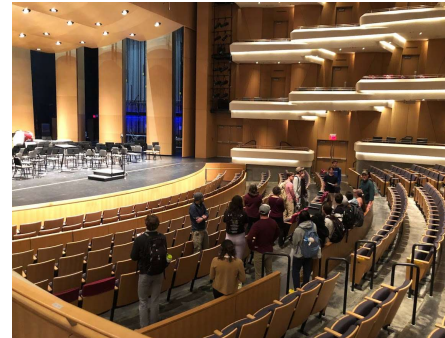
- Welcome, Opening Remarks, and Membership Updates
- Approval of Proposed Agenda (if a quorum is present)
- Meeting Minutes: Electronic Vote Results
- New Business
 - VT Utility Master Plan
 - **Earth Week 2023**
 - CAC Education Day, April 19th
- Announcements and Open Discussion

Earth Week – April 17-22

- Collaboratively planned week of events
 - Celebrate progress
 - Educate others
 - Engage peers and community
- Working in collaboration with:
 - 15 student groups
 - 12 campus units/depts
 - 5 community groups
- 20 events confirmed; 5-10 more events tentatively planned
 - Scaling back from previous years to allow for more meaningful and impactful events
- VT Bee Day – Monday, April 17
- CAC Day – Wednesday, April 19
- Earth Day and Arbor Day – Saturday, April 22
- All events found [here](#) (or google “VT Earth Week”)

April 2023

S	M	T	W	T	F	S
26	27	28	29	30	31	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	1	2	3	4	5	6



Pollinator Habitat Expansion at Hillcrest Hall

Monday, April 17 at 10:30 in the parking lot between Hillcrest and Wallace

Sustainable Fashion Show

Tuesday, April 18 from 7:00-9:00 PM, doors open 6:30 at Haymarket Theater in Squires

Bike to Work/School Day

Wednesday, April 19

Tour of the Old Growth Forest

Thursday, April 20 from 4:00-5:00 meeting in the parking lot in front of VT Engage office

Goodwin Waste Audit

Friday, April 21 at 1:30 at Goodwin Hall

Arbor Day Tree Planting

Saturday, April 22 from 10:00-12:00 meeting in the parking lot in front of VT Engage office



CAC Day – Wednesday, April 19

Squires Brush Mountain B

- **9:00-9:30** “What do you picture for Virginia Tech in 2050?” (Goal 15)
- **9:30-10:00** Carbon Neutrality and GHG Inventories (Goal 1)
- **10:30-11:30** Urban Forest Master Plan Feedback Session (Goal 6)
- **11:30-12:00** Climate Justice (Goal 11)
- **12:00-12:30** CALL (Goal 10)
- **12:30-1:00** Zero Waste (Goal 7)
- **1:00-1:30** Integrating Sustainability Principles into Campus Operations (Goal 13)
- **1:30-2:00** Sustainable Transportation (Goal 9)
- **2:00-2:30** Goals 2 and 14
- **2:30-3:00** Decarbonization of District Energy Systems (Goal 3)
- **3:00-3:30** The Impact of Energy Systems Optimization (Goal 4)
- **3:30-4:00** Carbon Neutrality and GHG Inventories (Goal 1)
- **4:00-4:30** Student Energy Value Action Gap (Goal 12)

A scenic view of a lake surrounded by lush green trees, with a white rectangular box in the center containing the word "Announcements" in blue text.

Announcements

Green Grads Pledges

- **Sign up deadline is Wednesday, May 10th**
- **Pledge information is being advertised on social media. Please spread the word!**

Graduating soon?

Pledge to support a
sustainable world
and receive a
FREE green cord

GREEN GRADS

Virginia Tech Office of Sustainability



tinyurl.com/greengrads



**Subcommittee
written reports
week of May 22nd**

- **April agenda is packed**
- **Written reports in lieu of a presentation**
- **CASE Team to provide campus progress on CAC goals**



Open Discussion

Next Meeting:

**April 24, 2023
2:00 p.m. via Zoom**

