



Utilities Master Plan Onsite Work



JANUARY 31, 2023

INN AT VIRGINIA TECH



Today's Onsite Project Meeting



- **Opening Remarks** - *Mary-Ann Ibeziako, AVP Infrastructure & Chief Sustainability Officer*
- **Utility Master Plan Phases** - *Matt Stolte, Engineering Services Director*
- **Project Team & Stakeholder Engagement** - *Matt Stolte*
- **Overview, Approach & Preliminary Schedule Updates** - *Mark Atkinson, Wiley & Wilson*
- **Next Steps - Questions & Answers** - *Matt Stolte*

UMP - Bridges 2047 Plan & CAC

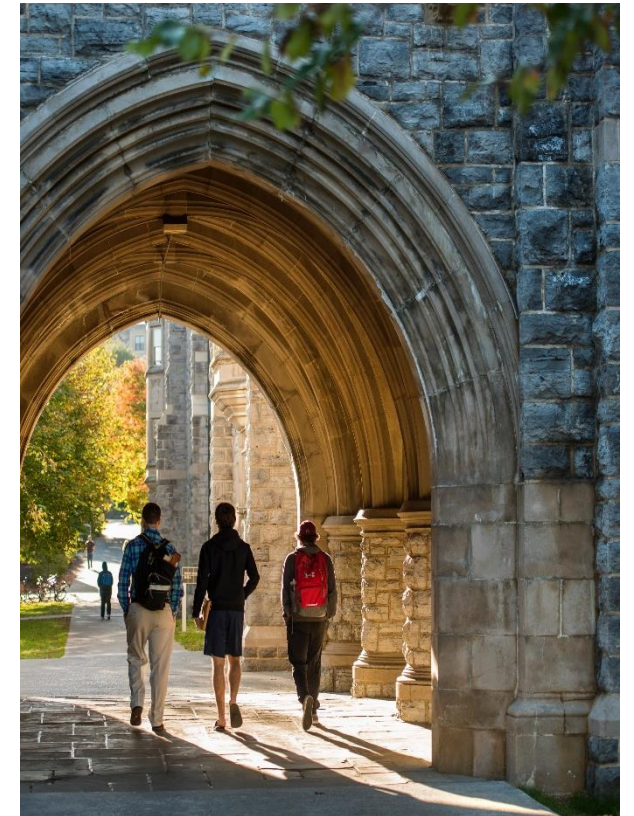


- *In 2018, Virginia Tech completed its most recent master planning effort resulting in ‘Beyond Boundaries 2047: The Campus Plan.’*
- *In 2020, Virginia Tech finalized its Climate Action Commitment, setting goals and Milestones thru 2050.*
- *The 2022 Utility Master Plan project will provide the Road Map to align campus wide utility systems with the Beyond Boundaries development plan and the CAC sustainability goals.*



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 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 CapCon 6yr, 10yr, and 2047 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
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- Communications
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Looking Ahead – Phase completion

- 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 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



Participation Request 18-24months

- *Engineering Services - manages project and Consultant for VT*
- *Three Groups of Stakeholder Varied Time Commitment*

Group -1 : Utility and Planning

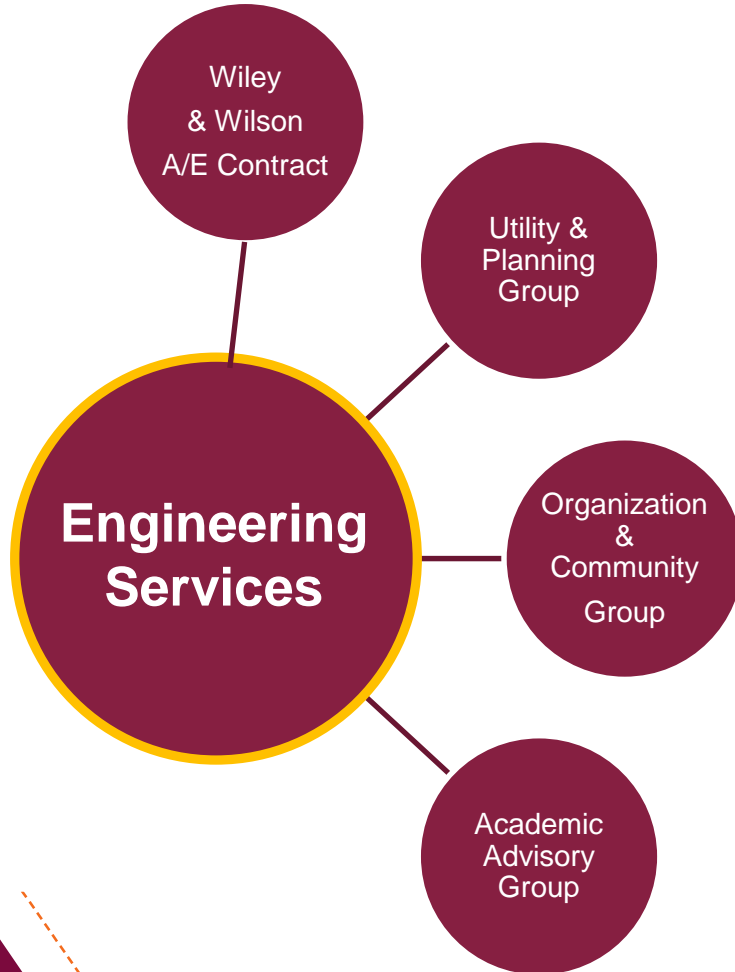
2-4 hours/week - Data collection and field presence
monthly one hour Stakeholder update - Teams/Zoom
3 to 4 - ½ day workshops

Group-2 & 3 : Organization/Community & Academic Advisory

A monthly one hour Stakeholder update - Teams/Zoom
3 to 4 - ½ day workshops

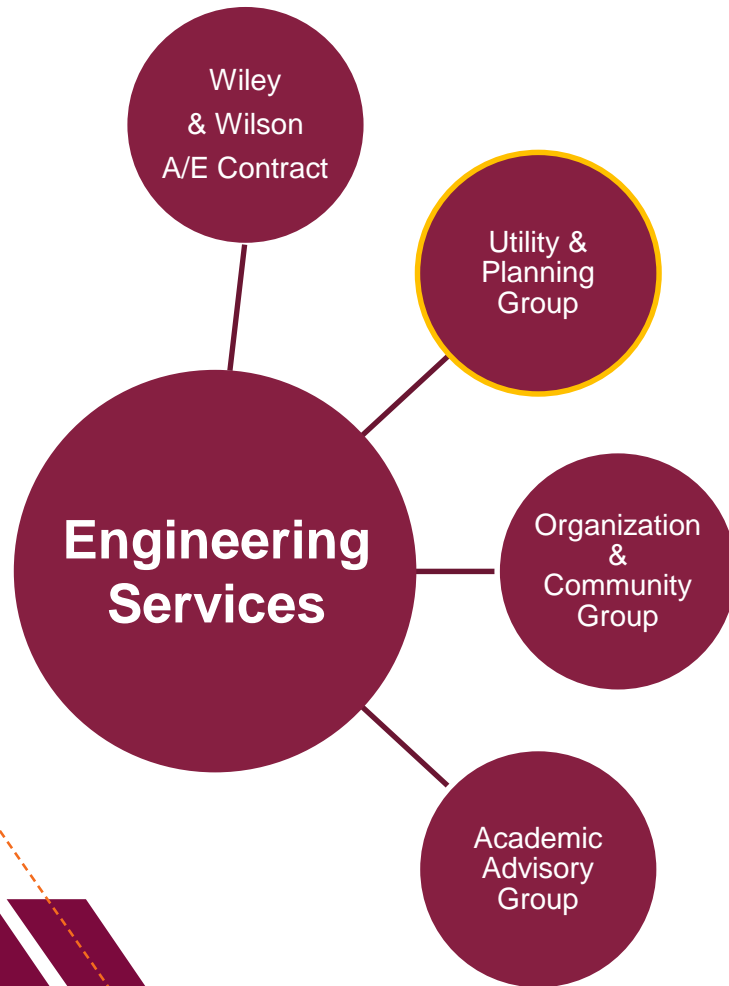


Engineering Services



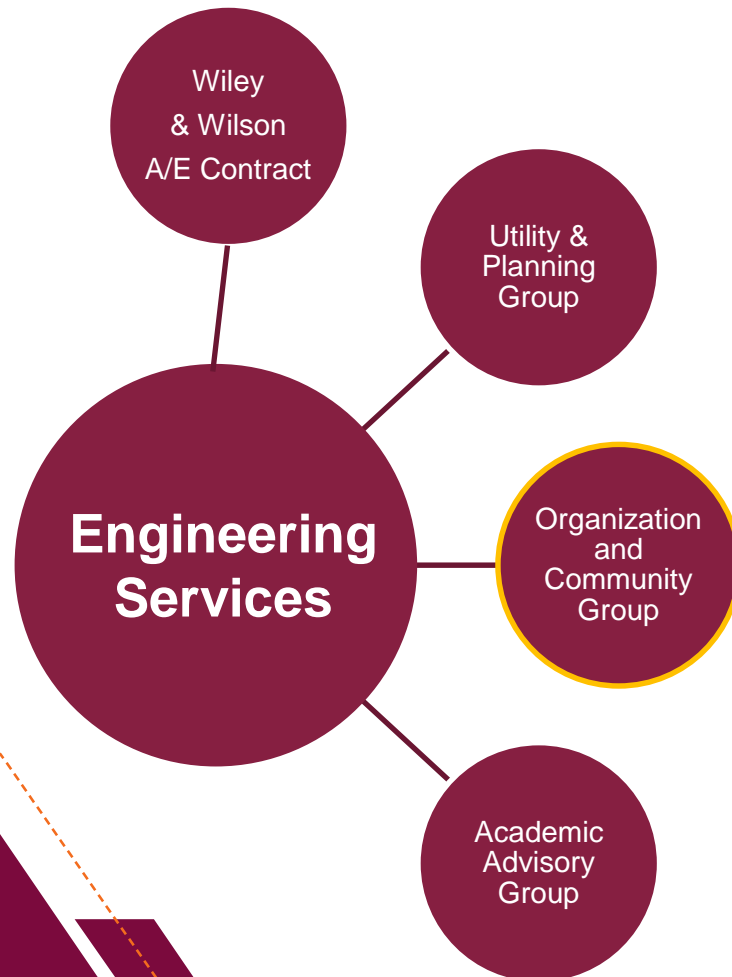
- *Project Owner - Mary-Ann Ibeziako*
- *Project Manager - Matt Stolte*
- *Project Sector Managers*
 - *Mechanical and Thermal Systems - Johnny Murray*
 - *Electrical Systems - Robert Bopp*
 - *Stormwater - Chuck Dietz*
 - *Telecom and Municipal Infrastructure - Mark Witt*
 - *Piping Infrastructure - Adam Krantz*
 - *Geographical Information Systems - Mike Ryba*
- *Consultant - Mark Atkinson, Wiley & Wilson*

Utilities & Planning



- *Utilities Director - Nam Nguyen*
- *Virginia Tech Electric Services - Scott Hebdon*
- *Buried Utilities - Bobby Polly*
- *Central Steam Plant - Todd Robertson*
- *Instrumentations Control and Metering - Jason Pearman*
- *Central Chillers Plant - Chris Tedder*
- *Network Infrastructure & Services - Ron Keller*
- *Campus Plan 2047 - Liza Morris*
- *Office of Energy Management - Stephen Durfee*
- *Sustainability - Nathan King*
- *Climate Action Commitment - Jack Leff*
- *Capital Construction - Paul Ely*
- *Operational Data Warehouse - Eli Meyer*

Organization & Community

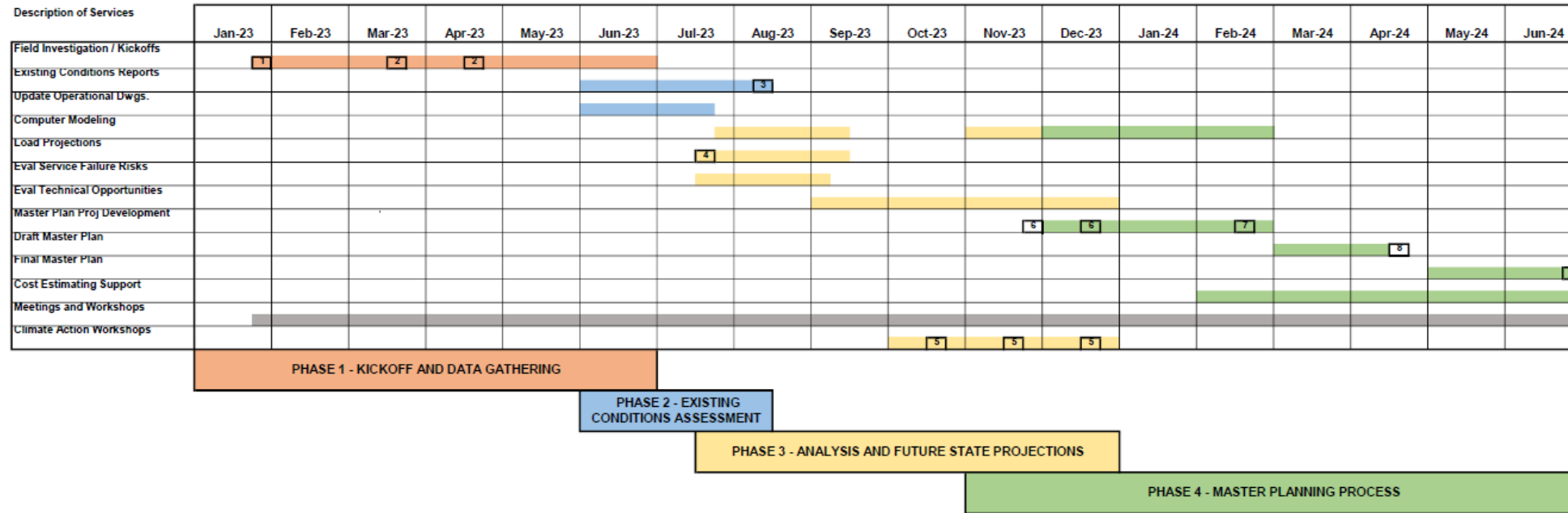


- *Facilities Operations - Wendy Halsey*
- *Facilities Operations - Anthony Watson*
- *Budget & Financial Planning - Travis Hundley*
- *Grounds - Matt Gart*
- *Grounds - Jamie King*
- *Analytics & Accountability - Gannon Davis*
- *Division of Student Affairs - Frances Keene, Ken Belcher*
- *Athletics - Tom Gabbard*
- *Research & Innovation - Laurel Miner*
- *Enterprise & Business Services - Lynsay Belshe*
- *Information Technology - Ken McCrery*
- *Real Estate - Heidi Myers*
- *College of Agriculture and Life Sciences - Patrick Hilt*
- *College of Engineering - Dr. Ed Nelson*
- *The Inn - Bob Muse*
- *Blacksburg Virginia Polytechnic Institute Sanitation Authority - Micheal Vaught*
- *New River Valley Water Authority - Caleb Taylor*
- *Communications & Media - Meghan Marsh*
- *Town of Blacksburg - Chris Lawrence*

UMP Phases & Schedule

Virginia Tech Utilities Master Plan - Preliminary Project Roadmap

Updated: January 31, 2023



1	Project Kickoff Meetings	Introductions, Logistics, and Planning
2	Existing Conditions Workshops	Interviews with Stakeholders to review existing conditions for the various utilities
3	30% Review Meeting	Review workshop to go over the Existing Conditions Report

4	Master Plan 2047 Review	Team briefing with the Office of University Planning
5	Climate Action Workshops	- Decarbonizing Workshop - Air Emissions Workshop - Measures of Success Workshop
6	Project Development Workshops	Collaboration with Stakeholders to help develop the slate of Master Plan projects

7	Concept Vetting Workshops	Review of draft projects with stakeholders to refine, accept, or reject proposed projects
8	90% Review Meeting	Review of the preliminary Master Plan documents and materials
9	100% Plan Presentation	Presentation of the final Plan to stakeholders and administration

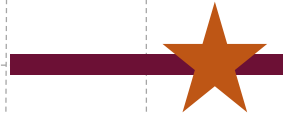
Project Outreach & Workshops

01/23 03/23 06/23 08/23 10/23 12/23 01/24 02/24 04/23 06/24

Phase 1: Assess Existing Capacity & Condition



Phase 2: Evaluate Utility Needs for 2047 Plan & CAC



Phase 3: Identify Specific Strategies/Projects/Programs to address 2047 Plan & CAC goals



Phase 4: Compiling of Utility Master Plan/Process



Project Communication



Utilities Master Plan



This Utilities Master Plan accompanies the efforts and resources that Virginia Tech has previously invested in to grow the influence of the university in a visionary and sustainable fashion.

Overview

In 2018, the university completed its most recent master planning effort resulting in Beyond Boundaries 2047: The Campus Plan. In 2020, the university finalized its Climate Action Commitment (CAC), setting goals and Milestones thru 2050. The 2022 Utility Master Plan project will provide the road map to align campus wide utility systems with the Beyond Boundaries development plan and the CAC sustainability goals.

GET MORE DETAILS ABOUT THE UTILITIES MASTER PLAN

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



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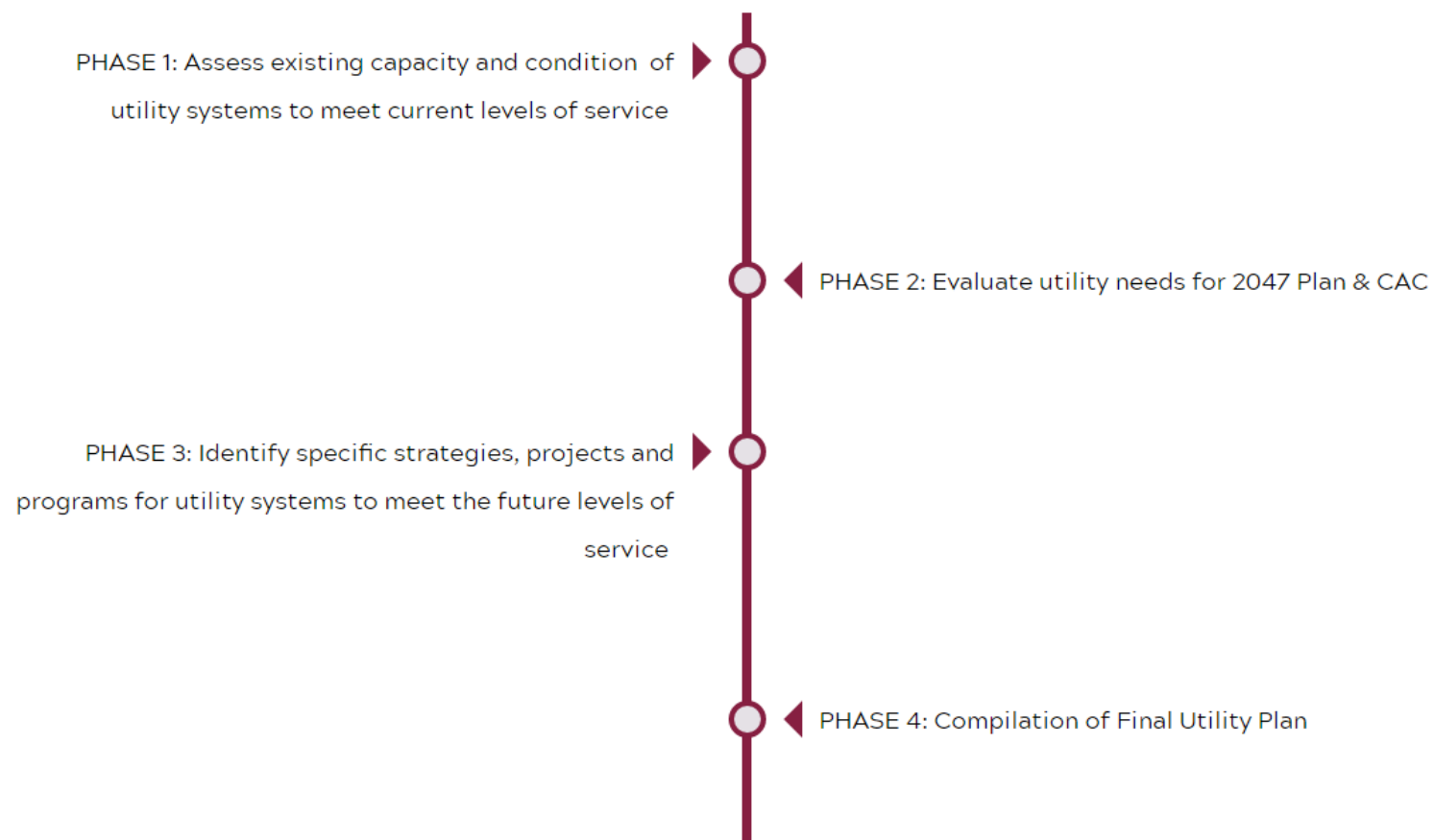
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Implementation



Stakeholders

Engineering Services acts as the project manager and consultant for Virginia Tech on this project. Other stakeholders make up several key groups:

Wiley & Wilson (A/E
Contract)

Utility and planning group

Organization and
community group

Academic advisory group

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

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Get In Touch!

Questions, comments, other feedback? Fill out the form below:

Full Name:

Email:

Question or comment

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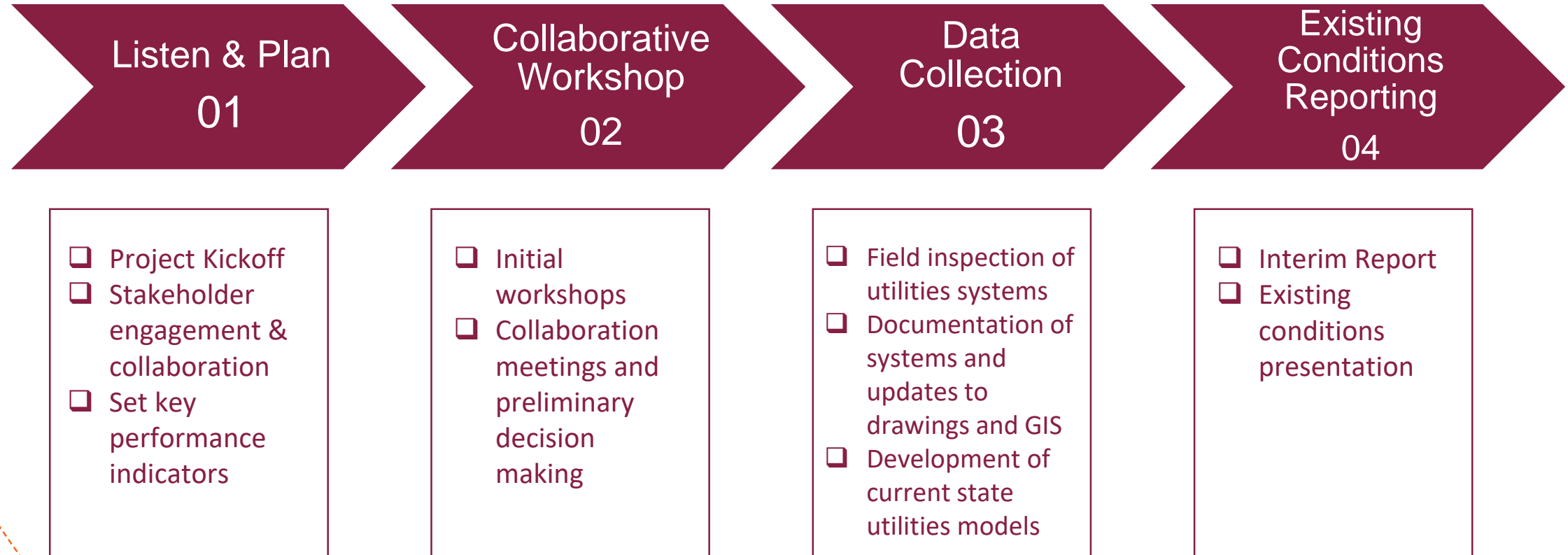
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<https://www.facilities.vt.edu/planning-documents/utilities-master-plan.html>

Approach & Updates

Approach



Approach



- ☐ University Master Plan Briefing
- ☐ University Metering and records, metric-based estimation
- ☐ Vet load assumptions

- ☐ Innovative technologies workshop
- ☐ Climate Action Commitment workshops

- ☐ Development of potential projects and implementation horizons
- ☐ Alternatives workshop to select potential UMP upgrades, project cost est.

- ☐ Detailed analysis and cost estimating development of project templates
- ☐ Final stakeholder workshops

- ☐ Final project definitions and cost opinions
- ☐ Graphically-driven core Master Plan
- ☐ Draft Report and Presentation
- ☐ Final Report and Presentation to Admin.

Tasks Accomplished Since Project Kickoff

- ✓ *Final Consultant Contract -December, 2022.*
- ✓ *Project Schedule Updated.*
- ✓ *Initiate Onsite project fieldwork.*
- ✓ *Project Website setup.*
- ✓ *Monthly Stakeholder meetings and workshops to be Scheduled in advance - Last Tuesdays of month.*
- ✓ *Mid-summer to fall 2023 field work phase-1 complete.*

Today's Workshop Agenda



A. Data Log Request clarification and status

B. Review Field Visit Requirements

- *Visit dates*
- *VT escort availability*
- *Utility/mechanical room and plant access*

Breakout Sessions 10:30 to 12:00



1. *Thermal/CHW/Steam Distribution & Generation - Smithfield room*
2. *Electrical Distribution - Draper's Meadow room*
3. *Telecom - New River room*
4. *Civil Utilities - Ellett Valley room*

Next Steps

Action Items Moving Forward

- *Workshop No. 1 Summarized and posted.*
- *Project Schedule Updates.*
- *Website content updated - dynamic site.*
- *Workshops to be scheduled.*
- *Stakeholder Zoom Meeting - Feb 28th, 10 AM.*
- *Ongoing field investigation and data collection.*
- *Schedule Phase-2: Planning & CAC Meetings.*

Discussion or Questions

Matt Stolte, PE Director, Engineering Services

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