Facilities Overview

Andy Wright
Director, Office of Facilities and Property Management (acting)

Kevin Gustin
CUP/USUR Program Manager

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
U.S. DEPARTMENT OF COMMERCE

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Agenda

1. FY 2026 Year in Review
2. Central Utility Plant (CUP) Modernization
3. Underground Site Utilities Replacement (USUR)



FY 2026 SCMMR Year in Review

Funding Available

FY 2026 Appropriation	$ 128.0 M
FY 2025 Carryover	$ 6.3 M
Prior Year recovery	$ 33.3 M
Total Available	$ 167.6 M

Expenditures

SCMMR Base *	$ 54.6 M
Executed Projects	$ 107.0 M

**SCMMR Base includes labor, operating expenses, maintenance and safety contracts, and contingencies.*

Executed Projects

Life Safety and Code Compliance	$ 3.6 M
HVAC Systems	$ 1.3 M
Core Utility Infrastructure	$ 26.1 M
Building Envelope, Structural & Elevators	$ 16.3 M
Other	$ 2.1 M
Central Utility Plant Modernization	$ 57.6 M

Program Overview

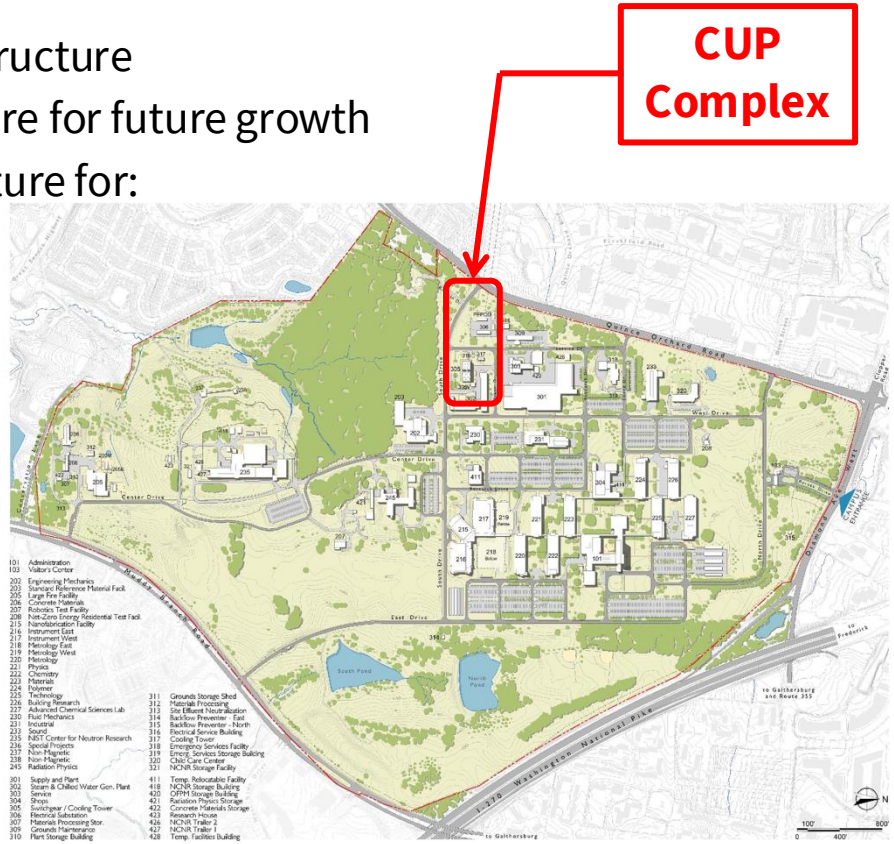
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The NIST Gaithersburg Campus Central Utility Plant Modernization & Utilities Site Replacement Program is comprised of two related projects:

1. Central Utility Plant Complex (CUP) Modernization
2. Underground Site Utilities Replacement (USUR)

Goals of the Program

1. Replace aging infrastructure
2. Optimize infrastructure for future growth
3. Modernize infrastructure for:
   - Maintainability
   - Sustainability
   - Resiliency



The "Challenge"

NIST needs to modernize the NIST Gaithersburg Central Utility Plant (CUP) and underground utilities to 1) provide a more reliable physical infrastructure ecosystem, and 2) to ensure that sustained utilities are provided to fulfill demands of the most advanced measurements required to drive the Administration's critical and emerging technology (CET) goals.

⚡ **Utility Demands for Critical & Emerging Technologies (CETs):** Legacy utility systems need to be updated to support the strict environmental controls (precise temperature stability to within 0.1°C, low vibration, and conditioned power) required for next-generation quantum and biotechnology research.

📉 **Addressing the Failing Utility Infrastructure (75% in Poor/Critical Condition):** Nearly 100 miles of aging underground piping causes increasingly frequent campus-wide utility outages, resulting in massive electricity and water waste, damaged equipment, and significant lost research time.

CUP Modernization

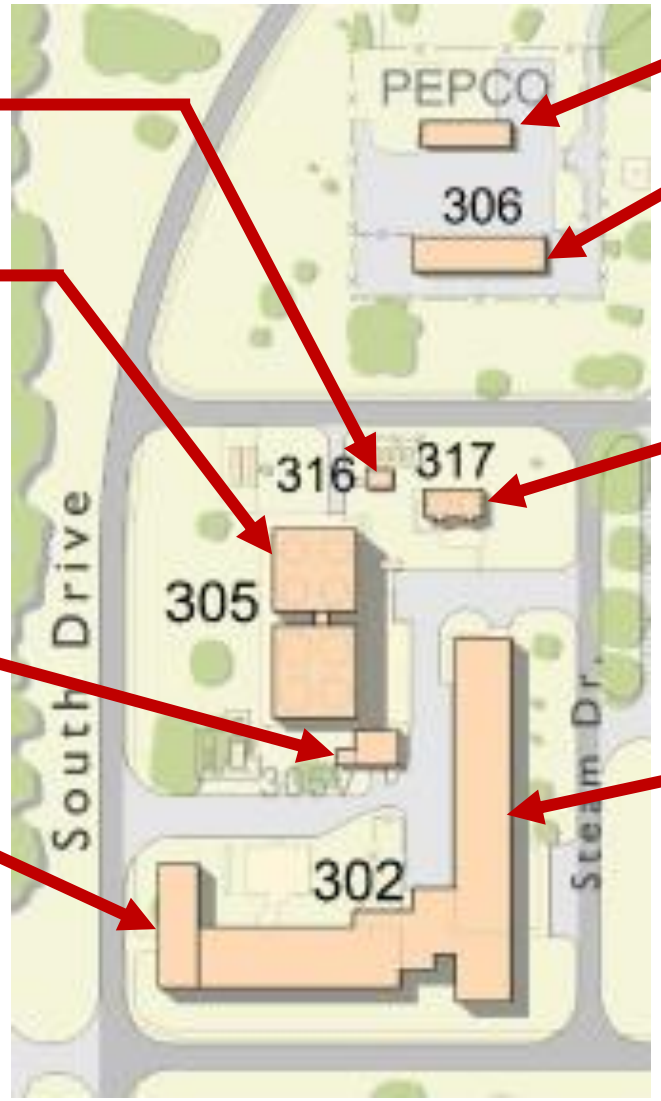
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B313 Cooling Tower 3
Electrical Service

B305 Cooling Towers 1 & 2:
- Chilled water system heat rejection

B305V Cooling Towers 1 & 2
Electrical Service

B302 Co-Generation Addition:
- Produces 10 MW of electricity
- Produces up to 40% of campus peak steam demand



Pepco Transformers

B306 Substation:
- Transforms incoming power to 13.4-kV for distribution

B317 Cooling Tower 3:
- Chilled water system heat rejection
- Chilled water "free-cooling"

B302 Chilled Water & Steam Generating Plant:
- Produces chilled water for cooling
- Produces steam for heating, hot water, & humidification

CUP Modernization

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Goals:

1. **Maintain campus operation during construction**
   - Phased Construction
2. **Mitigate the risk of variable funding**
   - Task Order Contract Structure
3. **Implement design principles to reduce operational costs**
4. **Resiliency – Provide full N+1 redundancy**
   - Interconnect cooling towers
   - Peak steam generation on both fuels
5. **Improve reliability, operation, and maintenance of systems**
   - Proven modern equipment with improved efficiency
   - New automated controls
6. **Provide a path forward for campus growth**
   - Address immediate needs in Phase 1
   - Address 20-year needs in Phase 2
   - Cognizant of 30+ year needs in Phase 3
7. **Improve operator facilities**
   - Design to current codes
   - Spare parts storage
   - “Command Center” for campus monitoring

Cost:

1. **Phase 1:** $375 M
2. **Phase 2:** $325 M

Status

1. **Single Award Task Order Contract**
   - Awarded 09/17/2026
   - $600 M Capacity
   - Design-build delivery method

2. **Task Order 01**
   - Awarded 09/21/2026
   - Complete Phase 1 design
   - First construction sub-phase focus on steam generation
   - Field investigation and existing condition verification started 10/20/2026

Underground Site Utilities Replacement

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Underground Site Utilities include:

- Chilled Water Supply & Return (~7 miles)
- 150 psi Steam & Pumped Condensate (~6.5 miles)
- Electrical Duct Bank (~17.6 miles)
  - 13.4-kV Power Distribution
- Telecommunication Duct Bank
  - Fiber
    1. Data
    2. Fire alarms
    3. Physical Access Control System
    4. Building level HVAC controls
  - Analog Voice

➢ Natural Gas (~4 miles)

1. Laboratory use
2. Back-up power generators
3. Vehicle fueling

➢ Water (~8 miles)

➢ Sanitary Sewer (~6 miles)

➢ Storm Drain (~6 miles)

Underground Site Utilities Replacement

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Goals:

1. **Maintain campus operation during construction**
   - Phased Construction
2. **Mitigate the risk of variable funding**
   - Task Order Contract Structure
3. **Provide a reliable network pathway (pipe/tube/conduit) for utilities**
   - Replace failing pathways
4. **Set the campus up for 30+ year planned expansion**
   - Sized for growth via the 2018 Masterplan
5. **Improve maintainability**
   - Add leak detection systems
   - Select right material for longevity & application
6. **Improve resiliency of utility delivery**
   - Loop steam piping network
   - Add additional chilled water piping network loops
   - Add sectionalized isolation valves to minimize disruptions during maintenance

Cost: Estimated $1.1 B

Status:

1. **Multiple Award Task Order Contract**
   - Planned for FY 2028 Q3 Award
   - Design-Build Delivery Method based on bridging documents

1. **Bridging documents completion in FY 2027**

Questions?



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