

UTILITIES ELEMENT

NOTE: Unless otherwise noted, the goals, objectives, and policies contained in this element shall guide development of the Tallahassee Campus and Southwest Campus in Tallahassee as well as the Panama City Campus in Panama City, Florida. This Campus Master Plan covers a ten-year horizon, beginning January 1, 2020 until December 31, 2029. Sustainable policies are designated with *italicized bold green font* with sustainability goal category in parentheses. The four sustainability goal categories are: Climate Action; Waste Minimization; Resource Stewardship; and Education for Sustainability. For more information on sustainability goals, see the Introduction Tab of this Volume.

STEAM AND CHILLED WATER SUB-ELEMENT

Goal 1

To provide heating, ventilation, and air conditioning to meet the future needs of the University.

Objective 1A

Improve the efficiency and performance of the chilled water system to achieve energy savings.

Policy 1A-1 (Climate Action)

Continue to monitor improved scheduling of building HVAC operations to reduce chilled water waste during periods when buildings are not in use.

Policy 1A-2 (Climate Action)

Continue to monitor control system technology and modify standard control requirements for buildings and HVAC system types including sequences of operations and typical control points.

Policy 1A-3

Continue to document the status of existing chillers, pumps, and piping systems. Continuously evaluate present condition, required repairs and maintenance, operating costs and anticipated remaining life, and evaluate scenarios for supporting proposed expansion.

Policy 1A-4

Pursue potential chiller automation project in the Central Plant to promote efficiency.

Policy 1A-5

Pursue thermal storage to reduce electrical demand during peak hours, achieving cost savings and improving reliability/redundancy.

Objective 1B

Ensure adequate chilled water production and distribution capacity to meet the future growth of the University.

Policy 1B-1

Update the chilled water system load analysis and the distribution system load map/analysis at least yearly. The analysis will include all existing facilities and all future development plans.

Policy 1B-2

Maintain a level of service at the central plant and both satellite plants for chilled water supply of 3.75 tons per 1,000 net square feet. This capacity will be available with one chiller on standby in each chilled water production facility.

Policy 1B-3

Update chilled water utility maps on a continuing basis to incorporate new construction. Copies of current maps are available from the Campus Utilities Section in the Facilities Department.

Policy 1B-4

Develop new GIS-based map of the chilled water system to aid and expedite maintenance, construction, planning, and recordkeeping.

Objective 1C

Continue to improve the efficiency and performance of the steam system.

Policy 1C-1 (Climate Action)

Continue to inspect all heat exchangers at least twice a year to ensure that hard water is not entering the steam condensate system.

Policy 1C-2 (Climate Action)

Continue to develop and implement improved scheduling of building HVAC operations to reduce steam waste during periods when buildings are not in use.

Policy 1C-3 (Climate Action)

Continue to optimize the steam system pressure to reduce thermal losses during periods of low demand.

Policy 1C-4

Explore the possibility of hot water loops in place of steam infrastructure on renovations or new construction in order to increase HVAC efficiency and reduce thermal losses.

Objective 1D

Ensure adequate steam production and distribution capacity to meet future needs of the University.

Policy 1D-1

Expand steam or hot water distribution piping to provide for future growth into the areas of planned new construction. Coordinate timing with development planning of new areas.

Policy 1D-2

Update the steam distribution maps and flow analysis at least yearly to verify adequacy of steam distribution capacity.

Policy 1D-3

Maintain a level of service at the central plant of 55 pounds per hour of steam per 1,000 net square feet. This capacity will be available with one boiler on standby.

Policy 1D-4

Update steam utility maps on a continuing basis to incorporate new construction. Copies of current maps are available from the Campus Utilities Section in the Facilities Department.

Policy 1D-5

Explore the possibility of hot water loops in place of steam infrastructure on renovations or new construction in order to increase HVAC efficiency and reduce thermal losses.

Policy 1D-6

Coordinate with Design and Construction to ensure chilled water and steam capacity and load analysis is conducted in relation to current infrastructure during project development for renovations and new construction.

Policy 1D-7

Develop new GIS-based map of the steam system to aid and expedite maintenance, construction, planning, and recordkeeping.

Objective 1E

Improve overall plant operations and efficiencies through trainings, asset management, and technological updates.

Policy 1E-1

Implement digital mobile data collection for plant operations and maintenance staff to enable automated recordkeeping and to facilitate required environmental reporting.

Policy 1E-2

Continuously maintain or exceed industry standard Building Automation System technologies to improve controls and monitoring in the utility plants to increase plant efficiencies.

Policy 1E-3

Implement additional training programs for plant operations and maintenance staff to increase familiarity with the plant and provide greater knowledge regarding plant efficiencies.

Policy 1E-4

Track and maintain plant assets, preventative maintenance, and maintenance actions and scheduling in an Integrated Workplace Management System.

Policy 1E-5

Implement a sensor maintenance and calibration program in the plants and associated distribution systems.

Policy 1E-6

Pursue Fault Detection and Diagnostics to identify maintenance issues in advance, help to troubleshoot, and improve overall plant performance.

ELECTRICAL POWER AND OTHER FUELS SUB-ELEMENT

Goal 2

To provide adequate and safe electric facilities and service to support the mission of the University.

Objective 2A

To improve the efficiency and performance, reduce system losses of electric distribution system, and to ensure adequate electric distribution capacity and space to meet the future needs of the University.

Policy 2A-1

Continue to provide projected electric load data to the local electrical providers in Tallahassee and Panama City at least every three years or when significant changes develop.

Policy 2A-2

The University shall provide and maintain electrical distribution circuits from the Woodward Avenue Substation in the center of the campus to handle the additional loads for the projected expansions in those areas.

Policy 2A-3

The University shall maintain an up-to-date electrical riser diagram of the campus.

Policy 2A-4

The University shall provide underground electrical distribution required to accommodate the proposed expansion projects.

Policy 2A-5

The University will continue to provide redundant electrical service to all new buildings by creating loop feeds.

Policy 2A-6

As new facilities are developed, coordinate conduit and cable routing with routes for mechanical system piping in order to create orderly utility corridors.

Policy 2A-7

The University shall continue to maintain a level of service in the main transformers and distribution system to provide 3 KW per 1,000 gross square feet.

Policy 2A-8

Update the utility policies and project development manual for architects, engineers, and FSU personnel.

Policy 2A-9

Coordinate with City of Tallahassee to upgrade Woodward Substation.

Policy 2A-10

Coordinate with Design and Construction to ensure capacity and load analysis is conducted in relation to current infrastructure during project development for renovations and new construction.

Policy 2A-11

Coordinate with City of Tallahassee to design and build a new FSU substation to increase reliability and redundancy for existing structures and ensure adequate capacity for future campus growth. University property adjacent to Regional Stormwater Facility and Warehouses has been selected.

Policy 2A-12

Update electrical utility maps (AutoCAD and GIS) on a continuing basis to incorporate new construction. Copies of current maps are available from the Central Utilities and Engineering Services Section in the Facilities Department.

Policy 2A-13

Develop new GIS-based map of the electrical distribution system to aid and expedite maintenance, construction, planning, and recordkeeping.

Objective 2B

Improve maintenance and safety procedures relating to the electric distribution systems.

Policy 2B-1

Update and expand the preventative maintenance program to inspect the 15 KV equipment (i.e., substation, switches, and transformers) on an annual basis.

Policy 2B-2

Continue to study the electrical distribution system every five years to determine if the circuits are evenly balanced.

Policy 2B-3

Annually review and update all existing safety and training programs.

Policy 2B-4

Pursue SKM modeling where applicable. A list of selected locations is housed in the FSU Facilities Electrical Engineering department.

Policy 2B-5

Conduct campus Electrical Safety Study.

Objective 2C

Establish design standards and operations programs to improve conservation of energy.

Policy 2C-1 (Climate Action)

Pursue state energy office grants to assist in the upgrading of equipment and studying of procedures to save energy.

Policy 2C-2 (Climate Action)

Expand, enhance, and promote existing administrative and operational procedures to conserve energy and minimize future demand, under the leadership of the Central Utilities and Engineering Services Section in the Facilities Department.

TELECOMMUNICATIONS SYSTEMS SUB-ELEMENT

Goal 3

To support the mission of the University by providing Voice, Data, Video, and Wireless services via campus wide infrastructure that will be reliable, flexible, expandable and sustainable.

Objective 3A

Expand and enhance the campus infrastructure to match University growth, allowing seamless communications and networking to all areas of future University expansion, to maintain a continuous improvement of service and sustainability to the University community as a whole.

Policy 3A-1

Maintain relationships between the Facilities Department and Information Technology Services (ITS) so that internal building wiring (voice, data, video and wireless), networking infrastructure and inter-building cabling infrastructure is considered when new buildings are constructed or renovated. Include input from ITS in the programming and planning of appropriate major and minor new construction, renovation, and remodeling projects.

Policy 3A-2

Develop policies and procedures regarding continued expansion of underground conduit and distribution systems, commonly referred to as Outside Plant (OSP). If the policy requires purchasing existing conduit systems or installation of new infrastructure, determine funding sources. The Plan will be amended to reflect the results of the Campus Master Plan and other studies that may be done.

Policy 3A-3

Continue to develop new methods that will allow new products and services in the areas of voice, video, data, wireless and networking services to the campus.

Policy 3A-4

Maintain the current Main Campus Telecommunications Map including duct banks and maintenance hole infrastructure and determine any impact on OSP requirements as well as the impact and expansion capabilities to remote properties.

Policy 3A-5

Consider developing of a 10 Year Master Networking Plan for networking technologies. This could include building infrastructure, national network connectivity, equipment replacement cycles, strategic locations where wireless equipment would be placed to provide excellent coverage to our growing customer base.

Objective 3B

Investigate developing a 10 Year Master Plan for Telecommunications covering voice services, networking services, Outside Plant Infrastructure and system capability.

Policy 3B-1

Annually review voice, video, data and wireless technologies and infrastructure to identify those aspects that are in demand or may have changed. Following such review(s) identify funding priorities.

Policy 3B-2

Annually review the 10 Year Master Plan for Telecommunications to determine if new services, properties or technologies have changed and should be revised.

Policy 3B-3

Assure that the expanding Southwest Campus and FSU facilities located within Innovation Park are included in all master planning documents and long-range planning activities for Telecommunications and Networking infrastructure. This would include establishing a centralized utilities corridor alongside other campus utilities (where applicable) for placing underground infrastructure.

Policy 3B-4

Continue to identify resources and establish a reserve within FSU to allow maximum flexibility and sustainability concerning the implementation of Master plans for Telecommunications.

Policy 3B-5

Continue to identify funding to reach new or existing campus facilities with FSU fiber optic network cabling outside the current boundaries of the main campus.

Objective 3C

Upgrade and/or replace the telecommunications infrastructure across the University.

Policy 3C-1

Continue to have the Florida State University Telecommunications Infrastructure Standard or any subsequent revision as a mandatory minimum requirement for all new construction and renovation projects.

Policy 3C-2

Continue to review, on a yearly basis, the existing infrastructure and how it can be improved by means of developing a scope of work and the priority order in which the improvements should be scheduled. This would be accomplished by following the Master Plan for Telecommunications as outlined in Policies 3B-1, 3B-2, and 3B-3.

Policy 3C-3

The University shall implement telecommunications system improvements as identified in the Master Plan for Telecommunications of the University. The timing and phasing requirements and priorities for these improvements are established in the Capital Improvements Element