MASTER PLAN

UTILITIES ELEMENT

STEAM (HEATING WATER) & CHILLED WATER SUB-ELEMENT

<u>Goal 1</u>

To provide heating water and chilled water to satisfy the building demands to support the mission of the University.

Objective 1A

To build a new central utility plant at the new site west of the College Avenue for the proposed new buildings at the new site. For the existing buildings and new buildings at the BCC site, utilize the existing chiller plant at the BCC site to maintain existing levels of chilled water service within existing campus buildings and ensure that new buildings meet levels of service (temperatures, humidity, ventilation, etc.) required by the Board of Trustees and appropriate codes and standards as well as undertake periodic readings to verify adequate levels of heating and chilled water service.

Policy 1A-1

For each new building project review the program documents for reference to the State University System Professional Services Guide, FAU Cost Containment Guidelines. These documents set minimum levels of service for building HVAC system design parameters. These requirements should be reviewed with the Design Professional at the start of each design project and, following the review procedures in the Cost Containment Guidelines, should be checked/reviewed during the design process.

Policy 1A-2

For each building renovation, include a review of existing systems to determine if the level of service provided meets the minimum levels of service required in the State University System Professional Services Guide and FAU Cost Containment Guidelines.

Policy 1A-3

FAU shall establish and adopt a level of service standard for hot water supply which provides and maintains a minimum of 210 degrees hot water supply temperature to meet building heating demands.

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Policy 1A-4

FAU shall establish and adopt a level of service standard for chilled water supply which provides and maintains a maximum of 45 degrees chilled water supply temperature to meet building cooling demands.

Objective 1B

Ensure provision of future heating water and chilled water capacity to campus and undertake periodic meter date readings (every 6 months) to verify adequate levels of heating and chilled water service.

Policy 1B-l

Build a new utility plant at the new site concurrently with a new building at the site. The timing and phasing requirements and priorities for the provision of a new utility plant or plants should be established in the Capital Improvements Element.

Policy 1B-2

As buildings are added to the campus, increase capacity of the central chiller plant.

Policy 1B-3

Provide primary and secondary chilled water and hot water loops at the new site. Provide each new building with flow meters in the chilled water and heating water service piping. Meters shall be connected to the central control system.

Policy 1-B4

Acquire control software to read and present meter data in a usable format.

Policy 1-B5

Perform periodic inspections of water quality and internal pipe conditions.

Objective 1C

Ensure the provision of future heating water capacity.

Policy 1C-1

Study system capacity when purchasing heating water boilers for the new site.

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Policy 1C-2

After adoption of the campus master plan maintain the liaison with the local gas/oil providers.

Policy 1C-3

Every 5 years, review the master plan with the gas/oil providers to discuss effects of campus growth on fuel supply for heating water systems.

Policy 1C-4

For the existing buildings and the future new buildings at the BCC site, maintain and provide electric heating system for the buildings.

Objective 1D

Ensure the provision of future chilled water capacity.

Policy 1F-1

Study system capacity when purchasing new chillers for the new site. Provide a chilled water distribution system to accommodate future expansion.

MASTER PLAN

ELECTRICAL POWER & OTHER FUELS SUB-ELEMENT

<u>Goal 2</u>

To accommodate existing and future FAU needs for electric power and infrastructure.

Objective 2A

Maintain existing levels of electrical service within existing campus buildings and ensure that new buildings meet levels of service and infrastructure required by the Board of Regents and appropriate codes and standards.

Policy 2A-1

For each new building project review the program documents for reference to the Florida Atlantic University Professional Services Guide and FAU Cost Containment. These documents set minimum levels of service and infrastructure for electrical system design. These requirements should be reviewed with the Design Professional at the start of each design project and, following the review procedures in the Cost Containment Guidelines, should be checked/reviewed during the design process.

Policy 2A-2

For each building renovation, include a review of existing systems to determine if the level of service provided meets the minimum levels of service required in the Florida Atlantic University Professional Services Guide and FAU Cost Containment Guidelines.

Policy 2A-3

Upon adoption of the final master plan FAU shall establish agreements for easement planning with FPL to efficiently and economically distribute power throughout the campus. Service routing of FPL easements shall be coordinated with local phone/data line service, and cable TV providers, as well as with the master plan to minimize the amount of easements required. The infrastructure requirements shall be agreed upon and placed underground with each project to accommodate any future facilities on campus. This infrastructure shall also accommodate redundant power delivery means throughout the site in the form of the installation of spare conduits to eliminate the need for future site disturbance if any portion of the system should fail.

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Policy 2A-4

For each new building a separate service from FPL pad mounted transformers shall be provided. These are to be separately metered by FPL as well as by an (<u>FAU preferred brand</u> EMON PROMON) meter with Ethernet connectivity.

Objective 2B

Plan to provide alternate fuels for facilities as required.

Policy 2B-1

FAU to adopt a selection of standard fuel types with which to provide and maintain as an appropriate supply to campus buildings for emergency power, heating, and other uses. The standard shall consider the service history of fuel and its suppliers. The standard shall consider power conditioning and UPS requirements for lab and computer lab spaces and emergency power for exit lighting and building evacuation. The service standard shall consider the need for supplemental power supplies and fuel storage for long-term emergency situations (such as hurricanes). The service standard shall also evaluate in-place preventive maintenance procedures and maintenance capability. Reference Objective 1C.

Policy 2B-2

As new buildings are added each shall be evaluated for its emergency power requirements and provided with stand alone generators which provide power for these systems as required.

MASTER PLAN

TELECOMMUNICATIONS SYSTEMS SUB-ELEMENT

Goal 3

To provide telecommunications, video, wireless, and data systems throughout the Campus, in accordance with the latest FAU Information Resource Management Communication Infrastructure Specifications.

Objective 3A

Maintain existing levels of service within existing campus buildings and ensure that new buildings meet levels of service required by the Board of Trustees and appropriate codes and standards.

Policy 3A-1

For each new building project review the program documents for reference to the State University System Professional Services Guide, FAU Cost Containment Guidelines, and FAU IRM Communications Infrastructure Specifications. These documents set minimum levels of service for building communication system design parameters. These requirements should be reviewed with the Design Professional at the start of each design project and, following the review procedures, should be checked/reviewed during the design process.

Policy 3A-2

For each building renovation, include a review of existing systems to determine if the level of service provided meets the minimum levels of service required in the State University System Professional Services Guide, FAU Cost Containment Guidelines, and FAU IRM Communications Infrastructure Specifications. If the existing system does not provide this level of service, determine if upgrading the system will be cost effective and worthwhile.

Policy 3A-3

FAU shall develop and maintain a liaison with the local phone/data line service and cable TV providers to coordinate easements and service routing with FPL easements and master plan.

Policy 3A-4

The new services shall originate in a IRM room, size requirements to be greater than the minimum FAU IRM Department specifications, to be built within or adjacent to the first facility on the west side of College Ave. These services shall all be routed underground and

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be provided with spare capacity to provide for future expansion within the master plan as well as provide spare inner ducts for pulling of new services without site disturbance if a failure is experienced.

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