FLORIDA ATLANTIC UNIVERSITY
Board of Trustees

Item: v.

Monday, September 30, 2024

SUBJECT: Development of a Water-Cooled Chiller Plant on the Boca Raton Campus

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PROPOSED COMMITTEE ACTION

Recommend approval of the development of a water-cooled chiller plant on the Boca Raton Campus by the FAU Finance Corporation.

BACKGROUND INFORMATION

On January 30th, 2024, the Board of Trustees approved the resolution issuing debt for construction of new 670 bed student housing facility on the Boca Raton Campus (Housing Phase I) by and through the FAU Finance Corporation, a direct-support organization (DSO) of the University (FAUFC). This project is planned to be the first phase of a three-phase residential development on the east side of the campus. As part of the initial program verification and site analysis for the project the design team evaluated the options of an air-cooled system against a central water-cooled system to maximize the efficiency, reduce operating costs and provide redundancy for this project and future facilities. A life cycle analysis of the various systems was conducted, and it was confirmed that investment in a central plant to service this project as well as other existing housing facilities and future projects would be a better approach.

The proposed new plant will be designed and constructed as part of the Housing Phase I project and will accommodate the infrastructure and bays to expand the plant with additional chillers to tie in other buildings. The initial investment of $6.5 million will include the design fees and construction cost for a 2,300 sq. ft. building to accommodate a full plant buildout to support 2,400-ton cooling, initial 600-ton chiller and cooling tower and necessary infrastructure for chilled water lines and power connection for immediate support of Phase I and future capacity for future phases.

In addition to providing cooling for Phase I, the 600-ton chiller, will have adequate capacity for “tie-in” of University Village Apartments. This facility is currently supported by air cooled chillers that are near end of life and need replacement within the next few years. Additionally, the connection to this plant will offer FAU the opportunity to remove UVA from overhead FPL connection and connect to FAU main electric feeders to support the complex.

In total, the life cycle cost analysis as calculated over a 25-year period will result in savings, including the interest earned on same, at approximately $12.4M. The $1.5 budget allocated for the air-cooled chiller as part of the Housing Phase I project will be directed to the central energy plant and the additional capital will be sourced from FAUFC operating reserves.

This project was approved by the FAUFC on September 19, 2024. Pursuant to University Regulation 6.013, any purchase of goods and services, acquisition of real property, and/or construction or renovation of facilities by a DSO in excess of one million dollars requires the approval of the Board of Trustees.

FISCAL IMPLICATIONS

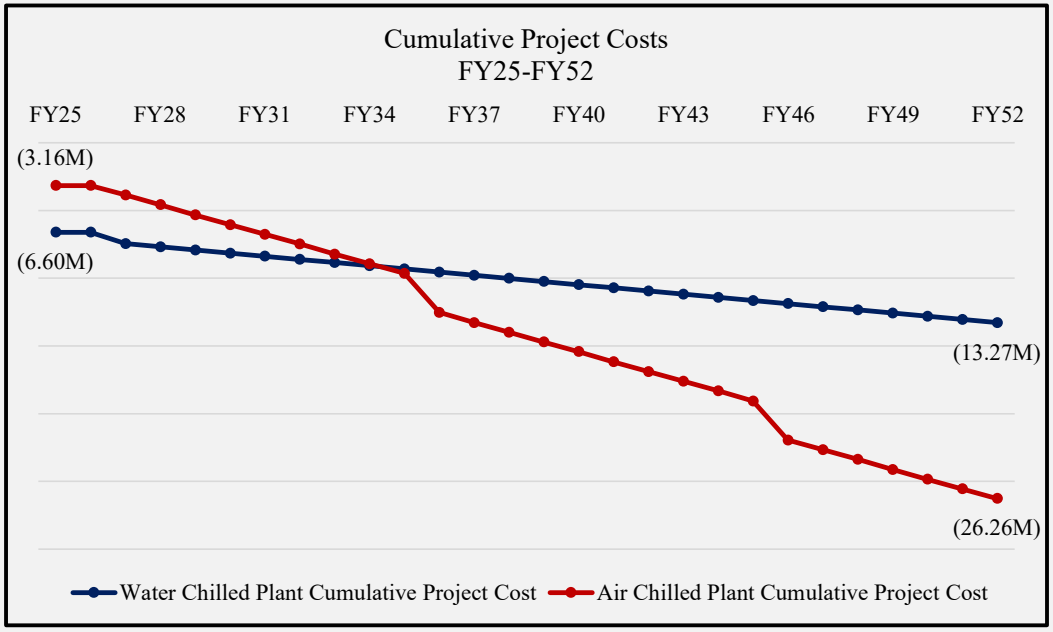
The cost to construct the central water-cooled plant is $6.5 million.

Supporting Documentation Included

Presented by: Dr. Larry Faerman, Vice President of Student Affairs
Mr. Jayson Iroff, Vice President Financial Affairs and CFO

FAUFC CHILLER PLANT ANALYSIS

Metric	Water Chilled Plant	Air Chilled Plant
Year 0 Project Cost	(6,602,900)	(3,155,000)
Year 1-27 Total project Cost	(6,670,549)	(23,101,148)
Additional Investment Income	0	561,403
Project Cost	(13,273,449)	(25,694,745)
Project Savings	12,421,296	0



Notes

Phase 1 & UVA Connection:
•Analysis focuses on Phase 1 and the UVA connection.

Investment Timeline:
•Initial investment in FY25; plants open in Fall FY27.

Project Costs:
•Water Chilled Plant: Total cost represented in Year 0.
•Air Chilled Plant: Includes construction and UVA replacement costs in Year 0.

Investment Summary:
•$1.5M invested; $5.1M more needed for the Water Chilled Plant; $1.6M for the Air Chilled Plant.

Project Savings:
•Based on the difference between the Water and Air Chilled Plant costs, factoring in investment income from the Air Chilled Plant.

Money Market Rate:
•Starts at 5.0% in FY25; declines to a 25-year average of 2.7% by FY28.

Cost Variations:
•Annual costs vary due to fixed energy assumptions and maintenance schedules.

FAUFC CHILLER PLANT ANALYSIS

FUNDING SOURCE SUPPORT

1. Current Status

Currently, there is $1.5M invested in the chiller project. $5.1M more is needed for the Water Chilled Plant; or $1.6M for the Air Chilled Plant.

2. Liquidity Exercise

In collaboration with the General Counsel's office, Financial affairs conducted a liquidity exercise regarding investable funds across bank accounts.

Table 2 displays our findings.

3. Additional Financial Upside (Upcoming Boca Project)

Relating to the approved upcoming Boca Raton housing project, Financial Affairs conducted an interest rate analysis identifying potential cash left on the table over the 30-year debt horizon.

Table 3 displays our findings considering bond issuance at 4.50% as opposed to the originally modeled 5.00%.

Additionally, if the guaranteed maximum price comes in below the board of governors approved budget, we can utilize surplus bond proceeds to be strategically utilized for this project as the chiller plant will directly support the new student housing development.

2. Liquidity Exercise	FY2024
Considered Investment Funds: (Represents all funds that can be evaluated for investment before covering operational needs.)	42,614,342
Obligated Funds: (Funds that cannot be moved or invested due to debt obligations.)	16,884,279
Operational Reserve: (Funds required to remain in the account to support ongoing operations.)	(12,454,493)
Identified Investable Funds: (Surplus funds available for future investment after covering operational needs.)	30,159,849

3. Additional Financial Upside	
Annual Debt Service at 5.00%	7,902,500
Annual Debt Service New Rate (Estimate)	7,350,000
Frees up (annually)	552,500
Total Debt service at 5.00	231,053,333
Total Debt service at 4.50	214,814,394
Total Cash saved in interest and principal	16,238,939

CHILLER PLANT RECOMMENDATION