### Department: Tennessee Higher Education Commission
### Institution: University of Memphis
### Project: Central Plant and CFA Building Chillers and HVAC Repairs and Replacements
### City/County: Memphis / Shelby

#### Fiscal Year: 2021/2022

<table>
<thead>
<tr>
<th>Capital Outlay</th>
<th>New</th>
<th>Reno/Maint</th>
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</thead>
<tbody>
<tr>
<td>X Capital Maintenance</td>
<td>0</td>
<td>Gross Sq.Ft. n/a</td>
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<tr>
<td>Disclosures</td>
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<td>Net Sq.Ft. 0</td>
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<tr>
<td>Deputy Required</td>
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<td>Cost/Sq.Ft. 0.00</td>
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#### Project Description:
Funds are provided for replacement and optimization of central plant chillers, balance of variable flow pumping campus wide, replacement of HVAC components in the Communication and Fine Arts building and all related work.

#### Total Project

- **Building Construction**: 3,954,000
- **Site & Utilities**: 0
- **Built-in Equipment**: 0

**Bid Target**: 3,954,000

**MACC** (Maximum Allowable Construction Cost): 3,954,000

**Fee**: 35/LogP-1.15 = 7.97122814

**Renovation**: 0

**Movable Equipment First Other**: 175,000
**Movable Equipment Second Other**: 0

**Administration & Miscellaneous**: 128,252

**Total Cost**: 4,350,000

#### Funding Request

- **THIS REQUEST**: 5,000,000

<table>
<thead>
<tr>
<th>Funding Request</th>
<th>This Request</th>
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<tbody>
<tr>
<td>STATE funds</td>
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<tr>
<td>FEDERAL funds</td>
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<tr>
<td>Local and Institutional Funds</td>
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#### Previous SBC Approved Funding:

- **already approved for existing SBC project**: 0
- **plus This Request**: 5,000,000

#### SBC Action:
If an existing project, SBC Project No.: NA

#### Designer:
NA
A. Architectural Program Scope
Replace and optimize central plant chillers, balance variable flow pumping campus wide, replace HVAC components in Communication and Fine Arts to achieve humidity control.

B. Evidence of Physical Facility Need
The Chillers in the Central Plant are near the end of their life cycle. The oldest chillers will be replaced and others will be rebuilt. More efficient chillers are now available and the entire plant can be optimized. The campus underground chilled water lines will be evaluated for any leaking or poorly insulated areas, and the installed variable flow pumping systems in each building will be analyzed and reset for optimum use with the new chillers. The CFA building needs a new chiller and air handler updates with humidity control to provide an environment that is conducive to fine arts display. The museum has issues with temperature and humidity swings and is not accredited to display traveling high impact fine arts, artifacts etc. which decreases cultural learning and awareness to our students.

C. Historical Profile
The existing chillers were installed as part of the CFC retrofit in the late 1990's and have been in continuous operation. The CFA building was constructed in 1983 and has not been totally renovated.

D. Summary Results and Date of Physical Facilities Survey
Current Physical Facilities Survey information indicates that these conditions are in the 60 to 70% range for conditions.
E. Cost Basis for Construction Estimate and Other Costs
The project is based on information from suppliers for the retrofits.

F. Project Schedule
Recieve funding in summer of 2021, with designer selection and design through summer of 2022 and installation in fall and winter of 2022.

G. Campus or Architectural Program Impact
The campus impact of a properly operating hvac system is paramount to daily achievement of instruciton goals. The chiller plant serves nearly every academic building with chilled water for air conditioning via underground piping and is the main source of cooling. Low flow or inadequate cooling cannot be tolerated. The impact of new equipment and balancing will be greater comfort, hvac control, humidity control and energy efficiency.