

## **Electrical Utility Conversion Phase One Construction**

### **Recommendation**

It is recommended that the Board of Governors authorize the President, or his designee, to award contracts to accomplish the design and first phase construction of building electrical infrastructure upgrades to support converting buildings that were formerly fed from the Detroit Public Lighting Department (PLD) to Detroit Edison Company (DTE), and to provide additional electrical capacity at a total project cost not to exceed \$6M. Funding for this effort will be provided by borrowing from the Cash Pool, with repayment provided by future bond proceeds that would be secured for the purpose of implementing this project.

### **Background and Project Description**

The concept for this series of electrical upgrades was presented to the Board of Governors in April of 2016. Authorization was later given in December of 2016 to proceed with design and early physical work at a cost of \$1.5M. This request asks that spending authorization be increased to \$6M. The project will be executed in two phases. The total project cost of \$6M compares to prior estimate of \$11M.

As shared with the Board of Governors in April 2016, the total project cost to implement these electrical infrastructure upgrades was anticipated to be approximately \$11M. The project is expected to be significantly less than originally thought due to a shift in thinking where DTE will own more of the transformers, the equipment located on the main campus will be smaller, and Wayne State underground vaults will no longer be necessary. The fund source for the overall project is planned to be bond proceeds.

As shared previously, PLD ceased to exist as an electric utility provider in July 2014 and DTE assumed responsibility to supply electric power to all former PLD customers. PLD previously supplied electrical power to 44 of the University's buildings, representing more than half of the electricity consumed by the University annually. The PLD infrastructure, historically known for being unreliable, has caused numerous power outages that greatly impacted normal operations, including the University being forced to cancel classes and close. The transition of service responsibility to DTE includes their commitment to replace the PLD infrastructure that supplies electricity to the University and other former PLD customers. The scope of this conversion involves constructing two new electrical substations that will support the Midtown area, installing new underground conduits and cables, new above ground transformers, and switching equipment to each of the former PLD buildings. Except for two electrical capacity upgrades highlighted below, DTE is responsible for the total capital cost to accomplish this conversion.

In addition, the existing electric service to the University's Computing Center is at maximum capacity, and the data center's HVAC and power systems are obsolete and well beyond their service life. A new data center has been designed and approval to construct

**Submitted by: William Decatur, Vice President, Finance and Business Operations**

it is also being requested at the October 2017 Board of Governor's meeting. This Phase One DTE electrical utility conversion project will provide a new substation with larger electrical service to serve this new data center. In addition the Phase One project will provide and upgrade equipment to convert the Engineering Building, the Life Sciences Building, and Shapero Hall to DTE service. Each of these buildings has components of their electrical infrastructure that are obsolete and antiquated. Work will also be done at the Multipurpose Building and the Harwell Building to improve overall electrical capacity at the Athletics Campus.

The conversion of the University's buildings to new DTE service is expected to take place in two phases over the next three years. Wayne State's project phasing will follow DTE's project phasing. First, DTE will construct new underground duct banks and conduit pathways around the perimeter of campus, mostly on Warren Avenue and Anthony Wayne Drive. Then steps will be taken to physically connect each building to new electrical services from DTE. This construction will impact the campus as additional underground pathways are established from the street or pedestrian malls to each building where new cable will be connected to transformers and switch cabinets, many of which will be installed outside, adjacent to the building. With the exception of those buildings supported by full building backup generators, each building will also experience a temporary shutdown during the cable connection process. In the buildings proposed to receive electrical equipment upgrades, the electrical shutdown durations will be very carefully coordinated to minimize operational impacts, and every effort will be made to support each conversion with a temporary electrical generator.

**Project Budget**

<b>Funding Sources</b>	
Bonds (bridged with University Cash)	\$6,000,000
<b>TOTAL Sources</b>	<b>\$6,000,000</b>
<b>Expenditures Plan</b>	
Design	\$1,500,000
Construction	\$4,500,000
<b>TOTAL Expenditures</b>	<b>\$6,000,000</b>