FISCAL YEAR 2024
CAPITAL OUTLAY PROJECT REQUEST

Institution Name: Delta College

Project Title: Information Technology and Computer Science (K-wing)

Project Focus: ☒ Academic   ☐ Research   ☐ Administrative/Support

Type of Project: ☒ Renovation   ☐ Addition   ☐ New Construction

Program Focus of Occupants: Information Technology, Computer Science classrooms and laboratory spaces

Approximate Square Footage: 16,458

Total Estimated Cost: $5,701,635

Estimated Start/Completion Dates: January 2024 to August 2024

Is the Five-Year Plan posted on the institution's public internet site?   ☒ Yes ☐ No
Is the requested project the top priority in the Five-Year Capital Outlay Plan?   ☒ Yes ☐ No
Is the requested project focused on a single, stand-alone facility?   ☐ Yes ☒ No

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Please provide detailed, yet appropriately concise responses to the following questions that will enhance our understanding of the requested project.

1. **1A. Project purpose.**

   This project will renovate Delta College's Information Technology, Computer Science and Office Professions wing, located on its main campus. The current facilities were constructed in 1961 with only minor updates since. Although the existing building has been maintained well, many of the architectural finishes, mechanical and electrical systems are at the end of their useful life and need to be replaced to meet the needs of the current programs and learning environments.

   The area being proposed for renovation is approximately 16,458 square feet, located on the east side of our main campus building, located in Bay County, but serving students from Bay, Midland and Saginaw counties. When upgraded and revitalized, the area will provide state-of-the-art computer lab and classroom spaces for multiple computer and business courses, as described further in questions #2 and #3. Along with the upgrades, 4,750 square feet of new space has been programmed to be added on to the building including an expanded cyber security classroom, multiple shared computer science classroom and lab spaces, along with needed storage, and support spaces.

   1B. Scope of the project, which addresses a core academic area of the institution.

   The renovation project provides a very dense use of space, to include the following program elements:

   - Computer Science laboratory (two 28 seat labs)
   - Office Technology laboratory (two 24 seat labs)
   - Cyber security/Networking laboratory (one 24 seat lab)
   - Information Technology Support laboratory (one 24 seat lecture and lab space)
   - Computer Science collaborative laboratory (one 25 seat lab and one 24 seat lab)
   - Smart classroom, allowed for shared work in an appropriately modeled room (one 32 seat lab)

- Small student lounge spaces (two)
- Restroom replacement
- Mechanical room, facility storage room

The facility is designed to be flexible to teach multiple types of computer-based courses. It will also contain two moveable walls between three classrooms, allowing for flexibility in space usage. The area could then be opened up for Delta student cyber security competitions, Skills Day activities with high school students, and IT business training opportunities with area employers. The ability to bring the businesses and the community into the wing for events or professional development will maximize use of the facilities and will highlight the importance of careers involving cybersecurity and IT.

1C. Program Focus of Occupants

The proposed renovations and improvements would allow Delta College to support new programs and methods of delivery. Degree options that are currently achievable by taking courses in the Information Technology wing include:

- Cyber Security – Associate in Applied Science degree
- Information Technology – Associate in Business Studies degree
- Network Administration – Associate in Applied Science degree or certificate
- Computer Programming – Associate in Applied Science degree
- IT Support – Associate in Applied Science degree or certificate
- Data Science – advanced certificate
- Criminal Technology – advanced certificate, post-associate degree

Delta College's cybersecurity program is recognized by the Department of Homeland Security and the National Security Agency as a Center of Academic Excellence in Cyber Defense Education. The Cybersecurity Center at Delta College provides a dedicated cybersecurity simulation lab and is fully supported by Delta's cybersecurity faculty. It also offers the opportunity to teach and learn either synchronously or asynchronously, for a student's convenience.

A cyber security degree provides the skills and knowledge to protect and recover information from an information system. Delta's program includes the following highly recognized academies:
- Palo Alto Cybersecurity Academy
- Red Hat Academy
- EMC academic Alliance
- Cisco Networking Academy
- VMware IT Academy
- Microsoft Imagine Academy

Additionally, instruction in Network Administration teaches students how to install, configure and support an organization's local area network (LAN), wide area network (WAN) and Internet systems or a segment of a network system. Students also learn how to assist in network modeling, analysis, planning and coordination between network and data communications hardware and software, and supervise computer user support specialists and computer network support specialists.

Computer courses taken within this area can also lead to an Office Management or Administrative Assistant degrees. Students learn management, managing systems, report and data compilation, records management, information gathering techniques and personnel administration, and other tools to be successful in the field.

2. **How does the project enhance Michigan's talent enhancement, job creation and economic growth initiatives on a local, regional and/or statewide basis?**

Supplying higher education to local residents through certificate and degree programs provides an investment in individuals, ensuring the economy of the Great Lakes Bay Region can remain strong. Delta College proactively assesses the current and future needs of business as we plan our curriculum and offerings. However, there are current hurdles within the facility proposed for renovation, which constrain our ability to address future needs and opportunities. Two employment sectors loom large for training – semiconductor and electric battery – as well the continuing demand for IT and cyber security training. We are worried that the state of our information technology and computer science classrooms will not allow us to respond nimbly and innovatively to these demands.

Recently, Congress passed and President Biden signed the CHIPS and Science Act, providing $52 billion in incentives to boost domestic semiconductor production and research. A portion of the funds will be dedicated to incentivizing production of semiconductors used in the automotive industry, by parts suppliers, and also in Michigan's medical device, agriculture and defense sectors.

The new federal legislation will provide investments in semiconductor and polysilicon manufacturing. Hemlock Semiconductor (HSC) is a large employer in Saginaw County, one of Delta College's taxpaying districts, and they anticipate expansions. HSC is a leading provider of high-purity polysilicon products for the electronic and solar power industries, and they are creating 170 new jobs in Hemlock. Although one third of the chips produced in the world use polysilicon produced by HSC, bringing semiconductor manufacturing back to the U.S. will expand the demand even further and will lead to jobs for more local residents.

Additionally, SK Siltron (SKK), a semiconductor wafer manufacturer, recently announced a new facility near Bay City (also within Delta's taxpaying district), creating 150 good-paying jobs. Its manufacturing will support electric vehicle growth and support auto industry needs in Michigan. SKK makes wafers, which eventually get sliced into microchips, which are the "brains" for electronics in vehicles, appliances, televisions and phones. Delta College is already scheduled to help train SK Siltron employees, through the New Jobs Training Program.

Hemlock Semiconductor (HSC) and SK Siltron are key players in securing a robust supply chain in Michigan, which ranks among the top 10 in the nation in its current semiconductor workforce. Job growth is projected to grow by at least 11 percent in the next five years. Increasing domestic production of chips will protect and create jobs, strengthen our supply chain, and grow the economy. Bringing chip manufacturing back to Michigan will help to create thousands of good-paying jobs and grow our region's economy. But, employers are already struggling to fill many jobs, with an estimated 84,000 unfilled industry job openings across the U.S.

Congress also passed the Inflation Reduction Act this past summer, which includes provisions that address climate change and is the largest investment in clean energy and emissions cuts. The legislation requires that automakers meet domestic-content for EVs, which will fuel a rapid build-out of manufacturing capacity for electric vehicles and batteries, and their components.

The funding will open up tens of billions of dollars in subsidies for high-tech electric vehicle plants. It has the potential to build and refurbish factories, create millions of good-paying manufacturing jobs, and help build electric vehicles, batteries, solar panels and more.

Within our region, Delta has worked with XALT Energy in Midland, Michigan. It is capable of handling virtually any energy storage need, from its highly automated advanced production facility. They are focused on the growing demand for high-tech storage solutions in marine, commercial transportation and specialty applications.

Jobs that previously required a high school diploma now require post-secondary training due to automation, sophisticated equipment, required quality processes, critical thinking and problem solving skills. Employers are searching for the talent necessary to operate new production equipment and technology, which require large financial investments. And, Delta College excels at meeting the essential educational and training needs,

through its strong skilled trades and manufacturing training programs, along with partnerships with existing businesses and Great Lakes Bay Michigan Works organization, strengthening our ability to help get students trained and into the workforce.

As stated earlier, being able to offer basic computer courses for students will be essential to building a training pathway for semiconductor and electric vehicle/battery advanced manufacturing. We will continue to work with area employers on the exact aspects needed to design and develop the certificates and job skills they will need in their future hiring pipeline.

Finally, opportunities for employment in cyber security and information technology have consistently grown in numbers. Within the Great Lakes Bay Region of Michigan (Bay, Midland and Saginaw counties especially), it is anticipated there will be many IT and technology related job openings through 2028 (Bureau of Labor Market Information; State of Michigan; Department of Technology, Management & Budget). And, hiring has been strong in industries handling consumer data, such as finance, health care and retail. The Bureau of Labor Statistics projects and 35 percent growth rate for information security analyst jobs from 2021 to 2031 (Bureau of Labor Statistics, Occupational Outlook Handbook) —that's 30 percent more than the average growth rate for all occupations.

3. How does the project enhance the core academic, development of critical skill degrees, and/or research mission of the institution?

Technology supports the Internet, distance learning, interactive simulations and virtual reality. IT in many forms has revolutionized the concept of higher education and Delta College has taken advantages of the changes as they become more readily available and affordable.

This project will will help Delta College meet its mission of preparing students for an ever changing job and educational future, thus having an economic impact on the region. Delta College is flexible and responsive to our community's needs, while educating students in the local area. Programs offered in this space will help residents enter the educational pipeline and prepare them with the IT skills needed to enter the workforce.

The U.S. economy is strongly rooted in the information age, which makes the programs offered in this proposed renovation space hugely important for our students. The project would renovate academic spaces used for Information Technology, Computer Science and Office Administration Technology programs, including classrooms for IT network, network security and cyber security instruction.

Regional businesses count on Delta College to provide their employees with new skills as technology changes. The changes caused by an information age economy, place demands on individuals to learn and then re-learn throughout their careers, as technology continues to change. This has put demands on the College to continually innovate educational offerings, while also delivering services in an efficient manner.

Delta College's fall 2022 enrollment was over 7,056 students in its academic programs. Its K-wing area of main campus, which is proposed for renovation, is highly used each semester, During a recent fall semester, **over 1,740 students attended for instruction in the labs and classrooms in the area as part of 101 classes scheduled in the semester**. Most students are part-time (71.2%) rather than full-time, the majority are working and many are in their 30s and 40s, balancing family responsibilities and work schedules with their educational pursuits. Students often complete initial training for entry into the workforce, frequently returning to the College as job requirements change and new skills are needed to be successful.

This renovation will ensure that Delta has state-of-the-art computer classrooms in the instructional process. It will support computer science and IT degree programs, but will also build the capacity to offer the training needed by new businesses in areas such as Computer Numeric Control (CNC), Programmable Logic Controller (PLC), and Mechatronics.

Finally, as further detailed in question #4 (talent enhancement and economic growth), the Great Lakes Bay Region is poised for growth in semiconductor, wafer production and EV battery storage. As area

manufacturers ramp up production, even through the use of automation, they rely more heavily upon computers and computer systems to operate. We must be able to offer students the education needed to gain the computer skills utilized in the expanding semiconductors and electric vehicle/battery fields.

4. **Is the requested project focused on a single, stand-alone facility? If no, please explain.**

No, this is not a stand-alone facility. However, it is a single focused area of Delta College's main campus, which is located midway between the three counties' major cities – Saginaw, Bay City and Midland. The renovation would occur totally within one of the college's 14 wings that are all connected into one overall structure. The College is able to isolate the work that would be done in this wing, as with other state funded projects that have been done over the decades, and could identify the areas that would be a part of the bond supported funding, until such time as the bonds are repaid.

5. **How does the project support investment in or adaptive re-purposing of existing facilities and infrastructure?**

Delta College was built in 1960, opening in 1961. While most of the main campus structure has been upgraded since that time, little has been done to address the classroom areas within the computer and IT area (K-wing) over the past 60+ years. Originally built and used for business administration programs, typing, shorthand, office machines, etc. this area is fully occupied and organized as divided computer lab space along with lecture/classroom space.

The proposed renovation would retain the exterior envelope of the wing, renovating all aspects of the interior, including the electrical and mechanical. Windows are single pane and need to be replaced with energy efficient glazed panels to improve energy efficiency.

The infrastructure needed for this project – sewer, electrical, water, sidewalks, parking lots, etc. – are all in place. There may be some minor electrical disruption to the external sidewalk lighting, but Delta could easily relocate any current systems to accommodate this facility renovation.

6. **Does the project address or mitigate any current health/safety deficiencies relative to existing facilities? If yes, please explain.**

There are life/safety deficiencies that have been identified in the space proposed for renovation. Issues to address include fire and safety elements, air handling and ventilation. Asbestos would be removed prior to renovation. A major element of this upgrade will include the extension of our fire sprinkler system into K-Wing, which is one area that currently does not have a fire suppression system. We would ensure it is appropriate for use in an IT environment.

Additionally, we would upgrade the alarm and speaker message system, in case of future emergencies.

The Information Technology portion of the building (K wing) is not currently a part of the central HVAC system. The classrooms to be addressed are equipped with individual unit ventilators that provide heating and cooling and minimal ventilation to the spaces and aren't able to access the college-wide ice storage system for cooling.

Unfortunately, students in our computer lab spaces in K-wing have had to deal with our ongoing dehumidification problems. During the warm months, the rooms take on moisture, which is evident by buckling carpet and a musty smell. This results in poor air quality throughout all of the classrooms. The proposed renovation will include a new mechanical room housing a central air handler and VAV HVAC system that will

provide increased ventilation, improved filtration, and needed dehumidification for the wing. This will provide much better air quality and control while eliminating the conditions that foster mold growth.

7. **To what extend has the institution demonstrated occupancy and effective utilization of existing facilities to merit the capital investment. How does the project help to improve the utilization of existing space and infrastructure?**

Delta College has received state of Michigan capital funding in the past and has used the dollars wisely. All areas of the campus, or community located buildings, which were constructed or renovated continue to be in full use for academic purposes.

Further, Delta College measures utilization of existing facilities by continuously adding, changing and removing course offerings based upon student demand and available physical space. The college targets a minimum 60% fill ratio on all sections. Each semester, close attention is paid to using the existing facilities as efficiently as possible by following a College-wide block schedule that allows classrooms to be utilized to the highest efficiency as possible.

This IT renovation project would help improve utilization of existing space and infrastructure by providing an environment that allows a larger variety of courses and the opportunity to complete a majority of IT courses in a concentrated area. This will encourage student co-hort groups to gather in a setting that allows for learning in team environments.

8. **How does the institution intend to integrate sustainable design principles to enhance the efficiency and operations of the facility?**

Delta College is an established leader in environmental responsibility and demonstrates sustainability practices that enhance the life-cycle of its infrastructure, materials and equipment. Delta College has designed and constructed its buildings, including major renovation projects, to meet or exceed LEED Silver standards whenever possible, with consideration to program needs and budget parameters.

We utilize sustainable building principles to the fullest extent possible in new, existing and renovated buildings, including landscape and infrastructure projects. Sustainable principles include planning, design and construction elements that promote the efficient use of energy and material resources, water conservation, and protect land and water environments. The Information Technology (IT) renovation project will allow us to actively seek innovative technology to achieve these objectives

Over the past fifteen years or more, energy improvements made at Delta have led to a reduction of nearly one-third in our annual electricity and gas usage. Clearly Delta College knows how to integrate sustainability to enhance the efficiency and operations of our facilities.

In 2013, Delta received LEED Gold Certification after renovating its Health Professions Building on its main Campus. The building meets high performance measures including sustainable site development, water and energy efficiency, materials selection, and human and environmental health quality.

Since that time, the U.S. Green Building Council has modified its LEED criteria, making it increasingly more difficult and expensive to achieve the highest certification levels. However, both Delta's Downtown Saginaw Center (opened in 2019) and its Downtown Midland Center (opened in 2021), were built to similar specifications as the Health Professions Building, which was to seek Silver status. We did so, however, without the inclusion of aspects that would not allow us to keep the overall construction pricing at a reasonable cost.

9. **Are match resources currently available for the project? If yes, what is the source of the match resources? If no, identify the intended source and the estimated timeline for securing said resources.**

Matching funds are currently available and the project could move forward as soon as the funding is available. The college intends to provide the matching funds for this project from our current accumulated Plant Fund reserves, which are made possible through the annual transfer of $2.5 million from our General Fund operating budget.

The general philosophy of the College has been to issue debt only when a very compelling case to do so can be made. However, in the event that funds are needed to provide the cash flow requirements of the Information Technology (IT) renovation project, we have the legal capacity to carry debt up to $127,066,036, with no current outstanding debt. The Community College Act establishes debt capacity as 1-1/2% of the first $250,000,000 of taxable valuation, plus 1% of the excess over $250,000,000 of taxable valuation. The current taxable valuation is $12,581,603,567.

10. **If authorized for construction, the state typically provides a maximum of 75% of the total cost for university projects and 50% of the total cost for community college projects. Does the institution intend to commit additional resources that would reduce the state share from the amounts indicated? If so, by what amount?**

Delta College has an operating fund balance and it is currently able to provide the required 50 percent match funding required through the legislative process. Through judicious financial planning, **Delta would be able to commit resources at an increased match level of 57.5 percent, or $3,278,440 million of the $5,701,635 total project cost**.

Delta College's Trustees have operated under the philosophy that we shouldn't build or obligate the taxpayers to a debt, which is why we hold no bonding and are debt free.

11. **Will the completed project increase operating costs to the institution? If yes, please provide an estimated cost (annually, and over a five-year period) and indicate whether the institution has identified available funds to support the additional cost.**

No, the completed renovation of this area will not increase the operating costs for Delta College. The space is already within the confines of the College's main campus footprint and is a part of our infrastructure, utilities, and maintenance commitments annually.

12. **What impact, if any, will the project have on tuition costs?**

This project will not directly impact the cost of tuition.

At Delta College, budget decisions are made using a holistic, inclusive approach. Tuition increases are not made to fund individual projects. When increases are made to Delta College tuition, it is with the philosophy of providing high quality instruction and education services at a reasonable cost. Delta College tuition remains the lowest of any higher education institution in the Great Lakes Bay Region.

13. If this project is not authorized, what are the impacts to the institution and its students?

Without the state of Michigan's match for this proposed renovation capital outlay project, we will not be able to move forward to mitigate the declining facilities and environmental factors at work in Delta's IT and computer science wing. Therefore, our ability to offer the appropriate training to support the region's current IT needs, as well as possible semiconductor and electric battery manufacturing expansion, will be unduly limited.

We feel our Information Technology/Computer Science project meets the state's capital outlay evaluation criteria, and strongly believe this request will economically impact our region, as described earlier in question #4. It will help Delta College meet its mission of preparing students for an ever changing job environment, meeting the region's future employment potentials, and provding a path to meaningful employment and a better way of life for our residents.

Delta College's service area has a significant number of low-income low-skilled individuals, with plenty of evidence of the need for further educational attainment. According to the 2020 U.S. Census, the median household income in Delta College's region of Bay, Midland and Saginaw County is $52,434, in Michigan it is $59,234, while the national average is $64,994. There is a great need to provide education, which will lead to better jobs, thereby improving the overall median income of our region.

There are upwards of 1,740 students who attend classes and labs in the computer wing proposed for renovation. But, our ability to continue to provide quality instruction in the current physical environment will continue to decline without this renovation and upgrade to the teaching spaces.

Delta College has decades of experience in addressing challenges and we fill the educational gap identified by both the community residents and area employers. However, without proper facilities and the technological capacity to meet the emerging educational demands of residents in a cost-effective manner, Delta College will not be able to excel in meeting its educational mission.

14. What alternatives to this project were considered? Why is the requested project preferable to those alternatives

This project was tentatively approved by the Delta College Board of Trustees in 2017 as a College funded project, but was placed on hold due to accelerated project costs, followed by the uncertainties brought on by the ongoing pandemic.

The only alternative to renovating the computer and IT classrooms in K-wing would be to remain in place or to move all of the programmatic delivery and disburse it around other areas of campus. Remaining in place means the environmental and health issues would stay in place, while moving around campus would require renovations and upgrades to accommodate the power and connectivity necessary to operate the academic program delivery. Also, it does not make economic sense to allow Delta's campus facilities to continue to deteriorate while spending money to modify and renovate other portions of our facility.