STATE BOARD FOR COMMUNITY COLLEGES AND OCCUPATIONAL EDUCATION
September 10, 2024

TOPIC: Pikes Peak State College (PPSC) Spending Authority Request for HB-21-1265 Machining Technology & Electronics Project

PRESENTED BY: Jim Mancall, Chief of Staff, PPSC

RELATIONSHIP TO THE STRATEGIC PLAN:

- Transform the student experience.
- Redefine our value proposition through accessibility, affordability, quality, accountability, resource development, and operational excellence.

EXPLANATION:
Pikes Peak State College (PPSC or College) requests permission to spend up to $1,364,600 of the HB21-1264 grant funds on renovations, equipment, and technology upgrades for Machining Technology and Electronics. This funding request will allow the Centennial Campus to upgrade the facilities, equipment, and technology related to Machining Technology and Electronic instruction.

BACKGROUND:
In 2022 Pikes Peak State College received SLFRF funds in the amount of $1,542,944 to increase the technical education equipment, facilities, and instruction capacity of our Colorado CTE education partners pursuant to HB21-1264.

PPSC proposes using a large portion of these funds on a project that upgrades approximately a 4000-square-foot open lab instructional space at the Centennial Campus. This housed programs that experienced a decline in enrollment for the last five years - Machining Technology and Electronics. The plan for these HB21-1264 funds is to remove and replace outdated equipment, update infrastructure, and maximize instructional space. To keep pace with workforce trends, programs are being redesigned to present a comprehensive education for employment in advanced manufacturing. Students will gain foundational knowledge and skills in industrial design, fabrication, automation, and maintenance processes via simulation.

1. Manufacturing "widgets" involves processes that are both additive (3D printing) and subtractive (machining metal). Subtractive manufacturing is taking a hunk of metal and whittling it away to whatever product is needed. This produces a lot of metal waste and dependency on humans, and it is significantly impacted by economic trends. (The high cost of the metal, minimum wages/benefits, and supply chain.) Additive manufacturing is on trend as it is the opposite, as high-

quality products are produced without waste and with less dependency on humans and the supply chain. 3D printing is also a quicker process.

2. Manufacturing processes are driven by the (LEAN) principles of high quality, low cost, and timeliness of delivery. Good, cheap, and fast.
3. The automation of manufacturing processes has been occurring for a long time as humans have been replaced with machines and the interaction of humans with machines is rapidly changing due to technology such as AI. Most manufacturers run operations 24/7 to maximize production so machines must be well maintained.

HB21-1264 Machining Technology & Electronics Project Budget

Project Budget	Professional Services Expenses	Construction Expenses	Equipment Technology Furnishing	Total Expenses	Available Project Contingency
$ 1,364,600	$ 87,500	$ 395,000	$ 755,000	$ 1,237,500	$ 127,100

PPSC's goal is to prepare students for the current and future workforce as we aim for 10+ years of sustainability/relevancy with every degree and certificate pathway. We will focus on educating humans to program and automate machines rather than just operating machines. PPSC will continue to teach foundational knowledge/skills, though more properly aligned with employability. There is also a downstream impact as engineering becomes more dependent on additive processes and the machines are more technologically advanced. An industrial maintenance tech will need to know how to calibrate a 3D printer and mechatronics in addition to traditional skills such as greasing bearings.

The industrial Mechatronics Maintenance Technicians' jobs remain stable due to the anticipated retirement of an aging workforce. Approximately 1200 job openings are projected in the next 5 years. PPSC has also engaged new employer partners to upskill and reskill incumbent workers. We expect enrollment to grow 33% over the next couple of years.

RECOMMENDATION:

Staff recommends that the Board approve spending authority to complete the HB21-1264 Machining Technology & Electronic Project up to $1,364,600. Staff also recommends Board delegate the signature authority of the Board to the System Vice Chancellor of Finance and Administration on the condition that all Board and State processes are followed.