PHASE II PROGRAM PROPOSAL

PROGRAM TITLE: ADVANCED MANUFACTURING EXPANSION

WIP CATEGORY: ADVANCED MANUFACTURING AND WORKFORCE DEVELOPMENT

PSG SPONSOR/S: DR. WALTER TRIBLEY AND DR. JOE SCHAFFER

PROGRAM CO-LEADS: EDITH JOHNSON-LAMERES, DEAN OF CAREER AND TECHNICAL EDUCATION AT SHERIDAN COLLEGE

DAVE CURRY, AMMC PROGRAM MANAGER AND CALEB PERRITON, TRADES & TECHNOLOGY PROGRAM DIRECTOR AT LARAMIE COUNTY COMMUNITY COLLEGE

INSTITUTION/S: SHERIDAN COLLEGE AND LARAMIE COUNTY COMMUNITY COLLEGE

PRESIDENT(S)/AGENCY DIRECTOR SIGNATURES

Presidents/Agency Directors from all participating institutions or agencies must sign off on this proposal in order for the full proposal to be reviewed for consideration of Phase II funding. Signature indicates that the President/Director has reviewed the application and acknowledges the program component as a priority for their institution or agency. Components that include multiple institutions and agencies should include signatures from all.

NAME: Dr. Walter Tribley

SIGNATURE: Walter A. Tribley

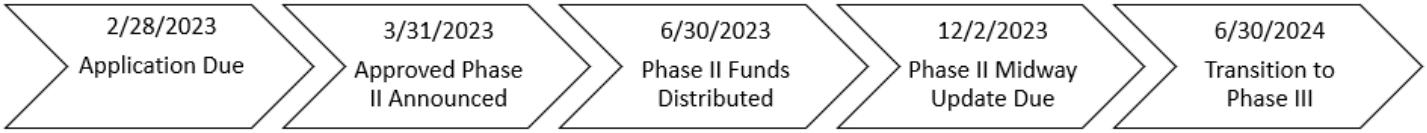
NAME: Dr. Joe Schaffer

SIGNATURE: Joe Schaffer (Feb 28, 2023 12:02 MST)

PROPOSAL SUBMISSION & REQUIREMENTS

A project charter is a formal, succinct document describing a project - or in WIP language, a "component" - in its entirety. The Project Management Institute (PMI) defines a project charter as "a document issued by the project initiator or sponsor that formally authorizes the existence of a project, and provides the project manager with the authority to apply organizational resources to project activities." Therefore, the WIP component charters are project charters that carry the association with WIP, assignment of component leads/co-leads, have the authority tied to a sponsoring institution and PSG member, and authorization to expend resources to accomplish the goals and objectives described within.

The following sections include relevant details needed to support the decision-making for the funding of WIP Phase II projects. Should funding be awarded, this application will serve as the foundation for the component's project charter that will guide the work of the project in the entirety of Phase II. Proposals will be reviewed and final funding decisions will be made by Governor Gordon. Questions about this proposal should be directed to Lauren Schoenfeld (lauren.schoenfeld@wyo.gov). Phase II will follow the below timeline unless changes are identified and approved.



Submission Requirements

- **Proposals are to be submitted to Lauren Schoenfeld at lauren.schoenfeld@wyo.gov by 5:00 pm on February 28, 2023.**
- **Only fully completed proposals (including a proposed budget) are submitted, they will be reviewed for participation in Phase II.**
- **Please include any and all justification, including regular data reports and strategic plans, to support the workforce and economic needs associated with your proposal.**

1. Component Information

1.1. Phase I Continuation: Select the type of Phase II component you are proposing. If a Phase I project, please complete section 1.2.

☐ Not a Phase I Project

☒ Component was funded in Phase I and Phase II will continue current component progress

☐ Component was funded in Phase I and Phase II will provide a new direction building on current progress

1.2. Summary of Phase I (if applicable). Provide a brief description of Phase I progress, key deliverables, metrics that were met, and how Phase II funding would progress this work further.

Manufacturing employers in Wyoming and along the Rocky Mountain corridor continue to voice a critical need for a trained workforce. The LCCC Advanced Manufacturing and Material Center (AMMC) provides opportunities for training various talent pipelines in areas such as precision machining, additive manufacturing, and product design; all under the umbrella of Industry 4.0, the future of advanced manufacturing. Stage I of the AMMC project included the renovation of an underutilized 14,500 square feet Auto Body Building (located on the LCCC Cheyenne campus) to an advanced manufacturing training and education center. Upon its scheduled grand opening in April 2023, the AMMC will provide a broad range of education and training offerings to develop, advance, and build the manufacturing workforce necessary to meet current and future needs. This project is in support of the state-wide goal of diversifying the state's economy through the growth of the advanced

manufacturing industry while providing Wyoming citizens with access to high-skill, high-wage career choices.

Included as part of the AMMC is a collocated "Concept Forge" fabrication lab supporting small-scale prototype development by entrepreneurs. Utilization of 2,000 square feet within the proposed space, allowed the development of a fabrication lab to fill a gap in the local maker-to-market pathways. Nationally, and in pockets across Wyoming, we are seeing the economic impact of innovators, inventors, and entrepreneurs on small business expansion and small business startup and recognize the need to remove obstacles to their success. Phase I WIP funding provided necessary equipment for the Concept Forge.

As of February 2023, AMMC and Concept Forge facility renovations have been completed. Key equipment has been received or is in the delivery process. The grand opening for the AMMC and Concept Forge is scheduled for April 14, 2023. At that time, the Concept Forge will be available to businesses and emerging entrepreneurs to prototype products. A youth career one-day camp is planned for April 22, 2023. A one-week youth career exploration camp is being planned for June 2023. A CNC bootcamp will launch on May 22, 2023. LCCC and two local employers will partner on a Wyoming Department of Workforce Services pre-hire grant to seek tuition funding for the bootcamp while guaranteeing employer interviews for students.

1.3. Description: Provide a brief description of the component. Please include the scope of the project in Phase II, the component's importance to the institution/s and state, and the problem you are trying to solve and/or the opportunity to be leveraged. Please also include how the proposal ties into your current strategic or academic plan.

Advanced Manufacturing remains a significant component of Wyoming's economic diversification strategy. In order to successfully grow existing businesses, as well as attract new businesses to our state, it is imperative that contemporary training opportunities are readily available to prepare a skilled workforce to meet the demand. Both Sheridan and Cheyenne represent strong communities with a diverse manufacturing base that is growing steadily. As part of this collaborative proposal, Sheridan College and Laramie County Community College (LCCC) propose to advance a cohesive pipeline of advanced manufacturing training available in the southeast and northcentral regions of the state, thus helping to close skill gaps for the manufacturing industry as it advances into the future.

Sheridan County has strategically invested in infrastructure that supports a growing manufacturing industry. This includes collaboration with the City of Sheridan, Sheridan County, the Wyoming Business Council, the Sheridan Economic and Educational Development Authority (SEEDA), and Sheridan College. According to Lightcast data, the result of this investment so far has led to a 106% increase in manufacturing jobs in Sheridan County over the last decade. Similar collaborations have occurred in Laramie County, and manufacturing jobs increased 33% from 2013-2023. With the upcoming opening of the AMMC, business growth is anticipated to mirror the growth experienced by Sheridan. Throughout Wyoming the manufacturing industry is expected to demand nearly 10,000 employees in the next ten years (https://jobseq.eqsuite.com). It is imperative for both current and future manufacturing business in the state that Sheridan College and LCCC continue to increase capacity for workforce training to support this projected industry growth.

The first stage of the Advanced Manufacturing and Material Center and Concept Forge at LCCC addresses both immediate and future needs of regional employers and entrepreneurs by providing

precision machining, additive manufacturing, and product design. This stage is near completion and focuses on the following elements:

- Supports the immediate training needs of regional employers
- Provides opportunities for organically growing new manufacturing businesses
- Builds a future workforce for attracting new and technically advanced businesses to Wyoming

"From the first industrial revolution (mechanization through water and steam power) to the mass production and assembly lines using electricity in the second, the fourth industrial revolution will take what was started in the third with the adoption of computers and automation and enhance it with smart and autonomous systems fueled by data and machine learning." (Bernard Marr, *What is Industry 4.0?*, Forbes.com). But there remain gaps to the full adoption of Industry 4.0. These gaps include a computer integrated manufacturing lab environment and the inclusion of data analytics. This Phase II WIP application proposes to help close that gap, as well as introduce collaboration with Sheridan College in our shared effort to bring advanced manufacturing education and training to a broad audience in Wyoming.

As part of this WIP Phase II proposal, Sheridan College will develop and advance the cohesive pipeline for the preparation of an advanced manufacturing workforce for Wyoming through the creation of their Advanced Manufacturing and Applied Sciences Building (NWCCD Trustees will name the building in the future). This new center will support programming in Advanced Manufacturing and Composites and enhanced opportunities for industry training. Through this Phase II project, students will have the opportunity to learn from experts in the field, utilize state-of-the-art manufacturing technology, and share lab space with Wyoming innovators.

The Sheridan College WIP Phase II Advanced Manufacturing project will:

a. Recruit and maintain a highly trained advanced manufacturing staff and faculty to deliver curriculum and training.

b. Enhance and build advanced manufacturing workforce pipeline through equipping Sheridan College's Advanced Manufacturing and Applied Sciences Center with state-of-the-art technology.

Sheridan College's Advanced Manufacturing project has been in development for over two years and is a culmination of recommendations and efforts from Sheridan College leadership, industry leaders, and manufacturers across the state. Manufacturers in Sheridan County especially have asserted their need for trained individuals to enter their workforce. In fact, employment projections from Lightcast indicate that in Sheridan County, available manufacturing jobs will grow by 44% over the next ten years; the more advanced markets within manufacturing demonstrate as much as 95% growth within that timeframe. This presents an opportunity for Sheridan College to train and educate individuals to fill this availability and enter the advanced manufacturing workforce with experience in up-to-date technologies, keeping our region and state on the cutting edge of the manufacturing industry. Additionally, Sheridan College's industry partners have been consulted and have highly influenced decisions made regarding space, equipment, and curriculum, ensuring that Sheridan College's Advanced Manufacturing students will leave the program prepared to enter Wyoming's workforce.

LCCC's proposal has similarly benefitted from consultation with regional manufacturers. Our Stage II AMMC project proposes the identification and purchase of equipment to replicate and provide teaching and certifications in a real-world smart computer integrated work-based learning manufacturing environment. This Smart Manufacturing equipment includes training elements such as

industrial maintenance, robotics, control software, and quality control which will be supported by a robust e-learning system which allows for traditional, hybrid, and remote learning scalability options. These options are necessary to meet the needs of the high school and adult learning communities targeted in this proposal. An example of the equipment required for the implementation of this proposal is provided in Attachment A.

Key elements of the proposed training will include:

- Emulation of manufacturing using real, full size industrial equipment
- System that manufactures real products
- Process with advanced manufacturing components used in smart factories and Industry 4.0
- Flexible manufacturing environment for students to practice and research;
    - Flexible Mass Production
    - Predictive Maintenance
    - System integration and automation
- Integrated machining, robotics, PLC automation, MES software, smart sensors, IoT, data analytics, and
- Alignment with curriculum and teaching labs that lead to certification/credentials.

Training and certifications will include both micro credentials in areas such as Robot Operator and Programmer along with industry recognized NIMS certifications in Industrial Maintenance Technology and Industry 4.0 Smart Production. "NIMS has a stakeholder base of over 6,000 companies in partnership with five major industry trade associations: The Association for Manufacturing Technology, the National Tooling & Machining Association, the Precision Machine Products Association, the Precision Metalforming Association, and the Technology and Manufacturing Association. These partners have invested over $7.5 million in private funds for the development of NIMS standards and credentials." (nims-skills.org)

Constraints & Risks: Please describe the constraints (the restrictions or limitations the team may face as it relates to time, money, and equipment) and risks (an uncertain event or condition that could have one or more effects on the component's progress and ability to meet metrics). It is the co-leads job to manage these limitations and risks and balance constraints with available resources to ensure component success.

Similar risks are identified for both institutions in the table below. Collaboration among the members of the working group and in concert with their regional partners is planned to mitigate these concerns. Both institutions accept that these are inherent risks in the current economic environment. A risk management plan will be established to circumvent all risks to ensure project success. Incorporating two project co-leads will also help alleviate leadership risks.

Lastly, to help alleviate these risks, the project co-leads will partner with state and regional manufacturing groups, Manufacturing Works in particular, to drive support for the program, assist in recruiting and training instructors, and provide support to promote the program to high school students and other key talent pipelines to ensure enrollment.

Sheridan College	LCCC
Hiring of qualified personnel Finding qualified experts in the advanced manufacturing field can prove challenging, and these positions will need to be dynamic,	**Employees** Lack of qualified personnel applying for posted positions.

self-starting, innovative individuals with a broad understanding of the field.	
Supply chain issues Ongoing supply chain issues and transportation shortages could delay installing crucial equipment into the space.	**Supply chain issues** Equipment will not arrive on time.
	Enrollment Pressures Interest in training is not as anticipated thus impacting enrollment.
	Facility Renovations Electrical and ventilation renovations will not be completed on time.

2. Objectives, Activities, and Metrics

2.1. Objectives: List the key objectives that will guide the work of this component through Phase II. Objectives should be SMART: Specific, Measurable, Attainable, Realistic, and Time-bound.

Recognizing that the dual pressures of demand and inability to consistently supply a trained manufacturing workforce are increasing, LCCC established an Advisory Committee of subject matter experts while also actively participating in the Next Gen Sector Partnership for Advanced Manufacturing in Southeast Wyoming, and the High-Altitude Manufacturing Partnership (HAMP.) With assistance from these experts and funding from various sources (including WIP, the EDA and a six-penny tax), LCCC is nearing completion of the first objective of establishing an Advanced Manufacturing and Material Center and Concept Forge. In parallel, Sheridan College has maintained active relationships through numerous advisory committees, stakeholder meetings, meetings with individual business owners, as well as participation in the Next Gen Sector Partnership for Advanced Manufacturing in Northern Wyoming, a group now known as New West. The results of these efforts and collaborations will serve to diversify Wyoming's economy by providing training and education to an incoming and incumbent workforce, attracting new manufacturing businesses to Wyoming, and organically growing new advanced manufacturing businesses.

At Sheridan College, objectives for this Phase II project include:

1. **Recruit and maintain a highly trained advanced manufacturing staff** and faculty to deliver curriculum and training.
2. **Develop academic and facility plan** for delivery of industry contract education, community interest/education, micro-credential and vendor-supported certifications
3. **Purchase state-of-the-art equipment and supplies** in order to train students in a manner that prepares them for immediate entry into the workforce.
4. **Recruit students** in order to meet our industry partner needs.

As noted, a missing component to this effort at LCCC is the establishment of a Smart Manufacturing lab that will further integrate robotics and computer software while adding data analytics to the students' work based-learning educational experience.

Therefore, objectives for Phase II of this effort include:

1. **Renovation of an existing facility.** Will include minor renovations to electrical and ventilation systems required to support smart manufacturing equipment.
2. **Identify and deliver micro-credentials and certifications in Smart Manufacturing**. Students will gain knowledge and skills in high demand areas, such as Industrial Maintenance and Production.
3. **Identify and purchase Smart Manufacturing training equipment.** In partnership with business, industry, and economic development partners, identify the equipment necessary to launch an effective Smart Manufacturing lab.
4. **Recruit and train** incoming and incumbent workers to smart manufacturing training. Specifically:
    i. Collaborate with K-12 to provide dual and concurrent enrollment activities to our high school youth.
    ii. Integrate education and training in high school equivalency and ESL student learning experiences.
    iii. Collaborate with local Department of Workforce Services workforce centers to recruit unemployed and underemployed workers which also ensures participants are career ready.
    iv. Collaborate with business and industry partners through Advisory Committee and Manufacturing Next Gen Sector Partnership to identify internship and other work-based learning opportunities and.
    v. Collaborate with military partners to provide training opportunities to transitioning military members and veterans.
5. **Provide open enrollment and customized training** in partnership with business, industry, and economic development partners. Promote and deliver training that specifically closes skill gaps in industrial maintenance, robotics technology, related computer software, and data analytics in the workplace.
6. **Ensure program sustainability through** partnerships with business, industry, workforce and economic development entities and suppliers that can provide ongoing support, training, professional development and growth to ensure the investment is viable for the long-term.

2.2. **Measurable Activities:** Map out the major events of the component, including the completion of key deliverables that are necessary for the component to meet the stated objectives. Explain what will be accomplished during each semester and include information about who is responsible for completion.

Fall 2023

Measurable Activities	Expected Completion	Responsible Party
Formalize a project committee	July 2023	LCCC AMMC Program Manager
Create a detailed project plan to ensure project completion	August 2023	LCCC AMMC Program Manager
Develop and release equipment RFPs	October 2023	LCCC AMMC Program Manager, Trades Director, Industry Partner and LCCC Contracting & Procurement

Select vendor	October 2023	LCCC AMMC Program Manager, Trades Director and Industry Partner
Begin equipment and supply procurement processes	October 2023	Sheridan College
Create equipment purchase orders	November 2023	LCCC Contracting & Procurement
Identify and hire instructors	December 2023	LCCC AMMC Program Manager and Industry Partners
Develop marketing and advertising plan	December 2023	Sheridan College
Recruit and hire administrator	December 2023	Sheridan College
Identify, contract and complete electrical work	December 2023	LCCC AMMC Program Manager and Trades Director

Spring 2024

Measurable Activities	Expected Completion	Responsible Party
Equipment delivery	January 2024	LCCC AMMC Program Manager
Install and test equipment	February 2024	LCCC AMMC Program Manager and Selected Vendor
Train instructors on equipment	February 2024	LCCC AMMC Program Manager, Selected Vendor, and Instructors
Pre-hire grant application	February 2024	LCCC Dean of Outreach & Workforce Development
Schedule Fall 2024 courses	February 2024	Sheridan College
Initiate marketing plan	February 2024	Sheridan College
Develop academic programming plan	March 2024	Sheridan College
Develop facility multi-use plan	April 2024	Sheridan College
Student recruitment	May 2024	LCCC AMMC Program Manager, K-12, Cheyenne and Laramie Workforce Centers, Business and Industry Partners, LCCC Adult Education and ESL programs, Military
Launch training bootcamp	May 2024	LCCC AMMC Program Manager and Instructors
Student recruitment	May 2024	LCCC AMMC Program Manager, K-12, Cheyenne and Laramie Workforce Centers, Business and Industry Partners, LCCC Adult

		Education and ESL programs, Military
Recruit and hire faculty	May 2024	Sheridan College
Purchase equipment and supplies	May 2024	Sheridan College

Summer 2024

Measurable Activities	Expected Completion	Responsible Party
Complete training bootcamp, feedback and assessment	July 2024	AMMC Program Manager and Instructors
Host employer hiring event	July 2024	AMMC Program Manager and Instructors
Complete equipment and supply procurement	September 2024	Sheridan College

Provide any additional context or information about the timeline of the component below.

This timeline is dependent on successfully addressing identified risk factors in section 1.4. A risk management plan will be completed as part of a project plan if funding is awarded to this project.

2.3. Success Metrics: Elaborate on the objectives stated above and identify the specific, quantifiable, and measurable criteria that define the success of this component. Success metrics should include at least one PSG-approved WIP metrics included in the dropdown list below. When selecting a metric please elaborate on how the metric will be measured in the context of the proposed work of the component. Metrics can align with more than one objective. See Appendix A for complete list of Component metrics.

Objective	Metric & Demonstration of Success in Context of the Program Component's Objective
All Objectives *SC and LCCC*	**Program is aligned to local and/or state needs** Sheridan College's Advanced Manufacturing program was developed largely in response to local needs, state of Wyoming industry diversification and workforce training goals, and WIP goals and initiatives specifically. These entities have identified advanced manufacturing as an area of need in Wyoming. By dedicating and renovating a space to Smart Manufacturing, LCCC is addressing needs of existing employers such as Precious Cat and incoming employers such as Eagle Claw in the development of a future workforce. See Cheyenne LEADS letter of support in Attachment C.
SC All Objectives and LCCC Objectives 2 and 5: *2 - Identify and deliver micro-credentials and certifications in Smart*	**New educational program stood up** Sheridan College's Advanced Manufacturing and Composites Technology programming will incorporate industry-recognized credentialing and continue to be informed by industry partners. Development of additional industry training opportunities and facility use plans, including nationally recognized certifications will

Manufacturing, and 5 - Provide open enrollment and customized training.	also be included in SC academic programming as well as industry training and community interest programming. The Smart Manufacturing lab will utilize nationally recognized certifications from organizations such as NIMS to train tomorrow's Industry 4.0 workforce. By utilizing industry recognized credentials, a program can be stood up quickly but more important, will be aligned with industry needs.
SC All Objectives and LCCC Objective 4: Recruit and train students	**Number of students enrolled** Sheridan College aims to recruit 12 students in Advanced Manufacturing and Composites programming. The students will be recruited from a variety of backgrounds, including previously underserved populations. The LCCC certification training supports enrolling two cohorts of 12 students in year one or 24 in total. Micro-credentialed customized and open enrollment training anticipates training approximately 50 students in year one. Working with K-12, Cheyenne and Laramie workforce centers, business and industry partners, LCCC Adult Education and ESL programs and the military, LCCC anticipates reaching these enrollment thresholds.
SC All Objectives and LCCC Objective 4: Recruit and train students	**Anticipated number of graduates** Sheridan College aims to graduate 80% of students enrolled in this programming. Based on 24 students training towards a certification in year one, LCCC estimates that 19 or 80% will earn an industry recognized certification.
SC Objectives 1 and 4 *1 – Recruit and maintain a highly trained advanced manufacturing staff, and 4 – Recruit and train students* *LCCC Objective 4 and 5: 4 - Recruit and train students, and 5 - Provide open enrollment and customized training*	**Job placement after graduation; Full time/Part time are students already within the workforce; and Internships created** The administrator hired through this project at Sheridan College will serve a split function as maintaining the Advanced Manufacturing and Composites programming and collaborating with industry partners through Sheridan College's Manufacturing Incubator. As such, this individual will be able to connect students directly to available jobs within the regional and state workforce. According to O*Net, Industrial Machinery Mechanics have a projected growth of 17% or much faster than average with 240 annual job openings. The support letter provided in Attachment B from Cheyenne LEADS highlights the needs of just one relocating employer to Laramie County is approximately 200.

2.4. Connection to WIP Metrics: All WIP components lead to the long-term success of WIP. Please select ALL applicable long-term WIP metrics from the dropdowns and elaborate on how this component will lead to the advancement of the stated metric. See Appendix B for longer-term WIP metrics.

Business relocation:

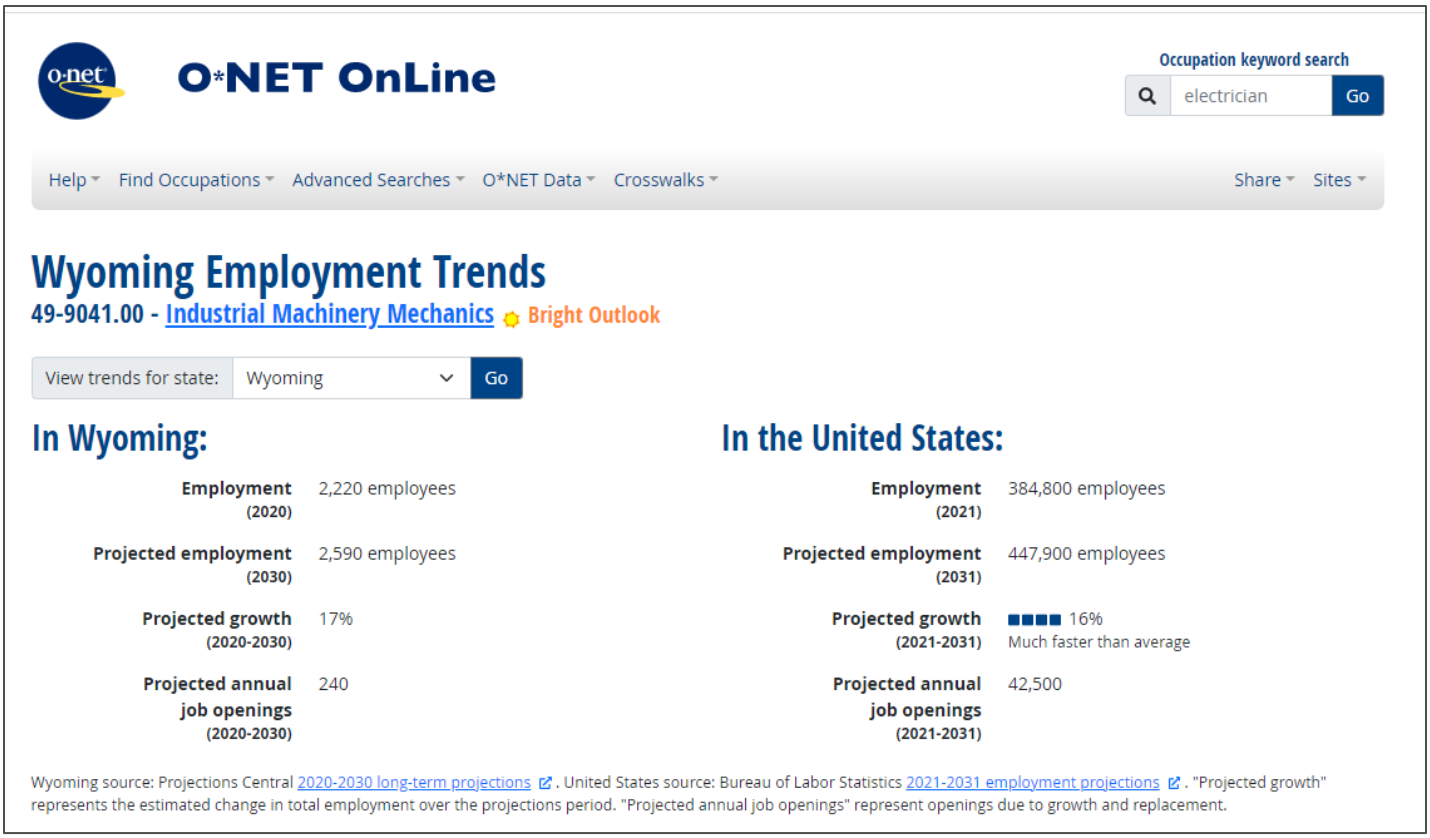
Sheridan College plays an important role in the recruitment of new businesses and the enhancement of current businesses. SC partners with all of the appropriate local entities involved in business recruitment, and the addition of the Advanced Manufacturing and Applied Sciences Center will continue to make this area attractive for businesses.

Cheyenne LEADS actively recruits new businesses to Laramie County. LCCC Smart Manufacturing will be key to addressing the skills gaps for employers such as Eagle Claw who is relocating to Cheyenne in 2023-2024 and anticipates 200 positions.

New jobs added to Wyoming's economy:

The primary goal of Sheridan College's Advanced Manufacturing programming and the Advanced Manufacturing and Material Center (including Smart Manufacturing) and the Concept Forge at LCCC is to support in the diversification of Wyoming's economy. With employers such as Eagle Claw already deciding to relocate to Wyoming and bringing 200 positions, efforts to support these businesses will only have a domino effect to adding new jobs to Wyoming's economy. A 2020 Manufacturing Works report identifies the lack of industrial diversity in Wyoming and the critical impact this can have on our state. A trained workforce can positively impact industrial diversity.

In addition, as the graphic below documents, 240 new jobs will be supported by this Phase II request, which also helps to ensure new jobs are successfully being addressed on behalf of Wyoming's economy.



2.5. **Evaluation:** How will the success of this component be evaluated? What data will be collected to determine if the component is having the desired impact?

Success of this component will be determined through data collection, surveys of Sheridan College and LCCC industry partners, surveys of student and employer satisfaction, and continuing Advisory and stakeholder meetings. Data will include tracking the number of students enrolled, students graduated, job placement after graduation and employer customized training. Demographic data will also be collected from the students to determine that underserved populations are being represented within

the program. Surveys of industry partners will collect information on necessary equipment updates, modifications to training, or recommendations for future growth.

3. Component Stakeholders

3.1. Program Component Lead(s): Who will be the main contact(s) for the component? Is there a plan if one of the leads must leave the program?

Sheridan College's Dean of CTE, the AMMC Program Manager and LCCC Trades Program Director will be co-leads on this project, to be joined by Sheridan College's Advanced Manufacturing Program Director (to-be-hired) through this project. By appointing multiple leads at both locations, if one should leave the program, progress will not be severely impacted.

3.2. Working Group: List the component's working group members, respective institutions, key responsibilities. The working group should include both members that are both internal and external to the institution(s) involved. Think of those affected both directly and indirectly by the work of the component and who will have input on the work and outcome of the component but may not necessarily be represented on the component team.

Both Sheridan College and AMMC at LCCC already have established Advisory Committees which consist of business and industry partners, economic development and workforce organizations, education including K-12, and other subject matter experts. As with LCCC's Stage I AMMC project, this committee will be pared down to include a working team that will assist this project to ensure completion. In addition, an inter-institutional working group will be established to share best practices, co-create curricula, aid in problem solving, and general project support in order to attain success and cohesion for projects at both colleges. This working group will plan to meet monthly during the first year of the project, with quarterly meetings (or as-needed) during years two and three.

3.3. Working Group Communications Plan: Please explain how the working group will work effectively across institutions to communicate with one another, meet key milestones, and meet the component's objectives and deliverables.

As with Phase I, similar communication platforms will be utilized to include advisory committee meetings, Next Gen Sector Partnership meetings, e-newsletters and customized meetings as needed and outlined in the soon-to-be developed communication plan.

3.4. Industry/Business Partnership and Engagement: Please explain how industry partners (current and future partnerships) will be leveraged to advance the component's progress.

Since its inception, Sheridan College and LCCC had both active advisory committees and Next Gen Sector Partnership groups that helped to ensure project completion. Members include K-12, business and industry partners, and economic and workforce development partners. These partners provide guidance and expertise on the facility, equipment identification and selection, curriculum, grant support letters, and will next lend their expertise in instruction. With the Phase II collaboration between the colleges, this group of partners is notably stronger.

3.5. K-12 Partners: Please explain how and which K-12 partners will be involved in the component and support to the overall success of the project.

Sheridan College has an extremely strong relationship with K-12 partners around the state, especially in terms of dual and concurrent enrollment. Sheridan College will lean on these partners to offer dual and concurrent enrollment where appropriate, and recruit students into the program.

LCCC also has a strong relationship with K-12. Already in progress and as part of Phase I, LCCC is partnering with Laramie County School District 1 (LCSD1) on a manufacturing career exploration day. Opportunities for exiting seniors to participate in the boot camp is also underway. Once education has been approved for credit, dual enrollment is another partnership opportunity. In the past, LCCC has also worked with LCSD1 on Youth Camps.

3.6. Community Partners: Please explain how and which community partners will be involved in the component and support to the overall success of the project.

As noted earlier, Sheridan College and the AMMC already have active Advisory committees and participants in the regional manufacturing Next Gen Sector Partnerships. Community partners from these organizations and other organizations have provided subject matter expertise in facility renovations, selecting equipment, selecting vendors, and developing curriculum. At LCCC, they have also made recommendations for participating in events such as Chamber lunches to support LCCC's manufacturing efforts, supporting LCCC events such as Manufacturing Day and the anticipated AMMC grand opening April 14. Business partners have also agreed to help teach segments of the curriculum and provide guaranteed interviews to students.

Member businesses, economic development and workforce organizations who actively serve on the AMMC advisory committee include: Cheyenne LEADS, the Wyoming Business Council, the Wyoming Department of Workforce Services Cheyenne and Laramie workforce offices, Thunder Beast Arms, Magpul Industries, Stag Arms, HiViz Sights, Avvid Corporation, , Frog Creek Partners, Voestalpine Nortrak, and Tube Bending Concepts among others. Brian Gross, CEO of Alliance Brew Gear serves as the co-chair on the AMMC advisory committee. LCCC is also an active member of the High Altitude Manufacturing Partnership (and Next-Gen sector partnership) led by businesses.

Additionally, LCCC and Sheridan College will collaborate with Manufacturing Works (MW) in order to provide the most fluid and cohesive benefit to Wyoming manufacturers. As part of MW's efforts to create awareness among Wyoming manufacturers, LCCC and Sheridan College will endeavor to communicate and partner together in order to connect those same manufacturers with training and educational opportunities available. A support letter from Manufacturing Works is provided in Attachment C.

4. Marketing, Funding, & Sustainability

4.1. Marketing & Communication Plan: Explain how critical information will be delivered to both internal and external stakeholders throughout the project, by who, and at what frequency.

Sheridan College has and will continue to communicate with current and future students, current and future employers, and the greater region regarding the opportunities to learn employable skills through the SC Advanced Manufacturing and Applied Science Building. Upon opening the center, a robust effort will be launched to recruit students and to connect students with internship opportunities through our business partners. A communication plan will be developed and will include the use of traditional and digital advertising, presentations to local entities, tours and "workshop" days for high school students and staff, as well as other outreach opportunities.

Targeted outreach efforts will be conducted during the first year of the facility development, equipment installation and curriculum approval processes.

LCCC has a number of partnerships that will aid in talent pipeline recruitment efforts including:

- Laramie County School Districts 1 and 2 and Albany County School District
- LCCC High School Equivalency and ESL educational programs
- F.E. Warren Air Force Base and transitional military
- Wyoming Department of Workforce Services underemployed and unemployed clients and the Wyoming Department of Vocational Rehabilitation
- Local non-profits
- Business and industry partnerships

This AMMC is an opportune focus in the LCCC Strategic Plan 2030. A full communication plan has been identified as part of the AMMC development and it will used in this proposed stage as well. LCCC's Marketing & Communications team will be key in creating awareness to the community at large. Frequency of this communication is still being determined. Details of communication include a website that contains information on the center. The site will identify options to complete training/certification, information on equipment, purchase access passes to access the spaces on the LCCC campus, and a reservation system to reserve specific pieces of equipment on set dates/times. In addition, digital promotion will occur through social media channels and press releases, while case studies and white papers will be provided on successful projects. An e-newsletter is already being delivered to key stakeholders; the Smart Manufacturing will be incorporated in this successful communication.

4.2. Budget: Submit the supplied budget template with the completed charter. If opting to utilize an indirect cost formula the maximum indirect cost rate will be 20%.

☐ There will be carry over of Component's Phase I funding into Phase II. If so, please explain how those funds will be used on the attached budget template.

Not Applicable – Budget is attached.

4.3. Funding Sources: What is the primary source/s of funding for the component? If external sources will be used in conjunction with WIP funding, please explain.

At Sheridan College, Phase II WIP funding will be utilized in conjunction with internal operating funds and local, state, and potential grant funds. In addition, contract training and manufacturing incubator rental funds provide anticipated revenue to offset ongoing costs.

For Smart Manufacturing equipment at LCCC, Phase II WIP funds will be a primary funding source for equipment and minor facility renovations. However, anticipated generated training revenues will serve as a match for personnel and marketing.

4.4. Sustainability Plan: Please provide a brief sustainability plan that demonstrates how additional financial resources, if needed, will be acquired upon the completion of Phase II to sustain this component and demonstrate how other key factors (enrollment, industry demand, etc.) will support the long-term sustainability of this component.

Sheridan College is confident in the sustainability of the Advanced Manufacturing program, as it will be modeled similarly to Sheridan College's notably successful Machine Tool Technology program, which has sustained itself and maintained cohorts of students each semester. Additionally, this program will be developed in conjunction with a number of other programs which will be housed in Sheridan College's new advanced manufacturing and applied sciences center. With the assistance of industry partners, Sheridan College will ensure that industry needs are met within the program.

It is anticipated Smart Manufacturing will be sustained through revenue generated from classes and customized training. LCCC, in partnership with industry partners, will seek Wyoming Department of Workforce Services pre-hire grants for training an incoming workforce. LCCC will promote Wyoming Department of Workforce Services business training grants for training incumbent workers. Once credit has been awarded to the certificate program, tuition and lab fees will also help support these efforts.

INITIAL EQUIPMENT ESTIMATE:

intelitek

18 Tsienneto Road
Derry, NH 03038

Delivery: 12 Weeks
Currency: USD
Payment: Net 30 Days

Sample Price Quotation - OpenCIM 4 Stations Quotation

Item	Product Bundle Des.	QTY	Unit Price	Total price
Station 1	ASRS (Automated Storage and Retrieval System) - 72 Shelves & RFID Reader	1	49,697.00	49,697.00
Station 2	FMS - MOTOMAN GP8 robot with BenchMill 6100 CNC machine with 4 tool table top ATC	1	63,213.00	63,213.00
Station 3	FMS - MOTOMAN GP8 robot with Laser Engraver and Fume Extractor	1	93,106.00	93,106.00
Station 4	Assembly & QC - MOTOMAN GP8 (for Ballgame & Cognex Vision)	1	51,674.00	51,674.00
Closed Loop Conveyor	Pallet Conveyor - Max 5 Stations (3440mm x 1400mm)	1	34,005.00	34,005.00
Programmable Logic Controller	Allen Bradley PLC & Cabinet (max. 5 Stations)	1	11,703.00	11,703.00
Pallet Tracking	Stop Station – Allen-Bradley	4	3,312.00	13,248.00
Management Station	SmartCIM System Management Station including OpenMES online Software	1	23,078.00	23,078.00
Installation	On Site Installation & Training	1	36,150.00	36,150.00
Shipping	Shipping Cost	1	7,300.00	7,300.00

TOTAL	USD 383,174.00

NOTE: Pricing shown is sample pricing and does not represent a quotation or commitment. SmartCIM 4.0 systems are customer designed and every quotation for clients should be specific to the needs agreed with the customer and approved by a technical Subject Matter Expert in a formal quote.

Additional Two Stations Price Breakdown:

Reply Reply All Forward IM

Wed 2/8/2023 7:24 AM

Curry, David

RE: WIP Phase II Application

To Tast, Mary

You replied to this message on 2/8/2023 8:46 AM.

The added cost is for two additional stations:

- FMS - MOTOMAN GP8 robot with ProTurn 9000 CNC machine - $67,008.00
- Automated Welding: MOTOMAN GP8 Robot & Welding Booth - $56,690.00

Dave

Source Office & Technology
1379 N. Cedar, Ste 105
Laramie, WY 82072
www.sourceot.com

Quote Number: LCCC-020423-1
Date: 2/6/2023
Valid Until: 2/28/2023
Rep: Shane Cox
Regional Manager
307-399-3696
Contract: AA02HONBRAND

QUOTE

Prepared For:

Abbie Connally
LCCC
1400 E. College Dr.
Cheyenne, WY 82007
307-778-1280
AConnally@lccc.wy.edu

Ship To:

Dave Curry
LCCC
1400 College Dr
Cheyenne, WY 82007
307-432-1687
dcurry@lccc.wy.edu

	Part Number	Qty	List	Ext List	Sell	Ext Sell
Catagory:						
	**HMN2** Motivate Nest/Stack Chair-Flex Bck-Uph Seat	6	$729.00	$4,374.00	$293.79	$1,762.74
	.N Arm: No Arm .H Hard .IM 4-Way Black .ON Onyx $(1) Gr 1 UPH .OP Optic 83 Color: Sky .BLCK Black Mica Texture					
	AND-AH2436KOI KOI Crosfit Student Desks, Height Adjustable, 24" x 36"	6	$650.00	$3,900.00	$433.33	$2,599.98
	Worksurface: White Nebula Edge: Bluescape Frame: Titanium Accent: Bluescape Plastic Accent: Bluescape					

Part Number	Qty	List	Ext List	Sell	Ext Sell
AND-MOVE-ITX2 KOI - CASTERS	6	$160.00	$960.00	$106.67	$640.02
SHIPPING Paragon Shipping	1	$0.00	$0.00	$633.33	$633.33
INSTALL Installation - Desks & Chairs	1	$0.00	$0.00	$562.50	$562.50
				Catagory Subtotal:	$6,198.57
		Total:	$9,234.00		**$6,198.57**

Approved By: _____
Name

_____
Title

Date:_____

PO:_____

Cheyenne LEADS
The Cheyenne-Laramie County Corporation for Economic Development

One Depot Square
121 W. 15th Street, Suite 304
P.O. Box 1045
Cheyenne, WY 82003-1045

February 2023

The Wyoming Innovation Partnership (WIP)

Subject: LCCC Advanced Manufacturing – Robotics/Automation

Dear WIP Presidents' Steering Group:

I am writing this letter on behalf of Cheyenne LEADS, the economic development organization for Cheyenne and Laramie County. As you may know, we primarily work with our area's primary employers – those that export their goods and services outside of Laramie County, in turn, bringing capital investment, tax revenue, and jobs to our region. These metrics are how we effectively measure our "ROI," and to achieve the utmost success within this criterion, we work intimately with Laramie County Community College.

Laramie County Community College is an immense asset and resource to the local community, county, state of Wyoming, and overall Rocky Mountain region. As such, the college undeniably proves to be a great partner to Cheyenne LEADS, helping the organization achieve its mission that has been previously detailed above.

The current and future environment of the manufacturing industry includes robust robotic and automation processes that are ever evolving. With that, manufacturers have an increased need for skilled workforce that have extensive knowledge in these specific practices and techniques within the manufacturing field. Laramie County Community College's Advanced Manufacturing and Materials Center will be the premier facility for Wyoming manufacturers to call upon for proper training of their workforce and talent pool, and because of this, we fully support Laramie County Community College's efforts in the further expansion of their advanced manufacturing program's robotics and automation curriculum, equipment, and overall build out.

Many, if not all, existing manufacturers in Laramie County use robotics and automation within their production processes. The use of these practices can be seen at companies with extremely different products and outputs, such as the kitty litter produced by Dr. Elsey's Precious Cat, the tooling done by the esteemed professionals at TBC, Mfg., and the various materials made by local injection molding company, Central Custom Molding, just to name a few.

To add helpful context, it is estimated that there were at least 1,530 manufacturing jobs in Laramie County in 2020 that were – and continue to be – touched by these robotics and automation techniques in some form or fashion. This number is always increasing, which can most recently be seen by the new investment and addition of Eagle Claw Fish & Tackle Co. to our growing community and manufacturing industry. Much of Eagle Claw's manufacturing is accomplished through robotics and automation, and at full build out they could have approximately 200 employees contributing their efforts to this collective endeavor.

leads@cheyenneleads.org
800-255-0742
307-638-6000
Fax 307-638-7728
www.cheyenneleads.org

Cheyenne **LEADS**
The Cheyenne-Laramie County Corporation for Economic Development

One Depot Square
121 W. 15th Street, Suite 304
P.O. Box 1045
Cheyenne, WY 82003-1045

Investments of this nature made within the college's advanced manufacturing program will not just benefit the school itself, but it will also benefit the students, the community, and the state's ability to create and sustain a skilled, strong, and qualified workforce that will be a vital resource to employers that call Wyoming home. In addition, this investment will aid WIP in accomplishing its goals of launching new Wyoming-based businesses, increasing the wages of Wyoming students and citizens, fostering an environment of increased research activity, and ultimately increasing enrollment and graduate retention.

As a Wyoming regional EDO, we are pleased to offer our full and unwavering support of Laramie County Community College, this specific program within the college, and this particular initiative of growing its capabilities in robotic and automation tooling and competencies. In the interest of Wyoming manufacturers and the effort of diversifying the state's economy, we strongly believe that it is not only appropriate, but also imperative for the college to receive additional resources in this space, and we respectfully encourage WIP to award the requested resources within the application.

If you have any questions, please feel free to contact me at betseyh@cheyenneleads.org and/or (307) 638-6000.

Sincerely,
Cheyenne LEADS

BL Hale

Betsey Hale, CEcD
CEO, Cheyenne LEADS

leads@cheyenneleads.org
800-255-0742
307-638-6000
Fax 307-638-7728
www.cheyenneleads.org

Thursday, February 23, 2023

The Wyoming Innovation Partnership (WIP)
Subject: Advanced Manufacturing at Laramie County Community College and Sheridan College

Dear WIP Steering Committee:

I am writing this letter on behalf of Manufacturing Works support of Laramie County Community College and Sheridan College's Wyoming Innovation Partnership Advanced Manufacturing proposals.

Drawing on Manufacturing Work's team of extensive knowledge and vast network of resources, Manufacturing Works delivers the smart, successful, and sustainable solutions to address Wyoming manufacturing business needs. Laramie County Community College (LCCC) and Sheridan College are critical resources for the manufacturing industry in Wyoming and along the front range. Both colleges provide additional resources to Manufacturing Works as we strive to provide the highest level of service to Wyoming manufacturers.

Components of Industry 4.0 manufacturing are vital in training a workforce that impacts the competitiveness of Wyoming's employers and our economy. The advanced manufacturing training expansions in additive manufacturing, robotics, and smart manufacturing that both LCCC and Sheridan College are proposing will provide the skilled workforce demanded now and into the future.

Investments in these colleges will strengthen Wyoming's economy and supports economic diversification. Manufacturing Works is pleased to continue partnering with both colleges in their efforts to train and provide needed resources to Wyoming manufacturers. We support this grant request and pledge to work in unison with these colleges to further our workforce.

If you have any questions, please feel free to contact me at rcase@uwyo.edu.

Sincerely,

Rocky Case
Manufacturing Works

Alliance Brew Gear, INC
1133 West 27th Street
Cheyenne, WY 82001
www.alliancebrewgear.com

Tuesday, February 28, 2023

The Wyoming Innovation Partnership (WIP)
Subject: Advanced Manufacturing at Laramie County Community College and Sheridan College

Dear WIP Steering Committee:

I am writing this letter on behalf of Alliance Brew Gear in support of Laramie County Community College and Sheridan College's Wyoming Innovation Partnership Advanced Manufacturing proposals.

At Alliance we know it's the little things that come together to make the perfect product for our customers worldwide. We provide the products and the know-how to manage those little things so our customers can focus on the bigger things, like their customers and their business!

Having a highly trained workforce is critical to this mission. That is why our company has been closely involved in the development of the Advanced Manufacturing and Material Center (AMMC) and Concept Forge at LCCC since its inception. I serve as the co-chair of the AMMC Advisory Committee and also serve on our local economic development board, Cheyenne LEADS. As a member of LEADS, I recognize the value in the addition of Smart Manufacturing to the center to support businesses who are already in Cheyenne and those relocating to Cheyenne.

If you have any questions, please feel free to contact me at brian.gross@alliancebrewgear.com.

Sincerely,

Charles Brian Gross
President
970-673-3293
Brian.Gross@alliancebrewgear.com

Advanced Manufacturing WIP Phase II Application - Final

Final Audit Report 2023-02-28

Created:	2023-02-28
By:	Jennifer McCartney (jmccartney@lccc.wy.edu)
Status:	Signed
Transaction ID:	CBJCHBCAABAAJ-VmHIsOwoRqF-l9i0gae7P6lGIpYYJo

"Advanced Manufacturing WIP Phase II Application - Final" History

Document created by Jennifer McCartney (jmccartney@lccc.wy.edu)
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Signer wtribley@sheridan.edu entered name at signing as Walter A. Tribley
2023-02-28 - 7:04:55 PM GMT- IP address: 137.89.126.2

Document e-signed by Walter A. Tribley (wtribley@sheridan.edu)
Signature Date: 2023-02-28 - 7:04:57 PM GMT - Time Source: server- IP address: 137.89.126.2

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