



2021-2022 CTE Perkins Reserve
Competitive Grant Application: Due 11:59 p.m. CT, April 13, 2021

NOGA ID <input type="text"/>	Application stamp-in date and time
TEA will only accept grant application documents by email, including competitive grant applications and amendments. Submit grant applications and amendments as follows: Competitive grant applications and amendments to competitivegrants@tea.texas.gov	

Authorizing legislation:

Grant period: **Pre-award costs:**

Required attachments:

Focus Area Selection

- Focus Area 1
- Focus Area 2

Amendment Number

Amendment number (For amendments only; enter N/A when completing this form to apply for grant funds):

1. Applicant Information

Name of organization

Campus name CDN Vendor ID ESC DUNS

Address City ZIP Phone

Primary Contact Email Phone

Secondary Contact Email Phone

2. Certification and Incorporation

I understand that this application constitutes an offer and, if accepted by TEA or renegotiated to acceptance, will form a binding agreement. I hereby certify that the information contained in this application is, to the best of my knowledge, correct and that the organization named above has authorized me as its representative to obligate this organization in a legally binding contractual agreement. I certify that any ensuing program and activity will be conducted in accordance and compliance with all applicable federal and state laws and regulations.

I further certify my acceptance of the requirements conveyed in the following portions of the grant application, as applicable, and that these documents are incorporated by reference as part of the grant application and Notice of Grant Award (NOGA):

- Grant application, guidelines, and instructions
- General Provisions and Assurances
- Application-Specific Provisions and Assurances
- Debarment and Suspension Certification
- Lobbying Certification
- ESSA Provisions and Assurances requirements

Authorized Official Name Title Email

Phone Signature Date

Grant Writer Name Signature Date

Grant writer is an employee of the applicant organization. Grant writer is not an employee of the applicant organization.

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3. Shared Services Arrangements

Shared services arrangements (SSAs) are permitted for this grant.

Check the box below if applying as fiscal agent.

- The LEA or ESC submitting this application is the fiscal agent of a planned SSA. All participating agencies will enter into a written SSA agreement describing the fiscal agent and SSA member responsibilities. All participants understand that the "Shared Services Arrangement Attachment" must be completed and signed by all SSA members, and submitted to TEA before the 80% reserve on the NOGA is lifted.

4. Identify/Address Needs

List up to three quantifiable needs, as identified in your needs assessment, that these program funds will address. Describe your plan for addressing each need.

Quantifiable Need	Plan for Addressing Need
Two NCTX districts currently offer Geographic Information Systems (GIS) and at least three additional districts are planning to add GIS in 20-21. There is an industry need to train Geoscientists, with that career pathway showing a high 10% regional growth rate.	Collaborate with post-secondary partners, specifically Tarrant County College, to develop a dual credit option for NCTX secondary students in GIS. Additionally, other post-secondary partners and programs will be explored, including the University of North Texas College of Engineering.
For 2020, Surveying and Mapping Technicians have a 54.9% turnover rate in North Central TX and Surveyors have a 36.6% turnover rate with median annual earnings of \$42K and \$55K with an 8.77% growth rate.	Develop a crosswalk for Geospatial Engineering and Land Surveying Program of Study (POS) through collaboration with Tarrant County College and other post-secondary schools that serve NCTX K12 partners. Collaborate with industry partners on industry licenses and related project-based instruction.
Due to COVID-19, with business and school closures, no NCTX students have been able to pursue traditional work-based learning (WBL) experiences. There is a need to provide WBL to all students pursuing NCTX Aerial Robotics pathways.	In addition to traditional work-based learning (WBL), including internships, apprenticeships, and on-the-job training; NCTX will collaborate with industry partners to provide virtual WBL opportunities

5. SMART Goal

Describe the summative SMART goal you have identified for this program (a goal that is Specific, Measurable, Achievable, Relevant, and Timely), either related to student outcome or consistent with the purpose of the grant.

By June 2022, of the 10 NCTX Districts that have integrated Aerial Robotics into one pathway, 5 NCTX Districts will develop Geographic Information Systems (GIS) and/or Geospatial Engineering and Land Surveying program of studies as new specialties within the pathway for the 2021-2022 school year. All participating NCTX Districts will prioritize non-traditional student enrollment throughout the Aerial Robotics pathway. Additional objectives include (1) utilizing the regional network to align curriculum and provide dual credit in GIS; (2) offering a variety of professional development opportunities for teachers across multiple aerial robotics industries; and (3) providing work-based learning through involved industry partners.

6. Measurable Progress

Identify the benchmarks that you will use at the end of the first three grant quarters to measure progress toward meeting the process and implementation goals defined for the grant.

First-Quarter Benchmark

Update of MOUs, data sharing agreements, and School Board approvals that are needed for the program additions. An inventory analysis of each campus' purchasing needs and acquisition schedule. Begin the RFP and/or bid process to procure necessary equipment, and program materials in compliance with EDGAR regulations. Select, hire, and onboard contract staff (curriculum specialists/writers). Begin draft of curriculum framework for new course offerings. Establish timelines for reporting data metrics across all districts. Assemble and engage advisory council members as necessary (monthly). Plan, provide, and assess 1 of 2 multi-district professional development events. Draft work-based learning plans for students. Collect BOY enrollment data and demographics of all course offerings associated with the Aerial Robotics pathway.

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8. Measurable Progress (Cont.)

Second-Quarter Benchmark

Identify the type and collect MOY data metrics across all NCTX Districts. Monitor baseline data metrics for non-traditional student enrollment. Develop protocols for the recruitment of non-traditional students into Aerial Robotics pathway. Conduct bimonthly Advisory Committee meetings. Facilitate multi-district professional development (virtual and in-person).(Re)assess campus needs, outstanding purchase orders and RFP. Draft of new curricula for GIS and Geospatial Engineering and Land Surveying courses. Collect the number of work-based learning opportunities for students. Identify the type and collect the number of students participating in work-based learning opportunities.

Third-Quarter Benchmark

Collect EOY data metrics across all NCTX Districts. Monitor baseline data metrics for non-traditional student enrollment. Collect the number of work-based learning opportunities for students. Collect the number of students participating in work-based learning opportunities. (Re)assess campus needs, outstanding purchase orders and RFP. Begin budget closeout, 65% of purchases allocated and received. Students begin Spring coursework including licensure/certification process. Continue bimonthly Advisory Committee schedule.

7. Project Evaluation and Modification

Describe how you will use project evaluation data to determine when and how to modify your program. If your benchmarks or summative SMART goals do not show progress, describe how you will use evaluation data to modify your program for sustainability.

The Program evaluation will be coordinated through FWISD Grant Compliance & Monitoring (GCM). GCM Staff are trained evaluators with experience evaluating both newly formed and established initiatives, as well as conducting applied research studies. Feedback will be provided during advisory meetings, with each grant area being discussed quarterly. Regular meetings with NCTX members will be held to discuss documentation, data collection, and any challenges/ unforeseen aspects to implementing project components. Recommendations and modification will be reported and discussed during all meetings. The following points of information will be assessed: *Classroom Observations: Observations will be conducted to determine the extent to which instructional objectives, as described in the curriculum framework, are being implemented at the classroom level. Observations will be conducted in randomly-selected schools during Fall semester (Quarter 2). Data will be used to influence the working drafts of later curriculum components. Significant findings will be reported in concurrence with Spring PD. *Surveys: Retrospective surveys will be administered to teachers during joint PD events. Data collected during trainings will be used to gather stakeholders' perceptions of grant implementation, PD, student engagement, and growth in aerial robotics knowledge and skills. *Student Academic Measures: Program and/or pathway enrollment and certification completion data will be collected to assess student academic achievement, engagement, and program growth. Students' demographic data will also be collected by each participating campus to ensure an equitable representation of students. (Performance Measures (PM): 2, 5, 6, 8) *District Data: Changes in CTE enrollment, sequencing, and certification will be monitored using public data sources (PBMAS, TAPR, & Snapshot). District-level performance and growth of NCTX members will be compared against region and state performance where possible. *Planning and implementation: Curriculum development and collaboration among NCTX members will be monitored through minutes, agendas, and documentation of curriculum development. Patterns and trends will be reported bimonthly to the Advisory to identify successes and possible modifications to program implementation. Participatory involvement and PD activities will be reported quarterly to identify areas of success and challenge. (PM: 1, 3, 4)

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8. Statutory/Program Assurances

The following assurances apply to this grant program. In order to meet the requirements of the grant, the grantee must comply with these assurances.

Check each of the following boxes to indicate your compliance.

- 1. The applicant provides assurance that program funds will supplement (increase the level of service), and not supplant (replace) state mandates, State Board of Education rules, and activities previously conducted with state or local funds. The applicant provides assurance that state or local funds may not be decreased or diverted for other purposes merely because of the availability of these funds. The applicant provides assurance that program services and activities to be funded from this grant will be supplementary to existing services and activities and will not be used for any services or activities required by state law, State Board of Education rules, or local policy.
- 2. The applicant provides assurance that the application does not contain any information that would be protected by the Family Educational Rights and Privacy Act (FERPA) from general release to the public.
- 3. The applicant provides assurance to adhere to all the Statutory and TEA Program requirements as noted in the 2021-2022 CTE Perkins Reserve Program Guidelines, and to adhere to the 2021-2022 CTE Perkins Reserve Formula Grant, which is incorporated by reference.
- 4. The applicant provides assurance to adhere to all the Performance Measures, as noted in the 2021-2022 CTE Perkins Reserve Program Guidelines, and shall provide to TEA, upon request, any performance data necessary to assess the success of the program.
- 5. The applicant assures that any Electronic Information Resources (EIR) produced as part of this agreement will comply with the State of Texas Accessibility requirements as specified in 1 TAC 206, 1 TAC Chapter 213, Federal Section 508 standards, and the WCAG 2.0 AA Accessibility Guidelines.
- 6. The applicant provides assurance that curriculum will be appropriately aligned to regional labor market supported CTE programs of study including higher education programs of study where applicable.
- 7. The applicant provides assurance that they will submit a Memorandum of Understanding (MOU) detailing the relationship between the institute of higher education, the LEA, and business and industry partner(s) within 90 days of the grant start date. The MOU will establish joint decision-making procedures that allow for planning and implementation of a coherent program across the institutions. The partnership and the MOU must include provisions and processes for collecting, sharing, and reviewing student data to assess the progress of the students.

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9. Program Requirements

1. **Summary of Program (Focus Area 1):** Provide an overview of the program to be planned and designed with grant funds. What pathway will be developed and how will each stakeholder support the pathway planning? What are the goals of developing this pathway and how does a regional pathways approach benefit your community and workforce development efforts in your region?

Not Applicable

2. **Summary of Program (Focus Area 2):** Provide an overview of the program to be implemented with grant funds. What pathway will be implemented and how will each stakeholder support the pathway? In the past, how have stakeholders previously contributed to pathways development in the region? What are the goals of developing this pathway and how does a regional pathways approach benefit your community and workforce development efforts in your region?

The North Central Texas Aerial Robotics STEM Initiative (NCTX) was formed in 2019 to create an innovative new career pathway to meet the demand for Licensed Small Unmanned Aircraft Systems (sUAS) or licensed "Drone" operators. Ten NCTX districts joined the initiative, ranging in enrollment from 187 students (Strawn ISD) to more than 83,000 students (Fort Worth ISD), and share a mission that includes preparing all students for success in college, career, and community leadership. In 2019-20, each district established its own sUAS program, aligned directly with local industry. In 2020-21, NCTX added key strategic partners, including another school district, another IHE, and more diverse industry partners to integrate aerial robotics into several high-wage, high-demand career pathways, including: Agriculture, Aviation Science, AV/Business, Construction, Criminal Justice/Law Enforcement, Cybersecurity, Engineering, and Geographic Information Systems (GIS). For 2021-22, the goals of NCTX based on feedback from industry and IHE partners include: 1. continuing to integrate aerial robotics into the selected high-wage, high-demand career pathways, 2. expanding Aerial Robotics into a new program of study, Geospatial Engineering and Land Surveying, 3. providing dual credit in GIS, and 4. focusing on providing WBL in traditional and innovative ways by dedicated NCTX industry partners. Also, there will be an emphasis on curriculum and training in coding to meet workforce needs. A regional pathways approach benefits NCTX communities and industries by bringing together school districts, a college and university, nine industry partners, and four workforce partners to collaborate, share resources, and advise students with college and high-wage career resources.

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9. Program Requirements (Cont.)

3. **Program of Study (Focus Areas 1 and 2):** The applicant must identify -- in partnership with all LEAs included in the application, a public institution of higher education, employer partners, and local workforce development board, economic development agency, and/or chamber of commerce -- high-wage and in-demand occupations and TEA approved statewide or regionally approved CTE programs of study that lead to these occupations. Regional labor market information must be included in the application demonstrating how the CTE programs of study were identified. Applicants may use LWDA Labor Market information and resources from TEA to demonstrate labor market alignment. Identify the strategy behind this program of study and what the intended education and career outcomes are.

The NCTX Aerial Robotics Initiative has a strong Advisory Committee that includes ten school districts: Azle ISD, Birdville ISD, Cleburne ISD, Crowley ISD, Era ISD, Fort Worth ISD, Grapevine-Colleyville ISD, Keller ISD, Mineral Wells ISD, and Strawn ISD, as well as Tarrant County College and University of North Texas as IHE partners. There are nine employer partners, including Bell Textron, DPR Construction, V3 Consulting Engineers, Half Associates, NCT9-1-1, Yazel Peebles and Associates, and Texas Instruments. Additionally, there are regional workforce partners, including Workforce Solutions for Tarrant County, Workforce Solutions for North Central Texas, North Central Texas Council of Governments, and North Central Texas InterLink. NCTX includes Region 11 approved Programs of Study (POS), including Drone (Unmanned Flight) and Aviation with plans to submit a new POS from input provided by industry partners for Geospatial Engineering and Land Surveying. NCTX will continue to embed curriculum, work-based learning opportunities, college and career resources, professional development, and equipment under the guidance of the NCTX Advisory Committee (workforce intermediaries, industries, and IHE partners) to prepare students to enter the high-wage and in-demand occupations of sUAS operators, pilots, engineers, and other relevant jobs. Tarrant County Workforce Solutions forecasts increases in jobs for engineers (29%), surveyors and mapping techs (28%), pilots (28%), software developers (27%), and electro-mechanical technicians (23%). The average monthly salary for in-demand careers ranges from \$3,400 to \$10,300. Workforce partners have shared in formal, informal, small, and full advisory meetings, the need for increased coding skills as well as general knowledge and skills in the cybersecurity field. In the North Central Texas region, Information Security Analysts expects a projects a 58% growth with a median average \$98,038.

4. **Intermediary Capacity (Focus Area 1):** The applicant must describe how they will build the capacity of the designated intermediary organization to carry out the functions related to this role, including -but not limited to- convening cross-sector stakeholders, supporting regional education and workforce development initiatives, working with educators and employers to create work-based learning experiences and place students in them, and collecting data to evaluate program outcomes and plan for continuous improvement. Describe the intermediary partner's plan to increase capacity during the planning year and the plan to provide adequate staff capacity to this grant.

Not Applicable

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9. Program Requirements (Cont.)

5. **Intermediary Capacity (Focus Area 2):** The applicant must describe the capacity of the designated intermediary organization to carry out the functions related to this role, including -but not limited to -convening cross-sector stakeholders, supporting regional education and workforce development initiatives, working with educators and employers to create work-based learning experiences and place students in them, and collecting data to evaluate program outcomes and plan for continuous improvement. Describe the intermediary partner's existing capacity and plan to provide adequate staff capacity to this grant.

The Project Manager and Intermediary are integral to the success of NCTX's work this school year. The Intermediary, North Central Texas InterLink, Inc. (InterLink), works directly with industry partners to collect input, ensuring that the program maintains alignment with business and industry needs while adhering to the goal of NCTX. The Project Manager communicates regularly with all stakeholders and organizes ongoing projects. In addition to working directly with one another, the Intermediary and Project Manager maximize the capacity of the project by working individually with stakeholders from regional school districts, postsecondary education, business, and industry, as well as working with other intermediaries. Both the Intermediary and Project Manager are respected members of the advisory board, bringing years of regional experience to NCTX. The Intermediary and Project Manager regularly convene cross-sector stakeholders, holding formal meetings but also facilitating digital conversations and virtual surveys. The Intermediary and Project Manager support regional education and workforce initiatives by regularly including presentations from all sectors, both public and private. Through this work, regional school districts and postsecondary stakeholders have established and maintain relationships with business and industry. As an example, NCTX industry partner Bell Textron facilitates a co-curricular competition and the number of competitors has doubled in one year. This competition supports an innovative WBL experience with industry partners working directly with students. The Intermediary and Project Manager work side-by-side in this capacity and will collect evaluation measures. During 2020-21, NCTX developed an active website to provide information about the NCTX Aerial Robotics Initiative, including information about the partners, events, and relevant resources (www.nctxaerialrobotics.com), and this website will grow and continue to be a vital communication tool in 2021-22.

6. **Crosswalk (Focus Areas 1 and 2):** The applicant must provide, for all pathways a crosswalk that identifies secondary and postsecondary coursework that would be required of a student in the program of study to complete a certificate, at a minimum, or receive an associate degree from the partnering general academic teaching institution(s) within two-years of graduating from high school. The crosswalk should align to the higher education program of study curricula where applicable and demonstrate how the program of study can lead to a post-secondary certification and credentials, up to and including, a bachelor's degree or beyond. For Focus Area 1 applicants, this crosswalk should demonstrate a sample or proposed crosswalk of the pathway that will be developed. For Focus Area 2 applications, this crosswalk should be a likely sequence of courses based on prior planning.

Tarrant County College (TCC) offers two-year programs in Engineering, Geographic Information Systems (GIS), Cybersecurity, and Criminal Justice. Local school districts will crosswalk with these programs to extend their pathways. In particular, the GIS program is an area of growth from 2020-2021 to 2021-2022. TCC has enhanced their GIS program by integrating drone technology within their sequence of courses. This is especially helpful as this degree, along with other associate degrees, and related courses lead to a bachelor's degrees at both Embry-Riddle and the University of North Texas (UNT). Embry-Riddle, in Fort Worth, TX offers a four-year Unmanned Systems Applications Bachelor of Science degree and a 4+1 Bachelor's and Master's degree option. UNT offers a Bachelor of Science, Master of Science, and Ph.D. degree in Electrical Engineering. The Electrical Engineering Department joined the NCTX collaborative in 2020-2021 to provide students with the opportunity to work on projects related to ongoing lab research. Their Autonomous Systems Laboratory provides facilities for the investigation of wireless sensor networks, robotics systems, airborne networks, and networks of unattended air vehicles, which directly align to the challenges suggested for further study by the NCTX advisory board. The current GIS crosswalk positions 11th grade students to take GISC 1402, "Understanding Geographic Information Systems", and either GISC 2401, "Data Acquisition & Analysis in GIS", or GISC 2411, "Geographic Information Systems Applications". These courses align to the TEA Innovative Course, Geographic Information Systems. In their 12th grade year, students will take GISC 2402, "GIS Design with Raster Analysis", and GISC 2404, "Geographic Information Systems with Design Vector

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9. Program Requirements (Cont.)**6. Crosswalk (Focus Areas 1 and 2) (Cont.):**

Analysis," in the fall. In the spring, they will take GISC 2420, "Intermediate Geographic Information Systems". This course aligns to the TEA Innovative Course, Raster-Based Geographic Information Systems. Additionally, the dual credit Cybersecurity program will continue to serve students by aligning Computer Science II and Computer Science III to COSC 1436, "Programming Fundamentals I", and COSC 1437, "Programming Fundamentals II", respectively. Foundations of Cybersecurity aligns to ITSY 1300, "Fundamentals of Information Security", Digital Forensics aligns to ITSY 2341, "Security Management Practices" and ITSY 2342, "Incident Response and Handling", and lastly, Internetworking Technologies I aligns to ITSY 2400, "Operating System Security" and ITSY 2401, "Firewalls and Network Security". The promotion of these career pathways and aligned crosswalks are in conjunction with the goals of the NCTX Aerial Robotics STEM Initiative and college and career resources, the result of continued collaboration amongst advisory members. The resources will include workforce data, with a regional, state, and national landscape view, descriptions of careers, education and experience needed, and quotes and considerations from people in the industry.

7. Strategic Partnerships (Focus Areas 1 and 2): Identify regional partnerships and/or initiatives that are aligned to Tri-Agency efforts and are already in place that provide an advantage in developing (focus area 1) or implementing (focus area 2) the proposed pathway(s). Describe how these specific partnerships and/or initiatives will be utilized to strengthen the foundation of their proposed cross-sector work, which is paramount for a regional pathways approach.

NCTX partnerships arise from a strong 2019-2020 advisory board that expanded during 2020-2021, and includes ten SSA districts, Education Service Center Region XI, Tarrant County College, Workforce Solutions for Tarrant County, Workforce Solutions for North Central Texas, North Central Texas InterLink, Inc., North Central Texas Council of Governments, NCT9-1-1, Bell Textron, V3 Consulting Engineers, Chariot Solutions, Half Associates, DPR Construction, and two new members, Yazel Peebles and Associates and Texas Instruments. Yazel Peebles and Associates and Texas Instruments bring with them knowledge and expertise in a wider range of related careers to UAS. This positions the Collaborative to expand its curriculum writing and work-based learning. Within the North Central Texas Council of Governments resides the North Texas UAS Safety and Integration Task Force, on which two of our district members serve. The Task Force consists of nearly 200 members and more than 100 entities representing NASA, Federal Aviation Administration, National Weather Service, multiple airports, multiple airlines, Airbus, Bell, Lockheed Martin, small and large engineering and manufacturing companies that support the industry, postsecondary institutions, police and governmental entities, and members of the Texas Congress. NCTX strategic partnerships facilitate a level of access to industry leaders, bridging the gap that typically occurs when multiple school districts attempt to partner with industry and providing a way to partner with the districts as a whole rather than individually. NCTX benefits greatly from its strategic partnerships, including ESC Region XI, a member of the P-16 Council and 60x30TX Regional Target Advisory Group. NCTX's district member, Mineral Wells ISD, formerly completed a JET Grant and district member, Cleburne ISD, will complete a JET Grant cycle in 2020-21.

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9. Program Requirements (Cont.)

8. Budget Narrative (Focus Areas 1 and 2): Describe how the proposed budget will meet the needs and goals of the program --for staffing, supplies and materials, contracts, travel, etc. --in particular, how will funds increase intermediary capacity? If applicable, include a high-level snapshot of funds currently allocated to similar programs. include a short narrative describing how adjustments will be made in the future to meet needs. How will budget funds be allocated to all stakeholders?

The identified quantifiable needs and the goals of the NCTX Collaborative are made possible through the work of the Intermediary and Project Manager. The Intermediary has served in this role to all industry and educational partners in the region for over two decades. Through introductions, partnership development, data collection and distribution, and collaboration support, the Intermediary has been integral to Career and Technical Education progress in the North Central Texas region. The proposed budget allots funds to be used for a Project Manager. This consultant serves as an extension of the Intermediary through focused work on the efforts of the NCTX Collaborative. The number of members, program pathways, and industries and career fields covered, necessitates a leader for the project who liaises and supports the ongoing work. Long-term, the result of the work will be integrated curriculum, requiring review and revision at milestones, established work-based learning experiences, and official dual credit crosswalks and alignment. The latter two successes will require maintenance from district employees, industry partners, and higher learning members. The NCTX Collaborative can continue to support this work through periodic and voluntary review committees. The 2021-22 academic year will see the inclusion of a new regional program pathway, Geospatial Engineering and Land Surveying, supported by industry partner members of the NCTX Collaborative. Bill Swope of Half Associates also serves on the board of the American Society for Photogrammetry and Remote Sensing and shares updates to the region which will likely lead to more rapid technological improvements. School districts must be ready to pivot and adapt as software improves and skills required in the profession evolve. Additionally, Tarrant County College is revising its Geographic Information Systems courses leading to enhanced dual credit course offerings. The 2021-22 school year will result in districts increasing the number of programs integrating Aerial Robotics through currently established pathways as well as the Geospatial Engineering and Land Surveying pathway. For instance, Birdville ISD and Azle ISD have confirmed the integration of Aerial Robotics within their Construction pathway programs and Grapevine-Colleyville ISD is pursuing integration within the Cybersecurity pathway, with the goal of offering dual credit courses to students through Tarrant County College. These areas as well as others entail the purchases of drones, software, and teacher training. Industry partners within Construction have advocated for complementary industry certifications, pairing the FAA Part 107 certification with OSHA 30-Hour in order for students to enter the workforce with an advantage. Existing pathways require training (as programs see growth at various districts plus a turnover in staff), purchase of software as students move further along in knowledge and skills, and purchase of peripherals and upgrades for maintenance purposes. Formal and informal discussions with industry, in particular with Bell Textron and Half Associates, concluded that all the industries using UAS require knowledge and experience in cybersecurity. Given the fundamental need to integrate this aspect of UAS into the classroom, funds will also be used for training and curriculum in coding and cybersecurity foundations. Texas Instruments has seen a great development in this area and supports the work of the NCTX Collaborative through training and low-cost upgrades to current classroom technology to support coding in Python and cybersecurity through its microbit controllers and other technology. With these changes, work-based learning becomes ever more crucial. School districts plan to use funds to support students in practicum settings such as a model of student unpaid apprenticeship with an electrical co-op wherein students partner with an industry representative to assist with UAS flight and data collection. Additionally, the budget will support an emphasis on College and Career Advising with communications developed for students and parents. Finally, the budget is first built with common costs considered, such as insurance and the funds for the Project Manager. Thereafter, the funds are split among the school districts on a cost per district enrollment basis. A minimum funding dollar amount, \$25,000, is put in place to ensure that the smaller districts still have enough funding to be able to purchase a reasonable number and variety of supplies and equipment to support their programs. The current year's budget was set at a minimum of \$2.51 per student enrolled in the district.

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9. Program Requirements (Cont.)

9. Current Pathways (Focus Area 2): What pathways work currently exists in your region and which stakeholders participate? How does the current work align with the Texas Regional Pathway's Network seven components of a pathway?

The NCTX Aerial Robotics Initiative has been successful in integrating aerial robotics into several high-wage, high-demand career pathways, including: Agriculture, Aviation Science, AV/Business, Construction, Criminal Justice/Law Enforcement, Cybersecurity, Engineering, and Geographic Information Systems (GIS). Plans for 2021-2022 are to add a new regional Program of Study with Aerial Robotics integrated, based on the input of the NCTX industry partners and workforce demand, Geospatial Engineering and Land Surveying. The current work aligns with the seven components of a pathway as follows: 1. Cross-Sector Partnerships - Active Advisory Committee with regularly scheduled meetings of School Districts, Regional Education Service Center, IHE partners (college and university), industry partners, and workforce partners; 2. Alignment with Labor Market Demand - Aerial Robotics integrated into pathways based on industry demand and input from industry partners and Workforce Boards; 3. Integration of Rigorous Core Academics and Career-Focused Learning - Crosswalks of courses in each Program of Study and alignment with college courses for dual credit and preparation for high-wage jobs; 4. College and Career Information and Advising - Information with 6 year plans provided to students and parents with opportunities for dual credit; 5. Links Between Secondary and Post-Secondary - Providing dual credit opportunities for students with collaboration between districts and college programs. 6. Credentials with Value in the Labor Market - Students have the opportunity to earn industry licenses, FAA Part 107; 7. Continuum of Work-Based Learning Experiences - Mentorships, Internships, Virtual Experiences, Industry Sponsored Competition, and On-the-Job Training provided by active NCTX industry partners.

10. Use of Funds (Focus Area 2): How will grant funds be used to: a) increase the number of students in the existing pathway? b) AND/OR increase participating LEAs (and other partners, as appropriate) partnering to provide at least one TEA approved statewide or regional CTE program of study? c) AND/OR expand the number of CTE programs of study that span secondary and postsecondary education and include an appropriate sequence of courses that are aligned with high-wage and in-demand occupations identified by the local regional workforce board? Applicants may use LWDA Labor Market Information and resources from TEA to demonstrate labor market alignment. (Note: 2020-21 Perkins Reserve grantees who received Focus Area 1 [planning] grants should describe how they will implement pathways based on this year's planning efforts instead of describing how they will increase the number of students participating in pathways.)

The NCTX Collaborative is increasing the number of industry partners to include Yazel Peebles and Associates and Texas Instruments. With additional partners, the Collaborative has the opportunity to expand its current developed curriculum framework to include real-world industry problem-based learning (PBL) and work-based learning experiences. Grant funds will assist for the time required for this work. Grant funds will also be used to establish the work needed to integrate the regional pathway program Geospatial Engineering and Land Surveying into selected districts. The number of programs offered by the districts continues to increase as districts find support from industry partners in developing four-year sequences with appropriate curriculum and work-based learning experiences. Grant funds will assist with providing professional development, curriculum, software, supplies, and equipment in these programs. The secondary coursework within multiple program pathways (Agriculture, Aviation Science, AV/Business, Construction, Criminal Justice/Law Enforcement, Cybersecurity, Engineering, and Geographic Information Systems) will also prepare students for dual credit opportunities in Cybersecurity, Geographic Information Systems, Engineering, or Criminal Justice. The program pathways support high-wage/high-demand college degrees and careers such as Information Security Analyst (58% growth and median annual salary of \$98,038), Software Developer (47% growth and \$112,754), Urban and Regional Planner (42% growth and \$71,072 salary), Real Estate Appraisers and Assessors (37% growth and \$43,499 salary), Real Estate Agents (34% growth and \$89,019), and Police Patrol Officers (33% growth and \$69,376 salary).

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10. Equitable Access and Participation

Check the appropriate box below to indicate whether any barriers exist to equitable access and participation for any groups that receive services funded by this grant.

- The applicant assures that no barriers exist to equitable access and participation for any groups receiving services funded by this grant.
- Barriers exist to equitable access and participation for the following groups receiving services funded by this grant, as described below.

Group	<input type="text"/>	Barrier	<input type="text"/>
Group	<input type="text"/>	Barrier	<input type="text"/>
Group	<input type="text"/>	Barrier	<input type="text"/>
Group	<input type="text"/>	Barrier	<input type="text"/>

11. PNP Equitable Services

Are any private nonprofit schools located within the applicant's boundaries?

- Yes No

If you answered "No" to the preceding question, stop here. You have completed the section. Proceed to the next page.

Are any private nonprofit schools participating in the grant?

- Yes No

If you answered "No" to the preceding question, stop here. You have completed the section. Proceed to the next page.

Assurances

- The LEA assures that it discussed all consultation requirements as listed in Section 1117(b)(1) and/or Section 8501(c)(1), as applicable, with all eligible private nonprofit schools located within the LEA's boundaries.
- The LEA assures the appropriate Affirmations of Consultation will be provided to TEA's PNP Ombudsman in the manner and time requested.

Equitable Services Calculation

1. LEA's student enrollment	<input type="text"/>
2. Enrollment of all participating private schools	<input type="text"/>
3. Total enrollment of LEA and all participating PNPs (line 1 plus line 2)	<input type="text"/>
4. Total current-year grant allocation	<input type="text"/>
5. LEA reservation for direct administrative costs, not to exceed the grant's defined limit	<input type="text"/>
6. Total LEA amount for provision of ESSA PNP equitable services (line 4 minus line 5)	<input type="text"/>
7. Per-pupil LEA amount for provision of ESSA PNP equitable services (line 6 divided by line 3)	<input type="text"/>
LEA's total required ESSA PNP equitable services reservation (line 7 times line 2)	<input type="text"/>

For TEA Use Only:

Adjustments on this page have been confirmed with _____ by _____ of TEA by phone / fax / email on _____.

12. Request for Grant Funds

List all of the allowable grant-related activities for which you are requesting grant funds. Include the amounts budgeted for each activity. Group similar activities and costs together under the appropriate heading. During negotiation, you will be required to budget your planned expenditures on a separate attachment provided by TEA.

Payroll Costs

1.	Project Development Specialist	\$15,000
2.	Professional Staff Extra Duty Pay	\$20,000
3.	Employee Benefits	\$5,000
4.		
5.		

Professional and Contracted Services

6.	Project Coordinator-Contract CTE Professional to Coordinate Grant Activities and Funds	\$50,000
7.	FWISD Grants Compliance Monitoring	\$20,000
8.	Intermediary for Travel and Networking Services	\$10,000
9.	IHE Partner Services/College Career Advising	\$10,000
10.	Professional Development/Training/Stipends and Audio Visual for Student Showcase	\$20,000

Supplies and Materials

11.	Instructional Materials, Curriculum, Related Equipment	\$208,000
12.		
13.		
14.		

Other Operating Costs

15.	Out of State Travel for Employees	\$5,000
16.	Travel for Employees	\$2,750
17.	Other Costs for K12 District Partners and WBL activities	\$513,000

Capital Outlay

18.		
19.		
20.		

Direct and indirect administrative costs:

TOTAL GRANT AWARD REQUESTED:

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Adjustments on this page have been confirmed with _____ by _____ of TEA by phone / fax / email on _____.

Appendix I: Negotiation and Amendments

Leave this section blank when completing the initial application for funding.

An amendment must be submitted when the program plan or budget is altered for the reasons described in the "When to Amend the Application" document posted on the [Administering a Grant](#) page of the TEA website and may be emailed to competitivegrants@tea.texas.gov Include all sections pertinent to the amendment (including budget attachments), along with a completed and signed copy of page 1 of the application. More detailed amendment instructions can be found on the last page of the budget template.

You may duplicate this page.

For amendments, choose the section you wish to amend from the drop down menu on the left. In the text box on the right, describe the changes you are making and the reason for them.

Always work with the most recent negotiated or amended application. If you are requesting a revised budget, please include the budget attachments with your amendment.

Section Being Negotiated or Amended	Negotiated Change or Amendment
<input type="text"/>	NA
<input type="text"/>	
<input type="text"/>	
<input type="text"/>	
<input type="text"/>	

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