Regular Meeting
Agenda Item 7B
August 18, 2020
Information Item

2020 USDA Rural Utilities Distance Learning and Telecommunications Grant

Summary:
Northland Pioneer College proposes Advancing Educational Resilience in Emergency Situations (AERIES), a three-year project to extend and enhance access to post-secondary educational opportunities available to students across even the most isolated portions of Navajo and Apache Counties. It is the objective of Project AERIES to increase students' educational resiliency to ongoing and future emergencies, like the COVID19 pandemic, by providing them with the technology they need for any-place learning, while also increasing the educational resilience of college instructors by making the existing Wide Area Network and technology solutions at each partner high school more robust, efficient and flexible. The project goal will be measured by the increase in number and percentage of students accessing and successfully completing post-secondary classes provided through the AERIES project. Activities include:

- Upgrading of AV-linked classrooms on the site of each of sixteen partner high schools and five NPC A-V classrooms. These upgrades will enable each classroom to be transformed from an end-user only site to a hub/end user site enabling any qualified instructor to teach from any location within the college/high school consortium to any location within the college/high school consortium. This change will vastly expand the ability to connect college-certified instructors with learners across the service area;
- Upgrading of low-bandwidth teleconferencing solutions at each endpoint, assuring that classroom connectivity is not interrupted and that students can access synchronous classes remotely;
- Utilization of innovative technology solutions that are most compatible with enabling students to remain synchronously connected to their classes from any Wi-Fi –enabled location, if they must work remotely.

The amount of $946,109.00 is requested from the Rural Utility Services Distance Learning and Telemedicine grant program. Grant funds will be used for acquisition of all AV-linked classroom technology and peripherals. Installation and maintenance will be performed by NPC's Technology Advancement and Support (TAS) division as

part of the required 15% match. NPC's Instructional Innovation Division will also provide support to instructors for distance education pedagogy to optimize teaching and learning.

Both Northland Pioneer College and its partner high schools, like most educational institutions worldwide, are in a period of great uncertainty with regard to the upcoming academic year. The COVID-19 pandemic has already prompted many students and parents of students to opt for either withdrawing from classes or homeschooling, at least for the Fall 2020 semester. This simply is not an option for many of the students who will be served by Project AERIES. Moreover, the loss of enrollment for both the college and its partner high schools has tremendous negative implications with regard to budgeting – implications that cannot yet be foreseen, due to the fluidity of the pandemic. Funding through the Rural Utilities Services Distance Learning and Telemedicine program will enable the college and sixteen rural and remote high schools across its service area to develop sustainable solutions that will enable them to keep their students connected and maintain resiliency in times of crisis.

B. Executive Summary

An Introduction to the Applicant and Service Area:

Northland Pioneer College (NPC), established in 1972, is the only **publically-controlled, comprehensive, multi-campus community college** serving Navajo and Apache Counties in rural and remote northeastern Arizona. All students commute to four full-service campuses, five centers, and numerous outreach sites to participate in traditional classroom lectures, and hands-on labs. Since the early 1980's NPC has been a pioneer and leader in the use of Distance Learning Technology (DLT), offering classes via interactive video/audio formats. The college's DLT network is the most efficient, efficacious, and cost-effective way to provide educational services to students in our region of dispersed, low population density, and often the only way to aggregate enough students to fill courses. NPC serves an area of 21,148 square miles with a population density of fewer than 10 persons per square mile. For perspective, there are 56.3 persons per square mile across Arizona and 432.4 per square mile in Maricopa County, home of the state capital, Phoenix.[1] To further illustrate the vastness of the NPC service area, the State of West Virginia, which covers approximately the same number of square miles, has twenty-two separate community college districts! The tribal lands of the Navajo, Hopi and White Mountain Apache people comprise 80% of the NPC service area. Over 56% of the population is Native American, compared to 5% for Arizona and 1.2% for the U.S.[2] While 14% of all Arizonans live below the poverty level[3], 28.5% of Navajo and 37.3% of Apache County residents have this distinction[4], making the two counties among the poorest 1% of all counties in the U.S.[5] High unemployment and poverty are concomitant with low levels of educational attainment, as will be documented in the Need Statement.

What is Needed and Why?:

So how can NPC meaningfully affect the rate of college-going across its service area, thus impacting the low educational attainment? Increasing access to post-secondary educational opportunities, beginning at the high school level, became our focus in the late 1990s. Results of a 2013 study published in the What Works Clearinghouse provided evidence that high school students, particularly from backgrounds underserved in post-secondary education, who earn seven or more credits of dual enrollment (DE) are significantly more likely to complete any college degree, because DE gives them a head start on degree completion.[6] This is especially significant for NPC students, the majority of whom are challenged by financial constraints as well as being the first generation in their families to attend college, and/or representing

[1] US Census QuickFacts – July 2018: https://www.census.gov/quickfacts/fact/table/AZ,apachecountyarizona,navajocountyarizona,US/PST045219
[2] US Census QuickFacts – July 2018: https://www.census.gov/quickfacts/fact/table/AZ,apachecountyarizona,navajocountyarizona,US/PST045219
[3] US Census QuickFacts – July 2018: https://www.census.gov/quickfacts/fact/table/AZ,apachecountyarizona,navajocountyarizona,US/PST045219
[4] Ibid
[5] Bureau of Economic Analysis Regional Accounts Data: www.bea.gov/regional/bearfacts
[6] WWC Review of the Report "The Impact of Dual Enrollment on College Degree Attainment: Do Low-SES Students Benefit?" - http://ies.ed.gov/ncee/wwc/SingleStudyReview.aspx?sid=20004

underserved racial/ethnic backgrounds. NPC has had DE agreements with high schools across its serve area for over 18 years, allowing students to earn college credits in a wide variety of career and technical education (CTE) and general education transfer classes, tuition-free.

The evidence supporting the role DE plays in advancing post-secondary attainment motivated NPC to find ways to expand access to DE opportunities across its service area. This was challenging, because per NPC accrediting requirements, as well as Arizona Department of Education mandate, DE classes must be taught by instructors who are certified to teach at the community college level. This was a critical problem in a region where rural, remote high schools struggle to attract teachers who are certified at the high school level, particularly in subjects like higher mathematics, languages and humanities.

Greater educational access to college courses was made available to our partner high schools through a robust network of audio-visual (AV) linked classrooms, that enabled students to interact with each other and with their instructors synchronously. Located on the campuses of partner high schools in sixteen communities across the college's service area, this project was implemented through a five-year (2015-2020) project: Technology to Advance Learning Outcomes at Northland (TALON), funded by the U.S. Department of Education's Title III Native American Serving Non-Tribal Institutions (NASNTI) grant program.

Offerings included not only high school dual enrollment, but also College and Career Prep (CCP – Adult Basic Education), and courses to prepare students for taking the exam for the High School Equivalency (HSE) diploma. Adult learners in some of the most remote communities in the NPC service area benefitted. Students in these classes found travel to the nearest NPC location to be prohibitive, but between Fall 2016 and Spring 2019, 126 adult students successfully completed College and Career Prep and High School Equivalency classes at TALON partner high schools. In some cases, the High School Equivalency diploma was all that was required for these individuals to obtain entry-level, paraprofessional positions in their community school districts.

The TALON project goals for increasing access to, and subsequent completion of post-secondary courses for high school students at these outlying locations were wildly successful, far exceeding our expectations. Between Fall 2016 and Spring 2020, TALON generated 2,284 unduplicated enrollments, serving 861 students, over 53% of whom are racial/ethnic minorities. There were 322 individual course sections offered, with a 90% average success rate. Still, the final academic semester of the TALON project was severely impacted by the COVID 19 pandemic, and the repercussions are ongoing. While NPC instructors acted quickly to adopt strategies that would allow their students to finish the semester while working online from home, these students faced a terrible disadvantage. They had to transition from a synchronous learning environment, where they were able to communicate with instructors and fellow students in real time, asking questions, taking part in discussions, and hearing and making presentations – all strategies that optimize learning – to a purely asynchronous, online format. That there is no predictable outcome for the pandemic implies an educational future for these low-income, first-generation students that is frighteningly bleak.

The effects of COVID-19 have also threatened the commitment that NPC and its partner high schools made for sustaining the TALON project. For the upcoming academic year, the college and high schools will be facing enrollment declines due to COVID-19. This is significant, because operational budgets are tied to enrollment, so budgetary capacity for maintaining and replacing aging equipment is compromised; to what degree remains as uncertain as the pandemic itself. Moreover, the college and high schools are also facing new challenges to making operational budgets stretch to assure clean, safe learning and working environments for students, faculty and staff. A grant from the USDA RUS-DLT program will enable us to implement a more efficient and effective DLT solution that expands the capabilities of the TALON project for both the college and its sixteen partner high schools, enabling students and faculty to remain connected through synchronous teaching and learning, even as the pandemic, and even unforeseen future emergencies, conspire against them. While the project goals are focused on creating educational resiliency in the face of situations like COVID-19, given the very budgetary constraints that have been created by COVID-19, this is a project that would not be possible without grant funding.

Project Summary: How Will We Address the Need, and What is the Goal?

Northland Pioneer College proposes Advancing Educational Resilience in Emergency Situations (AERIES), a three-year **Distance Learning** project to extend and enhance access to post-secondary educational opportunities available to students across even the most isolated portions of Navajo and Apache Counties. The chart below includes the name and location of each project site. The key feature of Project AERIES is that ***all*** **project sites are BOTH hub and end- user sites.** Also of note, 10 of the 22 are located on Native American tribal lands, **and 7 of the 22 are located in Opportunity Zones,** as designated by an asterisk, for which special consideration is requested[7].

Table 1: AERIES Project Sites

Site Number	Site Name	Town or Place Name	County and Tribal Location, if Applicable	2010 Census Population
1	Alchesay High School	Whiteriver, AZ	Navajo, Fort Apache Reservation	4,104
2	Blue Ridge High School*	Lakeside, AZ	Navajo	4,282
3	Dishchiibikoh High School	Cibecue, AZ	Navajo, Fort Apache Reservation	1,713

[7] Arizona Commerce Authority Opportunity Zones: https://azcommerce.maps.arcgis.com/apps/webappviewer/index.html?id=be88b47979a5443aac8efede74266b91

4	Ganado High School New	Ganado, AZ	Apache, Navajo Nation	1,210
5	Holbrook High School	Holbrook, AZ	Navajo	5,053
6	Hopi High School	Keams Canyon, AZ	Navajo, Hopi Reservation	304
7	Joseph City High School*	Joseph City, AZ	Navajo	1,386
8	Mogollon High School	Heber, AZ	Navajo	2,822
9	Red Mesa High School	Teec Nos Pos, AZ	Apache, Navajo Nation	730
10	Sequoia Village School	Show Low, AZ	Navajo	11,321
11	Shonto Preparatory Technology High School	Shonto, AZ	Navajo, Navajo Nation	591
12	Show Low High School	Show Low, AZ	Navajo	11,321
13	Snowflake High School*	Snowflake, AZ	Navajo	5,858
14	St. Johns High School*	St. Johns, AZ	Apache	3,517
15	Valley High School*	Sanders, AZ	Apache, Navajo Nation	630
16	Winslow High School	Winslow, AZ	Navajo	9,427
17	NPC Hopi Center	Keams Canyon, AZ	Navajo, Hopi Reservation	304
18	NPC Kayenta Center	Kayenta, AZ	Navajo, Navajo Nation	5,189
19	NPC Whiteriver Center	Whiteriver, AZ	Navajo, Fort Apache Reservation	4,104
20	NPC Painted Desert Campus	Holbrook, AZ	Navajo	5,053
21	NPC St. Johns Center*	St. Johns, AZ	Apache	3,517
22	NPC Silver Creek Campus*	Snowflake, AZ	Navajo	5,858

It is the objective of Project AERIES to increase students' educational resiliency to ongoing and future emergencies, like the COVID19 pandemic, by providing them with the technology they need for any-place learning, while also increasing the educational resilience of college instructors by making the existing Wide Area Network and technology solutions at each partner high school more robust, efficient and flexible. **The project goal will be measured by the increase in number and percentage of students accessing and successfully completing post-secondary classes provided through the AERIES project.** Activities include:

- Upgrading of AV-linked classrooms on the site of each partner high school to enable each classroom to be **transformed from an end-user only site to a hub/end user site** enabling any qualified instructor to teach from any location within the college/high school consortium to any location within the college/high school consortium, vastly expanding the ability to connect college-certified instructors with learners across the service area;
- Upgrading of low-bandwidth teleconferencing solutions at each endpoint, assuring that classroom connectivity is not interrupted and that students can access synchronous classes remotely;
- Establishment of a schedule of classes that will facilitate high school dual enrollment classes, taught during the school day, College and Career Prep for adult learners, taught during evenings, and courses leading to degrees in Early Childhood Education (ECD) and Education (EDU) taught on weekends, that can be readily transitioned to synchronous distance learning instruction from any Wi-Fi-enabled location.
- Utilization of innovative technology solutions that are most compatible with enabling students to remain synchronously connected to their classes from any Wi-Fi –enabled location, if they must work remotely.
- Establishment of a strong evaluation plan to assure continual monitoring of process and outcome measures, and guide ongoing refinement and improvement of strategies to advance the project goal and objectives and ultimately ensure sustainability.

Grant funds will be used for the following purposes:

- Acquisition of all AV-linked classroom technology and peripherals.

Installation and maintenance will be performed by NPC's Technology Advancement and Support (TAS) division as part of the required match.

To sustain the 2015-2020 Title III-funded TALON project, each of the sixteen high schools in the consortium have signed Intergovernmental Agreements (IGAs) establishing that they will provide the following, which will also be required for implementation of AERIES:

- A classroom on the site of the high school, that is pre-wired to support the technology;
- A lab aide to oversee dual enrollment classes;
- A school contact to facilitate enrollment of students in dual enrollment offerings and maintain dual enrollment agreements with NPC;
- A part-time (evenings and weekends) monitor to oversee CCP, ECD and EDU classes and facilitate students' access to the classroom;
- Modification of high school course scheduling, as necessary, to align with NPC scheduling that facilitates all course offerings;
- Local maintenance of equipment and bandwidth following the sunset of the grant. (NPC will replace equipment and peripherals as necessary.)

These IGAs are a testament to the strength of the partnership that has been established between NPC and these high schools. Further evidence of the value that is placed on synchronous,

distance learning technology for post-secondary education is revealed by the request from each high school in the consortium for seats for their students for DE class sections for academic year 2020-21. Nearly 2.5 times as many seats are requested for the upcoming year as in 2019-2020, the final academic year of the TALON project:

High School Name	FA 2019 Enrollment	FA 2020 Requests
Alchesay	27	50
Blue Ridge	43	200
Cibecue	12	36
Ganado	33	70
Holbrook	52	70
Hopi	16	30
Joseph City	29	70
Mogollon	33	53
Red Mesa	15	24
Sequoia	0	24
Shonto Preparatory	16	16
Show Low	0	80
Snowflake	38	100
St. Johns	33	40
Valley	21	33
Winslow	20	49
TOTAL	**388**	**945**

While this table depicts the number of rural students who will be served by the project at each high school location, AERIES assures that each high school, as well as all college locations, are both hub and end-user sites. Because this enables synchronous instruction to take place from and to any consortium classroom, the numbers served each year will be much higher.

When the RUS-DLT grant deadline was extended, the college and its consortium partners were in the midst of the chaos created by the pandemic, and were scrambling to keep students engaged with their learning through the end of the spring semester. As part of the AERIES project, all districts have verbally committed to signing a Memorandum of Agreement (MOA), which will be available prior to any grant award, attesting to their commitment to provide the following, in addition to what was established through the IGAs:

- A designated administrator to serve on the Project AERIES advisory committee, which will meet quarterly to evaluate progress of the project and promote ongoing refinement as needed;
- A designated Information Technology single point of contact to work with NPC's TAS technicians to operationalize, maintain and support project technology.

The amount of **$946,109.00** is requested from the Rural Utility Services Distance Learning and Telemedicine grant program. Northland Pioneer College Technology Advancement and Support (TAS) technicians will complete installation of all equipment and peripherals in each of the partner high school locations, and provide ongoing technical support and training to enable each high school to maintain its own equipment, thereby more than providing the required 15% match through in-kind. NPC's Instructional Innovation Division will also provide support to college faculty as well as all instructors at partner high schools to optimize distance education pedagogy supporting effective teaching and learning. Cisco Solutions, from whom we will purchase the technology, will also assist with evaluation and refinement of the solutions, so AERIES can be implemented on a broader scope, not only across the service area, but also in other rural and remote community college districts whose populations would benefit from expanded access to synchronous distance learning.

Both Northland Pioneer College and its partner high schools, like most educational institutions worldwide, are in a period of great uncertainty with regard to the upcoming academic year. The COVID19 pandemic has already prompted students and parents of students nationwide to opt for withdrawing from classes and homeschooling, at least for the Fall 2020 semester. This simply is not an option for many of the students who will be served by Project AERIES. Moreover, COVID-19 has created tremendous negative implications with regard to budgeting for both NPC and its partner high schools – implications that cannot yet be foreseen, due to the fluidity of the pandemic. Without grant funding, it is uncertain whether partner high schools would be able to sustain the TALON project as planned; whatever the case, they are committed to carrying out sustainability plans insofar as their operational budgets will permit. AERIES can take the consortium to a new level, not only assuring NPC can continue to provide, and high schools can continue to receive synchronous distance learning opportunities, but assuring these opportunities can be accessed remotely by both instructors and learners, and expanding the pool of qualified post-secondary instructors who can teach from and to any location across the consortium. Funding through the Rural Utilities Services Distance Learning and Telemedicine program will enable the college and sixteen rural and remote high schools across its service area to develop sustainable solutions that will enable them to keep their students connected to their instructors and peers, maintaining educational resiliency, even in times of crisis.