Tran-SET

Transportation Consortium of South-Central States

Solving Emerging Transportation Resiliency, Sustainability, and Economic Challenges through the Use of Innovative Materials and Construction Methods: From Research to Implementation

Analysis of the Causes of Workforce Shortages: Create Guidelines for Education and Workforce Development in Transportation to Generate Future Careers for the Navajo Nation

Project No. 19TTNTU03

Lead University: Navajo Technical University

Final Report

August 2020

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16. Abstract

Activities were dedicated to the collections, summarizations and categorizing more research articles related to the analysis of the sources of workforce deficiencies. The focus was on the technical and educational solution methods and strategies, guideline relevant to the workforce development. The times also were committed to the development of educational modules related to carrier's opportunities in the transport industry into a couple of courses. Several NTU STEM students were interviewed, selected and introduced for the summer research internships in transportation areas to LSU Tran SET center. Outreach activities conducted with the community and some of the high school professionals related to the factors, which have the greatest impact on job choice decisions of students entering the workforce in transportation industries. In order to increase the community knowledge and awareness several intern students were hired and guided to do research about the impact of transport trades and jobs chances on communities in the Navajo Nation.

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SI* (MODERN METRIC) CONVERSION FACTORS

APPROXIMATE CONVERSIONS TO SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
		LENGTH		
in	inches	25.4	millimeters	mm
ft	feet	0.305	meters	m
yd	yards	0.914	meters	m
mi	miles	1.61	kilometers	km
		AREA		
in^2	square inches	645.2	square millimeters	mm^2
ft^2	square feet	0.093	square meters	m^2
yd^2	square yard	0.836	square meters	m^2
ac	acres	0.405	hectares	ha
mi^2	square miles	2.59	square kilometers	km^2
		VOLUME		
fl oz	fluid ounces	29.57	milliliters	mL
gal	gallons	3.785	liters	L
ft^3	cubic feet	0.028	cubic meters	m^3
yd^3	cubic yards	0.765	cubic meters	m^3
		NOTE: volumes greater than 1000 L shall be shown in m^3		
		MASS		
oz	ounces	28.35	grams	g
lb	pounds	0.454	kilograms	kg
T	short tons (2000 lb)	0.907	megagrams (or "metric ton")	Mg (or "t")
		TEMPERATURE (exact degrees)		
^oF	Fahrenheit	5 (F-32)/9 or (F-32)/1.8	Celsius	^oC
		ILLUMINATION		
fc	foot-candles	10.76	lux	lx
fl	foot-Lamberts	3.426	$candela/m^2$	cd/m^2
		FORCE and PRESSURE or STRESS		
lbf	poundforce	4.45	newtons	N
lbf/in^2	poundforce per square inch	6.89	kilopascals	kPa

APPROXIMATE CONVERSIONS FROM SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
		LENGTH		
mm	millimeters	0.039	inches	in
m	meters	3.28	feet	ft
m	meters	1.09	yards	yd
km	kilometers	0.621	miles	mi
		AREA		
mm^2	square millimeters	0.0016	square inches	in^2
m^2	square meters	10.764	square feet	ft^2
m^2	square meters	1.195	square yards	yd^2
ha	hectares	2.47	acres	ac
km^2	square kilometers	0.386	square miles	mi^2
		VOLUME		
mL	milliliters	0.034	fluid ounces	fl oz
L	liters	0.264	gallons	gal
m^3	cubic meters	35.314	cubic feet	ft^3
m^3	cubic meters	1.307	cubic yards	yd^3
		MASS		
g	grams	0.035	ounces	oz
kg	kilograms	2.202	pounds	lb
Mg (or "t")	megagrams (or "metric ton")	1.103	short tons (2000 lb)	T
		TEMPERATURE (exact degrees)		
^oC	Celsius	1.8C+32	Fahrenheit	^oF
		ILLUMINATION		
lx	lux	0.0929	foot-candles	fc
cd/m^2	$candela/m^2$	0.2919	foot-Lamberts	fl
		FORCE and PRESSURE or STRESS		
N	newtons	0.225	poundforce	lbf
kPa	kilopascals	0.145	poundforce per square inch	lbf/in^2

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ACRONYMS, ABBREVIATIONS, AND SYMBOLS

NTU	Navajo Technical University
LSU	Louisiana State University
Under-Represented Minority	URM
Tran-SET	The Transportation Consortium South Central States
STEM	Science, Technology, Engineering. Math
TCU	Tribal College Universities
DOT	Department of Transportation
FHA	Federal Highway Administration

EXECUTIVE SUMMARY

Some of the Native American students in Science, Technology, Engineering and Math (STEM) at Navajo Technical University (NTU) have been instructed and trained in transportation-related firms thru the opportunities provided by the NTU-LSU partnership program. The program is a well-designed initiative supporting local Native American student from high school to NTU STEM undergraduate programs of study. We are planning to develop on-line courses, which would be offered free to the Native American institutions throughout the population in order to make this program more practical and accessible. Developments are anticipated to support additional undergraduates plus high school students each year throughout this initiative plan. Further actions expected by NTU are the partnership with diverse exploration, instruction and outreach projects related to transportation originated by the NTU capacity partners. The NTU STEM and pre-engineering students have contributed in the summer research practicum programs, educational, workshop, site visits as well as familiarizing students to the maximum technologically cutting-edge factual research workshops in the region as well as state-of-the-art capacities at other collaborative institutions. Several NTU students performed with resident trade and organizations to improve workforce development in the region and Navajo Nation. Eligible Local Native American students were selected and sent to funded summer research practicums in the field with accommodations in transportation businesses and also contributed to research summer at LSU. They were also engaged in transportation related workshops and additional research at NTU. Some students were chosen to do research thru the academic semester associated to the turf mainly, studying the sources of workforce absences in the transport industry. The program is intended to help Native American students from high school to STEM undergraduate students. This proposition has four main constituents: (1) Deliver funded summer internships to the eligible and interested students in transportation businesses to participate in summer research internship programs at LSU or other consortium partners' institutes; (2) Direct the students to the transportation related workshops and seminars conducted at the partnering institutions that are providing the required education in transportation fields and preparing the students for internships as well as providing a relationship from NTU to their transportation programs; (3) Analyze the root causes of workforce deficiencies in the transportation industry, and (4) Design and offer transportation certificate programs at NTU to train and expose the Native American students in transportation fields; this will inspire the students to select a transportation discipline when applying for college. The above components will be combined into the current program at NTU. Once the crucial study for the causes of the briefness of the occupations in transportation industries on the Navajo Nation, we will begin educating the community to improve acquaintance, viewpoints, and skills in the transportation areas. We plan to offer the Navajo Nation the opportunity for research and teaching in transportation and related areas. Therefore, we need to produce instructive programs in the transportation area at both the scholarly and high school level across the Navajo Nation. We need to prepare authorities, teachers, teenaged people, or other members of the community to transportation, science and technology, in order to advance the execution or assistance of the members of understated groups in the Nation. This will build the Nations admittance and retention in the transportation or other related occupations. We propose also that this project has a important influence on the people and instructive system. If realized properly, it will benefit many of our current educational programs at Navajo Technical University. Additionally, it will increase the career choices for our students and the Navajo Nation. Lastly it will lead to further business and financial development and improve environmental circumstances for the Nation.

1. INTRODUCTION

Workforce development for the transportation industry is a critical issue. Research and analysis are needed to understand the causes of the shortage and to determine the skill sets needed for today's transportation industry worker *(1)*. There is a need to investigate as well as implement education and workforce preparedness to better support current and future economic needs as well as improve job opportunities for transportation industry workers. Additionally, as trends and innovations continue to grow, workers will require additional education and training to keep pace with commercial demands (2). Demanding workforce shortage in the transportation industry is prompting thoughtful difficulties in Navajo Nation, New Mexico, and throughout the region six. When there is a sympathetic of the sources exist, methodologies are needed to implement accordingly. Present recruits to the transportation industry do not have sufficient knowledge or experience when entering the field, while keeping existing workers is often challenging due to the draw of increased salaries and responsibilities offered by private companies *(3-7)*. The overall objective of this project therefore are 1) Analysis of the causes of the workforce shortage in the transportation industry 2) Develop and implement Educational workshops through workforce development by creating programs in transportation to generate and support careers in transportation creation. Corroborate research results are broadcasted throughout educational and workforce development activities by accompanying the development of seminars, workshops, and training courses. 3) Explicit objects are to recruit, select and initiate STEM students' base on the info that we have about those students and their attention and offer them the summer internships and part time in school compensation, and send them to LSU summer workshops or other center of conglomerates member's institutions for training. 4) Propose educational workshops, Research, Internships, and workforce development concluded making of programs in transportation to create future occupations and the next generation of front-runners and advance students of the transportation field by supportive mentoring, interacting, preparation, and other development activities. 5) Investigation to Explore the Roots of Workforce Deficiencies; plan the strategies for the direction and workforce development in transport industry. The main specific objective of this project will be to generate a direction report comprising: 1) analysis of the causes of the workforce shortage in the transportation industry, 2) Develop and implement Educational workshops through workforce development by creating programs in transportation to generate and support careers in transportation areas. Consequently, a proposal related to educational programs in transportation industry, replies to the Tran-SET center call for proposals for American Indian STEM students to engage in transportation fields were applied. This project will direct students and educators towards transportation areas through creation of programs in transportation fields, internship, and workshops using the infrastructure of an existing transportation related program at NTU. The partnership with the principal institution LSU, as the regional center including other institutions in region 6, will power and reinforce the transportation programs at NTU. Through this partnership, the center will improve the institutional and research competences. Thru this endowment, it is conceivable to provide student internships, mentorship and education openings for Native-American high school students in STEM fields and inspire them to attend Tribal Colleges and Universities (TCU). The project also, delivers occasions for Native-American undergraduate students to transfer to a four-year degree program in a transportation field to train them for a career in unified areas. Thus, there is need to investigate as well as device education and workforce preparedness to better support current and future economic needs as well as improve job opportunities for transportation industry workers. Furthermore, as trends and innovations continue to evolve,

workers will require additional education and training to keep pace with economic demands. It is very important to understand factors such as geo- and socio demographics of the area to match people and jobs, evaluate equity, and to recognize potential changes, needs, and opportunities in the current and future workforces. Additional workforce development topics that fall out of scope, but play an important role in understanding the transportation workforce generally, include features of training and understanding through the pipeline all the way back to K-12 education, and intervention recruitment strategies and practices. With this fund, it is possible to provide undergraduate internships, mentorship and education opportunities for Native-American high school students in STEM fields and encourage them to attend Tribal Colleges and Universities (TCU). The project also provides opportunities for Native-American undergraduate students to transfer to a four-year degree program in a transportation field to train them for a career in interrelated areas. Workforce predicting relays to the development and planning topics both included and beyond the scope of this study, and is another important topic for investigation. The literature review and case examples in this report touch on some of these topics, but a full analysis of the state of the transportation workforce pipeline, recruitment, workforce demographics, and workforce anticipating requires supplementary future work. The deductions and suggestions enclosed inside this report are based in large part on the outcomes of a new study, literature review, and outreach activities among members of the Navajo Nation and Navajo Technical University Community in the past three years. The investigation was promoted through email or direct communications with several colleagues at Navajo Technical University working or doing research on the workforce development in the transportation areas. Therefore, methodology used to gather report and documents for this endeavor area were included but not limited to the periodical research articles, literature periodicals, interviews, surveys, observation and outreach activities in the community including both present and past evidence about the Navajo Nation community. Finally, the overall review of the literature specifically, focusing on transportation workforce development was completed to provide context and validate conclusions *(8-9).*

2. OBJECTIVES

The ultimate goals of the past and present project in the workforce development initiative are the development of the transportation workforce for the present and the next generation of Native American by inviting and supporting various, capable entities to the transportation arena thru research internships, offering proficiencies through education and research to prepare Native people as they attain the workforce. In addition, integrating experience created from supported research into educational and training activities.

Then the main objective of this research includes but not limited to guidance, skills building, and planning to a limited degree. Many of the shortcut elements that relate to workforce development and planning fall outside the capacity of this research and further examination and study is needed.

The overall objective of this project is to generate a pathway containing:
1) Analysis of the causes of the workforce shortage in the transportation industry

2) Develop and implement Educational workshops through workforce development by creating programs in transportation to generate and support careers in transportation creation. Corroborate research results are broadcasted throughout educational and workforce development activities by accompanying the development of seminars, workshops, and training courses.

3**)** Explicit objects are to recruit, select and initiate STEM students base on the info that we have about those students and their attention and offer them the summer internships and part time in school compensation, and send them to LSU summer workshops or other center of conglomerates members institutions for training.

4) Propose educational workshops, Research, Internships, and workforce development concluded making of programs in transportation to create future occupations and the next generation of front-runners and advance students of the transportation field by supportive mentoring, interacting, preparation, and other development activities.

5**)** Investigation to Explore the Roots of Workforce Deficiencies; plan the strategies for the direction and workforce development in transport industry.

3. LITERATURE REVIEW

This report categorizes the tasks and necessities challenged by existing tribes in transportation industries occupation proficiencies. Currently, only eighteen of the five hundreds federally recognized tribes have public transport systems. The study points out several of the key barriers exist to provide a reasonable transit services and occupations in this area however no conclusion has been pointed out at finding solutions to meet these barriers (10-12).

The research and survey among some of the native tribes across the US shows significant needs with respect to the services and jobs in the transportation area and it was made apparent that tribal transit is not well mannered (13).

In this research study a literature review was conducted specifically about the cusses and shortness in the workforce development in the transportation industry for Native Americans and particularly for Navajo Nations (14).

The articles classified and published between 2000- 2014, related to tribal transportation system, background, educational and workforce development, programs in transportation to generate future careers for Navajo Nation region and etc. were reviewed. The Results of the literature reviews are presented, discussed and the future directions and guidelines are created (15-16).

Organization structure method shows that the application of the mixed approach of data analysis from different source is more robust for analysis and understanding of the causes and shortness's of transportation workforce and identifying the sources of workforce developments for Native Americans and the Navajo Nation communities (17).

The information and literature review approaches were giving us very important information and methods of solution for effective studies for this research project. However, although the literature review has substantially contributed to the knowledge of cusses of shortness workforce in transportation industry but the complete solutions and many others important questions remain unresolved (18).

The Navajo Nation is the largest reservation in the United States; cover about 25,000 square miles in northeast Arizona, northwest New Mexico, and southeast Utah.

Addition to great land areas, tribal lands incline to have less inhabitants and lower population densities. The Navajo Nation has one of the highest occupied reservations with 175,000 people living within the reservation boundaries, but has a population density of only seven persons per square mile. Low population densities create challenges for operative transit service and tend to make transit roads less effective.

Information and literature review presents an analysis of present study and research proceeding on tribal transit that documents key challenges and lessons studied so as to not identical those strengths. This information review is a combination of recognized research, illustration findings, and papers authored by those with experience in tribal development. There are limited resources presently available that document research related particularly to tribal transportation. Of those currently available, most of the research fails to document solutions to many of the key known problems, but does provide evidence on the needs of the tribes (19-21).

Numerous and some of the tribes have high lack and unemployment rates, with unemployment as high as 85 percent and, according to the US Census, have roughly 61 percent of residents

living below the federal poverty level. There are high poverty rates and little access to services or employ opportunities.

Impediments to implementing transit service are owed to the fact that of the 48 tribes that were questioned in a survey, 16 did not have a transit program. Many of these had taken footsteps to implement a transit service but had not yet been successful. Continuation discussions and site visits providing added understanding into the reasons these tribes had not been able to start a transport service.

Some of the tribes had not employed a service yet since they did not have a plan in place. Some of the tribes suggested that transit service had not started because of a absence of support from tribal governance. Some of the tribes indicated a lack of funding as the barrier that had kept them from implementing transit service (22-23).

There is a necessity to speech shortages in Indian Country's transport substructure presents an vital opportunity to motivate economic development and increase access to job training and occupation. Tribal communities have faced despair level unemployment for generations. Indian joblessness in 2005 was approximately 49 percent. (24)

Meaningful workforce development approaches are a desperate tool to advance transportation substructure and address Indian Country's Jobs disaster. Tribal leaders have identified long-term job planning as a demanding. Requirement to advance a tribal workforce with various skills in transportation structure. Job planning includes job training and skill development, and providing employment funds such as free enterprise training, resume building, internship programs, and referral services. These services can assist in the recruitment of engineers, planners, entrepreneurs, and other skilled authorities inside tribal communities who are serious to developing contemporary transportation organization (25-26).

4. METHODOLOGY

The conclusions and suggestions enclosed inside this report are based in large part on the outcomes of a net study, literature review, and outreach activities among members of the Navajo Nation and Navajo Technical University Community in the past three years.

The investigation was promoted through email or direct communications with several colleagues at Navajo Technical University working or doing research on the workforce development in the transportation areas.

Therefore, methodology used to gather report and documents for this endeavor area were included but not limited to the periodical research articles, literature periodicals**,** interviews, surveys, observation and outreach activities in the community including both present and past evidence about the Navajo Nation community.

Finally, the overall review of the literature specifically, focusing on transportation workforce development was completed to provide context and validate conclusions.

5. ANALYSIS AND FINDINGS

Through a vigilant study and analysis, it was discovered that the workforce improvement for the transport industry is a serious and thought-provoking issue. Our formation demonstrations that many features are causing, profaning and are correlated for the workforce lack in the nation. We found that the public obligation training mindfulness, arrogances, and aptitudes in the transport areas. It was uncovered that we request to transport the Nations the occasions for investigation and education in transport and connected strategies. Consequently we resolute that we prerequisite to generate enlightening programs in the transport area at student and high school level, through the Navajo Nations. Once particular original examination and examination were directed to appreciate the roots of the scarcity of the careers in transport skills at Navajo nation in order to regulate the ability circles desirable for existing transport industry worker at Navajo lands, it was initiate that this project has a important influence on the culture and didactic system. It was revealed that if the aforesaid plan is applied properly, it will advantage many of our current edifying programs at Navajo Technical University and it will lead to surge the career choices for our students and Navajo Nation. This formation and approach will lead to upsurge the career selections for our people also, influences on additional occupational and financial growth and conservational circumstances for the nation._ The effect outside science and technology is that it will lead to growth the career options for our students and Navajo Nation. It also, impacts on additional business and economic development for the nation. Supplementary movements were achieved to further the outreach activities by talking to some of the faculties, high school authorities and teachers for the possible creation of a dual credit courses in transportation industries. This was disclosed that this will increase the educational options and opportunities for high school students, extend course availability, and increase access to college credit-bearing courses. In addition, finish high school and college better prepared for work and life, shorten the time it will take them to complete their degree, have the same opportunities as other students in the state, whether you live in an urban or rural region areas. Tran-SET center providing the summer research internships occasions and looking for students from Navajo Technical University to get complicated with the center's research actions and learn about the career opportunities in transport. In the center all students were exposed to projects, and were learned about Louisiana State University's research capabilities and programs geared towards civil engineering/transportation engineering fields and etc. Particular of the students were showed to numerous diverse projects over the summer period working on and joined in projects related to structural and geotechnical engineering related to transportation infrastructure, and other students were participated in projects related to traffic engineering and workforce development. Devolution is a crucial component in a tribe's economic development, wellbeing, and the overall quality of life of its associates. Transport supervision is a significant way for Tribal amenities to work together to make a transport system that is economical and client-efficient. Organization links transportation sources with groups needing transportation to increase people's aptitude to get to health care, jobs and needed services, particularly in isolated areas. Economic growth and transport shows a significant role in economic development for American Indians. Indian tribes, whether on or off reservations, are working to yield economic growth to their members. Linking people to their population through employment, health care, social events and shopping is essential to a strong economic upcoming. It was initiate likewise that it is an vital to depiction specialists, teachers, young people, and other members of the community to the transportation, science and technology, in order to improve the employment, aids, or skills of the members of understated groups in the Nation. In momentary the present

research and indication, there are some shared subjects, which are appropriate to this research review comprising: Certain necessities of tribes and the key disorders to keeping transit services are well recognized, but limited information is available on the solutions to meet the needs or overcome these barriers. During our short meetings, before the pandemic crises and questions and answers with the Navajo people and the site visits conducted as part of this research provided insight into how successful tribal transit programs have overcome some of those barriers. Actual transit organizations requisite to emphasis on preparation, management with other agencies, making use of current resources, and encouraging public effort correct from the initial planning phases. The frame of literature categorizes transport topics that tribes are challenged with such as geological isolation, low level of education, lower earnings, problems in retrieving funds, confidence issues with non-tribal members, funding and the difficulties of native, state, federal, and tribal governments working in collaboration. Reservations incline to reflect the nation in relations of the size of many mobility-dependent subcategories. However, certain reservations significantly surpass national averages for seniors and low-income residents. Many rural Native American counties were amongst the firmest hit by increasing fuel prices since of the travel distances, which are reliable with rural life, and moderately low family income levels. As an outcome, households spend a high percentage of household income on fuel and there are less transportation choices for rural people who necessity depends on private vehicles. It is significant to collect info on the number and percentage of transportation staff devoted to a transportation system. These replications can benefit to control suitable governmental structures and staffing supplies for coming services. Specific of the important aspects desired for a cost-effective bus service in low-density areas are active employer input, employ centers that form terminuses, consistent work shifts, and long-distance commuting. Temporarily there is refusal on the portion of tribal units to work with non-tribal units; there is a need to show welfares to both tribal and non-tribal members of the communal in organizing present transit services. The need for close collaboration and corporations with the indigenous tribes and other administration offices. The research consequences established this; show that organization and enterprises were answers to effective tribal transit programs. Discovery the requests of the tribe remains to be a task, as particular tribes are unwilling to make there needs identified or to share info about their tribes and local circumstances. In the future it may be more problematic for investigators to gain facts from tribes, as some tribes are now setting up independent research review panels. In conclusion, bearing in mind the main research analysis for the causes of the shortness of the careers in transportation professions at Navajo nation, we realize that we need to educate the community knowledge, outlooks, and capabilities in the transportation areas. It is required certainly to offer the Nations the prospects for research and teaching in transport and associated areas and generate educational programs in the transport area at undergraduate and high school level throughout the Navajo Nations. It would be fundamental to expose authorities, teachers, adolescent people, or other members of the community to the transportation, science and technology, in order to improve the employment, skills of the members of underrepresented groups in the Navajo Nation. The Nation access and retaining will improve also in the transportation and other related transportation occupations, which has a substantial effect on the society and the current educational system. If the aforementioned approaches are employed appropriately, it will benefit many of our current educational programs at Navajo Technical University. Additionally it will lead to surge the career chances for our students at Navajo Technical University and the Navajo Nation and its impact beyond science and technology that will lead to increase the career decisions for our students, additional business, financial

development and environmental improvement for the native land. Moreover, unemployment was, is, and, for the predicted future, will be a challenge for many Native nations so we need to move ahead and see this challenge as an prospect to build tribal communities educationally by offering formal and informal training, and by meeting the developmental needs of tribal members. Conclusively, this starts with leadership from educational institutes such as Navajo Technical University, NTU, faculties, and high school teachers and other tribal colleges and universities colleagues. On behalf of this challenge to become successful, tribal colleges & universities, tribal members, and all stakeholders need to work in together to accomplish the workforce in transportation for Native people.

Furthermore, I need to add that I had opportunity of mutual collaboration and exchanging the information related to our common project in workforce Developments with Dr. Peter Romine one of our faculty in EE program. University Transportation Centers, Mineta Consortium also have founded Dr. Romine for 5 years for Transportation Mobility (MCTM), and Led by San José State University.

His project is describe how the founded program makes an impact or is likely to make an impact on transportation workforce development by:

- Provided opportunities for research and teaching in transportation and related disciplines;
- Improved the performance, skills, or aptitudes of members of underrepresented groups that will improve their access to or retention in transportation research, teaching, or other related professions; or
- Developed and disseminated new educational materials or provided scholarships; or provided exposure to transportation, science and technology for practitioners, teachers, young people, or other members of the public.

Finally, in this mutual collaboration, we were conducted educational and workforce development and guideline research in Transportation areas with Dr Romine as follows: The objectives of this transportation related collaboration project at NTU for workforce development were consist of processes to first determine what critical skills are in short supply and what are the root causes for these shortages in this industry. In order to identify and report the critical skill shortage occupations and the keys to the root causes and making any suggestions to implement the solutions, we need to determine the root causes by conducting, research, interviews, focus groups, and meetings of industry professionals in the region and the educators. The next step of the objective is the educational workforce and workshops development through establishment of programs in the transportation industry. We also were very honored to have Dr. Hilary Nixon, Deputy Executive Director or the Mineta Transportation Institute visit Navajo Tech and Ojo Encino Day School for several days, culminating in the 2020 Dine' Maker Nation Fair on March 12th. The Ojo Encino students and staff were excited and energized by the opportunity to explain their ideas for sustainable transportation to Dr. Nixon.

6. CONCLUSIONS

Considering the key investigation for the reasons of the shortness of the jobs in transportation trades at Navajo nation, we realize that we need to educate the community knowledge, perspectives, and abilities in the transportation areas. We are required indeed to provide the Nations the prospects for research and teaching in transport and related areas and create educational programs in the transport area at undergraduate and high school level across the Navajo Nations. It would be vital to expose experts, teachers, young people, or other members of the community to the transportation, science and technology, in order to improve the employment, skills of the members of underrepresented groups in the Navajo Nation. This will improve also the Nation access and retention in the transportation and other related transportation professions, which has a significant impact on the society and the existing educational system. If the above-mentioned strategies are implemented correctly, it will benefit many of our current instructive programs at Navajo Technical University. Added more it will lead to increase the occupation opportunities for our students at Navajo Technical University and the Navajo Nation and its impact beyond science and technology that will lead to increase the career options for our students, additional business, financial expansion and environmental development for the native land. Furthermore, unemployment was, is, and, for the foreseen future, will be a challenge for many Native nations so we need to move ahead and see this challenge as an opportunity to rebuild tribal communities educationally by providing formal and informal training, and by meeting the developmental needs of tribal members. Finally, this starts with leadership from educational institutions such as Navajo Technical University, NTU, faculties, and high school teachers and other tribal colleges and universities members. For this challenge to become something of the past, tribal colleges & universities, tribal members, and all stakeholders need to work in tandem to achieve the workforce in transportation for Native people.

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