



Proposal for ICTD Funding

Prepared for the Student Government Association
of
New Mexico Tech

Presented by:

Austin Starnes

Austin Starnes ICTD Cover Letter

Over the summer of 2021, New Mexico Tech participated in implementation of a Culvert Asset Management Program (CAMP) for the New Mexico Department of Transportation (NMDOT). A comprehensive survey of 8,502 culverts was completed by five pairs of student interns yielding valuable information on the state of culverts in New Mexico. I am the primary author for “Collaborative Framework to Create a Culvert Asset Management System for NMDOT”, a paper that presents the methodology, findings, and implications of the first phase of the project. The paper has been accepted by the American Society of Civil Engineers (ASCE) for inclusion in the 2022 International Conference on Transportation and Development (ICTD) and will be published in the conference proceedings. The conference is in Seattle, Washington this May 31st-June 3rd. The purpose of this senate bill is to request funding for registration, travel, and lodging to represent NMT at this conference and present our research to an international audience.

In the interest of conservation of funds, I have reserved an Airbnb at the cheapest rate available near the location, a total of \$313.28 for a 3-night stay near downtown Seattle (the discounted rate for the conference hotel was \$220/night plus taxes and fees). The research and poster will be presented at the SRS and will be printed cost-free through attendance of SRS workshops. The conference registration costs \$390, and the flight is expected to cost \$400-500. Uber will also be necessary to and from the airport, with an estimated cost of \$50 each way as shown in the attached documents. The Civil and Environmental Engineering (CEE) department at Tech has some funds available and is able to contribute \$500 towards my attendance of the conference. I am financially able to contribute \$500, which will partially go towards meals and other uncovered costs (estimated around \$200) and cover \$300 towards lodging and transportation. This leaves a difference of \$613, which I am requesting through the SGA.

Funding from the SGA will make this trip possible and allow me to represent New Mexico Tech at the ICTD. Participation in this conference will award recognition of NMT and the CEE department and may result in establishing relationships, furthering our research, and collaboration with other entities such as state DOTs, researchers, and educational institutions. I will be honored to represent NMT at this conference and will continue to commit to excellence throughout this research and presentation.

Thank you for your consideration,



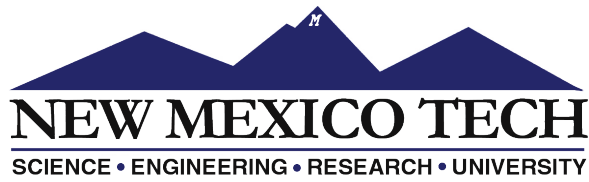
Austin Starnes

Collaborative Framework to Create a Culvert Asset Management System for NMDOT

Austin L. Starnes¹, Isabel Morris, Ph.D., A.M. ASCE², Claudia Mara D. Wilson, Ph.D., A.M. ASCE³, Wesley Cook, Ph.D.⁴, P.E., Clinton P. Richardson, Ph.D., PE, BCEE⁵, David Trujillo, Jr., P.E., M. ASCE⁶, Todd Howell, BS⁷, Douglas D. Cortes, Ph.D.⁸, Daniel Dugas, Ph.D.⁹, David Jauregui, Ph.D.¹⁰

ABSTRACT

The New Mexico Department of Transportation (NMDOT) is in the process of developing an asset management program for small culverts, which are not required to be included in biennial bridge inspections and can lead to catastrophic road failures if unmaintained. Aside from a partial statewide inventory in 2004, culverts in New Mexico have not been comprehensively inspected or had their condition assessed. The NMDOT initiated a Culvert Asset Management Program (CAMP) in 2021 to create an inventory of the state's projected 70,000 culverts, which will be regularly updated and used statewide to prioritize and plan maintenance and improve road safety. Student interns from New Mexico Tech (NMT) and New Mexico State University (NMSU) completed the first of six seasons of CAMP inspections in the Summer of 2021. This paper will review the data collected by NMT and make suggestions for future work. Researchers used Trimble devices with Terraflex GIS software to compile GPS points and photos for each culvert, along with entries for size, material, and condition. The condition was recorded by visual inspection, describing corrosion, concrete spalling and cracking, other structural damage, and blockage of flow by silting or other means. Researchers examined data for completeness and accuracy by comparing photos with reported data and holding team discussions to improve uniformity at weekly QA/QC Meetings. Five teams from NMT surveyed 8,502 culverts, averaging 53 culverts per team per day. A total of 1,480 (17%) may warrant immediate intervention (e.g., severe corrosion, spalling, or silting). This paper summarizes the contributions of CAMP from NMT, makes suggestions for improved survey efficiency, and assesses the program's utility in future applications. This research proposes a methodology that can be utilized by other entities for culvert asset management and produces a database useful in other analyses.



New Mexico Institute of Mining & Technology Student Government Association

Senate Bill

Short Title: _____

Agency, Agent, or Individual Proposing: Austin Starnes

Requested Date of Resolution: 1 day of April

Proposing Individuals' Information:

Name 1: Austin Starnes Title: Student Researcher

Phone: 2145515259 Email: Austin.starnes@student.nmt.edu Campus Box: N/A

Student/Non-Student: Student Signature: 

To the Proposing Agency, Agent, or Individual:

Please attach a typewritten explanation of your needs and/or concerns in double-spaced 12-point format, placing a page number and title on the top of each page. Include all information necessary and pertinent to your argument. State exactly what action you would like the Senate to consider taking and by when you must have a decision. Please take in to consideration that the Senate meets approximately once every two weeks while classes are in session – a schedule is available from the SGA Secretary.

Please see the Manual for Drafting Bills to help fill this page out; it includes explanations and examples for each field. If you have any further questions, please contact the SA Vice President.

Student Government Association

OFFICE OF THE VICE PRESIDENT USE ONLY

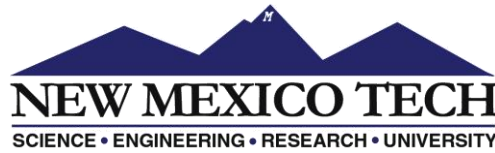
Date Presented to the Vice President: _____ Initials of Receipt by Vice President: _____

Session of the Senate: () Fall () Spring/Summer of the calendar year _____

Amount Approved: _____

OFFICE OF THE PRESIDENT USE ONLY

Presidential Signature: _____ Date: _____



Application for Senate Bills

Requesting Club/Agency: Austin Starnes

Classification: SGA Club Associate Club Sports Club Other

If an SGA club, what were your required volunteer hours (last semester): N/A

How many hours has your club fulfilled to date: ~5

Please detail events where volunteer credit was earned:

I contributed to organizing the Keep Socorro Beautiful event through EWB and ENVE club

Requested Amount of funding: \$613.28

Event: International Conference on Transportation and Development

Location: Seattle, Washington

Event Dates: May 31 - June 3

Have you received funding from another source for this event: Yes No

If yes, how much: \$500

From whom: Civil and Environmental Engineering Department

Have you fundraised for this event? Yes No

If yes, please detail the fundraiser and how much money was earned. _____

Student Government Association

If requesting funds for traveling please fill out below information:

Members Attending: Undergraduate: 1 Graduate: _____ Special: _____

Method of Travel: NMT Vehicle Personal Vehicle Plane Other

FOR ALL REQUESTING AGENCIES:

Please attach a ONE PAGE (12 pt. font) explanation for your funding request. This should include any additional information relevant to your request and an itemized budget with exact costs and explanations for all necessary items which may or may not include: Supplies and Materials, Services, Equipment, Travel, Registration, Etc.

BILLING ADDRESS:

Austin Starnes, S.M.ASCE
 505 Western Ave
 Socorro, NM 87801-4447

SUMMARY:

REFERENCE NUMBER: 1045271405



International Conference on Transportation and Development

5/31/2022 – 6/3/2022

Add to Calendar

Quantity	Unit Price	Total
1	\$390.00	\$390.00

test 2



QUESTIONS/ANSWERS

The Organization I work for is:
Education

SubTotal: **\$390.00**

Tax: **\$0.00**

Order Total: **\$390.00**

My Position is:
Student

Paid on 02/28/22 with Visa ending in 4352 for \$390.00

Balance: **\$0.00**

How many previous ASCE conferences have you attended, including this one?

Amount Due: **\$0.00**

1

My Age Group is:
25-34

Gender:
Male

Please specify your ethnicity
White

I have reviewed ASCE's COVID-19 policy and understand I will not be permitted to attend without providing proof of vaccination or a recent negative COVID-19 test:
YES



← To Itinerary

Your payment details

Seattle

3 nights in Seattle

Tue, May 31, 2022 → Fri, Jun 3, 2022

Entire home/apt · 1 bed · 1 guest

Confirmation code: HMH8E3RYDR



Payments

Payment 1 of 2	\$62.66
Feb 28, 2022 · 10:40PM CST	
VISA **** 4352	
Get receipt	

Amount paid (USD)	\$62.66
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Scheduled Payments

Payment 2 of 2	\$250.62
Scheduled for May 18, 2022	
VISA **** 4352	
Update payment details	

Balance due (USD)	\$250.62
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Share

Round trip · 1

Total price from

Dallas ↔ Seattle

\$513

This airline may be offering additional flexibility for bookings. [More details](#)

Selected flights

[Track prices](#)

Departing flight · May 31

6:15 AM → **8:32 AM**
DFW SEA
Nonstop · 4 hr 17 min · Alaska

Returning flight · Jun 3

6:05 PM → **11:59 PM**
SEA DFW
Nonstop · 3 hr 54 min · Alaska

Fare options

Departing flight Returning flight

<input checked="" type="radio"/> Main +\$0 \$513 <ul style="list-style-type: none"> ✓ Free seat selection ✓ Standard seat ✓ Standard boarding ✓ Free change, possible fare difference <hr/> <ul style="list-style-type: none"> 1 free carry-on 1st checked bag: \$30 	<input type="radio"/> First +\$280 \$793 <ul style="list-style-type: none"> ✓ Free seat selection ✓ Premium seat ✓ Priority boarding ✓ Free change, possible fare difference <hr/> <ul style="list-style-type: none"> 1 free carry-on 2 free checked bags
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[Alaska bag_policy](#)

Booking options

	Book with Alaska <small>Separate tickets</small> · The 2 tickets in your itinerary must be booked individually	\$513	Select
	Book on Google with Alaska AS 287, AS 372	<small>Fare details unavailable</small> \$538	Select
	Book with Alaska AS 287, AS 372	<small>Fare details unavailable</small> \$538	Select

Screenshot of Uber Estimate from Airport

