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,

[Signature]

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.
Senate Bill

Short Title:____________________________________________________

Agency, Agent, or Individual Proposing: Austin Starnes

Requested Date of Resolution: ___ day of ____________

Proposing Individuals' Information:

Name 1: __________________________  Title: _________________________________________

Phone: _______________  Email: __________________

Student/Non-Student: _________________  Signature: _____________________________________

Student/Non-Student: Student

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.

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.

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.
# Travel Funding Request

<table>
<thead>
<tr>
<th>Budget Item</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation</td>
<td>$500</td>
</tr>
<tr>
<td>Lodging/Meals</td>
<td>$313.28</td>
</tr>
<tr>
<td>Registration/Misc.</td>
<td>$490</td>
</tr>
<tr>
<td><strong>Grand Total:</strong></td>
<td><strong>$913.28</strong></td>
</tr>
</tbody>
</table>

## Transportation (Vans, Gas, Flights, Rentals, Taxis)

<table>
<thead>
<tr>
<th>Items: Highest to Lowest Priority</th>
<th>Quantity</th>
<th>Price Each</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round-trip Flight</td>
<td>1</td>
<td>$500</td>
<td>$500</td>
</tr>
<tr>
<td>Taxi (Uber)</td>
<td>2</td>
<td>$50</td>
<td>$100</td>
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Total: $600

## Lodging/Meals

<table>
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<tr>
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<th>Price Each</th>
<th>Total</th>
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<tbody>
<tr>
<td>Airbnb</td>
<td>3 nights</td>
<td>$104.43</td>
<td>$313.28</td>
</tr>
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</table>

Total: $313.28

## Registration/Miscellaneous

<table>
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<th>Price Each</th>
<th>Total</th>
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<tbody>
<tr>
<td>ICTD Conference Registration</td>
<td>1</td>
<td>$390</td>
<td>$390</td>
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Total: $390
BILLING ADDRESS:

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

SUMMARY:

REFERENCE NUMBER: 1045271405

<table>
<thead>
<tr>
<th>International Conference on Transportation and Development</th>
<th>Quantity</th>
<th>Unit Price</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>5/31/2022 – 6/3/2022</td>
<td>1</td>
<td>$390.00</td>
<td>$390.00</td>
</tr>
</tbody>
</table>

QUESTIONS/ANSWERS

The Organization I work for is:
*Education*

My Position is:
*Student*

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

Feb 28, 2022 · 10:40PM CST

VISA •••• 4352

Get receipt

**Amount paid (USD)**

$62.66

#### Scheduled Payments

#### Payment 2 of 2

Scheduled for May 18, 2022

VISA •••• 4352

Update payment details

**Balance due (USD)**

$250.62
Round trip to Seattle | Google Flights

Total price from

$513

Selected flights

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

<table>
<thead>
<tr>
<th>Departing flight</th>
<th>Returning flight</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main</strong> $513</td>
<td><strong>First</strong> $793</td>
</tr>
<tr>
<td>✓ Free seat selection</td>
<td>✓ Free seat selection</td>
</tr>
<tr>
<td>✓ Standard seat</td>
<td>✓ Premium seat</td>
</tr>
<tr>
<td>✓ Standard boarding</td>
<td>✓ Priority boarding</td>
</tr>
<tr>
<td>✓ Free change, possible fare difference</td>
<td>✓ Free change, possible fare difference</td>
</tr>
<tr>
<td>1 free carry-on</td>
<td>1 free carry-on</td>
</tr>
<tr>
<td>1st checked bag: $30</td>
<td>2 free checked bags</td>
</tr>
</tbody>
</table>

Alaska bag policy

Booking options

- **Book with Alaska**
  - Separate tickets: The 2 tickets in your itinerary must be booked individually
  - $513
  - Select

- **Book on Google with Alaska**
  - $538
  - Select

- **Book with Alaska**
  - $538
  - Select

https://www.google.com/travel/flights/booking?tf=CBwQAho_agcIARIDREZXEgoMDIyLTA1LTMxXmgclARIDU0VBIh8KA0RGVxIKMjAyMi0wNS0zMRo...
Screenshot of Uber Estimate from Airport

Choose a ride.

- Seattle-Tacoma International Airport (SEA)
- Hyatt Regency Seattle

- UberX: $50.00
  - Affordable everyday rides
- Comfort: $59.66
  - Never cars with extra legroom
- UberXL: $69.35

Schedule UberX

From Seattle-Tacoma International Airport (SEA) to Hyatt Regency Seattle