

## TRANSPORTATION POOLED FUND PROGRAM QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): Nevada Department of Transportation \_\_\_\_\_

**INSTRUCTIONS:**

*Project Managers and/or research project investigators should complete a quarterly progress report for each calendar quarter during which the projects are active. Please provide a project schedule status of the research activities tied to each task that is defined in the proposal; a percentage completion of each task; a concise discussion (2 or 3 sentences) of the current status, including accomplishments and problems encountered, if any. List all tasks, even if no work was done during this period.*

<b>Transportation Pooled Fund Program Project #</b>  <i>Wildlife Vehicle Collision (WVC) Reduction and Habitat Connectivity</i> Task 1 – Cost Effective Solutions Transportation Pooled-Fund Project TPF-5(358)		<b>Transportation Pooled Fund Program - Report Period:</b> <input type="checkbox"/> Quarter 1 (January 1 – March 31) <input type="checkbox"/> Quarter 2 (April 1 – June 30) <input checked="" type="checkbox"/> Quarter 3 (July 1 – September 30) <input type="checkbox"/> Quarter 4 (October 1 – December 31)	
<b>Project Title:</b> WVC Reduction & Habitat Connectivity NVDOT			
<b>Name of Project Manager(s):</b> Dr. Marcel Huijser	<b>Phone Number:</b> 406-543-2377	<b>E-Mail</b> mhuijser@montana.edu	
<b>Lead Agency Project ID:</b> 4W7576	<b>Other Project ID (i.e., contract #):</b> 4W7576	<b>Project Start Date:</b> 18 Dec 2018	
<b>Original Project End Date:</b> 30 Sep 2022	<b>Current Project End Date:</b> 30 Sep 2022	<b>Number of Extensions:</b> 0	

Project schedule status:

- On schedule     
  On revised schedule     
  Ahead of schedule     
  Behind schedule

Overall Project Statistics:

Total Project Budget	Total Cost to Date for Project	Percentage of Work Completed to Date
\$354,001.00	333,206.76 (excl final bills)	94%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
\$94,800.24 26.8% (excl final bills)	\$94,800.24	100%

**Project Description:**

All research modules have been submitted, have been processed, and are active.

Topic	Title	Proposed Budget	PI	Submitted?	Approved by NV?	Active account?
C	Design of Fiber-Reinforced Polymer (FRP) Wildlife Overpass Structures	\$70,000	Rob Ament and Matt Bell	yes	yes	yes
F	Identification of the patterns and processes that result in highway accidents involving elk: Informing the design of effective mitigation strategies in areas where elk is a dominant species	\$20,000	Tony Clevenger	yes	yes	yes
G	Wildlife community and species factors affecting crossing structure use: A continental meta-analysis and a 16-year perspective	\$65,000	Tony Clevenger, Marcel Huijser	yes	yes	yes
H	Jump-out design and measures at fence ends and at access roads	\$115,000	Marcel Huijser	yes	yes	yes
I	Efficacy and cost-savings of fencing and wildlife crossings to reduce wildlife-vehicle collisions in the Bow River Valley, Alberta	\$30,000	Tony Clevenger	yes	yes	yes
X	Economic value select species based on biological conservation	\$90,181.20	Chris Neher and John Duffield (as subcontractors from Bioeconomics)	yes	yes	Yes Subcontract (WTI-Bioeconomics) is also active

Literature review, cost-benefit analyses, and summary final report were all delivered 30 Sep 2022

**Anticipated work next quarter:**

None, project has ended

**Significant Results:**

None

**Circumstance affecting project or budget. (Please describe any challenges encountered or anticipated that might affect the completion of the project within the time, scope and fiscal constraints set forth in the agreement, along with recommended solutions to those problems).**

**Potential Implementation:**

None

## C TRANSPORTATION POOLED FUND PROGRAM QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT):     Nevada DOT    

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<p><b>Transportation Pooled Fund Program Project #</b> <i>(i.e., SPR-2(XXX), SPR-3(XXX) or TPF-5(XXX))</i></p> <p>TPF-5(358) Transportation Pooled Fund Study</p>	<p><b>Transportation Pooled Fund Program - Report Period:</b></p> <p><input type="checkbox"/> Quarter 1 (January 1 – March 31)</p> <p><input type="checkbox"/> Quarter 2 (April 1 – June 30)</p> <p><input checked="" type="checkbox"/> Quarter 3 (July 1 – September 30)</p> <p><input type="checkbox"/> Quarter 4 (October 1 – December 31)</p>	
<p><b>Project Title:</b> Innovative Fiber-Reinforced Polymer Structures for Wildlife Crossings (Adaptable for Bicyclists/Pedestrians)</p>		
<p><b>Name of Project Manager(s):</b> Damon Fick Rob Ament</p>	<p><b>Phone Number:</b> 406-994-6123 406-600-6348</p>	<p><b>E-Mail</b> damon.fick@montana.edu rament@montana.edu</p>
<p><b>Lead Agency Project ID:</b></p>	<p><b>Other Project ID (i.e., contract #):</b> 4W8317</p>	<p><b>Project Start Date:</b> April 27, 2020</p>
<p><b>Original Project End Date:</b> October 31, 2021</p>	<p><b>Current Project End Date:</b> September 30, 2022</p>	<p><b>Number of Extensions:</b> N/A</p>

Project schedule status:

On schedule       On revised schedule       Ahead of schedule       Behind schedule

Overall Project Statistics:

Total Project Budget	Total Cost to Date for Project	Percentage of Work Completed to Date
\$70,001	\$69,535	100%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
0%	\$0	99 %

**NOTE:** This project has matching funds available from the Small Urban, Rural & Tribal Center on Mobility (SURTCOM) which will be sufficient to complete the project. The two sources of funding, Pooled Fund and SURTCOM require separate financial reports.

**Project Description**

There are no known FRP wildlife overpasses in North America at this time. The overall objectives of this research project are to identify cost sensitive and environmentally friendly FRP materials and use them in the design of the continent's first FRP wildlife crossing. This structure can then be adapted for use in other locations across North America and will lead to innovation for bicycle and pedestrian crossings over roads. The development and deployment of a structural prototype by this project will help provide technical information that is sorely lacking for such a promising technology.

The project is organized into four tasks: 1) identify and select FRP manufacturers and materials that will contribute to efficient and cost-effective bridge structures; 2) investigate and perform a preliminary design of up to three different wildlife overpass structures using different FRP applications and assure they can meet Caltrans' structural specifications and address wildlife's needs; 3) evaluate the implementation of the selected FRP wildlife overpass structure via cost-benefit, construction and life-cycle metrics; and, 4) disseminate the results, recommendations and conclusions of the investigation.

**Progress this Quarter (includes meetings, work plan status, contract status, significant progress, etc.):**

Task 11. We had a final discussion with Advanced Infrastructure Technologies and finalized our cost numbers for the FRP composite tub girders. This completed the life-cycle cost analysis comparing FRP girders to traditional concrete and steel girders over 100-years.

Task 12: We have compiled the final report with all the information gathered over the entire project. The report was submitted and reviewed by our TAC. The final report is completed and a recorded presentation was created and posted to the WTI website.

**Anticipated work next quarter:**

NA

**Significant Results:**

**Circumstance affecting project or budget. (Please describe any challenges encountered or anticipated that might affect the completion of the project within the time, scope and fiscal constraints set forth in the agreement, along with recommended solutions to those problems).**

No conflicts.

**Potential Implementation:**

Yes! Caltrans is seeking to build an FRP girder wildlife overpass at the US97 site. They have currently made estimates in their engineering department for the costs of an FRP bridge alongside other traditional methods of construction. They are presenting the findings at a management meeting to identify if the FRP structure is the one they want to pursue. They are currently facing the challenge that their estimates for an FRP bridge is much higher than traditional materials because there is additional training and material testing involved in building an FRP overpass. They are still interested in building the bridge but it will be more challenging than a concrete bridge.

# I TRANSPORTATION POOLED FUND PROGRAM QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): Nevada DOT

**INSTRUCTIONS:**

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<b>Transportation Pooled Fund Program Project #</b> TPF-5(538)		<b>Transportation Pooled Fund Program - Report Period:</b> Quarter 2 (Apr-Jun 2022)	
<b>Project Title:</b> Efficacy and cost-savings of fencing and wildlife crossings to reduce wildlife-vehicle collisions in the Bow River Valley, Alberta			
<b>Name of Project Manager(s):</b> AP Clevenger		<b>Phone Number:</b> 4036881138	<b>E-Mail</b> apclevenger@gmail.com
<b>Lead Agency Project ID:</b>		<b>Other Project ID (i.e., contract #):</b>	<b>Project Start Date:</b> Jan 2020
<b>Original Project End Date:</b> Mar 2021		<b>Current Project End Date:</b> 30 June 2022	<b>Number of Extensions:</b> 1

**Project schedule status:**

Project is completed.

Overall Project Statistics:

Total Project Budget	Total Cost to Date for Project	Percentage of Work Completed to Date
\$30,000	\$30,000	100%

## F TRANSPORTATION POOLED FUND PROGRAM QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT):  Nevada DOT

**INSTRUCTIONS:**

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<b>Transportation Pooled Fund Program Project #</b> TPF-5(538)		<b>Transportation Pooled Fund Program - Report Period:</b> Quarter 3 (Jul - Sep) 2022	
<b>Project Title:</b> Identification of the Patterns and Processes that Result in Highway Accidents Involving Elk: Informing the Design of Effective Mitigation Strategies in Areas Where Elk is a Dominant Species			
<b>Name of Project Manager(s):</b> AP Clevenger	<b>Phone Number:</b> 4036881138	<b>E-Mail</b> apclevenger@gmail.com	
<b>Lead Agency Project ID:</b>	<b>Other Project ID (i.e., contract #):</b>	<b>Project Start Date:</b> Jan 2020	
<b>Original Project End Date:</b> Dec 2020	<b>Current Project End Date:</b> 30 June 2021	<b>Number of Extensions:</b> 1	

**Project schedule status:**

Project completed 4<sup>th</sup> quarter 2021

**Overall Project Statistics:**

<b>Total Project Budget</b>	<b>Total Cost to Date for Project</b>	<b>Percentage of Work Completed to Date</b>
\$20,000	\$20,000	100%

## X TRANSPORTATION POOLED FUND PROGRAM QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): Nevada Department of Transportation

### INSTRUCTIONS:

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<b>Transportation Pooled Fund Program Project #</b> <i>(i.e., SPR-2(XXX), SPR-3(XXX) or TPF-5(XXX))</i>		<b>Transportation Pooled Fund Program - Report Period:</b> <input type="checkbox"/> Quarter 1 (January 1 – March 31) <input type="checkbox"/> Quarter 2 (April 1 – June 30) <input checked="" type="checkbox"/> Quarter 3 (July 1 – September 30) <input type="checkbox"/> Quarter 4 (October 1 – December 31)	
<b>Project Title:</b> <b>Pilot Study: Incorporating Large Ungulate and Small Reptile Total Value in Collision Mitigation Benefit-Cost Calculations</b>			
<b>Name of Project Manager(s):</b> John Duffield	<b>Phone Number:</b> 406-721-2265	<b>E-Mail</b> bioecon@montana.com	
<b>Lead Agency Project ID:</b> P701-18-803 TASK 05	<b>Other Project ID (i.e., contract #):</b> G105-21-W8409	<b>Project Start Date:</b> 06/01/2020	
<b>Original Project End Date:</b> 12/31/2020	<b>Current Project End Date:</b> 12/31/2021	<b>Number of Extensions:</b> 1	

Project schedule status:

Completed

Overall Project Statistics:

Total Project Budget	Total Cost to Date for Project	Percentage of Work Completed to Date
\$69,974.00	\$69,974.00 invoiced through 12/31/21	100%



## H TRANSPORTATION POOLED FUND PROGRAM QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): Nevada Department of Transportation \_\_\_\_\_

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<b>Project Title:</b> Jump-out design and measures at fence ends and at access roads			
<b>Name of Project Manager(s):</b> Dr. Marcel Huijser		<b>Phone Number:</b> 406-543-2377	<b>E-Mail</b> mhuijser@montana.edu
<b>Lead Agency Project ID:</b>		<b>Other Project ID (i.e., contract #):</b>	<b>Project Start Date:</b>
<b>Original Project End Date:</b> 30 Nov 2022		<b>Current Project End Date:</b> 30 Nov 2022	<b>Number of Extensions:</b> 0

Project schedule status:

- On schedule     
  On revised schedule     
  Ahead of schedule     
  Behind schedule

Completed

Final reports were submitted 30 Sep 2022

Overall Project Statistics:

Total Project Budget	Total Cost to Date for Project	Percentage of Work Completed to Date
\$115,000	\$115,000	100%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
\$0 0.0%	\$0	100%

## G TRANSPORTATION POOLED FUND PROGRAM QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): Nevada DOT

**INSTRUCTIONS:**

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<b>Transportation Pooled Fund Program Project #</b>  TPF-5(538)	<b>Transportation Pooled Fund Program - Report Period:</b>  Quarter 3 (July - Sept) 2022	
<b>Project Title:</b> Long-term Responses of an Ecological Community to Highway Mitigation Measures		
<b>Name of Project Manager(s):</b> AP Clevenger	<b>Phone Number:</b> 4036881138	<b>E-Mail</b> apclevenger@gmail.com
<b>Lead Agency Project ID:</b>	<b>Other Project ID (i.e., contract #):</b>	<b>Project Start Date:</b> July 2020
<b>Original Project End Date:</b> Mar 2021	<b>Current Project End Date:</b> 30 June 2022	<b>Number of Extensions:</b> 1

**Project schedule status:**

Completed.

Overall Project Statistics:

Total Project Budget	Total Cost to Date for Project	Percentage of Work Completed to Date
\$65,000	\$65,000	100%

**Quarterly** Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
\$0%	\$0	100%