Quarterly Progress Report:
Project Number and Title: 4.1 Connected Vehicles Applications to Improve Infrastructure Safety and Durability
Research Area: Thrust 4 Connectivity for Enhanced Asset and Performance Management
PI: *Jonathan Rubin, University of Maine*
Co-PI(s): *Kathryn Ballingall, University of Maine*
Reporting Period: *01/01/2020 – 03/31/2020*
Submission Date: *03/31/2020*

Overview:

*Provide **BRIEF** overview and summary of activities performed during the reporting period.*

The pilot installation of a connected pedestrian crossing signal is complete, however the closure of campus has put the pilot operation and data collection on hold.

The project team is finalizing the research report and recommendations for connected vehicle applications in Maine. An undergrad student is continuing to support research on the costs and benefits of applications.

Provide context as to how these activities are helping achieve the overarching goal(s) of the project…

Collaboration with Maine DOT staff and Bangor Community Connector is vital to properly identifying the project concept and the needs of stakeholders. They will also help identify the most useful applications of connected vehicle technologies, and the data and infrastructure required to implement these applications.

Describe any accomplishments achieved under the project goals…

The completion of the pilot project is on hold, however, our team is continuing to meet with DOT to discuss plans and needs for advancing the installation of connected vehicle technology and applications in Maine.

Complete the following tables to document the work toward each task and budget (add rows/remove rows as needed, make sure you complete the Overall Project progress row and include all tasks even if they have ended or have not been started)…

Table 1: Task Progress

Task Number	Start Date	End Date	% Complete
Task 1	October 1, 2018	May 1, 2020	90%
Task 2	October 1, 2018	May 1, 2020	90%
Task 4	October 1, 2018	September 30, 2020	60%
Task 5	September 1, 2019	September 1, 2020	20%
Task 6	December 1, 2019	June 1, 2020	5%
Task 7	September 1, 2019	August 1, 2020	25%
Overall Project:	October 1, 2018	August 1, 2020	

Table 2: Budget Progress

Project Budget	Spend – Project to Date	% Project to Date*
$253,696	$97,728	38.5% (3/31/2020)

Include the date the budget is current to.

Describe any opportunities for training/professional development that have been provided…

The project team now includes an undergrad economics student to support research in year 2.

Describe any activities involving the dissemination of research results (be sure to include outputs, outcomes, and the ways in which the outcomes/outputs have had an impact during the reporting period. Please use the tables below for any Publications and Presentations in addition to the description of any other technology transfer efforts that took place during the reporting period.)… Use the tables below to complete information about conferences, workshops, publications, etc. ***List all other outputs, outcomes, and impacts after the tables*** *(i.e. patent applications, technologies, techniques, licenses issued, and/or website addresses used to disseminate research findings).*

Table 3: Presentations at Conferences, Workshops, Seminars, and Other Events				
Title	**Event**	**Type**	**Location**	**Date(s)**
N/A				

Table 4: Publications and Submitted Papers and Reports				
Type	**Title**	**Citation**	**Date**	**Status**
N/A				

Participants and Collaborators:

Use the table below to list all individuals who have worked on the project.

Table 5: Active Principal Investigators, faculty, administrators, and Management Team Members			
Individual Name	**Email Address**	**Department**	**Role in Research**
Jonathan Rubin	rubinj@maine.edu	MCSPC	Principal Investigator
Kathryn Ballingall	kathryn.ballingall@maine.edu	MCSPC	Co-PI

Use the table below to list all students who have participated in the project during the reporting. (This includes all paid, unpaid, intern, independent study, or any other student that participated in this project.)

Table 6: Student Participants during the reporting period				
Student Name	**Email Address**	**Class**	**Major**	**Role in research**
Nicholas Alvarez		Undergrad	Double Major in Economics and Mathematics	Assistant Researcher
Sheldon Green		Undergrad	Major in Financial Economics	Assistant Researcher

Use the table below to list any students who worked on this project and graduated during this reporting period.

Table 7: Student Graduates			
Student Name	**Role in Research**	**Degree**	**Graduation Date**
N/A			

Use the table below to list organizations have been involved as partners on this project and their contribution to the project.

Table 8: Research Project Collaborators during the reporting period						
Organization	**Location**	**Contribution to the Project**				
		Financial Support	**In-Kind Support**	**Facilities**	**Collaborative Research**	**Personnel Exchanges**
Maine Department of Transportation	Augusta, ME		DSRC In-vehicle unit			

List all other outputs, outcomes, and impacts here (i.e. patent applications, technologies, techniques, licenses issued, and/or website addresses used to disseminate research findings). Please be sure to provide detailed information about each item as with the tables above.

N/A

Have other collaborators or contacts been involved? If so, who and how? (This would include collaborations with others within the lead or partner universities; especially interdepartmental or interdisciplinary collaborations.)

N/A

Who is the Technical Champion for this project?
Name: Dale Peabody
Title: Director, Transportation Research
Organization: Maine DOT
Location (City & State): Augusta Maine
Email Address: Dale.Peabody@maine.gov

Changes:

Discuss any actual or anticipated problems or delays and actions or plans to resolve them…

The closure of campus due to COVID-19 has delayed the planned pilot due to a lack of people using the crossing signal. We will use the small amount of data collected to meet part of the pilot objectives, but will have to wait until campus reopens to finalize the pilot.

Planned Activities:

Description of future activities over the coming months.

The team us continuing to meet with DOT to identify future research and collaborators that will increase knowledge and capacity for the use of connected vehicle technology and applications in the state of Maine and New England. A draft report of findings will be discussed with DOT, as well as future recommendations for investment in connected vehicle technology.