

Semi-Annual Progress Report for University Transportation Centers

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Small Urban, Rural and Tribal Center on Mobility (SURTCOM)

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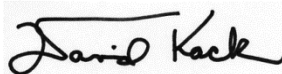
Recipient Organization: Montana State University
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Signature:



1. Accomplishments

What are the major goals and objectives of the program?

The mission of the Small Urban, Rural and Tribal Center on Mobility (SURTCOM) is to conduct research and provide leadership, education, workforce development and technology transfer in all transportation-related aspects of mobility for people and goods, focusing specifically on small urban, rural and tribal areas. Montana State University (MSU) is the lead institution, with consortium members including Eastern Washington University (EWU) and North Dakota State University (NDSU).

What was accomplished under these goals?

During the period April – September 2020:

- Work is nearly completed with two WTI/MSU projects entitled *Using WIFI to Determine Transit Ridership* and *Autonomous Paratransit in Rural Areas*. The first project looks at using devices searching for WIFI signals as a potential low-cost way to count riders on transit vehicles, while the second project is a preliminary review (cost/benefit analysis) of using an autonomous paratransit vehicle in a rural setting.
- WTI/MSU continues providing technical assistance to rural and tribal communities that want to increase biking and walking in their towns. The *Building Active Communities Technical Support* project will identify changes in infrastructure that can increase the number of people using active modes of transportation. During this reporting period, technical assistance was provided to Ennis, Montana, which included working with the Montana Department of Transportation (MDT), since like many rural communities, Ennis' Main Street is also a State Highway.
- Work continues on a WTI/MSU project entitled *Developing a Methodology for Implementing Safety Improvements on Low-Volume Roads in Montana*. This project is being conducted in conjunction with the Montana Department of Transportation.
- WTI/MSU began working with the Montana Department of Transportation on a project entitled *Use of Fluorescent Delineators in Temporary Traffic Control Work Zones*. The project is currently being delayed due to the COVID-19 pandemic. It is anticipated that work will begin again on this project in the late Spring/early Summer of 2021. It is anticipated that the project will show that using these delineators will help enhance the safety of motorists, workers, and others in small urban work zones, as well as in rural and tribal areas.
- Work continues on a WTI/MSU project which will identify fiber-reinforced polymer (FRP) materials and systems suitable for bridge superstructure and related design elements (e.g. fencing, sound barriers) that can be designed for bike/ped (and wildlife) crossings to meet American Association of State Highway and Transportation Officials (AASHTO) standards. Consideration will be given to the complete bridge system (superstructure, abutments, foundations, fencing, railings, sound barriers, etc.) to identify how FRP materials can be utilized for their design.

- WTI/MSU continues work on two projects in collaboration with the National Association of Development Organizations (NADO) to improve mobility in rural areas around Fort Smith, Arkansas and Augusta, Georgia. The timeline for these projects was extended to July 2021 in response to the COVID-19 pandemic.
- WTI/MSU started work on additional projects with NADO related to transportation and its ties to economic development. In addition to NADO, the National Rural Technical Assistance Program (National RTAP) is involved. This new effort includes working with the Hopi and Fort Belknap Tribal Governments, as well as with locations in Northcentral New Mexico, and the Big Sandy and Cumberland development areas in Kentucky. These projects were also extended due to the COVID-19 situation.
- WTI/MSU conducted a small project *Travel Behavior Analysis with Chittenden County Survey Data*. The Chittenden County Regional Planning Commission conducted travel behavior surveys in 2000, 2006, 2012, and 2018. Using the data from the four surveys, researchers conducted regression modeling to assess the relationship between the outcomes of interest and the factors that influence them. The final report can be found on the SURTCOM website at https://westerntransportationinstitute.org/wp-content/uploads/2020/10/4W8510_Chittenden-County-Full-Report.pdf
- WTI/MSU began working with the Idaho Transportation Department (ITD) on a project examining public transportation options in Twin Falls, Idaho, a community which is expected to transition from a Federal Transit Administration (FTA) Section 5311 funded system to a FTA Section 5307 transit system, once the 2020 Census is certified.
- WTI/MSU began a project to conduct a transit study in Humboldt County, a coastal county in northern California. The goal is to provide the Humboldt County Association of Governments (HCAOG) and the Humboldt Transit Authority with a review of all current transportation services, and to investigate the potential for new service in the town of McKinleyville.
- WTI/MSU started a follow-on project to the initial study of *Bicycle and Pedestrian Infrastructure Improvements Realized in Communities of Less than 10,000 People*. The new study includes communities in the states of Florida, Kentucky, Minnesota and Vermont.
- Work began on renewed Transportation Demand Management (TDM) efforts in the greater Bozeman (Montana) area. WTI/MSU had assisted Gallatin County and the City of Bozeman with TDM efforts under the SURLC UTC and is continuing efforts through the SURTCOM UTC. As a subset of this effort, WTI/MSU completed a paper *An Evaluation of the Montana Local Option Motor Fuel Excise Tax*. This paper by Andrea Hamre (WTI) is under final review and should be posted to the SURTCOM website by the end of 2020.
- WTI/MSU began a small research project that seeks to document the importance of K-12 school format (e.g. online, hybrid, in-person, “pandemic pod”) on women in STEM professions who have K-12 children. This will be accomplished by conducting three separate surveys to gather input from women in STEM with children. The results are

intended to provide insights and guidance regarding how policies in the future can better support women who work in STEM fields, including transportation.

- WTI/MSU began a new project in conjunction with the Montana Department of Transportation entitled *Effectiveness of Highway Safety Public Education at Montana Motor Vehicle Division and Vehicle Registration Stations by Streaming a Variety of Safety Content*. The purpose of this project is to research which safety messages, if any, affect the actions of those who watch the messages (i.e., increase safe driving behavior).
- Work continued with an EWU project entitled *The Status and Issues for American Indian Transit in the West*. Beginning with a 2012 report, the EWU team has sought to conduct a “state of tribal transit” update, including the identification of critical issues, and an assessment of western tribes in relation to transit. The project team will present a synopsis of the work to date during the 2021 TRB Annual Meeting.
- *The Impact of the Automobile on American Indian Reservations*, an EWU project, saw further progress. This report will assess the culture, use, and impact of the automobile on land use and reservation design, which will inform efforts to address unmet transportation needs.
- EWU staff are in final paper review for the project *Mobility & Access on American Indian Reservations in the Western United States: Phase I*. This initial study has documented issues related to distance and access and is establishing a framework for more detailed mobility analysis. The paper will highlight the transportation needs of American Indian reservations and note the transportation systems and resources that serve them.
- *Mobility on American Indian Reservations: A Tribal Context for Transportation*, an EWU project, continued its progress. This project will provide a perspective on mobility, including historic change from successful tribal specific cultures pre-contact to contemporary mobility related to American Indian reservations to other emerging transportation and key issues. An important component of this work is to understand the dynamics of mobility, particularly within tribal and community cultures, access, needs, and issues.
- EWU staff continued work on *Best Cases for Tribal Transportation Safety: Media, Planning and Action*. These small research projects are underway to support tribes on how to safely provide mobility and raise awareness of the importance of mobility.
- *Tribal-State Relations in Transportation: A Western States Analysis, Part 1: Evidence from Nine States* and *Part 2: Jurisdiction Overlaps* are two parts of a new project started by the EWU staff that will analyze how well States (and their Departments of Transportation) recognize the sovereignty of Tribal Governments, and how well these agencies work with the tribes to address their transportation needs. A survey related to the first part of the project is underway with tribes in the western United States to provide a quantitative approach/framework. A synopsis of work to date on this project will be shared during the TRB 2021 Annual meeting.

- EWU staff continued work on the project *Data Driven Planning and Tribal Implementation for Tribal Safety on Reservations*. This project will analyze how Washington State traffic safety programs may empower tribal programs and implement a culture of safety.
- The EWU team is working on several additional research reports, including, *Colville Reservation Seatbelt Use, a Focus Group Survey; Dangers Related to Mobility for Tribal Women; Human Trafficking as related to Transportation; Effects of Climate Change on Tribal Mobility on Land & Water based Tribes: Sustainability, Resiliency, & Mobilizing for Climate Change; A Tribal Short Course on Local Planning; and Tribal Engagement for a Culture of Tribal Traffic Safety*.
- EWU staff continue to teach numerous planning classes, including twelve different classes during the Fall 2020 quarter. All tribal planning, transportation, environmental, and tribal law classes are now being taught online, and will continue to be taught online until there is a vaccine for the Coronavirus.
- SURCOM/NDSU developed two Tribal Transit Training modules: “Customer Service for Rural and Tribal Transit Providers” and “Grant Writing for Rural and Tribal Transit Providers.” Both are available online at <https://www.ugpti.org/surcom/training/>. This training was developed to improve the effectiveness and efficiency of tribal transit systems.
- SURCOM/NDSU is in the final stages of completing the project *Tribal Transit Study: Demographic Needs Indicators, Funding Needs, and Livability*. The study was delayed due to COVID-19, but the final case study is now underway. Public transportation needs, the importance of providing critical lifeline services to transit dependent populations, and their contribution towards tribal community livability have not been studied to a significant degree. The objectives of the study are to identify research needs for tribal communities and address challenges including: 1) determine ways to understand mobility needs of tribal communities, 2) analyze transit operations and service coverage, 3) study demographic livability indicators, and 4) understand ways to improve livability of residents in tribal communities.
- SURCOM/NDSU completed the study *Develop a Revenue Vehicle Rehabilitation or Replacement Predictive Model for Small Urban and Rural Transit Systems*. The primary objective of this research is to improve the process to maintain America's small urban and rural revenue vehicles in a good physical condition, in a cost-effective manner. This project was completed, and the final report is currently out for review.
- SURCOM/NDSU finished the draft report for the NCHRP Project *Opportunities for State DOTs to Encourage Shared Use Mobility*. The final report is available at <https://www.ugpti.org/resources/reports/details.php?id=998&program=surcom>.
- SURCOM/NDSU completed work on a Rural Transit ITS project, which investigated ITS technologies that are being used in rural areas. The final report for this project was published in April 2020. It is available at <https://www.ugpti.org/resources/reports/details.php?id=988&program=surcom>.

- SURCOM/NDSU supports a Ph.D. student who is working on a Cyclist Riding Behavior Rating System. The student conducted a national survey to identify cycling behaviors that are perceived as reckless and risky by U.S. residents and to understand the perceived magnitude of each risky behavior. The study also simulated risky behaviors to evaluate and develop a new method for capturing the behaviors using sensors embedded in mobile phones. This research was completed, and the report is being finalized. This student completed his dissertation defense March 30, 2020, finalized his dissertation and graduated May 2020. The dissertation has not yet been posted to the website. The student was completely funded by UTC dollars.
- SURCOM/NDSU began a study in August for the North Dakota Department of Transportation (NDDOT) to look at the state's mobility services and transit systems, and to evaluate how well they serve the needs of North Dakota residents. The study has been completed and approved by the NDDOT and will be posted to the website after NDDOT submits it to the ND Legislature.
- SURCOM/NDSU started the project *Improving Mobility Among America's Aging Population to Combat Social Isolation*. This project will quantify the cost of providing greater mobility options to aging adults in small urban and rural communities to lower social isolation. This will be compared to the increased medical spending attributed to current levels of isolation.
- SURCOM/NDSU started the project *Interest of Shared Mobility and Emerging Vehicle Technologies in Rural America*. This project will document and analyze the interest and adoption patterns for shared mobility, and emerging vehicle technologies in rural communities. The case study portion of this study has been delayed due to COVID-19 but will resume.
- SURCOM/NDSU started a project to develop a Web Application for small urban and rural transit systems. The objective of the project is to develop a state of good repair predictive model for small urban and rural transit systems to be able to predict the service life of revenue vehicles. A financial analytical tool to estimate the current backlog and predict the yearly projected vehicle replacement cost will also be developed. The goal of the project is to provide a tool that helps transit managers prioritize investment needs for rehabilitation and replacement of vehicles.

What opportunities for training and professional development has the program provided?

- SURCOM/NDSU developed three eLearning courses during this reporting timeframe. They include: one 60-minute course: "Crisis Management for Rural and Tribal Transit Providers" published 6/24/20; two 10-minute courses "HR Training Short – Onboarding" and "HR Training Short – Employee Recognition."
- Two more courses are currently underway by SURCOM/NDSU include "Promoting your Agency" which is a 60- minute session and "HR Training Short – Transit Interview Questions" which is a 10-minute session.

How have the results been disseminated? If so, in what ways?

- See the information in Section 1, Accomplishments for project report information. Highlights include publishing of the report *Measuring the Economic Benefits of Rural and Small Urban Transit Service in Greater Minnesota*, <https://surcom.ugpti.org/?p=2112> as well as publishing the report *Travel Behavior Analysis with Chittenden County Survey Data* https://westerntransportationinstitute.org/wp-content/uploads/2020/10/4W8510_Chittenden-County-Full-Report.pdf

What do you plan to do during the next reporting period to accomplish the goals and objectives?

- Additional projects will begin, based on the SURTCOM UTC proposal, input from the SURTCOM Advisory Committee, and topics/issues noted by State DOTs.
- Dissemination of research results will occur through national venues, including the TRB Annual Meeting in January 2021.

2. Participants & Collaborating Organizations

What organizations have been involved as partners?

- Eastern Washington University and North Dakota State University are partners/collaborators in SURTCOM.
- MSU/WTI, SURTCOM Lead, is working with the National Association of Development Organizations (NADO) on a total of four mobility/transit projects which are fully funded by NADO (through a grant from USDA). Further, the Neponset Valley Transportation Management Association (TMA), which currently operates National RTAP, is involved in two of the NADO projects.
- WTI/MSU is working with the Idaho Transportation Department (ITD) on a project on assessing the transit system in Twin Falls, Idaho.
- WTI/MSU is working with multiple communities in Montana on pop-up traffic calming projects. Further, WTI is working with multiple departments within the City of Bozeman (MT) on pop-up projects, as well as the City's Climate Action Plan.
- The Washington State DOT (WSDOT) has worked with EWU for several years and continues that collaboration.
- Additional EWU partners include the Affiliated Tribes of Northwest Indians (ATNI), numerous individual tribes, the Bureau of Indian Affairs (BIA) and the Federal Highway Administration (FHWA).
- The Montana Department of Transportation (MDT) is working on four projects with SURTCOM lead WTI/MSU.

- The Minnesota Department of Transportation (MnDOT) is working with SURTCOM partner NDSU on a project. NDSU/SURCOM also works with the National Transit Institute (NTI), and additional partners including the Oklahoma Transit Association.
- NDSU/SURCOM is working with the North Dakota Department of Transportation (NDDOT) to look at North Dakota mobility services and transit systems, and how well they serve the needs of North Dakota residents.
- NDSU/SURCOM worked with WSP, Inc. to conduct the NCHRP study *Opportunities for State DOTs to Encourage Shared Use Mobility*.
- NDSU/SURCOM worked with Standing Rock Sioux Tribe in North Dakota and the Makah Tribe in Washington State on the *Tribal Transit Study: Demographic Needs Indicators, Funding Needs, and Livability*.

Have other collaborators or contacts been involved?

SURTCOM’s Advisory Board, which consists of one representative (each) from the Montana, North Dakota and Washington (state) DOTs, three tribal representatives, and one person from the National Association of Development Organizations (NADO), receives SAPR reports and is encouraged to submit topics/issues for potential research projects. Further, staff from SURTCOM organizations attend meetings of relevant TRB Committees and other organizations (such as ATNI), where issues/topics are discussed, and potential projects identified.

3. Outputs

Publications, conference papers and presentations

Publications

Final project reports were noted in Section 1, Accomplishments. In addition, SURTCOM staff collaborated on the following publications, papers and presentations:

SURCOM/NDSU published the following products during this reporting time:

- Rural Transit Fact Book, 2020 published in September, <https://www.ugpti.org/resources/reports/details.php?id=996&program=surcom>
- Measuring the Economic Benefits of Rural and Small Urban Transit Service in Greater Minnesota. April 2020 <https://www.ugpti.org/resources/reports/details.php?id=997&program=surcom>
- SURCOM/NDSU published ITS Technology Usage and Feasibility in Small Urban and Rural Transit. April 2020. <https://www.ugpti.org/resources/reports/details.php?id=988&program=surcom>

Conference Papers

- None at this time

Policy Papers

- None at this time

Presentations

- May 6, Ranjit Godavarthy with SURCOM/NDSU presented *Shared Mobility in Rural and Tribal Contexts* at the Shared Use Mobility Virtual Conference. There were 70 participants in the session.
- June 18, Jeremy Mattson with SURCOM/NDSU presented *Cost-Benefit Analysis of Rural and Small Urban Transit* at a virtual conference for the Nebraska Department of Transportation. There were 100 participants.
- June 23, Margo Hill (EWU) presented during an America Walks webinar on *Tribal Transportation Planning & Pedestrian Safety* with a total of 512 attendees!
- July 15, Margo Hill and Richard Rollins presented *Tribal Transit* during a “Transit Chat” hosted by the Transportation Choices Coalition.
- July 29, Margo Hill presented on *Human Trafficking and Mobility of Missing and Murdered Indigenous Women* through a webinar sponsored by the TRB Standing Committee on Native American Transportation Issues (AME30).
- August 12, the Western Transportation Institute (WTI), Montana State University (MSU), and the National Highway Traffic Safety Administration (NHTSA) co-hosted a national forum to raise awareness on *The Importance of Focusing on Transportation Safety in Rural America*. Moderated by SURTCOM Director David Kack, the forum included WTI researchers Natalie Villwock-Witte and Nic Ward. More information on the event, as well as a link to a recording of the forum can be found at <https://westerntransportationinstitute.org/event/2020/wti-co-hosts-national-event-on-rural-transportation-safety/>
- September 1, Rob Lynch with SURCOM/NDSU presented virtually at the National Transportation in Indian Country Conference (NTICC) on the topic of *Crisis Management in Transit*. There were 47 participants in the session.
- September 2, Angelena Campobasso with EWU presented (virtually) at NTICC on *Effects of Climate Change on Mobility, Sustainability & Resiliency*.
- September 4, Margo Hill & Dr. Ning presented at NTICC on *Seatbelt Use on the Confederated Colville Tribes: An Empirical Study*.
- September 8, Angelena Campobasso presented at Go Green Seattle on *Effects of Climate Change on Mobility, Sustainability & Resiliency, & Why Rural Tribes and Communities Matter to Urban Areas*.
- September 29-October 1. Many WTI/MSU and SURCOM/NDSU members participated in, moderated, and presented during the *3rd National Summit on Rural Road Safety*, a virtual summit hosted by the National Center for Rural Road Safety, which is led by WTI/MSU. This included Ranjit Godavarthy with SURCOM/NDSU presenting during the *Considering the Needs of All Rural Road Users* session in which there were 50 participants.

Website(s) or other Internet site(s)

- SURTCOM website (www.surtcom.org)
- EWU's SURTCOM related website (<https://www.ewu.edu/css/surtcom/>) has updated contact information, new lectures, outreach with lectures and PowerPoint presentations, and listings of on-going research.
- The Small Urban and Rural Transit Center (NDSU) website (<https://www.surtc.org/>) has been updated as of January 1, 2020 to reflect an organizational name change: Small Urban and Rural Center on Mobility <https://www.ugpti.org/surcom/>).

New methodologies, technologies or techniques

SURTCOM/NDSU developed a revenue vehicle rehabilitation or replacement predictive model utilizing machine learning.

EWU is partnering with the University of Washington's STAR Lab on primary research regarding using cell phones to determine how tribal transportation takes place on and off American Indian Reservations.

Inventions, patent applications, and/or licenses

Nothing to Report

Other products, such as data or databases, physical collections, audio or video products, application software or NetWare, analytical models, educational aids, courses or curricula, instruments, equipment, or research material

NDSU continues to work on training modules for tribal transit. Two eLearning Modules were developed. They include "Grant Writing for Rural and Tribal Transit Providers" https://modules.ugpti.org/grant-writing/story_html5.html and "Customer Service for Rural and Tribal Transit Providers" https://downloads.ugpti.org/surtcom-customer-service/story_html5.html

4. Outcomes

SURTCOM staff present the findings from research projects to the maximum extent possible, and present on all projects related to the SURTCOM theme. The Center has one performance measure to disseminate research deliverables for each research project; that target was met, as the research reports for all the completed projects are posted to the SURTCOM website and provided to the sponsor. Another performance measure was to plan or participate in technology transfer activities that offer implementation or deployment guidance at a broader scale. The target of hosting or participating in at least one forum per year that offers implementation assistance on a key mobility topic was met through both the webinar with NHTSA on August 12, and through the 3rd National Summit on Rural Road Safety (September 29 – October 1).

Increased understanding and awareness of transportation issues

As noted above, two larger webinars/events were held during this reporting period. The webinar held in conjunction with NHTSA (with pre-recorded comments by both Transportation Secretary Chao and NHTSA Deputy Administrator James Owens) highlighted WTI/MSU work on improving safety on rural roads, which is a key factor in improving the mobility of people and goods in rural areas. The *3rd National Summit on Rural Road Safety*, which is sponsored by the National Center for Rural Road Safety (led by WTI/MSU) covered a number of safety issues. Because the Summit was conducted virtually, more people were able to attend than in previous years, and in the end, over 300 people were able to participate.

Passage of new policies, regulation, rulemaking or legislation

EWU Research was utilized by the Affiliated Tribes of Northwest Indians (ATNI) as a Resolution that was put forward to reinstate funding for the position of the Eastern Washington State Patrol Tribal Liaison.

Increases in the body of knowledge

All completed projects, with their final reports posted or presentation made, increase the body of knowledge related to transportation issues.

Improved processes, technologies, techniques and skills in addressing transportation issues

Nothing to Report

Enlargement of the pool of trained transportation professionals

EWU, WTI/MSU and SURCOM/NDSU staff taught numerous classes related to planning and/or transportation. Further, outreach efforts were made to grade school, middle school and high school students to promote STEM activities, and to highlight the need for professionals in the transportation field.

Adoption of new technologies, techniques or practices

Nothing to Report

5. Impacts

The effectiveness of the transportation system

The main goal of SURTCOM is to enhance mobility of both people and goods in small urban, rural and tribal areas. Through our research and other activities, we hope to:

- Increase access to opportunities that promote equity and economic development through mobility;
- Implement innovative multi-modal solutions in these areas;
- Implement smart cities innovations in small urban, rural, and tribal communities;
- Increase active transportation modes, especially walking and cycling; and,
- Address mobility issues on Federal lands.

Technology transfer (including transfer results to entities in government or industry, adoption of new practices, or instances where research outcomes had led to the initiation of a start-up company)

The Deep East Texas Council of Governments (DETCOG) has continued the voucher program that was established with SURTCOM's assistance. Further, DETCOG's model has been shared with additional non-profits and city governments as an option for providing basic mobility for people with limited options.

The city of Bozeman continues to work with WTI/MSU to use "pop-up" installations to research the best methods for slowing traffic and improving safety for pedestrians and cyclists. As noted herein, other communities, such as Ennis, Montana, are also using pop-up projects.

The increase in the body of scientific knowledge

Nothing to Report

6. Changes/Problems

Changes in approach and reasons for change

Nothing to Report

Actual or anticipated problems or delays and actions or plans to resolve them

The COVID-19 situation has cancelled or delayed many conferences where SURTCOM staff were scheduled to present. Further, the COVID-19 has delayed some field work (gathering data), so projects will likely take longer to complete than originally planned. Finally, the COVID-19 pandemic may ultimately alter how people move within and between communities, which may affect comparing data gathered before and after the pandemic.

It is anticipated that securing match for the UTC funds may become more challenging, as local and state governments, and other potential funding partners, may limit funding for research as a result of budget cuts due to the pandemic. It would be helpful if all UTCs could have match requirements reduced for the next 18 months of their UTC funding. It is recognized that this would likely require Congressional action.

Changes that have a significant impact on expenditures

Nothing to Report

Significant changes in use or care of human subjects, vertebrate animals, and/or biohazards

Nothing to Report

7. Special Reporting Requirements

Not Applicable