

Research Need Statement 614

I. Need Statement Champions and Information

I.A. Need Statement Champion Information

- I.A.1. First and Last Name of Research Champion: **Victoria Nill**
- I.A.2. Research Champion's Office: **Transit and Active Transportation**
- I.A.3. Research Champion's Phone Number: 651/366-4161
- I.A.4. Research Champion's Email: Victoria.Nill@state.mn.us

I.B. Research Co-Champion

- I.A.1. First and Last Name of Research Co-Champion: **Mark Nelson**
- I.A.2. Research Co-Champion's Office: **Transit and Active Transportation**
- I.A.3. Research Co-Champion's Phone Number: 651/366-3794
- I.A.4. Research Co-Champion's Email: Mark.B.Nelson@state.mn.us

I.C. Research Needs Title (115 Characters):

Community Transit Strategies

I.D. Project Sponsor: MnDOT Research Program

II. Research Need Background and Description

II.A. Research Need Background

II.A.1. Describe the problem or opportunity.

A human-centered design approach to transportation in Greater Minnesota can lead to more efficient transit solutions that utilize the existing public and private assets in rural communities. This approach can take several directions, depending upon the community's needs and assets. This proposal is to engage a small greater Minnesota community (under a population of 10,000) in a community transit pilot project that would give people with transportation needs access to rides in under-utilized vehicles, with the goal of testing whether a shared, mobility services approach to transit transportation in Greater Minnesota can meet people's needs at a lower cost, with more convenience, and with greater positive impacts on the local economy than current practices.

Currently many Greater Minnesota community's transit needs are not being met. Urban-based transit models are not feasible in areas of dispersed populations and destinations. At the same time, Greater Minnesota citizens own substantial vehicle capacity and shared mobility service platforms have emerged to provide efficient methods for private vehicle owners to provide micro transit services in recent years.

II.A.2. If applicable, describe how this project will build on previous research.

II.A.3. If applicable, include the title/s or previous research.

II.A.4. What is the **objective** of the proposed research?

This research will look at how sharing-economy strategies could help create a rural transit model that links transit needs to excess vehicle capacity to create local, self-organizing transit networks to test strategies that can produce better outcomes at a lower cost than currently available transit models. Potential benefits to the state include the exploration of new public/private partnerships that meet the transit needs of under-served populations more efficiently.

The research project must engage Greater Minnesota transit providers and local volunteer driver programs to inform the research question and to identify local needs/questions that can be addressed through the research.

III. Strategic Priorities, Benefits, and Expected Outcomes

Section III. is for MnDOT sponsored and co-sponsored projects only; all LRRB projects proceed to section IV.

III.A. MnDOT Strategic Priorities

Instructions: Briefly describe how the project aligns with the following MnDOT Research Strategic Priorities. Complete all that apply.

III.A.1. Innovation & Future Needs:

Exploration of new public/private partnerships

III.A.2. Advancing Equity:

Meeting the transit needs of under-served populations more efficiently.

III.A.3. Asset Management:

Transit operating efficiencies may result in more efficient management of transit assets

III.A.4. Safety:

III.A.5 Climate Change & Environment:

III.B. Expected Outcomes

Instructions: Check all expected direct outcomes of this research.

- New or improved technical standard, plan, or specification
- New or improved manual, handbook, guidelines, or training
- New or improved policy, rules, or regulations
- New or improved business practices, procedure, or process
- New or improved tool or equipment
- New or improved decision support tool, simulation, or model/algorithm (software)
- Evaluation of a new commercial product
- New or improved technical standard, plan, or specification
- Other. Please specify below:

III.C. Expected Benefits

Instructions: Select all expected benefits that may be realized if the findings and recommendations from this research is adopted or implemented

III.C.1. Construction Savings Choose an item.

III.C.2. Decrease Engineering/Administrative Costs Choose an item.

III.C.3. Environmental Aspects Choose an item.

III.C.4. MnDOT Policy **Changed or inform a policy
May inform future transit funding and operating policies.**

III.C.5. Lifecycle Choose an item.

III.C.6. Operations and Maintenance Savings **Other operational and maintenance savings.
Lower cost than current transit service models.**

III.C.7. Reduce Risk Choose an item.

III.C.8. Reduce Road User Cost Choose an item.

III.C.9. Safety Choose an item.

III.C.10. Technology Choose an item.

III.C.11. Other, please describe below:

IV. Technical Advisory Panel

Instructions: Please list the name and affiliation of individuals to consider for the Technical Advisory Panel.

Your assigned Project Advisor is available to answer questions and provide guidance (assigned by the Office of Research & Innovation).

Your Project Advisor is: Brent Rusco, brent.rusco@state.mn.us