Abstract
The need for veteran transportation is growing rapidly because of the increasing number of older veterans and injured service men and women. Many veterans in rural areas have special mobility needs and must travel long distances to receive medical care. The objective of this study was to identify veterans with mobility needs currently living in rural Minnesota, Montana, and North Dakota, and to quantify the cost of transportation options for meeting their mobility needs. Special attention was given to the medical transportation of veterans to VA health care centers. The feasibility of a coordination effort between VA health care centers and rural public transit agencies for transporting veterans to medical appointments was also studied.

Background
There are approximately 22 million military veterans in the United States (Department of Veteran Affairs 2013). Veterans represent a unique population subset that differs from the total U.S. population in gender, age, and racial composition. These characteristics, among others, present significant mobility challenges for veterans and their families. Overall, the veteran population is overwhelmingly male and older than the non-veteran population. The high percentage of older male veterans is due to a large number of World War II, Korean, and Vietnam-era veterans, according to the American Community Survey (2010).

Veterans residing in rural areas represent almost 30% of the total veteran population and 41% of the total enrolled veteran population in the Department of Veterans Affairs Health Administration (VHA) system (National Center for Veterans Analysis and Statistics 2012). The National Center for Veterans Analysis and Statistics (2012) found that the isolation of rural areas creates unique challenges for veterans living in these communities. The authors highlighted four ways that rural communities differ from urban communities: demographic composition; social ties and social capital; culture; and infrastructure and institutional support.

Compared to urban veterans, rural veterans were found to be less racially diverse, less educated, more disabled, and of lower income than their urban counterparts. A higher percentage of rural veterans also had service-connected disability ratings above 50% compared to urban veterans. This was attributed to the high percentage of older male veterans residing in rural areas. Veterans living in rural areas are also reported to be in poorer health than those in urban areas (Burkhardt et al. 2011), with numerous wounded veterans requiring assistance with mobility for life-essential activities and employment.

Rall and Wheet (2013) developed in-depth case studies and detailed profiles of all 50 states focusing on state-level activities to enable improved access to transportation for all military veterans. They found that many states are working to ensure that veterans have a dedicated form of transportation for their everyday and special travel needs. However, survey respondents in their study were often unable to provide specific information showing measurable increased transportation for veterans. Instead, they mentioned coordination efforts that can improve
services and develop lines of communication between agencies. The ability to target veterans with outreach materials was found to be a key lesson learned. Rall and Wheeet (2013) also found that a general mistrust of government may be present. It may be beneficial to use nonprofit groups or local agencies to encourage veteran transportation planning when mistrust is present. Keeping peer-to-peer resources in mind was also found to be helpful given the tight-knit nature of the military community.

**Surveys**

The Small Urban and Rural Transit Center (SURTC) designed online and paper surveys to distribute to veterans. Both surveys contained questions regarding veteran travel patterns and mobility issues. The online survey was distributed via email to Veterans Service Officers (VSO) and Veterans Affairs representatives throughout Minnesota, Montana, and North Dakota. Small urban and rural counties were targeted. A total of 107 online surveys and 33 usable paper surveys were received, providing 140 viable surveys.

More than 80% of participants had a disability, with a wide range of disability ratings. Nearly 70% indicated they drive their own vehicle, and 13% replied that they usually travel as a passenger in a private vehicle. Nine percent rely on veteran transportation services, and another 9% rely on public transportation for their travel needs (Figure 1).

![Figure 1. Typical Travel Modes Used by Veterans](image1)

Veterans were also asked how far they are required to travel to get to a veteran health care facility. About one-third of respondents reported that they travel less than 30 miles one-way to their veteran health care facility. Another third indicated they travel between 31 and 60 miles, while the final third travel more than 60 miles one-way to receive medical services (Figure 2).

![Figure 2. Distance Traveled to Veteran Medical Services](image2)

**Simulations**

Simulations were conducted from a transit agency perspective to determine when it would be cost-effective for public transit agencies to transport veterans to Veterans Affairs (VA) health care centers. These simulations predicted the number of veteran passengers needed for every health care center medical trip so that current fare recovery levels are equaled or surpassed. Simulations were conducted for Minnesota, Montana, and North Dakota, as well as transit agencies that serve VA health care centers in Fargo, ND, St. Cloud, MN, Sioux Falls, SD, and Missoula, MT.

Each veteran medical trip was assumed to be unique and dependent on personal preferences and constraints. Simulations are useful to help account for the uncertainty in travel behaviors.

Data used in simulations were collected from a combination of the Rural National Transit Database (RNTD 2011), the Department of Veterans Affairs (2013), and survey findings. Three essential variables used throughout the simulations included the state average operating expense per mile; the fare recovery percentage (percentage of operating expenses covered by fare revenues) for rural public transit agencies in Minnesota, Montana, and North Dakota; and the VA travel reimbursement per mile.

Figure 3 shows that with a VA reimbursement rate of 10 cents per mile for a 90-mile round trip, transit agencies in Minnesota must transport six passengers to exceed their current fare recovery level while Montana and North Dakota need to only transport two and three passengers, respectively. This is due to the higher fare recovery level in Minnesota compared to the other two states. As the VA
reimbursement rate increases, fewer passengers must be transported per trip to surpass current fare recovery levels. Also, the simulation results included no fare charged to the passenger by the transit agency.

VA health care center regional scenarios were developed to simulate coordination efforts for rural public transit agencies that could potentially serve regional VA health care centers. Figure 4 illustrates the four regional veteran health care markets analyzed: Fargo, ND, St. Cloud, MN, Sioux Falls, SD, and Missoula, MT. These four locations were chosen because nearly 70% of survey respondents receive veteran medical care at one of these centers. Coordinated travel simulations between VA health care centers and rural public transit agencies were completed at three different mile radiuses from each VA health care center: 30, 60, and 100 miles.

The 60-mile round trip simulation for the Fargo, ND, VA health care center showed that two passengers would need to be transported to equal current transit fare recovery rates with a VA reimbursement of 10 cents per mile, while three and four passengers would be required to cover the fare recovery rate for the 120- and 200-mile round trips, respectively. Obviously, the number of passengers required to cover the fare recovery declines as the VA reimbursement rate increases. More passengers were required to meet fare recovery levels for the longer trips as the 200-mile trip had a fare recovery percentage of more than 12% while the other two trips had fare recovery rates between 8% and 9%. This occurred because the transit agencies serving the outer range of the service area had higher fare recovery rates compared to those serving the area closer to the Fargo, ND, VA health care center.

**Key Findings**

*Key Finding #1: Transit agencies can increase ridership and VA health centers can lower beneficiary travel costs if they coordinate services.*

Simulation results showed that if VA health care centers can transfer travel beneficiary eligible veterans to public transit and discourage them from driving their own personal vehicles, they will be able to lower their current 41.5 cent per mile reimbursement rate paid directly to veterans by reimbursing transit agencies between 10 and 30 cents per mile to provide transportation services. From a transit agency point-of-view, results showed that if a small number of veterans, usually between 1 and 4 per trip, would choose transit rather than drive their own vehicles to VA health care appointments, transit agencies could meet or exceed their current fare recovery rates. Results were estimated based on transit agency cost per mile, fare recovery rates, and location specific information.

Example: If a VA health center can lower transportation payments from 41.5 to 20 cents per mile by utilizing public transit to provide the service, they could save nearly $16 per 100 mile round-trip [($0.415 - $0.20) x 100 - $6 deductible] in travel reimbursements. The average transit agency, based on simulation results, would be able to meet or exceed their current fare recovery levels with between 1 and 4 veteran riders based on these same numbers.
VA beneficiary travel expenses have more than doubled during the past four years (from $373 million in 2008 to $861 million in 2012). Results show a potential win-win for both rural transit agencies and VA health care centers. Coordination efforts between transit and VA health care could save the VA between $10 and $30 in transportation costs for every medical trip, yielding thousands of dollars in total savings every year. Transit agencies could increase their ridership and better utilize their service while potentially increasing current fare recovery levels.

Key Finding #2: Study results can serve as a service planning tool for rural transit agencies.

Individual transit agencies can compare their current cost/mile and fare recovery levels to those in the simulations to gauge the feasibility of pursuing a coordination effort with their local VA. They can also determine the feasibility based on their location and knowledge of local veterans who may be eligible for VA travel benefits. State-wide and regional findings can be used to determine their best service scheduling technique.

Coordinating with VA health care centers would provide another funding stream for rural transit. Further, the 2013 Rural Transit Fact Book showed that for rural commuter transit service, there is excess capacity available and many rural transit agencies already serve larger communities where VA health care centers are located.

Key Finding #3: This is an optimal time to begin talking about strategies for rural transit to transition aging veterans from personal vehicles to public transit.

Survey findings showed that veterans rely heavily on their personal automobiles for transportation to medical appointments and everyday services, while few use public transit. Many rural veterans, as they age, will require transportation options other than their personal vehicles, and rural transit services can help fill that mobility gap. Offering veterans fare free trips to VA medical appointments may be an effective marketing tool. Rural transit could also offer transit travel training to veterans to ease their concerns about riding the bus.

Many veterans, like the country’s population as a whole, are aging. Vietnam veterans, for example, are currently in their 60s and early 70s. Numerous studies have shown that as people age, both their ability and willingness to drive long distances decrease. A coordination effort involving a marketing campaign between VA health care centers and transit agencies would make veterans aware of other options for their VA medical trip needs.

References