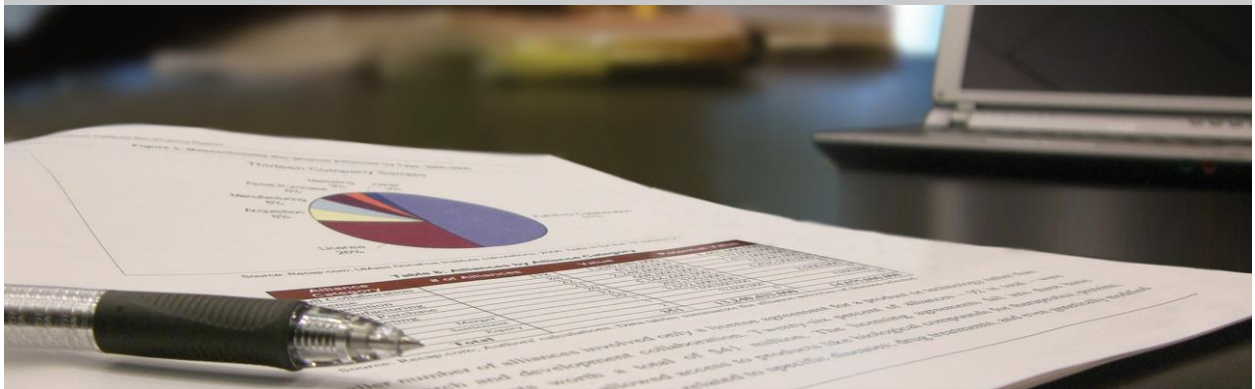


Quaboag Connector Rural Microtransit Economic Impact Analysis

May 2025



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Donahue Institute
Economic and
Public Policy Research

Quaboag Connector Economic Impact Analysis

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Executive Summary

The Quaboag Connector, operated by the Quaboag Valley Community Development Corporation (QVDC), offers demand response microtransit services to residents of a 10-town region straddling the edge of Worcester, Hampshire, and Hampden Counties in Massachusetts. This region represents the Quaboag Connector Service Area. The Quaboag Connector Service Area will also be referred to as the “region” in the following report, unless otherwise noted. Microtransit is small-scale, on-demand public transit services which offer flexible routes and on-demand scheduling.¹ Residents of the region can access the Quaboag Connector microtransit service by scheduling a ride in advance, over the phone. This rural region has historically faced acute challenges with public transportation as it exists on the periphery of multiple jurisdictions. While parts of the region have basic access to public fixed-route bus services through the Pioneer Valley Transit Authority (PVTA) and the Worcester Regional Transit Authority (WRTA), those services were insufficient for many of the region’s residents.

Across the region, students struggled to attend college or find jobs, while businesses had trouble finding employees who could reliably show up to work. Healthcare appointments were missed by patients and senior centers struggled for attendance at social events. At this critical time, schools, businesses, hospitals, and stakeholders recognized a key issue in their ecosystem: the lack of transportation in the area created barriers to work, school, healthcare, and nearly all facets of well-being for locals. To address these needs in a region that extends across counties, the Quaboag Connector was developed as a micro-transit service, a flexible alternative to fixed route-only services.

Since it began operating in 2017, the Quaboag Connector has provided over 76,000 trips to the region’s residents, providing access to medical care, errands, social interaction, senior services, and employment. The Quaboag Connector, a public-private partnership between the QVDC and the Town of Ware, has aimed its work at improving social determinants of health, including transportation explicitly, as well as social connections and employment, all of which have been amplified by its presence. The economic impacts are likewise considerable, supporting employment and incomes while contributing to economic development in the region.

The purpose of this report is to understand the Quaboag Connector Service Area region and the ways in which the Quaboag Connector impacts its residents and economy. Through qualitative and quantitative analytical techniques, this study will demonstrate how, and the extent to which, the Quaboag Connector contributes to the Commonwealth’s economy with a focus on the immediate region. To this end, the report will first break down, in detail, the unique characteristics of the Quaboag Connector’s service area using economic and demographic data. Quantitative and qualitative data related to trips provided by the Quaboag Valley Community Development Corporation will then be analyzed and operational data will be used to inform an economic impact model. Along with discussion of the resulting economic impacts, data from interviews with key stakeholders will be analyzed to holistically capture the impacts

¹ American Public Transportation Association Admin, “Microtransit,” *American Public Transportation Association* (blog), accessed May 1, 2025, <https://www.apta.com/research-technical-resources/mobility-innovation-hub/microtransit/>.

of the Quaboag Connector. Within the headings below, key findings describing the region's characteristics, the Connector's impacts, and valuable input from key stakeholders are summarized.

Quaboag Connector Service Area Characteristics

DEMOGRAPHICS

- The Quaboag Connector Service Area's population is older than the Commonwealth's, with 22 percent of residents in the 65 or older age group compared to 17 percent in Massachusetts. This share of the population is also growing faster than the state. As the region ages, the demand for transportation options beyond personal vehicles increases.
- The region experienced population growth (albeit, slowly) over the last decade, but population projections suggest the population will decline in coming decades.
- With few concentrated communities, the region is low in population density and geographically dispersed.
- Disability levels are higher in the Quaboag Connector Service Area than the statewide average (15% versus 12%), pointing to a heightened need for personal mobility beyond personal vehicles.
- The Quaboag Connector service area has a similar poverty rate to the state overall (9.3% and 10.0%, respectively).

WORKFORCE AND ECONOMY

- The Quaboag Connector Service Area acts as a major source of workers for both Central and Western Massachusetts, with over 24,000 workers leaving the region for work, over 8,000 entering the region for work, and about 6,500 living and working in the region.
- The Quaboag Connector Service Area lags the state and U.S. in terms of jobs growth between 2010 and 2023, with the U.S. growing 20 percent since 2010, Massachusetts growing 15 percent, and the Quaboag Connector Service Area growing 4 percent. Slow jobs growth suggests a lagging economy and transportation services, like the Quaboag Connector, are a pillar to support current and future economic development.
- The Quaboag Connector Service Area has historically had a higher unemployment rate than the state, though it has recently measured around the same level at the end of 2023 (3.6% in MA vs 3.5% in the Quaboag Connector Service Area).
- The region's top three industries by employment share are education & health services, retail trade, and manufacturing. Manufacturing is more concentrated in the region than in the rest of Massachusetts, in particular.

VEHICLE ACCESS

- The share of residents who rely on driving alone for their commute is higher than that of the Commonwealth, (82% versus 63%), indicating that the region remains heavily dependent on personal vehicles for commuting.
- Six percent of all Quaboag Connector Service Area households lack vehicles (1,713 households) compared to 12 percent statewide, reflecting the rural region's higher dependence on cars. Of those households, about 22.8 percent (390 households) are worker households that lack vehicles.

- Quaboag households without vehicles are more likely to be single person households, with single-person households accounting for 78 percent of non-vehicle households compared to 61 percent statewide.

Quaboag Connector Impacts

- The Quaboag Connector has more than doubled the number of trips it provides annually since it began operating, growing to 10,931 one-way trips in 2024.
- Over 400 unique passengers use the Quaboag Connector annually, just over half of whom are aged 55 or older.
- In 2023, most passengers used the Quaboag Connector to get to work (48%), followed by medical trips (21%) and then shopping (10%).
- By bringing residents to work, the Quaboag Connector directly supports earnings in the region and has generated over \$7 million dollars in local wage impacts.
- Beyond wages, the trips on the Connector help to support local employment. Distributing an estimate of the number of jobs supported by trips on the Connector, to local industries shows significant economic impact across the seven-year period.
 - 30 jobs (avg. annual)
 - \$19 million GDP (total)
 - \$31 million Output (total)
- The Quaboag Connector itself is an employer. Between 2018 and 2025, the Quaboag Valley Community Development Corporation's (QV CDC) operations have had a substantial economic impact.
 - 11 jobs (avg. annual)
 - \$1 million GDP (total)
 - \$2 million Output (total)
- With the Quaboag Connector, savings from trips for medical appointments (which ensure timely treatments resulting in better health outcomes, and thus lower cost of ultimate care) are estimated to be nearly \$11 million since operations began in 2017.
- Given a missed appointment with a physician incurs a cost of approximately \$200 per appointment to the provider, and the Connector facilitated about 1,900 medical trips in 2023 alone, providers saved an estimated \$370,000 due to the Connector.
- The Quaboag Connector travels approximately 67,000 miles annually, saving passengers more than \$420,000 in personal vehicle operating costs between 2017 and 2024.
- Each of the Quaboag Connectors transportation programs and partnerships have a positive local impact. The Connector provided about 1,800 trips for the Baystate Convenient Care Van, nearly 3,000 trips for the Ware Senior Program, over 1,000 trips for the Palmer Rides to Work Program, and nearly 300 trips for local veterans as a part of the Free Rides for Veterans program in 2024.
- The combined economic impact of the Quaboag Connector's internal operations, support for local industry employment, medical trip impacts and vehicle operating cost savings is nearly \$45 million in the 2017 through 2024 study period.
- Based on the results from the IMPLAN econometric model and supplementary analysis data, the Quaboag Connector has generated \$10.5 million dollars in economic activity for every \$1 million dollars of combined state, non-profit, and local reimbursement into the program.

Key Stakeholder Interview Findings

REGIONAL BENEFITS

- Addresses transportation barriers by providing an alternative to limited public transportation options, personal or family cars, or carpools.
- Improves transportation reliability by remaining a constant, well-known provider in the region.
- Improves overall attractiveness of the region by providing a crucial link between businesses and organizations and the region.
- Enables transportation for a range of use cases including, but not limited to, medical, social, work, education, transit connections, and support for seniors.

BUSINESS & ORGANIZATIONAL BENEFITS

- Provides consistency for employee attendance, which relieves the strain of unpredictable staffing on businesses.
- Fills gaps between public transit for clients which allows organizations to service more clients and therefore boost outcomes.
- Enables an education to workforce pipeline.

ECONOMIC DEVELOPMENT BENEFITS

- Addresses a range of social determinants of health including access to healthcare, social connection, housing, employment, and more.
- Addresses housing affordability issues by bridging the distance between workers and affordable, accessible housing.
- Attracts workers and grows infrastructure and amenities by supporting rides to work, healthcare, and other essentials, which invites potential workers who benefit the region's economic development.
- Mobilizes and motivates investors by creating an opportunity for businesses to thrive and a need for new or improved infrastructure and amenities.

CHALLENGES

- Does not reach all schools in the area which may fall outside of the service area but are crucial to the region's ecosystem.
- Need better coordination for transit connections to further enhance accessibility for riders.
- Need more vans and drivers to meet demand.
- Need more frequency and availability to accommodate weekend and evening trips.
- Tight scheduling is not able to meet demand for riders with specific needs and for the sheer volume of riders using the Connector.
- Funding is a core challenge restricting growth and capacity.

RECOMMENDATIONS

- Develop pathways for sustainable public and private funding.
- Broaden network to bring the benefits of the Connector to a broader population in the region.

- Increase accessibility to specifically reach those who may need ride service but are unfamiliar with the Connector or for sick non-emergency medical visits.
- Create opportunities for local business collaboration such as advertisement sales to leverage revenue in support of operating costs.
- Improve intrastate transit connections to connect the region with other transportation networks in the state.
- Share best practices to support the development of other microtransit services in regions lacking robust public transportation.

Figure 1: Quaboag Connector Impacts Summary



Introduction

The Quaboag Connector, operated by the Quaboag Valley Community Development Corporation in partnership with the Town of Ware, offers micro transit services to residents of a 10-town region straddling the edges of Worcester, Hampshire, and Hampden Counties in Massachusetts. This rural region has historically faced challenges with public transportation as the Quaboag Connector Service Area exists on the periphery of multiple jurisdictions. While the region has basic fixed-route access to public bus services through the Pioneer Valley Transit Authority (PVRTA) and the Worcester Regional Transit Authority (WRTA), services and access were insufficient for meeting the varied mobility needs of the region's residents. To improve access, the Quaboag Connector was introduced to provide micro-transit service, a concept that has emerged as a flexible alternative to fixed route-only services.

Along with its isolation from major public transportation networks, the Quaboag Connector Service Area also has unique needs compared to the state. Residents in the region are older and more likely to have a disability than the state average, and the share of the population that is 65 years or older both comprises a larger share than and is growing faster than the state. As expected for an area that is less densely populated and with few fixed-route public transportation options, residents are more likely to own their own cars and have longer commutes compared to the state average. As a relatively auto dependent region, Quaboag residents must also bear the costs of vehicle ownership as well as face the challenges that arise when automobiles fall into disrepair or break down. The region overall is experiencing a slow population decline. Economically, the region has slightly higher unemployment rate than the state, typical of more rural areas², but employment is spread amongst a diverse set of industries, with the region having a higher concentration of employment in industries like manufacturing, logistics and utilities, and construction compared to the state overall.

Before the Quaboag Connector's inception, students without transportation means to attend college often could not find work, while businesses had trouble finding employees who could reliably show up to work. Healthcare providers noticed appointments were missed by patients and senior centers were holding social events that were not well attended. Residents had no choice but to rely on limited fixed-route transportation services in the region or depend on family and friends for their transit needs. Some individuals were forced to move out of the region to a place with better transportation options. At the time, schools, businesses, hospitals, and key stakeholders recognized the issue in their ecosystem: the lack of transportation in the area created barriers to work, school, healthcare, and nearly all aspects of well-being for locals. To address these needs in a unique region that extends across multiple counties, the Quaboag Connector was created.

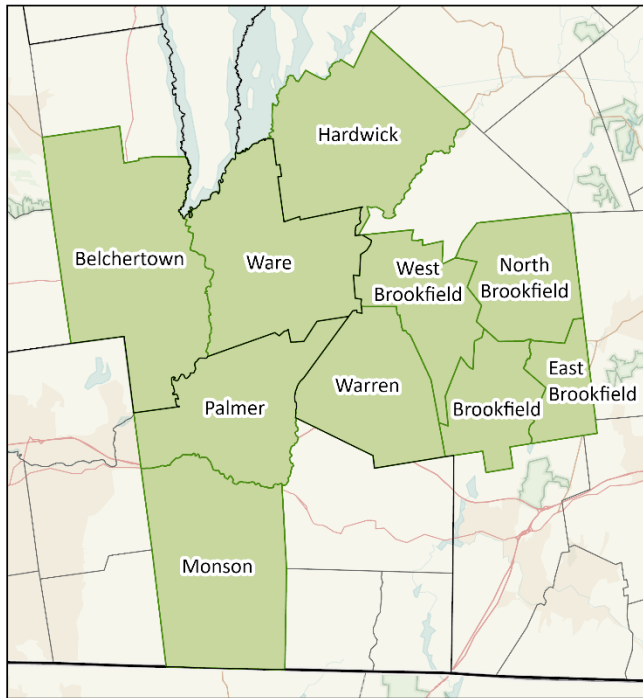
Since it began operating in 2017, the Quaboag Connector has dramatically improved access to transportation in the region. The Quaboag Connector provided over 10,000 trips to the region's residents in 2024, providing access to medical care, errands, social interaction, senior services, and employment. The not-for-profit Quaboag Connector has supported transportation as an important

² Economic Research Service, "Employment & Education - Rural Employment and Unemployment," U.S. Department of Agriculture, January 8, 2025, <https://www.ers.usda.gov/topics/rural-economy-population/employment-education/rural-employment-and-unemployment>.

social determinant of health that impacts access to social connections, employment, and more. The Quaboag Connector has also had a positive economic impact, supporting employment and income while contributing to economic development in the region. Additionally, with progress continuing on West-East Rail (Springfield to Boston), the region is set to host a new train station (in Palmer), providing increased access to the three largest cities in Massachusetts – Springfield, Worcester, and Boston. With the Connector’s ability to provide last-mile transportation, the region is well positioned to link up with these developments. These types of improvements are foundational for putting the region on a path for future economic growth.

The purpose of this report is to understand the Quaboag Connector Service Area and the ways in which the Quaboag Connector impacts the residents and economy in the area. To this end, the report will first break down, in detail, the unique characteristics of the Quaboag Connector’s service area using economic and demographic data. Quantitative and qualitative data related to trips provided by the Quaboag Valley Development Corporation will then be analyzed and operational data will be used to inform an economic impact model. Along with discussion of the resulting economic impacts, data from interviews with key stakeholders will be analyzed to holistically capture the impacts of the Quaboag Connector.

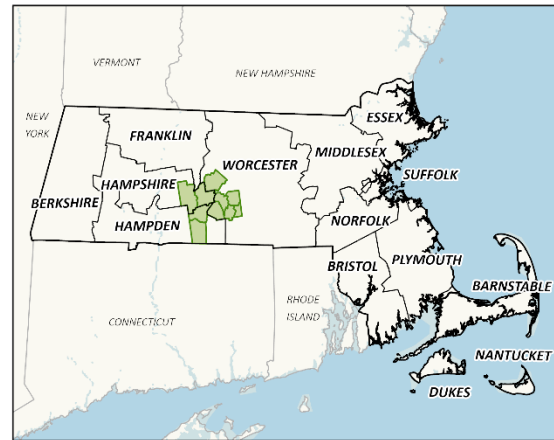
Study Area



Quaboag Connector Service Area

Situated in the Quaboag Valley, the region extends into Hampshire, Hampden, and Worcester counties in the western part of south-central Massachusetts

Quaboag Connector Service Area Towns (MA) State (MA)
County (MA) States (US)



The Quaboag Connector service area is within the Quaboag Valley of West Central Massachusetts. The region stretches across parts of Hampshire, Hampden, and Worcester counties and includes the following towns:

- Belchertown
- Brookfield
- East Brookfield
- Hardwick
- Monson
- North Brookfield
- Palmer
- Ware
- Warren
- West Brookfield

The Quaboag Connector's service area is unique because it crosses the borders of three counties. The service area also intersects the planning regions of the Pioneer Valley Planning Commission (PVPC) and the Central Massachusetts Regional Planning Commission (CMRPC). Finally, it is divided between the transit authorities of those two planning regions, the Pioneer Valley Transit Authority (PVTA) and the Worcester Regional Transit Authority (WRTA).

Background

The Quaboag Connector was developed as a response to the emerging need for additional public transit in the Quaboag Valley. The region's elderly population needed more reliable transportation in a rural region where services were often spread out and often challenging to access. Younger residents also faced transportation challenges, needing rides to work as well as services. Residents without their own vehicles depend on existing transit networks, friends, or family. The existing transit networks were insufficient. As mentioned before, the region sits on the periphery of two transit regions, the Pioneer Valley Transit Authority (PVRTA) and Worcester Regional Transit Authority (WRTA). This resulted in limited bus services for existing residents as both transportation networks lacked the ability to customize their networks and service levels to meet the specific needs of the Quaboag Connector Service Area and were challenged to set aside adequate funding to further develop services for a region on their respective peripheries.

Starting in 2017, the Quaboag Valley Community Development Corporation and the Town of Ware partnered together to implement a shuttle service. The original service had a single van and driver and provided seven trips in January 2017, its first month. In December of the same year the service provided over 700 trips and activity has grown since then. The program has since expanded through different partnerships. These partnerships include the Palmer Rides to Work Program, a partnership with the Town of Palmer, the Baystate Convenient Care Van, a partnership with Baystate Wing Hospital and a senior citizen shuttle program with the Town of Ware. Additional partnerships have connected the Quaboag Connector with existing PVRTA bus routes to tap into bus services to Amherst and Worcester while a separate program provides free rides for local veterans.

The Quaboag Connector is improving the health of the region. It improves health outcomes both directly, by connecting riders with health services, and indirectly by working towards social determinants of health. The social determinants of health framework used by the Quaboag Connector is based on a 5-step pyramid model developed by Thomas R. Frieden, a former director of the Centers for Disease Control (CDC)³. The model's foundation is made of socioeconomic factors including an individual's economic well-being. By providing access to medical care, work and community activities, the Quaboag Connector is able to improve local well-being.

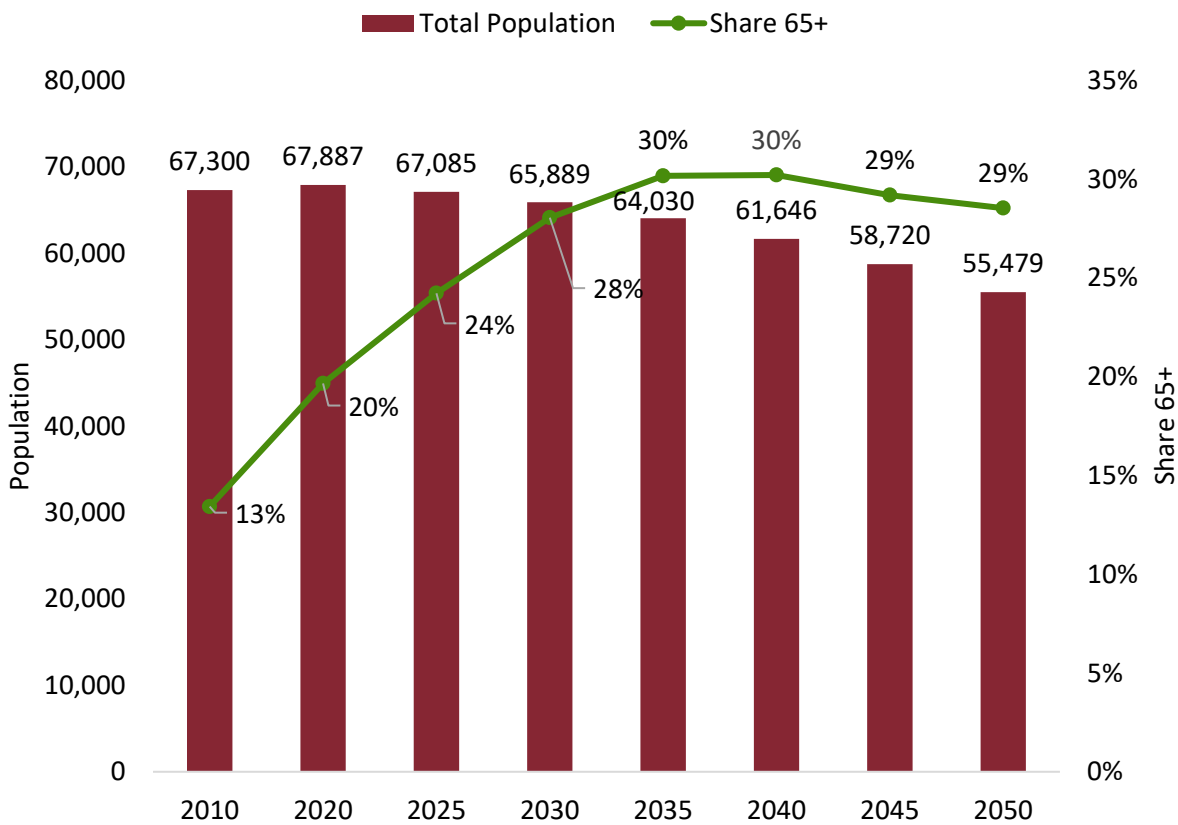
³ Thomas R. Frieden, "A Framework for Public Health Action: The Health Impact Pyramid," *American Journal of Public Health* 100, no. 4 (April 2010): 590–95, <https://doi.org/10.2105/AJPH.2009.185652>.

Socioeconomic Characteristics of the Quaboag Connector Service Area

Demographics

The rural Quaboag Connector Service Area faces unique demographic challenges which shape the need for reliable transportation and mobility options beyond a personal vehicle. The region experienced some population growth over the last decade, albeit slow, but projections of population based on historical trends are now suggesting population declines over the next several decades. This shift is driven by the aging of the population with the 65+ population growing from 20 percent to nearly 30 percent of the local resident population by 2030 as shown in **Figure 2**.

Figure 2: Quaboag Connector Service Area Population Growth and Projections, 2010 - 2050



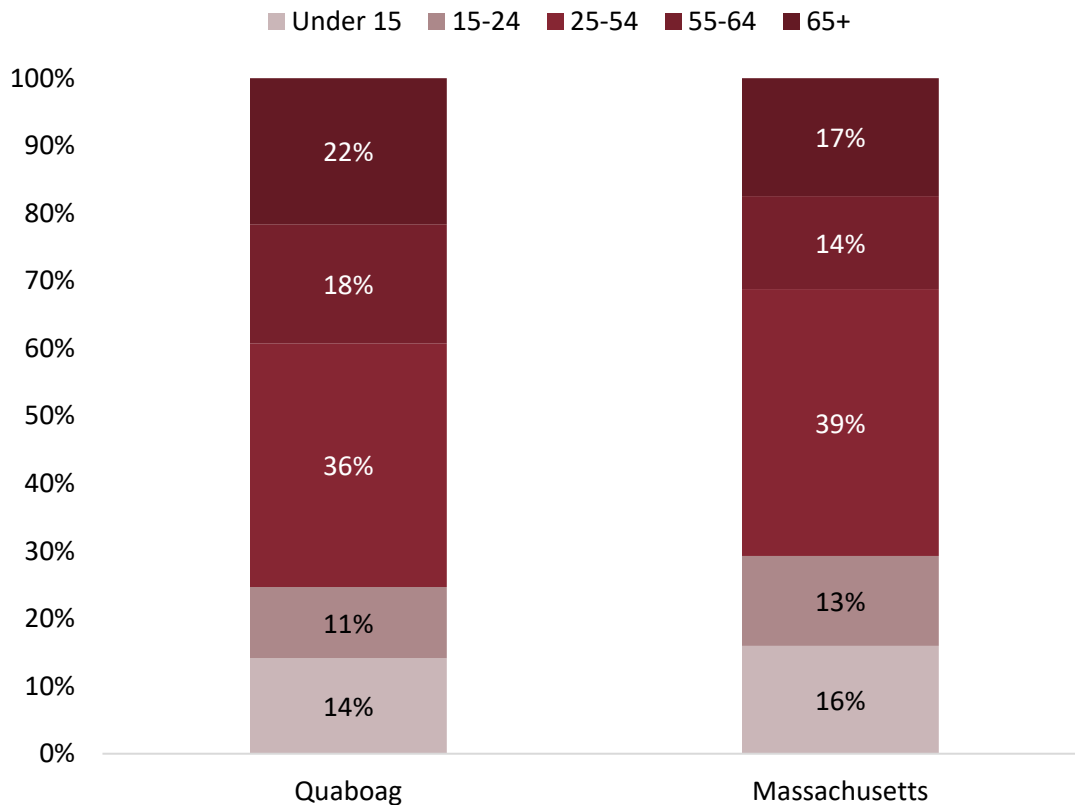
Source: UMass Donahue Institute Population Estimates Program V2024

Note: Post-2020 data reflects a projection.

This trend of aging is similar to the state overall, but the region is already slightly older than the state as shown in **Figure 3**, and projected to age more quickly as shown in **Figure 4**. As residents age, transportation options need to be expanded beyond access to personal vehicles. Interviews highlighted that the local elderly population is dependent on family and friends for transportation needs. They also

identified that elderly residents were much less likely to have their own licenses. While social connections can provide transportation most of the time, they do not have the constancy of a dedicated transit service like the Quaboag Connector.

Figure 3: Population By Age

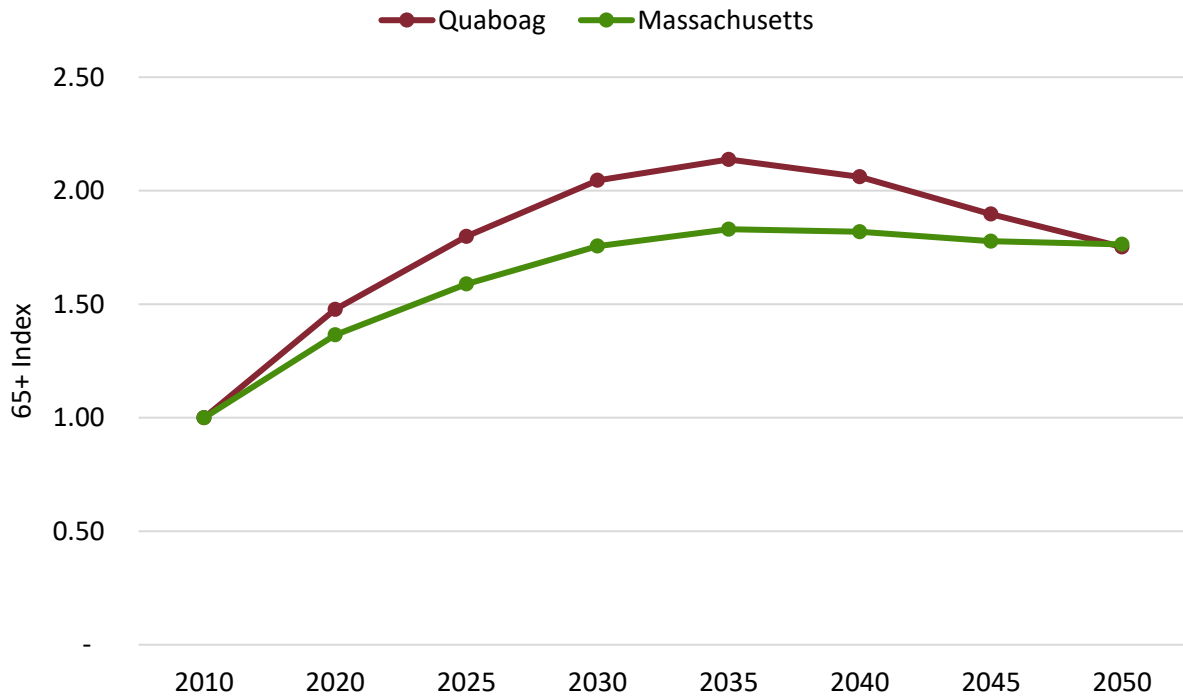


Source: U.S. Census American Community Survey 2019-2023 5-Year, B01001

The aging population is also a concern for the overall economic health of the region. As the population ages out of the workforce, and there is a shortage of younger residents to replace those workers, existing services in the region can suffer from both workforce shortages and a decline in overall demand. This is reflected in **Figure 3** by the smaller share of people aged 25-54 in the Quaboag Connector Service Area, which is the prime working age demographic. Ware’s Marylane Hospital, for example, closed in 2023 due to a decline in the number of patients visiting the facility as well as challenges maintaining adequate staffing levels⁴, and patients now attend Baystate Wing Hospital in neighboring Palmer. For residents of the region, services like the Quaboag Connector and the Convenient Care Van (in partnership with Baystate) make it easier to maintain access to vital healthcare services despite the closure of one of the region’s healthcare facilities.

⁴ DIFDESIGN, “The Patients Did Not Come’: Baystate Mary Lane, Part of Ware since 1909, Closing in Two Years under Pressure of the Modern Health Care Market,” *EDC* (blog), January 27, 2021, <https://www.westernmassedc.com/the-patients-did-not-come-baystate-mary-lane-part-of-ware-since-1909-closing-in-two-years-under-pressure-of-the-modern-health-care-market/>.

Figure 4: 65+ Population Growth Index

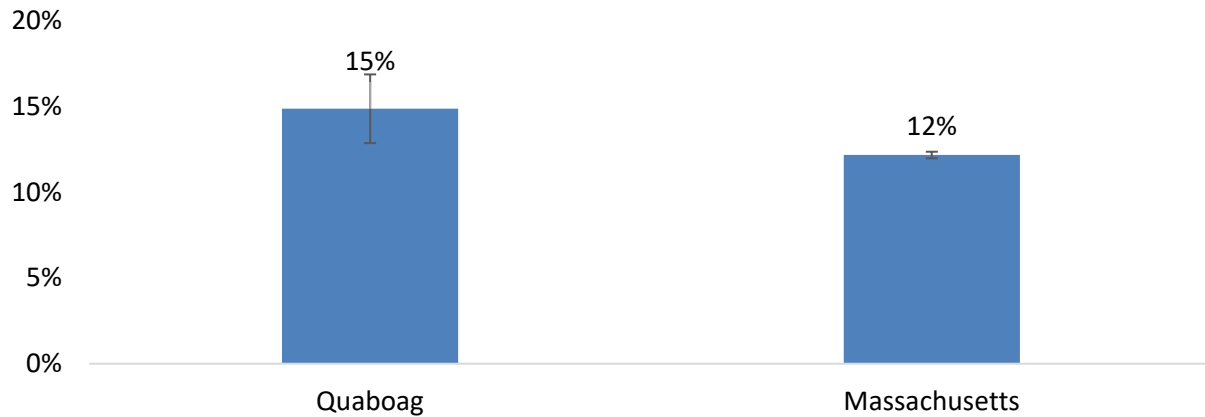


Source: UMass Donahue Institute Population Estimates Program V2024

Note: Post-2020 data reflects a projection.

Passengers using the Quaboag Connector are more likely to be elderly though trip data and interviews of passengers identified people of all ages benefiting from the service. The service also supports a region where the rate of disability is higher than the state overall as shown in **Figure 4**. Given the barriers that people with disabilities and the elderly face when it comes to transportation mobility, the Quaboag Connector is seen as a valuable resource.

Figure 5: Share of Population with a Disability



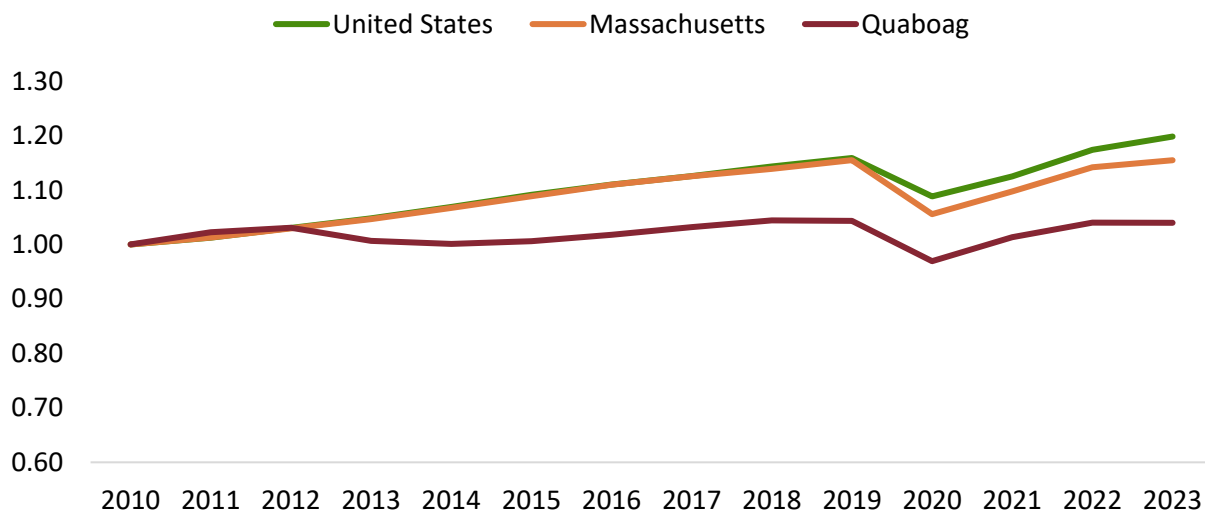
Source: U.S. Census American Community Survey 2019-2023 5-Year, C18130

The region has a similar rate of poverty to the state overall at 9.3 percent compared to 10 percent statewide. Low-income residents of the region benefit disproportionately from services like the Quaboag Connector, particularly with its provisions of non-emergency medical transport, which will be discussed more later. For these residents, the Quaboag Connector can connect them with employment and services even if they do not personally own a car.

Workforce

The Quaboag Connector directly supports employment in the region by providing a public transit option for members of the region’s workforce whose employers are not along existing transit routes.

Figure 6: Jobs Growth Index



Source: MA EOLWD ES202 for the Quaboag Connector Service Area, BLS QCEW for US and Massachusetts.

The region’s workforce has experienced significantly slower growth than the state which since 2020, has experienced slower workforce growth than the nation overall, as shown in **Figure 6**. The region’s

workforce is heavily concentrated in education and health services which includes large employers such as Baystate Wing Hospital as well as retail as shown in **Table 1**. Manufacturing is particularly concentrated in the region, with the Quaboag Connector providing ride services enabling employees to arrive at their shifts on-time, especially important if they do not have access to a car or a ride from a family member or friend. An interview with a local employer identified that the Connector improved the ability of their workers to reliably make it to work. If an employee’s car broke down or a carpool fell through, they had a backup, keeping operations running at the business by ensuring adequate staffing.

Table 1: Quaboag Connector Service Area Industry Mix

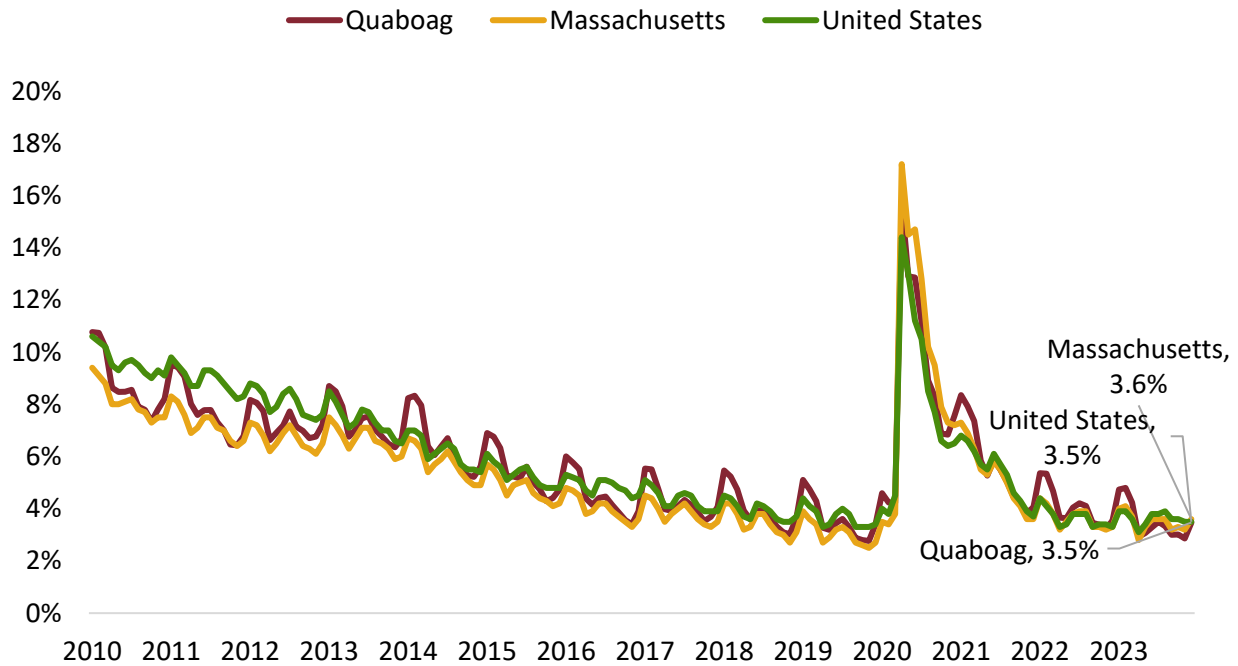
Industry	Average Employment	Employment Share	Average Wage (\$2024)	State Employment Share
Total, All Industries	15,668	100%	\$54,000	
Education and Health Services	4,410	28%	\$47,671	28%
Retail Trade	2,084	13%	\$39,124	9%
Manufacturing	1,631	10%	\$71,474	7%
Leisure and Hospitality	1,477	9%	\$23,616	10%
Logistics and Utilities	1,458	9%	\$59,561	7%
Professional and Business Services	1,385	9%	\$76,750	18%
Construction	1,066	7%	\$77,637	5%
All Other	968	6%	\$41,648	0%
Other Services	403	3%	\$42,072	3%
Public Administration	394	3%	\$63,506	4%
Financial Activities	287	2%	\$63,823	6%
Information	105	1%	\$52,297	3%

Source: MA EOLWD ES202, 2023

Note: Logistics and utilities contains wholesale trade, transportation and warehousing, and utilities

Looking at the industry mix of the region, employment in leisure and hospitality and professional and business services are a smaller share of the region’s employment than the state overall. Construction and logistics and utilities make up a larger share than statewide. While the region has its own internal industry mix, it also supplies workers to surrounding areas (see **Figure 8**).

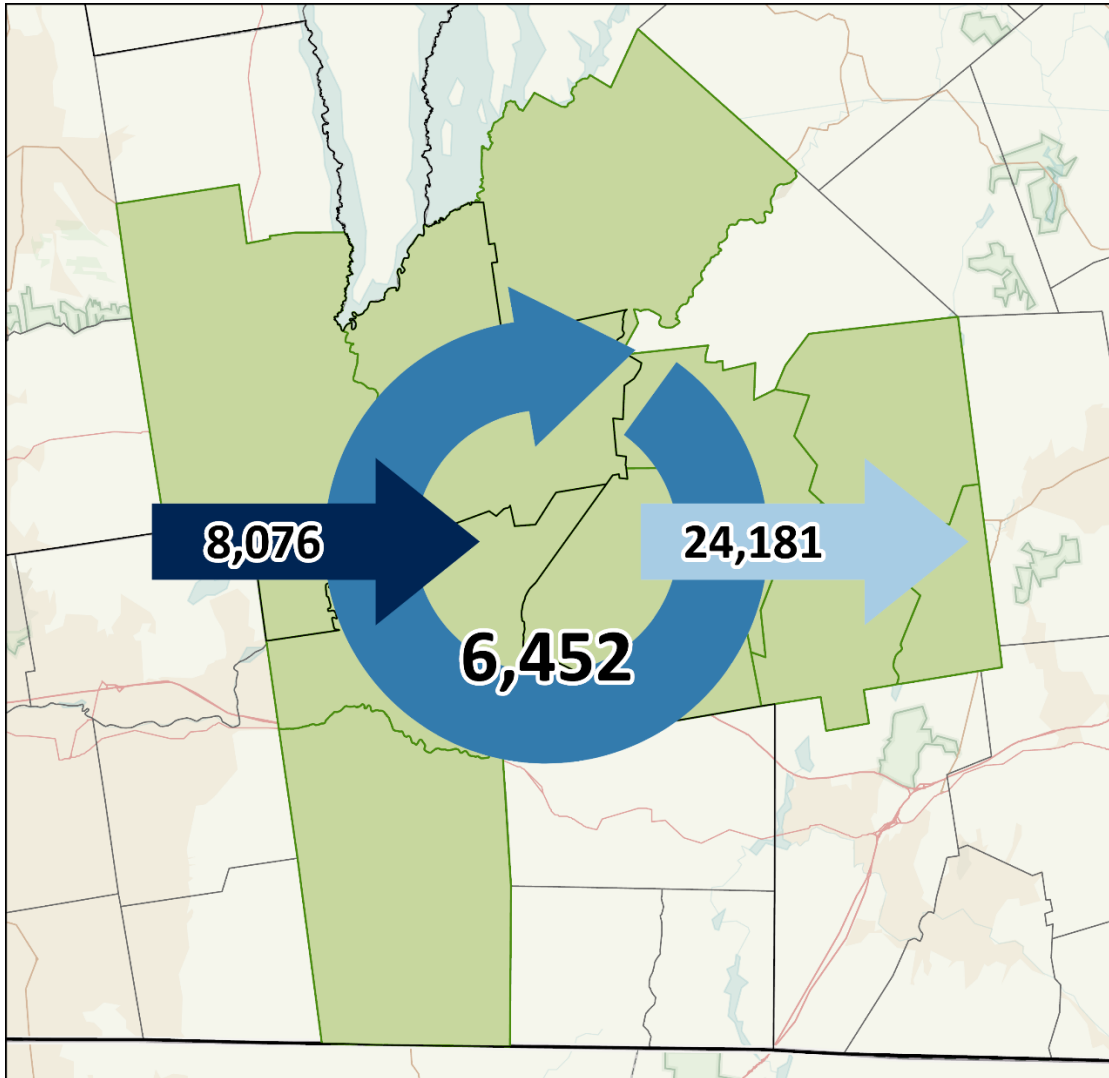
Figure 7: Unemployment Rate



Source: MA EOLWD Labor Force and Unemployment Data, Monthly, Not Seasonally Adjusted
Note: Values for December 2023 are shown

As shown in **Figure 7**, the region has historically had a higher unemployment rate than the state, though it has recently measured around the same level at the end of 2023 (3.6% in MA vs 3.5% in the region). Massachusetts tends to have a lower unemployment rate than the nation overall. The response to the COVID-19 pandemic reversed this pattern, with Massachusetts experiencing a higher rate of unemployment than the region and the nation.

Figure 8: Inflow and Outflow of Workers



Source: U.S. Census Bureau On The Map, 2022

According to data from the U.S. Census Bureau “On the Map” dataset, nearly 80 percent of workers who live in the region are employed outside of it. The region is strongly oriented towards job centers in the Worcester and Springfield Metro regions. As shown in **Table 2**, The cities of Springfield and Worcester are in the top five largest destinations for Quaboag resident workers. Within the region, Palmer and Ware are major employment centers. Quaboag residents also commute to more distant destinations including Boston. The U.S. Census Bureau’s “On the Map” data captures workers by place of work, and does not account for commute mode, so included in the count of Boston workers are likely some number of remote workers who have employers with Boston addresses.

Table 2: Destinations of Resident Workers

Destination	Count	Share
Total Primary Jobs	30,633	100%
Springfield	2,943	10%
Palmer	1,758	6%
Worcester	1,627	5%
Amherst	1,174	4%
Ware	1,114	4%
Boston	1,096	4%
Belchertown	1,059	3%
Chicopee	880	3%
Northampton	721	2%
Monson	709	2%
<i>All Other Destinations</i>	<i>13,081</i>	<i>43%</i>

Source: U.S. Census Bureau On The Map, 2022

Table 3: Origins of Region's Workforce

Destination	Count	Share
Total Primary Jobs	14,528	100%
Palmer	1,374	9%
Ware	1,277	9%
Belchertown	1,037	7%
Monson	881	6%
Springfield	702	5%
Warren	478	3%
North Brookfield	414	3%
West Brookfield	398	3%
Chicopee	364	3%
Ludlow	329	2%
<i>All Other Destinations</i>	<i>7,274</i>	<i>50%</i>

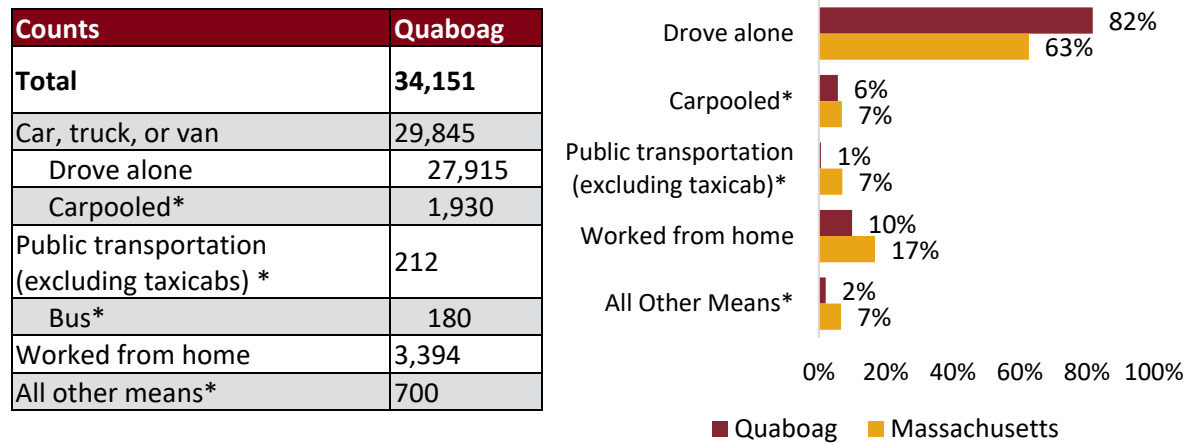
Source: U.S. Census Bureau On The Map, 2022

While more workers commute out of the Quaboag Connector Service Area than commute in, over 8,000 employees from outside the region work for employers within the region. While Springfield provides many workers to the region, Worcester does not fall into the top 10, despite being a major destination for many Quaboag residents. The Quaboag Connector contributes to the dynamic flow of people, representing a mobility option for a number of people to reach their jobs.

Vehicle access

As a rural region, Quaboag remains heavily dependent on personal vehicles for commuting as shown in **Figure 9**. The Quaboag Connector, as a form of microtransit, is a vital and flexible alternative for residents. While services are available through PVTA and WRTA, their respective networks and services for the Quaboag Connector Service Area are limited.

Figure 9: Preferred Commute Mode



Source: U.S. Census American Community Survey 2019-2023 5-Year, B08301

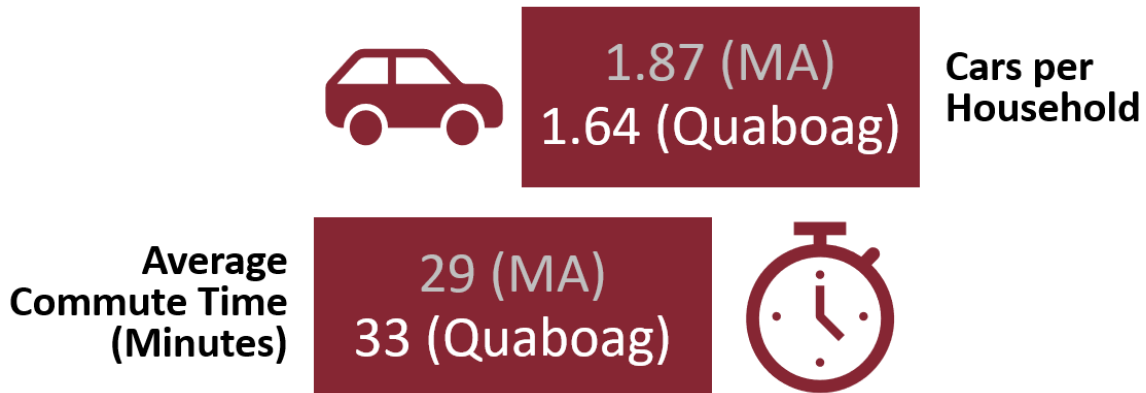
Note: * indicates the margin of error is over 20 percent of the estimate for the Quaboag Connector Service Area. All Other Means includes Taxicab, Motorcycle, Bicycle, Walked and other means.

Census data suggests the region is more car dependent than the state overall. Car dependency is typical of a more rural regions in the state, but this dependency burdens residents with the costs of car ownership as well as increasing the amount of pollution emitted which impacts the entire community.⁵ This car dependency is reflected in how people get to work. While the explosion of telework after 2020 has expanded the ability of workers to skip their commute entirely (or at least on some days), Quaboag residents work from home at lower rates than statewide averages. This may reflect the industry make up of the region. Compared to the state, retail trade, manufacturing and construction provide a larger share of local employment (**Table 1**). National data on telework suggests these industries (e.g., manufacturing production which requires an on-site presence for most workers) are less compatible with working from home than major statewide industries like professional and business services which is 18 percent of state employment. Nationally in March of 2025, almost half of all workers in professional and business services engaged in some amount of telework, compared to 10 percent of construction workers, 11 percent of retail trade workers and 20 percent of manufacturing workers.⁶

⁵ Center for State Policy Analysis at Tufts University, “Regional Transit In Massachusetts” (Quaboag Connector: Quaboag Valley Community Development Corporation, May 2024), 8.

⁶ “Telework (CPS),” Bureau of Labor Statistics, accessed April 9, 2025, <https://www.bls.gov/cps/telework.htm>.

Figure 10: Vehicle Ownership and Commute Time



Source: U.S. Census American Community Survey 2019-2023 5-Year, B25003, B08303 and B08013

While residents of the region are more likely to drive a car to work each day than the statewide average, each household typically has a lower number of vehicles. This suggests that households are more dependent on a single vehicle (and its reliable operation) for their transportation needs. Commutes are also longer in the region, tipping over 30 minutes on average. By providing a backup form of transportation for car-dependent households and letting them take their hands off the wheel on a long commute, the Quaboag Connector helps support the residents of the region.

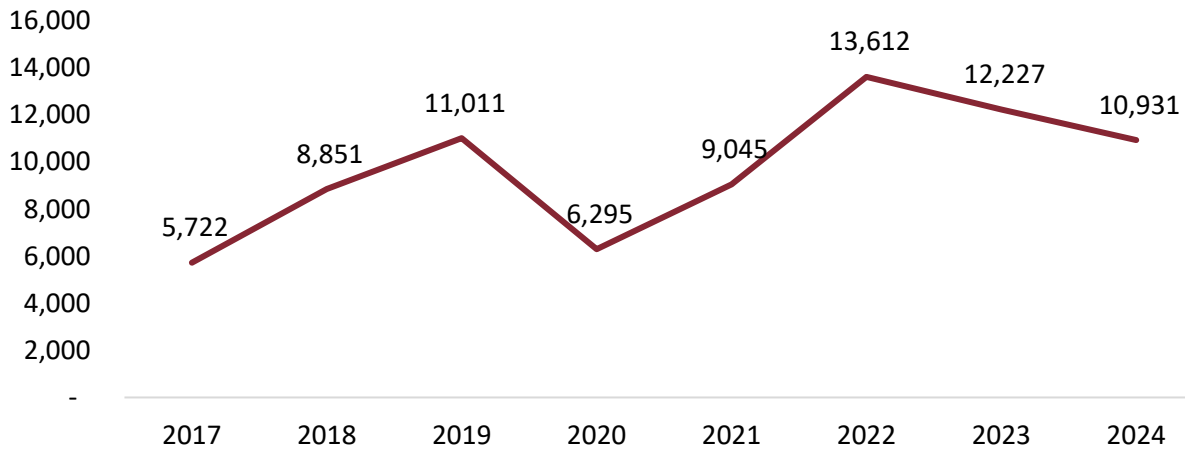
Census data includes detailed information on Quaboag Connector Service Area residents who lack vehicles. In total, six percent of all households in the region lack vehicles (1,713 households) and 78 percent of these are single person households. For households with workers, an estimated 390 working households lack vehicles in the region. These residents are dependent on existing bus transit routes, the Quaboag Connector and friends or family for their employment, access to services, and for visits to family and friends.

Interviews identified that many older householders rely on friends and family for transport in the Quaboag Connector Service Area. Nearly a third of householders in the Quaboag Connector's Service Area are age 65 or older, higher than the state rate. Of these households, 42 percent are single-person households. If these households lack a vehicle of their own, or are unable to operate one, they are dependent on friends, family, or existing bus routes for all their transportation mobility needs. The Quaboag Connector offers a convenient alternative and may make the difference in whether or not these residents are able to continue to live on their own in the region as well as reach jobs and medical appointments.

Quaboag Connector Trip Characteristics

The Quaboag Connector has been in operation since 2017 but has been continually evolving. One-way trips totaled about 5,700 in 2017, gradually increased to 11,000 before the COVID-19 pandemic induced a drop to about 6,300, before recovering in 2022 with a year of over 13,600 trips.

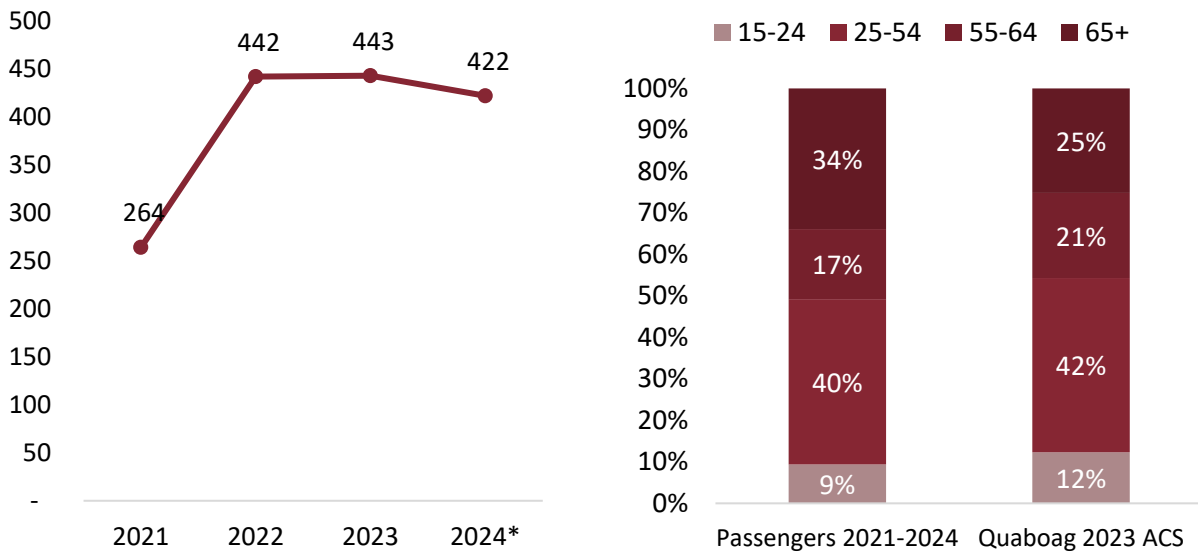
Figure 11: Quaboag Connector Trips (one-way)



Source: ECOLANE Trip data.

The Quaboag Connector has more than doubled the number of trips it provides since it began operating, growing to 10,931 one-way trips in 2024. Despite disruption due to the COVID-19 pandemic, the service continued to provide thousands of trips during 2020. This shows the service's resilience and importance even in times of social and economic disruption. In the last few years, there has been a decline in ridership, but this is due to staffing availability reducing the number of drivers and vehicle maintenance reducing the number of trips that can be offered. Demand remains extremely high for the Quaboag Connector's microtransit services.

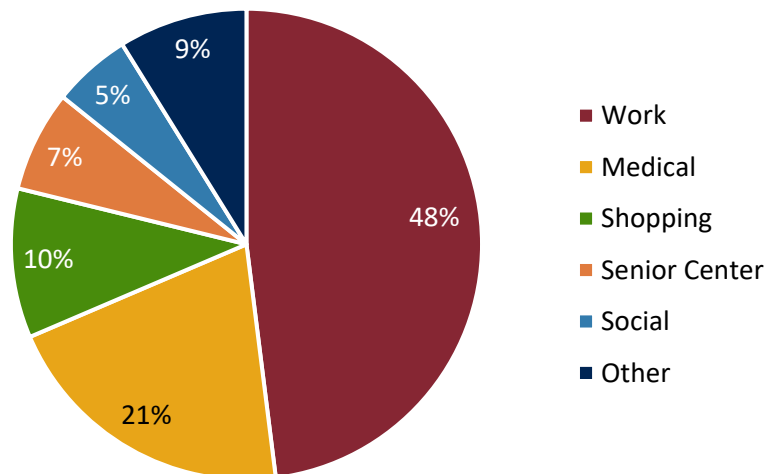
Figure 12: Quaboag Connector Unique Passengers by Count and Age



Source: ECOLANE Trip data and U.S. Census American Community Survey 2019-2023 5-Year, B01001
 Note: * indicates 2024 data is through December 6th 2024.

The Quaboag Connector provides trips for over 400 unique passengers annually. Compared to the region overall, these riders tend to be slightly older. Just over half of riders are 55 years of age or older compared to 46 percent of the region’s residents, but people of all ages are using the Quaboag Connector. Looking at data from 2023 in **Figure 13**, the primary purpose for using the Connector was access to work.

Figure 13: Quaboag Connector Trips by Purpose, 2023



Source: ECOLANE Trip data.

Work access is an extremely important service of the Quaboag Connector, helping to support the livelihoods of local residents while also keeping local businesses (like manufacturers) functioning. Access to employment is crucial for well-being because it directly influences the socioeconomic factors that form the base of the social determinants of health. Employment precipitates a number of positive benefits beyond just a paycheck. Access to non-monetary benefits like insurance, skill building and paid leave have positive impacts on the health and well-being of workers.⁷

Medical access is the second most common purpose of trips. With the closure of Ware’s Baystate Mary Lane hospital in 2023, the Quaboag Connector became an even more important link for residents to maintain access to healthcare services. The Baystate Convenient Care Van connects people with Baystate Wing Hospital in Palmer and also brings riders to medical appointments as needed at other medical offices. In a rural, car-dependent region, ensuring reliable access to medical appointments can be challenging, especially for older residents. The Quaboag Connector supports access to medical care and thus contributes to improved health outcomes throughout the region.

While medical and work purposes represent the largest categories of trips, the Quaboag Connector also connects residents with access to non-medical services such as shopping and to social opportunities. Discussions with Quaboag Connector staff identified that the service is used for important errands, for example on Mondays there is a spike in trips for groceries. Staff identified that while errands are the goal of the trip, these trips act as opportunities for riders to meet up with social connections. Interviews conducted by Brandeis University with a cohort of Quaboag Connector riders underscored this, with some interviewed riders stating explicitly that errands acted as social opportunities for them.⁸ For example, meeting a family member at the grocery store and socializing while shopping. Later interviews also identified that riders used the service to go to places where they feel socially connected such as the park with family or the center of town where they can go to a coffee shop and feel more connected with their community.⁹ The CDC identifies that loneliness is a serious health issue. Living in rural areas like Quaboag with limited transportation access is a risk factor.¹⁰ The Quaboag Connector supports social connections and accordingly the overall health of residents.

As shown in **Figure 14** on the following page, the Quaboag Connector is improving mobility all across the region. Some trip purposes are more heavily concentrated in certain areas of the region, for example work trips tend to be oriented towards commercial and industrial centers in the region, but the data clearly shows that the Quaboag Connector is connecting parts of the region that would otherwise have no transportation options besides personal vehicles.

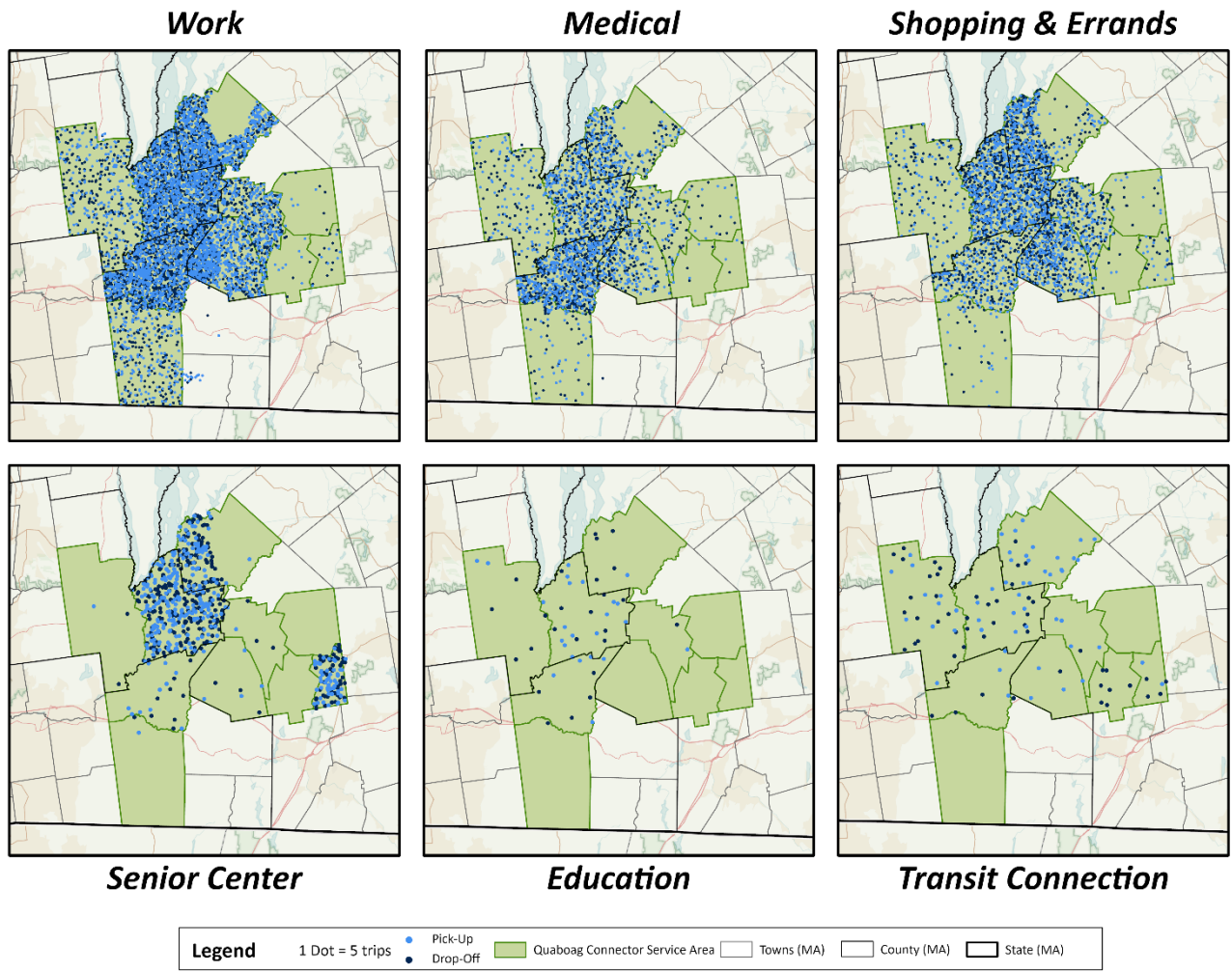
⁷ “Work as a Key Social Determinant of Health: The Case for Including Work in All Health Data Collections | Blogs | CDC,” February 16, 2023, <https://blogs.cdc.gov/niosh-science-blog/2023/02/16/sdoh/>.

⁸ Brandeis University, “QVDCD Rider Cohort Interviews – Round 1,” March 2023.

⁹ Brandeis University, “QVDCD Rider Cohort Surveys on Social Connectedness – Round 3,” December 2023.

¹⁰ CDC, “Health Effects of Social Isolation and Loneliness,” Social Connection, February 3, 2025, <https://www.cdc.gov/social-connectedness/risk-factors/index.html>.

Figure 14: Quaboag Connector Service Area and Trips by Purpose, 2023



Source: ECOLANE Data

Figure 14 highlights the geographic distribution of trip pick-ups and drop-offs, aggregated by popular trip purposes. Trips related to work, the purpose with the greatest number of pick-ups and drop-offs, are correlated heavily within the center of the region in the towns of Ware, Palmer, Warren, and West Brookfield. Medical trips are also highly concentrated in the center of the region, though more so in Palmer and Ware than other towns. Shopping and Errands, including trip purposes related to Bank, Car Repair, Court, Food Bank, Hairdresser, Shopping, Social, and Other are also heavily concentrated in the center of the region, with a greater presence in Ware, Warren, and West Brookfield. Trips related to a Senior Center, Education, or Transit Connection are expectedly correlated to these specific locations in the region.

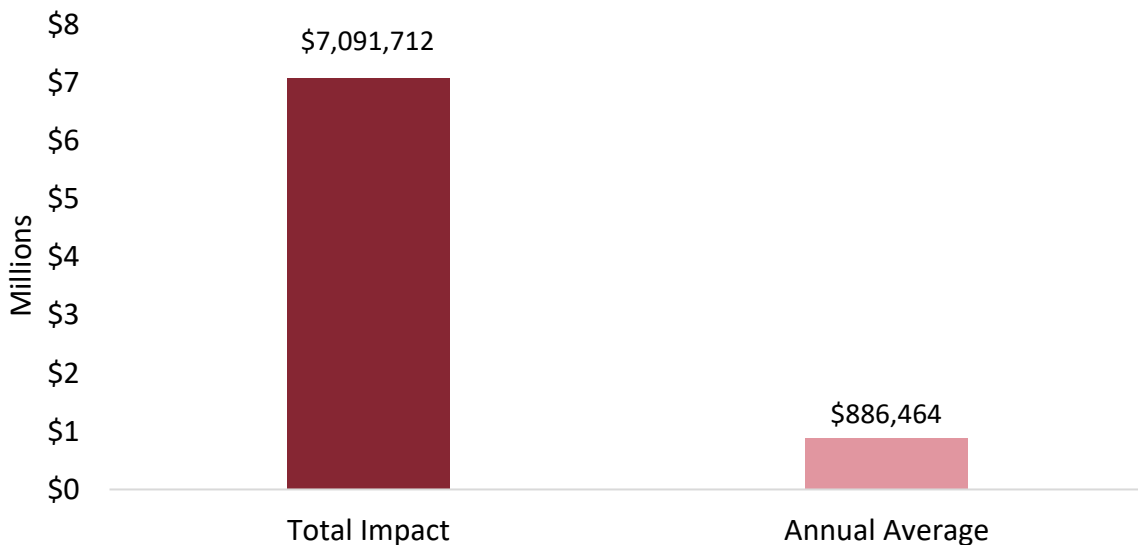
Quaboag Connector Impacts

The Quaboag Connector supports economic activity in the region in the following ways:

- Bringing people to work, generating wages for those riders who can then spend that earned money in the community.
- The jobs supported by work-related trips are in a range of local industries; the economic activity of these jobs reverberates through the economy to provide greater economic impacts than the ride-affiliated estimated wages alone would suggest.
- Quaboag Valley Community Development Corporation hires employees and purchases materials to support operations of the Quaboag Connector.
- Non-emergency medical transport (NEMT) is a critical function of the Quaboag Connector, and there has been extensive work done to evaluate the economic activities of NEMT services, creating an economic impact from that activity (in the form of cost-savings).

This section will break down these four categories of impact. For more information on the methodologies used to calculate these economic impacts, see the **Methodology** section at the end of this report.

Figure 15: Estimated Direct Annual Wages Supported by Quaboag Connector Work - Related Rides, 2017-2024



Source: MA EOLWD ES202 Average wage for all industries compared to ECOLANE Trip data, 75% of work trips represented, \$2024 Dollars.

The Quaboag Connector conducts over 5,000 trips annually to bring people to and from work. Given the typical wage of the area, around \$54,000 annually in \$2024 dollars, the daily wage impact of these trips can be estimated. As shown in **Figure 15**, the Quaboag Connector supports over three-quarters of a million dollars annually just in wages. Across the entire period of the service’s operation, this sums to over \$7 million dollars in wage impacts.

Wages only cover part of the employment-related impact of the Quaboag Connector. Additional economic impacts can be calculated using the impact analysis software, IMPLAN, an econometric model. The IMPLAN model shows how the spending of money in one part of the economy can translate to larger effects in the rest of the economy. The IMPLAN analysis is performed on the state of Massachusetts, so the impact reflects the impact of Quaboag Connector related activities on the statewide economy overall. Economic impact from IMPLAN is broken down into three impact effects:

- **Direct Effects:** The impact of employment and spending by Quaboag Connector on the overall economy. E.g., Payroll for drivers and dispatchers, purchases of goods and services such as vehicle maintenance.
- **Indirect Effects:** Impact of the purchase of intermediate inputs by suppliers for the Quaboag Connector across Massachusetts. E.g., The purchase of vehicle parts by a repair shop that are included in the cost of vehicle repair work.
- **Induced Effects:** The household spending of employees of the Quaboag Connector and any businesses Quaboag Connector works with if additional employment is generated by related firms by the Quaboag Connector’s spending. E.g., Drivers live locally and purchase groceries with their wages. The Quaboag Connector purchases goods from a local store, which may then hire additional people, and those workers earn wages that are spent in the region.

These three levels of impact are then divided into distinct categories of impact:

- **Employment:** Employment supported by related economic activity. Based on job-years, which is a unit of one job worked for a full year. Two employees working half a year each would be represented as one job-year.
- **Labor Income:** Wages and salaries paid to employees.
- **Value-Added (GDP):** Difference between total output and inputs, can be thought of as the contribution of a firm to Gross Domestic Product or Net New Economic Activity. Value-added also includes Labor Income.
- **Output:** Total value of a firm’s production including value-added, labor income along with intermediate expenditures.

In the case of the Quaboag Connector, these economic impacts happen when the service connects local people with employment and when the Quaboag Connector itself hires people and engages in economic activity to support operations. The impact of connecting people to employment is show in **Table 4**.

Table 4: Impact of Industry Employment Supported by Quaboag Connector-Related Work Trips

2017-2024 Impact	Employment (sum, in job years)	Labor Income	Value-Added (GDP)	Output
Direct	143	\$7,091,712	\$10,332,652	\$17,866,255
Indirect	37	\$2,251,803	\$3,685,151	\$5,853,092
Induced	61	\$2,931,012	\$4,836,146	\$7,453,621
Total	240	\$12,274,528	\$18,853,949	\$31,172,968

Source: IMPLAN, 2024 dollars

Quaboag Connector’s estimate of wages can be divided across the local industry makeup. Based on the amount of wages supported an estimate of the number of whole jobs supported can be created, the Quaboag Connector has supported jobs which generated over \$30 million dollars in economic impact (as measured by output) between 2017 and 2024 as shown in **Table 4**.

The Quaboag Connector itself is an employer, and an operational impact of the service itself can be created as shown below in **Table 5**.

Table 5: Quaboag Connector Economic Impacts of Operations

FY2018-2025 Impact	Employment (sum, in job years)	Labor Income	Value-Added (GDP)	Output
Direct	81	\$1,755,404	(\$106,593)	\$559,830
Indirect	1	\$78,168	\$180,783	\$260,503
Induced	7	\$544,531	\$937,745	\$1,414,331
Total	89	\$2,378,103	\$1,011,935	\$2,234,665

Source: IMPLAN, 2024 dollars

Note: Data shown is only for operations that are part of QVDC

The compensation and benefits for the Quaboag Connector’s employees generate an additional contribution to the Massachusetts economy. It is important to note that when any type of analysis is run on a public transit industry, the results will show negative values for some parts of the direct value-added estimate. In net, however, the Quaboag Connector’s operations have a positive economic impact to the region as they employ local people, and purchase goods and services that support operations.

Quaboag connector medical trip benefits

By providing non-emergency medical transportation (NEMT), the Quaboag Connector supports the health and well-being of the local community. Thousands of NEMT trips are conducted annually, and transportation, health, and healthcare are undoubtedly interrelated. A 2005 study of non-emergency medical transport by the National Academies of Sciences, Engineering, and Medicine created a tool that allows a community to estimate the economic impact of these types of medical-related trips. Applying the tool to the size of the Quaboag Connector’s service area and adjusting for inflation, the net savings (from preventing deferred or missed treatments which would result in sub-optimal health outcomes) of these trips is estimated to be nearly \$11 million over the eight-year study period. The exact benefit depends on the medical conditions for which transit is provided, with more severe conditions having larger scale impacts as a single missed appointment would result, ultimately, in greater costs. Adequate transportation ensures well-managed healthcare, improves quality of life and healthier outcomes, and connects people to cost-effective preventive care.¹¹ Non-emergency medical transport disproportionately benefits:

- People with low incomes

¹¹ P. Hughes-Cromwick et al., *Cost-Benefit Analysis of Providing Non-Emergency Medical Transportation*, 2005, chap. 8, <https://doi.org/10.17226/22055>.

- Black, Indigenous and People of Color (BIPOC)
- Women
- People with lower educational attainment

The Quaboag Connector is a crucial resource for these communities in the region to access medical care. Interviews identified that the Quaboag Connector is often used to bring people to specialists in places outside the region, such as Springfield. Access to healthcare providers is limited locally, including pediatric and primary care, in particular. An additional cost that should be considered is the cost of a missed appointment. In addition to serious health impacts, missed appointments incur a cost on healthcare providers, making it more difficult for them to operate and preventing medical resources from being allocated efficiently. A missed appointment incurs a cost of \$200 per hour for a physician¹². In 2023, alone, the Quaboag Connector provided approximately 1,900 medical trips. If missed, these appointments would have cost providers over \$370,000. In interviews with a cohort of riders, access to the Quaboag Connector microtransit service was identified as important for medical care. A rider identified that the service made them more consistent in making it to appointments¹³. Another rider identified that the service reduced their stress knowing that they had transportation for where they needed to go¹⁴.

Quaboag connector reduces vehicle ownership costs

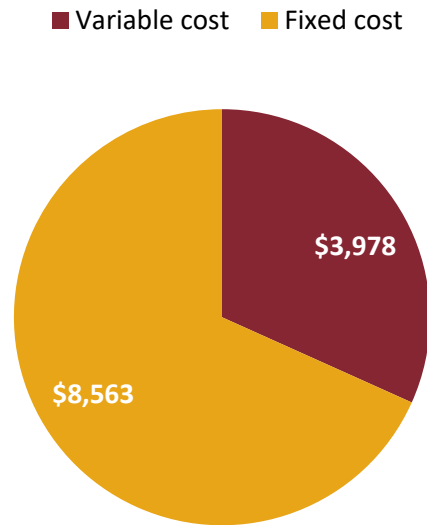
Interviews highlighted that some residents of the region had to give up their vehicles due to rising maintenance and insurance costs due to inflation which has inflated the cost of maintenance and insurance. In 2023, the average US household spent over \$12,000 every 15,000 miles in driving, a 10 percent increase since 2019.

¹² “The Cost of Missed Medical Appointments: A Hidden Burden on Healthcare - TransLoc,” accessed April 11, 2025, <https://transloc.com/blog/the-cost-of-missed-medical-appointments-a-hidden-burden-on-healthcare/>.

¹³ Brandeis University, “QVDC Rider Cohort Interviews – Round 2,” September 2023, 3.

¹⁴ 4.

Figure 16: Annual Vehicle Ownership Costs, U.S., 2023



Source: American Automobile Association (AAA), Adjusted to 2024 Dollars

By providing a public transit alternative to driving a personal vehicle, the Quaboag Connector reduces a significant cost for its riders and makes living without a car more practical. Another way to look at the cost of vehicle ownership is the cost per mile. The Quaboag Connector travels approximately 67,000 miles annually, saving its passengers the operating costs of a personal vehicle – depreciation, maintenance, and fuel. Based on standard per-mile reimbursement rates¹⁵, between 2017-2024, this has led to an estimated transportation cost savings of more than \$424,000 for passengers.

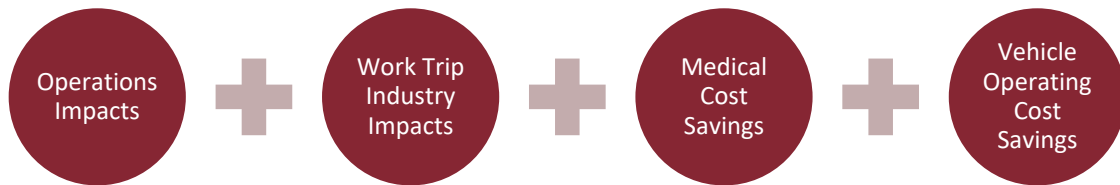
Program impacts

In 2024, the Quaboag Connector supported a large number of trips for groups with unique transportation needs in the region. For example, the Baystate Convenient Care Van provides access to Baystate Health facilities and is operated through the Quaboag Connector. They offered over 1,800 trips for approximately 200 riders in 2024. That same year, the Ware Senior program provided rides for around 130 seniors across almost 3,000 trips. The Palmer Rides to Work Program provided over 1,000 trips in 2024, bringing Palmer residents who qualify for the program based on income level, to their jobs and job-related training. Both the Ware Senior program and Palmer Rides to Work were able to offer reduced fares to qualifying riders. The Quaboag Connector has also offered free services, such as the nearly 300 trips for local veterans provided in 2024. Interviews with riders emphasize the importance of these programs on the health and well-being of residents, with one senior rider stating: “[The Quaboag Connector is] the only transportation available. It’s life saving for someone who can’t drive. It’s a blessing to have it.” These ridership programs reflect the Quaboag Connector’s emphasis on the social

¹⁵ “Privately Owned Vehicle (POV) Mileage Reimbursement Rates,” U.S. General Services Administration, accessed April 17, 2025, <https://www.gsa.gov/travel/plan-a-trip/transportation-airfare-rates-pov-rates-etc/privately-owned-vehicle-pov-mileage-reimbursement>.

determinants of health, and ensure that people have access to quality transportation in a rural region that would otherwise be lacking in transit access.

Figure 17: Total Impact of Quaboag Connector's Microtransit Services, Components



Combining the Quaboag Connector's Operational Impacts, Employment Impacts and savings from vehicle miles travelled, the service has had an economic impact of nearly \$45 million dollars since it began. Based on the results from the IMPLAN econometric model and supplementary analysis data, the Quaboag Connector has generated \$10.5 million dollars in economic activity for every \$1 million dollars of combined state, non-profit, and local reimbursement into the program.

Key Stakeholder Interview Findings

Interviews conducted with key stakeholders in the region revealed high levels of satisfaction with and appreciation of the Quaboag Connector’s mission, operations, and impacts. Interviewees unanimously agreed that the presence of the Connector has made the region better off than it was without. As told by an interviewee, “what I just know about this community is that people being able to get around and get to health care, get to food, get to work,” they noted, “I really believe that had we not had that we'd be in much worse shape.” Stakeholders have not only reaped the benefits of the connector from their own employees or clients utilizing the service, but have also recognized the opportunities that it creates to connect people with medical appointments, employment, and leisure. Some interviewees commended the local footprint that the Connector has created as they have heard discussion in public settings of people using the connector as their primary mode of transportation to work. Others noted that annual ridership increasing and growing year-over-year is a testament to the success of the connector. For an area situated across counties and just far enough away from other transit routes, the Connector is viewed as a valuable feature to bridge those gaps. Overall, the consensus from our interviews is that the Quaboag Connector is doing excellent work, and the region wants to see more of it. This sentiment is well summed up by the comments of one key stakeholder who adds:

“I think the overall vision where we started [...] when this was all a concept, has gone way beyond the expectations of what we had planned, and the acceptance of the system by the general public has really gone beyond expectations as well. So, the vision would be just to keep creating more opportunity.”

The following sections will detail the advantages and benefits noted by key stakeholders, issues that were raised and recommendations for improvement and the future.

Advantages and benefits

FOR THE REGION OVERALL

Addresses transportation barriers

Along with their satisfactory reviews of the Quaboag Connector, interviewees reported that benefits for the region include addressing transportation difficulties across the rural area. Due to limited public transportation options, many residents rely on personal or family cars to get to where they need to go. During the COVID-19 pandemic, many residents either could not afford their cars after getting laid off or could no longer rely on carpools for safety reasons. Residents resorted to less favorable options for transportation, “they were walking, they were riding bicycles, they were trying to find commuter rides, and it was not reliable,” one interviewee noted, “and so the Connector became that reliable transportation for them. It's been very important.”

Improves transportation reliability

Beyond providing just an option for transportation, interviewees noted that the connector is widely known as a reliable form of transportation across the region. “I've been at the grocery store and hearing people talking that they're using it, and it's been immensely helpful to them,” one interviewee noted. Others witnessed the impacts on social media as well, adding “I see people begging for rides and

immediately that community will come together and send flyers about the Quaboag Connector: Call the Connector, the Connector can help you.” Overall, the Connector is seen as a reliable solution to transportation barriers across the region.

Improves overall attractiveness of the region

Business owners recognize that these advantages contribute to the overall attractiveness of the region as well, noting “when we're operating in a small community, a rural community, it's not just our employees, but also their family members who need transportation. So in order to keep people in town, and keep a pool going, they need these services.” Interviewees who have had a presence in the area for decades acknowledge that the Connector provides the crucial link between businesses or organizations and the region, adding “the community needs us, and we need the community.” Addressing the gaps in transportation for the small, rural parts of the Commonwealth fosters an image of connection that invites people into the community in ways that wouldn't exist without the Quaboag Connector.

Provides avenues for social connection

Aside from connecting people to appointments and work, the Connector provides important avenues for social connection, especially for seniors. “I think it's connecting friends,” one interviewee began, who recalled the social benefits of combining the senior van from the Ware Senior Center to the Connector system. “The Quaboag Connector really will bring people to social events,” one interviewee added, emphasizing the importance of socialization as it relates to health, “social determinants of health are more than just going to a doctor. They have to get to the senior center for socialization.”

Enables transportation for a range of use cases

Overall, the benefits of the Quaboag Connector can be itemized by looking at the various trips that it enables. Key stakeholders highlighted a number of use cases for the connector which are touched on throughout this section including; medical, social, work, education, transit connections, and support for seniors. Some specific cases, not fully expanded upon in other sections, are highlighted below.

Rides for medical or healthcare purposes were mentioned by the majority of interviewees. In the most basic sense, getting patients to appointments has been a critical role of the connector. Additionally, interviewees mentioned “to be able to get them to pharmacies to pick up prescriptions, that's a huge use of the vans.” After the closing of a major hospital in the area, the next closest hospital is 10 miles down the road, but that “might as well be a hundred miles, you know, if you don't have transportation,” emphasized one interviewee. The connector also addresses the issue of getting rides back home from appointments and emergency department trips if patients have car troubles or only have a ride one way. Other specialist visits and dental care are yet another use mentioned in interviews.

One of the primary use cases identified in interviews was for seniors, especially for senior healthcare. One interviewee who works at a local senior center reported the use of the connector to provide specialized care, preventative care, and routine check ups for seniors. “The Quaboag Connector plays a big role in making sure that people can get here not only for those appointments,” the interviewee adds, “but for everything else that we offer, for instance, lunch and things like that.” Interviewees highlighted the use cases for seniors go beyond just the necessary appointments to enable seniors to enjoy social events and connect with their community in ways that are vital to their wellbeing.

The connector's role of bridging the gap between statewide transportation networks was referenced by many interviewees. With rides to bus and train stops, residents can make connections with relatives across the state that were previously nearly impossible. For one isolated resident who cannot drive themselves, seeing family in Boston is now a reality, with one interviewee sharing with a ride from the connector to the bus stop, "[they] could just simply take the B79, hop on the train. I think [their] sister lives 2 blocks over from the train station, they're getting together all the time now, it's great." Other interviewees mentioned the East-West rail plans from the MBTA, with hopes that if the plan does materialize, the connector could provide rides to and from the Palmer station.

FOR BUSINESSES AND ORGANIZATIONS

Provides consistency for attendance for employees

A primary use and benefit of the connector identified in key stakeholder interviews is for rides to work. In a region that is rural and disconnected from major transportation networks, residents mostly rely on cars or carpooling to get to work. For those who don't have their own reliable cars, getting to work can be very unpredictable, which puts strain on businesses. It's clear that "having regular transportation locked in for people to get to work is greatly important for some," as described by one interviewee. Along with paid employees, volunteers play a role in supporting businesses and organizations in the area. Although these volunteers are not needed as regularly as employees, one interviewee adds, "I do have volunteers here that use it to come in and help out with the senior center activities or any kind of [activity] that we're putting on." Overall, the benefits that the connector provides for businesses and organizations in the region cannot be overstated.

Fills gaps between public transit for clients

In addition to supporting employees and volunteers, the Quaboag Connector supports businesses and organizations by supporting their clientele. For seniors and those seeking medical care in particular, other paratransit options do exist within the region, but service and networks are limited. For interviewees who run health care operations, the Quaboag Connector's microtransit service fills the gaps where other transit options fall short. For transit options that only run in the mornings, those with afternoon appointments are still left without a reliable ride, "so now you're back to that, Mary's gonna take me or Bob's gonna take me, that kind of thing." With the connector operating from 7am to 7pm, organizations are able to service more clients and therefore boost business and health outcomes.

FOR ECONOMIC DEVELOPMENT

The benefits that the Quaboag Connector provides for residents, workers, businesses, and all in the region can also be understood from an economic development perspective. Generally, benefits mentioned thus far inform the advantages for individual actors and organizations, but when taken as a whole, the advantages for economic development across the region become apparent.

Addresses housing affordability issues

Housing affordability is an issue well known to Massachusetts, and one particularly familiar to those in the more rural regions in the central and western part of the state. Beyond finding just any housing that is affordable comes the issue of finding housing that is affordable and near the jobs, schools, and community that residents already have ties to. While more businesses and jobs can be beneficial to the economic health of a region, one interviewee recognizes, "as more economic centers become more

expensive to live in, they push people out.” Accordingly, residents have no choice but to live where they can afford the housing, whether that means transitioning, downsizing, or finding subsidized housing. Keeping residents connected to jobs, schools, and communities no matter where they can find housing is where the connector comes in. Affordable housing can be a reality for those who have the means to travel further from their jobs to find it, and the connector plays a key role in bridging that gap. Addressing that gap is one of the many ways that the Quaboag Connector in turn benefits economic development in the region. One interviewee summarizes the advantages of the connector in this role by highlighting how transportation accessibility is what makes these housing options a viable option for those in the region, adding “viability really is key to their survival.”

Attracts workers and grows infrastructure/amenities

Along with supporting current residents, a reliable transportation network like the Quaboag Connector attracts residents and workers into the region as well. To put it simply, economic growth requires businesses to offer amenities and jobs that earn paychecks, and workers to operate businesses and spend their paychecks on amenities. The cyclical relationship between employers and employees also relies on the region’s housing and infrastructure. Bringing new workers into the region therefore spurs more economic growth which provides capital and demand for improved infrastructure and amenities. The need for improved infrastructure and amenities is captured by one interviewee, who notes, “we need housing, we need infrastructure improvements; water, for instance.” With the connector supporting rides to work, healthcare, and other essentials, the region becomes more attractive to potential workers which benefits the region’s economic development. This interviewee underlines the importance of the connector by adding, “we need transport, [and] to continue to grow that transportation, because that's what helps attract people to the area.”

Mobilizes and motivates investors

To the end of attracting more workers and therefore economic growth into the region, opportunities for economic development also attract investors into the region. “One of our biggest investors early on was actually a physician’s group from [a hospital],” one interviewee recalls, “where they realized that [patients] were able to get to their appointments if they had this kind of transportation.” The opportunity for businesses to thrive mobilizes investors to fund companies in the area, and even motivates them to invest in infrastructure, housing, and amenities to enable businesses to grow. For this key stakeholder, the presence of the connector “became very instrumental in the success of not only the Quaboag Connector, but [...] our system and the Quaboag Connector because we couldn't physically go to the different towns [without it].” Overall, the connector makes the region a more attractive place for businesses, workers, and investors, which is a key factor for economic development in the area.

Enables an education to workforce pipeline

Bolstering the workforce through yet another mechanism, the Quaboag Connector improves economic development in the region by enabling students to receive the necessary education to enter the workforce. As residents age into working ages, it is important for the local workforce to retain and train them to support local businesses. One of the ways to achieve this is to create a pipeline, or a direct strategic pathway, for students to receive the education needed to enter local jobs upon graduation. Key stakeholders recognized the role that the connector plays in getting students the education needed, noting the connector “provided rides for students to get to class for their GEDs, the equivalent of a diploma, which has allowed them to move on to other positions.” Providing avenues for the future

workforce of the region to get necessary credentialing to enter the workforce is essential to enabling an education to workforce pipeline and therefore supporting economic development in the region.

Addresses social determinants of health

Health, and its social determinants, inform the level to which a region can sustain economic growth and development. Without healthy, able workers, businesses and residents will not be able to thrive. Therefore, any means by which the Quaboag Connector can improve the health of the region's residents is also improving the region's economic health. Social determinants of health can be any social aspect that prevents or impacts one's health, from the house they live in to the grocery supply nearby. One interviewee notes that health services in the region are available, but primary care and pediatric care are not as accessible. By providing rides to those who are seeking primary and pediatric care, the connector is able to address the social determinant, transportation, and therefore improve the health of those in the region. Acknowledging that all social determinants are interrelated, one interviewee illustrates, "we need a comprehensive approach to just growing the economic health of the community," while highlighting that transportation is one of those components. Overall, the benefits that the Quaboag Connector provide to the region's health via social determinants can be taken in whole as an advantage to economic development.

Challenges

With the satisfaction and benefits the Quaboag Connector brings, key stakeholders also identified concerns they have or issues they have experienced in using the connector. Network concerns regarding service area, purpose, and eligibility as well as service concerns regarding hours and availability are outlined below.

Does not reach all schools in the area

Though not recognized or utilized by all organizations in the region, students are a valuable part of the economy in western-central Massachusetts. Either as interns, volunteers, or in other training roles, some interviewees reported that students from local public schools and vocational schools have opportunities to work with their organizations. Transportation for students, however, is not as accessible as it could be. Though some schools do fall within the region, schools outside of the service area may only be a short distance from organizations but totally isolated without walkable or bikeable avenues. For students at these schools without a license or car, the Quaboag Connector network falls short of connecting them with valuable experience and employers with potential workers.

Need better coordination for transit connections

Other shortcomings with the Quaboag Connector service area include coordination with transit connections. The Connector is an asset for those looking to travel throughout the region, but with connections to other modes of public transport, riders can travel even farther. While the connector enables some of these connections as is, the need for expanded coordination with transit connections has been noted by key stakeholders. In particular, service along Route Nine between Amherst and Worcester and to Springfield has been identified as an area where the connector falls short.

Need more vans and more drivers

Stakeholders recognize the impact that the Quaboag Connector has made on the region, and emphasized that because of the large, positive impact the connector has made, the demand for more vans and drivers has grown. The result of increased demand, though a notably positive outcome for the connector, is the issue of needing to add capacity. One interviewee categorized the connectors success in saying, “it's shown that: A) the need is there, and B) people are willing to use it” while concluding that “the only thing keeping it now is whether we're available more for more people.” In general, key stakeholders overall shared pleas for more of what the connector is already doing.

Need more frequency and availability

On the note of expanded capacity, the need for increased frequency and availability was expressed by a number of interviewees. Business owners made a case for expanded hours of operation to support all shifts. “Last I knew they operated 7 to 7 and our shifts run 7 to 7”, one business owner recalled, which addresses their employee’s transportation needs for the day and night shifts. “However,” the owner added, “we added a second shift and evening shift 3 to 11. So at that 11 o'clock hour there's no connector for them.” Expanding hours to service employees and other riders in the evenings was echoed by many stakeholders.

Along with evening availability, interviewees reported demand for weekend availability from the connector. Those involved with senior services mentioned that operations for seniors are currently running Monday through Friday, partly to ensure there is transportation for seniors to make it to the center. This interviewee recognized an opportunity for their operations to extend to the weekends as well to connect with those who may not be able to make weekday availability, commenting, “it would be nice if we could expand that service, or at least the availability of the Quaboag Connector throughout the entire weekend.” Employers and other stakeholders reiterate this sentiment for their own purposes as well.

Tight scheduling is not able to meet demand

Overall, stakeholders recognize that the Quaboag Connector is not able to meet the current level of demand in the region. Some indicated that scheduling has been very tight citing the need for more drivers and vehicle repair outages despite the help of scheduling software to optimize service. “Whether it's disappointment or whether it's an opportunity, looking to expand the number of rides and ultimately, maybe going out another level of towns for the region to be included,” one interviewee added, “that would be great.” The issue of demand for riders with specific needs was also raised, questioning whether the connector can manage everybody’s needs with its own limitations in mind. Whether that means assessing the needs of current drivers or gaining understanding of the needs of those who are not able to access the connector, the question stands, “Could we do more?”

Funding is a core challenge restricting growth and capacity

Common among challenges realized throughout interviews is the theme of capacity and the inability of the Connector to meet the demand for its services. In the Quaboag Connector’s case, issues with capacity stem directly from financial capacity. In order to expand the service area, add targeted services, and increase frequency and availability, the Connector must add vans and drivers. It follows that adding additional vans and drivers comes at a cost, which is therefore a core challenge for the future of the

Connector. Given the breadth of challenges that could be solved with greater financial capacity, it follows that additional funding is essential to the Quaboag Connector's success.

Recommendations

In interviews with key stakeholders, a number of suggestions were raised to the end of improving the Quaboag Connector. Recommendations range from increasing accessibility and networks to suggestions for collaborating with local businesses in new ways.

INCREASE ACCESSIBILITY

Recommendations for barriers to accessibility were mentioned by multiple interviewees who identified different areas where the connector can increase its accessibility. For example, one interviewee considered the population who might need transportation services the most might not even know that the connector is an option. To make the connector more accessible, it is necessary to continue to bolster public outreach. "I'm not quite sure what the best venue for social media is," the interviewee suggested, "but the more word of mouth, the more representation that they have to the public, the better."

Another interviewee suggested that dedicated services, related to medical trips for those who are sick for example, would open the connector to support segments of the population it may not be currently reaching. Even though the connector already services trips to doctor's offices and various other healthcare locations, the interviewee points out that "if somebody is sick, it's not necessarily safe to have a van full of sick people going together." Therefore, they suggest "expanded access to health care and perhaps a unique service for healthcare needs" as a type of dedicated service that the connector could provide, while also suggesting that the Quaboag Connector expand the types of services offered.

BROADEN NETWORK

A recommendation shared by most interviewees is a simple request for a broader network. Generally, the argument made by those who propose this change is the larger the network, the larger the impact the connector can have on the community. More specifically, one interviewer mentioned the benefit of adding in targeted routes for those who are involved in the region's workforce, suggesting "I think there could be some more specialized routes and needs that would help our community, if the youth can get out to internships that that's a huge benefit to both the schools and the businesses in the area, and the students." Though broadening the network has practical limitations, a case can be made for identifying specific needs and thoughtfully adding service for specific routes.

IMPROVE INTRASTATE TRANSIT CONNECTIONS

Though interviewees acknowledge the benefits of taking the Quaboag Connector to other transit stops, such as the PVRTA bus routes, the vision of the connector providing rides to other transit networks is one shared by many. In addition to the notable accomplishment of connecting with the B79 route, one interviewee mentioned that adding more than one bus making the trip to the Worcester commuter rail station with improved time schedules could open public transportation capabilities throughout the state. Much like the recommendations for dedicated services or dedicated routes outside of the region, the connector could consider adding routes to Worcester for train service alone. With word of the MBTA's plans for a commuter rail stop in Palmer in mind, this interviewee points out the possibilities for leisure, health care, and more, when the connector coordinates with other transit modes, adding "if the

train station is right here in Palmer, the next town over, that just opens up a whole world of opportunity for the seniors to be able to get to different types of care that they need to get to.” Beyond having access to Dana Farber, Mass General, UMass Worcester, and more, coordinated connections could bridge the gaps between public transportation in the Commonwealth. Going further beyond the state, improved access to Springfield could enable riders to travel south to Connecticut, New York, and beyond.

CREATE OPPORTUNITIES FOR COLLABORATION

Looking at opportunities for collaboration with local businesses, one interviewee pitched the idea of using the connector’s vans as a space for advertising. In addition to the increased visibility and exposure that comes with partnering with a local business, the connector could leverage advertising revenue to support operating costs. The interviewee acknowledges that this idea might be outside of the connector’s typical business model, but “if there was a way to combine their vehicles on the road with mobile advertising, that could be a source of income.”

HEALTH FOUNDATION RECOMMENDATIONS

Develop pathways for sustainable funding

Thinking holistically about challenges and recommendations, the Health Foundation identified a couple of additional recommendations to consider. Building on concerns related to funding, the Health Foundation recommends that the Quaboag Connector develop pathways for sustainable public and private funding. With the Quaboag region stretching across multiple jurisdictions, it heightens the challenges for the QVDC to secure traditional municipal or county level funding. Therefore, avenues for sustainable funding anchored by either public or private sources, ideally both, are important for the Connector’s continuing success.

Sharing of best practices for microtransit development

An additional recommendation posed by the Health Foundation is for the Connector to articulate and share strategies and successful practices from its experience as a microtransit service in a rural region. Though there are other microtransit systems in operation throughout the country, many may not have seen the levels of success in a rural region lacking public transportation as the Quaboag Connector has. By identifying and sharing the best practices that helped the Connector find success, the QVDC can do its part in helping other regions experiencing similar circumstances to access the transportation services they need. Interest in services like the Quaboag Connector is growing, and just recently a study was published identifying need for additional microtransit service in Berkshire County¹⁶. The service expansion could build off of the existing South County Connector which provides microtransit service to Great Barrington and neighboring towns¹⁷. The Quaboag Connector may be able to provide guidance based on its own experiences to emerging microtransit services throughout Western Massachusetts.

¹⁶ Breanna Steele, “BRTA Studying Microtransit for County,” News, iBerkshires, May 4, 2025, <https://www.iberkshires.com/story/78848/BRTA-Studying-Microtransit-for-County.html>.

¹⁷ Transit Department for the Town of Great Barrington, “South County Connector,” Government, South County Connector, 2025, <https://www.socoride.org/>.

Conclusion

Since becoming operational in 2017 and demonstrated in this study, the Quaboag Connector has brought numerous benefits to the Quaboag Valley region. The Quaboag Connector has increased economic mobility for its residents by providing convenient and affordable transportation to connect people to jobs, healthcare, and shopping. The Connector has saved residents money on vehicle ownership and maintenance costs while area businesses have benefited by having transportation services in place that can get employees to and from work reliably (especially important if a personal vehicle or ride from a friend are unavailable). With the Quaboag Connector, seniors and people with disabilities have greater mobility, allowing them to reach appointments and have social interactions – essentially making it possible to live more independently. The study shows that the Quaboag Connector during its years of operation has brought tangible benefits to the region, including through the positive experiences of employers and healthcare providers. On the quantitative side, several of the benefits of the Quaboag Connector, including access to jobs (through work trips), the cost savings of not missing medical trips, and the operations of the service have been monetized, and combine to show millions of dollars of economic benefits for the Quaboag Valley since 2017. Combining the Quaboag Connector’s Operational Impacts, Employment Impacts and savings from vehicle miles travelled, the service has had an economic impact of nearly \$45 million dollars since it began. The Quaboag Connector has generated \$10.5 million dollars in economic activity for every \$1 million dollars of combined state, non-profit, and local reimbursement into the program. Looking into the future, the Quaboag Connector will continue to provide an important transportation mobility pillar for the region which is a crucial component of economic development (along with other assets like education, industry base, quality of life amenities, etc.). Additionally, the Connector can play a role in carrying Quaboag Valley residents to the West-East passenger rail station in Palmer in coming years which will markedly improve access to Springfield, Worcester, and Boston economic hubs. In its initial eight years of operations, the Quaboag Connector has had positive impacts for the region and its on-demand transit services will continue to provide opportunities for the region in the future.

Figure 18: Quaboag Connector Impacts Summary



Methodology

Trips by Purpose

Data from ECOLANE categorizing trips by purpose was used to create a dot density map. Longitude and latitude, trip purpose, and whether the trip type was a drop off or pick up was tabulated by purpose and by type. For the purpose labeled “Shopping and Errands,” the following trip types were aggregated: Bank, Car Repair, Court, Food Bank, Hairdresser, Other, Shopping, Social. The geographic data was then projected onto a map of the region using ArcGIS Pro, symbolized based on type and parsed out by trip purpose. The dot distribution parameters were set for one dot to be equivalent to five trips to preserve anonymity and enhance map readability.

Estimated Direct Annual Wages Supported by Quaboag Connector Work

The wage-based impact analysis is based on the average all-industry wage data for towns in the Connector’s operation region from the State ES202 dataset. The wage across all industries is converted to a daily value based on 260 working days and adjusted to 2024 dollars.

$$\text{Daily Wage } (\$2024) * (\text{Annual Work Trips} * 0.75) = \text{Annual Wage Impact}$$

$$\begin{aligned} &2017 \text{ Annual Wage Impact} + 2018 \text{ Annual Wage Impact} + \dots + 2024 \text{ Wage Impact} \\ &= 2017 \text{ thru } 2024 \text{ Total Wage Impact} \end{aligned}$$

Wage data is compared to the number of work trips. It is assumed that the number of unique work trips is equivalent to 75 percent of the total work trips, annually. This reflects that trips for work are a mixture of round and one-way trips. The number of unique work trips is then multiplied by the daily wage across all industries, producing an estimate of the wages supported by connector trips for work purposes, annually.

Medical Trip Impacts

The estimate is based on analysis tools developed in a 2005 study of non-emergency medical transport by the National Academies of Sciences, Engineering, and Medicine. The tool allows the user to adjust the calculations of medical impacts based on the population and rural nature of a region. The exact benefit depends on the medical conditions for which transit is provided, with more severe conditions having larger scale impacts as a single missed appointment would result in greater costs. The worksheet identifies the difference between the “Cost of poorly managed care” and the “Cost of well managed care.” The Quaboag Connector Service Area was input into the tool using the population of the region from the ACS to produce an estimate of the impact of this form of transit in a region the size of Quaboag.

IMPLAN Impact Analysis

IMPLAN models how the spending of money in one part of the economy can translate to larger effects in the rest of the economy. The IMPLAN analysis is performed on the state of Massachusetts, so the impact

reflects the impact of Quaboag Connector related activities on the statewide economy overall. Economic Impact from IMPLAN is broken down into three impact effects:

- **Direct Effects:** The impact of employment and spending by Quaboag Connector on the overall economy. E.g., Payroll for drivers and dispatchers, purchases of goods and services such as vehicle maintenance.
- **Indirect Effects:** Impact of the purchase of intermediate inputs by suppliers for the Quaboag Connector across Massachusetts. e.g., The purchase of vehicle parts by a repair shop that are included in the cost of vehicle repair work.
- **Induced Effects:** The household spending of employees of the Quaboag Connector and any businesses Quaboag Connector works with if additional employment is generated by related firms by the Quaboag Connector's spending. E.g., Drivers live locally and purchase groceries with their wages. The Quaboag Connector purchases goods from a local store, which may then hire additional people, and those workers earn wages that are spent in the region.

These three levels of impact are then divided into distinct categories of impact:

- **Employment:** Employment supported by related economic activity. Based on job-years, which is a unit of one job worked for a full year. Two employees working half a year each would be represented as one job-year.
- **Labor Income:** Wages and salaries paid to employees.
- **Value-Added (GDP):** Difference between total output and inputs, and can thought of as the contribution of a firm to Gross Domestic Product or Net New Economic Activity. Value-added also includes Labor Income.
- **Output:** Total value of a firm's production including value-added, labor income along with intermediate expenditures.

EMPLOYMENT SUPPORTED BY QUABOAG CONNECTOR-RELATED WORK TRIPS

Using the amount of supported wages identified above, divided by the region's average all-industry wage, an estimate of whole jobs is created. This count of jobs is then distributed across the region's industry makeup at the 2-digit NAICS industry level and the employment is used as an input into IMPLAN using the whole state as a region of analysis.

OPERATIONS

Payroll and employment counts provided by the Quaboag Connector are used as inputs in the IMPLAN analysis using the local public passenger transit industry. IMPLAN notes that when any type of analysis is run on a public transit industry the results will show no direct proprietor income, negative TOPI, and negative OPI. This will result in a negative Direct Value-Added when these Industries are analyzed.

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