

SIXMO

City Services Division

Coshocton County Employment
Transportation Feasibility Study
Ohio Mid-Eastern Governments
Association (OMEGA)
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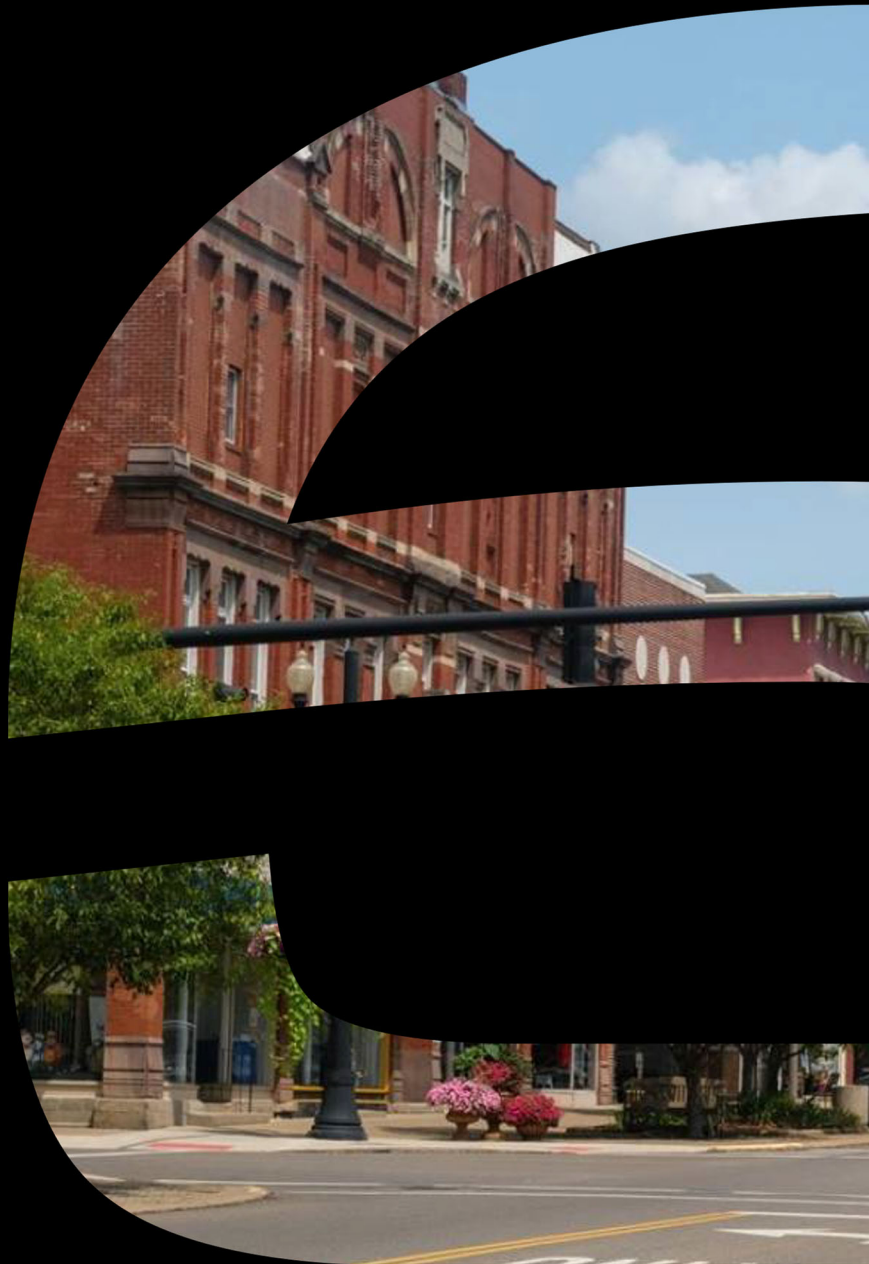


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The preparation of this plan has been financed through funding from the Specialized Transportation Program provided by the Ohio Department of Transportation. The contents of this study reflect the views of the authors, who are responsible for the facts and accuracy of the data presented. The contents of this report do not necessarily reflect the official views or policies of the State of Ohio and/or the Ohio Department of Transportation at the time of publication.

As the local recipient of funding utilized to complete this effort, the following statements are provided courtesy of the Ohio Mid-Eastern Governments Association.

OMEGA does not tolerate discrimination in any of its programs, services, or activities, and will not discriminate against anyone on the basis of race, color, national origin, gender, age, disability, religion, income, sexual orientation, gender identity, or family status.

Title VI of the Civil Rights Act of 1964 prohibits discrimination on the basis of race, color, or national origin in programs and activities receiving Federal financial assistance. Specifically, Title VI provides that "no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance" (42 U.S.C. Section 2000d).

The Civil Rights Restoration Act of 1987 clarified the intent of Title VI to include all programs and activities of Federal-aid recipients, sub-recipients, and contractors whether those programs and activities are federally funded or not. During the Obama Administration, the Federal Transit Administration ("FTA") placed renewed emphasis on Title VI issues, including providing meaningful access to persons with Limited English Proficiency ("LEP").

Additional authorities and citations include:

- Title VI of the Civil Rights Act of 1964 (42 USC 2000d et seq)
- Section 162 (a) of the Federal Aid Highway Act of 1973
- Age Discrimination Act of 1975
- Section 504 of the Rehabilitation Act of 1973
- Americans with Disabilities Act of 1990
- Civil Rights Restoration Act of 1987
- 23 CFR Part 200
- USDOT Order 1050.2
- Executive Order 12898 – Federal actions to Address Environmental Justice in Minority Populations and Low-income Populations (1994)
- Executive Order 13166 – Improving Access to Services for People with Limited English proficiency (2000)

- U.S. DOT regulation, 49 CFR part 21, “Nondiscrimination in Federally-Assisted Programs of the Department of Transportation— Effectuation of Title VI of the Civil Rights Act of 1964” (June 18, 1970, unless otherwise noted).

Of particular interest is Executive Order 12898 which was intended to ensure that minority and low-income individuals receive equitable benefit from federally funded programs, that they do not suffer disproportionately from any environmental burdens caused by those programs, and that they have the opportunity for meaningful input into the process.

To ensure that OMEGA complies with these regulations, the Title VI plan includes the following:

- Demographic Profile of Planning Area
- Environmental Justice Areas
- Limited English Proficiency
- Public Involvement Process
- Title VI Complaint Procedures

The Title VI/Public Participation Plan is on the OMEGA homepage: www.omegadistrict.org.

For additional information on Transportation Planning programming in the OMEGA region, please contact Josh Sliker at jsliker@omegadistrict.org, or via telephone at 740.439.4471.

EXECUTIVE SUMMARY

This study and the concepts within the represent research conducted during the Summer of 2021 by the staff of Sixmo City Services on behalf of the Ohio Mid-Eastern Governments Association (OMEGA) and the Coshocton County Coordinated Transit Agency (CCCTA) regarding the establishment of public transportation services that would serve employment needs within Coshocton County. This document provides background information including demographics, income, and employment; information on public transportation services and providers in the project study area, potential stops and routes, costs to establish additional services, proposed fares for cost recovery, observed employer/employee transportation needs, funding considerations, general best practices, and vehicle recommendations.

In general, we offer the following findings:

The creation of an employment transportation system to support the transportation of residents and workers to employment opportunities is feasible in Coshocton County and surrounding areas.

In total, a universe of 24,937 residential addresses were identified within one mile of these conceptual modeled routes. Based on this, an estimated maximum daily ridership of 702 individuals was calculated.

Also within one mile of the conceptual modeled routes are 1,734 employers, reporting employment of 20,754 individuals. This reflects a mean of 8.15 employees per establishment within one mile of the modeled routes. Modeled routes were composed of rural routes and express routes and combinations of the two that would best serve these employers.

To serve the universe of 126 employers with greater than 25 employees, and 31 clusters of employers with greater than 50 employees in total, five conceptual routes, and 27 transit stops were modeled for cost, travel time, and ridership.

To provide cost flexibilities, routes were modeled for service twice a day and three times a day, for five and seven days per week. The least expensive modeled option would be to establish a two times per day, five days a week combined route service utilizing a part-time driver. This cost is estimated at \$95,593.36 annually. The most expensive modeled option would be to establish a three times per day, seven days a week rural round trip route utilizing a full-time driver. This cost is estimated at \$335,814.36 annually. A fifth route providing loop service to the general Coshocton City area was also created based on feedback from the core group. The minimum modeled cost was \$39,783.61 and the maximum was \$78,375.03. All costs were based on observed operation costs for existing fleet vehicles provided by CCCTA.

ODOT's rural transit program (5311) is the strongest match for potential ongoing operational funding should additional services be established by CCCTA.

Local employers presented a mixed view of the urgency of the employment transportation issue. Larger employers tended to experience more urgent issues and were more receptive to potential partnerships and solutions. Smaller employers tended to not perceive transportation as an issue for employment.

OVERVIEW

Coshocton County is a rural county located in eastern Ohio located approximately 75 miles east of Columbus. Home to approximately 36,000 residents, Coshocton County is served by eighteen (18) transportation providers who offer a range of services to local clientele. All available services are demand/response style offerings targeted to specific populations including seniors, veterans, and disabled populations. As one of these providers, CCCTA does offer demand/response services to the general public on a fare basis. Collectively these services, while critical to human services and quality of life considerations, do not provide robust capacity for employment or commuting purposes. Responding to requests from citizens, employers, and other stakeholders in the community, OMEGA and CCCTA have commissioned this feasibility study to ascertain the possibility of adding fixed-route services (including nights and weekends) to support access to employment opportunities for residents.

The expressed need for employment-related transportation is also highlighted multiple OMEGA planning documents. In section 5.3 of the 2020 OMEGA Long Range Transportation & Development Plan entitled 'Facilitate Economic & Community Development,' transit is identified as a key need to enhance mobility within the region. Specifically, OMEGA is focused on increasing the number of commuters using transit; reducing ride denials, cancellations, and no-shows; expanding services for employment and human services, and other unmet needs currently facing the citizenry in eastern Ohio. This need is also identified in the 2019 to 2022 Regional Coordinated Public Transit/Human Services Transportation Plan; Goal #5 Increase Transportation Options for Job Seekers and Employees. This also surfaces in the updated Goals and Strategies for CY 2020; Goal 1 To maintain and expand transportation services and options, Strategy 1.2 Increase access to affordable and available employment transportation options. Members of the core project team expressed a perspective that if additional transit services were available that could specifically serve the purposes of commuting for employment, this would bolster overall employment considerations in Coshocton County and the neighboring areas.

The study area for this effort is the entirety of Coshocton County, Jackson and Cass Townships in Muskingum County (including the Villages of Frazeyburg and Dresden), Oxford and Bucks Townships in Tuscarawas County (including the Village of Newcomerstown), and Clark Township in Holmes County (including the Village of Baltic). The overall study area is illustrated below in figure 1. The study area as related to the larger OMEGA region is illustrated in figure 2.

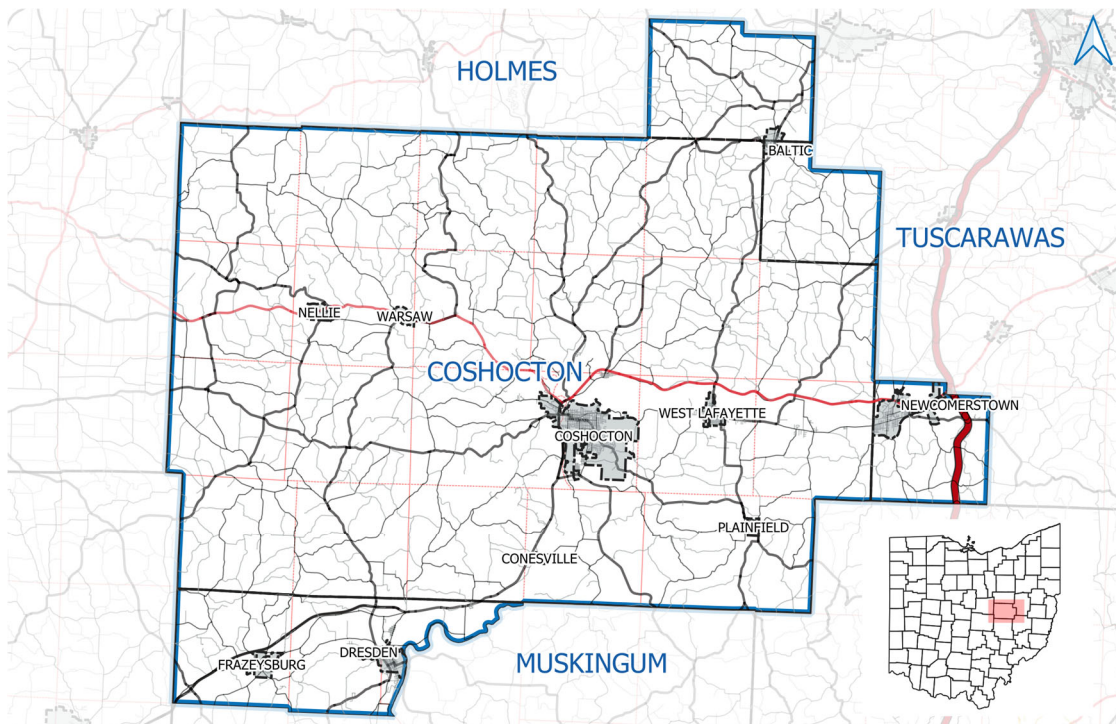


Figure 1 – Project Study Area

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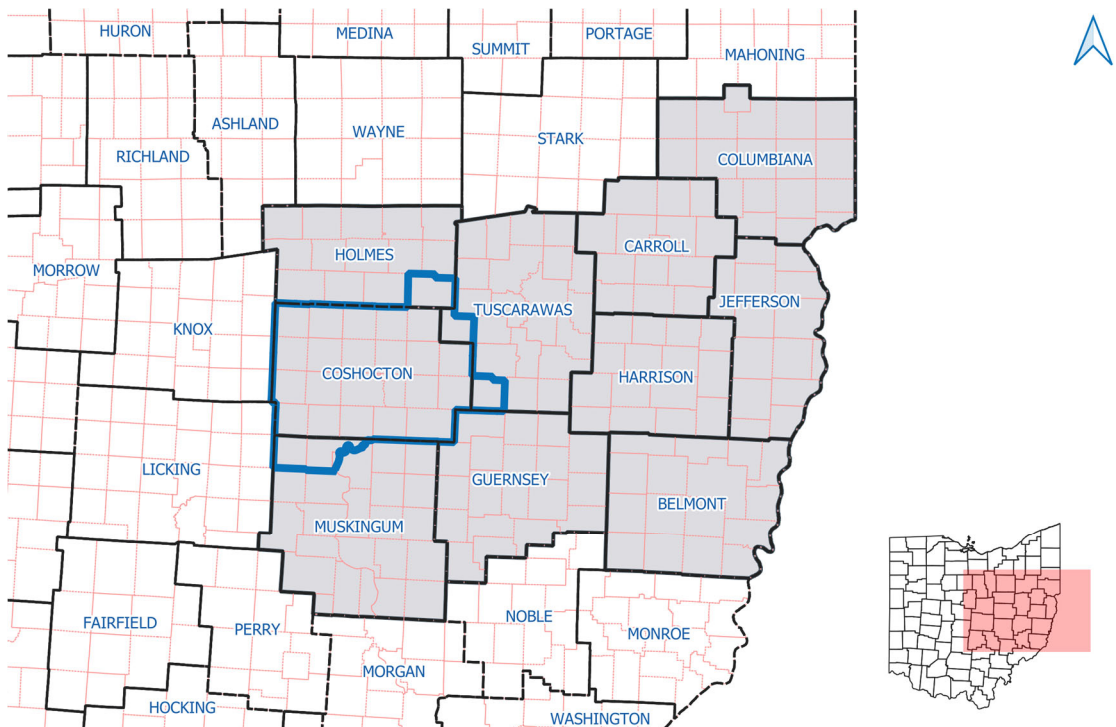


Figure 2 – OMEGA Region

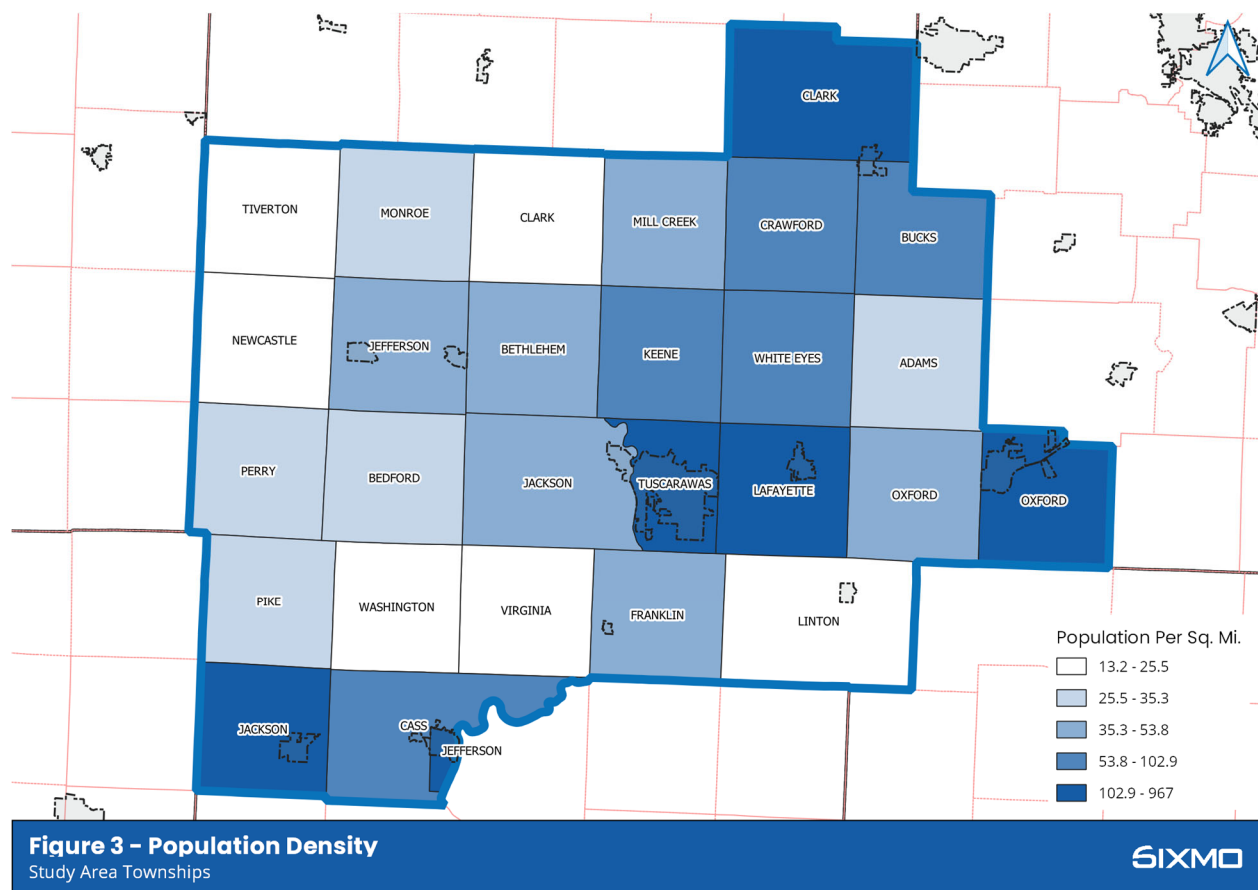
Project Study Area

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BACKGROUND DATA AND TRENDS

DEMOGRAPHICS

According to the United States Census Bureau, the project area represented in this study has a population of 52,023¹ and encompasses an area of 698.5 square miles in eastern Ohio. The population density of the total study area was calculated at 107.1 people per square mile. Population density for townships within the project study area is illustrated in figure 3. The service area is comprised of one city, Coshocton – the county seat of Coshocton County, and nine villages; Conesville, Nellie, Plainfield, Warsaw, West Lafayette (Coshocton County), Dresden, Fazeysburg (Muskingum County), Baltic, and Newcomerstown (Tuscarawas County). These communities are predominantly rural in nature, with the exception of Coshocton, and have an average population of 1,260 each, with the smallest, Plainfield, at 114 residents.



As of 2019, Coshocton County had an estimated population of 36,585 and had only experienced a loss of 316 residents since 2010. Population projections provided by the State of Ohio outline relatively level

¹ American Community Survey - 2019 5 Year Estimates

population levels in the county through 2020. Moving from 2020 to 2040 an anticipated loss of approximately 3,000 residents is forecasted. This population is estimated to comprise 14,476 households in the county, averaging 2.5 persons per household. The median age for residents of Coshocton County in 2019 was 41.3 years old.

Figure 4 below illustrates detailed population factors across townships in the project study area, including total population, total households, and population below the poverty level within the past 12 months (individuals).

Figure 4 – Demographics			
	Total Pop.	Households	Poverty
Adams	760	280	4.8%
Bedford	742	221	0.7%
Bethlehem	910	450	10.1%
Clark	366	166	21.0%
Crawford	1,855	445	5.1%
Franklin	1,272	579	10.7%
Jackson	1,738	772	10.2%
Jefferson	1,373	584	8.2%
Keene	2,053	811	10.6%
Lafayette	4,047	1,600	18.1%
Linton	572	247	36.4%
Mill Creek	954	252	22.3%
Monroe	750	238	24.8%
New Castle	340	141	17.9%
Oxford	1,244	572	6.2%
Perry	878	315	20.4%
Pike	817	312	4.8%
Tiverton	423	164	12.1%
Tuscarawas	1,912	733	38.2%
Virginia	471	212	19.1%
Washington	580	209	0.0%
White Eyes	1,465	510	4.0%
Clark (Holmes)	4,214	971	9.8%
Cass (Musk.)	1,567	609	11.7%
Jackson (Musk.)	2,746	974	14.5%
Jefferson (Musk.)	2,108	833	13.5%
Bucks (Tusc.)	2,008	593	7.4%
Oxford (Tusc.)	4,903	2,143	15.6%

ECONOMY

The clear hub of the study service area for human services, employment, and cultural amenities is the City of Coshocton. Other large employers and employment clusters are scattered across the region and are acknowledged through the consideration given to potential transit stop locations intended to provide

service to those areas. Conversations with employers during the study effort confirmed that the City of Coshocton was the most significant source of employees for establishments in the study area.

Figure 5 below provides details on the economy of Coshocton County as reported by the Bureau of Labor Statistics². In 2020, there were 582 private business establishments operating in the county, employing 7,722 workers. The reported average weekly wage across all sectors was \$846, and the average annual wage was \$43,964.

Figure 5 – Coshocton County – Establishments and Wages						
NAICS Code	NAICS Description	Establishments	Avg. Weekly Wage	Avg. Annual Wage	Avg. Emp. LQ	Avg. Wage LQ
11	Agriculture, forestry, fishing and hunting	8	\$730	\$37,935	0.9	1.28
21	Mining, quarrying, and oil and gas extraction	14	\$957	\$49,766	1.82	1.21
22	Utilities	6	\$3,030	\$157,541	3.43	6.82
23	Construction	47	\$1,135	\$59,012	0.65	0.84
31-33	Manufacturing	57	\$1,112	\$57,837	3.13	3.66
42	Wholesale trade	37	\$821	\$42,682	0.41	0.31
44-45	Retail trade	97	\$486	\$25,265	1.16	1.19
48-49	Transportation and warehousing	23	\$843	\$43,835	0.57	0.67
51	Information	6	\$793	\$41,216	0.23	0.1
52	Finance and insurance	35	\$1,014	\$52,748	0.48	0.31
53	Real estate and rental and leasing	14	\$627	\$32,588	0.28	0.2
56	Administrative and waste services	29	\$624	\$32,444	0.48	0.5
61	Educational services	6	\$478	\$24,881	0.48	0.31
62	Health care and social assistance	91	\$684	\$35,555	1.19	1.14
71	Arts, entertainment, and recreation	9	\$251	\$13,040	0.99	0.42
72	Accommodation and food services	52	\$273	\$14,176	0.78	0.72
81	Other services, except public administration	49	\$461	\$23,961	0.71	0.57
99	Unclassified	2	\$901	\$46,869	0.43	0.41

Of note here are the location quotients found above, abbreviated 'LQ.' These values indicate the comparative rate of employment or wages as compared to the rest of the United States. A value greater than one (1.0) indicates a higher local share of wages or employment as compared to the rest of the nation. Coshocton County has 5 sectors with values greater than one in average employment, and six sectors with average wages greater than one during 2020.

Another way to analyze the strength of the local economy is to utilize a 'shift-share analysis.' In a shift-share analysis, three growth metrics are utilized: national growth, industry mix, and regional shift. National growth indicates how much of the change observed in your area of interest is due to the national

² U.S. Bureau of Labor Statistics – Quarterly Census of Employment and Wages

economy. Industry mix indicates how much of the observed change is due to changes in the specific industry you are evaluating. Industry mix is of the most interest here, this value indicates how much of the observed change is due to local conditions. Utilizing this measure for Coshocton County for the period between 2012 and 2018, the three industry sectors with the largest regional mix values are **food manufacturing (NAICS 311), nursing, and residential care facilities (NAICS 623), and primary metal manufacturing (NAICS 331)**. In aggregate, Coshocton County as of 2018 had an aggregate economic base multiplier of **3.4**. This means for every job in a basic employment sector (NAICS 21, 22, 31-33, 61, 62) there were 3.4 jobs induced in other non-basic sectors in the county.^{3 4}

Utilizing available data provided by the Longitudinal Employer-Household Dynamics (LEHD) tool from the U.S. Census Bureau, a snapshot of job locations and job densities as they relate to individuals who work in Coshocton County can be generated and has been provided below as figure 6. This map illustrates general locations and densities of jobs for individuals working in the project area. This data was paired with Dun and Bradstreet data provided by OMEGA, and outlined in subsequent sections, to help inform potential stop and route locations for consideration.

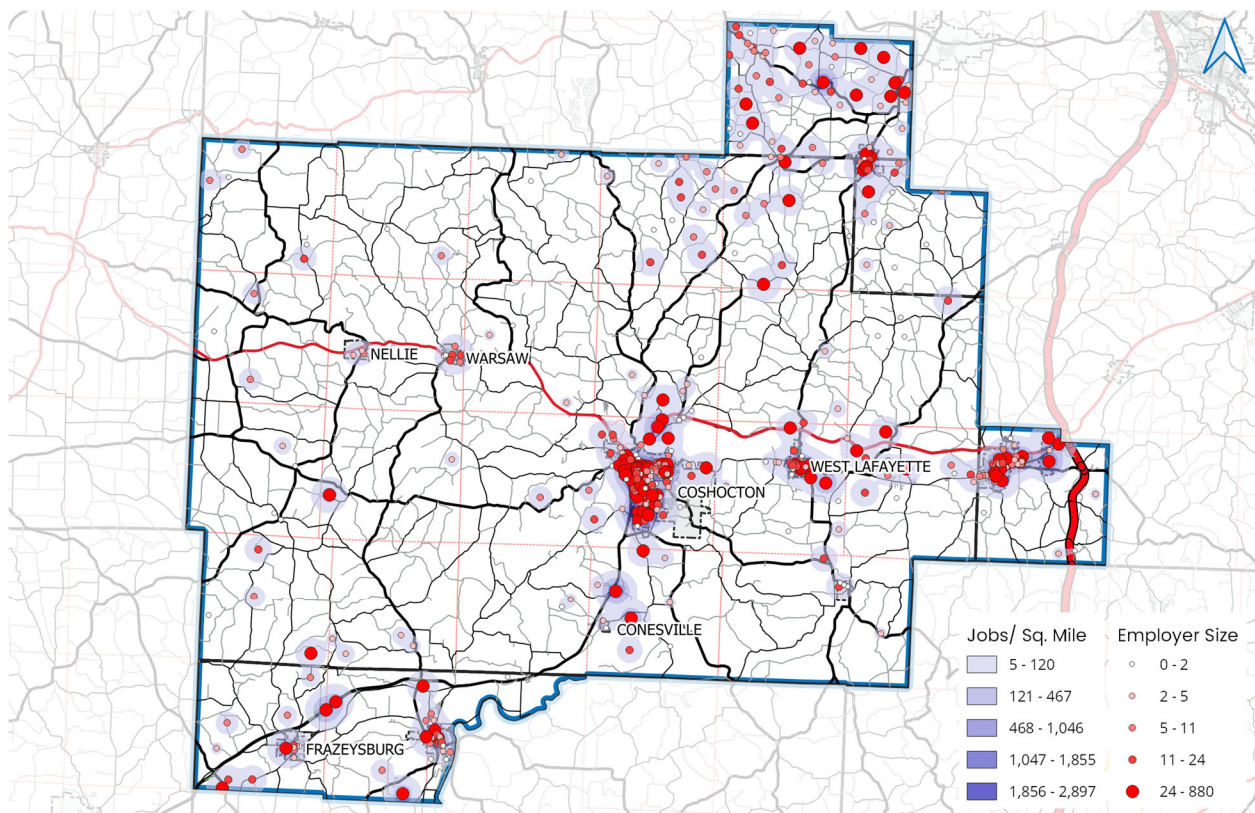


Figure 6 – Employers and Job Density

³ <http://shiftshare.stdb.com/>

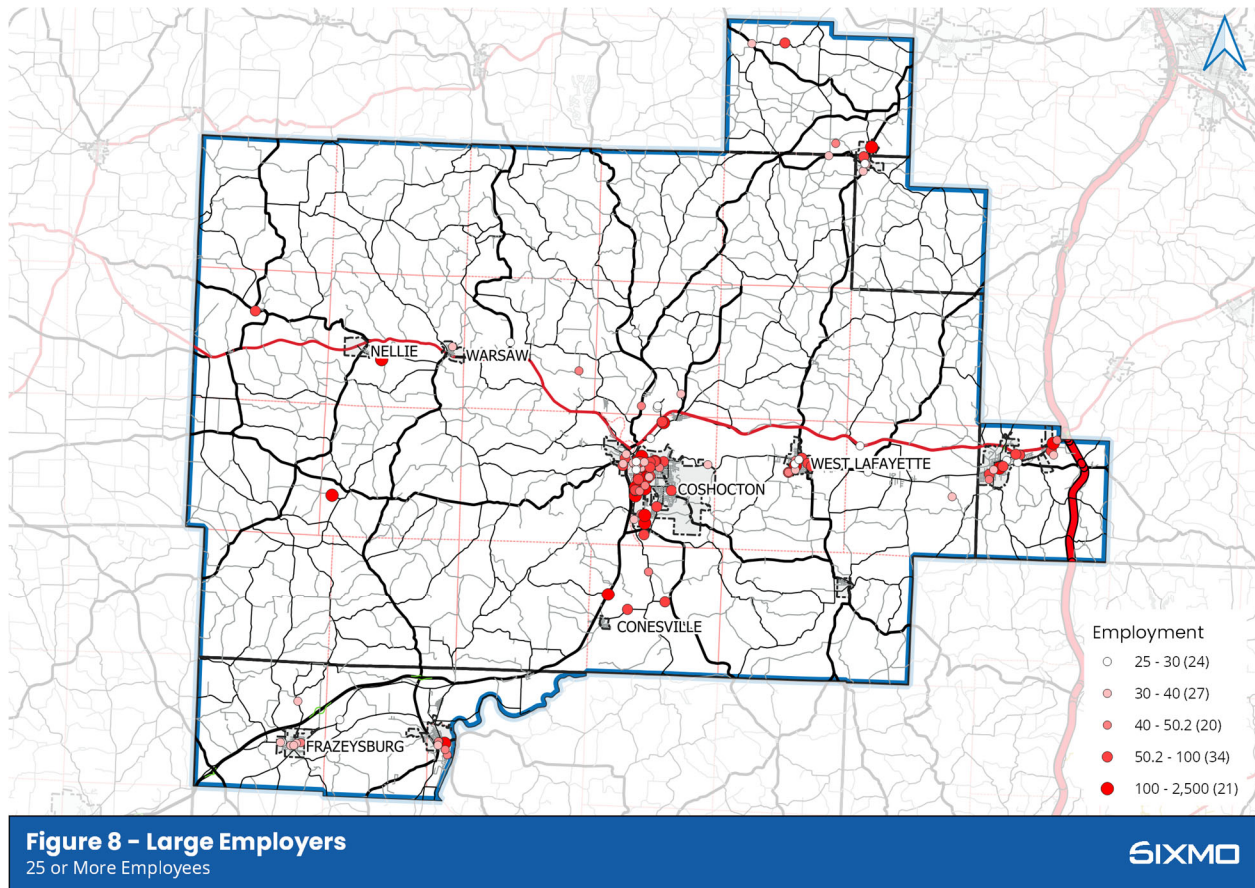
⁴ <https://support.implan.com/hc/en-us/articles/4402334035611-Shift-Share-Analysis>

Within the study area, 12,360 private-sector jobs were reported in 2018. The data indicates employment clusters found around the communities of Coshocton, West Lafayette, Newcomerstown, Fazeysburg, Dresden, and the general Baltic/southeastern Holmes County area. The largest employment sector within the study area was manufacturing, with 3,880 positions. Retail trade and health care rounded out the top three sectors with 2,167 and 1,787 positions respectively. The top employment sectors in the study area are illustrated in figure 7.

Figure 7 – Top Employment Sectors			
NAICS Code	NAICS Description	Number	Percent
31-33	Manufacturing	3,880	31.40%
44-45	Retail Trade	2,167	17.50%
62	Health Care and Social Assistance	1,787	14.50%
72	Accommodation and Food Services	1,071	8.70%
56	Administration & Support, Waste Management and Remediation	613	5.00%
23	Construction	607	4.90%
48-49	Transportation and Warehousing	337	2.70%
42	Wholesale Trade	301	2.40%
81	Other Services (excluding Public Administration)	285	2.30%
22	Utilities	277	2.20%
56	Professional, Scientific, and Technical Services	268	2.20%
52	Finance and Insurance	224	1.80%
21	Mining, Quarrying, and Oil and Gas Extraction	111	0.90%
11	Agriculture, Forestry, Fishing and Hunting	96	0.80%
71	Arts, Entertainment, and Recreation	92	0.70%
61	Educational Services	75	0.60%
53	Real Estate and Rental and Leasing	62	0.50%
51	Information	59	0.50%
55	Management of Companies and Enterprises	48	0.40%
92	Public Administration	0	0.00%

As a companion to this data, OMEGA provided SCS with Dun and Bradstreet data (February 2021) to utilize in ascertaining employers and their locations within the project study area. This data comprised approximately 2,500 individual records. Of these employers, **126 reported having 25 or more employees**.⁵ A full listing of the identified employers with 25 or more employees is included as appendix B. The locations of these employers within the project study area are illustrated in figure 8.

⁵ Employment was determined utilizing the 'Employees Here' attribute value found in the Dun & Bradstreet data.



EMPLOYMENT DEMAND

Several announced projects are spurring future demand for employment in the project study area. In October 2021, the Ridge Corporation located in Frazeytsburg announced a \$13.5 million expansion to their existing facility. When complete this expansion will add 114,000 square feet to the existing footprint.

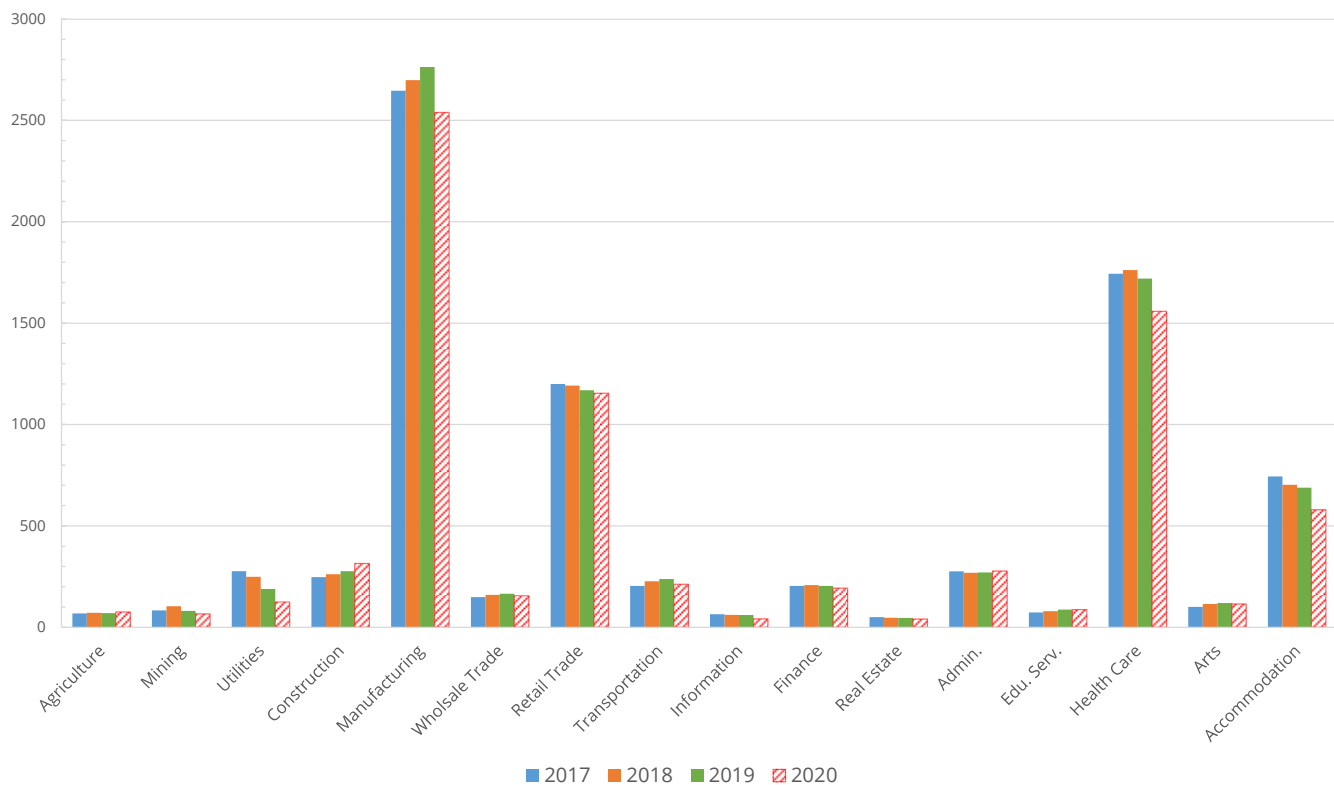
In April 2021 Genesis Healthcare System announced the establishment of a new 60,000 square foot hospital facility just north of Coshocton. This investment was valued at \$45 million and is estimated to create 200 jobs. Officials expect the project to be complete and open in 2023.

These new project locations are closely situated to proposed transit stops on routes 1 east and route 2 south, described and depicted in subsequent sections.

Aside from these future project announcements, employers expressed a constant demand to fill existing positions and to make modest additions to their workforces during interviews for this study. It was also clear during the outreach effort that local businesses were scaling up to near pre-COVID levels of employment and were experiencing challenges doing so. During our conversations, employers expressed employment needs from 5 to 100 employees on an ongoing basis.

Publicly available employment and wage data does not point to an overall systemic sustained increase in employment in Coshocton County across a multi-year time period. The table below illustrates employment levels from the Bureau of Labor Statistics (BLS) – Quarterly Census of Employment and Wages (QCEW) between 2017 and 2020. Taking 2020 as an anomaly for the purposes of this study, modest employment growth was observed in manufacturing, construction, transportation, education services, and arts between 2017 and 2019. All other sectors were largely unchanged or decreasing during this period. Private investment survey totals published by the Ohio Department of Development indicated that there were 7 new or expanding facility projects between 2010 and 2019, and an average of .7 projects per year. These projects are private efforts where investments of \$1 million are made, 20,000 square feet of space are added, and 20 or more jobs (50 or more prior to 2014) are reported. The information for this state report is gathered from media releases and surveys of local development agencies. This information serves to indicate new demand for employment in Coshocton County is modest, but existing employment is stable. **Observed employment demand is coming largely from employers working to fill existing positions, not to support the substantial addition of new positions.** Further conversation around employment demand is provided in a subsequent section detailing feedback received during employer interviews.

QCEW Employment 2017 – 2020



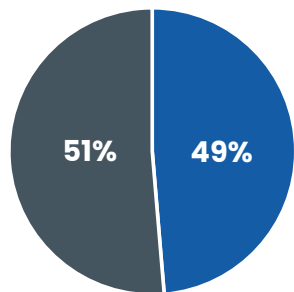
COMMUTING AND TRANSPORTATION

Building on this general picture of the local economy, we can also illustrate the movement of people within the study area as it relates to employment and employment locations.

As of 2018, **12,360 individuals were employed within the project study area**, of those nearly 49% (6,017) commute into the area for employment; 51% (6,343) work and live within the area.

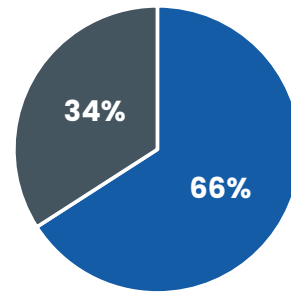
Similarly, **18,602 individuals live in the project study area**, approximately 66% (12,259) travel out of the area for employment, while 34% live and work in the area.

Working in the Study Area



■ Live Outside ■ Live Inside

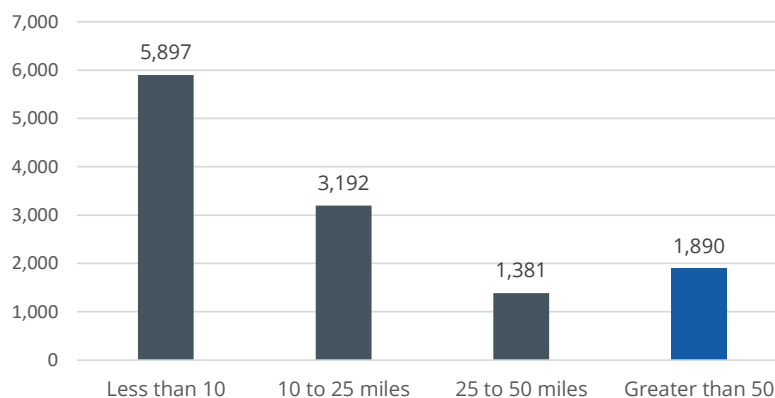
Living in the Study Area



■ Work Outside ■ Work Inside

Focusing more closely on those who are working in Coshocton County, we can determine how far those individuals are traveling home on average. Of the 12,360 individuals working in the study area, an astounding 15% (1,890) drive 50 miles or more to reach their home.

Miles from Work to Home



2019 data indicated that on average residents of Coshocton County commuted **24.4** minutes to work each day, with 78% of those individuals traveling alone in a personal vehicle. This is slightly lower than the state average of 82.9% during the same period. Coshocton County did have a higher rate of carpooling for commuting purposes at 10.8%, as compared to the U.S. average of 9% and Ohio average of 7.8%.

With this data illustrating the dependence on personal vehicles for employment commuting purposes, we can go one step further and illustrate the number of workers over the age of 16 who report living in a household with zero vehicles available to them. This data for the project study area by township is provided in figure 9.

Figure 9 – Workers in Zero Car Households		
	Number	Percent
Adams	0	0.0%
Bedford	13	3.8%
Bethlehem	0	0.0%
Clark	0	0.0%
Crawford	604	71.3%
Franklin	0	0.0%
Jackson	0	0.0%
Jefferson	6	1.1%
Keene	23	2.7%
Lafayette	11	0.6%
Linton	0	0.0%
Mill Creek	227	70.9%
Monroe	0	0.0%
Newcastle	13	9.1%
Oxford	19	3.6%
Perry	0	0.0%
Pike	0	0.0%
Tiverton	84	53.8%
Tuscarawas	24	4.6%
Virginia	0	0.0%
Washington	0	0.0%
White Eyes	21	3.1%
Clark (Holmes)	1,139	63.8%
Cass (Musk.)	6	1.0%
Jackson (Musk.)	0	0.0%
Jefferson (Musk.)	11	1.1%
Bucks (Tusc.)	212	20.8%
Oxford (Tusc.)	19	3.6%

Across the entire project study area, **11.2%** of workers over the age of 16 report living in a household with zero vehicles available for employment purposes. Reasons for not having access to a vehicle are many, the most identifiable are financial implications. The American Automobile Association (AAA) reported in September 2021 that the average annual ownership cost of a new vehicle is **\$9,666** per year or

approximately \$806 per month.⁶ LEHD data states that of the 12,360 workers holding employment within the project study area, **over 22% are making \$1,250 per month or less**. Working with these figures, we can calculate that the average monthly cost of a new vehicle could consume up to 65% of a worker's monthly income at this wage rate. This financial challenge is one additional reason why public partners like CCCTA are investigating the establishment of additional low-cost public transportation services for employment purposes.

EMPLOYER NEEDS AND FEEDBACK

A key activity in understanding the need for employment transportation as expressed by CCCTA and other members of the core project team was identifying and interviewing up to 20 employers from across the project study area. During these interviews, company officials were engaged by SCS in conversation regarding the transportation needs of employees, observed transportation issues as they relate to the overall success, and ideas for solutions to any identified transportation issues.

Working with the core project team representatives, SCS was able to identify a list of 20 targeted establishments across sectors, employment levels, and geographic locations to interview for relevant feedback. The listing of identified organizations and their participation status is listed below in figure 10.

Figure 10 – Employer Interview Targets		
Name	Industry	Status
AK Steel/Cosh. Works	Manufacturing	Interviewed
Kraft Heinz	Food & Beverage	Interviewed
McWane	Manufacturing	Interviewed
Buehler Food Markets	Grocery	Interviewed
GMI Holdings Inc	Misc. Building Materials	Interviewed
Express Packaging**	Business Services	Interviewed
Malouf**	Other	Interviewed
Annin & Co.	Textiles & Apparel	Interviewed
31 Inc.	Tire & Rubber	Interviewed
Schlabach Wood Design	Construction & Real Estate	Interviewed
Herco Inc.	Industrial Machinery & Equipment	Declined
REM Corp.	Healthcare	No Response
DK Manufacturing	Plastics, Packaging, Containers	Interviewed
Wiley's	Food & Beverage	Declined
Keim Lumber Company	Misc. Building Materials	Interviewed
SanCasT	Manufacturing	Interviewed
Coshocton Ethanol	Chemicals	Contacted
Fanatics**	Apparel & Accessories	Interviewed
Yankee Wire	Wire & Cable	Declined
Jones Metal	Medical Devices & Equipment	Declined
ProVia*	Manufacturing	Interviewed
Walmart*	Department Stores	Declined

*Added to the list based on group/employer feedback.

** Information misreported in D&B Data but identified through stakeholder input.

⁶ <https://theapopkavoice.com/sticker-shock-owning-a-new-vehicle-costs-nearly-10000-annually-aaa-offers-car-buying-advice/>

INTERVIEW RESULTS AND FINDINGS

Employer perspectives on employment varied widely during our interviews and research. Following these conversations, general high-level themes did appear, including the following;

Transportation issues were not generally received as challenges to initial employment or employee attraction;

Transportation issues were most likely to arise as tenure of employment continued;

Limited carpooling/ridesharing was observed. Few employers offer, or have ever offered, any type of transportation services;

Larger employers were more likely to experience, and acknowledge, transportation issues as opposed to small and medium employers;

Across discussions held with targeted employers, larger employers experiencing a constant churn of employees considered transportation a top ongoing issue and were much more willing to discuss potential solutions as a vehicle to address their ongoing employment needs. Medium and small employers in a very general sense did not seem to acknowledge transportation as an employee attraction/retention issue – but cited other cultural and social challenges as more pressing. One medium-sized employer went far enough to state that transportation ‘was not even in the top five’ of critical issues they face with maintaining their workforce. Other employers who did identify transportation as a challenge for employee retention, often cited individuals facing the most significant challenges were new hires seeking to access new employment opportunities. Often they owned and or operated motor vehicles that were marginally reliable and any issues that surfaced with the vehicle cause challenges to continuing employment. Transportation challenges were observed and more pronounced for employers outside of the greater Coshocton City area.

Following this theme, a significant portion of the workforce of those employers interviewed comes from the greater Coshocton city area. Several employers described workers walking or biking to work during the temperate months with little challenge or difficulty, but were often unable to sustain regular attendance via this commuting method when the weather became colder and more challenging. Others indicated that their physical location made anything other than vehicle travel difficult or even dangerous. Several employers did identify having employees regularly utilize local taxi services for their commuting transportation. The general consensus around the topic was that taxis are a viable solution for some, but provided other challenges including availability and scheduling issues. During comments regarding the use of taxi services, at least one employer identified that any proposed public transportation should set fares to correspond to comparable taxi fares as an important point of consideration. At least one employer cited challenges with employees having limited abilities to obtain driver's licenses due to legal challenges. In these scenarios, the worker is dependent on taxi service, walking, biking, riding with friends/family, or other options outside of their control. While public transportation is often seen as a temporary resource until an individual can become transportation sufficient, individuals with legal challenges are likely to

remain dependent on public transportation services. Some positions at targeted employers required a valid driver's license as a prerequisite to employment due to equipment requirements. This requirement is a further limitation for individuals with legal challenges, aside from just transportation – but in accessing employment at a basic level.

Identifiable carpooling was only recognized at two large employers, stating that due to their irregular start times – workers on the same shift or related family members often shared rides during common shift times. Others felt that it may be happening in very small groups of employees, but did not appear to be clearly observable.

There was a common refrain that having transit services would open up opportunities for individuals living outside the City of Coshocton, and conversely expose employers to a new universe of potential workers that could support their operations. There was a sentiment that some of the target employers had 'tapped out' the local workforce through turnover or other challenges and were seeking new entrants to the universe of applicants for consideration.

Multiple employers indicated a willingness to consider funding assistance for potential transit services including employee stipends to offset the cost of fares or similar arrangements. Of the employers we interviewed, seven (7) offered their own employment transportation service to employees now or at some point in the past. **One such employer was forced to eliminate a van service that provided transportation for 14 workers. Of those 14 workers, only two (2) were able to find alternative accommodations and continue employment.**

EMPLOYEE SURVEY RESULTS

During the study period, SCS also offered an employee survey for individuals working at identified employers as listed in figure 10. Three employers chose to participate in the employee survey portion of the research effort. During the study period, **89** employee survey responses were recorded. The surveys were offered and administered after SCS had interviewed key representatives from the identified employer. The survey instrument is included as appendix D of this report. A summary of the responses is provided below.

89.9% of respondents traveled to work in a personal vehicle;

42.7% of respondents travel less than 5 miles to work;

96.6% stated that transportation has NOT been a barrier to maintaining a steady job;

93.3% of respondents reported spending less than 30% of their monthly income on transportation;

19.1% stated that they would use public transportation or an employer-provided shuttle to commute to work;

The survey corresponded with the information presented in the publicly available data provided in the background portion of this report (i.e. heavy personal vehicle use, low expenditure of monthly income on transportation expenses). These employee survey responses also closely align with feedback that was received from company officials that spoke with SCS about general transportation considerations.

AMISH COMMUNITY OUTREACH AND FEEDBACK

SCS staff was able to connect with a representative of the Amish Community via attendance at a meeting of the Northeast Coshocton County Infrastructure Connection (NECCIC) held in Fresno Ohio. During this meeting, SCS was able to solicit feedback on the draft study and make connections for further communication. Initial commentary and feedback is summarized below.

Select Amish employers continue to offer and operate van services for the purposes of transporting employees to places of work. Some of these services included fleets of up to five (5) vans that traveled as far as 25 miles to gather employees. The representative stated that some individuals have been relying on this service as a sole means of commuting for years. **One business that utilizes a mostly Amish workforce described operating 18 different transportation routes to support employees.** In recent times, the community has experienced an explosive growth in the use of e-bikes as a form of commuting. One employer offered that they were creating space to store and charge the bikes at their facility in response to the number of employees utilizing them.

Representatives also offered that employment, especially in Holmes County, continued to be very low, and that much of the community was ‘fully employed.’ There was an expressed desire to attract non-Amish workers from Coshocton County and surrounding areas to employment in Amish businesses. Representatives indicated that there was no specific limitation on Amish workers working in non-Amish businesses, but did identify that cultural differences provided challenges.

Overall our impression of members of the Amish Community based on facilitated interactions was that the community is interested and engaged in actively improving the transportation assets available to the entire community, including potential public transportation options and existing assets (public roads and bridges). Community leaders appeared open to further discussions and partnership options that may be developed as a result of this effort.

EXISTING TRANSIT SERVICES

Not including CCCTA, eighteen (18) transportation providers are operating within Coshocton County as outlined in the 2020-2025 Locally Developed Transportation Plan for Coshocton County developed by the Coshocton County Office of Mobility Management. These providers operate approximately 59 vehicles within the county, serving a variety of specific clientele including senior citizens, veterans, and rehabilitation patients. Generally, these providers do not provide comprehensive transportation services to the general public. The list of providers is listed in figure 11.

Figure 11 – Transportation Providers

Provider	Vehicles
Veterans Service Commission	1
RHDD	7
Coshocton County Emergency Medical Services	13
Coshocton County Regional Medical Center	1
Alter Care	2
Echoing Hills Village	4
Gentle Brook/West Lafayette Meadows	3
Signature HealthCARE of Coshocton	1
Lafayette Pointe Health & Rehabilitation Center	2
Coshocton County Emergency Management Agency	1
Coshocton County Juvenile Court	4
The Fuse Network	10
Coshocton County Senior Center	2
Taxi Services	4
Amish Transport Services	--
Area Churches	--
Midwest	3
Muskingum Valley Health Services	1

CCCTA currently operates a robust demand-response transit service utilizing 9 vehicles; six (6) Ford E350 series vehicles, one Ford E250, and two Dodge Grant Caravans. During 2020 these vehicles traveled a combined 142,832 miles. Through July 2021 these vehicles have traveled a combined 103,476 miles.

Current service offerings require riders to schedule rides 48 business hours in advance. These demand response services are currently only available Monday through Friday between the hours of 10 a.m. and 2 p.m... Riders are assessed a fare for each ride as outlined in figure 12 below. Discounted fares are available for elderly and disabled riders with the completion and approval of an application for assistance.

Figure 12 – CCCTA Fares – One Way

	Within Coshocton City	Within Coshocton County
General Public	\$4	\$8
Elderly/Disabled	\$2	\$4
Jobs/School	\$2	\$4

During 2020 CCCTA provided 12,104 total rides to consumers within Coshocton County. Down 37% from the 19,350 rides provided in 2019.

Based on interviews with local officials, ridership of current demand-based CCCTA services appears to be largely serving individuals making personal trips including appointments and shopping; individuals traveling to or from places of employment were not acknowledged as a large percentage of the active ridership. Prior to the COVID 19 pandemic beginning in March 2020, ridership varied between 110 and

140 trips per day. As of summer 2021, daily ridership had decreased to between 90 and 100 riders per day.

It is also important to highlight that many Amish employers are providing transportation services for their employees utilizing privately owned and operated vans. Our research and interaction during this project provided little specific detail about these services, but members of the core team and other stakeholders were aware of these services in the northeast region of the study area. As communicated to Amish community stakeholders, the effort illustrated in this study is not to curtail or limit those van services, but to find ways to successfully interface with them if possible.

Adjacent counties outside the project study area do provide limited fixed-route services, including Southeast Area Transit (SEAT) with service to the Zanesville area, and Knox Area Transit (KAT) which provides a single shuttle between Gambier (Kenyon College) and Mt. Vernon. Opportunities to connect with these and other services are described in subsequent sections.

POTENTIAL NEW ROUTE FEASIBILITY

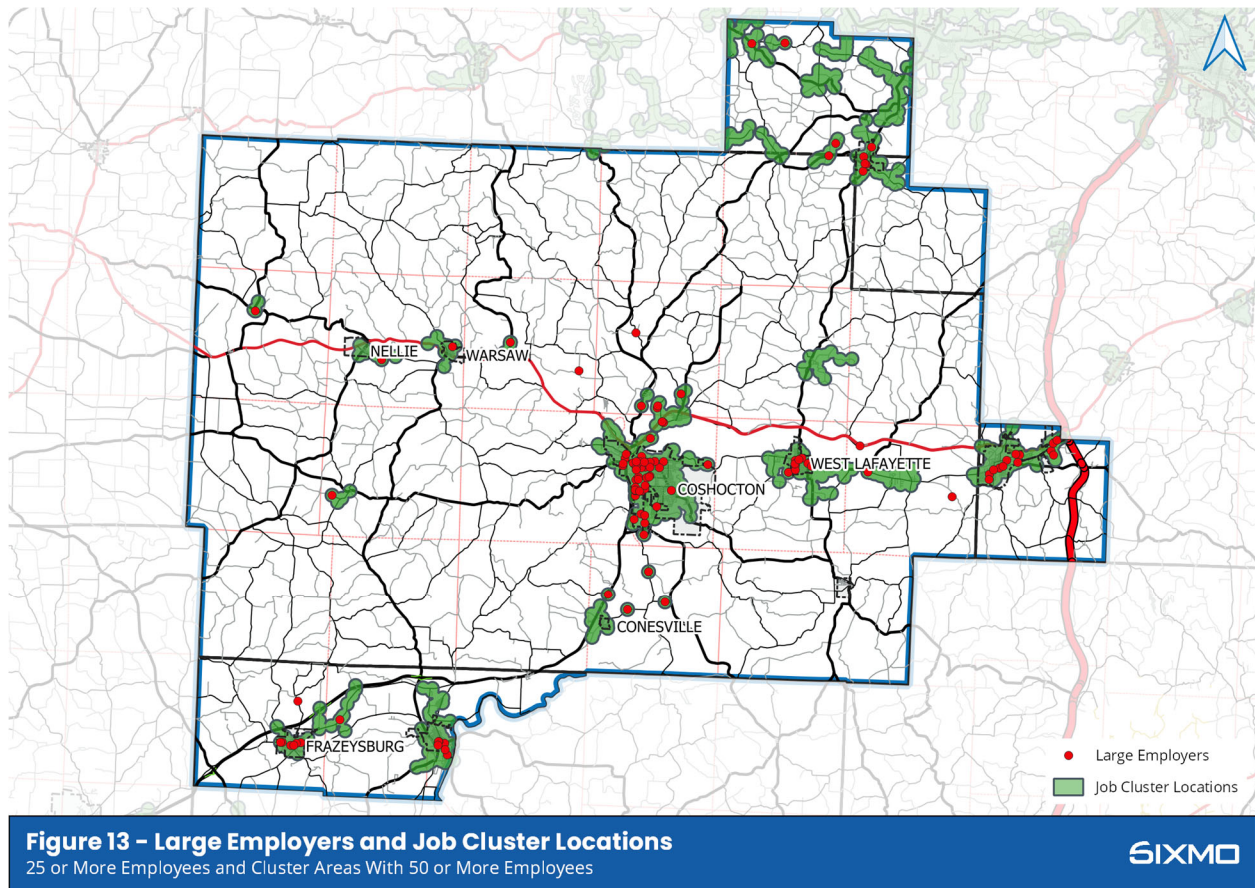
Based on the feedback received from the core project team during the early phases of this effort, and from community partners and stakeholders prior to this, there is an expressed desire to evaluate the establishment of new fixed-route transit service in Coshocton County. The goal of any potential new fixed-route service would be to provide service in a manner that would support commuting transportation options for residents and workers in Coshocton County.

The following sections will outline five potential new routes that would provide employment transportation services as desired by CCCTA and other stakeholders. Information about each route, stops, distances, travel times, potential ridership, anticipated total travel mileages and costs are provided.

TRIP GENERATORS/EMPLOYER LOCATIONS

The initial phase of this analysis was to locate the major trip generators relevant to establishing potential employment transportation services. For the purposes of this study, trip generators have been stipulated as single employers with more than 25 employees or clusters of employers with more than 50 employees in total. Other more traditional trip generators such as shopping and social service facilities may not be well represented in these locations as they may not meet the pre-defined levels for employment, since this is the focus of the effort. These locations have been ascertained via the provided Dun and Bradstreet data and GIS data analysis techniques. In total there were 126 employers in the project study area with more than 25 employees, and 31 identified cluster areas where 50 or more employees were recorded. The employers were not categorized or limited according to industry in any way. The only condition evaluated for this step of the analysis was employment.

The large employers and cluster areas as utilized in the generation of potential stops and routes are found below in figure 13. A listing of all large employers (25 employees or more) as identified is included as appendix B to this report.



It is important to note that these large employers and job cluster locations as determined utilizing the provided Dun and Bradstreet data, match up well with the employer and cluster locations illustrated in figure 6 ‘Employers and Job Density.’ These analyses were created with unique and separate datasets. The high level of physical coincidence increases the level of confidence that the information and locations being depicted for further use are accurate for the purposes of this effort.

Data Note: It is important to note that there were questions around the voracity of data being reported in the provided Dun and Bradstreet information, especially around the reported value of ‘Employees Here.’ This was the value utilized to make employment classifications and determinations. Within the scope of this project effort, SCS was unable to verify or challenge any of the data as it was provided for use in this project. These questions were raised by the core project team and recognized by all. Best efforts have been made to identify when and how those questions may impact the final feasibility considerations and findings.

PROPOSED TRANSIT STOP LOCATIONS

Following the identification of key employers and employer cluster locations, this information was utilized to establish locations where transit stops might be located to best serve these areas. SCS was also able to solicit direct feedback from the core project team regarding specific employers, high-density residential

locations, and other areas that were perceived as high-value locations for potential transit stops which may not be reflected through pure data analysis and identification. As a result of this effort, 27 stop locations were identified across the project study area.

Data Note: Stop locations were ascertained purely based on physical location related to employers, job cluster locations, dense residential areas, and other high-value locations outlined by the core project team. No diligence was performed as to whether the site was available for use as a transit stop. In many cases, general locations such as intersections were utilized understanding that any actual physical stop infrastructure may be located in the general vicinity highlighted.

Figure 14 – Preliminary Transit Stops

Number	Location	Community	Latitude	Longitude
1	Magnolia Apartments	Coshocton	-81.8600	40.2524
2	North Street	Coshocton	-81.8439	40.2806
3	Coshocton Medical Center	Coshocton	-81.8480	40.2705
4	Coshocton Square	Coshocton	-81.8661	40.2737
5	Downtowner Plaza	Coshocton	-81.8691	40.2693
6	River Run Shopping Plaza	Coshocton	-81.8694	40.2647
7	MVHC	Coshocton	-81.8653	40.2587
8	Main & Kirk	West Lafayette	-81.7511	40.2755
9	Lafayette	West Lafayette	-81.7443	40.2697
10	Newcomerstown Library	Newcomerstown	-81.6054	40.2760
11	Bakers IGA	Newcomerstown	-81.6024	40.2724
12	Express Packaging	Newcomerstown	-81.5661	40.2793
13	Genie Overhead Door	Baltic	-81.6981	40.4492
14	93 & East Main	Baltic	-81.7023	40.4401
15	Main St. & 60	Warsaw	-82.0067	40.3353
16	41 & Main Street	Nellie	-82.0679	40.3364
17	Fanatics & Malouf	Fazeysburg	-82.0859	40.1361
18	3rd & State Street	Fazeysburg	-82.1168	40.1187
19	9th & Main	Dresden	-82.0105	40.1204
20	State Street	Conesville	-81.8935	40.1879
21	AK Steel	Conesville	-81.8856	40.2065
22	McWane	Coshocton	-81.8630	40.2457
23	Glenview Way	Coshocton	-81.8310	40.2767
24	Walmart	Coshocton	-81.8496	40.2970
25	New Bedford	New Bedford	-81.7651	40.4445
26	93 & 36 Park and Ride	West Lafayette	-81.7502	40.2939
27	West Bedford	West Bedford	-82.0764	40.2591

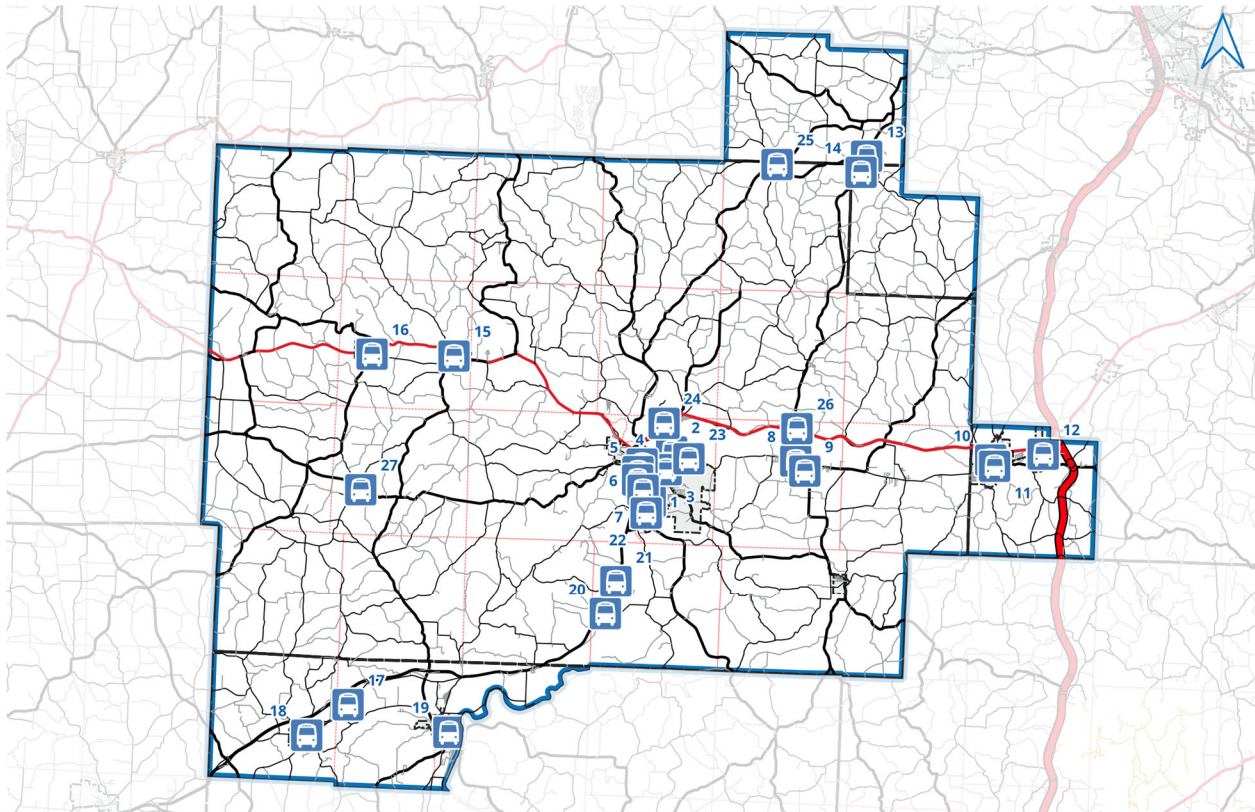


Figure 15 – Transit Stops
All Potential Locations

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The stops envisioned at these locations are basic in nature, optimally requiring minimal funding to establish or erect. Availability of future funding will dictate the types of facilities that may be offered. For reference, Washington Morgan Community Action located in Washington County operates the Community Action Bus Line (CABL) which provides fixed-route service in the city of Marietta. The system has a variety of stop locations, only one of which has a shelter available for riders. Illustrated in the photos below is an example of one of those stops on the A route which serves northern Marietta. In cases where accessibility challenges are present at proposed stop locations, minor route deviations could be provided to offer curb to curb style services. Route deviations were not modeled as part of this feasibility effort. Final ADA accessibility concerns for each proposed location would need to be investigated and addressed by CCCTA and other partners prior to route activation.



To provide further insight on each location identified as a potential stop location, figure 17 provides information on the number of residential addresses (as provided from local 911 addressing data) and business locations (as provided by Dun & Bradstreet) within a quarter-mile, half-mile, and mile from each location. (It is important to note here, many of these locations and their analysis radii were overlapping, so summing the totals found in figure 16 would produce duplicate data values. Each location should be regarded individually when considering the data points presented here.)

In general, across the universe of proposed stops described here, there are **11,768** residential addresses and **1,506** business establishments within 1 mile of the proposed locations.

Figure 16 – Stop Proximity to Residential and Business Locations

	Location	Community	Residential			Business		
			1 mi.	.5 mi.	.25 mi.	1 mi.	.5 mi.	.25 mi.
1	Magnolia Apartments	Coshocton	1,558	302	56	185	36	6
2	North Street	Coshocton	1,871	383	111	140	25	10
3	Coshocton Medical Center	Coshocton	3,580	1,537	384	380	105	43
4	Coshocton Square	Coshocton	2,750	855	209	564	353	211
5	Downtowner Plaza	Coshocton	2,648	705	225	564	327	89
6	River Run Shopping Plaza	Coshocton	2,243	600	134	529	153	43
7	MVHC	Coshocton	2,227	369	60	311	76	31
8	Main & Kirk	West Lafayette	1,282	964	340	96	76	34
9	Lafayette	West Lafayette	1,286	647	297	104	40	12
10	Newcomerstown Library	Newcomerstown	1,503	752	240	205	142	85
11	Bakers IGA	Newcomerstown	1,524	839	287	200	143	37
12	Express Packaging	Newcomerstown	110	38	5	27	17	10
13	Genie Overhead Door	Baltic	311	71	17	52	17	3
	Holmes ¹		68	33	17	0	0	0
	Coshocton ¹		6	0	0	0	0	0
	Tuscarawas ¹		237	38	0	52	17	3
14	93 & East Main	Baltic	314	245	132	50	43	22
	Holmes ¹		37	5	0	0	0	0
	Coshocton ¹		17	5	0	0	0	0
	Tuscarawas ¹		260	235	132	50	43	22
15	Main St. & 60	Warsaw	409	323	165	1	1	1
16	41 & Main Street	Nellie	109	64	48	1	1	1
17	Fanatics & Malouf	Fazeysburg	32	4	1	17	8	0
18	3rd & State Street	Fazeysburg	743	546	234	41	34	21
19	9th & Main	Dresden	913	591	229	175	78	50
20	State Street	Conesville	268	177	67	22	15	5
21	AK Steel	Conesville	179	51	14	8	5	1
22	McWane	Coshocton	700	261	52	94	30	8
23	Glenview Way	Coshocton	926	145	80	68	4	2
24	Walmart	Coshocton	232	54	6	46	24	18
25	New Bedford	New Bedford	159	75	53	10	7	4
	Coshocton		96	58	47	9	6	3
	Holmes		63	17	6	1	1	1
26	93 & 36 Park and Ride	West Lafayette	241	84	81	10	2	0
27	West Bedford	West Bedford	81	37	29	5	2	1

1 – Some business locations in the Dun and Bradstreet data near county boundaries were attributed to locations where the business was not located. In the highlighted cases businesses near the Holmes, Coshocton, Tuscarawas county borders were generally attributed to Tuscarawas County.

PROPOSED ROUTE CONFIGURATIONS

Building from this base of proposed transit stop locations across the project study area that serve employers, SCS carried this thought process forward to build a network of five potential transit routes that would serve large employers, job cluster locations, and high-density/high-interest residential locations as expressed by the members of the core project team. Following the advice of the Coshocton County Engineer, best efforts were made while modeling to keep the routes on higher capacity roadways as to minimize challenges from existing roadway conditions.

The routes proceed in all four ordinal directions, each originating in downtown Coshocton, moving outward to provide service to residents and employers. A looping route in the general Coshocton City area was also added based on feedback provided during the project period.

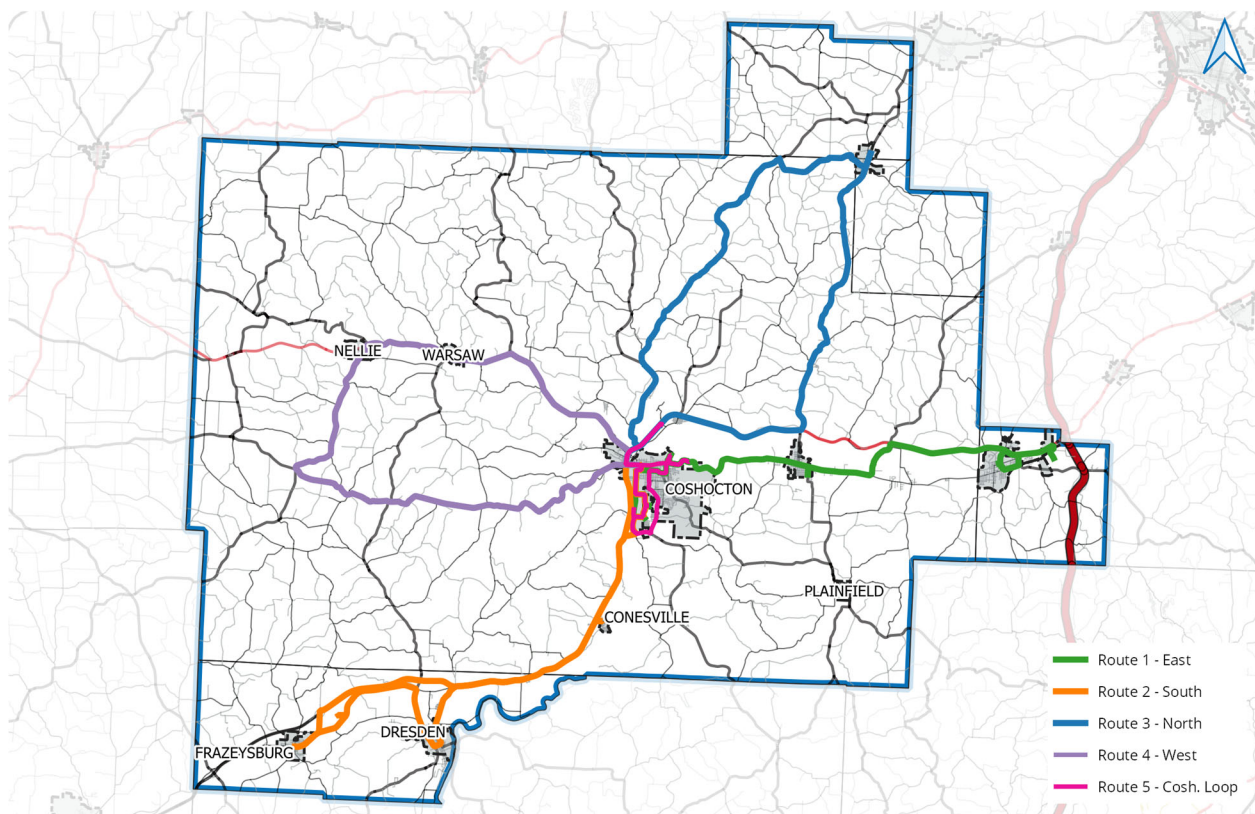


Figure 17 – Proposed Employment Transportation Routes

The routes as proposed are made up of two distinct types of segments, rural routes, and express routes. Each of these is described further below.

Rural Routes – These are routes that generally originate in, and provide service to, populated areas. These routes are populated with stops, and each stop is completed during each trip of the route, in both directions. Rural routes often have higher average operating speeds and longer trip lengths as compared to other types of routes. Rural routes also frequently operate in longer or inconsistent intervals to meet specific needs or in response to resource limitations.

Express Routes – These are routes that provide faster direct service with limited stops, often suited to serve commuters. In many systems, these routes are only operated during peak hours and on weekdays.

The proposed routes illustrated in this section could be operated in three configurations: rural route out of Coshocton and express route returning, express route out of Coshocton and rural route returning, or rural route in both directions. The advantage to running the express route at the beginning or end of a given route would be to accommodate the largest numbers of workers on a given route based on the time of day for the trip. For example, in the afternoon, Route 1 heading east may operate in the express/local configuration to first pick up workers at locations in the Newcomerstown area and all other stops between Newcomerstown and Coshocton, before ultimately concluding the route in downtown Coshocton. The routes illustrated with their proposed express route segments are depicted below. The Coshocton Loop route contains no express route segments.

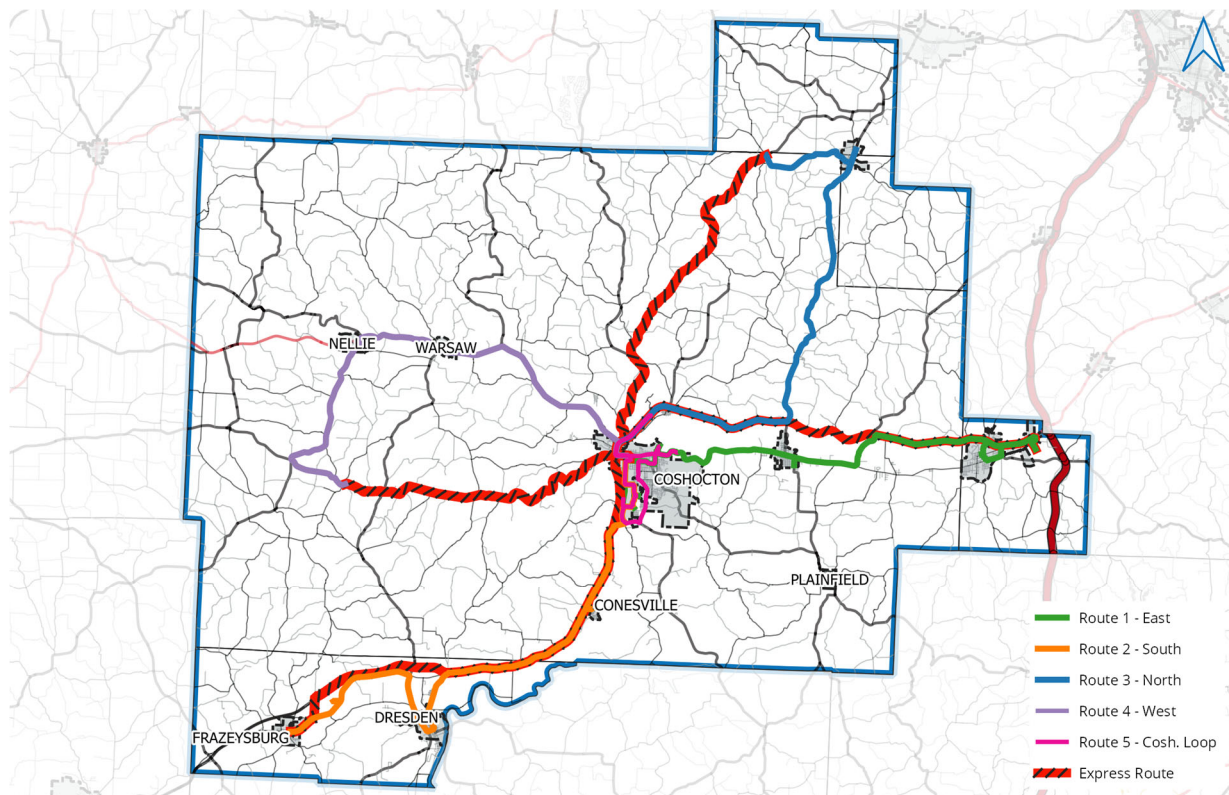


Figure 18 – Proposed Employment Transportation Routes
Routes Including Potential Express Route Areas

It is important to note, the express routes illustrated here (and detailed in subsequent sections) may traverse the same route sections as the rural routes. These areas will be shown in greater detail as each route is reviewed in detail.

The stop and route locations illustrated here were carefully formulated to provide service to the employers and job cluster locations previously outlined in figure 13. Figures 19 and 20 illustrate the intentional close correlation between the proposed stop and route locations and the employer and job cluster locations. Placement of a stop or route location near an employer does not imply their support or usage of these facilities. During the interview process, these stops and routes were shared with targeted employers, any feedback received on these facilities can be found in the earlier employer feedback sections. It is also important to note that the goal of this route design was to serve as many employers and job cluster locations as possible with reasonable effort and resources. **Providing service to every identified area and employer is not feasible based on the limited resources available to CCCTA and other stakeholders.**

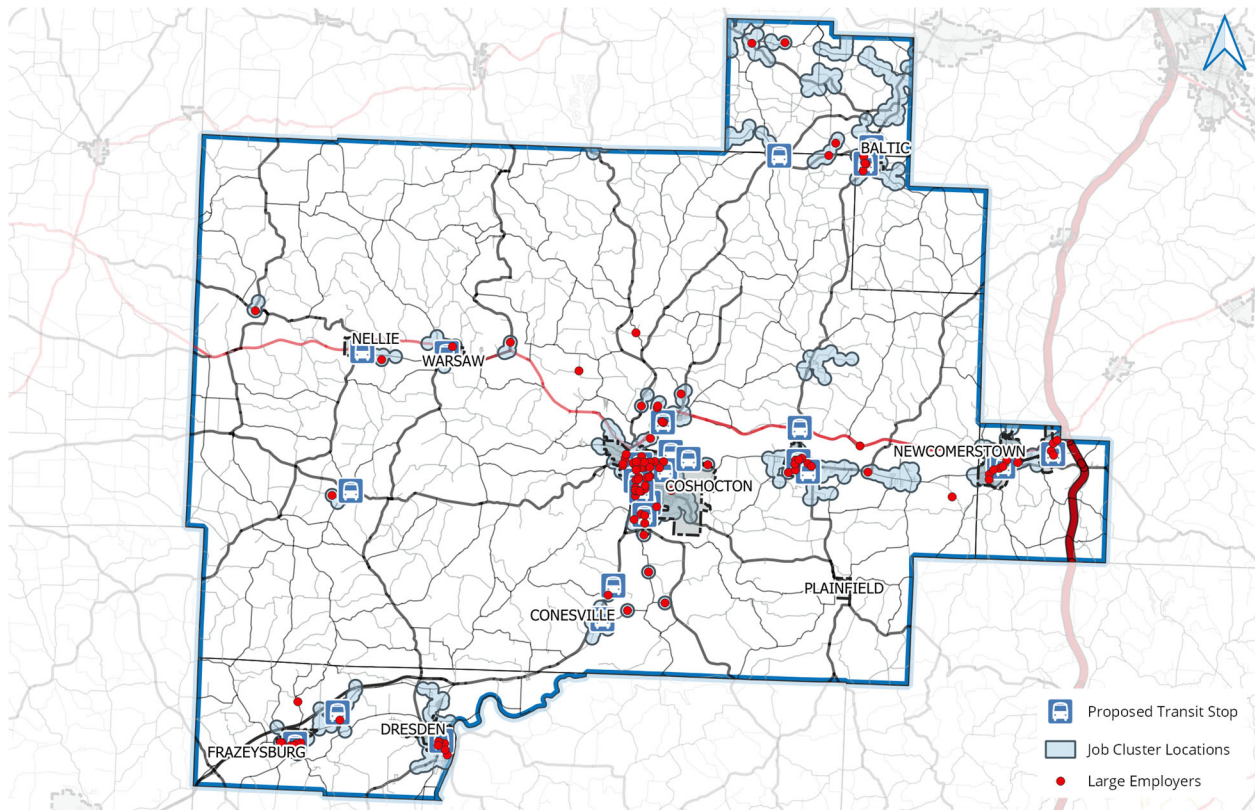


Figure 19 – Proposed Stop Correlation with Employment Locations

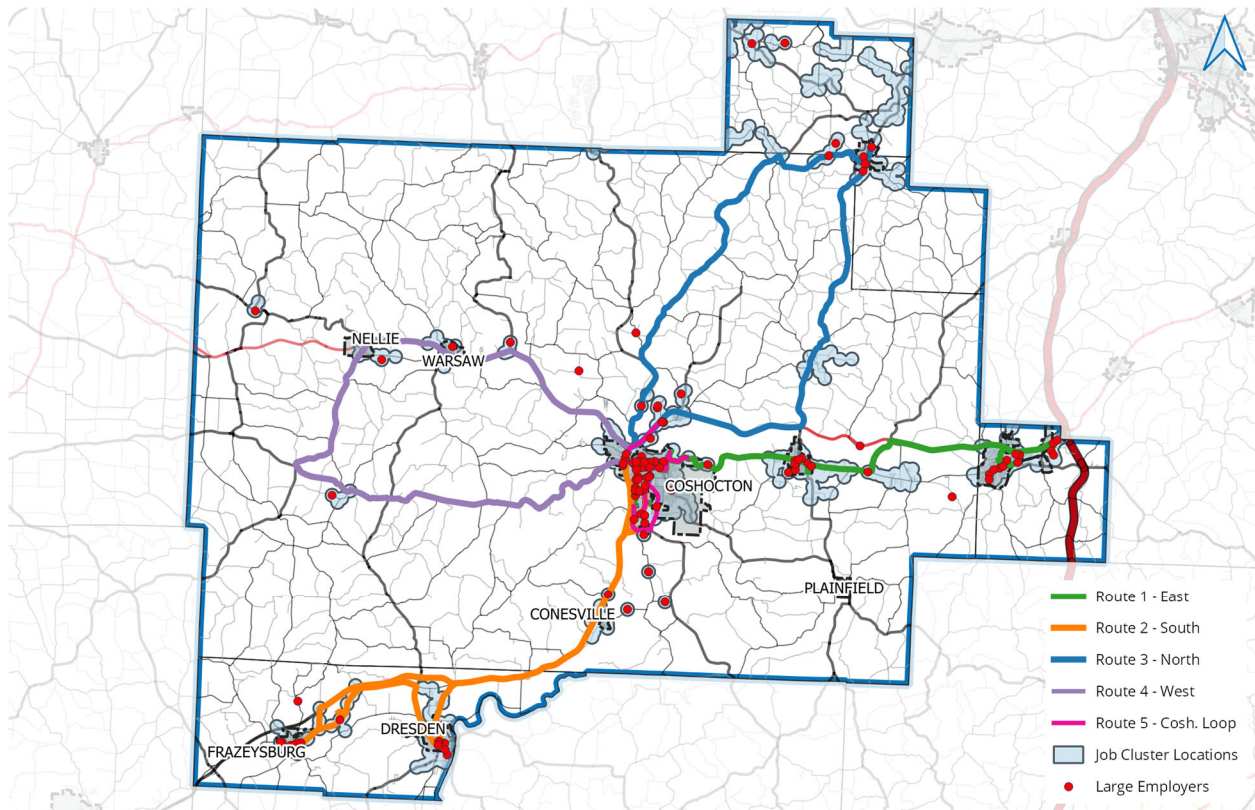


Figure 20 – Proposed Route Correlation with Employment Locations

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These illustrations of route and stop correlation to the identified large employer and job cluster locations provide general justification that the routes proposed here for further discussion and analysis meet the overall project requirement of providing service to employers and employment clusters in the project study area.

Vehicle dwell time was factored into the overall travel time of each route as presented in the following sections. Research from the 'Transit Capacity and Quality of Service Manual – 2nd Edition' published by the National Academies of Sciences – Transportation Research Board indicates that for a vehicle with one door channel, passenger boarding service time was 2.5 seconds per person for boarding who had pre-paid for the trip. TRB also recommends 3.3 seconds per passenger for alighting through the front door. To normalize the boarding and alighting considerations, we have utilized an average of 2.9 seconds for passenger service in these scenarios. Considering that a Ford E Series commercial transit vehicle is likely to be in use with a maximum passenger capacity of 12 riders, this would yield a maximum dwell time of 34.8 (12 x 2.9) seconds per stop at full capacity. For our purposes, we have rounded this value to 35 seconds (full capacity). These dwell times have been added to the actual traveling time to yield a total trip duration. This information and other route details are provided for each route in the following sections.

ROUTE 1 - EAST

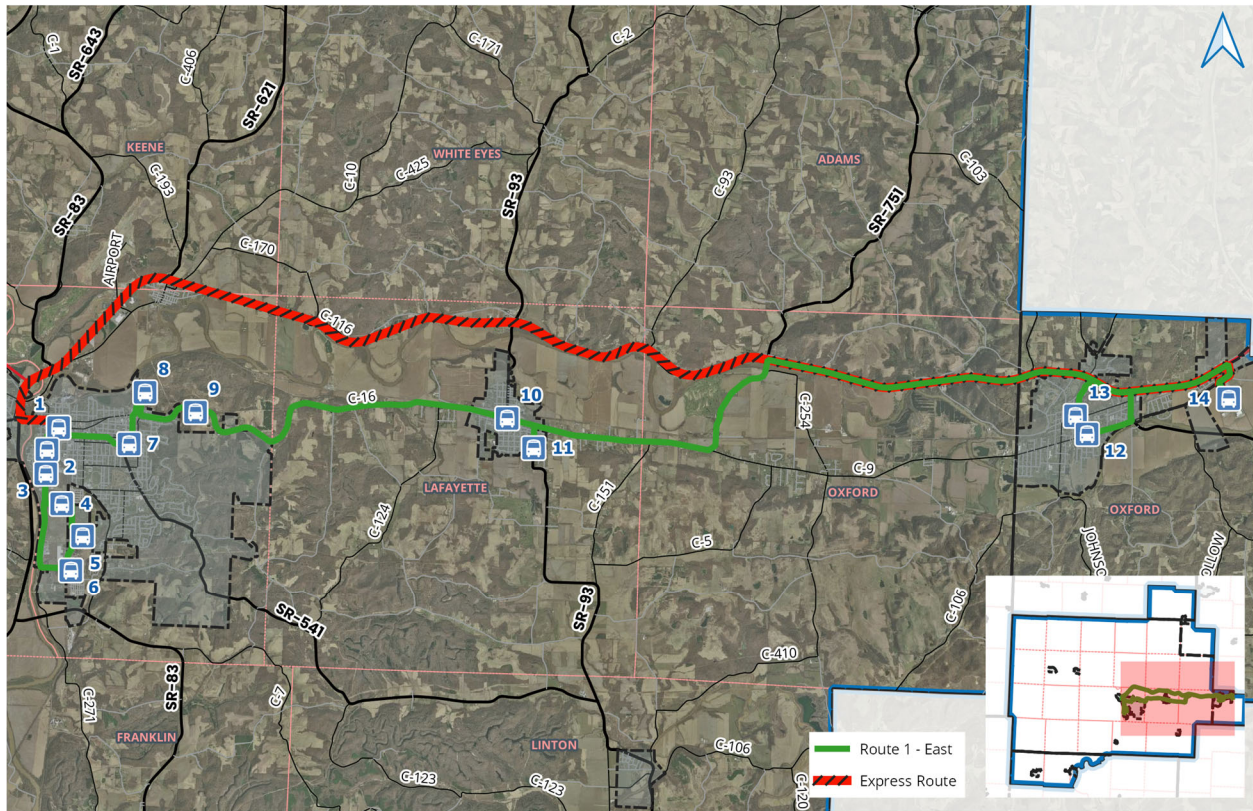


Figure 21 - Route 1 - East

Route Detail with Express Route and Stops

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Route Origin: Coshocton Square
 Route Destination: Express Packaging
 Number of Stops: 13
 Distance (one way): 27.7 miles
 Total Distance: 47 miles
 Travel Time (one way): 1 hr. 4 mins. 11 seconds
 Total Travel Duration: **1 hr. 34 mins. 33 seconds**

Travel Distance (RRx2): 55.4 miles
 Travel Time (RRx2): 2 hr. 23 mins. 4 seconds

Major Employers: Ansell Healthcare, Annin & Co., Kraft Heinz Foods, SanCasT, McWane, Wiley's Finest, Yankee Wire, Jones Metal, 31 Inc., Express Packaging

Route 1 East – Segment Details						
Segment	Description	Distance (Mi.)	Hours	Minutes	Seconds	
1	Coshocton Square to Downtowner Plaza	0.5	0	1	32	
2	Downtowner Plaza to River Run Shopping Plaza	0.3	0	0	37	
3	River Run Shopping Plaza to MVHC	0.6	0	2	19	
4	MVHC to Magnolia Apartments	0.7	0	4	23	
5	Magnolia Apartments to McWane	0.7	0	4	3	
6	McWane to Coshocton Medical Center	3.4	0	9	36	
7	Coshocton Medical Center to North Street	0.8	0	4	56	
8	North Street to Glenview Way	1.2	0	3	43	
9	Glenview Way to Main & Kirk	4.8	0	9	35	
10	Main & Kirk to Lafayette	0.7	0	1	18	
11	Lafayette to Bakers IGA	10.4	0	14	40	
12	Bakers IGA to Newcomerstown Library	0.4	0	2	13	
13	Newcomerstown Library to Express Packaging	3.2	0	5	12	
Rural Route Summary		27.7	1	4	11	
Express Route	Express Packaging to Coshocton Square	19.3	0	22	50	
Total Route Summary (Rural Route Summary + Express Route)		47	1	34	33	
Rural Route Round Trip		55.4	2	23	4	

A maximum dwell time per stop of 35 seconds was factored in to each route trip. Rural round trip doubles this value.

Route 1 East originates on Main Street in Coshocton and proceeds south toward the Magnolia Apartments before looping north and east toward the Coshocton Medical Center. From here the route heads toward apartment complexes on North Street and Glenview Way before departing east for stops in West Lafayette and Newcomerstown. The final stop on this route is Express Packaging located on Enterprise Drive.

The maximum speed limit along this route is **65** miles per hour, the minimum is **25** miles per hour. The mean speed limit along the entire route is **36.7** miles per hour. The average speed utilized across the model was **49.7** miles per hour.

Potential Ridership

Potential ridership was estimated by analyzing areas within .25 miles, .5 miles, and 1 mile from the rural route segments of the route. These estimations were calculated utilizing current estimates of population and workers over the age of 16 and average household size as reported in the American Community Survey provided by the U.S. Census Bureau, as well as the national average of commuters utilizing public transit (specifically) buses. The full methodology for calculating the values in the potential ridership table below is included in appendix A. Ridership values expressed here should be viewed as best-case-scenario values for planning purposes only. Full and accurate ridership potential would be best determined by a widespread survey of households/potential riders in the service area.

Potential ridership for Route 1 East is estimated to range from **118** riders within ¼ mile, **177** riders within ½ mile, to **223** riders within 1 mile of the rural route. (Express route locations were omitted from this calculation as passenger stops are not anticipated along these routes.) Within these same areas, the number of employers who could potentially benefit from these facilities ranged from **801** to **1,201**, supporting a maximum employment of **13,308**.

Route 1 East – Potential Ridership and Employers			
	1/4 mile	1/2 mile	1 mile
Residential Addresses	4,721	7,094	8,957
Estimated Potential Population	11,803	17,735	22,393
Estimated Potential 16+ Population	5,119	7,685	9,708
Employers ¹	801	998	1,201
Employment ²	10,202	11,881	13,308
Mean Employment	13	12	11
Total Potential Riders	118	177	223

¹ - Number of establishments

² - D&B "Employees Here"

Estimated Costs

Potential costs for this route were estimated utilizing observed fuel and maintenance data provided by CCCTA for the years 2020 and 2021. These values were utilized to create a maximum high and maximum low total per mile operation costs (fuel cost plus maintenance) for vehicle operation. It is important to note that CCCTA provided data on all vehicles in their fleet, including vans and passenger vehicles. *Only data recorded for the seven (7) operating Ford E series vehicles were utilized to generate these cost factors.* The observed fuel mileages and maintenance costs for Dodge Grand Caravans was not included. CCCTA has indicated to SCS that the existing Ford E series vehicles and/or four additional new Ford E series vehicles would be utilized to undertake any new employment transit services that may be established in the future. The purchase costs for any new vehicles was **not** factored into the estimated route operation costs detailed below, as these vehicles have already been funded with other resources. All miles recorded and provided by CCCTA for these vehicles were utilized for these calculations, not just revenue miles. For the purposes of these estimates the observed combined high per mile operation cost was **58** cents per mile, the combined low rate was **36** cents per mile. Full details of the calculation and methodology utilized to generate these costs are included in appendix C.

Personnel costs utilized in this calculation included hourly wages (\$12.53 part-time/\$14.44 full-time), fringe benefits including Public Employee Retirement System (PERS), Medicare tax, workers comp, as well as insurance costs as provided by CCCTA. It is important to note, the costs modeled here only reflect the costs related to operating the routes as described, utilizing only the time that is required to provide the illustrated level of service.

Cost estimation for this route was generated to reflect four potential scenarios:

- Twice per day – seven days a week
- Three times per day – seven days a week
- Twice per day – five days a week
- Three times per day – five days a week

Based on guidance provided by CCCTA, aside from an observed cost per mile for vehicle operation, the other major variable included for consideration was the use of a full-time or part-time driver. Costs in the following tables are broken down into two categories; 'combined route' – this is the rural route with stops, and an express route leg included. 'Rural route round trip' is performing the route making all stops in both directions each time the route is executed. The costs are segregated by using a full or part-time driver.

Route 1 East – Anticipated Costs		Total Miles	All Costs - Full Time		All Costs - Part Time	
			Low	High	Low	High
7 Days- 2x Day	Combined Route	33,370	\$37,891.76	\$59,497.80	\$35,375.23	\$56,981.27
	Rural Round Trip	39,334	\$49,671.96	\$72,590.08	\$45,881.24	\$68,799.36
7 Days - 3x Day	Combined Route	50,055	\$53,411.10	\$78,687.84	\$49,636.31	\$74,913.05
	Rural Round Trip	59,001	\$71,081.39	\$98,326.25	\$65,395.31	\$92,640.17
5 Days - 2x Day	Combined Route	23,500	\$28,711.31	\$48,145.95	\$26,939.10	\$46,373.74
	Rural Round Trip	27,700	\$37,007.22	\$57,365.86	\$34,337.70	\$54,696.34
5 Days - 3x Day	Combined Route	35,250	\$39,640.42	\$61,660.06	\$36,982.11	\$59,001.75
	Rural Round Trip	41,550	\$52,084.29	\$75,489.93	\$48,080.01	\$71,485.65

Estimating the time required to complete the driving required for this route each week, the table above is highlighted to reflect potential staffing needs. Route options highlighted in **yellow** indicate that more than one part-time driver would be required, cells highlighted in **orange** indicate that more than one full-time driver (or the ability to pay overtime) would be required to complete the route as configured. Estimated route driving times are shown below.

Route 1 East – Weekly Driving Time		Hours	Minutes
7 Days- 2x Day	Combined Route	22	10
	Rural Round Trip	32	54
7 Days - 3x Day	Combined Route	33	15
	Rural Round Trip	49	21
5 Days - 2x Day	Combined Route	15	50
	Rural Round Trip	23	30
5 Days - 3x Day	Combined Route	23	45
	Rural Round Trip	35	15

At the current rate of \$4 per one-way trip as established by CCCTA, and an expectation of **355** annual service days in a 7 day per week scenario, and **250** annual service days in a 5 day per week scenario, the following recovery scenarios have been generated.

Route 1 East – Annual Fares		Full Time		Part Time	
		Low	High	Low	High
7 Days- 2x Day	Combined Route	9,473	14,874	8,844	14,245
	Rural Round Trip	12,418	18,148	11,470	17,200
7 Days - 3x Day	Combined Route	13,353	19,672	12,409	18,728
	Rural Round Trip	17,770	24,582	16,349	23,160
5 Days - 2x Day	Combined Route	7,178	12,036	6,735	11,593
	Rural Round Trip	9,252	14,341	8,584	13,674
5 Days - 3x Day	Combined Route	9,910	15,415	9,246	14,750
	Rural Round Trip	13,021	18,872	12,020	17,871

The table above illustrates the number of fares annually that would be required to break even on the expenses for this proposed route at \$4 per one-way trip. The table below indicated the number of fares that would be required per day to meet the new annual expenses.

Route 1 East – Fares Per Day		Full Time		Part Time	
		Low	High	Low	High
7 Days- 2x Day	Combined Route	27	42	25	40
	Rural Round Trip	35	51	32	48
7 Days - 3x Day	Combined Route	38	55	35	53
	Rural Round Trip	50	69	46	65
5 Days - 2x Day	Combined Route	29	48	27	46
	Rural Round Trip	37	57	34	55
5 Days - 3x Day	Combined Route	40	62	37	59
	Rural Round Trip	52	75	48	71

The Ohio Department of Transportation (ODOT) Office of Transit operates a Rural Transit program that provides up to 50% grant funding for net operating costs of rural transit services. This funding is provided by the Federal Transit Authority (FTA) Section 5311. The following tables illustrate potential scenarios where CCCTA would be able to access 50% of the route operation costs via 5311 Rural Transit funding from ODOT.

Route 1 East – 50% Funding		Total Miles	All Costs - Full Time		All Costs - Part Time	
			Low	High	Low	High
7 Days- 2x Day	Combined Route	33,370	\$18,945.88	\$29,748.90	\$17,687.62	\$28,490.64
	Rural Round Trip	39,334	\$24,835.98	\$36,295.04	\$22,940.62	\$34,399.68
7 Days - 3x Day	Combined Route	50,055	\$26,705.55	\$39,343.92	\$24,818.15	\$37,456.52
	Rural Round Trip	59,001	\$35,540.70	\$49,163.13	\$32,697.66	\$46,320.09
5 Days - 2x Day	Combined Route	23,500	\$14,355.65	\$24,072.97	\$13,469.55	\$23,186.87
	Rural Round Trip	27,700	\$18,503.61	\$28,682.93	\$17,168.85	\$27,348.17
5 Days - 3x Day	Combined Route	35,250	\$19,820.21	\$30,830.03	\$18,491.06	\$29,500.88
	Rural Round Trip	41,550	\$26,042.14	\$37,744.96	\$24,040.00	\$35,742.82

Route 1 East – Annual Fares (50%)		Full Time		Part Time	
		Low	High	Low	High
7 Days- 2x Day	Combined Route	4,736	7,437	4,422	7,123
	Rural Round Trip	6,209	9,074	5,735	8,600
7 Days - 3x Day	Combined Route	6,676	9,836	6,205	9,364
	Rural Round Trip	8,885	12,291	8,174	11,580
5 Days - 2x Day	Combined Route	3,589	6,018	3,367	5,797
	Rural Round Trip	4,626	7,171	4,292	6,837
5 Days - 3x Day	Combined Route	4,955	7,708	4,623	7,375
	Rural Round Trip	6,511	9,436	6,010	8,936

Route 1 East – Fares Per Day (50%)		Full Time		Part Time	
		Low	High	Low	High
7 Days- 2x Day	Combined Route	13	21	12	20
	Rural Round Trip	17	26	16	24
7 Days - 3x Day	Combined Route	19	28	17	26
	Rural Round Trip	25	35	23	33
5 Days - 2x Day	Combined Route	14	24	13	23
	Rural Round Trip	19	29	17	27
5 Days - 3x Day	Combined Route	20	31	18	30
	Rural Round Trip	26	38	24	36

Route 1 East – Cost Summary

Based on the calculations and assumptions made here, the minimum expected cost for implementing this fixed-route service would be **\$26,939.10** for a combined route service utilizing a part-time driver, operating **twice per day, five days per week**. This scenario would produce 250 service days per year and 23,500 annual route miles.

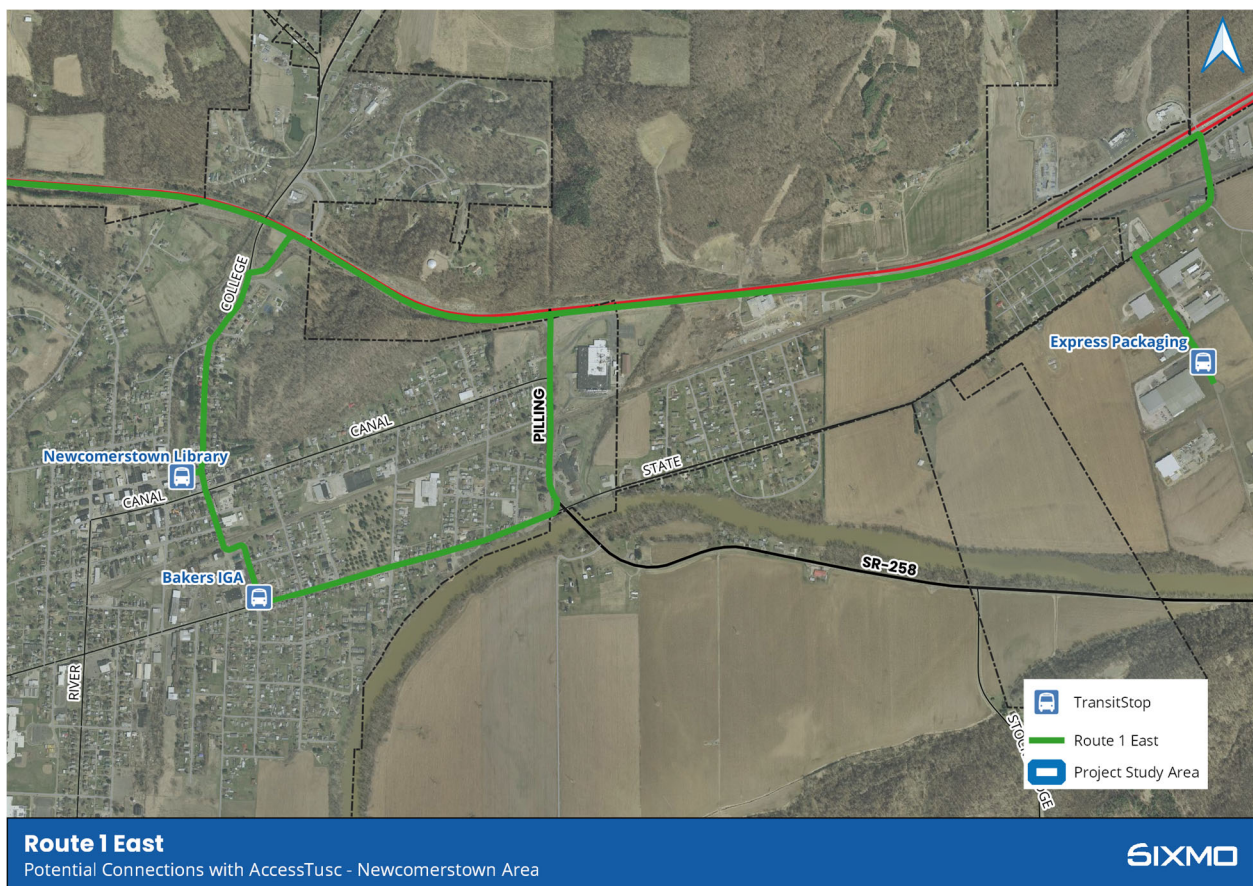
The maximum expected cost for this route would be **\$98,326.25** for a rural round trip service, utilizing a full-time driver, operating **three times per day, seven days per week**. This scenario would produce 355 service days per year and **59,001** annual route miles.

In these minimum and maximum scenarios presented, **6,735 annual fares** or **27 fares per service day** are required to cover the minimum expected costs with farebox revenues only (no additional funding). In the maximum scenario, **24,582 annual fares** or **69 fares per service day** are required.

In a scenario where 50% additional funding is secured from ODOT or other parties, the cost gap for the minimum expected cost falls to **\$13,469.55**, **3,367 annual fares**, or **13 fares per service day**. The cost gap for the maximum expected costs falls to **\$49,163.13**, **12,291 annual fares**, or **35 fares per service day**.

Route 1 East – Potential Service Connections

Route 1 East provides potential service connections with existing transit services in the Newcomerstown area. Access Tuscarawas provides demand response service to the greater Tuscarawas County area as outlined on their website at <http://accesstusc.org/access-tusc-transit>. In conversation with representatives from AccessTusc Transit, there was an expressed desire to explore service connections with CCCTA should services be established that would reach into the Newcomerstown area. For modeling purposes of this study, three potential locations in Newcomerstown were identified as potential transit stops; the Newcomerstown Library, the Bakers IGA area on State Street, and the Express Packaging area of the Newcomerstown Industrial Park. In a scenario where CCCTA is providing fixed route employment transportation services to these locations, connections could be explored with existing demand response services provided by AccessTusc to any of these locations.



ROUTE 2 – SOUTH

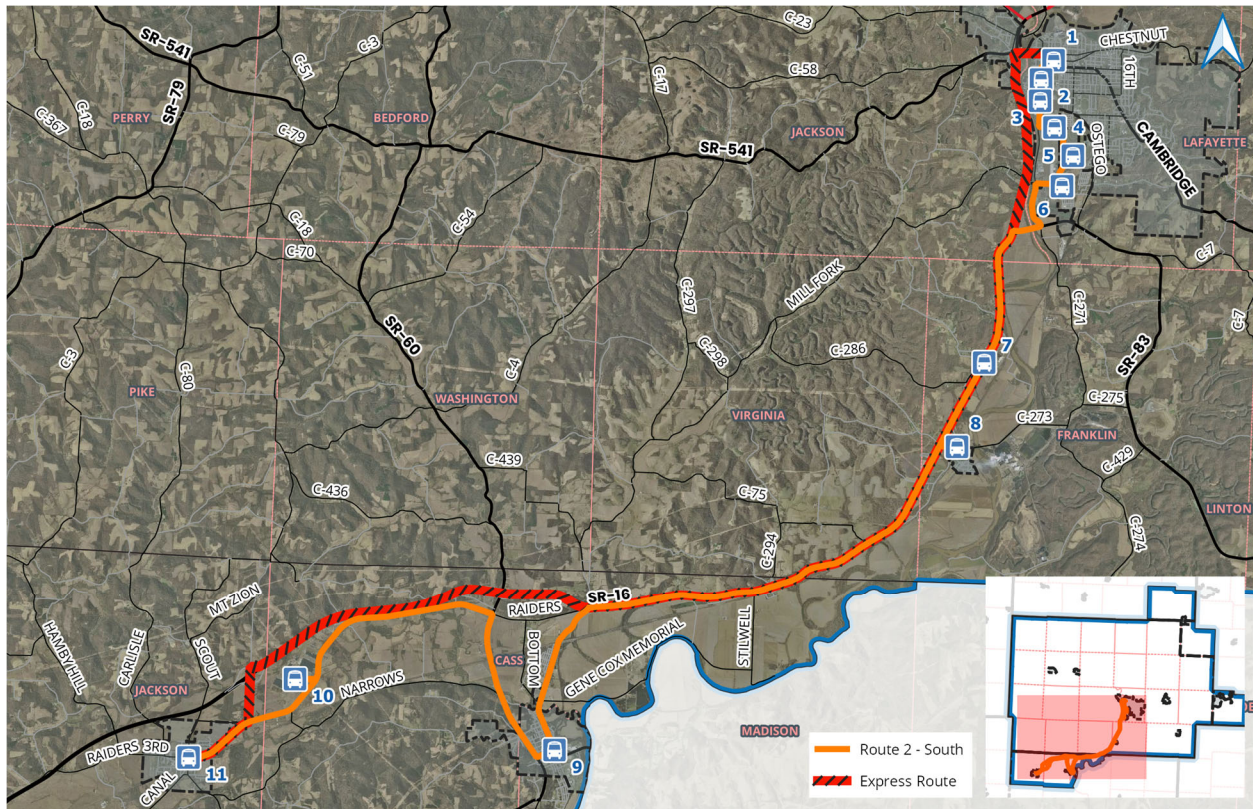


Figure 22 – Route 2 – South
Route Detail with Express Route and Stops

SIXMO

Route Origin: Coshocton Square
 Route Destination: Downtown Frazeyburg
 Number of Stops: 10
 Distance (one way): 26.4 miles
 Total Distance: 47.4 miles
 Travel Time (one way): 54 mins. 10 seconds
 Total Travel Duration: **1 hr. 26 mins. 14 seconds**

Travel Distance (RRx2): 52.8 miles
 Travel Time (RRx2): 1 hr. 48 mins. 20 seconds

Major Employers: Ansell Healthcare, Annin & Co., Kraft Heinz Foods, SanCasT, McWane, AK Steel, Fanatics, Malouf

Route 2 South– Segment Details					
Segment	Description	Distance (Mi.)	Hours	Minutes	Seconds
1	Coshocton Square to Downtowner Plaza	0.5	0	1	32
2	Downtowner Plaza to River Run Shopping Plaza	0.3	0	0	37
3	River Run Shopping Plaza to MVHC	0.6	0	2	19
4	MVHC to Magnolia Apartments	0.7	0	4	23
5	Magnolia Apartments to McWane	0.7	0	4	3
6	McWane to AK Steel	3.7	0	7	22
7	AK Steel to State Street (Conesville)	1.7	0	2	29
8	State Street to 9th & Main (Dresden)	9.2	0	13	16
9	9th & Main to Fanatics/Malouf	6.3	0	12	13
10	Fanatics/Malouf to 3rd & State Street (Fazeysburg)	2.7	0	5	52
Rural Route Summary		26.4	0	54	10
Express Route	3rd & State Street to Coshocton Square	2.1	0	26	16
Total Route Summary (Rural Route Summary + Express Route)		47.4	1	26	14
Rural Route Round Trip		52.8	2	0	2

A maximum dwell time per stop of 35 seconds was factored in to each route trip. Rural round trip doubles this value.

Route 2 South originates on Main Street in Coshocton and proceeds south toward the Magnolia Apartments. The route continues south on State Route 16 to AK Steel, stopping on State Street in Conesville, and continuing south exiting into Dresden stopping at 9th and Main Street. The route then continues north on State Route 60, turning west on Raiders Road to access Malouf and Fanatics, before culminating at 3rd & State Street in Fazeysburg.

The maximum speed limit along this route is 55 miles per hour, the minimum is 25 miles per hour. The mean speed limit along the entire route is 37.4 miles per hour. The average speed utilized across the model was 49.7 miles per hour.

Potential Ridership

Potential ridership was estimated by analyzing areas within .25 miles, .5 miles, and 1 mile from the rural route segments of the route. These estimations were calculated utilizing current estimates of population and workers over the age of 16 and average household size as reported in the American Community Survey provided by the U.S. Census Bureau, as well as the national average of commuters utilizing public transit (specifically) buses. The full methodology for calculating the values in the potential ridership table below is included in appendix A. Ridership values expressed here should be viewed as best-case-scenario values for planning purposes only. Full and accurate ridership potential would be best determined by a widespread survey of households/potential riders in the service area.

Potential ridership for Route 2 South is estimated to range from 57 riders within ¼ mile, 101 riders within ½ mile, to 170 riders within 1 mile of the rural route. (Express route locations were omitted from this calculation as passenger stops are not anticipated along these routes.) Within these same areas, the number of employers who could potentially benefit from these facilities ranged from 560 to 983, supporting a maximum employment of 11,860.

Route 2 South – Potential Ridership and Employers			
	1/4 mile	1/2 mile	1 mile
Residential Addresses	2,299	4,113	6,916
Estimated Potential Population	5,748	10,283	17,290
Estimated Potential 16+ Population	2,466	4,408	7,406
Employers ¹	560	738	983
Employment ²	8,007	10,056	11,860
Mean Employment	14	14	12
Total Potential Riders	57	101	170

¹ - Number of establishments

² - D&B "Employees Here"

Estimated Costs

Potential costs for this route were estimated utilizing observed fuel and maintenance data provided by CCCTA for the years 2020 and 2021. These values were utilized to create a maximum high and maximum low total per mile operation costs (fuel cost plus maintenance) for vehicle operation. It is important to note that CCCTA provided data on all vehicles in their fleet, including vans and passenger vehicles. *Only data recorded for the seven (7) operating Ford E series vehicles were utilized to generate these cost factors.* The observed fuel mileages and maintenance costs for Dodge Grand Caravans was not included. CCCTA has indicated to SCS that the existing Ford E series vehicles and/or four additional new Ford E series vehicles would be utilized to undertake any new employment transit services that may be established in the future. The purchase costs for these new vehicles was **not** factored into the estimated route operation costs detailed below, as these vehicles have already been funded with other resources by CCCTA. Full details of the calculation and methodology utilized to generate these costs are included in appendix C. For the purposes of these estimates the observed combined high per mile operation cost was **58** cents per mile, the combined low rate was **36** cents per mile.

Personnel costs utilized in this calculation included hourly wages (\$12.53 part-time/\$14.44 full-time), fringe benefits including Public Employee Retirement System (PERS), Medicare tax, workers comp, as well as insurance costs as provided by CCCTA. It is important to note, the costs modeled here only reflect the costs related to operating the routes as described, utilizing only the time that is required to provide the illustrated level of service.

Cost estimation for this route was generated to reflect four potential scenarios:

- Twice per day – seven days a week
- Three times per day – seven days a week
- Twice per day – five days a week
- Three times per day – five days a week

Based on the information provided by CCCTA, aside from an observed cost per mile for vehicle operation, the only other major variable included was the use of a full-time or part-time driver. Costs on the following table are broken down into two categories; 'combined route' – this is the rural route with stops, and an express route leg included. 'Rural route round trip' is performing the route making all stops in both directions each time the route is executed. The costs are segregated by using a full or part-time driver.

Route 2 South – Anticipated Costs		Total Miles	All Costs - Full Time		All Costs - Part Time	
			Low	High	Low	High
7 Days- 2x Day	Combined Route	33,654	\$36,187.78	\$57,856.30	\$33,910.17	\$55,578.69
	Rural Round Trip	37,488	\$44,431.65	\$66,943.65	\$41,246.17	\$63,758.17
7 Days - 3x Day	Combined Route	50,481	\$50,855.14	\$76,225.60	\$47,438.71	\$72,809.17
	Rural Round Trip	56,232	\$63,220.93	\$89,856.61	\$58,442.71	\$85,078.39
5 Days - 2x Day	Combined Route	23,700	\$27,511.32	\$46,989.96	\$25,907.37	\$45,386.01
	Rural Round Trip	26,400	\$33,316.86	\$53,389.50	\$31,073.57	\$51,146.21
5 Days - 3x Day	Combined Route	35,550	\$37,840.44	\$59,926.08	\$35,434.51	\$57,520.15
	Rural Round Trip	39,600	\$46,548.75	\$69,525.39	\$43,183.81	\$66,160.45

Estimating the time required to complete the driving required for this route each week, the table above is highlighted to reflect potential staffing needs. Route options highlighted in **yellow** indicate that more than one part-time driver would be required, cells highlighted in **orange** indicate that more than one full-time driver (or the ability to pay overtime) would be required to complete the route as configured. Estimated route driving times are shown below.

Route 2 South – Weekly Driving Time		Hours	Minutes
7 Days- 2x Day	Combined Route	20	4
	Rural Round Trip	28	0
7 Days - 3x Day	Combined Route	30	6
	Rural Round Trip	42	0
5 Days - 2x Day	Combined Route	14	20
	Rural Round Trip	20	0
5 Days - 3x Day	Combined Route	21	30
	Rural Round Trip	30	0

At the current rate of \$4 per one-way trip as established by CCCTA, and an expectation of **355** annual service days in a 7 day per week scenario, and **250** annual service days in a 5 day per week scenario, the following recovery scenarios have been generated.

Route 2 South – Annual Fares		Full Time		Part Time	
		Low	High	Low	High
7 Days- 2x Day	Combined Route	9,047	14,464	8,478	13,895
	Rural Round Trip	11,108	16,736	10,312	15,940
7 Days - 3x Day	Combined Route	12,714	19,056	11,860	18,202
	Rural Round Trip	15,805	22,464	14,611	21,270
5 Days - 2x Day	Combined Route	6,878	11,747	6,477	11,347
	Rural Round Trip	8,329	13,347	7,768	12,787
5 Days - 3x Day	Combined Route	9,460	14,982	8,859	14,380
	Rural Round Trip	11,637	17,381	10,796	16,540

The table above illustrates the number of fares annually that would be required to break even on the expenses for this proposed route at \$4 per one-way trip. The table below indicated the number of fares that would be required per day to meet the new annual expenses.

Route 2 South – Fares Per Day		Full Time		Part Time	
		Low	High	Low	High
7 Days- 2x Day	Combined Route	25	41	24	39
	Rural Round Trip	31	47	29	45
7 Days - 3x Day	Combined Route	36	54	33	51
	Rural Round Trip	45	63	41	60
5 Days - 2x Day	Combined Route	28	47	26	45
	Rural Round Trip	33	53	31	51
5 Days - 3x Day	Combined Route	38	60	35	58
	Rural Round Trip	47	70	43	66

The Ohio Department of Transportation (ODOT) Office of Transit operates a Rural Transit program that provides up to 50% grant funding for net operating costs of rural transit services. This funding is provided by the Federal Transit Authority (FTA) Section 5311. The following tables illustrate potential scenarios where CCTA would be able to access 50% of the route operation costs via 5311 Rural Transit funding from ODOT.

Route 2 South – 50% Funding		Total Miles	All Costs - Full Time		All Costs - Part Time	
			Low	High	Low	High
7 Days- 2x Day	Combined Route	33,654	\$18,093.89	\$28,928.15	\$16,955.08	\$27,789.34
	Rural Round Trip	37,488	\$22,215.82	\$33,471.82	\$20,623.08	\$31,879.08
7 Days - 3x Day	Combined Route	50,481	\$25,427.57	\$38,112.80	\$23,719.36	\$36,404.59
	Rural Round Trip	56,232	\$31,610.47	\$44,928.31	\$29,221.36	\$42,539.20
5 Days - 2x Day	Combined Route	23,700	\$13,755.66	\$23,494.98	\$12,953.68	\$22,693.00
	Rural Round Trip	26,400	\$16,658.43	\$26,694.75	\$15,536.78	\$25,573.10
5 Days - 3x Day	Combined Route	35,550	\$18,920.22	\$29,963.04	\$17,717.26	\$28,760.08
	Rural Round Trip	39,600	\$23,274.38	\$34,762.70	\$21,591.90	\$33,080.22

Route 2 South – Annual Fares (50%)		Full Time		Part Time	
		Low	High	Low	High
7 Days- 2x Day	Combined Route	4,523	7,232	4,239	6,947
	Rural Round Trip	5,554	8,368	5,156	7,970
7 Days - 3x Day	Combined Route	6,357	9,528	5,930	9,101
	Rural Round Trip	7,903	11,232	7,305	10,635
5 Days - 2x Day	Combined Route	3,439	5,874	3,238	5,673
	Rural Round Trip	4,165	6,674	3,884	6,393
5 Days - 3x Day	Combined Route	4,730	7,491	4,429	7,190
	Rural Round Trip	5,819	8,691	5,398	8,270

Route 2 South – Fares Per Day (50%)		Full Time		Part Time	
		Low	High	Low	High
7 Days- 2x Day	Combined Route	13	20	12	20
	Rural Round Trip	16	24	15	22
7 Days - 3x Day	Combined Route	18	27	17	26
	Rural Round Trip	22	32	21	30
5 Days - 2x Day	Combined Route	18	29	17	28
	Rural Round Trip	22	33	21	32
5 Days - 3x Day	Combined Route	25	38	24	36
	Rural Round Trip	32	45	29	43

Route 2 South – Cost Summary

Based on the calculations and assumptions made here, the minimum expected cost for implementing this fixed-route service would be **\$25,907.37** for a combined route service utilizing a part-time driver, operating **twice per day, five days per week**. This scenario would produce 250 service days per year and 23,700 annual route miles.

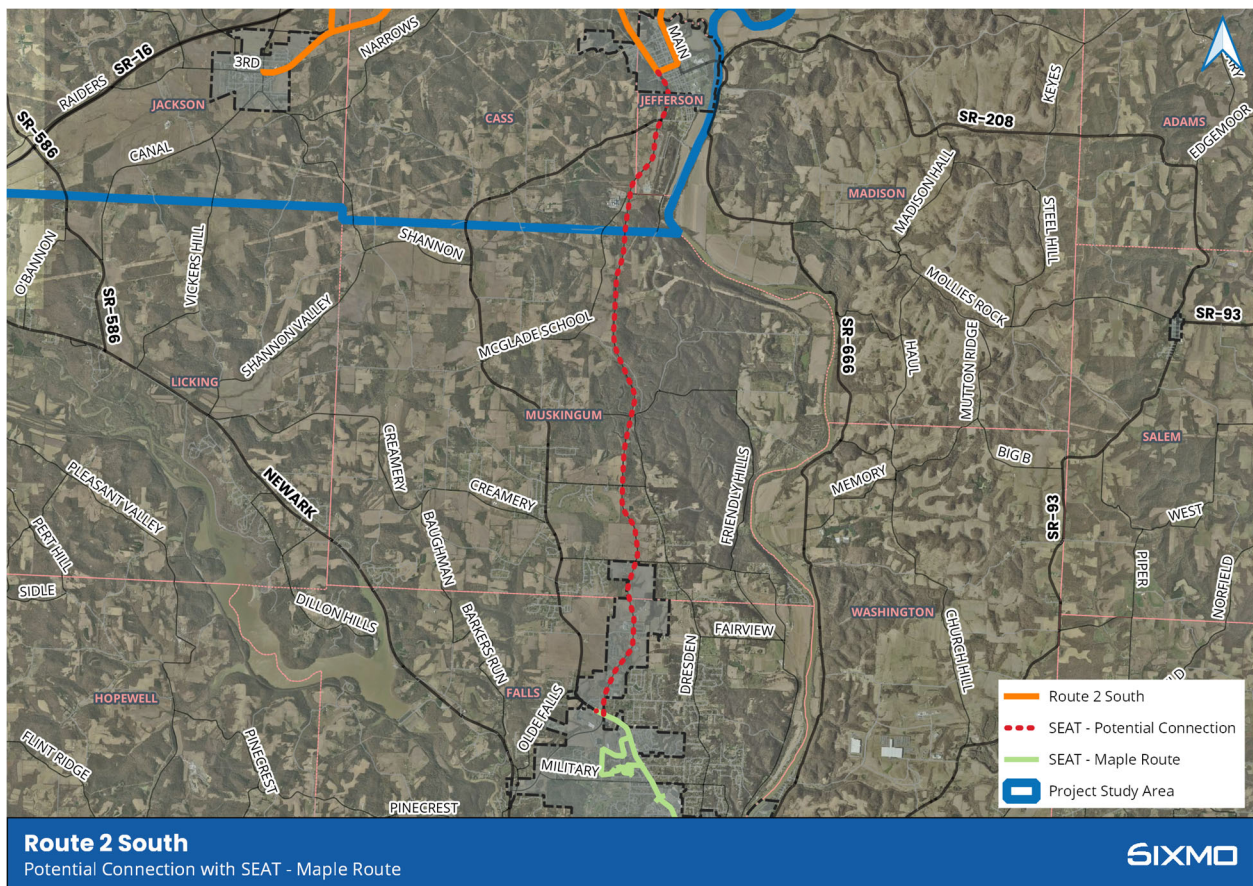
The maximum expected cost for this route would be **\$89,856.61** for a rural round trip service, utilizing a full-time driver, operating **three times per day, seven days per week**. This scenario would produce 355 service days per year and 56,232 annual route miles.

In these minimum and maximum scenarios presented, **6,647 annual fares** or **26 fares per service day** are required to cover the minimum expected costs with farebox revenues only (no additional funding). In the maximum scenario, **22,464 annual fares** or **63 fares per service day** are required.

In a scenario where 50% additional funding is secured from ODOT or other parties, the cost gap for the minimum expected cost falls to **\$12,953.68**, **3,238 annual fares**, or **17 fares per service day**. The cost gap for the maximum expected costs falls to **\$44,928.31**, **11,232 annual fares**, or **32 fares per service day**.

Route 2 South – Potential Service Connections

The Southeast Area Transit (SEAT) organization based in Zanesville Ohio, provides fixed-route services in the Zanesville and Cambridge Ohio areas. SEAT offers five (5) routes in the general Zanesville area of Muskingum County. Based on the modeled routes presented in this study, Route 2 South is in the general vicinity of the Maple Route operated by SEAT. The southernmost extent of Route 2 South is 9.3 miles from the northernmost extent of the Maple Route. The approximate travel time between these points is 13 minutes via North Pointe Drive. A potential service connection could be established between these points to transfer riders from potential CCCTA to SEAT to access locations in the greater Zanesville area. A map of the potential connection is found below.



ROUTE 3 – NORTH

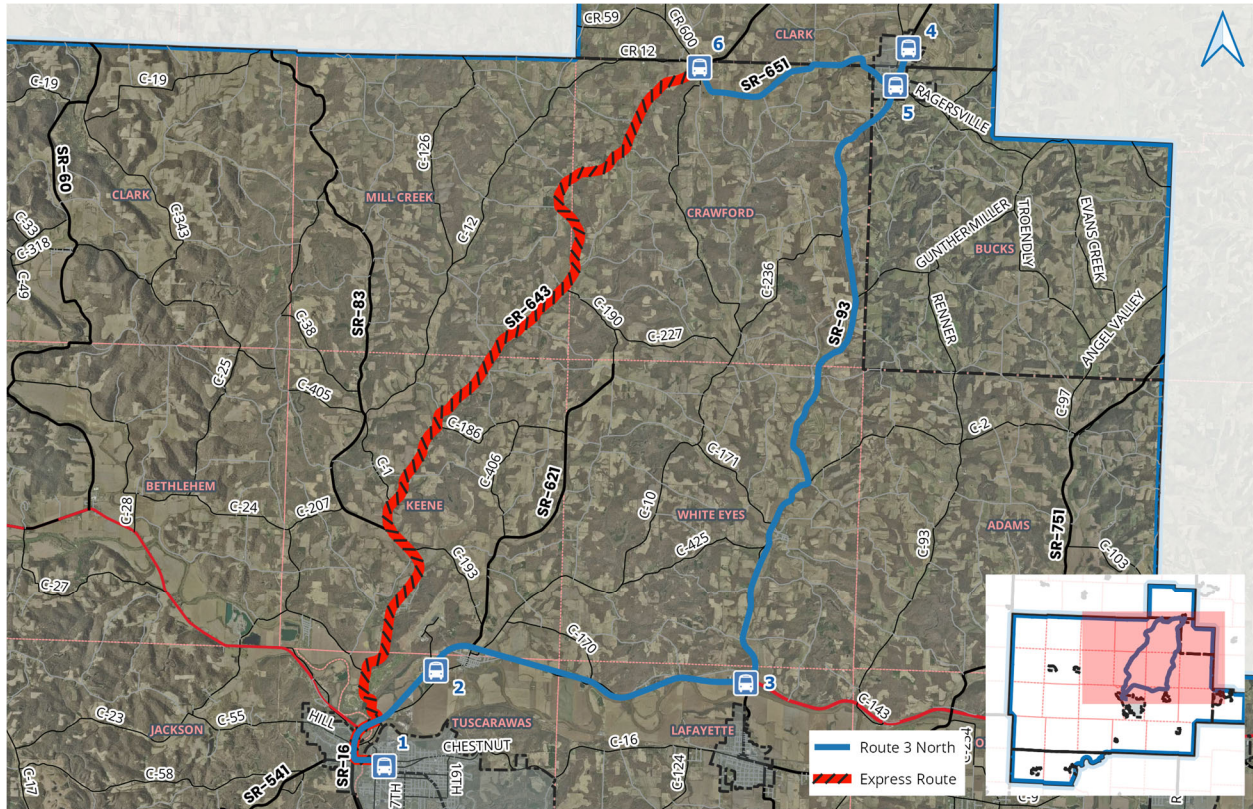


Figure 23 – Route 3 – North

Route Detail with Express Route and Stops

SIXMO

Route Origin:	Coshocton Square
Route Destination:	New Bedford
Number of Stops:	5
Distance (one way):	25.4 miles
Total Distance:	41.3 miles
Travel Time (one way):	38 mins. 12 seconds
Total Travel Duration:	1 hr. 6 mins. 55 seconds

Travel Distance (RRx2):	50.8 miles
Travel Time (RRx2):	1 hr. 22 mins. 12 seconds

Major Employers:	Walmart, Genesis, Flex Technologies, Baltic Health Care Corp., Schlach Wood
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Route 3 North – Segment Details						
Segment	Description	Distance (Mi.)	Hours	Minutes	Seconds	
1	Coshocton Square to Walmart	2.9	0	4	26	
2	Walmart to 93/36 Park and Ride	5.7	0	6	23	
3	93/36 Park and Ride to Genie Overhead Door	12.2	0	19	44	
4	Genie Overhead Door to 93 & East Main (Baltic)	0.7	0	1	7	
5	93 & East Main to New Bedford	4	0	6	28	
Rural Route Summary		25.4	0	38	12	
Express Route	Express Packaging to Coshocton Square	15.9	0	25	52	
Total Route Summary		41.3	1	6	55	
Rural Route Round Trip		50.8	1	22	12	

A maximum dwell time per stop of 35 seconds was factored in to each route trip. Rural round trip doubles this value.

Route 3 North originates on Main Street in Coshocton and proceeds east on US 36 to the Walmart area. From there the route continues east on US 36 stopping at the US 36 and State Route 93 park and ride. The route continues north on State Route 93 until reaching the Genie Overhead Door area in Baltic, then turning back south to stop on East Main Street. From here the route turns west on State Route 651 culminating at State Route 643 and County Road 12 in New Bedford.

The maximum speed limit along this route is **55** miles per hour, the minimum is **25** miles per hour. The mean speed limit along the entire route is **49.7** miles per hour. The average speed utilized across the model was **49.7** miles per hour.

Potential Ridership

Potential ridership was estimated by analyzing areas within .25 miles, .5 miles, and 1 mile from the rural route segments of the route. These estimations were calculated utilizing current estimates of population and workers over the age of 16 and average household size as reported in the American Community Survey provided by the U.S. Census Bureau, as well as the national average of commuters utilizing public transit (specifically) buses. The full methodology for calculating the values in the potential ridership table below is included in appendix A. Ridership values expressed here should be viewed as best-case-scenario values for planning purposes only. Full and accurate ridership potential would be best determined by a widespread survey of households/potential riders in the service area.

Potential ridership for Route 3 North is estimated to range from **34** riders within ¼ mile, **56** riders within ½ mile, to **117** riders within 1 mile of the rural route. (Express route locations were omitted from this calculation as passenger stops are not anticipated along these routes.) Within these same areas, the number of employers who could potentially benefit from these facilities ranged from **406** to **782**, supporting a maximum employment of **9,316**.

Route 3 North – Potential Ridership and Employers			
	1/4 mile	1/2 mile	1 mile
Residential Addresses	1,349	2,224	4,654
Estimated Potential Population	3,421	5,637	11,811
Estimated Potential 16+ Population	1,485	2,436	5,085
Employers ¹	406	591	782
Employment ²	5,940	7,223	9,316
Mean Employment	14	12	12
Total Potential Riders	34	56	117

1 - Number of establishments

2 - D&B "Employees Here"

Estimated Costs

Potential costs for this route were estimated utilizing observed fuel and maintenance data provided by CCCTA for the years 2020 and 2021. These values were utilized to create a maximum high and maximum low total per mile operation costs (fuel cost plus maintenance) for vehicle operation. It is important to note that CCCTA provided data on all vehicles in their fleet, including vans and passenger vehicles. *Only data recorded for the seven (7) operating Ford E series vehicles were utilized to generate these cost factors.* The observed fuel mileages and maintenance costs for Dodge Grand Caravans was not included. CCCTA has indicated to SCS that the existing Ford E series vehicles and/or four additional new Ford E series vehicles would be utilized to undertake any new employment transit services that may be established in the future. The purchase costs for these new vehicles was **not** factored into the estimated route operation costs detailed below, as these vehicles have already been funded with other resources by CCCTA. Full details of the calculation and methodology utilized to generate these costs are included in appendix C. For the purposes of these estimates the observed combined high per mile operation cost was **58** cents per mile, the combined low rate was **36** cents per mile.

Personnel costs utilized in this calculation included hourly wages (\$12.53 part-time/\$14.44 full-time), fringe benefits including Public Employee Retirement System (PERS), Medicare tax, workers comp, as well as insurance costs as provided by CCCTA. It is important to note, the costs modeled here only reflect the costs related to operating the routes as described, utilizing only the time that is required to provide the illustrated level of service.

Cost estimation was generated to reflect four potential scenarios:

- Twice per day – seven days a week
- Three times per day – seven days a week
- Twice per day – five days a week
- Three times per day – five days a week

Based on the information provided by CCCTA, aside from an observed cost per mile for vehicle operation, the only other major variable included was the use of a full-time or part-time driver. Costs on the following table are broken down into two categories; ‘combined route’ – this is the rural route with stops, and an express route leg included. ‘Rural route round trip’ is performing the route making all stops in both directions each time the route is executed. The costs are segregated by using a full or part-time driver.

Route 3 North – Anticipated Costs		Total Miles	All Costs - Full Time		All Costs - Part Time	
			Low	High	Low	High
7 Days- 2x Day	Combined Route	29,323	\$30,895.78	\$51,611.48	\$29,111.91	\$49,827.61
	Rural Round Trip	36,068	\$36,334.34	\$58,533.94	\$34,152.28	\$56,351.88
7 Days - 3x Day	Combined Route	43,985	\$42,917.13	\$66,858.36	\$40,241.32	\$64,182.55
	Rural Round Trip	54,102	\$51,074.97	\$77,242.05	\$47,801.89	\$73,968.97
5 Days - 2x Day	Combined Route	20,650	\$23,784.56	\$42,592.20	\$22,528.31	\$41,335.95
	Rural Round Trip	25,400	\$27,614.53	\$47,467.17	\$26,077.87	\$45,930.51
5 Days - 3x Day	Combined Route	30,975	\$32,250.30	\$53,329.44	\$30,365.93	\$51,445.07
	Rural Round Trip	38,100	\$37,995.25	\$60,641.89	\$35,690.27	\$58,336.91

Estimating the time required to complete the driving required for this route each week, the table above is highlighted to reflect potential staffing needs. Route options highlighted in **yellow** indicate that more than one part-time driver would be required, cells highlighted in **orange** indicate that more than one full-time driver (or the ability to pay overtime) would be required to complete the route as configured. All options for this route could be completed with one full or part-time driver. Estimated route driving times are shown below.

Route 3 North – Weekly Driving Time		Hours	Minutes
7 Days- 2x Day	Combined Route	15	38
	Rural Round Trip	19	8
7 Days - 3x Day	Combined Route	23	27
	Rural Round Trip	28	42
5 Days - 2x Day	Combined Route	11	10
	Rural Round Trip	13	40
5 Days - 3x Day	Combined Route	16	45
	Rural Round Trip	20	30

At the current rate of \$4 per one-way trip as established by CCCTA, and an expectation of 355 annual service days in a 7 day per week scenario, and 250 annual service days in a 5 day per week scenario, the following recovery scenarios have been generated.

Route 3 North – Annual Fares		Full Time		Part Time	
		Low	High	Low	High
7 Days- 2x Day	Combined Route	7,724	12,903	7,278	12,457
	Rural Round Trip	9,084	14,633	8,538	14,088
7 Days - 3x Day	Combined Route	10,729	16,715	10,060	16,046
	Rural Round Trip	12,769	19,311	11,950	18,492
5 Days - 2x Day	Combined Route	5,946	10,648	5,632	10,334
	Rural Round Trip	6,904	11,867	6,519	11,483
5 Days - 3x Day	Combined Route	8,063	13,332	7,591	12,861
	Rural Round Trip	9,499	15,160	8,923	14,584

The table above illustrates the number of fares annually that would be required to break even on the expenses for this proposed route at \$4 per one-way trip. The table below indicated the number of fares that would be required per day to meet the new annual expenses.

Route 3 North – Fares Per Day		Full Time		Part Time	
		Low	High	Low	High
7 Days- 2x Day	Combined Route	22	37	21	36
	Rural Round Trip	26	42	24	40
7 Days - 3x Day	Combined Route	31	48	29	46
	Rural Round Trip	36	55	34	53
5 Days - 2x Day	Combined Route	24	43	23	41
	Rural Round Trip	28	47	26	46
5 Days - 3x Day	Combined Route	32	53	30	51
	Rural Round Trip	38	61	36	58

The Ohio Department of Transportation (ODOT) Office of Transit operates a Rural Transit program that provides up to 50% grant funding for net operating costs of rural transit services. This funding is provided by the Federal Transit Authority (FTA) Section 5311. The following tables illustrate potential scenarios where CCCTA would be able to access 50% of the route operation costs via 5311 Rural Transit funding from ODOT.

Route 3 North – 50% Funding		Total Miles	All Costs - Full Time		All Costs - Part Time	
			Low	High	Low	High
7 Days- 2x Day	Combined Route	29,323	\$15,447.89	\$25,805.74	\$14,555.95	\$24,913.80
	Rural Round Trip	36,068	\$18,167.17	\$29,266.97	\$17,076.14	\$28,175.94
7 Days - 3x Day	Combined Route	43,985	\$21,458.56	\$33,429.18	\$20,120.66	\$32,091.28
	Rural Round Trip	54,102	\$25,537.48	\$38,621.02	\$23,900.94	\$36,984.48
5 Days - 2x Day	Combined Route	20,650	\$11,892.28	\$21,296.10	\$11,264.16	\$20,667.98
	Rural Round Trip	25,400	\$13,807.26	\$23,733.58	\$13,038.94	\$22,965.26
5 Days - 3x Day	Combined Route	30,975	\$16,125.15	\$26,664.72	\$15,182.96	\$25,722.53
	Rural Round Trip	38,100	\$18,997.63	\$30,320.95	\$17,845.13	\$29,168.45

Route 3 North – Annual Fares (50%)		Full Time		Part Time	
		Low	High	Low	High
7 Days- 2x Day	Combined Route	3,862	6,451	3,639	6,228
	Rural Round Trip	4,542	7,317	4,269	7,044
7 Days - 3x Day	Combined Route	5,365	8,357	5,030	8,023
	Rural Round Trip	6,384	9,655	5,975	9,246
5 Days - 2x Day	Combined Route	2,973	5,324	2,816	5,167
	Rural Round Trip	3,452	5,933	3,260	5,741
5 Days - 3x Day	Combined Route	4,031	6,666	3,796	6,431
	Rural Round Trip	4,749	7,580	4,461	7,292

Route 3 North – Fares Per Day (50%)		Full Time		Part Time	
		Low	High	Low	High
7 Days- 2x Day	Combined Route	11	18	10	18
	Rural Round Trip	13	21	12	20
7 Days - 3x Day	Combined Route	15	24	14	23
	Rural Round Trip	18	27	17	26
5 Days - 2x Day	Combined Route	12	21	11	21
	Rural Round Trip	14	24	13	23
5 Days - 3x Day	Combined Route	16	27	15	26
	Rural Round Trip	19	30	18	29

Route 3 North– Cost Summary

Based on the calculations and assumptions made here, the minimum expected cost for implementing this fixed-route service would be **\$22,528.31** for a combined route service utilizing a part-time driver, operating **twice per day, five days per week**. This scenario would produce 250 service days per year and 20,650 annual route miles.

The maximum expected cost for this route would be **\$77,242.05** for a rural round trip service, utilizing a full-time driver, operating **three times per day, seven days per week**. This scenario would produce 355 service days per year and **54,102** annual route miles.

In these minimum and maximum scenarios presented, **5,632 annual fares** or **23 fares per service day** are required to cover the minimum expected costs with farebox revenues only (no additional funding). In the maximum cost scenario, **19,311 annual fares** or **54 fares per service day** are required.

In a scenario where 50% additional funding is secured from ODOT or other parties, the cost gap for the minimum expected cost falls to **\$11,264.16**, **2,816 annual fares**, or **11 fares per service day**. The cost gap for the maximum expected costs falls to **\$38,621.02**, **9,655 annual fares**, or **27 fares per service day**.

ROUTE 4 – WEST

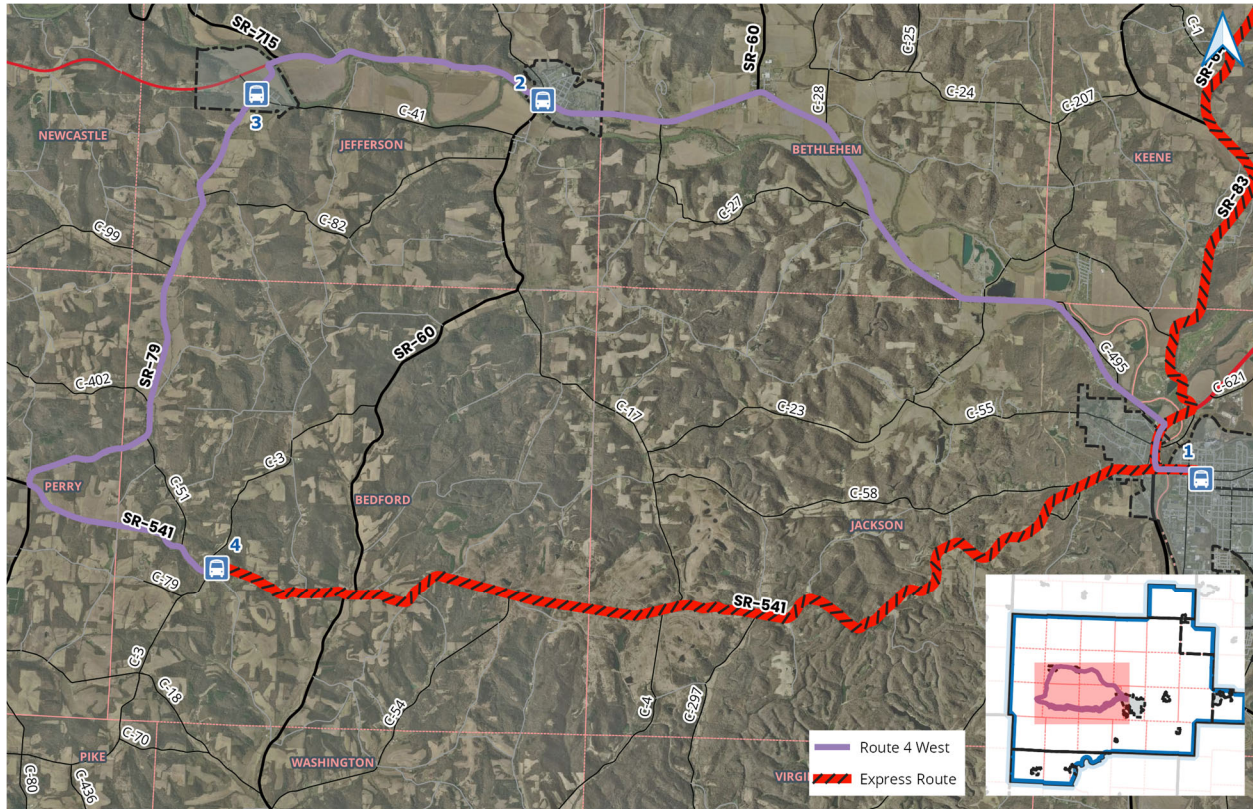


Figure 24 – Route 4 – West
Route Detail with Express Route and Stops

SIXMO

Route Origin: Coshocton Square
 Route Destination: West Bedford
 Number of Stops: 3
 Distance (one way): 21.9 miles
 Total Distance: 34.6 miles
 Travel Time (one way): 35 mins. 13 seconds
 Total Travel Duration: 58 mins. 30 seconds

Travel Distance (RRx2): 43.8 miles
 Travel Time (RRx2): 1 hr. 13 mins. 58 seconds

Major Employers: Feral Mountain*, Lonestar Fire Protection*, Shopwise Grocery*,
 The Mayor's Corner*
 *fewer than 25 employees

Route 4 West – Segment Details						
Segment	Description	Distance (Mi.)	Hours	Minutes	Seconds	
1	Coshocton Square to Main Street & 60 (Warsaw)	10	0	16	1	
2	Main Street & 60 to County Road 41 & Main Street (Nellie)	3.7	0	5	59	
3	County Road 41 & Main Street to West Bedford	8.2	0	13	13	
Rural Route Summary		21.9	0	35	13	
Express Route	West Bedford to Coshocton Square	12.7	0	21	28	
Total Route Summary		34.6	0	58	30	
Rural Route Round Trip		43.8	1	13	58	

A maximum dwell time per stop of 35 seconds was factored in to each route trip. Rural round trip doubles this value.

Route 4 West originates on Main Street in Coshocton and proceeds west on US 36 to Main Street and State Route 60 in the Village of Warsaw. From there the route continues west on US 36 stopping at County Road 41 and Main Street in the Village of Nellie. The route continues south on State Route 79 for 5.7 miles before turning left on to State Route 541 for 2.5 miles before stopping in the Village of West Bedford.

The maximum speed limit along this route is **55** miles per hour, the minimum is **25** miles per hour. The mean speed limit along the entire route is **47.7** miles per hour. The average speed utilized across the model was **49.7** miles per hour.

Potential Ridership

Potential ridership was estimated by analyzing areas within .25 miles, .5 miles, and 1 mile from the rural route segments of the route. These estimations were calculated utilizing current estimates of population and workers over the age of 16 and average household size as reported in the American Community Survey provided by the U.S. Census Bureau, as well as the national average of commuters utilizing public transit (specifically) buses. The full methodology for calculating the values in the potential ridership table below is included in appendix A. Ridership values expressed here should be viewed as best-case-scenario values for planning purposes only. Full and accurate ridership potential would be best determined by a widespread survey of households/potential riders in the service area.

Potential ridership for Route 4 West is estimated to range from **29** riders within ¼ mile, **84** riders within ½ mile, to **192** riders within 1 mile of the rural route. (Express route locations were omitted from this calculation as passenger stops are not anticipated along these routes.) Within these same areas, the number of employers who could potentially benefit from these facilities ranged from **335** to **685**, supporting a maximum employment of **8,210**.

Route 4 West – Potential Ridership and Employers			
	1/4 mile	1/2 mile	1 mile
Residential Addresses	1,193	2,227	4,410
Estimated Potential Population	2,983	5,568	11,025
Estimated Potential 16+ Population	1,274	2,379	4,710
Employers ¹	335	505	685
Employment ²	4,378	6,119	8,210
Mean Employment	14	12	12
Total Potential Riders	29	84	192

1 - Number of establishments

2 - D&B "Employees Here"

Estimated Costs

Potential costs for this route were estimated utilizing observed fuel and maintenance data provided by CCCTA for the years 2020 and 2021. These values were utilized to create a maximum high and maximum low total per mile operation costs (fuel cost plus maintenance) for vehicle operation. It is important to note that CCCTA provided data on all vehicles in their fleet, including vans and passenger vehicles. *Only data recorded for the seven (7) operating Ford E series vehicles were utilized to generate these cost factors.* The observed fuel mileages and maintenance costs for Dodge Grand Caravans was not included. CCCTA has indicated to SCS that the existing Ford E series vehicles and/or four additional new Ford E series vehicles would be utilized to undertake any new employment transit services that may be established in the future. The purchase costs for these new vehicles was **not** factored into the estimated route operation costs detailed below, as these vehicles have already been funded with other resources by CCCTA. Full details of the calculation and methodology utilized to generate these costs are included in appendix C. For the purposes of these estimates the observed combined high per mile operation cost was **58** cents per mile, the combined low rate was **36** cents per mile.

Personnel costs utilized in this calculation included hourly wages (\$12.53 part-time/\$14.44 full-time), fringe benefits including Public Employee Retirement System (PERS), Medicare tax, workers comp, as well as insurance costs as provided by CCCTA. It is important to note, the costs modeled here only reflect the costs related to operating the routes as described, utilizing only the time that is required to provide the illustrated level of service.

Cost estimation was generated to reflect four potential scenarios:

- Twice per day – seven days a week
- Three times per day – seven days a week
- Twice per day – five days a week
- Three times per day – five days a week

Based on the information provided by CCCTA, aside from an observed cost per mile for vehicle operation, the only other major variable included was the use of a full-time or part-time driver. Costs on the following table are broken down into two categories; 'combined route' – this is the rural route with stops, and an express route leg included. 'Rural route round trip' is performing the route making all stops in both directions each time the route is executed. The costs are segregated by using a full or part-time driver.

Route 4 West – Anticipated Costs		Total Miles	All Costs - Full Time		All Costs - Part Time	
			Low	High	Low	High
7 Days- 2x Day	Combined Route	24,566	\$27,377.04	\$47,046.20	\$25,832.08	\$45,501.24
	Rural Round Trip	31,098	\$33,100.16	\$54,206.36	\$31,109.24	\$52,215.44
7 Days - 3x Day	Combined Route	36,849	\$37,639.02	\$60,010.44	\$35,321.58	\$57,693.00
	Rural Round Trip	46,647	\$46,223.71	\$70,750.69	\$43,237.32	\$67,764.30
5 Days - 2x Day	Combined Route	17,300	\$21,306.57	\$39,377.21	\$20,218.58	\$38,289.22
	Rural Round Trip	21,900	\$25,336.94	\$44,419.58	\$23,934.88	\$43,017.52
5 Days - 3x Day	Combined Route	36,849	\$28,533.32	\$48,506.96	\$26,901.32	\$46,874.96
	Rural Round Trip	46,647	\$34,578.87	\$56,070.51	\$32,475.78	\$53,967.42

Estimating the time required to complete the driving required for this route each week, the table above is highlighted to reflect potential staffing needs. Route options highlighted in **yellow** indicate that more than one part-time driver would be required, cells highlighted in **orange** indicate that more than one full-time driver (or the ability to pay over time) would be required to complete the route as configured. All options for this route could be completed with one full or part-time driver. Estimated route driving times are shown below.

Route 4 West – Weekly Driving Time		Hours	Minutes
7 Days- 2x Day	Combined Route	13	32
	Rural Round Trip	17	16
7 Days - 3x Day	Combined Route	20	18
	Rural Round Trip	25	54
5 Days - 2x Day	Combined Route	9	40
	Rural Round Trip	12	20
5 Days - 3x Day	Combined Route	14	30
	Rural Round Trip	18	30

At the current rate of \$4 per one-way trip, and an expectation of **355** service days in a 7 day per week scenario, and **250** service days in a year in a 5 day per week scenario, the following recovery scenarios are presented.

Route 4 West – Annual Fares		Full Time		Part Time	
		Low	High	Low	High
7 Days- 2x Day	Combined Route	6,844	11,762	6,458	11,375
	Rural Round Trip	8,275	13,552	7,777	13,054
7 Days - 3x Day	Combined Route	9,410	15,003	8,830	14,423
	Rural Round Trip	11,556	17,688	10,809	16,941
5 Days - 2x Day	Combined Route	5,327	9,844	5,055	9,572
	Rural Round Trip	6,334	11,105	5,984	10,754
5 Days - 3x Day	Combined Route	7,133	12,127	6,725	11,719
	Rural Round Trip	8,645	14,018	8,119	13,492

The table above illustrates the number of fares annually that would be required to break even on the expenses for this proposed route at \$4 per one-way trip. The table below indicated the number of fares that would be required per day to meet the new annual expenses.

Route 4 West – Fares Per Day		Full Time		Part Time	
		Low	High	Low	High
7 Days- 2x Day	Combined Route	19	33	18	32
	Rural Round Trip	23	38	22	37
7 Days - 3x Day	Combined Route	27	42	25	41
	Rural Round Trip	33	50	30	48
5 Days - 2x Day	Combined Route	21	39	20	38
	Rural Round Trip	25	44	24	43
5 Days - 3x Day	Combined Route	29	49	27	47
	Rural Round Trip	35	56	32	54

The Ohio Department of Transportation (ODOT) Office of Transit operates a Rural Transit program that provides up to 50% grant funding for net operating costs of rural transit services. This funding is provided by the Federal Transit Authority (FTA) Section 5311. The following tables illustrate potential scenarios where CCCTA would be able to access 50% of the route operation costs via 5311 Rural Transit funding from ODOT.

Route 4 West – 50% Funding		Total Miles	All Costs - Full Time		All Costs - Part Time	
			Low	High	Low	High
7 Days- 2x Day	Combined Route	24,566	\$13,688.52	\$23,523.10	\$12,916.04	\$22,750.62
	Rural Round Trip	31,098	\$16,550.08	\$27,103.18	\$15,554.62	\$26,107.72
7 Days - 3x Day	Combined Route	36,849	\$18,819.51	\$30,005.22	\$17,660.79	\$28,846.50
	Rural Round Trip	46,647	\$23,111.85	\$35,375.34	\$21,618.66	\$33,882.15
5 Days - 2x Day	Combined Route	17,300	\$10,653.29	\$19,688.61	\$10,109.29	\$19,144.61
	Rural Round Trip	21,900	\$12,668.47	\$22,209.79	\$11,967.44	\$21,508.76
5 Days - 3x Day	Combined Route	36,849	\$14,266.66	\$24,253.48	\$13,450.66	\$23,437.48
	Rural Round Trip	46,647	\$17,289.44	\$28,035.26	\$16,237.89	\$26,983.71

Route 4 West – Annual Fares (50%)		Full Time		Part Time	
		Low	High	Low	High
7 Days- 2x Day	Combined Route	3,422	5,881	3,229	5,688
	Rural Round Trip	4,138	6,776	3,889	6,527
7 Days - 3x Day	Combined Route	4,705	7,501	4,415	7,212
	Rural Round Trip	5,778	8,844	5,405	8,471
5 Days - 2x Day	Combined Route	2,663	4,922	2,527	4,786
	Rural Round Trip	3,167	5,552	2,992	5,377
5 Days - 3x Day	Combined Route	3,567	6,063	3,363	5,859
	Rural Round Trip	4,322	7,009	4,059	6,746

Route 4 West – Fares Per Day (50%)		Full Time		Part Time	
		Low	High	Low	High
7 Days- 2x Day	Combined Route	10	17	9	16
	Rural Round Trip	12	19	11	18
7 Days - 3x Day	Combined Route	13	21	12	20
	Rural Round Trip	16	25	15	24
5 Days - 2x Day	Combined Route	11	20	10	19
	Rural Round Trip	13	22	12	22
5 Days - 3x Day	Combined Route	14	24	13	23
	Rural Round Trip	17	28	16	27

Route 4 West– Cost Summary

Based on the calculations and assumptions made here, the minimum expected cost for implementing this fixed-route service would be **\$20,218.58** for a combined route service utilizing a part-time driver, operating **twice per day, five days per week**. This scenario would produce 250 service days per year and 17,300 annual route miles.

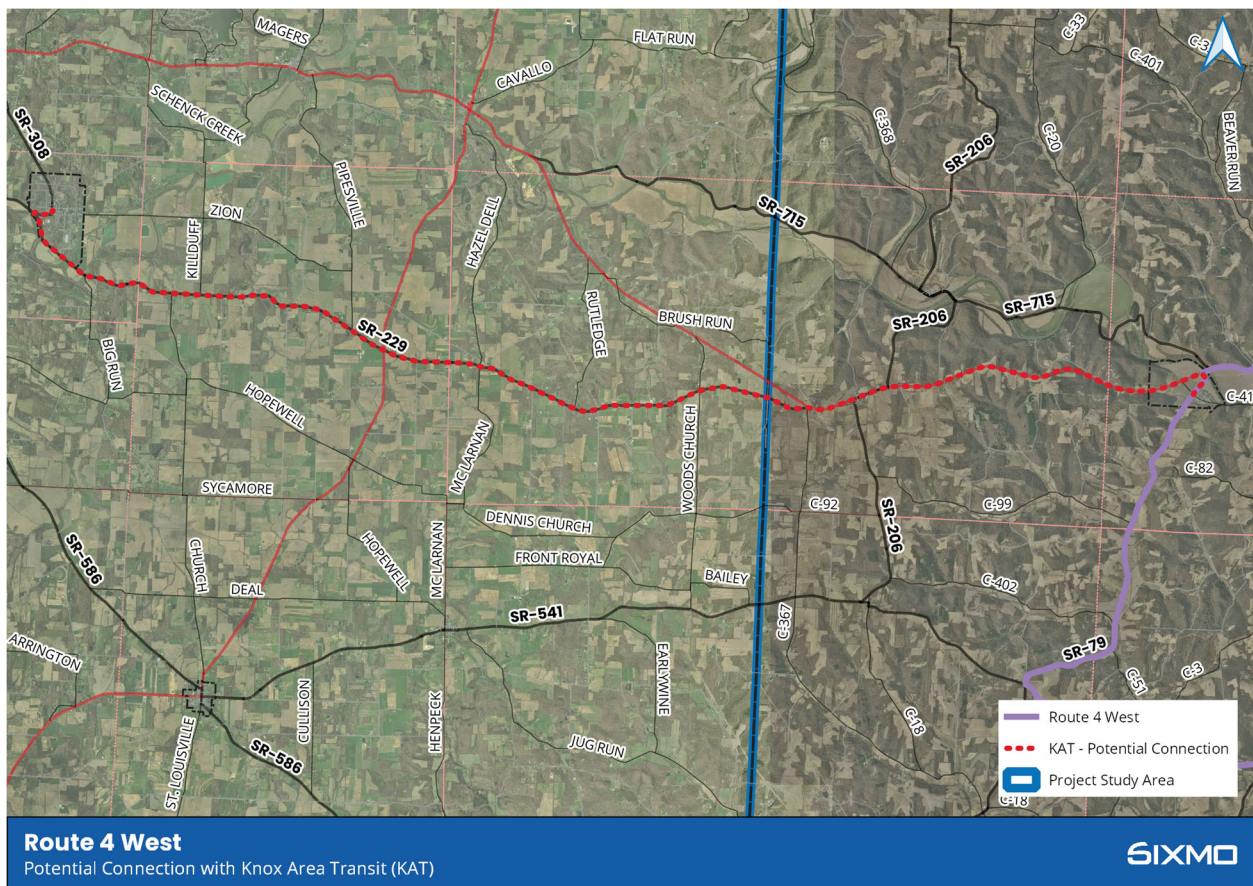
The maximum expected cost for this route would be **\$70,750.69** for a rural round trip service, utilizing a full-time driver, operating **three times per day, seven days per week**. This scenario would produce 355 service days per year and 46,647 annual route miles.

In these minimum and maximum scenarios presented, **5,055 annual fares** or **20 fares per service day** are required to cover the minimum expected costs with farebox revenues only (no additional funding). In the maximum cost scenario, **17,688 annual fares** or **50 fares per service day** are required.

In a scenario where 50% additional funding is secured from ODOT or other parties, the cost gap for the minimum expected cost falls to **\$10,109.29**, **2,527 annual fares**, or **10 fares per service day**. The cost gap for the maximum expected costs falls to **\$35,375.34**, **8,844 annual fares**, or **25 fares per service day**.

Route 4 West – Potential Service Connections

Route 4 West does provide a potential opportunity to connect to a shuttle service from the Village of Gambier to Mt. Vernon in Knox County, via services provided by Knox County Transit. This service is primarily offered to provide service to students at Kenyon College. From proposed stop number three on this route, located in the proximity of County Road 41 and Main Street in the Village of Nellie, it is approximately 19.9 miles (32 minutes) west on State Route 229 to reach the Kenyon College Book Store in the Village of Gambier. If CCCTA determines services to Mt. Vernon are of interest or need to residents of Coshocton County, this connection could be explored further.



ROUTE 5 – COSHOCTON LOOP

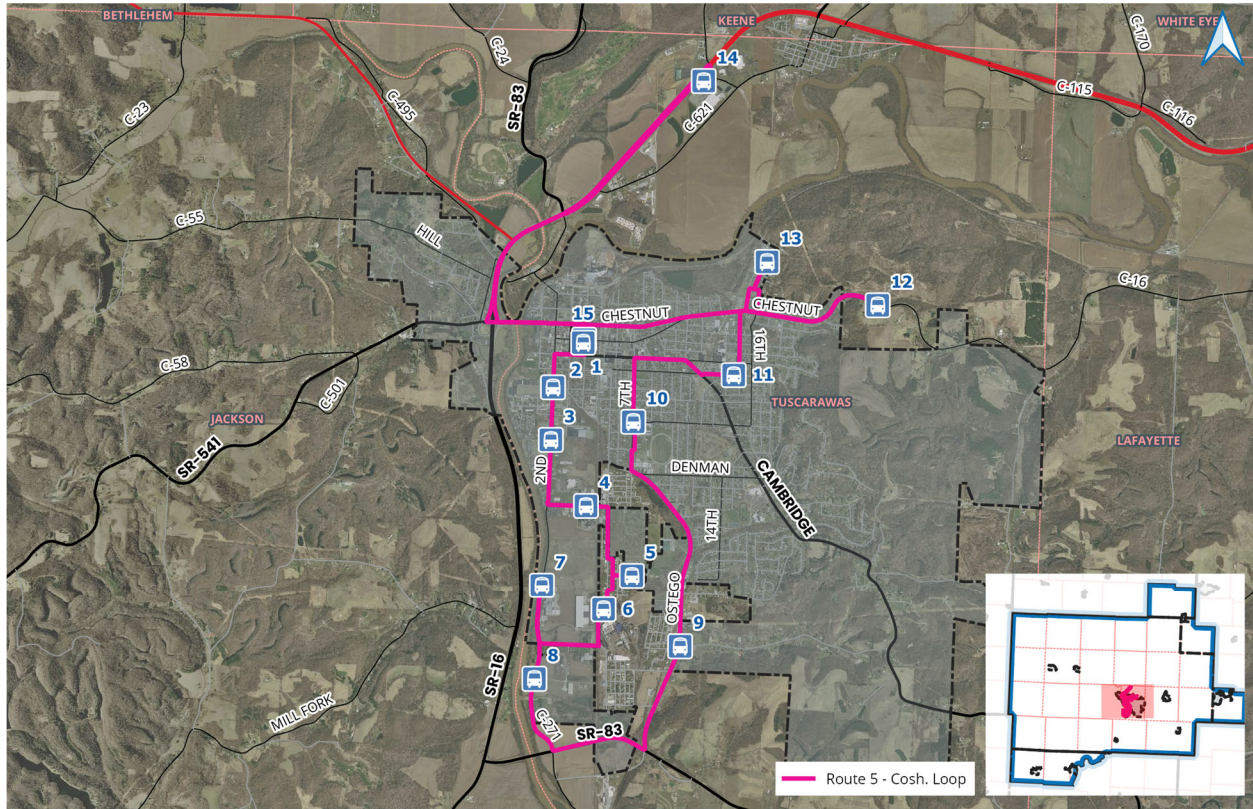


Figure 25 – Route 5 – Coshocton Loop

Route Detail and Stops

SIXMO

Route Origin: Coshocton Square
 Route Destination: Walmart
 Number of Stops: 14
 Distance (one way): 18.5 miles
 Total Distance: 18.5 miles
 Travel Time (one way): 55 mins. 17 seconds
 Total Travel Duration: **55 mins. 17 seconds**

Travel Distance (RRx2): N/A – Looping Rural Route Only
 Travel Time (RRx2): N/A – Looping Rural Route Only

Major Employers: Kraft, Annin, SanCasT, Wiley's, McWane, Ansell

Route 5 Loop – Segment Details

Segment	Description	Distance (Mi.)	Hours	Minutes	Seconds
1	Coshocton Square to Downtowner Plaza	0.5	0	1	32
2	Downtowner Plaza to River Run Shopping Plaza	0.3	0	0	37
3	River Run Shopping Plaza to MVHC	0.6	0	2	19
4	MVHC to Magnolia Apartments	0.7	0	4	23
5	Magnolia Apartments to McWane	0.4	0	2	14
6	McWane to Kraft	1	0	4	40
7	Kraft to Sancast/MFM	0.6	0	1	8
8	Sancast/MFM to Beech St./Cassingham Hollow	1.8	0	3	32
9	Beech St./Cassingham Hollow to Fairgrounds	1.6	0	8	34
10	Fairgrounds to Coshocton Reg. Med. Center	1.1	0	4	39
11	Coshocton Reg. Med. Center to Glenview Way Apts.	1.4	0	4	39
12	Glenview Way Apts. to North Street	1.2	0	3	43
13	North Street to Walmart	4.2	0	8	16
14	Walmart to Coshocton Square	3.1	0	5	1
Total Route Summary		18.5	1	3	25

A maximum dwell time per stop of 35 seconds was factored in to each route trip. Rural round trip doubles this value.

Note: This route was added based on feedback from the core group following draft report presentations during November 2021. This route includes four additional stops that were not included in previous calculations and modeling. These stops exist for the purposes of this route only and may not be reflected in prior figures.

Route 5 is a loop route originating on Main Street in Coshocton and proceeds south on 2nd Street past McWane, SanCasT, Kraft before heading east on SR 83 and north on Ostego Ave (CR91). Stops at Beech St./Cassingham Hollow continuing north on Ostego turning north on 7th Street stopping at the Coshocton County Fairgrounds, heading east toward the Coshocton Regional Medical Center; northeast toward apartment at Glenview Way and North Street, turning west to merge on to US 36 toward Walmart before returning to Coshocton Square.

The maximum speed limit along this route is **55** miles per hour, the minimum is **25** miles per hour. The mean speed limit along the entire route is **30.25** miles per hour. The average speed utilized across the model was **49.7** miles per hour.

Potential Ridership

Potential ridership was estimated by analyzing areas within .25 miles, .5 miles, and 1 mile from the rural route segments of the route. These estimations were calculated utilizing current estimates of population and workers over the age of 16 and average household size as reported in the American Community Survey provided by the U.S. Census Bureau, as well as the national average of commuters utilizing public transit (specifically) buses. The full methodology for calculating the values in the potential ridership table below is included in appendix A. Ridership values expressed here should be viewed as best-case-scenario values for planning purposes only. Full and accurate ridership potential would be best determined by a widespread survey of households/potential riders in the service area.

Potential ridership for Route 5 Loop is estimated to range from **99** riders within ¼ mile, **122** riders within ½ mile, to **141** riders within 1 mile of the rural route. Within these same areas, the number of employers who could potentially benefit from these facilities ranged from **716** to **863**, supporting a maximum employment of **10,787**.

Route 5 Loop – Potential Ridership and Employers			
	1/4 mile	1/2 mile	1 mile
Residential Addresses	4,046	4,994	5,760
Estimated Potential Population	10,115	12,485	14,400
Estimated Potential 16+ Population	4,321	5,334	6,152
Employers ¹	716	791	863
Employment ²	9,995	10,290	10,787
Mean Employment	14	13	12
Total Potential Riders	99	122	141

1 - Number of establishments

2 - D&B "Employees Here"

Estimated Costs

Potential costs for this route were estimated utilizing observed fuel and maintenance data provided by CCCTA for the years 2020 and 2021. These values were utilized to create a maximum high and maximum low total per mile operation costs (fuel cost plus maintenance) for vehicle operation. It is important to note that CCCTA provided data on all vehicles in their fleet, including vans and passenger vehicles. *Only data recorded for the seven (7) operating Ford E series vehicles were utilized to generate these cost factors.* The observed fuel mileages and maintenance costs for Dodge Grand Caravans was not included. CCCTA has indicated to SCS that the existing Ford E series vehicles and/or four additional new Ford E series vehicles would be utilized to undertake any new employment transit services that may be established in the future. The purchase costs for these new vehicles was **not** factored into the estimated route operation costs detailed below, as these vehicles have already been funded with other resources by CCCTA. Full details of the calculation and methodology utilized to generate these costs are included in appendix C. For the purposes of these estimates the observed combined high per mile operation cost was **58** cents per mile, the combined low rate was **36** cents per mile.

Personnel costs utilized in this calculation included hourly wages (\$12.53 part-time/\$14.44 full-time), fringe benefits including Public Employee Retirement System (PERS), Medicare tax, workers comp, as well as insurance costs as provided by CCCTA. It is important to note, the costs modeled here only reflect the costs related to operating the routes as described, utilizing only the time that is required to provide the illustrated level of service.

Cost estimation was generated to reflect four potential scenarios:

- Twice per day – seven days a week
- Three times per day – seven days a week
- Twice per day – five days a week
- Three times per day – five days a week

Based on the information provided by CCCTA, aside from an observed cost per mile for vehicle operation, the only other major variable included was the use of a full-time or part-time driver. Potential costs for this route are found in the following table. Unlike other modeled routes, this route is a rural route only with no express segments. All costs are further segregated utilizing a full or part-time driver.

Route 5 Loop– Anticipated Costs		Total Miles	All Costs - Full Time		All Costs - Part Time	
			Low	High	Low	High
7 Days- 2x Day	Rural Round Trip	13,135	\$22,659.81	\$39,814.15	\$21,194.49	\$38,348.83
7 Days - 3x Day	Rural Round Trip	19,703	\$30,563.17	\$49,162.36	\$28,365.19	\$46,964.38
5 Days - 2x Day	Rural Round Trip	9,250	\$17,984.58	\$34,284.22	\$16,952.66	\$33,252.30
5 Days - 3x Day	Rural Round Trip	13,875	\$23,550.33	\$40,867.47	\$22,002.45	\$39,319.59

Estimating the time required to complete the driving required for this route each week, the table above is highlighted to reflect potential staffing needs. Route options highlighted in **yellow** indicate that more than one part-time driver would be required, cells highlighted in **orange** indicate that more than one full-time driver (or the ability to pay over time) would be required to complete the route as configured. All options for this route could be completed with one full or part-time driver. Estimated route driving times are shown below.

Route 5 Loop – Weekly Driving Time		Hours	Minutes
7 Days- 2x Day	Rural Round Trip	12	50
7 Days - 3x Day	Rural Round Trip	19	15
5 Days - 2x Day	Rural Round Trip	9	10
5 Days - 3x Day	Rural Round Trip	13	45

The purpose of this route is expressly different from the four previously modeled and detailed routes. Route time and cost calculations offered above are intended for comparative purposes with the four other potential route scenarios. Based on feedback from the core team, this conceptual route would be

more likely to operate on a continuous daily loop based on the availability of a full-time or part-time driver. The hours of operation for this loop would reflect those that would best serve the schedule of employers found in the route vicinity. Based on feedback from employers and the core team, this schedule is likely to be general business hours or first shift. The number of potential route completions that could be expected on this looping route configuration is highlighted below based on the use of one part-time or full-time driver. It is important to note the calculations below reflect the maximum potential driving time, based on full or part-time status, and operating based on 5 or 7 days in a week. *These scenarios are modeled for driving time only and do not include any other ancillary time for administrative or other tasks.* The values in the tables below should be anticipated to be slightly lower based on the need to undertake these undetermined tasks as part of normal employment.

Route 5 Loop – Potential Route Completions				
5 Day Schedule		Hrs./Day	Daily	Weekly
Part Time Driver	30 Hours/Week	6	6.52	32.60
Full Time Driver	40 Hours/Week	8	8.7	43.48

Route 5 Loop – Potential Route Completions				
7 Day Schedule		Hrs./Day	Daily	Weekly
Part Time Driver	30 Hours/Week	4.29	4.66	32.62
Full Time Driver	40 Hours/Week	5.71	6.21	43.47

As illustrated above, when modeling for only one driver, the seven-day scenario yields slightly fewer weekly route completions, due to the need to spread the available 30 or 40 working hours across seven days as opposed to five. This indicates that the seven-day schedule would require roughly **1.4 drivers** (full or part-time) to reach the level of service provided by a single driver in the 5-day scenario. In the 7-day scenario, the service hours available each day may also be limited if only one driver is available.

Reflecting the five- and seven-day scenarios presented in the general analysis that yield a total of 250 and 355 service days respectively, it can also be anticipated that the following number of annual route completions could be expected.

Route 5 Loop – Potential Route Completions		
	Format	Annual
Part Time Driver	5 Days/Week	1,630
	7 Days/Week	1,651
Full Time Driver	5 Days/Week	2,175
	7 Days/Week	2,205

As illustrated above, the ability to utilize a full-time driver would yield an additional **545** and **554** route completions annually in the presented 5-day and 7-day scenarios.

Costs to provide service over a maximum number of loops per day based on full-time or part-time driver availability is outlined below.

Route 5 Loop– Anticipated Costs		Total Miles	All Costs	
			Low	High
7 Days	Full Time	40,784	\$55,913.71	\$79,150.86
	Part Time	30,605	\$40,283.19	\$61,280.83
5 Days	Full Time	40,238	\$55,258.14	\$78,375.03
	Part Time	30,155	\$39,783.61	\$60,682.35

CCCTA is currently utilizing a \$2 one-way fare for destinations in Coshocton City. For the purposes of this analysis, we will assume that the Walmart stop north of Coshocton will be considered 'in-city' for the purposes of this route. The number of one-way trips needed annually and per day to cover the costs of this route with no additional funding is detailed below.

Route 5 Loop- Annual Fares		Total Miles	All Costs	
			Low	High
7 Days	Full Time	40,784	27,957	39,575
	Part Time	30,605	20,142	30,640
5 Days	Full Time	40,238	27,629	39,188
	Part Time	30,155	19,892	30,341

Route 5 Loop- Fares Per Day		Total Miles	All Costs	
			Low	High
7 Days	Full Time	40,784	79	111
	Part Time	30,605	57	86
5 Days	Full Time	40,238	111	157
	Part Time	30,155	80	121

Route 5 Loop- Annual Fares (50%)		Total Miles	All Costs	
			Low	High
7 Days	Full Time	40,784	13,978	19,788
	Part Time	30,605	10,071	15,320
5 Days	Full Time	40,238	13,815	19,594
	Part Time	30,155	9,946	15,171

Route 5 Loop- Fares Per Day (50%)		Total Miles	All Costs	
			Low	High
7 Days	Full Time	40,784	39	56
	Part Time	30,605	28	43
5 Days	Full Time	40,238	55	78
	Part Time	30,155	40	61

In a scenario where CCCTA could receive 50% operational funding from a program like 5311, the resulting impact on annual and daily fares is illustrated on the previous page. The same impact could be achieved by lowering fares on this loop route to \$1 per one-way trip. Both the cities of Athens and Marietta Ohio offer their in-town fixed-route service at this rate.

Route 5 Loop– Cost Summary

Based on the calculations and assumptions made here, the minimum expected cost for implementing this fixed-route loop service would be **\$39,783.61** utilizing a part-time driver, operating **five days per week**. This scenario would produce 250 service days per year and **30,155** annual route miles.

The maximum expected cost for this route would be **\$79,150.86** utilizing a full-time driver, operating **seven days per week**. This scenario would produce 355 service days per year and **40,784** annual route miles.

In these minimum and maximum scenarios presented, **19,892 annual trips** or **80 trips per service day** are required to cover the minimum expected costs with farebox revenues only (no additional funding). In the maximum cost scenario, **39,575 annual fares** or **111 fares per service day** are required.

In a scenario where 50% additional funding is secured from ODOT or other parties, or fares are lowered to \$1 per one-way trip, the cost gap for the minimum expected cost falls to **\$19,891.81, 9,946 annual fares, or 40 fares per service day**. The cost gap for the maximum expected costs falls to **\$39,575.43, 19,788 annual fares, or 56 fares per service day**.

TOTAL ROUTE SUMMARY

Below are summary data tables combining the data found above, providing cost, trip, and fare information for routes 1 through 4 in total.

Note: Route 5 Coshocton Loop was **not** included in this total cost scenario comparison due to the fact that it is highly unlikely to operate in any 2x or 3x per day scenario, but rather on a constant daily loop based on the availability of a full or part-time driver.

All Routes - Anticipated Costs		Total Miles	All Costs - Full Time		All Costs - Part Time	
			Low	High	Low	High
7 Days- 2x Day	Combined Route	120,913	\$132,352.36	\$216,011.78	\$124,229.39	\$207,888.81
	Rural Round Trip	143,988	\$163,297.28	\$252,033.20	\$152,179.96	\$240,915.88
7 Days - 3x Day	Combined Route	181,370	\$184,822.39	\$281,782.24	\$172,637.93	\$269,597.78
	Rural Round Trip	215,982	\$231,239.76	\$335,814.36	\$214,563.77	\$319,138.37
5 Days - 2x Day	Combined Route	85,150	\$101,313.76	\$177,105.32	\$95,593.36	\$171,384.92
	Rural Round Trip	101,400	\$123,105.95	\$202,472.51	\$115,276.85	\$194,643.41
5 Days - 3x Day	Combined Route	138,624	\$138,264.48	\$223,422.54	\$129,683.88	\$214,841.94
	Rural Round Trip	165,897	\$170,952.77	\$261,473.33	\$159,209.12	\$249,729.68

All Routes - Annual Fares		Full Time		Part Time	
		Low	High	Low	High
7 Days- 2x Day	Combined Route	33,088	54,003	31,057	51,972
	Rural Round Trip	40,824	63,008	38,045	60,229
7 Days - 3x Day	Combined Route	46,206	70,446	43,159	67,399
	Rural Round Trip	57,810	83,954	53,641	79,785
5 Days - 2x Day	Combined Route	25,328	44,276	23,898	42,846
	Rural Round Trip	30,776	50,618	28,819	48,661
5 Days - 3x Day	Combined Route	34,566	55,856	32,421	53,710
	Rural Round Trip	42,738	65,368	39,802	62,432

All Routes - Fares Per Day		Full Time		Part Time	
		Low	High	Low	High
7 Days- 2x Day	Combined Route	93	152	87	146
	Rural Round Trip	115	177	107	170
7 Days - 3x Day	Combined Route	130	198	122	190
	Rural Round Trip	163	236	151	225
5 Days - 2x Day	Combined Route	101	177	96	171
	Rural Round Trip	123	202	115	195
5 Days - 3x Day	Combined Route	138	223	130	215
	Rural Round Trip	171	261	159	250

All Routes – Cost Per Mile		Total Miles	All Costs - Full Time		All Costs - Part Time	
			Low	High	Low	High
7 Days- 2x Day	Combined Route	120,913	\$1.09	\$1.79	\$1.03	\$1.72
	Rural Round Trip	143,988	\$1.13	\$1.75	\$1.06	\$1.67
7 Days - 3x Day	Combined Route	181,370	\$1.02	\$1.55	\$0.95	\$1.49
	Rural Round Trip	215,982	\$1.07	\$1.55	\$0.99	\$1.48
5 Days - 2x Day	Combined Route	85,150	\$1.19	\$2.08	\$1.12	\$2.01
	Rural Round Trip	101,400	\$1.21	\$2.00	\$1.14	\$1.92
5 Days - 3x Day	Combined Route	138,624	\$1.00	\$1.61	\$0.94	\$1.55
	Rural Round Trip	165,897	\$1.03	\$1.58	\$0.96	\$1.51

FARE ANALYSIS

Fares are one of the key factors that lead to or limit ridership of transit services. The cost analysis provided in the tables and sections above was created utilizing the current rate of \$4 for one-way service to job locations within the project study area (except for Route 5). As outlined in figure 4, the poverty rate across the project study area is calculated at 13.5%, with some areas coming in significantly higher. Linton and Monroe townships were 36% and 25% respectively. If we envision a citizen utilizing this service for an average of 21 working days a month, the average monthly cost to them is \$168. Based on earlier data that indicated the average annual wage of Coshocton County being \$43,964, the monthly transit cost would translate to 4.6% of their monthly wages. This signifies the challenge partners like CCCTA face identifying fares that are accessible to low-income households but also support cost recovery. It is also important to consider how these fares in total compare to the monthly or annual cost of vehicle ownership/operation. Based on recent AAA data⁷ indicating that the average annual cost of new car ownership is \$9,282, 21 days of transit fees would represent nearly 22% of the cost of owning and operating a car. Employers interviewed as part of this project also acknowledged the use of local taxi services by employees, and that any fares considered as part of new or expanding services should be relative to those fares.

SCS examined the fare schedules of other transit providers to gain perspective on what types of fares are utilized in nearby systems. It is important to recognize that nearly all transit systems in the eastern Ohio area are demand response services and not fixed route services. It should be expected that general operating costs of fixed-route services will be higher than demand response services, so higher fares should be anticipated if additional funding support is not identified. Additionally, several nearby providers utilize a zone-based fare system, where fares are varied based on destinations in the county, or distance from a central originating point or community. Often zone-based fares are utilized to help more accurately offset the fluctuating cost of providing transit services. One local partner described zone-based fare schedules being developed as a result of requests for expanding service areas. This configuration offered an incremental method to expanding services as documented demand from riders grew over time.

A single fare system, while more streamlined and simple to administer, does not accurately reflect observed costs based on ride duration, distance, and other factors. Those taking short (i.e. less expensive)

⁷ <https://www.aaa.com/autorepair/articles/average-annual-cost-of-new-vehicle-ownership>

trips could end up paying more for those trips on average because those revenues help subsidize the longer (i.e. more expensive) trips in the system. These are value judgments that providers like CCCTA will need to consider when evaluating fare configurations in any future fixed route service offering. Examples of fares from nearby systems are offered below.

Figure 26 – Fare Comparisons

System Name	Service Type	Fare Type	Fare	Trip
Athens on Demand	Demand Response	Single	\$2.00/\$1.00	One Way
Athens Public Transit	Fixed Route	Single	\$1.00/\$.50	One Way
Logan Public Transit	Demand Response	Multi	\$2.00/\$3.00/\$4.00	One Way
Morgan County Transit	Demand Response	Multi	\$1.00/\$1.25/\$1.50/\$2.00	One Way
Monroe County Transit	Demand Response	Single	\$1.50	One Way
Noble County	Demand Response	Single	\$4.00/\$8.00	One Way
Perry County Transit	Demand Response	Multi	\$2.00/\$2.50/\$3.50/\$4.50/\$5.50/\$6.50/\$7.50	One Way
OVRTA/EORTA	Fixed Route	Single	\$1.30	One Way
Carroll County Transit	Demand Response	Single	\$3.50/\$5.50	One Way
Harrison County Transit	Demand Response	Single	\$2.00/\$4.00	One Way
SEAT	Fixed Route and Dem. Res.	Multi	\$1.00/\$2.00/\$4.00/\$6.00	One Way
Knox Area Transit	Demand Response	Multi	\$4.50/\$5.50/\$6.50/\$7.50	One Way

*Data Note: Single/ multi fare designation; single fare was listed even if there is an 'in town/in county' fare separation. The 'multi' designation was reserved for systems that utilize a zone or distance-based fare differentiation system.

To evaluate the effects of modifying the current job/employment fare of \$4 per one way trip, the tables below indicate the changes in the number of trips needed monthly and annually by CCCTA to implement the routes outlined in this feasibility study at a rate of \$3 per trip and \$5 per trip.

Figure 27 – \$3 Fare Impacts

Additional Annual Fares		Full Time		Part Time	
		Low	High	Low	High
7 Days- 2x Day	Combined Route	11,029	18,001	10,352	17,324
	Rural Round Trip	13,608	21,003	12,682	20,076
7 Days - 3x Day	Combined Route	15,402	23,482	14,386	22,466
	Rural Round Trip	19,270	27,985	17,880	26,595
5 Days - 2x Day	Combined Route	8,443	14,759	7,966	14,282
	Rural Round Trip	10,259	16,873	9,606	16,220
5 Days - 3x Day	Combined Route	11,522	18,619	10,807	17,903
	Rural Round Trip	14,246	21,789	13,267	20,811

Figure 28 – \$3 Fare Impacts

Additional Fares Per Day		Full Time		Part Time	
		Low	High	Low	High
7 Days- 2x Day	Combined Route	31	51	29	49
	Rural Round Trip	38	59	36	57
7 Days - 3x Day	Combined Route	43	66	41	63
	Rural Round Trip	54	79	50	75
5 Days - 2x Day	Combined Route	34	59	32	57
	Rural Round Trip	41	67	38	65
5 Days - 3x Day	Combined Route	46	74	43	72
	Rural Round Trip	57	87	53	83

Figures 25 and 26 above illustrate the number of **additional routes** needed annually and per day, should current employment fares be reduced to \$3. On average, CCCTA would have to complete **33% more trips** annually to make up the \$1 cost difference in fares to riders.

Figure 29 – \$5 Fare Impacts

Fewer Annual Fares		Full Time		Part Time	
		Low	High	Low	High
7 Days- 2x Day	Combined Route	-6,618	-10,801	-6,211	-10,394
	Rural Round Trip	-8,165	-12,602	-7,609	-12,046
7 Days - 3x Day	Combined Route	-9,241	-14,089	-8,632	-13,480
	Rural Round Trip	-11,562	-16,791	-10,728	-15,957
5 Days - 2x Day	Combined Route	-5,066	-8,855	-4,780	-8,569
	Rural Round Trip	-6,155	-10,124	-5,764	-9,732
5 Days - 3x Day	Combined Route	-6,913	-11,171	-6,484	-10,742
	Rural Round Trip	-8,548	-13,074	-7,960	-12,486

Figure 30 – \$5 Fare Impacts

Fewer Fares Per Day		Full Time		Part Time	
		Low	High	Low	High
7 Days- 2x Day	Combined Route	-19	-30	-17	-29
	Rural Round Trip	-23	-35	-21	-34
7 Days - 3x Day	Combined Route	-26	-40	-24	-38
	Rural Round Trip	-33	-47	-30	-45
5 Days - 2x Day	Combined Route	-20	-35	-19	-34
	Rural Round Trip	-25	-40	-23	-39
5 Days - 3x Day	Combined Route	-28	-45	-26	-43
	Rural Round Trip	-34	-52	-32	-50

Figures 29 and 30 above illustrate the annual and daily fare impacts should CCCTA raise the employment fare to \$5. On average CCCTA would have to complete **20% fewer trips** in order to meet the overall expected costs with farebox revenues only and no additional funding. Outside parties could contribute to

CCCTA to help offset the expected costs. This funding would provide the same impact as raising fares without raising costs to riders. The volume of increased fares needed to meet the expected costs at a fare lower than \$4 without additional funding challenges the financial feasibility of the conceptual routes presented here.

Based on the information provided in earlier sections, there are an estimated 702 total daily riders within 1 mile of all rural route segments for routes 1-4 proposed in the project study area. The total expected universe of potential riders within the same 1-mile area is 26,909. If all 702 potential riders utilized the proposed routes for the 355 service days (7 days per week) or 250 service days (5 days per week) this would yield 249,210 and 175,500 one-way routes per year. As fare prices move lower without additional funding, an increasing percentage of the rider universe would need to utilize the service to make it feasible.

It is also important to recognize how fare revenues impact the ability of agencies like CCCTA to maximize available funding through public programming, including the 5311 program offered by ODOT. As part of the 5311 funding program, fare revenue is taken 'off the top' of reimbursement requests submitted to ODOT. For example, if a transit partner has been awarded \$500,000 in operating funding in a project year through the 5311 program, and subsequently generates \$100,000 in fare revenues, the maximum funding available for use from ODOT is reduced to \$400,000. The available amount for reimbursement has been offset by the amount of fare revenue generated. This creates funding challenges for rural transit providers like CCCTA who are trying to expand services via farebox revenues.

FUNDING CONSIDERATIONS AND ANALYSIS

As part of the due diligence for this effort, SCS staff spoke with transit managers/operators, mobility managers, employers, and other involved stakeholders across eastern and southern Ohio regarding alternative methods to funding transit operation services. Information was gathered via email exchange or telephone conversation. Overwhelmingly the most common funding streams utilized by transit systems in the region are 5311 transit funds provided by the Federal Transit Authority (FTA) and the Ohio Department of Transportation (ODOT), state General Revenue Funds (GRF) provided by ODOT, and farebox revenues generated through ridership. Many of these organizations also access funding focused on senior services or other specific populations.

It is important to note that no other systems in the local area identified by SCS were operating fixed transit routes solely targeted to serving commuters and the needs of employers. Many of the systems currently operating in eastern and southern Ohio, including CCCTA, offer a 'job/work' rate for existing demand response services. Hancock Area Transit Service (HATS), while not specifically operating an employment-based system, does refer to their system as having primarily employment-related trips as the majority of their service.

City and County Funding – At least two regional partners outside the project study area reported leveraging county and/or city general revenue funding to support transit services in their communities. At least one county reported utilizing funding from a local foundation as a revenue support as well. Each county government operates their own process for requesting general revenue funding. Examples of

systems using local and/or CDBG funding include the City of Bowling Green, Washington County (CABL/Marietta), City of Greenville, Ottawa County, Perry County, Scioto County Public Transit, and Seneca Crawford Area Transportation.

State and Federal Funding – A review of transit programs across the country reveals that federal funding for programs like [Congestion Mitigation and Air Quality \(CMAQ\)](#) focused on improving air quality and reducing congestion are regular sources of funding for transit efforts in communities across the country. Unfortunately, Coshocton County is not located within one of Ohio's eight largest Metropolitan Planning Organization (MPO) service areas where ODOT has stipulated that CMAQ funding can be allocated.

[Surface Transportation Block Grant \(STBG\)](#) funding is another federal funding source that was utilized by other identified transit partners, typically in larger communities. In Ohio, STBG funds are administered through ODOT and distributed to Metropolitan Planning Organizations (MPOs). Coshocton County is not within an eligible MPO where these funds can be allocated.

[Community Services Block Grant \(CSBG\)](#) is a federal program offered by the Department of Health and Human Services. These funds are intended to alleviate the causes and conditions of poverty in U.S. communities. These funds often are administered through Community Action Agencies. As an example, the CATS system in Pike County is utilizing this funding to support transit services.⁸ Wayne and Medina Counties offer free transportation to CSBG eligible clients in the form of taxi services or transit passes. A rural mobility solutions program is also slated for launch that will provide 'workplace access to individuals throughout Wayne County through a microtransit vanpooling service.'⁹

The 5311 Rural Transit program administered by ODOT is by far the most heavily utilized funding source for systems identified in reference to this feasibility effort. As of October 2021, there are 40 total 5311 rural transit grantees in Ohio, including CCCTA.

Private Funding – Many identified transit agencies, including Coshocton County, are utilizing funding from locally focused foundations to support transit operations. United Way was also observed as a regular funding partner of many transit systems across Ohio. No other major foundation or charitable organizations with a regular focus on rural transit were immediately identified. Organizations like W.K. Kellogg Foundation have made sporadic transit investments in the past, but do not appear to have an ongoing commitment to those types of projects.

CDBG Entitlement – One regional partner reported receiving CDBG funding from an entitlement community where they are providing fixed-route services. While this is a viable option for many, this is not relevant to this effort, as there are no entitlement cities or counties within the project study area.

Contract Revenue – Multiple providers identified individual contract services as a key revenue source for transit operations. Partners interviewed largely identified contract services with nursing homes and health care providers as their key partners. While this may not be relevant to the employment-based focus of

⁸ <https://www.catsservices.org/funders.html>

⁹ <https://www.cawm.org/wp-content/uploads/2019/11/CSBG-Community-Plan.pdf>

this effort, private partners and employers who may stand to benefit from this new service could be potential contract partners. At least two employers indicated a willingness to discuss options to support expanded transportation services that may directly benefit their employees.

Other Senior Funding – Multiple partners identified utilizing Title III (senior supportive services), Title XX (Social Security Act funding for family preservation), and Medicaid reimbursement for non-emergency medical transit as major funding sources for transit operation support. While not immediately relevant to the employment-based focus of this effort, these could be critical funding opportunities for general support of an expansion of services as outlined in this study.

Advertising – At least two partners identified advertising as a source of funding. Making advertising space on identified transit vehicles available is an option to consider. Revenues and rates for advertising spaces varied widely across respondents. One operator indicated that they provided the rear areas of their transit busses for advertising and the active rates were approximately \$100 per month. Hocking County and Ottawa County are specifically offering and utilizing advertising as a source of supporting revenue.

Other Fees – Other identified transit agencies have successfully implemented permissive taxes as allowed by state code as a source of funding for transit projects. [ORC 5739.023](#) and [ORC 5741.022](#) establish the authority for counties to levy a sales tax for the purposes of supporting the transit authority or a regional transportation improvement project. The County Commissioners Association of Ohio (CCAO) has created a county commissioners handbook which has excellent plain-language guidance and overview of permissive taxes, their origin, and justification, as well as other supporting details. Chapter 17 covers county permissive taxes and can be found at: <https://ccao.org/wp-content/uploads/hdbkchap017-2011.pdf>.

As an example, the City of Chillicothe established their transit system in 1981 with a .1% tax levy to establish the service/system. SARTA serving Stark County also utilizes a .25% sales tax to support ongoing transit operations.

Many of these sources wouldn't be immediately applicable to employment-related transit services, as these populations are not traveling for employment, but for social and human service purposes.

IDENTIFIED BEST PRACTICES

ETAP – Success Through Engagement & Partnership – Williamsport, Pennsylvania

A potential model and best practice for consideration is the Employment Transportation Assistance Program (ETAP) operated by an organization called [STEP](#) (Success Through Engagement & Partnership) located in Williamsport Pennsylvania. STEP is a private non-profit Community Action Agency established in 1996.

This program offers resources to help individuals overcome challenges with retaining and sustaining gainful employment. Families eligible for TANF and qualified to utilize these services, as well as non-TANF families that meet other needs definitions outlined by the agency.

Benefits of the program are limited to one year per participant, as the goal of the effort is to provide assistance to individuals in obtaining and sustaining employment, to a point where they can transition from the assistance program to transportation independence. Extensions of a maximum of one year can be offered in extenuating circumstances, a single household is capped at a lifetime benefit of \$5,000 through the ETAP program. The program allows participants to utilize available fixed route services, offers mileage reimbursement, and can provide reimbursement for the shared ride or taxi services. Reimbursements are provided by the Pennsylvania Department of Transportation. In order to obtain reimbursement for services rendered, the beneficiary must provide documentation from the employer detailing that observed work hours are consistent with the record of transportation services provided.

Additional information including a program brochure can be found at: <https://www.stepcorp.org/step-pathways/workforce-development/employment-transportation-assistance-program-etap.html>.

Wheels to Work – The Hope Network – Grand Rapids, Michigan

Wheels to Work is an employment transportation program where employers partner directly with existing transportation partners, in this case, the Hope Network and local van/taxi services. Employers enter into a purchase agreement with Hope Network Transportation for a specified number of rides, and rider fares are covered by the employer and/or payroll deducted from employee riders. Wheels to Work takes advantage of IRS Code section [132\(f\) 'Qualified Transportation Fringe'](#) – which outlines that employees can use up to \$125 per month or \$5,000 per year of pre-tax salary toward transit and vanpool commuting costs without paying income tax. Currently, 43 employers are enrolled in the Wheels to Work program and providing rides to employees. While this system is operated by a highly focused private organization, the employer network that has been built to share costs and services is a target for examination to determine how a similar employer network could be built in Coshocton County.

Additional information can be found at: <https://ridewheelstowork.com/participating-employers.php>.

Western Iowa Transit – Commuter Services – Denison, Ida Grove, Harlan, Iowa

Facing challenges resulting from layoffs from major employers, partners in three communities in rural Iowa partnered with their local council of governments to establish commuter transit routes to serve the cities of Denison, Harlan, and Ida Grove. These services began modestly with a single used school bus and have since grown to meet rising demand. The partners were able to collaborate on a CDBG funding application utilizing in-kind and traditional forms of match contributed by both the public and private partners. While this service was started with grant funding, following the conclusion of the grant program,

employment partners chose to continue supporting the program for the benefit of residents and workers.¹⁰

Additional information can be found at: https://gorgetranslink.com/wp-content/uploads/2021/01/Rural-Transportation-Options_Klickitat-County.pdf, and <http://www.region12cog.org/public-transit/>.

VEHICLE NEEDS AND CONSIDERATIONS

In typical cases, optimal vehicle sizing and capacity needs would be calculated using existing peak hour rider volumes observed during the progress of a route. In this scenario there is no existing fixed-route ridership to observe, so we are left to estimate potential ridership based on available data and observations. This scenario is also unique in that the available vehicles and their capacities are known to the client and SCS.

A key consideration influencing the costs associated with the proposed routes outlined in this study effort are the vehicles that may be utilized to provide these services. CCCTA provided SCS with operational expense data for the vehicles in their fleet; 7 Ford E Series Commercial Vehicles and 2 passenger vans. The service mileage, fuel costs, and maintenance expenses utilized to generate the expected costs here were based on those costs incurred by the Ford E Series vehicles.

Four new Ford E Series vehicles have been requisitioned and funded for potential use on routes that may be established as a result of this study effort. In surveying Coordinated Public Transit – Human Services Transportation Plans for counties in southern and eastern Ohio, the mix of vehicles utilized by CCCTA was consistent with what was observed as in use by similar providers. Ford E Series vehicles and Dodge Caravans were particularly common with many providers across the region. A key consideration that supports the use of the vehicle fleet mix currently maintained by CCCTA is that CDL certification is not required for operation. During early interviews with core team members, challenges were identified in attracting drivers with CDL certifications who may be currently employed in more lucrative positions in the project study area.

Capacities of the current vehicle fleet are 12 passengers for the Ford E Series vehicles and 5 passengers for the Dodge Grand Caravan vehicles. It is understood that the requisitioned vehicles will have the same passenger capacities as the current fleet. As stated earlier only the Ford E Series vehicles were considered when calculating cost expenditures. Based on the expectation of potential ridership calculated surrounding the four proposed routes, the twelve-passenger capacity of the existing or new Ford E Series vehicles is likely to be sufficient for expected commuting purposes. It is important to recognize that while the E Series vehicles can carry up to 12 passengers simultaneously, multiplying the number of trips by the maximum capacity of the vehicle does will not yield a total number of potential passengers per day. Since riders can board and alight at any number of stops along a route, the potential number of riders observed in a day could be higher than this product (vehicle capacity x trips).

¹⁰ 'Rural Transportation Options in Klickitat County' produced by the NADO Research Foundation, January 2019.

As stated in prior sections, the costs modeled in this report do not include the purchase price of additional vehicles. Multiple light transit vehicles – fiberglass over steel (LTV-FS) 12-2 have been requisitioned by CCCTA at a cost of \$68,585 per vehicle. Federal funding in the amount of \$54,867 has been secured along with local matching funds of \$13,718. Vehicle deliveries have been delayed due to global supply chain challenges; a current delivery date is unknown.

If an opportunity to establish these proposed routes or a subset of these routes is presented following the completion of this study, CCCTA may wish to consider initially operating the routes utilizing the Dodge Grand Caravans in the fleet to determine demand. The likely observed costs of operating these routes using vehicles other than the Ford E Series vehicles is estimated to be significantly lower due to the vehicle's fuel efficiency and lower overall cost of maintenance. If the service demand outgrows the five-passenger capacity of the Grand Caravans, the Ford E Series vehicles could be pressed into route service to meet additional demand.

SUMMARY AND RECOMMENDATIONS

As the full and final summary and recommendations following the completion of this effort on behalf of OMEGA, CCCTA, and the core project team, we offer the following general observations and recommendations. It is our intent that these recommendations will assist local leaders in assessing the potential to offer additional or expanded transit services in Coshocton County, and the greater project study area.

General Summary

- The creation of extended transit service across the project study area is generally feasible based on cost and demand as identified and expressed in this research project.
- New or additional employment does not appear to be driving transportation service demand. The need to support existing levels of employment and the regular turnover of employees experienced by employers is a more accurate depiction of employment demand. Employment demands from future projects may expedite the need for additional transit services.
- Transportation was generally not observed to be a critical issue to attracting employees to employment in the project study area. Transportation was observed to be a critical issue to long-term employee retention.
- Transportation issues were more regularly recognized as a key challenge to large employers (25 employees or more). Small and medium employers identified other non-transportation-related issues as more pressing concerns.
- Of the employers contacted as part of the research for this project, larger employers were typically the most receptive to ongoing conversations about partnerships focused on future employment transit services.

- Some interviewed employers require a driver's license as a prerequisite to employment, this often confuses the existence of transportation needs among employees. (i.e. Employees must have a driver's license to work here, therefore they have transportation to work.)
- Employers generally do not provide transportation services or resources for employees. Some employers have provided services in the past and have elected not to continue those services for a variety of reasons. Amish communities and businesses are the exception to this.
- Amish communities experience additional basic transportation challenges beyond what might be served by a public transit service focused on employment transportation.
- Amish communities and businesses are generally interested in interacting with potential future transit service offerings. This interest includes transporting Amish individuals to non-Amish work locations and transporting non-Amish workers to Amish work locations.
- Employers expressed interest in accessing other under-represented populations in the study area, including a growing Latino population in the Dover/New Philadelphia area.
- Employers recognized that transit services were likely to be temporary for many individuals, as they would utilize the services for a period long enough until they were able to support their own individual method of transportation.

General Recommendations

1. Establish pilot route scenarios for Routes 1, 2, and 5.

Of the proposed conceptual routes that were modeled, Routes 1 and 2 (East and South) are likely to provide the most immediate impact to the largest employers and largest number of employees. In a scenario where the entire system cannot be implemented simultaneously, these routes may be of the initial highest value and impact due to their proximity to both employers and potential employees. Route 2 may be of increased interest due to the presence of large employers Fanatics, Malouf, and the Ridge Corporation. Fanatics regularly utilizes over 1,000 seasonal workers, many of whom face transportation challenges. Nearby Ridge Corporation is planning a major expansion valued at over \$10 million and is expected to create 85 new jobs. Route 1 provides service to the Newcomerstown Industrial park which is also home to significant existing investments and is being actively marketed for new opportunities.

Route 5 – Coshocton Loop could also provide an immediate impact in connecting with employers and other local amenities. As observed, many of the largest employers and the greatest density of available workers are in the greater Coshocton City area. This route could also generate revenue from general human services transportation when not being utilized

for employment purposes. To provide sufficient service on this route, more than one driver must be considered in any of the proposed time/day scenarios.

Any routes that may be initiated on a trial basis could utilize existing vehicles owned and operated by CCCTA. Utilizing existing Dodge Grand Caravans would likely yield lower anticipated operating costs compared to Ford E Series vehicles that were utilized to generate cost modeling in this study. If service demand grows during the pilot period, an E Series vehicle could be considered for use at that time.

2. Connect with existing transit services in Dresden and Newcomerstown.

Routes 1 and 2 offer opportunities to connect with transit services identified during this project. Most available transit services in the region are demand response offerings, with SEAT providing the only fixed-route service proximate to the project study area. (Knox Area Transit offers a single shuttle between Mt. Vernon and Gambier as discussed in Route 4.)

Route 1 offers potential connection points with AccessTusc transit in the Newcomerstown area with three (3) stops modeled as part of this effort for consideration. Should a pilot program be established an agreement could be fashioned between CCCTA and AccessTusc to make transfer stops in areas with common service requests.

The southernmost point of Route 2 in Dresden is approximately 9.4 miles north of the northernmost point of the Maple Route offered by SEAT in North Zanesville. Connection options via North Point Drive could be negotiated between CCCTA and SEAT in this area.

3. Monitor future developments in the western and northern portions of the project study area to justify potential future service offerings for CCCTA related to employment transportation.

Major employers or clusters of employers were less densely populated in the western/northwestern region of the project study area. Future services in this area are more likely to deliver residents to and from work locations in other parts of the project study area, as opposed to serving significant numbers of employers in this area.

4. Conduct additional research and exploration to fully understand Amish employment transportation needs within Coshocton County.

Fixed route service into Amish communities does not appear warranted at this time. Amish individuals appeared most likely to work in other Amish communities/businesses, and generally do not commute to work locations outside of these areas. Existing demand response services are likely sufficient to handle the non-employment demand presented by these communities in the near future.

Employers interviewed for this effort (outside of the Baltic area) did not highlight a significant existing Amish employee population commuting outside Amish communities that would justify the support of transit services.

Route 3 offers connection points with existing private transportation services offered by employers and organizations serving the Amish community in the southern Holmes and western Tuscarawas County areas. Limited information was available on the origins and destinations of these private services as they are typically operated by individual employers. It is our opinion based on feedback received that a limited number of Amish workers are commuting into Coshocton County for employment purposes. Likewise, there appeared to be very few workers commuting to work in Amish businesses in the Baltic area from the greater Coshocton area.

5. Establish an employer advisory committee that can provide ongoing guidance and feedback to CCCTA on employment transportation service needs in Coshocton County.

The group of 20+ employers that were contacted as part of this research effort could be a strong foundation for an employer/employment advisory group providing valuable feedback to CCCTA. Each of these entities has been engaged in the effort to date at some level and could be considered a resource for future service input. Partnerships with existing entities that currently convene these types of stakeholders could be considered in lieu of creating a new entity as a result of this study.

6. A \$4 one-way employment transportation fare, and \$1 loop route fare are recommended for pilot evaluation purposes.

Following the fare analysis completed as part of this effort and in consideration of fares observed for services in adjoining counties and communities, these fares levels can provide a basis for service adoption without unnecessarily burdening riders. Cost recovery that might be expected at these fare levels, and the service levels (trips per day/year) required to generate those funds appear plausible based on information offered in this study.

7. Pursue discussions for revising how fare revenues impact funding availability in critical programs like the section 5311 rural transit program administered by ODOT.

Operational funding offered by the Ohio Department of Transportation; Rural Transit Program (5311) is the strongest match for funding any proposed new services. Expanding services and increasing/modifying fares does not yield the ability to draw down additional funding from existing programs. Revising how fare revenues are considered in these programs could provide opportunities for agencies like CCCTA to establish new or expanded services.

Other non-public funding resources which may support these types of transportation services are limited. Large-scale private funding from foundations or other entities that support transit

projects on a regular basis was not immediately available. Local foundations and community organizations are likely to provide important limited funding support but should not be anticipated as major contributors.