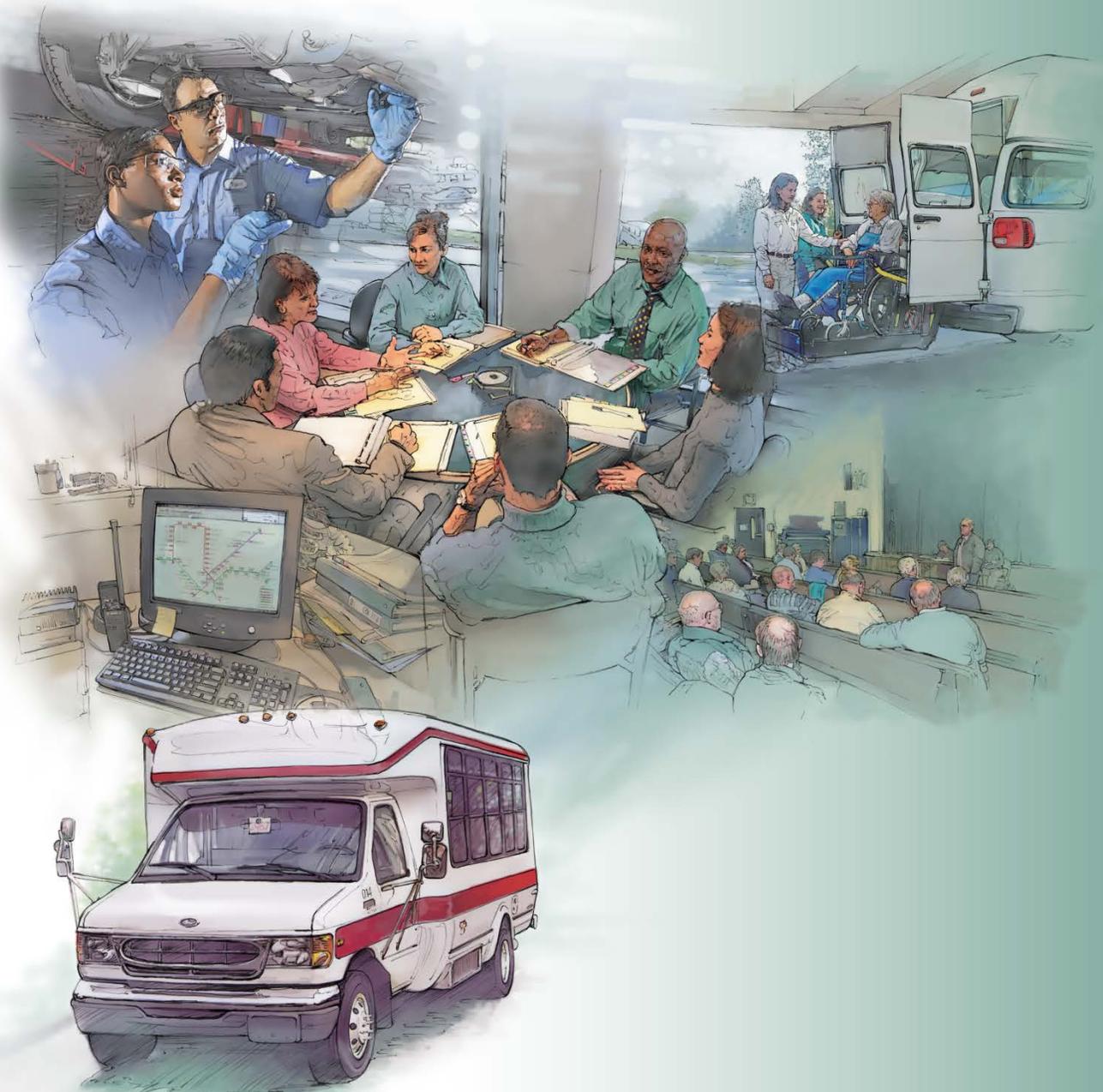




Midland County Public Transportation Study

Final Report

November 27, 2017





Moving Public Transportation Into the Future

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INTRODUCTION

Introduction

PURPOSE OF THIS STUDY

The main goal of the transportation study is to evaluate and build on the region's current transportation services, respond to current community needs by augmenting the overall system where/if deemed lacking, and to promote connectivity collaboration while mindful of fiscal constraints and other barriers. The study will facilitate and promote public transportation across Midland County and it will examine opportunities for collaboration with other transportation authorities in the Great Lakes Bay Region. The study seeks to enhance the existing transportation system, increase accessibility and mobility of citizens within the county, improve the quality of life and economic vitality of the area, enhance cooperation and connectivity between individual providers, and promote efficient transportation through viable public and private transportation options.

METHODOLOGY

RLS & Associates, Inc. (RLS) was hired through a competitive bidding process to evaluate existing transportation services in and around Midland County. The approach was approved by Midland Area Transportation Study (MATs) and the project steering committee. Following the initial business meeting, the RLS team developed the following scope of work and time schedule:

- ◆ Task 1: Review of Existing Transportation Planning Documents and Demographics
- ◆ Task 2: Initial Project Kick-Off and Business Meeting
- ◆ Task 3: Identify Unmet Transportation Needs and Barriers in the Project Area
- ◆ Task 4: Consult with MATs Regarding Data Availability
- ◆ Task 5: Develop Forecasts of Current and Projected Five-Year Unmet Transportation Demand in Midland County
- ◆ Task 6: Prepare Detailed Plan and Solutions for Identified Unmet Transportation Service Needs
- ◆ Task 7: Final Report

Throughout the study, the consultant provided Technical Memorandums to the steering committee for review and comments. The steering committee conducted monthly meetings to allow interaction with the consultant and updates on the project.

TIMELINE

Midland County Public Transportation Study												2017																												
Tasks	(Revised) Weeks																																							
	Jun.			Jul.				Aug.			Sept.			Oct.			Nov.			Dec.			Jan.			Feb.			Mar.											
	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
Task 1: Review of Existing Transportation Planning Documents	■																																							
Task 2: Initial Project Kick-Off and Business Meeting <i>Deliverable: Technical Memorandum #1</i>		■																																						
Task 3: Identify Unmet Transportation Needs and Barriers <i>Deliverable: Technical Memorandum #1</i> <i>Presentation to the Project Steering Committee and Local Meetings</i>			■	■	■	■	■	■	■																															
Task 4: Consult with MATS Regarding Data Availability <i>Presentation to the Project Steering Committee</i>													■	■	■	■																								
Task 5: Develop Forecasts of Current and Projected 5 Year Unmet Transportation Demand in Midland County <i>Deliverable: Technical Memorandum #2</i> <i>Presentation to the Project Steering Committee</i>																																								
Task 6: Prepare Detailed Plan for Coordination/ Consolidation of Transportation Services <i>Deliverable: Technical Memorandum #3 Draft Final Report</i> <i>Presentation to the Project Steering Committee</i>																																								
Task 7: Final Report <i>Deliverable: Final Report</i> <i>Presentation Slides</i> <i>Executive Summary</i>																																								

EXISTING TRANSPORTATION PLANNING DOCUMENTS AND DEMOGRAPHICS

Once given notice to proceed, the consultant received many documents relative to the project including past studies, regional studies, and demographic data and information about Midland County. The consultant team reviewed these documents and developed questions for the June meeting based on this information and discussions with Midland Area Transportation Study - Metropolitan Planning Organization.

The consultant also used information derived from a study in Clare County, which took a regional approach to identifying transit solutions in an area facing economic challenges. The RLS project manager was involved in that study and identified a few similar characteristics facing the Midland area.

INITIAL PROJECT KICK-OFF AND BUSINESS MEETING

The consultant team met with the Midland County Public Transportation Study Project Steering Committee on June 16, 2016 to introduce the study, gain an understanding of the local feelings about existing transportation services, and define some of the perceived community needs. The ninety minute meeting included discussion on the makeup of the City of Midland as well as the County.

The well attended meeting included the following committee members with several attendees from agencies:

- ◆ Midland Area Community Foundation
- ◆ City of Midland Dial-A-Ride
- ◆ Midland Area Transportation Study
- ◆ Midland MPO
- ◆ County Connection of Midland
- ◆ The Legacy Center
- ◆ Mid-Michigan Health
- ◆ Community Mental Health for Central Michigan
- ◆ The Arnold Center

The Committee discussed the background of the need for the study, which was derived from a needs assessment conducted four years ago that focused on all community issues. From that assessment, transportation was found to be a high ranking unmet need in Midland and surrounding communities. Many of the comments discussed at the meeting are listed below.

- ◆ Transit needs to be easily accessible to younger riders.
- ◆ Consideration might be given to an Uber concept of transportation.
- ◆ There is need for transportation to medical appointments to the hospital for cancer treatment.
- ◆ Needs of low income residents should be considered.
- ◆ Some of the concerns with the existing type of service is the advanced reservation process, and designated pickup times as opposed to hopping on a fixed route bus.
- ◆ Transit may be seen in this area as having a stigma of being only for riders with low incomes or seniors.
- ◆ Dow, the leading employer in Midland, is getting a higher rejection rate for job applicants who may be enticed by employers in the bigger cities.
- ◆ Concern – do not want to duplicate any of the transit services currently being provided.
- ◆ NEMT (Non-emergency medical transportation) is run through the 211 system and should be considered an area to expand for increased transportation services not related to NEMT.
- ◆ Fixed route service would be an easier service to use.
- ◆ Efforts are being made in Midland to make it a more enticing area to live through downtown construction and bike and pedestrian trails.

As discussions progressed the consulting team asked if there were other stakeholders in the community who were not represented at the meeting. The Committee came up with the following list:

- ◆ Chamber of Commerce
- ◆ Dow Chemical
- ◆ Faith-based community
- ◆ Momentum Midland
- ◆ Family Foundations
- ◆ Seniors and Persons with Disabilities
- ◆ Bay Metro Transit Authority
- ◆ Colleges – Delta, Saginaw State, Northwood
- ◆ Hospital
- ◆ Legislators

- ◆ Career College Access Network
- ◆ Public School Academy
- ◆ Other Counties – Gladwin, Gresham, Mt. Pleasant

Each of the transit agencies provided information about the type of service they operate. County Connection noted that Michigan Department of Transportation was sponsoring a survey to be conducted with its system riders in the next few weeks. The consultant met with County Connection after the meeting and agreed to provide a couple questions to possibly add to the survey.

The meeting helped provide the consulting team with information on the needs and vision of the community while also providing stakeholder information for additional outreach. It was agreed the next Plan Committee meeting would be in September 2016.

IDENTIFY UNMET TRANSPORTATION NEEDS AND BARRIERS IN THE PROJECT AREA

To identify the needs in a community the consultant started by evaluating the demographics of the City and County. The consultant can use the demographic information, particularly the factors that commonly make up the transit dependent population when identifying transit solutions that meet the needs of many existing and potential riders.

DEMOGRAPHICS

Demographics

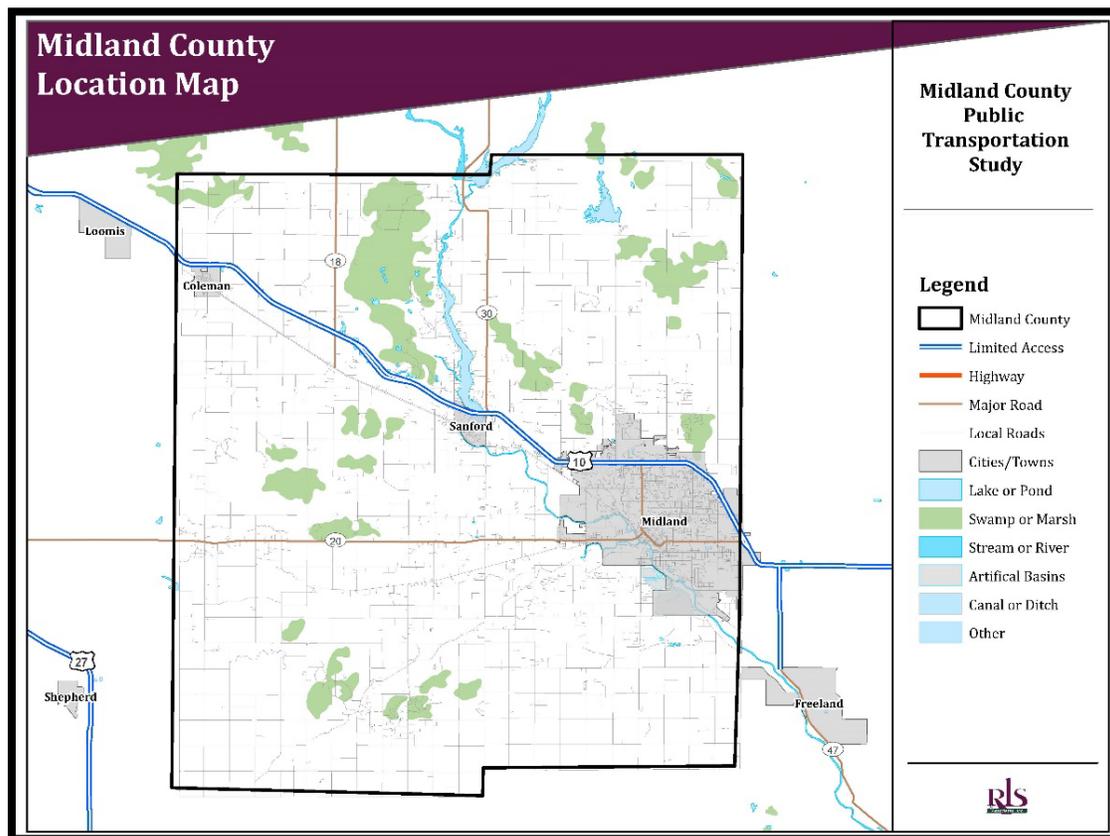
OVERVIEW

The demographics of an area are a strong indicator of demand for transportation service. Relevant demographic data was collected and is summarized in this section.

The data provided in the following section was gathered from multiple sources including the U.S. Census Bureau's 2014 American Community Survey (ACS) Five-Year Estimate, Michigan Department of Transportation, and the Mid-Michigan Medical Center. These sources are used to ensure that the most current and accurate information is presented. It is important to note that the ACS Five-Year Estimates have been used to supplement census data that is not available through the 2010 Census. As a five-year estimate, the data represent a percentage based on a national sample and does not represent a direct population count.

Midland County is located in central Michigan just to the west of Saginaw Bay. The City of Midland is the largest city in the County and has an estimated population of 42,200. The map in Exhibit 1 provides a depiction of the area included in this study.

Exhibit 1: Location Map



Population Density

Exhibit 2 illustrates the population density per square mile for Midland County. As illustrated, population is concentrated in and around the City of Midland. The block groups within the city limits have the highest population per square mile, with block groups ranging from between 4,120 to 6,100 persons per square mile. The City of Midland also has areas of moderate to moderately high population densities. These block groups have densities ranging from 833.8 to 4,119 people per square mile. The remaining portions in the County have population densities ranging from low (248.8 to 833.7) to very low (29.88 to 248.7).

Exhibit 2: Population Density

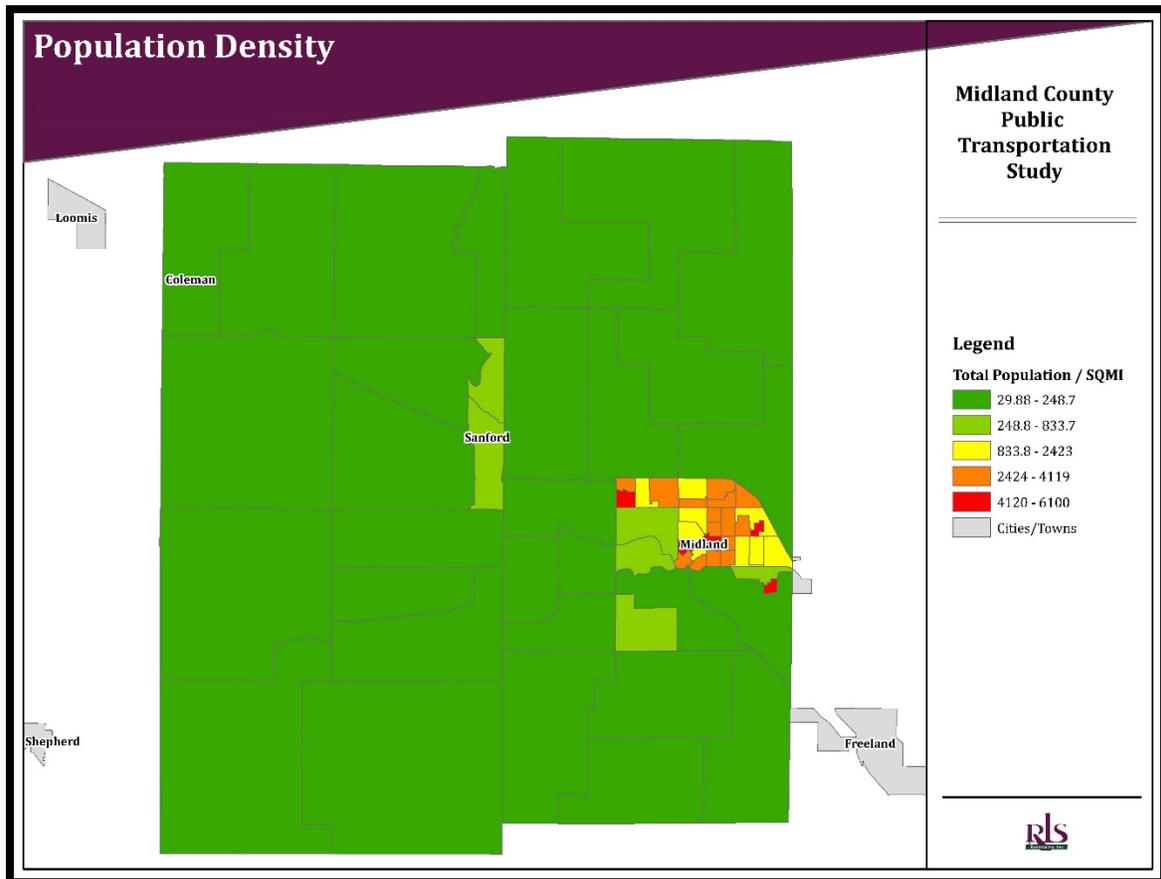
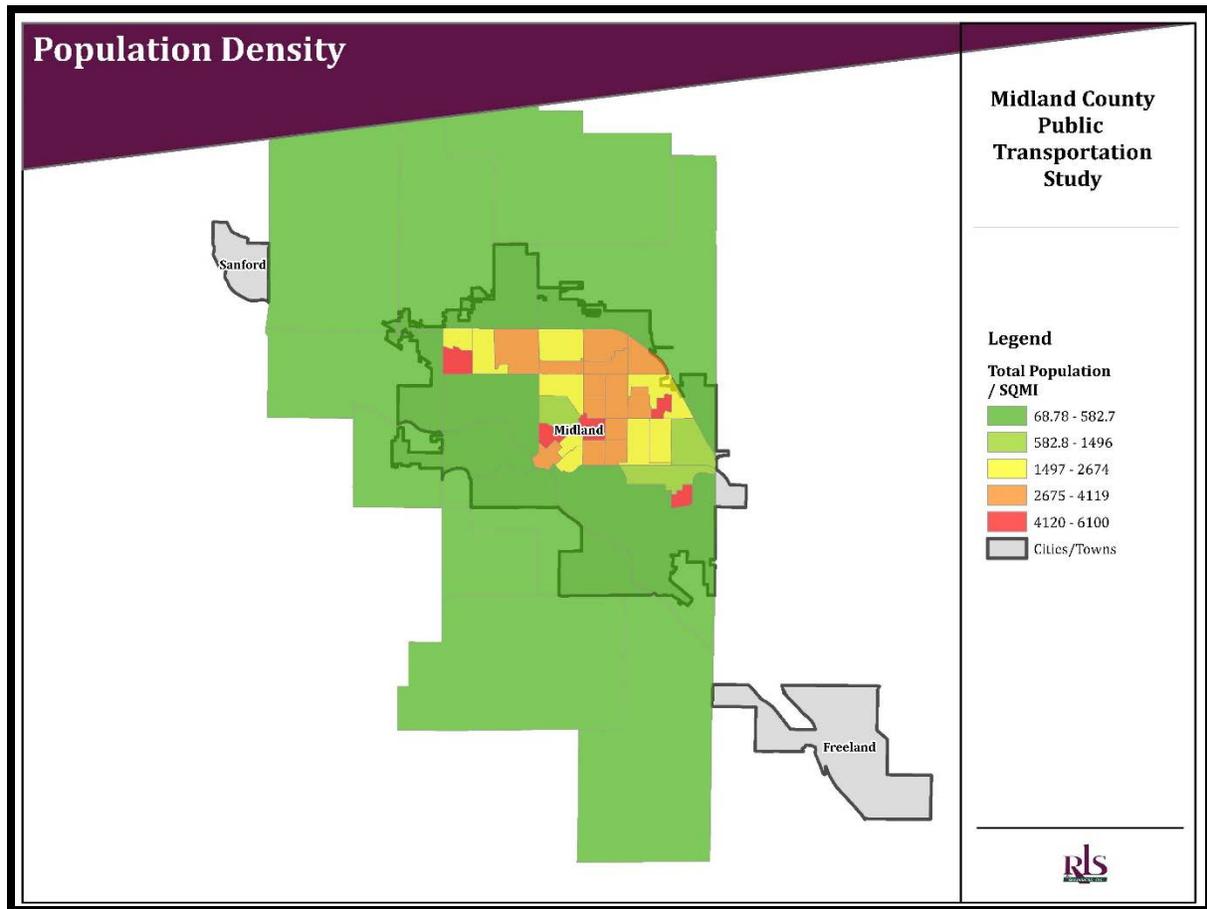


Exhibit 3, on the following page, illustrates the population density for the block groups in and around the City of Midland. The zoomed in view around Midland better visualizes the higher population densities. One area of high population density (4,120 – 6,100) is the apartment complex area north of Northwood University and H.H. Dow High School. Other areas of high population density are around Midland High School, Forest Glen, Shattuck Apartments, Maple Grove Mobile Home Village, Briarwood Park, and Carpenter School.

Exhibit 3: City of Midland Population Density



Older Adult Population

Older adults are most likely to use transportation services when they are unable to drive themselves or choose not to drive. Older adults also tend to be on a limited retirement income and, therefore, transportation services are a more economical option to owning a vehicle. For these reasons, the population of older adults in an area is an indicator of potential transit demand.

There is a trend occurring in the United States relating to the aging of the population. The two age cohorts with the largest percentage of growth over the last decade were the 50-54 year old cohort and the 45-49 year old cohort. People in these two age groups were primarily born during the post-WWII “baby boom,” era defined by the Census Bureau as persons born from 1946 through 1964. These baby boomers have reached, or are now reaching, the age of 65 and are becoming more likely to use transportation services if they are available.

Further, the Administration on Aging (U.S. Department of Health and Human Services) reports that, based on a comprehensive survey of older adults, longevity is increasing and younger seniors are healthier than in all previously measured time in our history. Quality of life issues and an individual's desire to live independently will put increasing pressure on existing transit services to provide mobility to this population. As older adults live longer and remain independent, the potential need to provide public transit greatly increases.

Exhibit 4 illustrates the percentage of persons over 65 years of age by block group for Midland County. Just over 15 percent (15.5) of Midland County's population is age 65 and over. The higher percentages of adults 65 and over is concentrated in the eastern section of the County. Areas shaded in orange and red have percentages of population 65 and over between 19.88 and 33.05 percent. Moderate percentages of population 65 and over are shaded in yellow and are found throughout the County. All the areas shaded in yellow, orange, or red have higher percentages of population 65 and over when compared to the State of Michigan (14.6 percent).

Exhibit 5 zooms in to the area around the City of Midland. The highest concentration of population 65 and over is located near downtown Midland. Areas of moderately high age 65 and over population is found mainly in the northern parts of the City of Midland.

Exhibit 4: Percent of Population Age 65 and Older

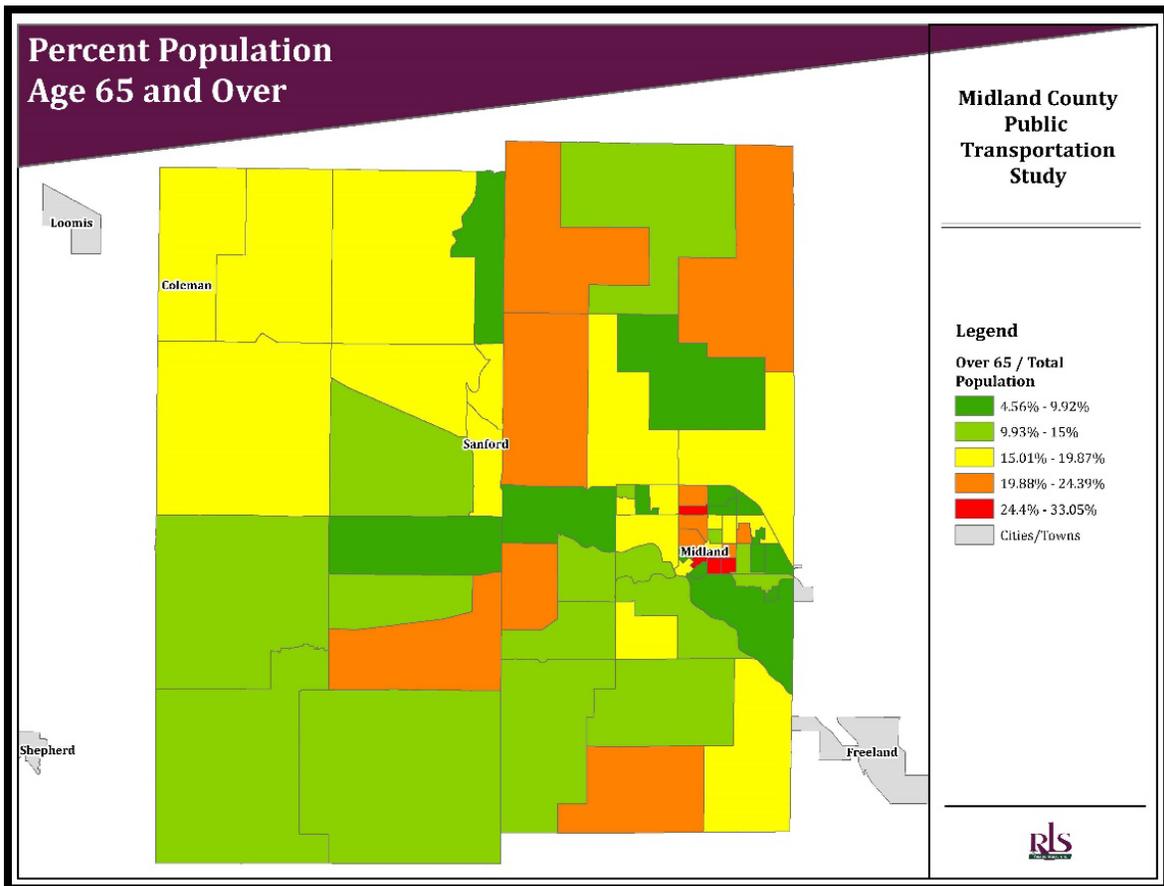
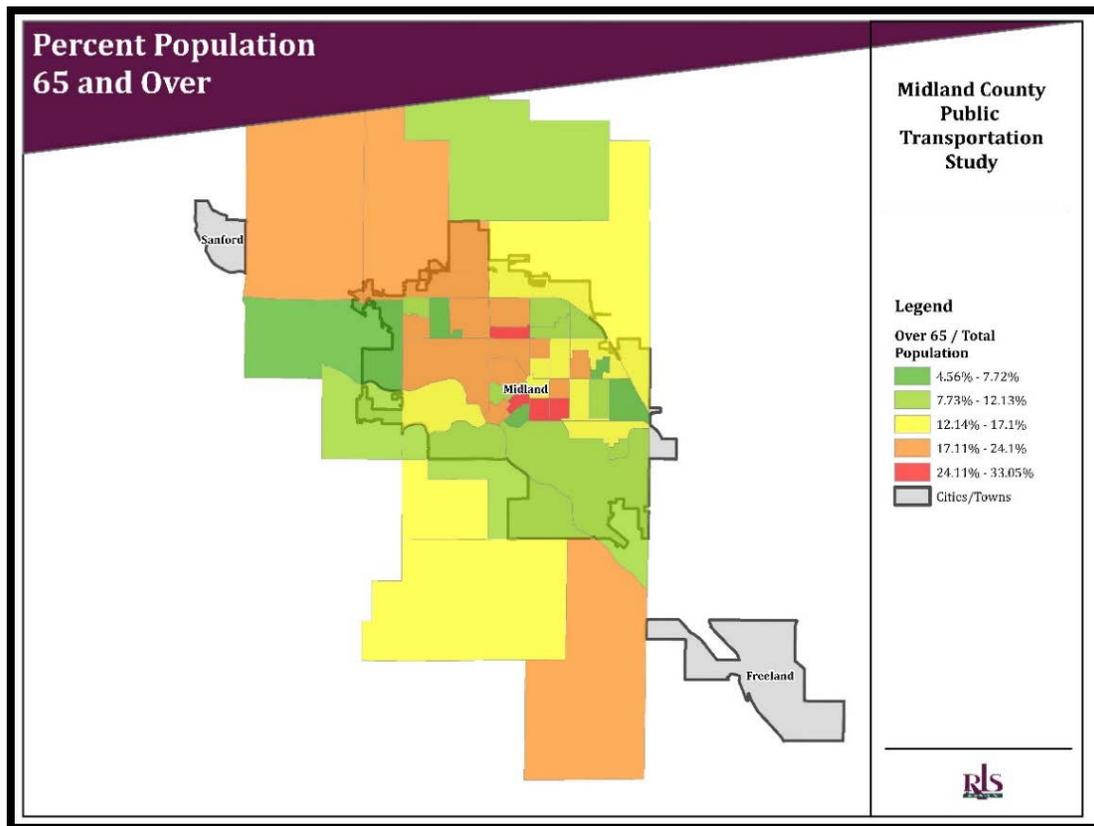


Exhibit 5: Percent of Population Age 65 and Older (City Focus)



Colleges, Universities and College Age Population Distribution

Exhibit 6 maps the location of Colleges and Universities in and around Midland County. Northwood University and Davenport University are located within Midland County, while Central Michigan, Mid-Michigan Community College, Delta College, and Saginaw Valley State University are located just outside the County.

Exhibit 7 illustrates the percentage of college age students per block group in Midland County. The block groups with the highest percentages are located around Northwood University.

Exhibit 6: Location of Colleges and Universities

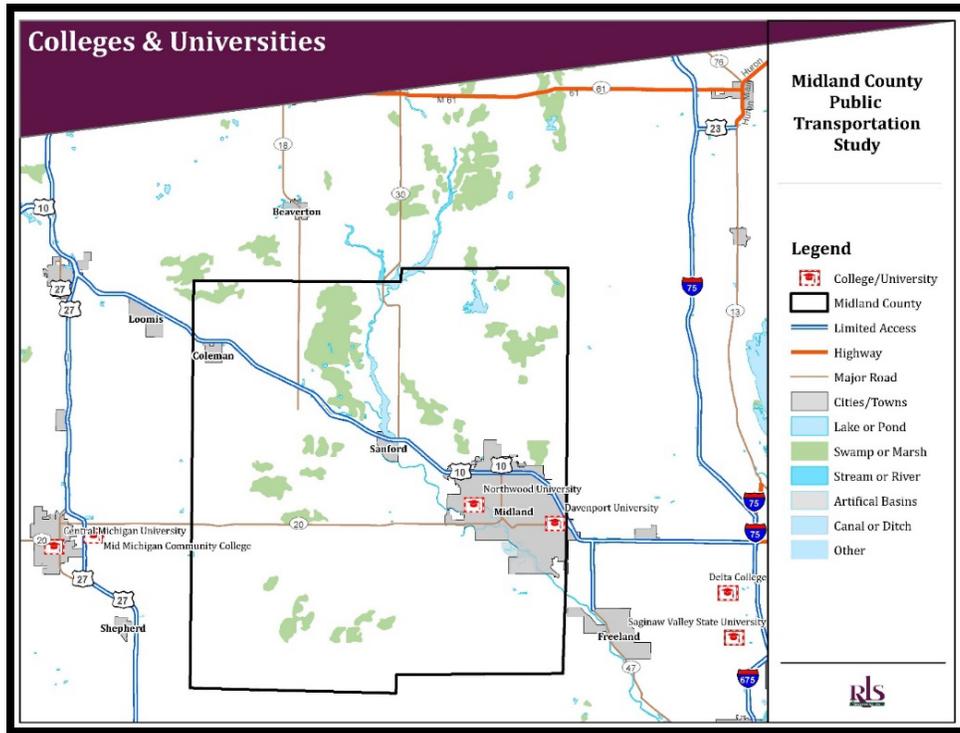
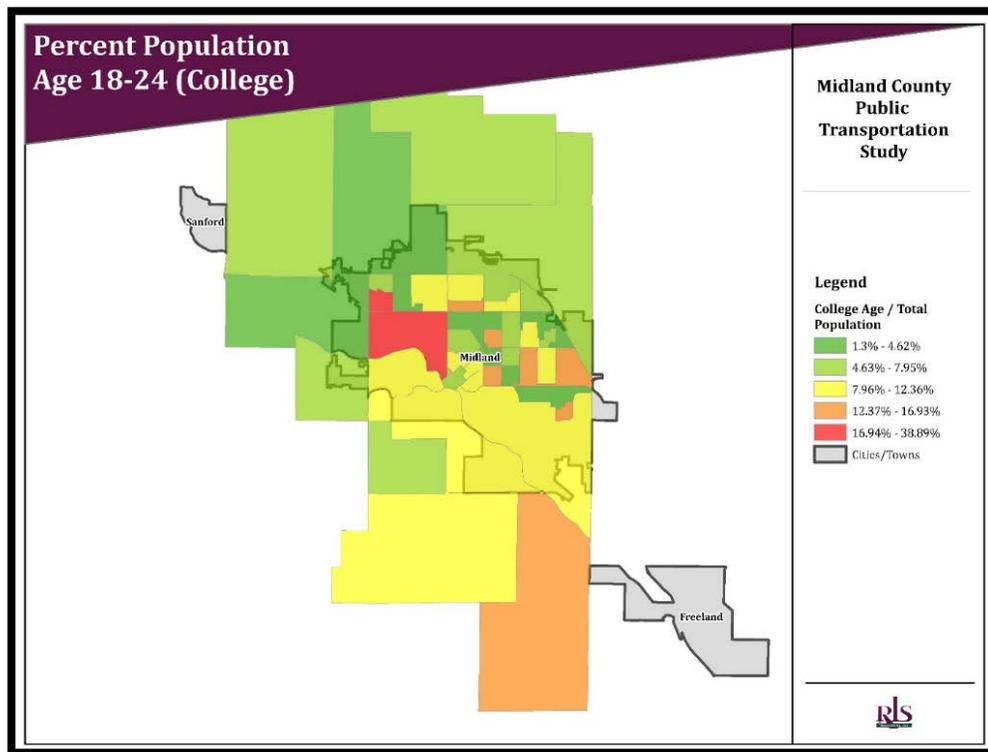


Exhibit 7: Percent of College Age Population



Employment

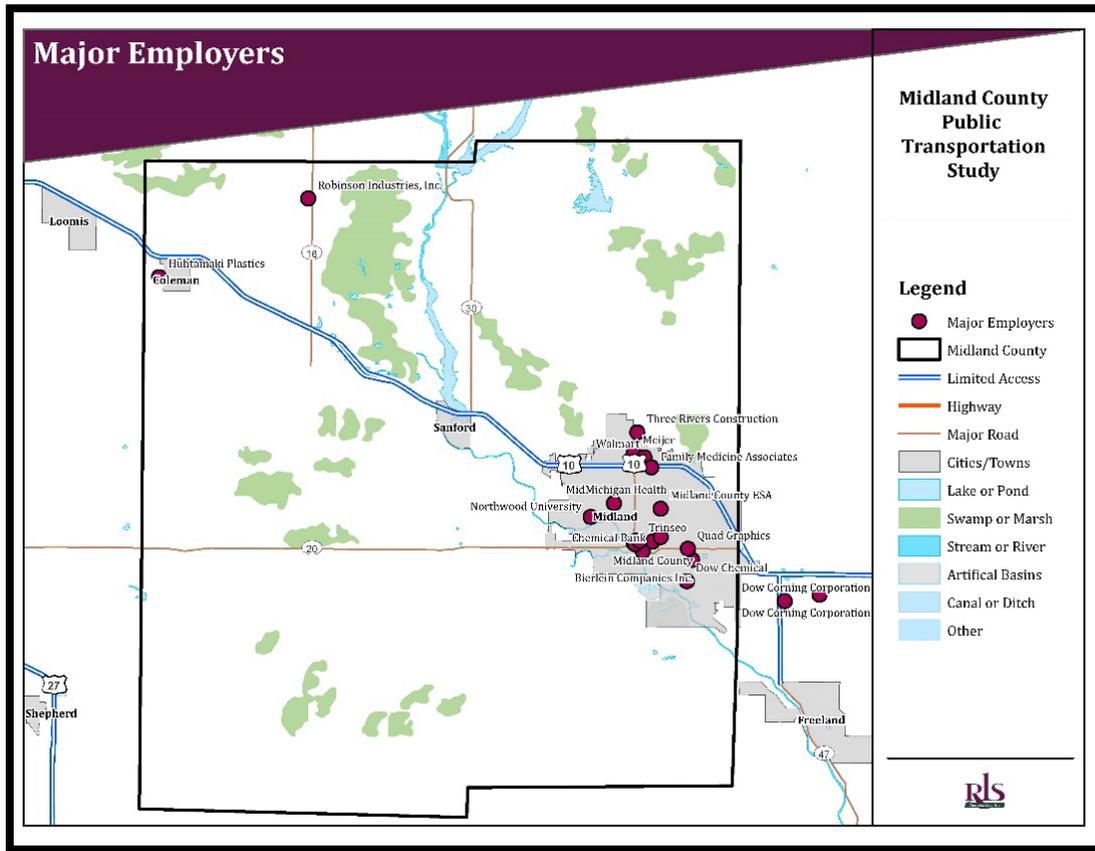
The Michigan Department of Transportation provided Transportation Analysis Zone (TAZ) data for Midland County that included total employment figures for 2013. Exhibit 8 illustrates the areas with the highest amount of employment. Areas of highest employment were around Mid-Michigan Medical Center and Dow Chemical. The areas of moderately high employment (1,175 – 2,700) were around Dow Chemical and the Midland Mall. These figures do not reflect total employment by Dow with combined facilities.

Though the concentration of employment is in the City of Midland, additional employers are located in the northwest corner of Midland County. The Town of Coleman has several companies involved with manufacturing and draw employees from the Town. Exhibit 9 shows the major employers county-wide.

Exhibit 8: Total Employment



Exhibit 9: Location of Major Employers



Poverty Status

Approximately 13.2 percent of the Midland County population lives below the poverty level. This is lower than the state average of 16.9 percent. Exhibit 9 illustrates the percent population in Midland County living below the poverty level. The highest poverty levels are located in the City of Midland, specifically in the southeast portion. Areas of moderately high and moderate percentages of poverty are located throughout the County.

Exhibit 10 zooms into the City of Midland. Areas shown in red have poverty rates between 23.1 and 40.8 percent. A very large section of southeastern Midland has the highest poverty rates in the City and County. The areas in this section are around the Dow Chemical plant and Midland Wastewater Treatment center.

Exhibit 10: Percent Living Below Poverty

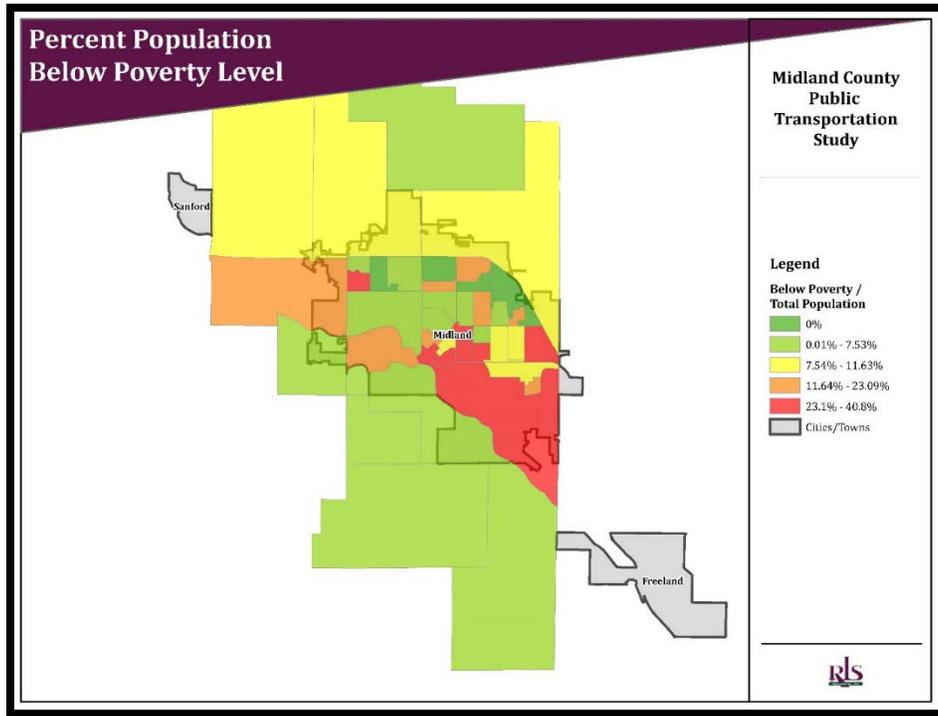
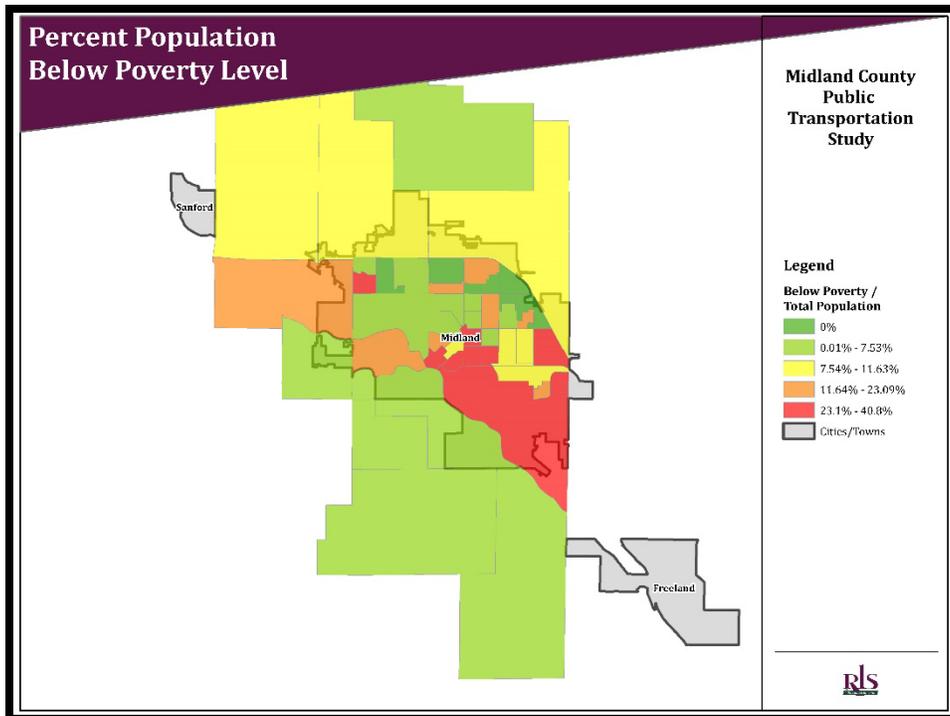


Exhibit 11: Percent Living Below Poverty (City Focus)



Zero Vehicle Households

Zero vehicle households are a demographic that is frequently used to determine transit dependence. Midland County has 4.9 percent of households with zero vehicles available. This percentage is lower than the state's 7.9 percent. Exhibit 11 illustrates the percentage of housing units that have no available vehicle, according to 2014 American Community Survey Five-Year Estimate data. The block groups with the red shading have the highest percentage of housing units with no available vehicles. These block groups are concentrated in the southwest section of the City of Midland, see exhibit 12. Over 20.61 percent of households within these block groups have no vehicle available. Areas with a moderately high percentage ranging from 10.19 to 20.6 percent of zero vehicle households can be found within the City of Midland and just to the east of the City.

Exhibit 12: Zero Vehicle Households

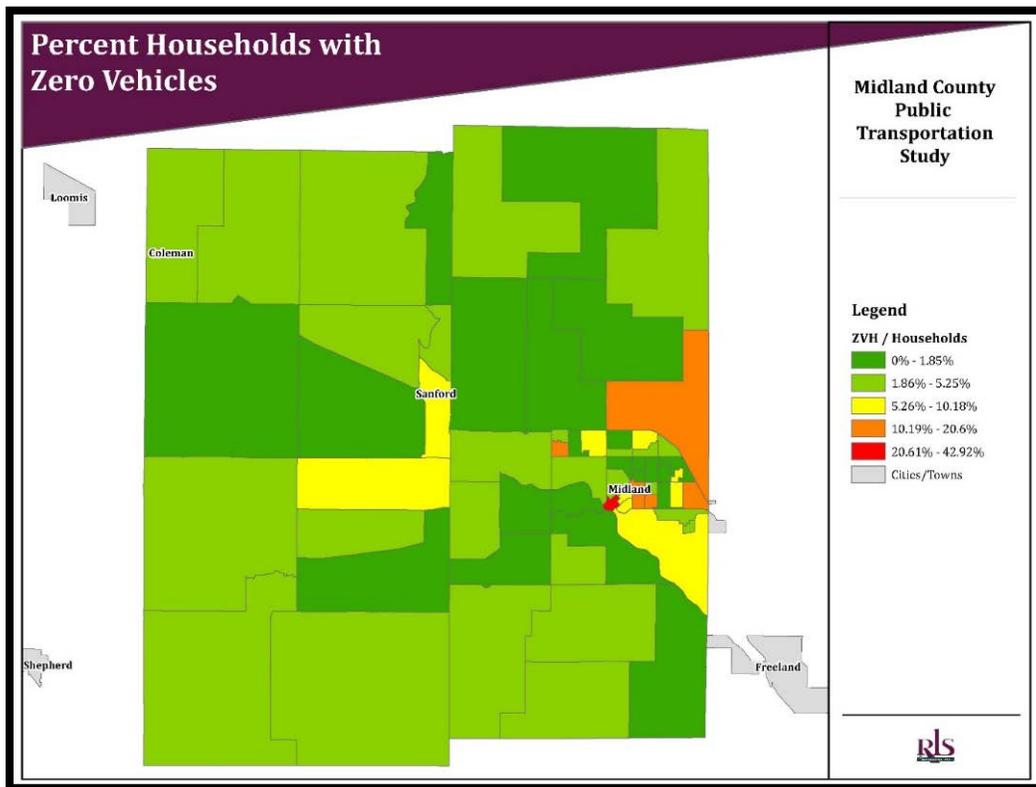
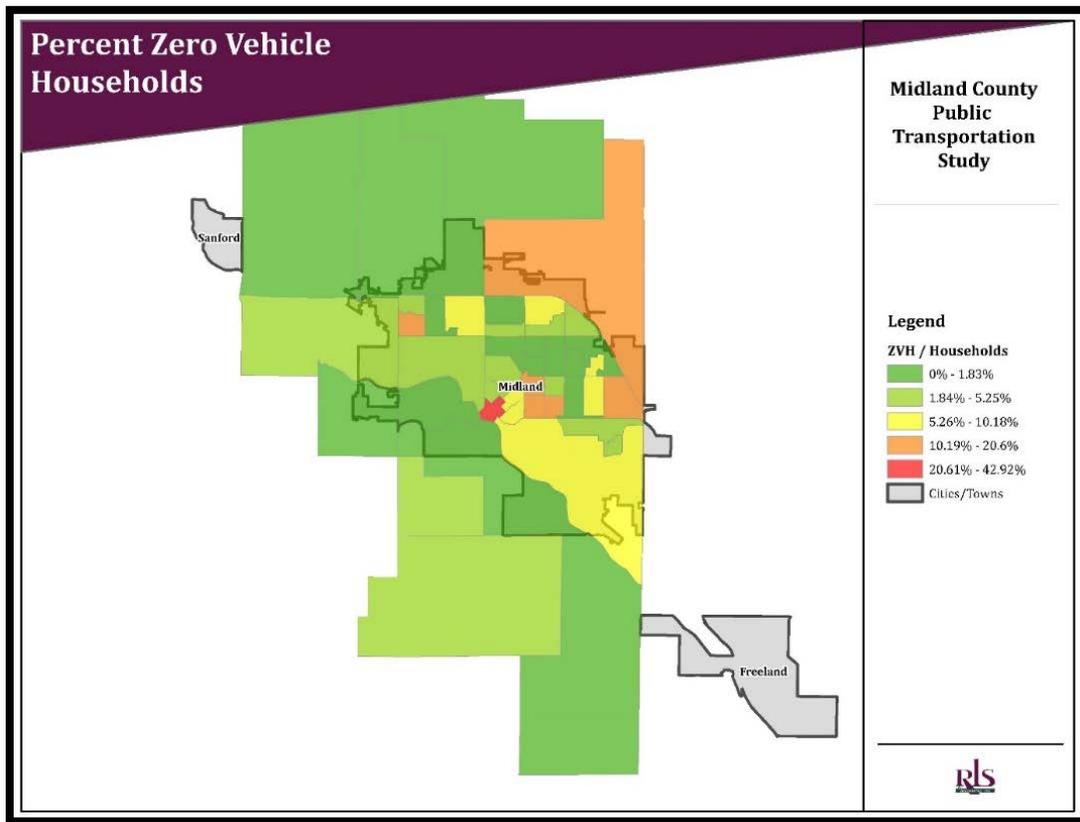


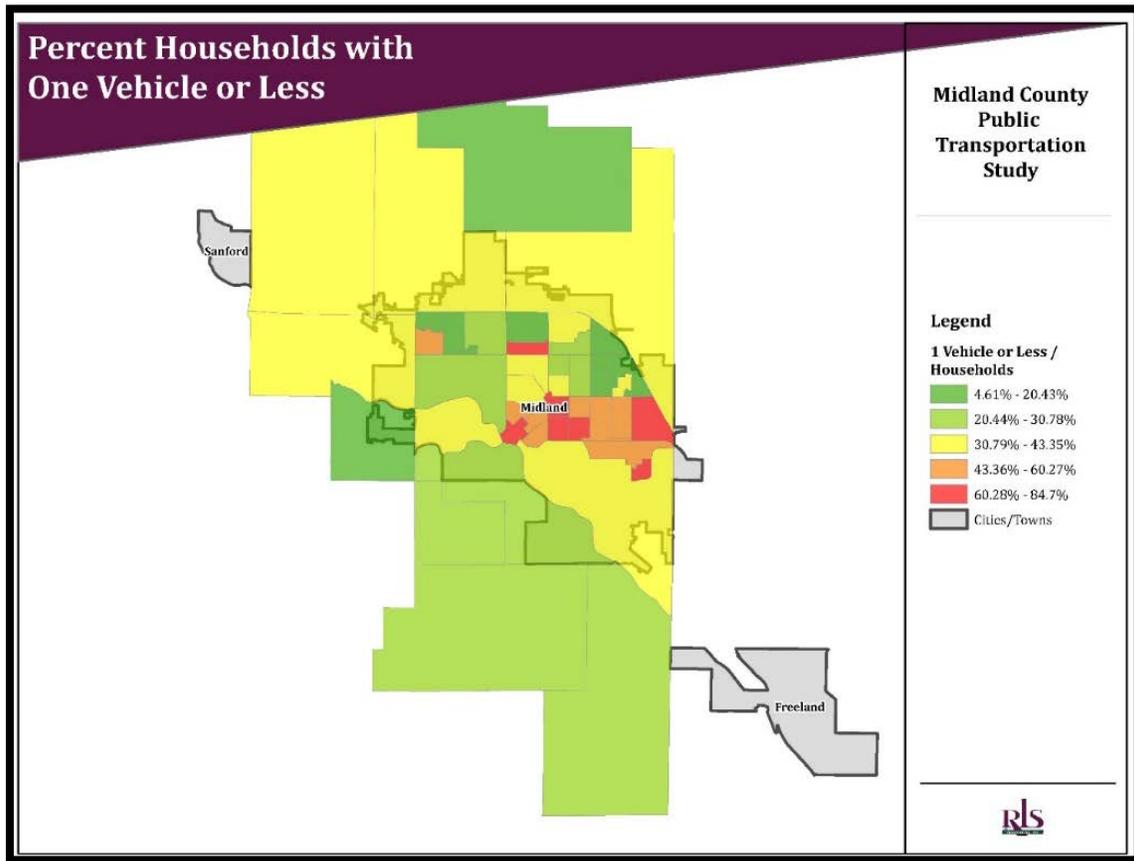
Exhibit 13: Zero Vehicle Households (City Focus)



One Vehicle or Less Households

Similar to zero vehicle households, Midland County also has a lower percentage of households with one vehicle or less (37.3 percent) as compared to the State of Michigan (43 percent). Exhibit 13 visualizes where the households with one or less vehicle are located near the City of Midland. Areas shaded in red have between 60.28 and 84.7 percent of households with one or less vehicle. These areas are located around downtown Midland, Midland High School, Stratford Woods Park, Maple Grove Mobile Home Village, and the area just south of Jefferson Middle School.

Exhibit 14: Households with One Vehicle or Less



SECTION SUMMARY

Demographic analysis is a tool used to provide insight into the community make-up to identify areas of transit dependent individuals. Characteristics commonly found with transit dependent populations are age, income, disability, and carless or single vehicle households. This information is developed to provide the consultant with information on the community but also as an element in the solutions development phase of the project.

The demographic analysis, showed the majority of the transit dependent population is within the City limits with some pockets of the city including dense housing areas like apartment complexes, assisted living facilities and colleges as having the most transit dependent population. Low income areas in the southwest corner of the City also showed a high level of transit dependency.

As transit solutions are developed these identified areas are significant for transit development and should be considered if additional services are considered.

PEER COMMUNITY REVIEW

INTRODUCTION

Analysis of peer communities from the perspective of the public transportation industry is helpful in development of expanded or new service structures. The following analysis includes a brief overview of statistics pertaining to transportation services, by mode, that are provided in communities similar to Midland in size, demographic, and socio-economic make up.

This analysis includes the transportation statistics of six peer communities that have implemented demand response and fixed route transportation. The purpose is to inform Midland stakeholders about the productivity and expenses related to the implementable strategies suggested as Midland considers transportation service expansions and changes.

The review addresses issues of demographic conditions, including:

- ◆ Population
- ◆ Geography (population per square mile and land area in square miles)
- ◆ Age
- ◆ Families and Living Arrangements
- ◆ Education
- ◆ Health
- ◆ Economy
- ◆ Employment
- ◆ Transportation (travel time)
- ◆ Income and Poverty

The review also addresses the transit operating productivity measures taken by public transit services in each peer community, including:

- ◆ Annual Vehicle Revenue Miles
- ◆ Annual Vehicle Revenue Hours
- ◆ Annual Passenger Trips
- ◆ Annual Passenger Trips per Mile
- ◆ Annual Passenger Trips per Hour
- ◆ Total Annual Operating Expenses
- ◆ Cost per Revenue Mile
- ◆ Cost per Revenue Hour
- ◆ Cost per Passenger Trip
- ◆ Maximum Number of Vehicles in Service

PEER COMMUNITIES

The first study examines the demographic and socio-economic factors that are most likely to influence transit demand in any American community. The communities included in the study are similar in population size and density. They also have similar education and income levels. Table 1 depicts six peer communities. The table is arranged in order of similar population density, ranging from least to most people per square mile. Population density is an important

factor in projecting demand for scheduled route services. Routes are most successful in areas of highest density. Density is one of several factors to be considered when contemplating a scheduled route, and it is a starting point for comparing peers.

As illustrated in Table 1, the City of Midland has the third lowest population density among the peer communities. Battle Creek city, Michigan and Concord city, New Hampshire have lower populations per square mile. Midland reports having the second lowest unemployment rate among selected peers. Midland also has the second highest percentage of the population with a four-year college education or higher; second to Olympia, Washington.

Socio-economic and demographic factors that often indicate a higher incidence of transit demand are:

- ◆ Age
- ◆ Disability or mobility limitation
- ◆ Income
- ◆ Unemployment
- ◆ Commute time

The peer communities have relatively similar percentages of the total population that are age 65 or older. Midland has the second highest percentage among its peers. As people age, they are less likely to drive and more likely to use public transportation options. In Midland, the percentage of individuals under age 18 is higher than the percentage of those age 65 and older.

For the younger than 65 population, the presence of a disability is the most common factor that limits a person's likelihood to be a driver and increases the likelihood that he or she will use transit. Midland has the second lowest incidence of individuals under age 65 with a disability, among the selected peer communities.

Unemployment or low income is also a common factor to cause an individual to use public transit. Midland has the second lowest unemployment rate and the third highest median household income among the selected communities. Finally, the mean travel time to work for Midland commuters is 16.3 minutes. This is the lowest commute time among the peer communities.

Based on the peer comparison, the transit demand demographic factors for Midland generally indicate a lower than average level of projected latent demand for fixed schedule mode of transit services.

Table 1: Demographic Comparison, by Community

	Concord city, New Hampshire	Battle Creek city, Michigan	Midland city, Michigan	Kokomo city, Indiana	Olympia city, Washington	Bay City city, Michigan	Port Huron city, Michigan
Population							
Population estimates, July 1, 2015, (V2015)	42620	51589	42200	57995	50302	33917	29330
Geography							
Population per square mile, 2010	664.6	1228.6	1242.4	2458.1	2608	3436.2	3735.2
Land area in square miles, 2010	64.25	42.61	33.7	18.5	17.82	10.17	8.08
Age							
Persons under 18 years, percent, April 1, 2010	20.7	26.1	23.4	24.0	19.5	24.9	25.6
Persons 65 years and over, percent, April 1, 2010	13.8	13.4	15.6	15.8	13.9	12.3	13.1
Families and Living Arrangements							
Households, 2010-2014	17,141	20,502	17,603	24,823	20,657	14,134	12,106
Persons per household, 2010-2014	2.32	2.47	2.32	2.25	2.25	2.41	2.40
Living in same house 1 year ago, percent of persons age 1 year+, 2010-2014	81.8	80.6	81.2	79.6	78.1	83.5	80.3
Education							
High school graduate or higher, percent of persons age 25 years+, 2010-2014	92.1	88.4	94.5	87.3	94.3	86.1	87.3
Bachelor's degree or higher, percent of persons age 25 years+, 2010-2014	35.0	21.3	42.2	16.8	43.4	16.2	16.0
Health							
With a disability, under age 65 years, percent, 2010-2014	10.2	12.1	8.5	13.5	7.4	13	18.1
Persons without health insurance, under age 65 years, percent	13.0	13.9	10.6	17.6	14.1	13.2	15.4
Economy							
In civilian labor force, total, percent of population age 16 years+, 2010-2014	65.1	59.8	60.8	59	65.0	61.5	60.7
Employment							
Unemployment Rate not seasonally adjusted (Average per month Mar.-Aug. 2016)*	2.45	4.45	3.63	5.1	6	5.07	8.4
Transportation							
Mean travel time to work (minutes), workers age 16 years+, 2010-2014	21.8	18.7	16.3	19.4	20.5	19.5	19.2
Income and Poverty							
Median household income (in 2014 dollars), 2010-2014	\$54,182	\$37,885	\$50,433	\$35,690	\$52,834	\$36,179	\$32,888
Median value of owner-occupied housing units, 2010-2014	\$210,800	\$81,300	\$137,900	\$83,100	\$240,800	\$68,800	\$77,100
Per capita income in past 12 months (in 2014 dollars), 2010-2014	\$30,043	\$22,010	\$30,715	\$22,102	\$30,206	\$19,616	\$18,265
Persons in poverty, percent	11.7	21.8	14.7	21.1	16.5	23.6	28.8

While the socio-economic and demographic factors do not indicate a strong likelihood for high transit demand, each of the selected peer communities successfully operates public transit services that include both demand response and fixed route modes. Table 2 provides an overview of transit productivity factors for public transit services in each of the peer communities.

- ◆ Transit service efficiency is measured in terms of operating expense per vehicle revenue mile and hour.
- ◆ Service efficiency is measured in terms of operating expense per passenger trip. A passenger trip is one person riding from point A to point B.
- ◆ Service effectiveness is measured in terms of passenger trips per revenue mile and revenue hour.

Total operating expenses by mode of service, total annual vehicle miles and hours, and the total number of passenger trips provided are also illustrated to provide a comparison of the size and scale of the transit service.

Data included in Table 2 is derived from the National Transit Database 2014 or 2013 data, with the exception of Concord Area Transit data that was provided by New Hampshire Department of Transportation, Bureau of Rail and Transit.

Table 2: Peer Community Transit System Profiles

	Concord, New Hampshire (Concord Area Transit)	Battle Creek, Michigan (Battle Creek Transit)	Midland, Michigan (Dial-A-Ride)	Kokomo, Indiana	Olympia, Washington (Intercity Transit)	Bay City, Michigan (Bay Metro)	Port Huron, Michigan (Blue Water Area Transportation Commission)
Annual Vehicle Revenue Miles							
Commuter Bus	N/A	N/A	N/A	N/A	421,945	N/A	99,661
Demand Response	196,247	136,634	437,629	216,402	841,607	483,874	2,276,131
Fixed Route		460,871		146,135	2,344,542	987,823	403,494
Total	196,247	597,505	437,629	362,537	3,608,094	1,471,697	2,779,286
Annual Vehicle Revenue Hours							
Commuter Bus	N/A	N/A	N/A	N/A	17,547	N/A	3,541
Demand Response	Yes	12,861	27,575	19,218	66,305	28,844	142,204
Fixed Route	Yes	30,954	N/A	12,316	183,863	47,478	32,302
Total	12,930	43,815	27,575	31,534	267,715	76,322	178,047
Annual Passenger Trips							
Commuter Bus	N/A	N/A	N/A	N/A	211,686	N/A	23,553
Demand Response	Yes	28,409	107,181	71,553	156,477	52,473	581,322
Fixed Route	Yes	542,483	N/A	402,740	4,222,385	496,293	965,141
Total	102,069	570,892	107,181	474,293	4,590,548	548,766	1,570,016
Annual Passenger Trips per Mile							
Commuter Bus	N/A	N/A	N/A	N/A	0.50	N/A	0.2
Demand Response	Yes	0.2	0.2	0.3	0.19	0.1	0.3
Fixed Route	Yes	1.2	N/A	2.8	1.80	0.5	2.4
Fixed Route/Demand Response	0.52						
Annual Passenger Trips per Hour							
Commuter Bus	N/A	N/A	N/A	N/A	12.06	N/A	6.7
Demand Response	Yes	2.2	3.90	3.7	2.36	1.8	4.1
Fixed Route	Yes	17.5	N/A	32.7	22.96	10.5	29.9
Fixed Route/Demand Response	7.89						
Total Annual Operating Expenses							
Commuter Bus	N/A	N/A	N/A	N/A	\$1.98M	N/A	\$317,734
Demand Response	Yes	\$1.02M	\$1.77M	\$950,430	\$7.23M	\$2.9M	\$8.57M
Fixed Route	Yes	\$3.13M	N/A	\$466,887	\$21.29M	\$5.3M	\$2.71M
Total	\$884,990	\$4.15M	\$1.77M	\$1,417,317	\$30.5M	\$8.2M	\$11.60M
Cost per Revenue Mile							
Commuter Bus	N/A	N/A	N/A	N/A	\$4.69	N/A	\$3.19
Demand Response	Yes	\$7.51	\$4.06	\$4.39	\$8.60	\$6.03	\$3.77
Fixed Route	Yes	\$6.79	N/A	\$3.19	\$9.08	\$5.40	\$6.73
Fixed Route/Demand Response	\$4.51						
Cost per Revenue Hour							
Commuter Bus	N/A	N/A	N/A	N/A	\$112.86	N/A	\$89.73
Demand Response	Yes	\$79.82	\$64.43	\$49.46	\$109.10	\$101.21	\$60.30
Fixed Route	Yes	\$101.06	N/A	\$37.91	\$115.82	\$112.43	\$84.05
Fixed Route/Demand Response	\$68.44						
Cost per Passenger Trip							
Commuter Bus	N/A	N/A	N/A	N/A	\$9.35	N/A	\$13.49
Demand Response	Yes	\$36.14	\$16.58	\$13.28	\$46.23	\$55.64	\$14.75
Fixed Route	Yes	\$5.77	N/A	\$1.16	\$5.04	\$10.76	\$2.81
Fixed Route/Demand Response	\$8.67						
Maximum Number of Vehicles in Service							
Commuter Bus	N/A	N/A	N/A	N/A	9	N/A	3
Demand Response	Yes	7	12	19	34	16	42
Fixed Route	Yes	14	N/A	4	50	46	9
Total	Not Available	21	12	23	93	62	54

SECTION SUMMARY

Similar to demographics, the peer analysis provides the consultant with another decision making tool to use when developing solutions for future growth. The consultant chose transit systems with

similar demographic and geographical areas to illustrate the types of transit services provided and characteristics of those services. There are many factors influencing the level of service in the peer communities besides demographic and geographic information. In some cases the amount of funding available can influence the level and type of service available. In other cases, the political climate can have an impact on transit development. The peer analysis does not recognize the impact of tourism to a community like Port Huron.

Through this analysis the consultant found these similar communities all support a fixed route element as part of their transit service. The cost per passenger trip is considerably lower than the cost of demand response or complimentary paratransit even though some of the peers spend more on fixed route than demand response service.

This information will be considered when options are developed and additional services are considered.

COMMUNITY OUTREACH

TRANSIT SYSTEM INTERVIEWS

In an effort to enhance the knowledge of existing transit services being provided in and around Midland, the consultant conducted interviews with four transportation services in Greater Midland.

City of Midland Dial-A-Ride

Summary of Service

The City of Midland provides city-wide, public transit service through its Dial-A-Ride Transportation (DART). The system operates seven days a week offering curb-to-curb transportation through its first-come/ first-serve reservation scheduling service. The service hours are Monday through Friday 6:30a.m. – 10:30p.m.,



Saturday 9a.m. – 8p.m. and Sunday 8:30a.m. – 2p.m. Sunday service was recently re-started after the service had been discontinued in 2008 due to poor ridership and tightening budgets. The average one-way fare for the service is \$2.00 with discounts provided for seniors, persons with disabilities (\$.75 fare) and children (\$1.00 fare). These fares have remained the same since 1996.

All ride requests are handled by DART's dispatch center where rides are scheduled based on seat availability, time of day and location. Same-day requests for service are provided, if possible, but are not guaranteed as the service is first-come/first-serve. All rides are scheduled based on a 20-minute pickup window on either the hour or half hour. DART recently experimented with a new software system to increase pickup flexibility while also maintaining levels of efficiency and productivity. The new scheduling system did not meet DART's expectations and it recently went back to PC Trans software, which increased efficiency. The system expects to provide around 100,000 one-way trips in 2016.

DART operates a fleet of 14 late model cutaway-style vehicles (small buses), which can transport multiple persons with and without mobility devices. The fleet is maintained at the City garage where repairs and service are performed promptly by the City Maintenance Department.

The transit system is funded through farebox revenues, local City match for Federal Transit Administration (FTA) programs 5307 and 5339, and Michigan DOT.

The majority of ridership (70%) includes seniors and persons with disabilities traveling to medical appointments, The Arnold Center, and Midland Mall. The Arnold Center service requires four vehicles during the morning and afternoon hours to meet the transportation needs of their Organizational Employment Services. All other times of the day require one vehicle. Peak ridership usually occurs September-June when DART provides rides for school age children participating in

the School of Choice program, which allows students to attend schools outside their immediate public school district.

The City DART has agreements with County Connection and Bay Metro Transit Authority to coordinate services where possible. DART provides connection service to Bay Metro, which provides hourly intercity bus service to Department of Health and Human Services in downtown Midland.

Challenges

- ◆ DART provides an efficient and productive demand response service, but faces challenges on a daily basis with passengers not showing up for their scheduled ride or cancelling at the last minute. In the first six months of 2016, DART had 1,865 “no-shows” and 16,519 late cancellations. DART enforces their policies for no-shows, as needed.
- ◆ Many same-day requests for service are not able to be scheduled due to lack of schedule. Call intake staff make every effort to work with the rider to provide a ride at an alternative time.
- ◆ DART also receives calls for rides for second shift employment, which is outside of DART’s service hours. In those cases the caller is referred to County Connection, which can provide trips in the City when DART is not in service.
- ◆ The transit system has seen a decrease in ridership in the last few years due to the reduction in transportation service for students with special needs ride requests.

County Connection

Summary of Service

County Connection operates throughout Midland County providing general public, demand response service (dial-a-ride). The service operates in a similar manner to Midland Dial-A-Ride by requiring riders to call in advance to schedule their curb-to-curb, shared ride service. Some same-day trip requests are accommodated, but most require one-day advance notice.



The service operates Monday through Friday, 5a.m.-11p.m. and Saturday from 5:30a.m.-10a.m. and 2p.m.-7p.m. There is no Sunday service. Fares range from \$3.00 to \$1.50 with discounts for seniors, persons with disabilities, and children.

County Connection began service in 1996 in response to a statewide effort to assist residents dependent on welfare. Through a grant named Project Zero, the system began by providing transportation services to the transit dependent population and eventually expanded to general public transit throughout the County. The service is celebrating its 20-year anniversary and expects to include the milestone in its promotional material and marketing.

The transit system, like DART, uses PC Trans software for its scheduling and dispatching activities. It is currently working on integrating tablets for 36 County Connection drivers to use to send and receive trip information and improve data collection.

A breakdown of County Connection rider and trip purpose is listed below:

- ◆ 55,215 trips (Jan. 1 – Sept. 21, 2016)
- ◆ 33,063 general public
- ◆ 18,036 seniors
- ◆ 1,644 disabled seniors
- ◆ 18,709 disabled non-seniors
- ◆ Estimated 75-80% low income
- ◆ Estimated 65-70% work trips
- ◆ Estimated 15% recreational trips
- ◆ Estimated 15-20% medical trips

Of 325 trips a day – 150 are subscription (standing rides)

County Connection provides frequent service to/from Coleman for transportation to work either in Coleman or Midland. The service also provides a large number of rides to/from the Arnold Center in Midland.

The transit system has 22 cutaway vehicles and provides maintenance for those vehicles at their administration and maintenance facility on Isabella Road. Currently, the facility is finishing repairs from damage as a result of a small fire. Of the 22 vehicles, 17 vehicles are on the road daily providing County-to-County and County-to-City of Midland trips.

County Connection operates several propane fueled vehicles and is expecting two new propane vehicles to arrive this year. The system feels the propane engines provide lower maintenance and can be conveniently refueled at a recently opened propane fuel station nearby.

As mentioned earlier in this report, a survey of County Connection riders began a few months ago, but did not meet the expectations of the transit system. The coordinators for the survey, Michigan State University, expect to be back in October, 2016, to complete the passenger survey and provide results soon after.

Funding for the County service comes from millage, FTA programs 5309 and 5311, Michigan DOT, farebox revenues and advertising.

Challenges

- ◆ Like DART, County Connection struggles with last minute cancellations and no-shows. Pickup locations can be up to 30 miles away, sometimes making cancellations and no-shows substantial travel time expenses.
- ◆ Same-day requests for rides are frequent, but for the most part County riders understand a one-day advance notice is necessary.

Senior Services

Summary of Service

Senior Services, located in the City of Midland provides multiple services for residents over the age of 60. One of those services is transportation. The majority of the trips provided are to Adult Day Services and medical appointments. The service provides a higher level of service with door-to-door pickups and drop-offs, and a diversified fleet made up of buses, vans, mini-vans and sedans. The fare for each trip is \$2.50 and most seniors living independently in Midland qualify for the service.

Funding for transportation comes from a senior millage and through a contract with Region VII Area Agency on Aging. The service provides approximately 75 rides a day and is only offered Monday through Friday.

Bay Metro Transit Authority (BMTA)

Summary of Service

The BMTA provides intercity bus service between Bay County, City of Midland and Saginaw with Route 4 operating Monday through Friday. The route meets riders from DART and County Connection at the Department of Health and Human Services Building in downtown Midland 12 times daily at 40 minutes past the hour. The service provides Midland riders with connections to Bay Metro's system at a regional transfer facility in Bay City. From there riders can access Indian Trails Bus line with connections throughout Michigan, ride any of the Bay City routes, or stay on the bus for service to Delta College and Saginaw Valley State University (with a connection to Saginaw's STARS transit system).



The fare for Route 4 on BMTA is \$1.00 with discounts for seniors, students and persons with disabilities.

STAKEHOLDER INTERVIEWS

Throughout the past few months the project team has been meeting with individuals and organizations in and around the City of Midland to get their feedback on the importance for transportation in the community and how the transportation systems effect their lives and those around them. The following interviews were a combination of telephone and in-person interviews.

Individual, Group and Phone Contacts: July - September, 2016

- ◆ Mid-Michigan Medical Center-Midland case management team, including caseworkers, social workers, department managers and directors.
- ◆ Stephanie Leibfritz – Mid-Michigan Medical Center-Midland
- ◆ Maureen Donker - Mayor of Midland
- ◆ Jenny Velasquez - Herbert H. and Grace A. Dow Foundation
- ◆ Mike Whiting - Herbert H. and Grace A. Dow Foundation
- ◆ Pat Albrecht - Herbert H. and Grace A. Dow Foundation
- ◆ Annette Rummel - Great Lakes Bay Regional Convention & Visitors Bureau

- ◆ Bobbie Nelson Arnold - Charles J. Strosacker Foundation
- ◆ Sharon Mortensen - Midland Area Community Foundation
- ◆ Rev. Ed Doerner - Messiah Lutheran Church
- ◆ Lynn Knapp - County Connection
- ◆ Gary Rogers - County Connection
- ◆ Roger Deitrick - County Connection
- ◆ Jerry Wasserman - Midland Public Schools Board of Education
- ◆ Kurt Faust - Academic and Career Education Academy/STEP UP
- ◆ Bill Allen - Midland Chamber of Commerce
- ◆ Paul Barbeau - Momentum Midland/Great Lakes Loons
- ◆ Richard Dolinski - Legacy Center for Community Success
- ◆ Bobbie Nelson Arnold - Charles J. Strosacker Foundation
- ◆ Brad Kaye - City of Midland
- ◆ Karen Murphy - Midland Dial-A-Ride
- ◆ Kathy Dollard - Community Mental Health
- ◆ Charles Markey - The Arnold Center
- ◆ Dave Engelhardt – Eastern Michigan Council of Governments
- ◆ Clark Harder - Michigan Transportation Connection/Michigan Public Transit Association
- ◆ Joe DeKoning - Ret. GM, BATA (Bay Area Transportation Authority, Traverse City MI)

General Comments

- ◆ Should new fixed route service be introduced, or should demand-response services be expanded, or both?
- ◆ Improvements are needed in out-of-county regional transit services and connections. Consider combining Midland City and County transit services with the agencies serving neighboring cities and counties to form a single public transportation agency and system that better serves residents and commuters throughout the entire Saginaw Bay/Flint region.
- ◆ Should City of Midland Dial-A-Ride and County Connection be combined into a single countywide transit agency?
- ◆ Midland is perceived to be an uninteresting and unattractive destination for the young educated workers in the millennial age group. Midland is getting older and it needs to become more attractive for younger working professionals. The needs and priorities of young, single persons merit more consideration.
- ◆ Some local employers are having difficulty attracting and retaining professional talent, in competition with employers in cities with stronger transportation options.
- ◆ Education and smooth life transitions are valued in Midland.
- ◆ MADD drinking and driving education campaigns have helped reduce impaired driving, and have increased calls for improved transit services.
- ◆ Opportunities exist to better educate and partner with businesses and other employers regarding transportation options.
- ◆ Perhaps Uber can be utilized to improve public transportation options in Midland County. Government solutions shouldn't be the only options considered.
- ◆ Midland has very little traffic congestion. You can drive anywhere in Midland in ten minutes or less.
- ◆ Public involvement is both valued and critical to Midland's citizens.
- ◆ The Midland Mall area is a key destination for both shoppers and lower-wage commuters who are employed by the numerous retailers and hotels in the area.

- ◆ Public transit needs, interests and perceptions are in part cultural issues: Midland’s education and income levels are high and it has an international population, but there are also significant low-income needs for many current and potential transit users. There are needs for better transit services among people who don’t traditionally have a strong voice in setting Midland’s priorities.
- ◆ The Michigan Transportation Connection just received a \$1 Million grant to expand and improve its regional transportation brokerage services. But Midland Dial-A-Ride and County Connection are not in the network because they do not meet the MTC’s transportation provider requirements (because of cost considerations and other factors).
- ◆ Midland needs more viable modes of choice options for those who can’t or don’t drive: fixed route, bikes, and better regional connectivity are needed.
- ◆ Taxes are a concern, but Midland millages typically pass with 70-80% approvals.
- ◆ Vanpools and carpools might be viable options if they could be established, coordinated and promoted by the local transit agencies.

Current Demand-Response Service Issues

- ◆ Current arrival and pickup times are variable and unpredictable. Dispatching efficiencies and other “low-hanging fruit” need to be found and implemented to improve transit in Midland County.
- ◆ Dial-A-Ride and County Connection customers are forced to anticipate in advance, accept, and adjust accordingly to early or late pickups, and early or late return trips, without any advance notice.
- ◆ Public transportation from Midland to SVSU and other regional college campuses is inconvenient and/or unavailable.
- ◆ Travel time can become a significant issue for Dial-A-Ride customers when their bus needs to ride around picking up other customers along the way.
- ◆ One Bay City bus route comes into Midland County.
- ◆ Dial-A-Ride service is difficult for students to schedule during the county fair. Often students find that during the fair, all normally-available bus trips have already been booked in advance by fair workers.
- ◆ Delta College - Midland students need frequent, convenient and reliable transportation to Delta’s other campuses in the Bay region, especially in Bay City.
- ◆ Both Midland Dial-A-Ride and the County Connection need much more dependability and reliability, and much less variability. Not too early or too late like they often are now. If a person misses their ride because their doctor was late for their appointment, the person loses their ride, gets penalized, and might be stuck waiting for three hours or more for another bus.
- ◆ Better public transit services into and out of Midland County are a significant need.
- ◆ Coleman is a low-income community in northwest Midland County whose residents need better transit service, but it is also very difficult to serve efficiently. South of Coleman is the poorest area in the county. Poverty and public transit needs are high in west Midland County. There are also pockets of poverty within the Midland City limits that rely on public transit and need better service. Existing transit connections and connection points both within and outside of the county should be improved. The low income individuals and families need better transportation connections to jobs so they can lift themselves out of poverty.
- ◆ There are too many county line barriers to convenient transit use. That is why a true regional transit system is needed. The region’s legislative caucus in Lansing (“Great Lakes Regional Caucus”) has a transportation committee that should be consulted and engaged.

- ◆ Midland has a strong sense of responsibility to better serve and meet the needs of children, older adults, and persons with disabilities.

Stakeholder-Specific Comments

Mid-Michigan Medical Center

- ◆ The Center is the county's 2nd largest employer, and a regional facility that attracts a growing and significant number of patients from outside of Midland County. It is now affiliated with the hospital in Alpena, for example.
- ◆ Currently, most patients find their own way to and from the Center.
- ◆ The Center has one van to assist cancer patients.
- ◆ Psychiatric patients and out-of-county patients present have significant unmet public transportation needs and challenges.
- ◆ Last-minute, weekend and evening patient discharges are a particular challenge, since the demand response service reservations need to be made by 9a.m/ the day before, patients do not always know their needs in advance, and often need a same-day ride.
- ◆ Dial-A-Ride trips are slow, and take too long.
- ◆ Cost and service penalties for patients who missed their ride due to doctor delay issues outside of their control are a problem.
- ◆ Safe and comfortable transit transfer points are a significant need for out-of-county trips. Connections with out-of-county transit agencies do not work well.
- ◆ Many discharged patients need to stop at a pharmacy on their way home.
- ◆ Agency "hands off" policies which preclude their drivers from helping infirm riders are an issue.
- ◆ There is a significant amount of Medical Center and patient movement on a daily basis between various buildings on the Center campus. Only one cafeteria is available on the entire campus for employee and patient food service, for example.
- ◆ Gladwin to Mid-Michigan Medical Center connections are important

Fixed Route Service

- ◆ Midland currently lacks sufficient residential population densities along its major corridors to justify fixed route service.
- ◆ People want New York City-levels of service, but Midland needs services that are appropriate for its size.
- ◆ Better public transportation access to and from Midland's after-school programs is a critical need for the middle and high school students who can most benefit from these programs. After-school programs are currently held at four schools: Dow High School, Midland High School, Northeast Middle School, and Jefferson Middle School, and better safe, secure, predicable and reliable transit service is badly needed. An estimated 300-400 kids (whose parents can't pick them up, drop them off, or both) out of the 1,000+ who participate in after-school programs, could benefit from improved transit services during the 3:30 p.m. to 5:30 p.m. time period every weekday.
- ◆ Three fixed route loops should be considered that start and end in the Center City. They could radiate out to the Northwest, to the Northeast, and to the South and East. A central transit station "hub" should be secured providing convenient bus access and an out-of-the-weather refuge for riders waiting to transfer between routes.
- ◆ Midland doesn't have population density to support fixed route service.
- ◆ Downtown to Center City is the hub of activity in Midland.

- ◆ Midland has a growing international population that is familiar with and expects to see and use fixed-route services.
- ◆ Anything over a five-minute walk becomes unimaginable for many people.
- ◆ To become more successful as a community, Midland needs to develop more and better transportation options for “choice” riders. Fixed-route service appeals to choice riders because they can catch the bus whenever they want, instead of scheduling demand-response trips in advance.
- ◆ People are looking for a different, better quality of public transportation. Midland needs to have a well-developed look at possible fixed-route services. Saginaw, Bay City, Mount Pleasant, Traverse City and Kalamazoo all have fixed route services. Why can’t Midland provide these services as well?
- ◆ Community leader involvement, endorsement and support is critical to the success and sustainability of transit service improvements.
- ◆ Potential demand for fixed route services could be tested by providing corridor and park & ride services for Midland area special events, where convenient driving and parking is a challenge.
- ◆ If Midland wants to test fixed route service, a five-year test period commitment should be planned in close partnership with major corridor employers. Grants should be secured to pay for fixed route buses, so that curb-to-curb services are not adversely impacted by the test. Test fixed route buses should have bike racks from the start, should operate on at least a 30-minute frequency, and should carry an average at least 10 rides per vehicle hour.
- ◆ The time is now to consider a route-based bus system for our community. The following is an outline of some points that support this conclusion (not in any specific order):
 - Job access. Many individuals do not work or consider work because of the lack of reliable, affordable and consistent transportation in Midland.
 - Increased access to downtown and major retail and cultural centers for all residents of all age groups and demographics.
 - Bridging the community to Northwood and vice versa.
 - Allow for a better opportunity to neighbor and interact with our diverse population.
 - Provide a form of transportation that is free from a negative stigma and not thought of as exclusively for people with low incomes, older adults and persons with disabilities.
 - Providing transportation that is on a fixed schedule makes it more appealing to everyone.
 - Mass transit is considered "hip" and a modern approach in many communities.
 - Transit services with fixed schedules create an "accountability" factor for those who need it, i.e. they now need to get to the transportation as opposed to door to door entitlement.
 - Transit service impacts the number of cars on the road in Midland by reducing excess and promoting a safer environment for other modes of transportation.
 - Transit is environmentally friendly and I am sure it fits in to many grant opportunities for funding.
 - Our wonderful community continues to pass millages for transportation because we have a lot of caring people. But we are missing a significant population and a significant opportunity to connect our community socially and economically as well as bridging areas that need to be included in Midland.

REFERENCED COMMUNITY PLANS, REPORTS, AND NEWS

Midland County Youth Master Plan (2010) Goals & Strategies, Goal 3: Increase access to youth programs

- ◆ Strategy 1: Develop a strategic regional approach to public transportation needs (Basic Needs and Safety)
- ◆ Strategy 2: Improve reliable, affordable access to transportation (Physical Health, Social, Emotional, Spiritual Health)
- ◆ Strategy 3: Expand utilization of school buildings for after school activities (Youth input)

Midland County Exploring our Future Community-Based Strategic Planning Process (2014)

- ◆ Key Performance Area: Transportation, Infrastructure, Technology and Environment
 - Proposed Initiatives:
 - Develop a single, integrated, reliable and “green” public transportation (route system with real-time technology)
 - Expand the current non-motorized trail system for safe travel
 - Proposed Action: Improve public transportation
 - Reliable, efficient, and economical public transportation system
 - Streetcars
 - Accessible and user friendly transportation system
 - Taxi services
 - Real-time route system technology
 - Promote carpools
 - Zip cars
 - An around-the-clock bus system
 - Find grants
 - Understand issues with Dial a Ride
 - Transportation for low income, those with disabilities, seniors, etc.
 - Expand choices for late night rides to decrease incidents of drunk driving
 - Transportation to social services center

Midland County Dashboard MACF Needs Assessment Top Category Needs (2014)

In many cases, educational and learning opportunities are available to Midland County youth but they have limited access to transportation to bring them to the program. While Dial-A-Ride and County Connection are available, they are not always convenient or cost-effective options to get to the desired programs. The issue of transportation exists for the very young (e.g., access to quality preschool programs) as well as for secondary students (e.g., access to career technical and college courses).

Low wage individuals also find themselves unable to access both job skills training courses as well as higher paying jobs, when available, owing to inadequate transportation options. While the currently available alternatives are used, they are not very convenient and are rather expensive for a person earning a minimum wage. Consideration should also be given to a fixed route structure that brings riders into needed areas including shops, medical services, agencies, etc. In addition, transportation options outside of the city are limited.

While the physical environment of Midland is good, accessing some of the programs and sites is limited, especially to low income individuals and families. Local recreational areas and parks have low utilization rates owing to access/transportation issues. In addition, the ongoing integration of non-motorized transportation options is encouraged.

Seniors who no longer drive are also challenged with transportation needs. While Senior Services provides assistance with this, the need will continue to grow as the percentage of seniors in the community increases.

Youth Master Plan (2013)

Opportunities for Improvement - "There is a very strong need for better access to youth-serving programs...the lack of reliable and affordable transportation was most often cited as a key limiting factor in program participation by youth."

Tuesday reader's view: "Fixed route bus service needed in Midland"

Tuesday, October 27, 2015 By the Midland Daily News (To the editor with comments)
"... • Mt. Pleasant already has a fixed route city bus system, as well as a DART service.

- Bay City has a fixed route city bus system, as well as a DART service.
- Saginaw has a fixed route city bus system, as well as a DART service.
- Midland, the city of modern explorers, has no fixed route bus system. Midland has DART (Dial-A-Ride) and bike lanes..."

Midland Daily News poll (10/27/15) "Do you think Midland needs a fixed route public bus system in addition to the Dial-A-Rider Transportation service?" 163 Yes, 160 No, 27 Not Sure.

Public transportation: Can two be made one? (10/29/08) Midland Daily News Editorial

"Midland County has a call-and-response bus service, and so does the City of Midland. They're both supported by property taxes. They both use drivers and dispatchers. And the city and county office buildings sit side-by-side on Ellsworth St. in downtown Midland. Why not combine the two systems and save a bundle? It's an approach that came up frequently during recent city budget roundtable sessions..."

SECTION SUMMARY

Community outreach is essential to gaining an understanding of the impacts transit or the lack of transit has on a community. It allows individuals and groups to voice their needs for transportation services as a means of independence, employment, education or medical needs.

By speaking to human service agencies, educational institutions, medical centers, employers and human service agencies, the consultant was able to gain a better understanding of the transportation challenges in the City and County. The results of six months of outreach and

community meetings was mixed with suggestions for improvement of existing services to expansion of services to status quo.

As part of the outreach efforts a survey was conducted to identify some of the needs of riders and potential riders while also seeking destination information. Several of the top destinations included shopping areas like Walmart/Meijer and Midland Mall. Approximately 66% of those surveyed expressed the desire for fixed route transportation services and prefer to walk to a bus stop close to their house. Documentation of the survey results is included in this technical memorandum.

The outreach for this project was substantial taking into account public meetings, community surveys, individual and group interviews and the feedback provided by the MATS committee. As mentioned in earlier sections, this information will be beneficial moving forward as transit solutions are developed.

Demand

CURRENT AND PROJECTED TRANSIT DEMAND ESTIMATES

GAPS IN THE EXISTING TRANSPORTATION NETWORK

Estimating demand for transportation services involves compilation of data from the variety of investigative approaches mentioned in earlier sections of this report. The results of transportation ‘need’ and ‘demand’ research mean distinctly different things to the transportation operator(s). And, it is the combination of need and demand analysis that leads to a reliable evaluation. Measuring input through interviews and meetings provides the Project Steering Committee with valuable insights into what various segments of the population indicate as the most *needed* transportation services. Analysis based on demographics and socio-economic characteristics provide the project team with quantitative details that indicate the level of *demand* for transportation services that exists. When the results of a needs analysis and the quantitative results of the demand analysis are combined, the local project team has a thorough understanding of the level and ‘type’ of transportation services that will be most beneficial to the area.

Spatial Depiction of Existing Transportation Services and Major Destinations

Working cooperatively with Project Committee and the participating transportation providers, RLS collected a sample of completed trips requested for the purpose of developing a comprehensive list of destinations served by each of the major transportation providers. Analysis of trip origins and destinations identify geographic areas of duplication of service and/or the gaps in the existing service structure, potentially leaving room for expansion.

Dial-A-Ride

The RLS team analyzed a sample of passenger trip origins and destinations for the Dial-A-Ride service. The top 10 most frequent destinations for Dial-A-Ride are as follows:

- ◆ Arnold Center
- ◆ Greenhill Apartments
- ◆ Midland Mall
- ◆ Walmart
- ◆ Community Mental Health
- ◆ Meijer
- ◆ Community Center 2001
- ◆ Campus Ridge 1 – Mid-Michigan Health
- ◆ Kroger
- ◆ Washington Wood Senior Citizen (WW2), Independent Living Apartments

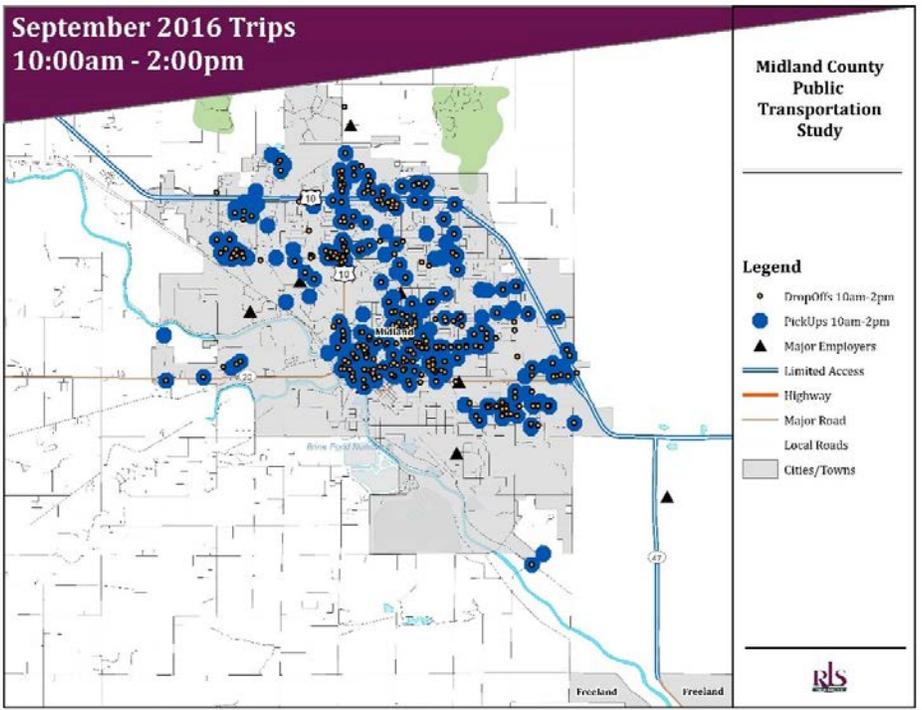
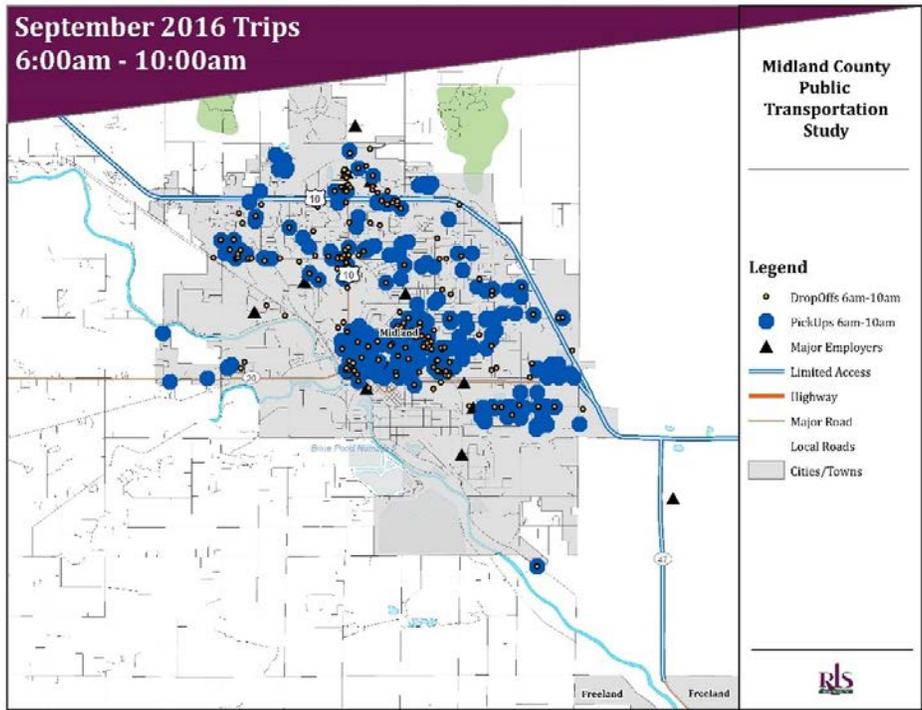
A sample of all trips provided, by time of day, for the month of September was plotted (Exhibit 14) to illustrate the locations where Dial-A-Ride vehicles serve passengers. As illustrated on the

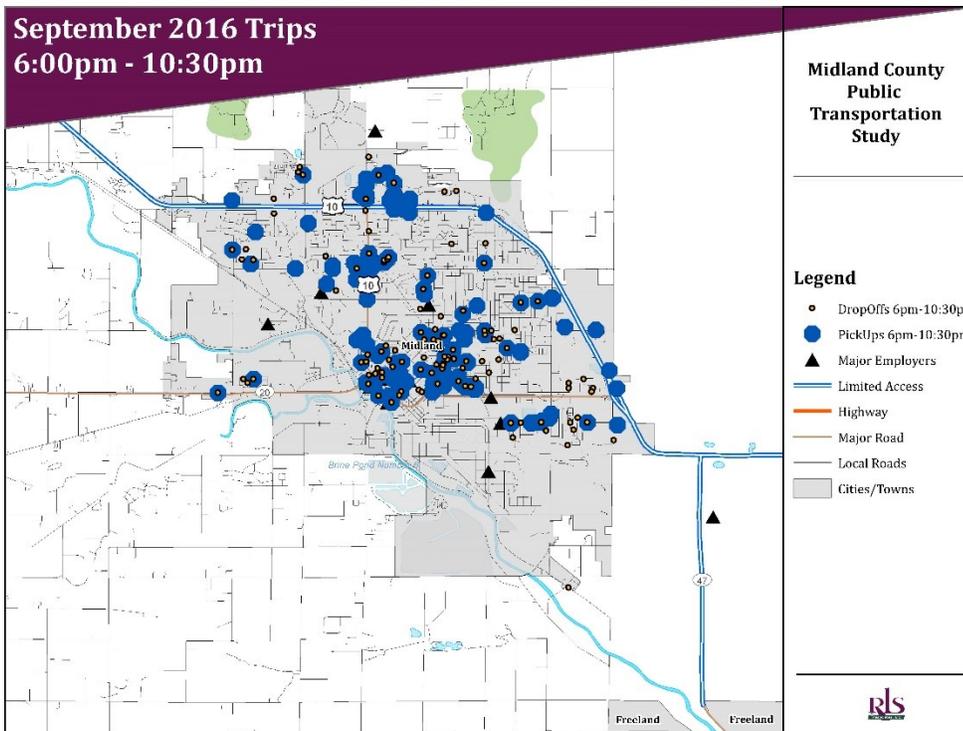
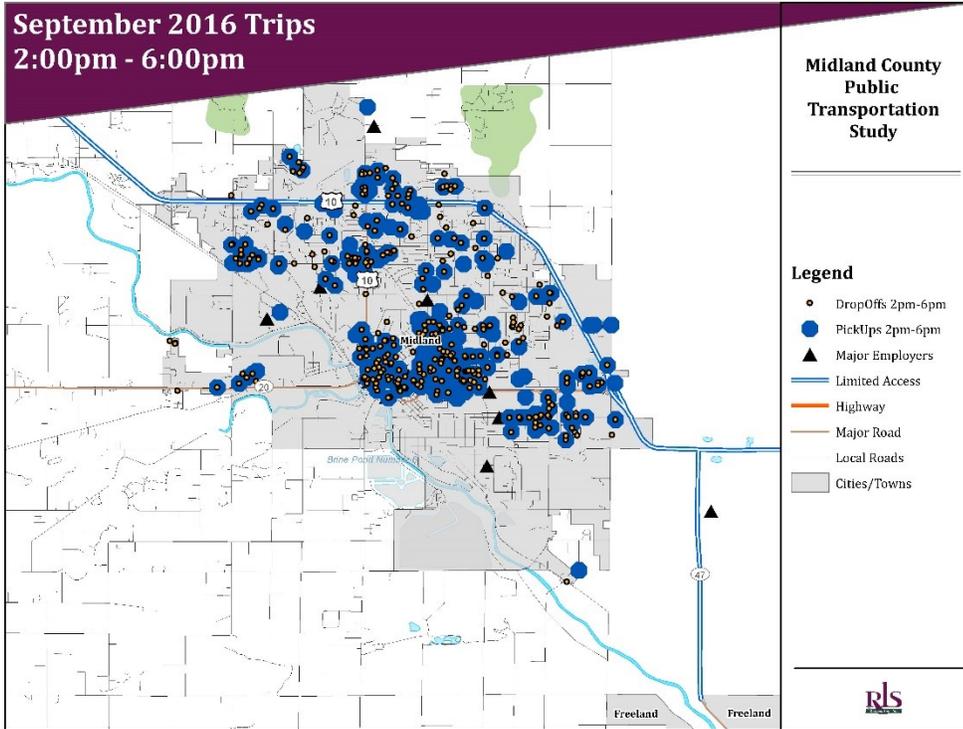
map, the majority of trips originate and end in the southern and central portions of the City of Midland. A significant portion of the trip origins and destinations in southeast and central Midland are services provided to the Arnold Center and CMH. The majority of trips to/from the Arnold Center and CMH require paratransit services, according to Dial-A-Ride, and could not be reasonably accommodated with a scheduled route.

In August 2016, Dial-A-Ride provided 8,483 one-way passenger trips; 342 trips provided per day on weekdays, on average. In January 2017, Dial-A-Ride provided an average of 422 trips per day on weekdays.

- ◆ 67 same-day trips per weekday, on average
- ◆ 7,005 trips scheduled
- ◆ 2,300 calls for cancellations of future rides
- ◆ 55 calls for cancellations of same-day rides, per day

Exhibit 14: Dial-A-Ride Trip Origins and Destinations





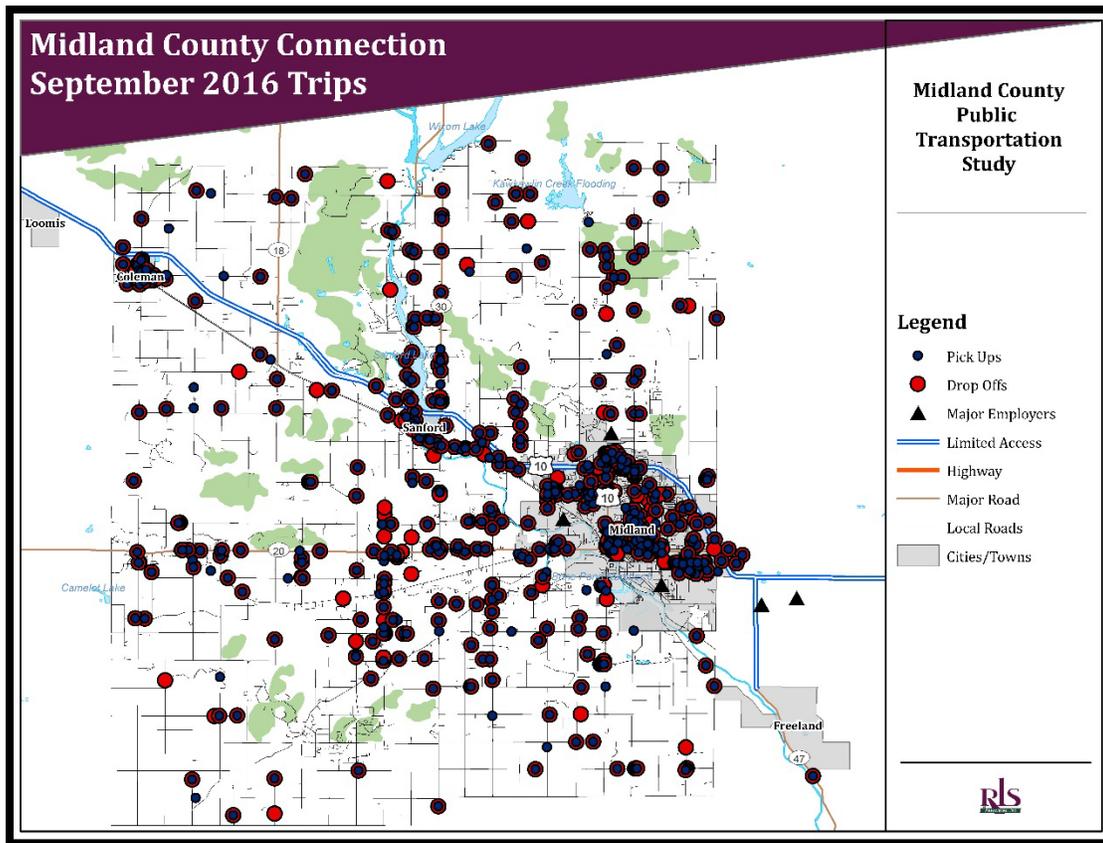
County Connection

County Connection provided approximately 55,215 passenger trips between January 1 and September 21, 2016. Common destinations for MCC service include trips to and from Coleman and Midland for employment purposes and a significant number of rides that originate or end at the Arnold Center in Midland. Exhibit 15 illustrates the trip origins and destinations served by MCC during September 2016. During the month of September, MCC made a total of 5,905 one-way trips. The following bullet points outline the pattern of those trips:

- ◆ 5,822, or 98.6% of MCC trips were County-to-City or City-to-County, with one end of the trip being within the City limits
 - 227 weekday pick-ups and 226 drop-offs in the City of Midland before 6:30a.m. and after 10:30p.m. (These are the hours of the day when City of Midland Dial-A-Ride is not operating.)
 - 2,249 total weekday trips had a pick-up in the City of Midland and a drop-off in the County
 - 2,605 total weekday trips had a drop-off in the City of Midland and a pick-up in the City
- ◆ 79 weekday City-to-City (within Midland) trips were provided by MCC
- ◆ 4 Saturday City-to-City (within Midland) trips were provided by MCC
- ◆ 61 Saturday pick-ups and 103 Saturday drop-offs in the City of Midland before 9:00a.m. and after 8:00p.m. (These are the hours of the day when City of Midland Dial-A-Ride is not operating.)
- ◆ 57 Saturday trips had a pick-up in the City of Midland (drop-off in County)
- ◆ 99 Saturday trips had a drop-off in the City of Midland (pick-up in City)

Exhibit 15 illustrates the trip origins and destinations served by MCC during September 2016. It is noted that MCC does not deny passenger trips. It has a policy to accommodate all passenger trip requests, including same-day trips. To date, the system reports that it has the available capacity to accommodate all trip requests.

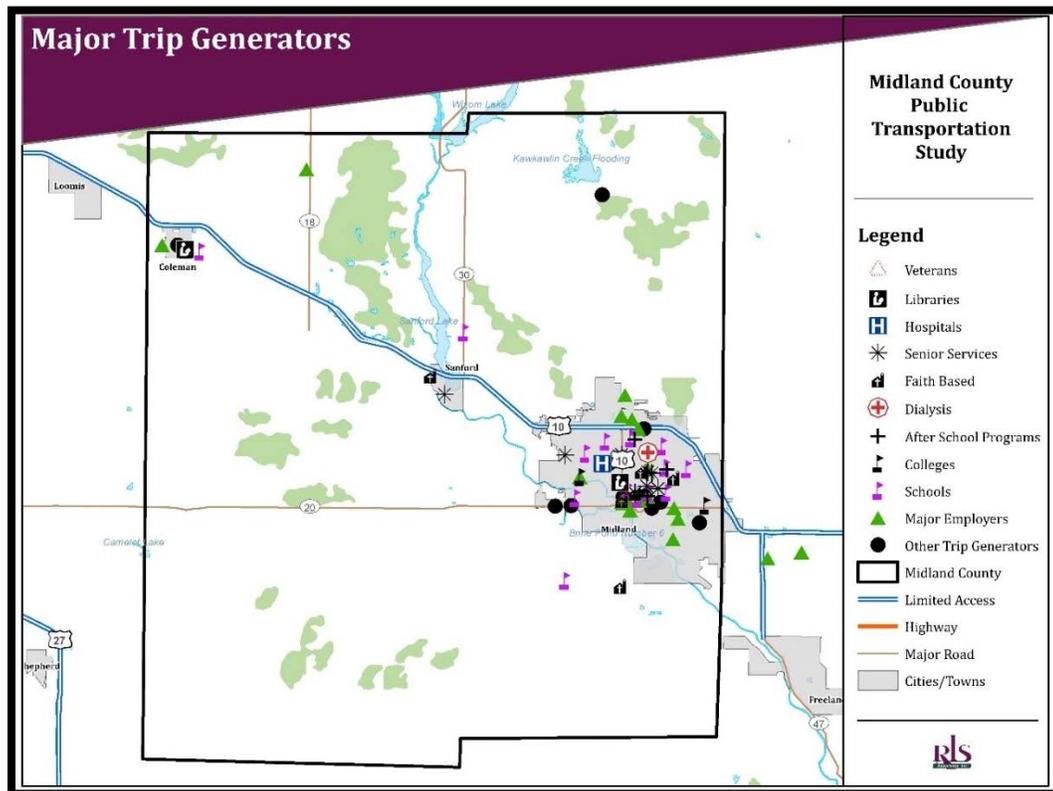
Exhibit 15: Midland County Connection Trip Origins and Destinations



Other Transportation Providers and Major Destinations

In addition to the public transportation services, there are several human service agencies, senior services, school programs, and volunteer and faith-based organizations that also provide a significant portion of transportation to eligible consumers throughout Midland County. Exhibit 16 illustrates the most frequent destinations served by these transportation providers. The map also includes data from the United Way 211 program, which tracks referrals that are made in response to requests for transportation. For example, the 2016 Midland Transportation Report from 211 documented 455 calls where transportation was the initial need presented. Thirty-seven percent (37%) of those calls were referred to Blessed Sacrament Church. Other highly requested agencies that received transportation referrals from 211 are included in the exhibit.

Exhibit 16: Major Destinations Served and Unserved by Existing Transportation Resources



Temporal Depiction of Existing Transportation Services and Gaps in Services

It is important to understand the temporal gaps in the transportation network, in addition to the spatial gaps, because while a certain major destination may be covered by the existing transportation services, transportation may not be available during all hours of business. Exhibit 17 provides a quick reference to the transportation services available in the City and/or County of Midland by time of day and day of the week. The table is color coded to illustrate services that are open to the general public compared to those that have eligibility restrictions. The table does not include regional transportation services. Private taxi services are available during all hours included in the exhibit. The three primary taxi providers serving the area are MBS Taxi, Quick Cab, and DD Taxi.

As indicated in the table, a large majority of services are available only during normal business hours (generally between 8:00a.m. and 6:00p.m.) on weekdays. Dial-A-Ride and County Connection are the primary, and possibly only, transportation options on weekend mornings, and Dial-A-Ride is the only transportation option on Saturday afternoons and evenings. There is no transportation service available after 2:00p.m. on Sundays other than DD Taxi. Please note that volunteer driver programs are available based on the drivers' schedules and some volunteer options may be available during the gaps illustrated in the table.

Exhibit 17: Available Transportation Services by Time of Day and Day of Week

Time of Day	Transportation Services Available						
	Mon.	Tue.	Wed.	Thur.	Fri.	Sat.	Sun.
5:00 AM-6:30 AM	County Connection	County Connection	County Connection	County Connection	County Connection	County Connection	County Connection
6:30 AM-10:00 AM	Dial-A-Ride County Connection Senior Services (8:15) Midland's Open Door MBS Taxi Quick Cab (8:00) DD Taxi	Dial-A-Ride County Connection Senior Services (8:15) Midland's Open Door MBS Taxi Quick Cab (8:00) DD Taxi	Dial-A-Ride County Connection Senior Services (8:15) Midland's Open Door MBS Taxi Quick Cab (8:00) DD Taxi	Dial-A-Ride County Connection Senior Services (8:15) Midland's Open Door MBS Taxi Quick Cab (8:00) DD Taxi	Dial-A-Ride County Connection Senior Services (8:15) Midland's Open Door MBS Taxi Quick Cab (8:00) DD Taxi	Dial-A-Ride (9:00) County Connection MBS Taxi Quick Cab (8:00) DD Taxi	Dial-A-Ride (9:30) County Connection MBS Taxi Quick Cab (8:00) DD Taxi
10:00 AM-2:00 PM	Dial-A-Ride County Connection Senior Services Midland's Open Door MBS Taxi Quick Cab DD Taxi	Dial-A-Ride County Connection Senior Services Midland's Open Door MBS Taxi Quick Cab DD Taxi	Dial-A-Ride County Connection Senior Services Midland's Open Door MBS Taxi Quick Cab DD Taxi	Dial-A-Ride County Connection Senior Services Midland's Open Door MBS Taxi Quick Cab DD Taxi	Dial-A-Ride County Connection Senior Services Midland's Open Door MBS Taxi Quick Cab DD Taxi	Dial-A-Ride MBS Taxi Quick Cab DD Taxi	Dial-A-Ride MBS Taxi Quick Cab DD Taxi
2:00 PM-6:00 PM	Dial-A-Ride County Connection Senior Services (4:15) ESA (3:00) Midland's Open Door MBS Taxi Quick Cab DD Taxi	Dial-A-Ride County Connection Senior Services ESA (3:00) Midland's Open Door MBS Taxi Quick Cab DD Taxi	Dial-A-Ride County Connection Senior Services ESA (3:00) Midland's Open Door MBS Taxi Quick Cab DD Taxi	Dial-A-Ride County Connection Senior Services ESA (3:00) Midland's Open Door MBS Taxi Quick Cab DD Taxi	Dial-A-Ride County Connection Senior Services ESA (3:00) Midland's Open Door MBS Taxi Quick Cab DD Taxi	Dial-A-Ride MBS Taxi Quick Cab DD Taxi	MBS Taxi DD Taxi

Time of Day	Transportation Services Available						
	Mon.	Tue.	Wed.	Thur.	Fri.	Sat.	Sun.
6:00 PM-10:00 PM	Dial-A-Ride County Connection MBS Taxi Quick Cab DD Taxi	Dial-A-Ride County Connection MBS Taxi Quick Cab DD Taxi	Dial-A-Ride County Connection MBS Taxi Quick Cab DD Taxi	Dial-A-Ride County Connection MBS Taxi Quick Cab DD Taxi	Dial-A-Ride County Connection MBS Taxi Quick Cab DD Taxi	Dial-A-Ride (8:00) MBS Taxi Quick Cab DD Taxi	DD Taxi
10:00 PM-10:30 PM	Dial-A-Ride County Connection MBS Taxi Quick Cab DD Taxi	Dial-A-Ride County Connection MBS Taxi Quick Cab DD Taxi	Dial-A-Ride County Connection MBS Taxi Quick Cab DD Taxi	Dial-A-Ride County Connection MBS Taxi Quick Cab DD Taxi	Dial-A-Ride County Connection MBS Taxi Quick Cab DD Taxi	MBS Taxi Quick Cab DD Taxi	DD Taxi
10:30 PM-11:00 PM	County Connection MBS Taxi Quick Cab DD Taxi	County Connection MBS Taxi Quick Cab DD Taxi	County Connection MBS Taxi Quick Cab DD Taxi	County Connection MBS Taxi Quick Cab DD Taxi	County Connection MBS Taxi Quick Cab DD Taxi	MBS Taxi Quick Cab DD Taxi	DD Taxi

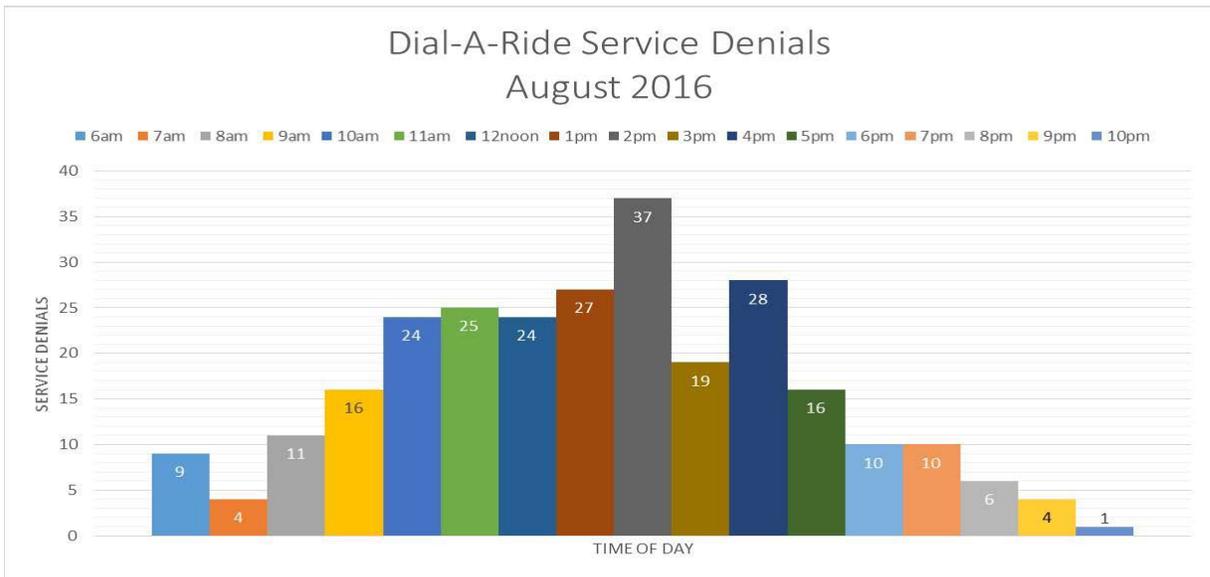
[Eligibility for Seniors](#) / [Eligibility for General Public](#) / [Eligibility for Consumers only](#)

Midland’s demand response service has attempted to create efficiencies, and has achieved a 2% to 3% service denial rate for trip requests for same-day service. The reasons for service denials are as follows:

- ◆ Request for service with less than 2 hours’ notice (36%)
- ◆ Request for service made the day before service was needed (28%)
 - It is unknown if the person called back on the day of service
- ◆ Request for same-day service with more than 4 hours’ notice (14%)
- ◆ Request for service made more than one-day before service was needed (11%)
- ◆ Request for same-day service with less than 4 hours’ notice (8%)
- ◆ Hang-ups or other (3%)

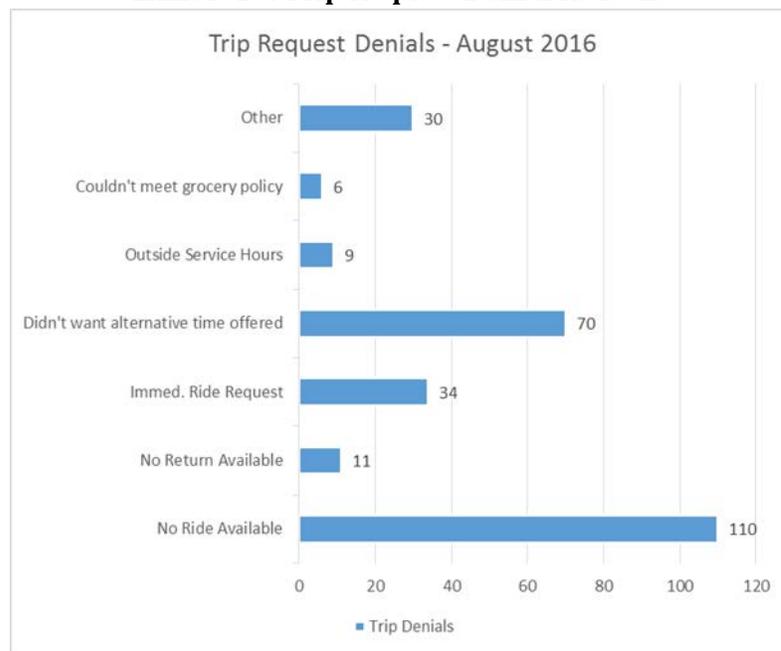
As seen in Exhibit 18, trip denials are most prevalent during the midday hours. Dial-A-Ride indicated that the trip denials are, at least in part, higher during the midday hours because that is when a significant number of same-day service requests are received by the system. Those short notice request are more difficult to accommodate because drivers are actively providing the trips that were scheduled in advance. However, Dial-A-Ride attempts to accommodate as many of the same-day trips as possible.

Exhibit 18: Dial-A-Ride Service Denials by Hour



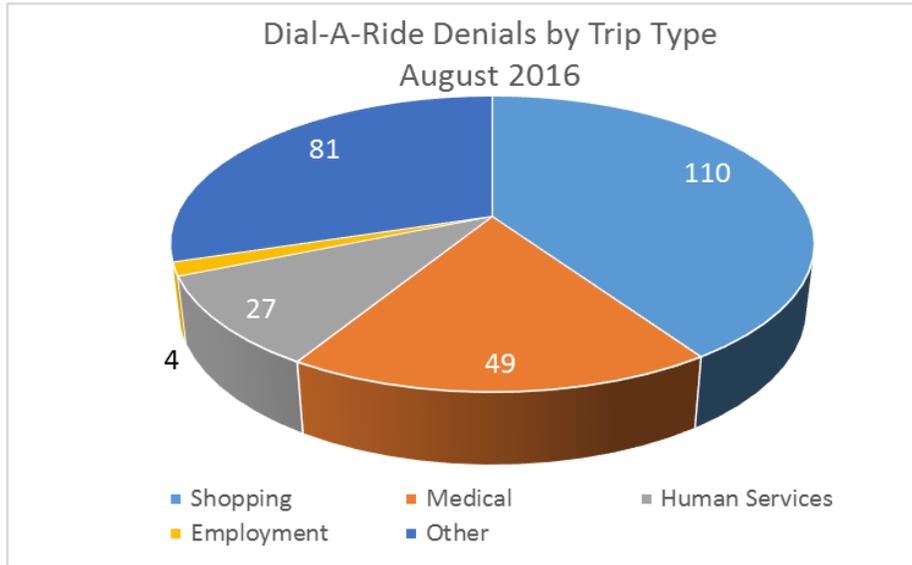
Trip denials result from lack of available capacity, immediate trip requests, and inability to meet round trip schedule needs. Dial-A-Ride works with callers to make alternative pickup times available, but these times might not meet the passengers’ needs. Exhibit 19 provides a view of trip requests received that Dial-A-Ride could not accommodate at the time of the call. It is possible that some of these passengers called at a later date or time and were able to schedule the trip.

Exhibit 19: Trip Request Denial Reasons



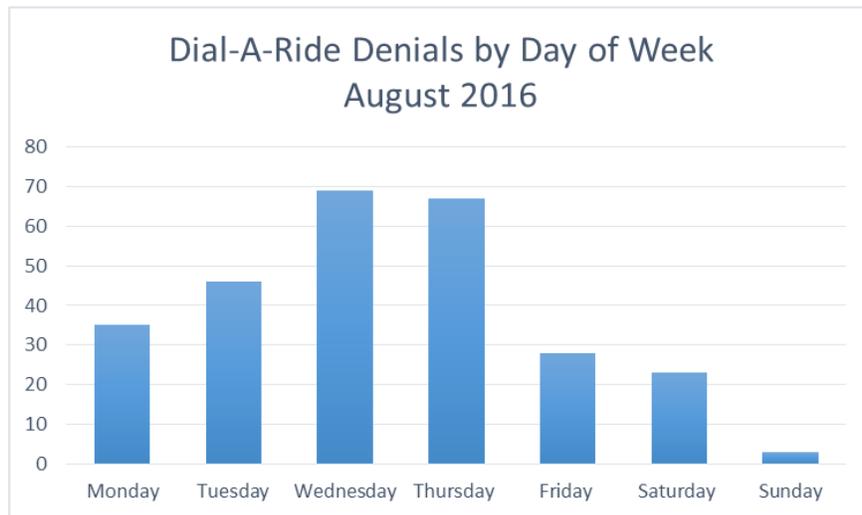
Dial-A-Ride schedules rides on a “first come, first serve” basis and makes every effort to schedule rides on the day of the request. An analysis of trip denials show most trip denials were for riders with unspecified or other trip purposes. Shopping was the most commonly requested trip that was denied, with medical and human service related trips as the second and third highest type of trip purpose denied.

Exhibit 20: Trip Denials by Trip Purpose



The Dial-A-Ride service experienced the highest volume of denials towards the beginning of the work week (Monday through Thursday). Many of the calls were requests for same day service, but some also followed the policy of calling a day in advance. Exhibit 21 shows the peak days of denials for the period of August, 2016. It should be noted there was no service on two Sundays in that month.

Exhibit 21: Service Denials by Day of Requested Service



TRANSIT DEMAND BASED ON DEMOGRAPHIC DATA ANALYSIS

Transit propensity is a measure of the likelihood that a local population will use public or agency transportation services, taking into account population demographic characteristics. The model applied to projecting transit propensity for Midland was derived through demographic research (see Technical Memorandum #1 October, 2016) and compilation of major trip generating public and senior transportation service locations that exist in the City and County of Midland today. The end result is an estimate of the relative propensity for transit per census block group.

To calculate transit propensity, U.S. Bureau of the Census American Community Survey 5-Year Estimates 2010 - 2015 data were gathered at the block group level for the entire county. The data included total population, total households, population below poverty level, number of persons age 65 and older, and the number of households with zero vehicles available. These demographic and socio-economic conditions were selected because they represent the groups in America that are most likely to use public and human service agency transportation services. The number of individuals with disabilities would be another factor, however, those numbers are not available through the U.S. Census Bureau and reliable sources at the block group level are uncommon or nonexistent. Therefore, projected demand from individuals with disabilities who are under age 65 must be considered as an additional factor outside of the transit propensity model.

The first step in calculating propensity involves creating a threshold value equal to the total number of each variable characteristic divided by the total for the entire service area. The service area is equal to the sum of the study area's populations and households. Calculations for the threshold values are outlined in the following bullet points:

- ◆ Number of households with zero vehicles divided by the total number of households within the service area equals 4.69% (threshold value).
- ◆ Population within the service area living below the poverty level divided by the calculated poverty population* equals 12.67% (threshold value).
- ◆ Population within the service area that is age 65 and over divided by the total population of the service area equals 15.87% (threshold value).

*Calculated Poverty Population is calculated for all people except institutionalized people, people in military group quarters, people in college dormitories, and unrelated individuals under 15 years old. These groups were excluded from the numerator and denominator when calculating poverty rates.

The threshold values were entered into the transit propensity model to determine each block group's transit propensity. This process included:

- ◆ Calculating the standard deviation for each variable to create a "moderate" category equal to one standard deviation around the mean (threshold). (One-half standard deviation below and one-half standard deviation above the threshold value).
- ◆ Query the variables for block groups that experienced percentages within the categories very low, low, moderate, high, and very high propensity.

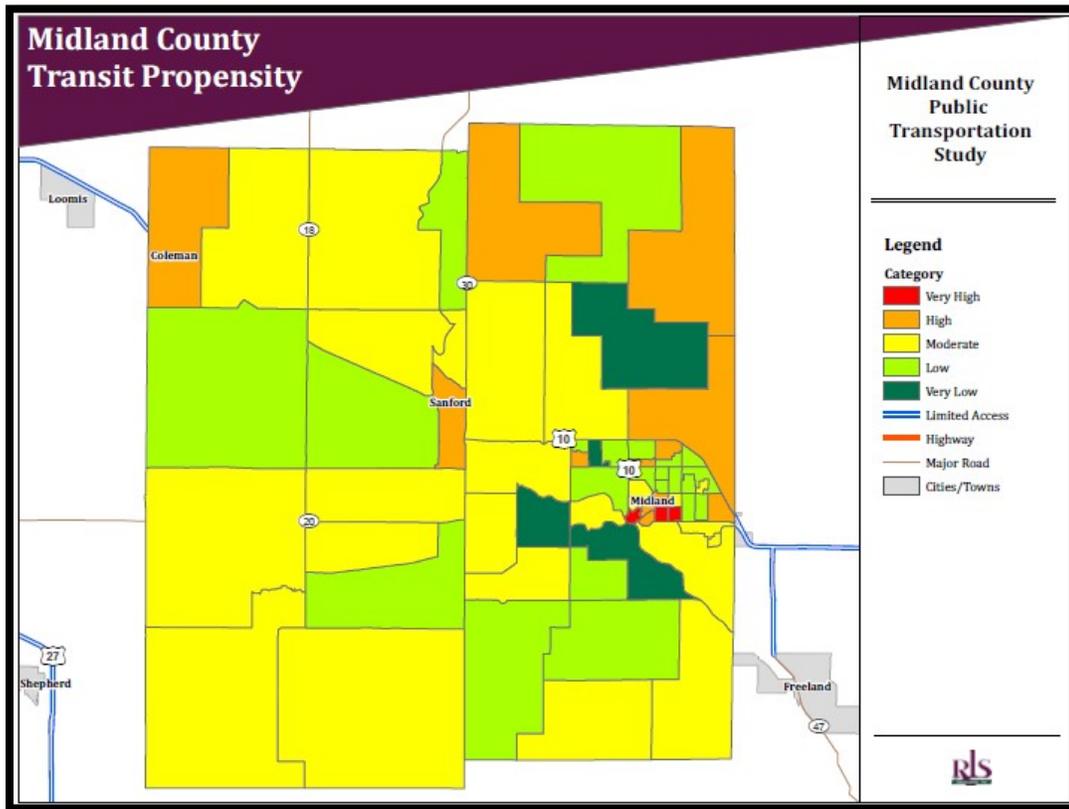
- Very low equals all three of the variables for the block group that fell below the lower limit threshold value;
- Low equals one or two of the three variables below the lower limit;
- Moderate equals block groups within one standard deviation around the mean;
- High propensity equals block groups where one or two of the three variables exceed the upper limit; and
- Very high propensity equals block groups where all three of the variables exceed the upper limit.

Exhibit 22 illustrates the process and Exhibit 23 geographically depicts the data.

Exhibit 22: Transit Propensity Process

Transit Propensity					
Variable	Very Low	Low	Moderate	High	Very High
Zero Vehicles	All of the variables fell below the lower limit	1 or 2 of the 3 variables fell below the lower limit	2.93% - 12.03%	1 or 2 of the 3 variables exceeded the upper limit	All of the variables exceeded the upper limit
Below Poverty			0.00% - 24.33%		
Elderly Population			11.71% - 17.90%		

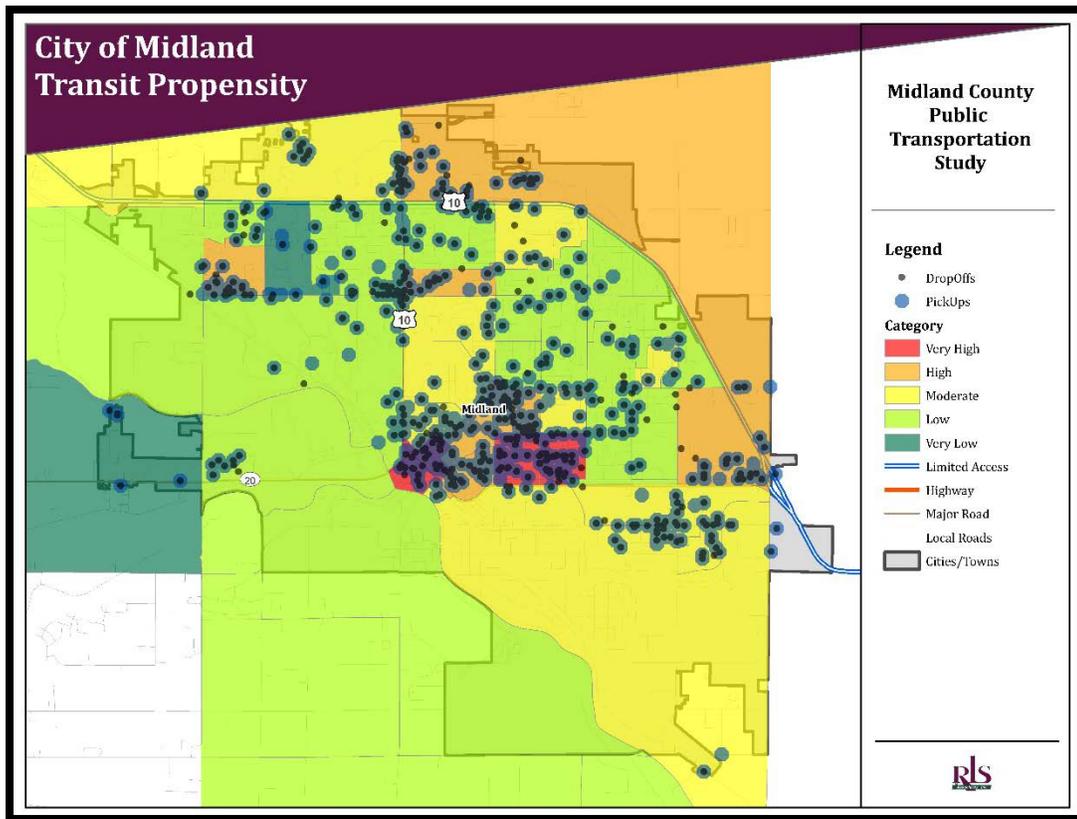
Exhibit 23: Transit Propensity for Midland County



Areas of highest projected transit demand had a combination of the highest population densities, highest densities of people living below poverty, highest densities of seniors (age 65 or older), and highest densities of households without an available vehicle. As illustrated in Exhibit 5, areas that have the highest projected demand for transportation services are located in three block groups in the southern portion of the City of Midland. Areas of high transportation propensity are located around the borders of the City of Midland as well as along the north eastern, north central and north western borders of Midland County, including Coleman. Areas of moderate, low, and very low propensity are scattered throughout the County and City.

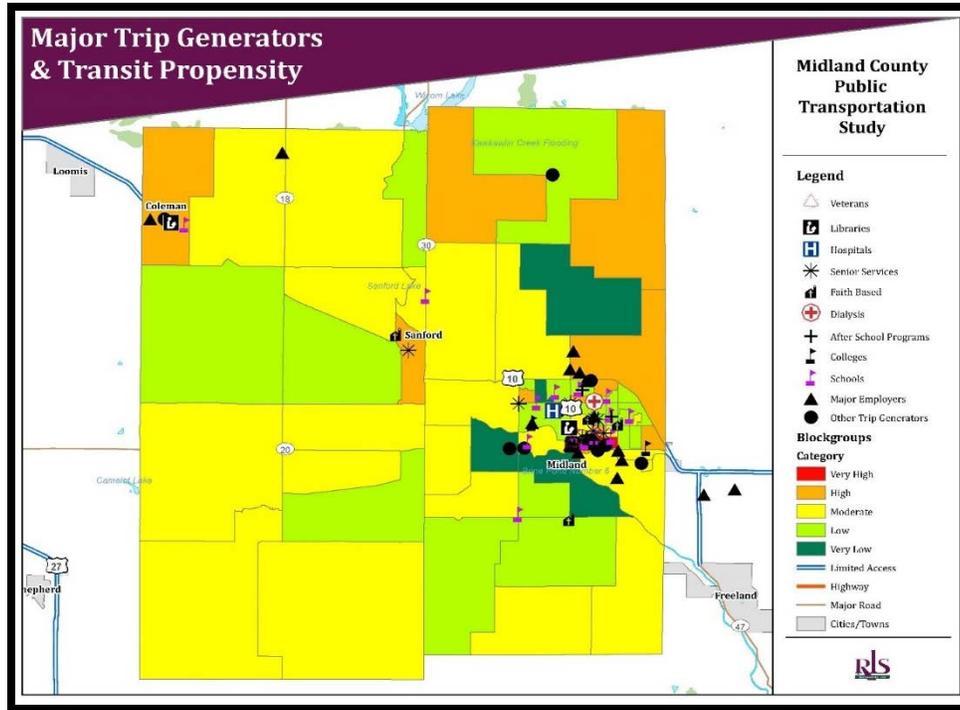
Exhibit 24 illustrates the sample of trip origins and destinations served by Dial-A-Ride during September 2016. As illustrated, the clusters of trip origins and destinations within the City of Midland are consistent with the “Very High” and “High” results of the transit propensity model. The sample of Dial-A-Ride and County Connection trips also reflects lower levels of demand from areas with lower transit propensity scores.

Exhibit 24: City of Midland Demographic Transit Propensity and Dial-A-Ride and County Connection Trip Origins and Destinations



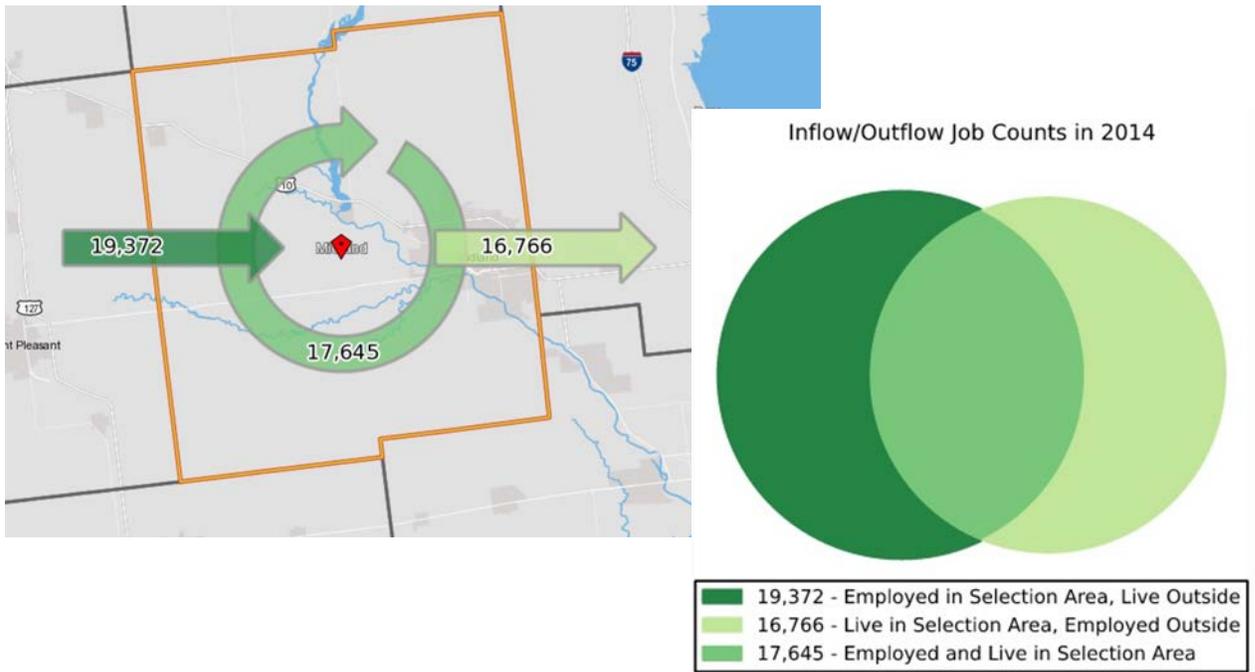
Similarly, Exhibit 25 depicts the major trip generators for all other major transportation providers serving the City and County of Midland, compared to the areas of highest and lowest transit propensity.

Exhibit 25: Major Trip Generators and Midland County Demographic Transit Propensity



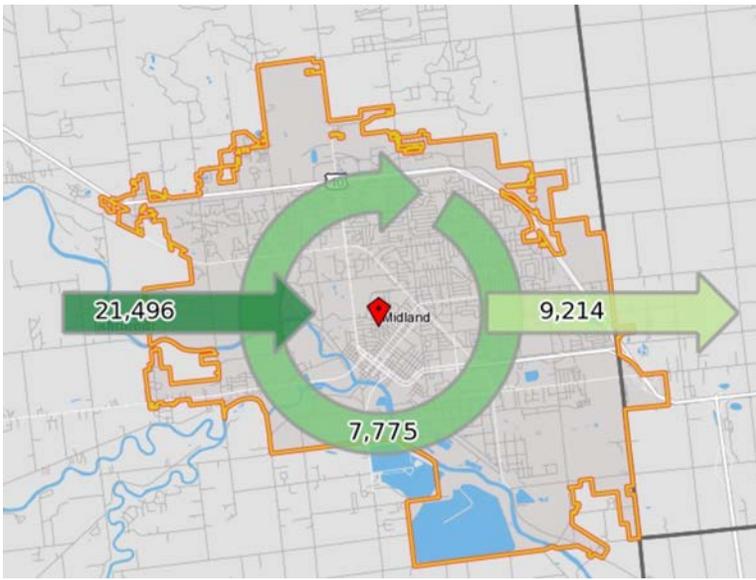
According to the U.S. Census Bureau, Inflow/Outflow Job Counts in 2014, there were 37,017 people employed in Midland County. Approximately 52% of those employees commuted to work from their homes outside the county. Nearly 48% of commuters lived and worked within Midland County. There were 34,411 commuters who lived in Midland County. Approximately 49% of the Midland County residents were employed outside the County.

Exhibit 26: County of Midland Inflow/Outflow Job Counts, 2014

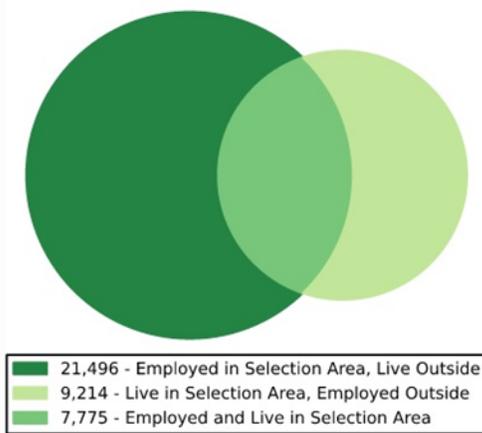


Similarly, 29,271 commuters were employed in the City of Midland. Approximately 73% of those individuals commuted from outside the City boundaries; nearly 27% of commuters live and work within the City. There were 16,989 commuters living in the City of Midland. Approximately 54% commuted to an employer outside of the City.

Exhibit 27: City of Midland Inflow/Outflow Job Counts, 2014



Inflow/Outflow Job Counts in 2014



FORECASTED DEMAND THROUGH STAKEHOLDER INPUT

As a continuation of the major stakeholder outreach efforts documented, the consulting team interviewed several additional community stakeholders to discuss their perspectives about the unmet transportation needs and gaps in services in Midland County.

- ◆ Midland County Educational Services Agency
- ◆ Midland County Continuum of Care
- ◆ The ROCK Center for Youth Development

Midland County Educational Service Agency

Midland County Educational Service Agency (ESA) is an intermediate school district. It operates programs in 23 classrooms at 19 different locations around Midland County. The ESA transports clients with its agency-owned fleet of vehicles. Currently, an average of 75 students per week are transported by ESA vans and 16 students use Dial-A-Ride. The ESA also rents Midland Public School buses as needed to meet demand. The City of Midland Dial-A-Ride does not accommodate ESA service requests because exclusive service for a specific destination would qualify as charter service, which is prohibited by the Federal Transit Administration (FTA). The FTA provides a significant portion of Dial-A-Ride's budget. Charter Bus Service by public transit systems is prohibited because it protects private charter operators from unauthorized competition from FTA grant recipients.

The ROCK Center for Youth Development

The ROCK serves approximately 1,000 students annually with seven programs in four Midland County school districts, plus pilot programs in Bay and Saginaw Counties. Its main office and activities are located at the Greater Midland Community Center recreation facility and Northeast Middle School. Program participants use Dial-A-Ride, County Connection, and Midland Public School buses. This organization contracts with Midland Public Schools for the use of school buses and occasionally uses volunteer drivers to transport clients that would be stranded with no way to get home.

The ROCK programs have also been conducted at Meridian Early College High School (just north of Sanford), Bullock Creek High School (Midland), the Academic & Career Education Academy, and Wenona Center in Bay City. It also provides individual day trip programs to various educational activity and event destinations during the year.

A summary of stakeholder inputs, including those captured with Technical Memorandum #1, regarding unmet transportation demand and gaps in services is provided in the following bullet points:

Capacity

- ◆ There are perceptions in the community that the public transit agencies could and should adjust their scheduling and service policies to make more efficient and intensive use of their current bus fleets.
 - People frequently report seeing buses parked at various locations around town, or running around empty, and they wonder why those buses couldn't be used to better serve the community.
- ◆ The Midland County Educational Service Agency established its own van fleet to transport its clients despite the associated liabilities and costs because it could not meet its service standards using Dial-A-Ride alone.
- ◆ Dial-A-Ride's limited service capacity and lack of schedule flexibility is not convenient for people who work part time or full time and for evening or night time schedules.

Perceptions

- ◆ Midland has poor transit service because people incorrectly believe that the community is generally too affluent, and that even the less affluent have cars. Yet, Midland's population in poverty may be as high as 35%, and as a result of the community's unmet transit needs, many organizations and agencies in the community have to provide their own ride services.
- ◆ People with disabilities and senior citizens will use public transit in Midland only if they can't drive and have no other alternatives, because of transit's well-known lack of predictability and reliability.
- ◆ Families in poverty and children with disabilities are currently transit's primary users, but the demand for transit by all populations is increasing and will continue to do so.
- ◆ Over time, Senior Services established a fleet of four accessible mini-vans, a 7-passenger accessible van, a 12-passenger bus, and 4, 4-door cars all using volunteer drivers to address local senior transportation needs that were not adequately accommodated by the public transit services.
- ◆ Midland is perceived to be an uninteresting and unattractive destination for the young educated workers in the millennial age group. Midland is getting older and it needs to become more attractive for younger working professionals. The needs and priorities of young single persons merit more consideration.
- ◆ Some local employers are having difficulty attracting and retaining professional talent, in competition with employers in cities that have stronger transportation options.
 - Education and smooth life transitions are valued in Midland.
- ◆ Opportunities exist to better educate and partner with businesses and other employers regarding transportation options.
- ◆ A stigma is associated with riding the bus in Midland: People feel that only the poor and people with special needs will ride the bus, and even then only if they have no other alternatives.

Accessibility and Awareness

- ◆ Dial-A-ride and County Connection should both introduce and allow app-based scheduling that shows service availability to potential riders, and provides verifiable records of rides that have already been scheduled.
 - The Midland ESA reported that its kids do have and use smartphones, so app-based ride scheduling and text message notices of bus proximity or expected arrival times are options that would help improve the system's efficiency and convenience for riders.
- ◆ The boundary lines between Dial-A-Ride and County Connection service areas and service availability are poorly-communicated and hard for people to understand.
- ◆ For the convenience of riders (and for better fare box revenue control), both transit agencies should introduce and offer easily-renewed swipe cards for fare payment, instead of distributing, selling and collecting their old-fashioned paper tickets.
- ◆ Safe and comfortable transit transfer points are a significant need for out-of-county trips. Connection with out-of-county transit agencies do not work well.
- ◆ Many discharged patients need to stop at a pharmacy on their way home.
- ◆ Agency "hands off" policies which preclude their drivers from helping infirm riders are an issue.

Mobility within the County and Region

- ◆ Improvements are needed in out-of-county regional transit services and connections. Consider combining Midland City and County transit services with the agencies serving neighboring cities and counties, to form a single public transportation agency and system that better serves residents and commuters throughout the entire Saginaw Bay/Flint region.
- ◆ Midland has very little traffic congestion. You can drive anywhere in Midland in ten minutes or less.
- ◆ The Midland Mall area is a key destination for both shoppers and lower-wage commuters who are employed by the numerous retailers and hotels in the area.
- ◆ Vanpools and carpools might be viable options if they could be established, coordinated, and promoted by the local transit agencies.
- ◆ Public transportation from Midland to SVSU and other regional college campuses is inconvenient and/or unavailable.
- ◆ Travel time can become a significant issue for Dial-A-Ride customers when their bus needs to pick up other customers along the way.
- ◆ Delta College - Midland students need frequent, convenient and reliable transportation to Delta's other campuses in the Bay region, especially in Bay City.
- ◆ There are too many county line barriers to convenient transit use. That is why a true regional transit system is needed. The region's legislative caucus in Lansing ("Great Lakes Regional Caucus") has a transportation committee that should be consulted and engaged.
- ◆ Midland has a strong sense of responsibility to better serve and meet the needs of children, older adults, and persons with disabilities.
 - Gladwin to Mid-Michigan Medical Center connections are important.

Current Demand-Response Service Issues

- ◆ People with special needs or their parents/guardians must call to reserve their own individual rides, and to call again to cancel or reschedule. The reservation and cancellation/rescheduling process is overly burdensome to frequent riders.
- ◆ Dial-A-Ride drivers may show up early (30 minutes or more, in some cases) for their pickups, and yet they are still very strict regarding their own "two-minute wait" rule. Special needs riders thus must wait by their windows well before their pickup times to watch for their bus. For some special needs individuals, the act of "waiting and watching" for a long period of time can be very stressful. And then when the bus pulls up, they have to quickly put on their coats, grab their things, turn off the lights, lock their doors, and navigate snow or ice-covered sidewalks to get all the way to their bus before it pulls away. While this may not seem difficult for an able-bodied person, people with disabilities often have related concentration, mobility and walking speed issues, so depending on the proximity of their residence, getting to the bus within two minutes can be a real challenge for some.
- ◆ Dial-A-Ride will not accept a group reservation, and cannot establish a pre-arranged regular route for rider groups who have regular and predictable needs.
 - This Dial-A-Ride policy for not accepting group reservations is based on the FTA regulatory requirement prohibiting public transit services from engaging in unfair competition with private charter bus services. Violation of the FTA Charter Bus regulation would likely result in loss of Federal funding.
- ◆ Over time, public transit has proven unable to accommodate the service agencies' growing demand for regular and predictable youth and special needs public transportation services, due

to the transit systems' current fleet configurations, policies, and program limitations. As a result, to supplement their clients' Dial-A-Ride and County Connection trips, the ESA and The ROCK Center have contracted with Midland Public Schools at excessive cost for school buses, the ESA has developed its own vehicle fleet, and both noted anecdotes of occasional "off-the-record" volunteer rides from employees and others so that clients wouldn't be stranded with no way to get home.

- ◆ Dial-A-Ride has a reputation for being unreliable for on-time performance.
 - However, it is noted by Dial-A-Ride that 97.72% of rides between October and December 2016 were on-time.

Fixed Route Service Comments

- ◆ There is a huge need in Midland for low income housing. Associated convenient, regular and reliable transit service between such housing and available employment centers would be well utilized.
- ◆ Hospital employees and patients could benefit from regular 30-minute shuttles providing services to the hospital and around the hospital complex's various buildings.
- ◆ Midland currently lacks sufficient residential population densities along its major corridors to justify fixed route service.
- ◆ People want New York City-levels of service, but Midland needs services that are appropriate for its size.
- ◆ Better public transportation access to and from Midland's after-school programs is a critical need for the middle and high school students who can most benefit from these programs. Afterschool programs are currently held at four schools--Dow High School, Midland High School, Northeast Middle School, and Jefferson Middle School--and better safe, secure, predicable and reliable transit service is badly needed. An estimated 300-400 kids (whose parents can't pick them up, drop them off, or both) out of the 1,000+ who participate in after-school programs, could benefit from improved transit services during the 3:30 p.m. to 5:30 p.m. time period every weekday.
- ◆ Three fixed route loops should be considered that start and end in the Center City. They could radiate out to the northwest, to the northeast, and to the south and east. A central transit station "hub" should be secured providing convenient bus access and an out-of-the-weather refuge for riders waiting to transfer between routes.
 - Downtown to Center City is the hub of activity in Midland.
- ◆ Midland has a growing international population that is familiar with and expects to see and use fixed-route services.
- ◆ Anything over a five-minute walk becomes unimaginable for many people.
- ◆ People are looking for a different, better quality of public transportation. Midland needs to take a well-developed look at possible fixed-route services. Saginaw, Bay City, Mount Pleasant, Traverse City and Kalamazoo all have fixed route services. Why can't Midland provide these services as well?
- ◆ Community leader involvement, endorsement and support is critical to the success and sustainability of transit service improvements.
- ◆ Potential demand for fixed route services could be tested by providing corridor and park & ride services for Midland area special events, where convenient driving and parking is a challenge.
- ◆ Provide a form of transportation that is free from a negative stigma and not thought of as exclusively for people with low incomes, older adults, and persons with disabilities.
- ◆ Providing transportation that is on a fixed schedule makes it more appealing to everyone.

Bicycling and Pedestrian Issues

- ◆ The City of Midland has done a great job of establishing and expanding bicycle routes in the community.
- ◆ ARC of Midland provides bicycle safety training for clients with developmental disabilities.
- ◆ Bicycling is not thought to be an option in Midland during inclement weather and throughout the winter months.

CONCLUSIONS

The results of transportation ‘need’ and ‘demand’ research mean distinctly different things to the transportation operator(s). And, it is the combination of need and demand analysis that leads to a reliable evaluation. Measuring input through interviews and meetings provides the Project Steering Committee with valuable insights into what various segments of the population indicate as the most *needed* transportation services. Analysis based on demographics and socio-economic characteristics provides the project team with quantitative details that indicate the level of *demand* for transportation services that exist. When the results of a needs analysis and the quantitative results of the demand analysis are combined, the local project team has thorough understanding of the level and type of transportation services that will be most beneficial to the area.

Spatial gaps in transportation availability pertain to the ability, or inability, to travel from point A to point B. Spatial gaps do not consider the time of day or day of the week when the trip is needed.

- ◆ According to a one-month sample of trips completed by Dial-A-Ride (Exhibit 14), the majority of trips originate and/or end in the southern and central portions of the City of Midland, while other areas of the City are served with less frequency.
- ◆ Analysis of County Connection trips is in progress, but preliminary summation is that County Connection has a high demand for trips to and from Coleman and Midland.
- ◆ United Way 211 documented 455 calls received during 2016 pertaining to transportation needs and information. The majority of those calls were referred to human service agencies and faith based organizations.
- ◆ A map of the major destinations served and unserved by the existing transportation network (Exhibit 15) reveals a concentration of popular destinations located in areas that also have the highest densities of populations below poverty, with zero vehicles available to the household, and/or people age 65 and older.

Temporal gaps in transportation availability pertain to the inability to travel at a time of the day and/or day of the week when a trip is needed.

- ◆ Analysis of the primary human service agency, public and private transportation providers serving Midland County reveals that transportation for the general public is available, broadly speaking, between 5:30a.m. and 11:00p.m., weekdays. Specialized transportation services for seniors, individuals with disabilities, and program participants are generally limited to 8:00a.m. to 6:00p.m. on weekdays.
- ◆ Weekend transportation options are only covered by public transit operators and taxis. Public transit operates until 8:00p.m. on Saturday and 2:00p.m. on Sunday.
- ◆ All weekday and weekend transportation options, other than private taxi service, require an advance reservation. In most cases, the reservation must be made more than one-day in advance.
- ◆ Capacity issues of the public transportation providers, according to the stakeholder and general public survey, are a barrier for scheduling trips at certain times of the day.

The demographic analysis of Midland County focuses on the population groups that are most likely to need and use public and human service agency transportation. Those groups are: Older adults, zero vehicle households, and people living below poverty. A fourth group—individuals with disabilities—should also be considered in this calculation. However, only subjective data is available at the block group level for that group.

- ◆ Approximately 4.69 percent of households in Midland County has zero vehicles available.
- ◆ Approximately 12.67 percent of the population lives below the poverty level.
- ◆ Approximately 15.87 percent of the population is age 65 or older.
- ◆ Areas of highest transit propensity, or likelihood to use public transportation, are located in the southern and central portions of the City of Midland.
- ◆ The demographic transit propensity model is consistent with the concentration of trip demand for Dial-A-Ride (Exhibit 20) and for the major trip generators for all stakeholders (Exhibit 21).

Stakeholders interviewed throughout the study period consistently focus on similar unmet needs and challenges for the existing services. The areas of focus are:

- ◆ Capacity issues (not enough capacity to meet demand)
- ◆ Negative perceptions of public transit
- ◆ Accessibility challenges and limited awareness of available services throughout the community
- ◆ Barriers to out-of-county regional transit service connections and limited service options for in- and out-of-county trips.
- ◆ Challenges with making the existing demand response service policies meet the needs of agency, school, and employment demands.
- ◆ Support and doubts about expanding to a fixed route or fixed schedule service.
- ◆ Bicycling and pedestrian issues do not seem to be a major concern in Midland County, according to stakeholder input. Most are happy with the bike routes and sidewalks, but would like expanded bike routes and improved bicycle safety training options.

SOLUTIONS

RLS and Associates through research, outreach, demographic analysis and propensity modeling developed a selection of service options in this section for discussion among the steering committee members. The list of 13 options in the areas of Customer Service/Administration, Service and Marketing were discussed and reduced to 3 major solutions to further define.

CUSTOMER SERVICE AND ADMINISTRATION SOLUTIONS

Customer service and administration solutions are suggested for two primary reasons.

First, public outreach results indicate that people perceive Dial-A-Ride Transit service to be designed for taking older adults and people with disabilities to stores or agency programs. In reality, the service is available and designed to serve the general public for any trip purpose. Use of technology, such as websites and mobile apps may enable transit services to reach a broader distribution of the population. Technology will appeal to millennials and others who are comfortable with and attracted to using technology to manage their day-to-day schedules and prefer to spend less time planning rides. For those not comfortable with technology, the current scheduling procedures will continue.

Second, analysis of Dial-A-Ride service reveals that almost 4% of its daily trips are no-shows with an even greater percentage (20%-30%) being last minute cancellations. Late cancellations or no-shows are destructive to the service's productivity because vehicles dispatched for riders that do not show up or cancel at the last minute could have been assigned to another trip request; or, other passengers could have had more direct rides to their destinations. Furthermore, planners heard from stakeholders that the process of calling to verify a trip or cancel a trip is time consuming and frustrating because they are placed on hold. Technology that would allow passengers the option to verify or cancel a trip without calling Dial-A-ride would reduce the number of calls received by Dial-A-Ride, the demand on the call taker, and the time passengers spend on the phone. The intended result of implementing an application to allow on-line trip cancellation is improved efficiency and availability for all parties.

Solution #1: A Mobile App for Transit in Midland

Description: A well-planned and developed mobile app can provide riders and potential riders with an easy to use method for canceling or checking the status of trips without calling the transit system. An app appeals to millennials and attracts the attention of older and younger population groups. Since technology is ever growing and known to correlate with improved customer service, many people will view its addition to public transit systems as an update, which will attract new riders to Dial-A-Ride and County Connection.

Many transit systems around the country are developing and using mobile apps to increase efficiency, improve customer service, reach-out to new markets, reduce labor costs and keep up with

technology trends. Depending on the level of sophistication, the app could be integrated into a rider's existing calendar program and provide notifications or reminders of the scheduled trip. It could also provide real-time arrival times to allow the rider more flexibility without missing a trip. This would require some form of Automated Vehicle Location (AVL) system for each vehicle.

As with any technology tool, software maintenance is necessary and occasionally the technology tool could go offline. A redundancy plan would need to be a part of any app endeavor. App development, unless modifying an existing app framework, can be costly and the return on investment may take years to achieve. Furthermore, as expressed by Dial-A-Ride administrators, some segments of the ridership may not use a smart phone and would still be reliant on the conventional method of canceling a ride through a phone call or no call at all (no-show). Finally, integrating an app with other transit systems serving the area in the future may prove challenging and inhibit coordinated service.

Short Term Steps: The Dial-A-Ride and County Connection administrators will meet to discuss the preferred design and aspects to be included in the app. Once the desired capabilities of the app are documented, Dial-A-Ride and County Connection will work to identify potential approaches for app development. Coordinate this part of the planning process with local planners and technology experts to ensure a comprehensive approach is selected. Depending upon the procurement guidelines of the City and/or County, a formal procurement process for a company to develop, maintain, and update the app may be required. Once the development process begins, industry experts indicate it takes an average of 18 weeks to build an app.

Potential Costs: Because there are so many variables, the price for a mobile app could range from \$5,000 to \$500,000. However, Applico, an app development company, estimates that the price range will typically be \$100,000 to \$300,000. An app may be configured to work with existing Mobile Data devices.

Potential Revenue Sources: Federal Transit Administration Section 5307 funding is available for planning, and software. Currently, 5307 funds are fully allocated to program needs, but could be reprogrammed for this solution if additional funding sources were identified to replace the portion re-programmed. Federal Transit Administration Section 5303 funding may also be available to the MPO for planning this effort, but not for maintenance of the app. Local match would be required if Federal funds are utilized.

Solution #2: Credit Card Payments to Dial-A-Ride

Description: The option is to pay for a trip in advance, at the time the trip is scheduled. Though most riders might be hesitant about paying for a trip before it happens, those who do pay in advance would be less likely to cancel a trip, which will improve the performance of Dial-A-Ride and County Connection. Adding this feature to the transit systems' websites and/or call intake processes would allow the passenger to pay for a trip with a credit card.

A strong credit card policy will be needed and must include refund strategies emphasized to reduce potential discussion over a missed trip (no-show) refund and security assurances to the rider. A policy must also cover the risk assumed by the transit agency for misplaced credit card numbers.

Short Term Steps: Credit card software should be available through the credit card service allowing each call intake person the ability to authorize and complete the transaction while the rider is on the phone.

Potential Costs: Credit card fees would be incurred by the transit system to implement this capability. Those fees are usually a percentage of the transaction amount.

Potential Revenue Sources: Federal Transit Administration Section 5307 funding is available for planning and software. Federal Transit Administration Section 5303 funding may also be available to the MPO for planning this effort but not for maintenance. Local match would be required if Federal funds are utilized.

Solution #3: Trip Confirmation Calling System

Description: Both Dial-A-Ride and County Connection use a software that has the capacity to add a trip confirmation “robo” call to remind the passenger of his or her trip and ask the passenger to confirm the trip. By implementing this system “no-shows” and late cancellations could be reduced and efficiency increased. Furthermore, it is a system that will reassure the waiting passenger that his or her ride is on the schedule.

Each passenger would need to have a working phone with messaging capability, which will not be the situation for Dial-A-Ride and County Connection passengers who use disposable cell phones. To reduce the incidence of a person not receiving his or her trip confirmation “robo” call, the call intake personnel at the transit system, would need to confirm the phone number with each trip reservation. The process of confirming/updating phone numbers is time consuming and not ideal especially at busy times of the day.

Short Term Steps: The existing transit telephone infrastructure would need to be reviewed to determine what additional components would need to be added or implemented to the system.

Potential Costs: The call-back reminder system can be structured in a number of ways. One potential structure is to pay a monthly fee based on the number of different phone numbers contacted. For example, a price per month to contact 400 different phone numbers would cost the transit systems approximately \$85 to \$100. During the month, those 400 phone numbers could be contacted an unlimited amount, so long as no more than 400 different numbers are logged.

Alternatively, the billing system can be set up with credits. One credit equals one 30 second call or one text message. The number of credits can range from \$0.09 to \$0.06 per call or text, depending upon the package purchased by the provider.

Potential Revenue Sources: Federal Transit Administration Section 5307 funding is available for planning and software. Currently, 5307 funds are fully allocated to program needs, but could be reprogrammed for this solution if additional funding sources were identified to replace the portion re-programmed. Federal Transit Administration Section 5303 funding may also be available to the MPO for planning this effort, but not for maintenance. Local match would be required if Federal funds are utilized.

Solution #4: Electronic Fare Payment Technology

Description: Electronic mobile ticketing is another option for improving customer experience when using public transit. It is convenient to customers and is therefore likely to boost ridership. Additionally, electronic fare media, when used among multiple transportation providers in a region, provides more connecting options and often reduces rider’s confusion about which fare structure is offered by which provider. Riders would not need to carry cash, which is advantageous to adult riders and the parents of adult riders. The fare card system would allow riders or parents to pay for trips in advance and maintain the card similar to a debit card. Transit systems would see the seamless capture of trip data with every swipe of the electronic fare card (or mobile app). Also, the fare card itself can be used for advertising or transit information.

There are a wide range of electronic fare payment options. When selecting the appropriate technology, user-friendliness, ease of administration for staff, and system integration must be considered. Transit pass technology options are constantly updated. The following list includes a range of pass technologies, some of which may not be feasible for Midland at this time due to costs.

Mobile Ticketing – Advances in mobile ticketing are constantly improving flexibility for transit systems across America. With this system, passengers can purchase tickets or passes for transit on a smartphone. The tickets can be stored offline and activated when the ride begins. When the transit driver asks to see the ticket, riders can show the activated ticket on their screen.

Magnetic Strip Cards – Strip cards come in several varieties (read-only and read-write) and may or may not comply with certain standards. There are several standards for the data on the card, both proprietary and open; the American Public Transportation Association has published standards for this media that are generally available to the industry.

Smart Cards – These are plastic cards that have an electronic chip embedded. These cards can process a great deal more data than magnetic stripe cards, and are largely secure from copying or fraudulent manipulation.

- ◆ E-Purse – Most often, smart cards carry an electronic purse. The fare is debited from the e-purse as the customer rides. Through “autoload” functions, the value can be added to the e-purse online without the passenger having to come to a designated location. The smart card can also serve as an ID card.

- ◆ Account Based – Some smart card systems are account-based. In an account-based system, there is no e-purse on the card itself. The account only reports that the ride took place. A separate process calculates the correct fare to be charged and debits money from the card.

Short Term Steps: A feasibility study to determine the most appropriate system and the costs and benefits of implementing electronic fare systems should be the first step in the process of considering electronic fare card systems. Fare collection technology is complex and requires a substantial level of technical competence within an organization. Also, the need for a high level of electronic security and the capacity and commitment to managing security is vital to success.

Potential Costs: Cost and benefits cover a broad range. The administrative benefits of an automated fare system must be considered when evaluating the implementation and maintenance costs of the program. Administrative benefits may include spending less staff time calculating fare revenue and less staff time tracking ridership,

Potential Revenue Sources: Federal Transit Administration (FTA) Section 5307 funding is available for planning and software. Currently, 5307 funds are fully allocated to program needs, but could be reprogrammed for this solution if additional funding sources were identified to replace the portion re-programmed. Federal Transit Administration Section 5303 funding may also be available to the MPO for planning this effort but not for maintenance. Federal mobility management funding may also be available. Local match would be required if Federal funds are utilized.

Solution #5: Coordination with Michigan Transportation Connection (MTC)

Description: MTC offers brokered transportation services for Medicaid eligible riders needing transportation services for medical trips. The service uses existing transit systems, human service agencies, volunteers and other transportation providers to fulfill trip requests. Currently, MTC operates in Gladwin, Clare and Midland Counties using demonstration grant funds and, recently, Rides to Wellness funds through FTA. The service currently uses volunteer drivers to provide service in Midland County and public transit providers in Clare and Gladwin Counties.

Though Dial-A-Ride and County Connection provide rides for Medicaid recipients, coordinating with MTC might allow certain trips to be easily placed on existing demand response services and less productive trips shared with volunteers. Under the MTC structure, MTC handles most of the Medicaid eligibility requirements. Driver background checks and training are essential elements to providing safe rides.

Short Term Steps: Initially, both transit systems will need to enroll in the MTC brokered system if financial analysis—currently in progress—proves it to be in the best interest of the public transit systems and Medicaid riders.

Potential Costs: Up front expenses to the transit systems, which include annual driver background checks, are substantial. Software systems may not be compatible which would require both MCT and public transit to input trip information twice. Finally, reimbursement for Medicaid funded trips might

not always cover the actual cost of the trip. Currently, reimbursement is based on state mileage reimbursement rates.

Potential Revenue Sources: Vehicle advertising, foundation grants – for annual administration burden that is not covered by reimbursement rate. The reimbursement should cover the cost of the trips performed.

Solution #6: Bike Racks on Transit Vehicles

Description: Over the last several years, the City of Midland has enhanced bike trails to enable safe travel in different parts of the City. In areas where trails are not available, riders use street shoulders or sidewalks. The addition of bike racks on transit vehicles would allow riders to bring bikes with them to areas where non-motorized paths are available.

Allowing bicycles on transit vehicles connects modes of transportation in Midland and gives bike riders the opportunity to connect to trails without using their cars to get to the trails, or riding in areas not designated for bike traffic. Bus bike racks are easily used by riders and do not require the driver's assistance. In most cases, bikes can be loaded in a minute or two.

To keep demand response vehicles compatible with bikes, all vehicles would need racks, otherwise scheduling would present fewer options for people wanting to travel with bicycles. Extra maintenance would be needed to ensure bike racks are in working order and safe. Drivers would need to oversee bicycle loading to reduce potential mistakes that could damage the bicycle, bus, or others.

Short Term Steps: Additional outreach to the biking community should be conducted to assess interest for bike racks on buses. A ridership survey of existing Dial-A-Ride and County Connection could be conducted to determine if riders would use the bike racks. It is anticipated that since 70% of Dial-A-Ride riders and County Connection riders are elderly or disabled, the excitement for bike racks may be minimal.

Reaching new markets of riders looking to combine the independence of bike riding with transit use will require coordinating with bicycle affiliated organizations in Midland County and regionally.

Potential Costs: Approximately \$1,600 per vehicle.

Potential Revenue Sources: FTA Section 5307 Urbanized Area Formula Program (95% Federal Share); FTA Section 5339 Bus and Bus Facilities Formula Grants (90% Federal Share); FTA Section 5311 Grants for Rural Areas (90% Federal Share); Local match will be required for all FTA Federal funding programs. Currently, 5307 funds are fully allocated to program needs, but could be reprogrammed for this solution if additional funding sources were identified to replace the portion re-programmed. Also, Congestion Mitigation Air Quality (CMAQ) funding may also be available at 100%.

SERVICE SOLUTIONS

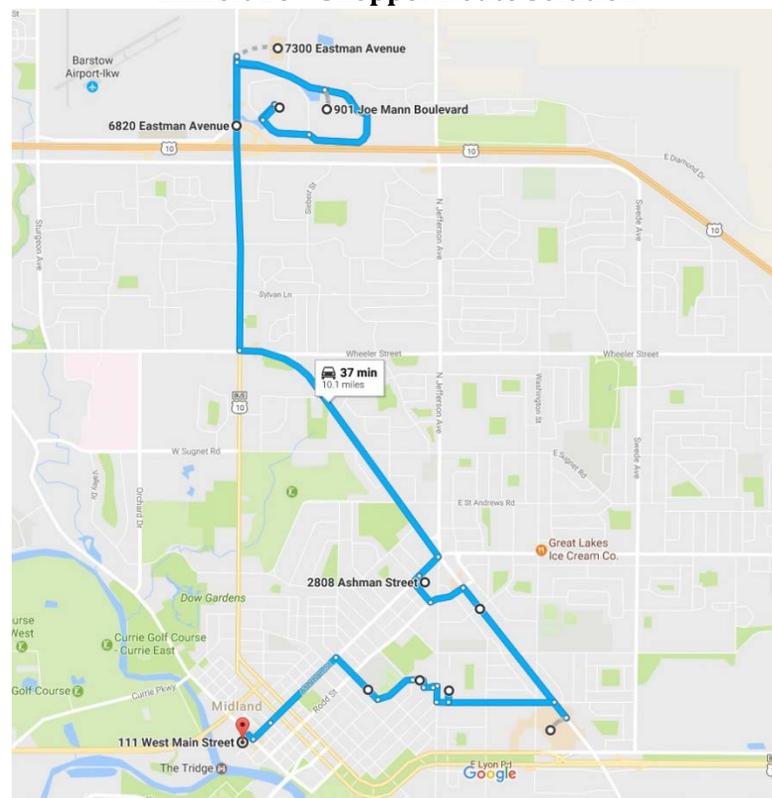
Solution #1: Shopping Service Route

Description: As identified in earlier sections of the plan, shopping areas are popular destinations for both Dial-A-Ride, County Connection and Senior Services. A designated shopping route should be considered to meet the demand for shopping trips and reduce the burden on demand response services.

A shopping route would not need to add additional fleet vehicles, as the route should alleviate several trips on the demand response service by consolidating those trips into two to three days a week of four-hour, mid-day service blocks (e.g. 10:00a.m to 2:00p.m.). The service would operate on a route, beginning at the Farmers Market area or Tridge, following a path to shopping areas along Saginaw Avenue, and continuing to Midland Mall. The route would also include the Bay Transit stop.

The service would operate 153 days a year (3 days – Tues., Thurs., and Sat.) with projected ridership of 3,366 one-way trips. The service would require proper marketing and could build relationships with stores for promotions, possibly covering some of the marketing and service costs.

Exhibit 28 – Shopper Route Solution



Short-Term Steps: A survey of riders could be completed to determine interest in the route. Also, an in-depth analysis of shopping destinations would need to take place to identify the most popular shopping destinations as well as residential origins (1010 Eastlawn Drive, WW2, and Community Mental Health) to include in the route. The brief analysis for this report identified the following most-frequented shopping destinations.

- ◆ Midland Mall
- ◆ Walmart
- ◆ Kmart
- ◆ Kroger
- ◆ Meijer
- ◆ Target
- ◆ McDonalds
- ◆ Dollar Store

County Connection provided over 1,277 trips out of 9,379 (14%) to or from shopping in September 2016. The trip data review did not include restaurants, fast food locations or specialty stores. And, many of the shopping destinations included in the route are the most frequented stops for Dial-A-Ride.

Prior to rolling out the new service, the transit systems will need to prepare an advertising campaign as well as developing policies for the number of bags to be carried on board the vehicle. For example, in order to manage capacity, some public transit systems limit the number of bags to what a passenger can carry on his or her lap.

Potential Costs: The estimated annual operating cost is \$35,490. This estimate is based on \$57.99 cost per hour for 612 hours. This cost does not include capital, marketing or administration expenses. However, the cost does not necessarily represent a full expansion of the current budget because Dial-A-Ride and County Connection are already operating a vehicle during those hours. Ideally, an existing vehicle and driver will be shifted from the demand response service to operate the shopping route. The Dial-A-Ride and County Connection styled vehicle type would meet the capacity needs until demand increased. The estimated trips per hours is 5.5 as seen in Exhibit 29.

Exhibit 29

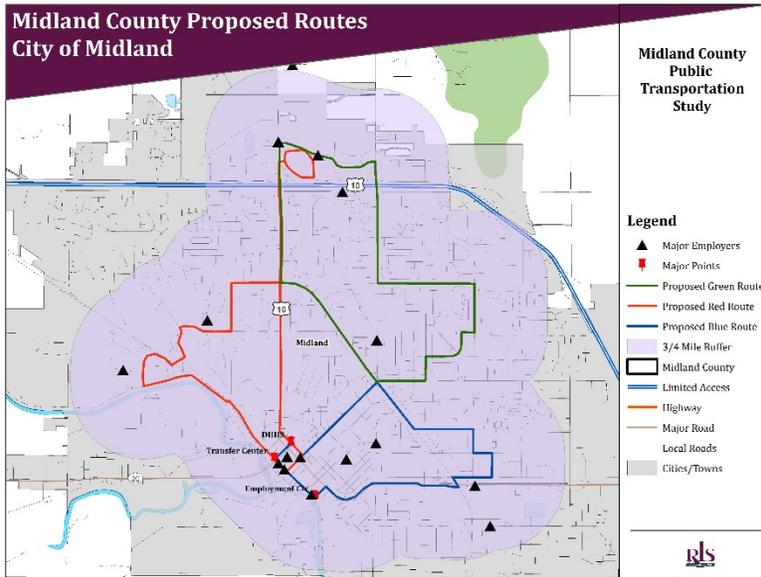
Service Options					Daily			Annual				Total Operating Cost	Performance		
	Days	Operating Hours	Headway	Route Time	Veh's	Rev. Hrs.	Rev. Miles	Rev. Hours	Rev. Miles	Days	Est. Rides		Trips/Hr	Cost/Hr.	Cost/Trip
Option 1 - Shopper Route	T, TH, S	10:00 AM - 2:00 PM	1 hour	50 mins	1	4	48	612	7344	153	3366	\$ 35,490	5.5	\$ 57.99	\$ 10.54

Potential Revenue Sources: Existing operating budget of the transportation operator may be available for this service with minimal budget expansion if a driver and vehicle can be redirected from the demand response service to the route. Sources for revenue include FTA 5311, Millage.

Solution #2: Fixed Route Service

Description: Fixed route service operating on three routes throughout the City of Midland would

Exhibit 30



provide regular route and time stop service to destinations for shopping, medical, human services, employment, education and social services. The three routes would operate every ½-hour to one-hour and would allow for transfers to other routes and Bay Transit.

The service would require two vehicles for each of the three routes, operating in opposite directions to provide greater frequency and flexibility. See Exhibit 30.

Short-Term Steps: The costs listed in Exhibit 31 are operational expenses only. If this option is considered for further evaluation additional expenses would be added including capital expenses for vehicles and infrastructure, administrative costs and additional maintenance costs associated with capital equipment. Route structuring and planning along with financial planning must take place in the short-term with operations beginning in the mid-term time period.

Potential Costs: As seen below in Exhibit 31, the operational cost for the fixed route service is based on an hourly rate of \$57.99 (roughly 9% lower than existing demand response cost per hour). Operating costs of fixed route are traditionally less than demand response service due to less dispatch and scheduling involvement.

Exhibit 31

Service Options					Daily		Annual				Total Operating Cost	Performance			
	Days	Operating Hours	Headway	Route Time	Veh's	Rev. Hrs.	Rev. Miles	Rev. Hours	Rev. Miles	Days		Est. Rides	Trips/Hr	Cost/Hr.	Cost/Trip
Option 2a - Fixed Route															
Green Route	M-F	6:00 AM - 6:00 PM	30 mins	52 mins	2	24	182	6168	46774	257	30840	\$ 357,682	5	\$ 57.99	\$ 11.60
Red Route	M-F	6:00 AM - 6:00 PM	30 mins	54 mins	2	24	224	6168	57568	257	24672	\$ 357,682	4	\$ 57.99	\$ 14.50
Blue Route	M-F	6:00 AM - 6:00 PM	30 mins	50 mins	2	24	172	6168	44204	257	37008	\$ 357,682	6	\$ 57.99	\$ 9.67
Option 2b - Fixed Route															
Green Route	S	8:00 AM - 5:00 PM	1 hour	50 mins	1	9	63	468	3276	52	2340	\$ 27,139	5	57.99	\$ 11.60
Red Route	S	8:00 AM - 5:00 PM	1 hour	50 mins	1	9	77	468	4004	52	2340	\$ 27,139	5	57.99	\$ 11.60
Blue Route	S	8:00 AM - 5:00 PM	1 hour	50 mins	1	9	63	468	3276	52	1404	\$ 27,139	3	57.99	\$ 19.33

Potential Funding Sources: FTA 5311, FTA 5307, Millage. Currently, 5307 funds are fully allocated to program needs, but could be reprogrammed for this solution if additional funding sources were identified to replace the portion re-programmed.

Solution #3: Deviated Fixed Route (Flex Route)

Description: A Deviated Fixed Route service is designed to have greater flexibility than a fixed route service by allowing the vehicle to deviate off the route to pick up passengers who might not have the ability to travel to the fixed route stop. Many times deviations are for seniors or people with mobility limitations. In some cases, the path to the bus stop may be unsafe or inaccessible for individuals with mobility devices.

With the ability to deviate off the route, passengers who might prefer the current demand response service can still use the deviated route service but they also have the option to walk to a bus stop. And, the route also meets the desires of people who prefer to walk to a bus stop without making an advance reservation. As an option, policies can be implemented by the transportation provider that require individuals who live within a designated distance from the scheduled stops of the route and are traveling to a destination on the route, to use this service. Additional policies can be established that limit the eligibility for a deviation. The deviations require additional route travel time to accommodate the potential deviation. Therefore, the system will need to limit the number of deviations that can be scheduled per hour or half hour.

To reduce a long route time, the route should have two vehicles traveling in opposite directions on a loop service.

Marketing a deviated fixed route must be extensive in the beginning as most riders are familiar with a fixed route concept, but might need additional guidance for the deviation process requiring scheduling assistance.

Potential Costs:

Like Solution 2, Fixed Route, this solution reflects only operating costs as seen in Exhibit 32.

Exhibit 32

Service Options					Daily		Annual					Total Operating Cost	Performance		
	Days	Operating Hours	Headway	Route Time	Veh's	Rev. Hrs.	Rev. Miles	Rev. Hours	Rev. Miles	Days	Est. Rides		Trips/Hr	Cost/Hr.	Cost/Trip
Option 3a - Deviated Fixed Route															
Green Route	M-F	6:00 AM - 6:00 PM	40 mins	62 mins	2	24	200	6168	51400	257	40092	\$ 377,543	6.5	61.21	\$ 9.42
Red Route	M-F	6:00 AM - 6:00 PM	40 mins	64 mins	2	24	244	6168	62708	257	33924	\$ 377,543	5.5	61.21	\$ 11.13
Blue Route	M-F	6:00 AM - 6:00 PM	35 mins	60 mins	2	24	208	6168	53456	257	46260	\$ 377,543	7.5	61.21	\$ 8.16
Option 3b - Fixed Route															
Green Route	S	8:00 AM - 5:00 PM	1 hour	54 mins	1	9	70	468	3640	52	3042	\$28,646.28	6.5	61.21	\$ 9.42
Red Route	S	8:00 AM - 5:00 PM	1 hour	56 mins	1	9	84	468	4368	52	3042	\$28,646.28	6.5	61.21	\$ 9.42
Blue Route	S	8:00 AM - 5:00 PM	1 hour	52 mins	1	9	72	468	3744	52	2106	\$28,646.28	4.5	61.21	\$ 13.60

Potential Funding Sources: FTA 5311, FTA 5307, Millage. Currently, 5307 funds are fully allocated to program needs, but could be reprogrammed for this solution if additional funding sources were identified to replace the portion re-programmed.

Solution #4: Point Deviation

Description: The vehicle travels on an unspecified path to fixed points at fixed times and picks up demand response trips along the way. Though unspecified, the path will follow a direction from a beginning point to an end point. The points may later be used as deviated or fixed route bus stops if demand warrants the higher capacity service.

The goal of this type of service is to identify demand response trip patterns with common origins and destinations and set time points/stops to allow riders to access the service without calling to schedule a ride. Typically, this type of service would include a lower fare for those using the fixed time point/stop versus riders requiring curb-to-curb service.

Short-Term Steps: Initial analysis of existing demand response trips occurred with this study. However, a more extensive analysis of ridership trends is recommended to verify common patterns and the travel time between established time points (given various traffic conditions, etc.). Once tentative time points/stops are identified, marketing will need to inform passengers and potential passengers of the benefits offered by this non-traditional transit mode.

Long-Term Steps: After providing the service for 1-3 years, the service should be assessed to determine if greater efficiency and productivity could be realized by changing the mode to fixed or deviated fixed route service.

Potential Costs: Point Deviation service is developed to lower the cost of providing demand response service and possibly leading to an even lower cost of service, fixed or deviated fixed route. Below, in Exhibit 33, is a projection of cost for the service based on current demand response rates. Initially, the cost per hour will be similar to existing demand response, but as productivity increases the cost per passenger will decrease as well as the cost per hour and mile.

Of the four service options listed, the Point Deviation service is the most expensive, as it requires more call intake and scheduling services. The benefit of this service over demand response is its ability to gradually transition to fixed route service, rather than cause a sudden change. Experiences learned from this service will allow better planning of fixed route service design.

Exhibit 33

Service Options					Daily		Annual					Performance			
	Days	Operating Hours	Headway	Route Time	Veh's	Rev. Hrs.	Rev. Miles	Rev. Hours	Rev. Miles	Days	Est. Rides	Total Operating Cost	Trips/Hr	Cost/Hr.	Cost/Trip
Option 4 - Point Deviation															
Green Route	M-F	6:00 AM - 6:00 PM	45 mins	80 mins	2	24	154	6168	39578	257	27756	\$ 397,404.24	4.5	64.43	\$ 14.32
Red Route	M-F	6:00 AM - 6:00 PM	45 mins	80 mins	2	24	184	6168	47288	257	24672	\$ 397,404.24	4	64.43	\$ 16.11
Blue Route	M-F	6:00 AM - 6:00 PM	45 mins	75 mins	2	24	160	6168	41120	257	33924	\$ 397,404.24	5.5	64.43	\$ 11.71
Option 4b - Point Deviation															
Green Route	S	8:00 AM - 5:00 PM	90 mins	80 mins	1	9	77	468	4004	52	2340	\$ 30,153.24	5	64.43	\$ 12.89
Red Route	S	8:00 AM - 5:00 PM	90 mins	80 mins	1	9	92	468	4784	52	1404	\$ 30,153.24	3	64.43	\$ 21.48
Blue Route	S	8:00 AM - 5:00 PM	90 mins	75 mins	1	9	80	468	4160	52	1404	\$ 30,153.24	3	64.43	\$ 21.48

Potential Funding Sources: FTA 5311, FTA 5307, Millage. Currently, 5307 funds are fully allocated to program needs, but could be reprogrammed for this solution if additional funding sources were identified to replace the portion re-programmed.

Solution #5: Centralized Scheduling and Dispatch

Description: Combining the Dial-A-Ride and County Connection dispatch and scheduling responsibilities would allow greater flexibility and improve efficiency and productivity by combining trips with similar origins, destinations, and time of day.



A large portion of County Connection trips include destinations in the City of Midland. By sharing trips across the City boundary line, both systems will open up additional seats that could be filled within an existing demand response service structure.

Short-Term Steps: Each of the two transit systems would develop a Memorandum of Understanding/Agreement outlining how trips will be scheduled, assigned, reported, and billed. Once this has been completed, the software company would develop protocols for allowing access to each other's database.

Initially, schedulers and dispatchers would remain at the respective transit system locations. Eventually, the two services could be combined in a centralized call center with a single number for all riders to call.

Long term impacts: After the initial coordination of scheduling and dispatching the systems may find that additional action can be taken to consolidate the scheduling and dispatching into a centralized call center with one number for rides on either system. A strategic marketing plan would be instrumental in educating riders on the changes of a centralized scheduling service. Additional marketing and branding steps could be taken to give both system's vehicles a similar look to cut down on confusion some riders might have about which system they are riding.

A long-term goal of centralizing scheduling and dispatching responsibilities would increase efficiency and convenience for riders.

Potential Costs: The initial set-up would be relatively inexpensive, other than the hours attributed to planning and software configuration. Later stages to share a centralized location, if desired, may require capital costs through system upgrades and location costs.

Potential Funding Sources: FTA 5311, FTA 5307 – Mobility Management, Millage, Federal Transit Administration Section 5303 funding may also be available to the MPO for planning this effort but not for maintenance. Currently, 5307 funds are fully allocated to program needs, but could be reprogrammed for this solution if additional funding sources were identified to replace the portion

re-programmed. Local match (50% for operating, 20% capital) would be required if Federal funds are utilized.

Solution #6 App Based Shared-Ride Service

Description: This solution is a car service based on use of a smartphone app to hail rides in private vehicles driven by local residents with characteristics similar to cab companies. Shared-ride services like Uber and Lyft, or transportation network companies, have become popular in large cities throughout the United States with some cities experiencing contention surrounding the impacts to existing taxi services, incidents with drivers and regulatory compliance issues. In most cases, these shared-ride services have proven effective at providing point-to-point transportation service with seamless financial transactions handled through app registration and scheduling software systems.

One of the key components to a successful ridesharing service like Uber or Lyft is the ability to recruit local drivers who, both meet the hiring criteria with late model vehicles and the standards set by each company. The fast response to ride requests are dependent on the number of available drivers. The vetting process for drivers varies depending on the company and the state or local compliance regulations. In most cases, the vetting and oversight of shared ride drivers is not comparable to the strict regulations required of public transit drivers (i.e., drug and alcohol testing, fitness for duty, license and background checks, annual safety assessments and training for working with riders with disabilities).

On December 21, 2016, the Governor of Michigan signed a bill requiring transportation network companies to comply with the same regulations taxi companies must follow in the State. The bill requires background checks and annual vehicle inspections. Two months after the bill was signed, Lyft announced expansion plans throughout Michigan to include Midland and nearby Saginaw.

Lyft currently provides service in Flint and is coordinating with the public transit system to provide options for complimentary paratransit service (ADA transportation for persons with disabilities) riders. Though very few, if any, Lyft vehicles are accessible for persons using mobility devices, the service is offered as an alternative for eligible paratransit riders who are ambulatory and able to ride or transfer from a mobility device to a car seat. The transit system provides a voucher to cover a portion of the trip over and above the normal transit fare. This agreement allows the transit system to give the rider more independence through ride choices and significantly reduces the cost of the paratransit trip.

Replicating the Flint model in Midland would prove challenging since the City and County provide accessible public transit, not complimentary paratransit which requires an eligibility process. Lyft and Uber have worked with numerous transportation providers across the country to provide “first and last mile” service, which provides service to a fixed route end-point and allows the rider greater reach in pursuing transportation services.

Short-Term Steps: With the newly announced presence of Lyft in Midland, the riding public has another option to meet their transportation needs along with public transit and taxi. Though the

pricing of Lyft service may be similar to taxi service, the self-empowering app service may attract a new market of rider and possibly make an impact on existing public transit ridership.

Public transit should reach-out to Lyft to identify common goals and determine if there is potential for coordination opportunities that might benefit ride sharing companies, public transit and the City and County riders.

Potential Cost: At this point the cost to evaluate the potential for coordination is minimal.

MARKETING SOLUTIONS

Solution #1 – Marketing of Dial-A-Ride and County Connection

Description: Through the process of community outreach with this study, comments have been wide ranging. One apparent aspect of the current services being provided is lack of information for those who are not regular riders. Both systems have marketed their services but it has been limited. With any change as a result of this study, marketing will be vital in educating the public on the new part of the service as well as the existing service.

Portraying the systems as services open to all public riders and not just seniors and persons with disabilities can be done through effective marketing and outreach. Marketing is not just limited brochures and bus phone numbers. It includes web site design, outreach with various agencies, organizations and employers, branding, vehicle appearance, and presence during community events to show they are a community asset.

An effective marketing campaign should be developed in various mediums to make the community and businesses aware of the vital role transit plays in connecting the community, creating a healthier community and reducing the isolation of vulnerable residents.

Short-Term Steps: Transit systems should identify areas of their public image to be enhanced with new branding (i.e. Midland County Connection vs. Dial-A-Ride), identify other community organizations who might help with marketing outreach, look to colleges for design assistance, and create an image of public transit instead of human service transportation.

Potential Costs: The cost of a marketing campaign has a wide range depending on the level of enhancement needed and partners enlisted for assistance. Systems looking to provide a medium level of marketing can spend anywhere from 1% to 5% of the annual budget on marketing and advertising.

Funding Sources - FTA 5311, FTA 5307 – Mobility Management, Millage, Federal Transit Administration Section 5303 funding may also be available to the MPO for planning this effort but not for maintenance. Currently, 5307 funds are fully allocated to program needs, but could be reprogrammed for this solution if additional funding sources were identified to replace the portion re-programmed. Local match would be required if Federal funds are utilized.

COMMITTEE SOLUTIONS SURVEY RESULTS

Though only five committee surveys were returned, the insight assisted in the development and direction of the Detailed Service Solutions. Additional insight was gained through the March 14 Committee meeting.

OVERVIEW

The following section of the report details four service solutions selected by the Midland County Public Transportation Study Committee at its monthly meeting on March 14, 2017. The meeting included a review of the Technical Memorandum #3, Service Solutions. The committee selected the following four options to expand and develop cost estimates and or service change requirements.

SELECTED DETAILED SERVICE SOLUTIONS

Trip Confirmation Calling System

Description: Both Dial-A-Ride and County Connection use a software which has the capacity to add a trip confirmation “robo” call to remind the passenger of his or her trip and also ask if he or she still wants the trip. By implementing this system “no-shows” and late cancellations could be reduced and efficiency increased. Furthermore, it is a system that will reassure the waiting passenger that his or her ride is on the schedule.

Each passenger would need to have a working phone with messaging capability, which will not be the situation for all Dial-A-Ride and County Connection passengers who use disposable cell phones. To reduce the incidence of a person not receiving his or her trip confirmation “robo” call, the call intake personnel at the transit system would need to confirm the phone number with each trip reservation. The process of confirming/updating phone numbers is time consuming and not ideal especially at busy times of the day.

Details: Dial-A-Ride and County Connection use PC Trans software to schedule their demand response trips and develop driver manifests and reports. The software provider is located in Michigan and provides technical support to both systems.

PC Trans is currently developing a Ride Reminder system that will allow the transit system to notify the passenger the day before their scheduled trip and determine if the passengers intend to take their trip or if their trip needs to be re-scheduled or cancelled. The call or text would go to the phone number listed in the PC Trans database and would only be used for the first “leg” of the trip. It is assumed the second “leg” or return trip would take place unless otherwise noted to the driver of the first trip. The Ride Reminder system would only be used for on-demand trips versus subscription trips.

The software system estimates 25% of the ridership would receive a ride reminder each day. This estimate is based on 50% of the existing trips being subscription and a reminder needed for the first half of a round trip only. A round trip is counted as two one-way trips. For systems like DART and CC who provide 100,000 trips annually, 25,000 Ride Reminders would be needed a year.

PC Trans does not plan to provide this service directly, but will use a third party contractor for the notification process. The third party company provides Ride Reminders in batches and appropriate batch size would be coordinated between PC Trans and the transit systems. Passengers would be able to opt for text messages which may have less of an impact of their mobile phone service plans which might charge by phone minutes or data usage.

Currently, PC Trans expects to have this service online by fall of 2017 or early 2018. The estimated cost for the service was still being explored by PC Trans at the time of this report.

Impacts: Both transit systems would benefit greatly from the Ride Reminder system by reducing “no-shows” and last minute cancellations. This is especially valuable for County Connection who might travel between 15-30 minutes to pick up a rider. Though the Ride Reminder may not alleviate all “no-shows” and cancellations, a significant reduction could be realized and additional rides could be scheduled.

Similar Interactive Voice Response systems are being used by transit systems across the country. The Tripline IVR system by Enghouse Transportation is being used in over 125 transit systems in North America and includes software interface with scheduling and dispatching software like Trapeze, Ecolane, Route Match and Strategen. Similar sized cities to Midland using the IVR system include Madison County, IL, Kent, OH and by 2019, 33 transit systems in the state of Pennsylvania with fleet sizes of 8-25 buses. The cost for this system ranges from \$20,000 - \$40,000.

Centralized Scheduling and Dispatch

Description: Combining the Dial-A-Ride and County Connection dispatch and scheduling responsibilities would allow greater flexibility and improve efficiency and productivity by combining trips with similar origins, destinations, and times of day.



A large portion of County Connection trips include destinations in the City of Midland. By sharing trips across the City boundary line, both systems will open up additional seats that could be filled within an existing demand response service structure.

Short-Term Steps: Each of the two transit systems would develop a Memorandum of Understanding/Agreement outlining how trips will be scheduled, assigned, reported, and billed. Once this has been completed, the software company would develop protocols for allowing access to each other’s database.

Initially schedulers and dispatchers would remain at the respective transit system locations. Eventually the two services could be combined in a centralized call center with a single number for all riders to call.

Long term impacts: After the initial coordination of scheduling and dispatching the systems may find that additional action can be taken to consolidate the scheduling and dispatching into a centralized call center with one number for rides on either system. A strategic marketing plan would be instrumental in educating riders on changes of a centralized scheduling service. Additional marketing and branding steps could be taken to give both systems' vehicles a similar look to cut down on confusion some riders might have about which system they were riding.

A long-term goal of centralizing scheduling and dispatching responsibilities would increase efficiency and convenience for riders.

Potential Costs: The initial set-up would be relatively inexpensive, other than hours attributed to planning and software configuration. Later stages to share a centralized location, if desired, may require capital costs through system upgrades and location costs.

Potential Funding Sources: FTA 5311, FTA 5307 – Mobility Management, Millage, Federal Transit Administration Section 5303 funding may also be available to the MPO for planning this effort but not for maintenance. Currently, 5307 funds are fully allocated to program needs, but could be reprogrammed for this solution if additional funding sources were identified to replace the portion re-programmed. Local match (50% for operating, 20% capital) would be required if Federal funds are utilized.

Details: The recommendation for combined scheduling is best implemented in stages similar to below:

Stage 1: Identify duplication of trip routes to common destinations.

Example: If County Connection is transporting individuals to the Arnold Center by way of Eastman Avenue, the vehicle might be able to make one stop at 1010 Eastman Avenue or other points along the route in the City and pickup riders going to the Arnold Center. By coordinating trips traveling similar paths, at similar times to similar destinations, productivity is increased. In this example, the Dial-A-Ride service—by coordinating the riders on Eastman Avenue—might be able to use that time to pick up other passengers.

Passenger education would need to be part of this transition process. Some passengers may be tentative about their rides being provided by another system. Both systems have strong reputations for providing quality service, but passengers would need to understand how and when the first stage would be implemented.

PC Trans would need to work with both systems to ensure trips could be identified properly for independent reporting.

Implementation of Stage 1 could take between 6 months to a year.

Stage 1a: Once coordinated trips have been established, it may lead to the development of intercity fixed route or deviated fixed route service. By observing ridership patterns of subscription trip services along a corridor, the transit systems may see the need to develop a route knowing that there is already established ridership.

Stage 2: Access to common scheduling program

Depending on the success of Stage 1, both systems may be at a comfort level where a joint program is used with schedulers from both systems entering trip data into a common schedule. Though both systems would continue to operate independently, a joint scheduling system would allow greater flexibility for scheduling, increase productivity, provide consistent scheduling processes of both systems, and lay the groundwork for a combined call center.

Currently, both systems have PC Trans and use the software in a similar manner, but there are differences in data input and data labels to consider when pursuing Stage 2. Working discussions by management, schedulers and software vendors would be paramount to the success of Stage 2.

Implementation of Stage 2 could take a year to 18 months after successful implementation of Stage 1.

Stage 3: Centralized scheduling and dispatch

Once Stage 2 has been established and both systems see the benefits to the systems and riders, the next stage can be pursued. A centralized scheduling and dispatch center would be established and allow all rides on both systems to come through the center. A single number, possibly an 800 number, would be used, allowing City and County residents to make a single call instead of being referred to the other system due to service area or time of day restrictions.

The transit systems would continue to operate their independent administration and bus facilities as they are ideally located for their service area. Additional stages could be considered in the future, including transitioning to a Mobility Management Center with greater coordination with Senior Transportation, Medicaid, Bay City Transit and other Counties providing intercity transportation service to Midland.

Implementation of Stage 3 could be implemented in two years once Stage 2 is established.

When evaluating the cost of implementing this Solution, it is necessary to consider: the time needed by staff of both systems to modify the systems so each stage operates properly to allow each stage to

operate properly; the fees of PC Trans; and the need to provide technical support through a maintenance contract.

Shopping Service Route

Description: As identified in earlier sections of the plan, shopping areas are popular destinations for both Dial-A-Ride, County Connection and Senior Services. To meet the demand for shopping trips and reduce the burden on demand response services, a designated shopping route should be considered.

A shopping route would not need to add additional fleet vehicles as the route should alleviate several trips on the demand response service by consolidating those trips into three days a week, five-hour, mid-day service blocks(e.g. 10:00a.m. to 3:00p.m.). The service would operate on a route beginning at the 1016 Eastman Avenue, following a path to Midland County Health Department, transfers to Bay Transit, Independent Living and Senior Housing and on to multiple shopping destinations.

The service would operate 153 days a year (3 days – Tues., Thurs., and Sat.) with projected ridership of 4,207 one-way trips. The service would require proper marketing and could build relationships with stores for promotions, perhaps covering some of the marketing and service costs.

Short-Term Steps: A survey of riders could be completed to determine if there is interest in the route. Also, an in-depth analysis of shopping destinations would need to take place to identify the most popular shopping destinations as well as residential origins (1010 Eastlawn Drive, WW2, and Community Mental Health) to include in the route. The brief analysis for this report identified the following most-frequented shopping destinations.

- ◆ Midland Mall
- ◆ Walmart
- ◆ Kmart
- ◆ Kroger
- ◆ Meijer
- ◆ Target
- ◆ McDonalds
- ◆ Dollar Store

County Connection provided over 1,277 trips out of 9,379 (14%) to or from shopping in September 2016. The trip data review did not include restaurants, fast food locations or specialty stores. And, many of the shopping destinations included in the route are the most frequented stops for Dial-A-Ride.

Prior to rolling out the new service, the transit systems will need to prepare an advertising campaign as well as developing policies for the number of bags to be carried on board the vehicle. For example, in order to manage capacity, some public transit systems limit the number of bags to what a passenger can carry on his or her lap.

Potential Costs: The estimated annual operating cost is \$44,362. This estimate is based on \$57.99 cost per revenue hour for 765 hours. This cost does not include capital, marketing or administration expenses. However, the cost does not necessarily represent a full expansion of the current budget

because Dial-A-Ride and County Connection are already operating a vehicle during those hours. Ideally, an existing vehicle and driver will be shifted from the demand response service to operate the shopping route. The Dial-A-Ride and County Connection styled vehicle type would meet the capacity needs until demand increased. The estimated trips per hours is 5.5 as seen in the below chart may be higher than standard public deviated routes as they tend to be general routes opposed to a specific route purpose with limited times and days.

Exhibit 34

Service Options					Daily			Annual				Total Operating Cost	Performance		
	Days	Operating Hours	Headway	Route Time	Veh's	Rev. Hrs.	Rev. Miles	Rev. Hours	Rev. Miles	Days	Est. Rides		Trips/Hr	Cost/Hr.	Cost/Trip
Shopper Route	T, TH, S	10:00 AM - 3:00 PM	1 hour	50 mins	1	5	40	765	6120	153	4207	\$ 44,362	5.5	\$ 57.99	\$ 10.54

Potential Revenue Sources: Existing operating budget of the transportation operator may be available for this service with minimal budget expansion if a driver and vehicle can be redirected from the demand response service to the route. Sources for revenue include FTA 5311, Millage.

Details: A shopper route service with the capability of deviating would provide an opportunity for Dial-A-Ride passengers to use the service three days a week during the non-peak hours. County Connection trips as well as Dial-A-Ride demand response trips could be used as feeder service to the route allowing the rider increased flexibility while reducing the higher priced demand response service. This service would be an introduction to deviated fixed route possibly leading to additional deviated or fixed routes without the investment of a traditional fixed route.

The below schedule in **Exhibit 35** represents an estimate of the time schedule. The route would need to be tested thoroughly before final route with deviations and time schedule is complete.

Exhibit 35

Departure Stops	Run 1	Run 2	Run 3	Run 4
1016 Eastman Ave	10:00	11:30	1:00	2:30
Midland County Health Dept.	10:05	11:35	1:05	2:35
Independent Community Living	10:10	11:40	1:10	2:40
1510 State St.	10:16	11:46	1:16	2:46
2200 Cleveland Ave.	10:20	11:50	1:20	2:50
1409 Washington St.	10:24	11:54	1:24	2:54
821 Cambridge St.	10:26	11:56	1:26	
Kroger	10:33	12:03	1:33	
6100 N. Jefferson Ave.	10:43	12:13	1:43	
Midland Mall	10:48	12:18	1:48	
Walmart	10:52	12:22	1:52	
Meijer	10:55	12:25	1:55	
1016 Eastman Ave	11:15	12:45	2:15	

Peers: Deviated fixed route service is a next step for demand response service with established ridership trends. Transit systems across the country have found it allows the flexibility not found in a fixed route, but also can realize increased capacity from deviations without changing the base route. The following systems have been operating deviated fixed routes with substantial increase in ridership.

Warren County, NJ (Warren County Transit)

Warren County is a primarily demand response (advance reservation) transit system that transitioned to operating three of its 21 peak buses on deviated fixed route services in 2001. Over the past 15 years, the presence of the deviated fixed route services resulted in system changes as shown below.

Year	1999	2016
Total Ridership	95,000	179,473
Trips per Revenue Hour	2.38	4.91
Total Revenue Hours	39,916	36,538

In 2016, the Warren County deviated routes carried over 115,000 passenger trips and averaged 10.93 trips per revenue which accounted for the more than doubling of system productivity with less than 25% of the revenue hours coming from the deviated fixed route service.

Knox County, OH Transit

The Knox County Transit system has operated eight deviated fixed routes for more than 5 years. Prior to introduction of the routes, the advance reservation system averaged approximately 2.8 trips per hour. Table 2 demonstrates the impact of the introduction of the route deviation services, allowing the system to significantly reduce its revenue hours while carrying nearly 90% of the total passenger trips.

Year	2012	2016
Total Ridership	129,562	113,120
Trips per Revenue Hour	3.16	3.21
Total Revenue Hours	40,941	35,203

South East (OH) Transit

South East has operated a hybrid system for more than 10 years with seven deviated fixed routes and the system has continued to improve its productivity in recent years as shown in the table below. A slight decrease in revenue hours yielded a more than 10% increase in ridership.

Year	2013	2016
Total Ridership	122,892	132,744
Trips per Revenue Hour	3.95	4.38

Total Revenue Hours	31,080	30,293
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Cass County (IN) Transit

Cass County, IN operated solely advance reservation service until April 2016. While the introduction of deviated fixed routes had a limited time to produce results, the deviated fixed route services reached a trips per revenue hour productivity of 3.7 and has continued to improve. Table 4 shows a nearly 30,000 passenger trip growth of which more than a third resulted from the introduction of the new service.

Year	2013	2016
Total Ridership	141,400	171,078
Trips per Revenue Hour	2.77	2.94
Total Revenue Hours	40,277	58,259

Marketing

Both Dial-A-Ride and County Connection are established transit systems offering public transit using small buses. The majority of the ridership is made up of seniors, persons with disabilities and low income. A reservation process is used to schedule curb to curb, shared ride, demand response service and trips are scheduled on a first come, first serve basis. These attributes may lead some potential riders to think the service is for specialized transportation versus open to the public.

A marketing effort should be considered to educate the City and County residents about the benefits of riding public transit for all their needs. The below marketing concepts can be implemented to increase the knowledge and benefits of riding public transportation.

- ◆ Create an image for Midland DART that more accurately reflects the system’s public transportation focus.
 - When the service began it was named for the style service it was, dial a ride. Over the years “dial a ride” has been viewed by many communities as service with eligibility criteria like human service transportation. The name itself, DART, should be re-evaluated to indicate a more public transit and mobility solution type moniker.
 - Consideration should be given to refreshing the public transit service names. This should be done in a coordinated method in will involve long-term planning.
- ◆ Build awareness and knowledge for DART and MCC’s various services among appropriate target groups.
 - Though DART and MCC have been around for a long-time, many residents will recognize the red stripe buses but they may not know that anyone can ride the service. Education needs to be part of the marketing campaign to let city and county residents know how easy it is to use the service for their daily transportation services.
- ◆ Develop new markets for the DART service.

- With higher learning institutions within the DART and MCC service area a push should be made to appeal to college students as well as faculty to increase support and ridership from the colleges. Agreements could be developed to appeal to both administration officials and students. Though many students are local and drive to class, the cost of gas, car payments and insurance may push them to consider alternative methods of transportation.
- If the shopping route is implemented, there is potential for advertising and promotions from the stores on the route. Stores may find an increase in sales as a result of being a stop on the route and may be more likely to participate in marketing promotion or even providing a bench or bus shelter.
 - In Cottage Grove, OR the public transit system worked with Walmart to build a large bus shelter in the parking lot. The transit system computed the average amount spent by a Walmart shopper (Walmart provided figure) times the number of riders using public transit to Walmart and determined an investment by Walmart was in their best interest.
- Dow Chemical, the largest employer in Midland, was interviewed as part of this study and was mildly interested in the study, but is currently in a transition period with its company. Once the transit is complete, there may be opportunities to develop employment focused transportation for commuters in the county and/or shuttle system for the city. Employers investing in transportation related services for their employees qualify for tax incentives.
- Identify opportunities for DART and MCC to improve customer service and build customer satisfaction.
 - The ability to create customer satisfaction through delivery of high quality transportation service is critical to the success of any transit marketing plan. Hence, the on-going improvement of customer service and increase of customer satisfaction is a critical goal of this plan. This includes increasing capacity either through efficiencies, design or expansion to reduce the level of denied rides.
 - As mentioned previously in this report, technology can play a vital role in attracting new riders who rely on their smart phone for many of their planning needs. Technology improvements might include online pass purchases, bus location apps, and online ride booking. Technology improvements must be evaluated on return on investment and the user market driving the need for technology. It might attract millennials, but it could also alienate those less technologically savvy or do not own smart phones.

CONCLUSION

Through analysis and outreach, this study found areas where transit growth and enhancement is possible without the considerable investment associated with major changes in the existing structure of demand response service. Currently, both Midland Dial-A-Ride and Midland County

Connection provide service to meet a large part of the transportation needs for seniors, persons with disabilities and low income riders in the City and County. Additional transportation services provided by Senior Services, Midland County Educational Service Agency, and Michigan Transportation Connection provide rides for segments of the population to compliment the public transit services, which at times might have capacity challenges.

The recommendations in the report focus on building on the efficiencies already in place from the two public transit providers. By identifying areas where the two systems could work closer with their common software system to provide coordinated trips, additional capacity can be realized. The addition of a shopper route will provide an alternative for riders currently using the more expensive mode of demand response to meet their shopping needs three days a week.

Both transit systems have a strong presence in the community but have not been fully recognized as a public system open to anyone and not just for human service transportation needs. Increased marketing and the addition of the shopper route are steps to show the public that public transit is more than just medical appointments and senior transportation. As more millennials impact the local demographics, the need for new methods of providing transportation increases. Technology can play a large role in meeting the existing and future ridership.

Implementation Timeline

The below timeline was developed based on the feedback from the steering committee and the complexities of implementation of each of the solutions. External factors including funding, leadership and operations/capital prioritization may impact this schedule.

Solution/Timeline	Short-term	Mid-Term		Long-term	
	Year 1	Year 2	Year 3	Year 4	Year 5+
Trip Confirmation Calling System - IVR		X	X		
Centralized Scheduling and Dispatching					
Stage 1 - Identifying Duplication		X			
Stage 2 - Access to joint scheduling			X	X	
Stage 3 - Centralized scheduling/dispatching					X
Shopping Service Route		X			
Marketing	X				

APPENDIX

Public Survey Results



Midland County Public Transportation Options

PUBLIC SURVEY



Public Transportation Survey

- ◆ 124 Registered Responses
- ◆ Responses Collected from October 27, 2016 through December 9, 2016

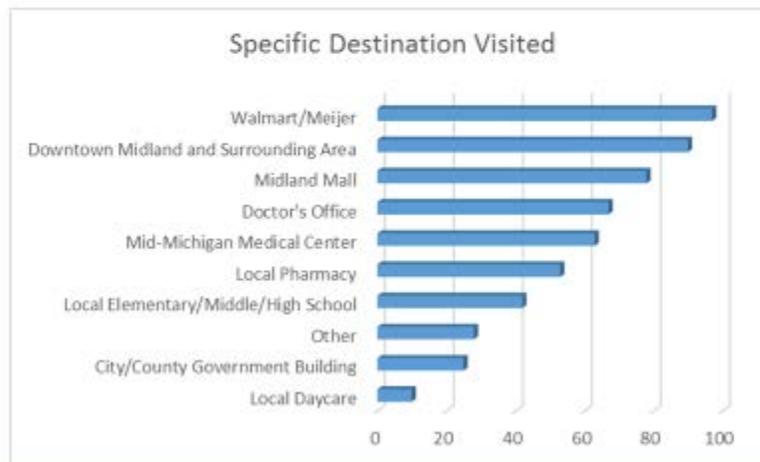


Public Transportation Survey

- ◆ Demographics/Socio-Economics of Respondents
 - 88.7% Live in Midland
 - 58.1% Are Employed Outside the Home
 - 76.2% Work in Midland; 22.6% Other
 - 20.2% Are Retired
 - 92.7% Do Not have a Mobility Limitation

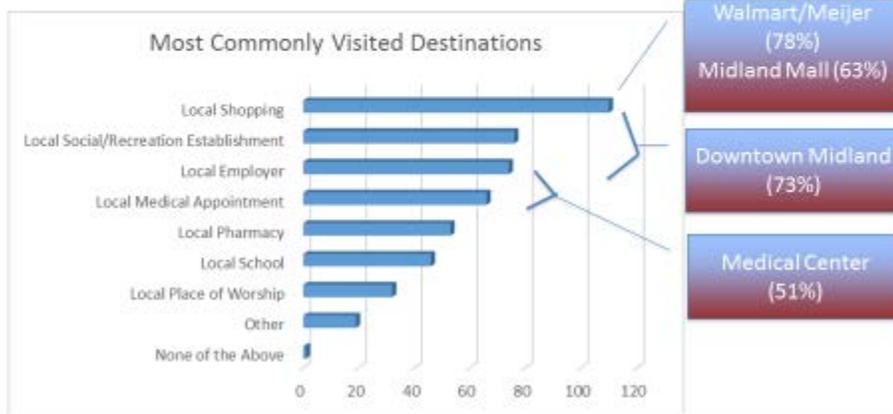
Public Transportation Survey

- ◆ Most Commonly Visited Destinations....



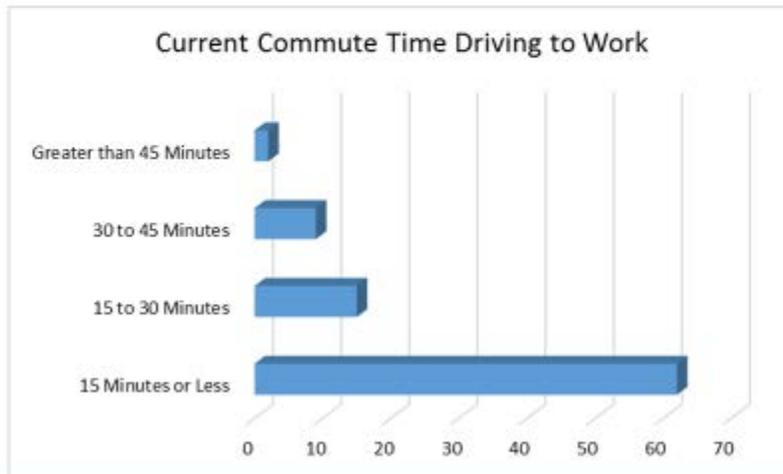
Public Transportation Survey

◆ Trip Purposes



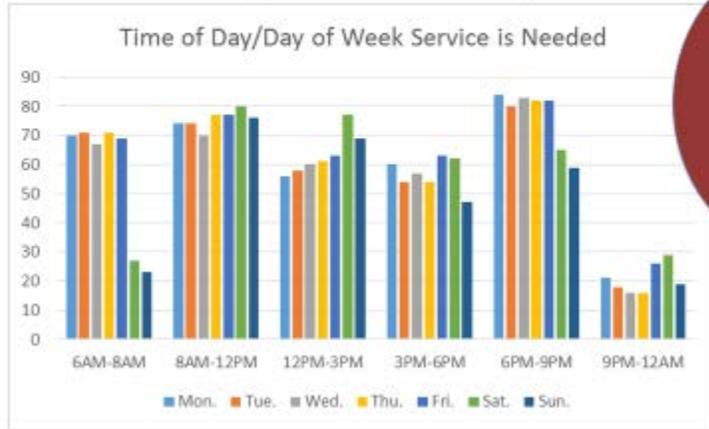
Public Transportation Survey

◆ Commute



Public Transportation Survey

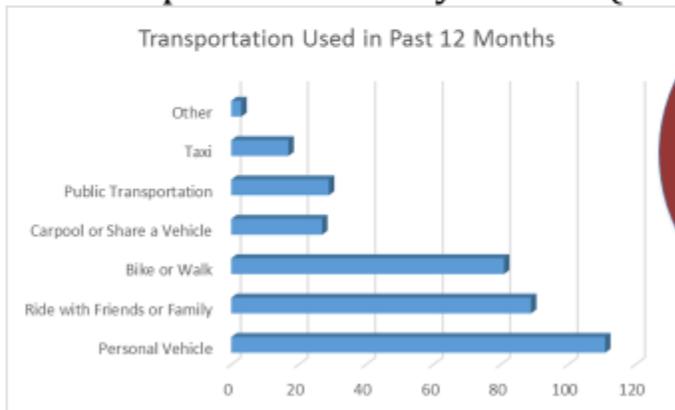
◆ When do you need transportation?



* Highest Weekday Peak is 8AM to 12PM & 6PM to 9PM
 * Highest Weekend Peak is 8AM to 12PM & 12PM to 3PM

Public Transportation Survey

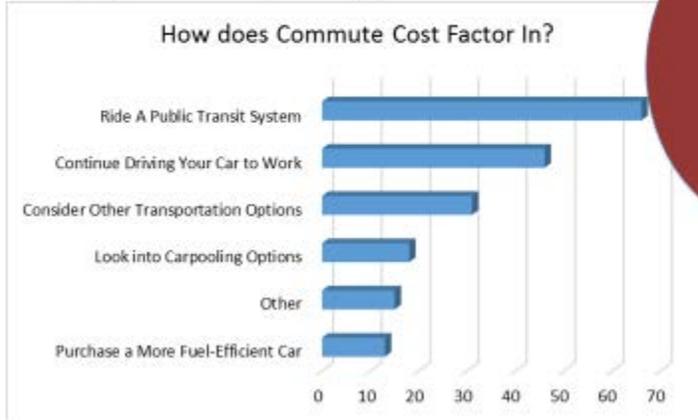
◆ In the past 12 months, what types of transportation have you used (check all)?



Approximately 58% Used Public Transit, Taxi, and/or a Carpool/Shared Ride Program

Public Transportation Survey

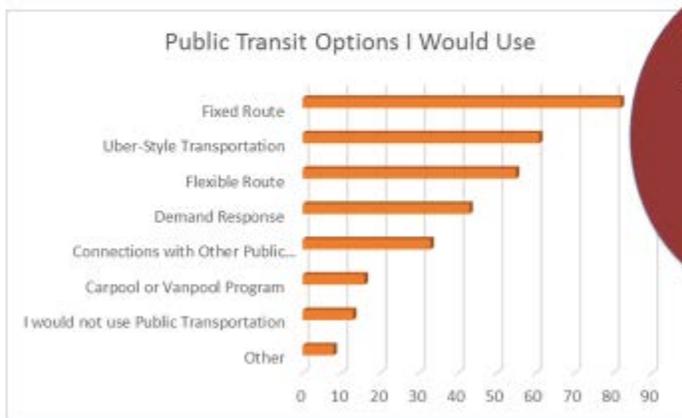
◆ \$3,874 vs. \$960/year



- 53% would ride public transit
- 37% would continue driving a car
- 25% would consider other transportation options

Public Transportation Survey

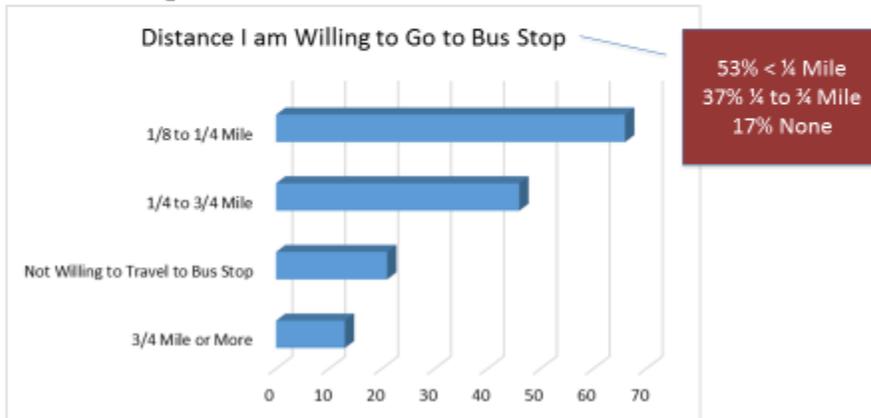
◆ What public transit options would you consider using in Midland County?



- * 66% said Fixed Route
- * 49% Uber-style
- * 44% Flexible Route
- * 34% Demand Response
- * 10.5% None

Public Transportation Survey

- ◆ How far would you be willing to travel to the bus stop?



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Ride Reminders

Better Service, Fewer No Shows

All transit agencies face issues with no shows or riders who are not ready when the bus arrives. Over the course of the day, these riders may significantly impact a vehicle's schedule which reduces the quality of service to all riders.

PCTrans offers an automated calling system, Ride Reminders, designed to reduce no shows and passenger delays by placing automated phone calls that remind customers of their trips. The PCTrans software uses your rider and schedule database to call your scheduled clients automatically.



Passengers who are reminded of their trip will be less likely to be a no show. If you have a large service area or a small number of buses, reducing no shows will help you better serve your other riders.

To learn more about Ride Reminders from PCTrans, [contact us today](#).



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