

The Great Lakes Bay Transit Authority: Regionalism through Public Transit

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INTRODUCTION

With a population of 400,000 residents, the Great Lakes Bay Region (GLBR) is very similar to other regional metropolitan populations throughout the State of Michigan. Unlike other metropolitan regions with one metropolitan transit authority, the GLBR has four independently operated public transit systems. These four separate transit systems are located in Bay, Saginaw, and Midland counties. These systems are also largely exclusive to their respective cities, rather than serving the entire region.

The operation of four transit authorities within the GLBR is inefficient and detrimental to the Region. With the introduction of a Regional Transit Authority (RTA), these systems could be integrated, expanded, and improved upon to better serve the whole of the GLBR. This would bring much needed access to transportation to impoverished areas, while further expanding transportation options in prosperous areas. The expanded access would also increase connections to the four regional higher education facilities in the region (Central Michigan University, Northwood University, Saginaw Valley State University, Delta College), the four regional medical centers (Covenant, St. Mary's, Bay Medical, Mid-Michigan), and many other regional amenities (cultural activities, shopping centers, entertainment venues / districts). The RTA could also have daily routes to Mt. Pleasant, Standish, Caro and Flint. These additional daily routes would further increase access to those satellite communities and increase opportunity for those traveling to the GLBR.

The objective of this paper is to provide evidence about why one single transit authority would better serve the GLBR. This paper will review the current transit authorities in the GLBR, while also reviewing other regional metropolitan authorities around the State of Michigan. The end of the paper will make recommendations about what an RTA in the GLBR might look like.

REVIEW OF CURRENT GLBR TRANSIT AUTHORITIES

The Michigan Great Lakes Bay Region is comprised primarily of Saginaw, Bay, Midland, and Isabella Counties. The combined population of these four counties is roughly 460,000 people over an area of more than 2,331 square miles (U.S. Census Bureau, 2011w; U.S. Census Bureau, 2011d; U.S. Census Bureau, 2011r; U.S. Census Bureau, 2011m). The residents of Saginaw, Bay City, and Midland, as well as the areas surrounding the cities, are currently being served by 4 different transportation systems that serve their cities relatively effectively, but provide little, if any connection between the cities of the Great Lakes Bay Region.

Bay City

Bay City, Michigan is the seat and largest city of Bay County, and part of the larger Tri-County Great Lakes Bay Region of Bay, Saginaw, and Midland counties. Bay City had an estimated population of 34,500 in 2012, while Bay County has an estimated population of 107,000 (U.S. Census Bureau, 2011a; U.S. Census Bureau, 2011d). Bay County also covers an area of 442 square miles (U.S. Census Bureau, 2011d). The region is served primarily by the Bay Metropolitan Transportation Authority.

Fixed Routes

The Bay Metropolitan Transportation Authority run eleven fixed routes that operate primarily (but not exclusively) in Bay County, and services Bay City, Essexville, Kawkawlin, Linwood, Pinconning, Auburn, University Center (Saginaw Valley State University and Delta College), and the City of Standish. The BMTA offers connection rides with other public transit systems that are located in the counties surrounding Bay County; specifically Arenac and Midland Counties. There is one particular route that makes trips to University Center and Midland's Towne Plaza, for the purpose of transferring riders. Any transfer that occurs between Bay Metro and Saginaw Stars is done at Saginaw Valley State University, while transfer done at

Midland Towne Plaza is between BMTA and Midland's Dial-A-Ride (DART) or County Connection service. This particular transfer needs pre-arrangement, as Midland's transit system does not run on fixed routes. Transfers can be made from the Bay Metropolitan Transportation Authority to the Arenac-Dial-A-Ride for service throughout Arenac County (Bay Metropolitan Transportation Authority, 2013).

Dial-A-Ride

BMTA also offers a Dial-A-Ride system to senior citizens and disabled residents who are incapable of using the fixed-route system. This type of system is a pre-arranged curb-to-curb transportation service with senior citizens and disabled residents taking priority over other individuals. Users must call the BMTA office to arrange a pick-up at least one day in advance, but no more than a week in advance. It is also recommended that riders remain flexible in order to avoid overbooking (Bay Metropolitan Transportation Authority, 2013).

Rolling Stock

To accommodate the individuals who utilize this transportation system, BMTA operates 60 total vehicles throughout the city of Bay City. Not all 60 vehicles operate simultaneously, however. Between all the routes and working buses, total mileage for the fiscal year of 2012 was approximately 1.6 million miles.

Ridership

The Bay Metropolitan Transportation Authority of Bay City offers transportation to 643,658 individuals in a given fiscal year, or an average of about 53,638 rides per month. This is including the roughly 25,000 individual rides being subcontracted through taxi services in the Bay City area annually (Sprague, 2013). According to the U.S. Census Bureau, Bay City had a population of just under 35,000 in 2010, meaning a monthly per capita ridership of 1.53 rides per person for the Bay Metro Transportation Authority (US Census Bureau, 2011c).

Budget

The Bay Metropolitan Transportation Authority ran its operations with fiscal year 2012 budget of approximately \$8 million. The revenue streams for the BMTA included funding from both the State of Michigan and the Federal Government, a city transit millage, and contract fares. The revenue stream is also supplemented in large part through individual rider fares (Sprague, 2013).

Fare

To ride on BMTA's fixed route, an individual pays a fare of \$1.00. However, they offer discounts to students, senior citizens, and the disabled. Students can use the transit system for \$0.75 as long as they present a student identification card. Children who are younger than five may also ride the transit system at no charge. The senior fare is just \$0.50 for individuals over the age of 60, and the disabled fare is also \$.50 for individuals with Medicare, ADA identification cards, or any state or federal identification card designating an individual as disabled (Bay Metropolitan Transportation Authority, 2013). A single ride with the DART system costs \$1.50 for senior citizens and disabled residents, and \$3.00 per ride for the general public who do not fall under either of the previously stated categories.

Transit Hours

The Bay Metropolitan Transportation Authority's current transit system runs its course Monday through Friday between the hours of 6:40 a.m. and 5:35 p.m. They also operate on Saturday from 9:00 a.m. to 6:00 p.m. Ten of these eleven routes run on 45 minute schedules, so one can expect a bus to arrive at a stop every 45 minutes. These fixed routes also allow deviations in the route as long as a pre-arrangement has been made (Bay Metropolitan Transportation Authority, 2013). DART operates Monday through Friday from 6:30 a.m. to 6:15

p.m., and on Saturdays from 9:00 a.m. to 6:00 p.m. (Bay Metropolitan Transportation Authority, 2013).

Saginaw

Saginaw, Michigan is the seat and largest city of Saginaw County, and part of the larger Tri-County Great Lakes Bay Region of Bay, Saginaw, and Midland counties. Saginaw had an estimated population of 50,700 in 2012, while Saginaw County had an estimated population of 198,000 (U.S. Census Bureau, 2011x; U.S. Census Bureau, 2011w). Saginaw County also covers an area of 800 square miles, the largest of the tri-cities (U.S. Census Bureau, 2011w). The region is served primarily by the Saginaw Transit Authority Regional Services.

Fixed Routes

The Saginaw Transit Authority Regional Services (STARS) system has 11 fixed routes that run on a repetitive schedule along specific routes throughout Saginaw County. Their routes run every 40 minutes within the city of Saginaw, and the routes within Birch Run and Frankenmuth run every 80 minutes. These routes allow easy access to frequented destinations such as the Post Office, City Hall, Fashion Square Mall, and Covenant Hospital (STARS: Saginaw Transit Authority Regional Services, n.d.b).

Dial-A-Ride

Saginaw STARS also has a transit system called the LIFT system, also known as Dial-A-Ride. This system is a sub-transit system specifically aimed at wheelchair users and those who cannot easily use fixed-route transportation systems. LIFT is a pre-arranged curb-to-curb service that operates Monday through Friday, excluding major holidays, by appointment between the hours of 6:00 a.m. to 8:00 p.m. ("STARS: Saginaw Transit Authority Regional Services," 2013).

Rolling Stock

To accommodate the individuals who utilize this transportation system, the Saginaw Transit Authority Regional Service operates 53 total vehicles throughout Saginaw County. Each of these vehicles is equipped with a lift for the elderly or disabled, and is operated by 80 employees. Between all the routes and working buses, total mileage for Fiscal Year 2012 was approximately 855,000 miles (MDOT Department of Transportation, 2013c).

Ridership

STARS carries over one million riders per fiscal year, or approximately 83,300 riders per month. According to the U.S. Census Bureau, Saginaw County had a population of slightly more than 200,000 in 2010, meaning a monthly per capita ridership of 2.4 rides per person for STARS (US Census Bureau, 2011w). This is nearly a full point higher than the Bay Metropolitan Transportation Authority.

Budget

The Saginaw Transit Authority Regional Service ran its operations with a fiscal year 2012 budget of 6,159,809 dollars. The revenue streams for the STARS included funding from both the State of Michigan and Federal Government. The revenue stream is also supplemented in large part through individual rider fares (MDOT Department of Transportation, 2013b).

Fare

Routes are \$1.25 for adults and children over the height of 42 inches, with children less than 42 inches in height able to ride for \$0.60. Senior citizens over the age of 62, and disabled citizens with a Medicare card or a STARS silver or gold card (which states they are of a disabled status), can ride the transit system for \$0.60 per ride. Any individual who is transferring to STARS from another transportation authority is not charged (STARS: Saginaw Transit Authority Regional Services, n.d.c). For those who utilize this transportation system frequently, STARS

provides unlimited access passes known as STARS cards, which is entitled to the card holder only, and gives that individual unlimited use of the fixed-route bus system for a period of one month. The cost of the card is \$50.00 for the general public and \$25.00 for senior citizens or disabled residents who own a STARS gold or silver card (STARS: Saginaw Transit Authority Regional Services, n.d.d). Senior citizens and disabled residents take priority in the operation of this service for \$2.50 per ride, while the general public pays \$5.00 per ride, with children under the height of 42 inches paying \$0.60 per ride (STARS: Saginaw Transit Authority Regional Services, n.d.a).

Transit Hours

Ten of the eleven STARS routes run within the city of Saginaw and operate Monday through Friday from 6:00 a.m. to 8:00 p.m. with the exception of Route 11, which also operates on Saturday during the same time period. The Birch Run and Frankenmuth routes both run Monday through Friday but have slightly different time schedules. Birch Run operates from 8:00 a.m. to 6:30 p.m., and Frankenmuth operates from 8:40 a.m. to 7:10 p.m. (STARS: Saginaw Transit Authority Regional Services, n.d.b).

Midland

Midland D.A.R.T. (City of Midland)

Midland, Michigan is the seat and largest city of Midland County, and part of the larger Tri-County Great Lakes Bay Region of Bay, Saginaw, and Midland counties. Midland had an estimated population of 42,000 in 2012, (U.S. Census Bureau, 2011s). The region is served primarily by two transportation systems; Midland D.A.R.T. and Midland County Connection

Fixed Routes/Dial-A-Ride

Unlike the transportation systems in Saginaw and Bay City, the Midland transportation system does not operate a fixed-route service. Instead, there are two Dial-A-Ride systems that

service the city. The first transportation system is called the Midland D.A.R.T. system, which is a demand/response transit that travels within the city limits of Midland. The D.A.R.T. system caters to school children, the elderly, the disabled, and anyone who needs access to transportation (City of Midland, n.d.b).

Rolling Stock

To accommodate the individuals who utilize this transportation system, the Dial-A-Ride fleet consists of 14 25-foot passenger buses. Each of these buses is capable of transporting approximately 25 passengers at a time (MDOT Department of Transportation, 2013a). Between all the routes and working buses, total mileage for Fiscal Year 2012 was approximately 435,000 miles (MDOT Department of Transportation, 2013a).

Ridership

The Midland Dial-A-Ride system sees roughly 130,000 passengers in a single year, with 20,000 of those passengers having a need for vehicles equipped with a lift. Although roughly 15% of the riders need lift equipment, 70% of the total riders are of senior or disabled status (City of Midland, n.d.a, pg. 144). According to the U.S. Census Bureau, Midland County had a population of roughly 83,600, meaning a monthly per capita ridership of 4.99 rides per person for the Midland transportation systems (US Census Bureau, 2011u).

Budget

The Midland Dial a Ride Transportation system ran its operations with a fiscal year 2012 budget of 1,802,909 dollars. The revenue streams for the Midland DART included consumer fares of \$116,000, contract revenues of \$13,000, Federal grants of \$293,464, State grants of \$680,837, and investment earnings of \$50. This generated a total of \$1,103,351 in revenue for fiscal year 2012, with a shortfall of \$699,558 that was covered by a general funds transfer by the City of Midland (City of Midland, n.d.a).

Fare

D.A.R.T. receives a portion of their funding through ridership fare, which is \$2.00 per one-way ticket for adults and \$0.75 for the disabled and elderly. Additionally, children riding with a parent or sibling only pay \$1.00, while children under 5 years of age ride for free. For those who utilize the system frequently, there are books of tickets available for discounted prices (Dial-A-Ride, n.d.).

Transit Hours

Midland's D.A.R.T. phone service currently operates Monday through Friday from 8:30 a.m. to 5:00 p.m., and Saturday from 8:30 a.m. to 1:00 p.m. (City of Midland, n.d.c). In order to use this transportation without any delays or mishaps, a rider must call 60 minutes prior to their desired pick-up time and plan at least a 25 minute ride to the destination. For individuals who use the system frequently, or do not have the option to call ahead, D.A.R.T. offers riders the opportunity of a standing order. A standing order allows individuals to make one simple phone call to get picked up at the same time all week or the same day every week (City of Midland, n.d.b).

Midland County Connection (Midland County)

Midland, Michigan is the seat and largest city of Midland County, and part of the larger Tri-County Great Lakes Bay Region of Bay, Saginaw, and Midland counties. Midland County had an estimated population of 83,800, and covers an area of 516 square miles (U.S. Census Bureau, 2011r). The region is served primarily by two transportation systems; Midland D.A.R.T. and Midland County Connection

Fixed Routes/Dial-A-Ride

Unlike the transportation systems in Saginaw and Bay City, the Midland transportation system does not operate a fixed-route service. Instead, there are two Dial-A-Ride systems that

service the city. The Midland County Connection is the other demand/response transportation system that offers rides throughout Midland County. County Connection is available to those who live within Midland County, but not in Midland's city limits. (MDOT Department of Transportation, 2013b).

Rolling Stock

To accommodate the individuals who utilize this transportation system, the Midland County Connection maintains a separate fleet of vehicles consisting of 20 buses, 3 of which are 30-foot hybrid buses (Lascari, 2010). These 30 foot buses are capable of transporting approximately 30 people at a time. Between all the routes and working buses, total mileage for the fiscal year of 2012 was approximately 962,000 miles (MDOT Department of Transportation, 2013b).

Ridership

Midland County Connection roughly sees 71,000 passengers per year. This equates to a total ridership of 201,000 on the Midland transportation systems (MDOT Department of Transportation, 2013b). According to the U.S. Census Bureau, Midland County had a population of roughly 83,600, meaning a monthly per capita ridership of 4.99 rides per person for the Midland transportation systems (US Census Bureau, 2011r).

Budget

The Midland County Connection system ran its operations with a fiscal year 2012 budget of 2,313,061 dollars. The revenue streams for the Midland County Connection included funding from both the State of Michigan and Federal Government. The government funding they receive is also supplemented with rider fares (MDOT Department of Transportation, 2013b).

Fare

Midland County Connection receives a portion of their funding through ridership fare, which is \$3.00 per one-way ticket for adults and \$2.50 for the disabled and elderly. Additionally, children riding with a parent or sibling only pay \$1.50. Those who reserve a trip with the Midland County Connection and do not show up at the reserved time will be charged full fare of \$3.00 (County Connection of Midland, n.d.a).

Transit Hours

Midland County Connection operates Monday through Friday from 5:00 a.m. to 11:00 p.m., Saturday from 5:30 a.m. to 9:30 a.m. and 2:30 p.m. - 6:30 p.m (MDOT Department of Transportation, 2013b). In order to use this transportation without any delays or mishaps, a rider must call prior to 5:00 p.m. the day before they wish to be picked up, and prior to 5:00 p.m. on Friday for Saturday and Monday rides. For individuals who use the system frequently, or do not have the option to call ahead, Midland County Connection offers riders the opportunity of a standing order. A standing order allows individuals to make one simple phone call to get picked up at the same time all week or the same day every week (County Connection of Midland, n.d.b)

Bike Racks

None of the current transit systems in the Great Lakes Bay Region, including STARS, BMTA, Midland D.A.R.T. or Midland Dial-A-Ride currently have bike racks equipped on their vehicles. This limits the number of people who can utilize the transit systems through the Great Lakes Bay Region. A fleet of buses and vehicles equipped with back racks would allow those who live farther away from fixed route bus stops to use the bus system, instead of relying on personal transportation they may not have. This will be particularly effective in Bay City, which has a bike route running throughout the city, which can facilitate transportation throughout the city as well as the region.

Summary

Despite operating similar services for populations that are relatively close together, each transportation system in the Great Lakes Bay Region has a number of differences with the others in the area. While Bay Metro and STARS have a similar number of fixed routes that they operate (11 and 12, respectively), the transit systems that operate in Midland do not have any, as they instead provide only a dial-a-ride service for Midland and Midland County residents. All three cities, Saginaw, Bay City, and Midland, do operate on-demand dial-a-ride services, however.

There is also a disparity between the number of vehicles each system operates, although this may be more attributable to the nature of each transit system. The disparity between the Bay Metro and STARS fleet is not extremely large, with Bay Metro operating 60 vehicles, and STARS operating 83. However, the Midland D.A.R.T. only has a fleet of 13 vehicles in operation.

The three cities also see disparities in ridership among their respective transit systems. STARS in Saginaw has the most annual ridership, with approximately 1 million residents of Saginaw utilizing the service each year. Bay Metro in Bay City sees roughly 643,000 riders annually, while Midland D.A.R.T. and Midland County Connection serve just over 200,000 people each year. Midland D.A.R.T. sees the majority of ridership in Midland, with 130,000 utilizing their system, while 71,000 use Midland County Connection each year.

Each transit system operates on a budget that is dependent upon multiple sources of funding, including state and local funding, as well as ridership fare. Bay Metro has the largest budget of the four transit systems in the region, at \$8 million, while STARS comes in second with a budget of \$6.1 million. The two on-demand services in Midland and Midland County have the smallest budgets in the region, with Midland D.A.R.T. operating on a budget of \$1.6 million, and Midland County Connection operating on \$2.3 million.

The amount it costs for riders to utilize the transit systems also vary, but much of the variation is likely due to the difference in the way fixed route systems and dial-a-ride systems operate. For instance, there is very little price difference in standard fare for Bay Metro and STARS, which costs \$1.00 and \$1.25, respectively. The Midland systems cost a decent amount more, however, with a standard fare for Midland D.A.R.T. costing \$2.00, and Midland County Connection costing \$3.00 to utilize.

Each of the transit systems operated 6 days per week, from Monday to Saturday, but the hours are generally varied from one system to another. During the week, Bay Metro begins running at 6:40 a.m., and operates until 5:35 p.m. On Saturdays Bay Metro begins operation later in the morning, at 9:00 a.m., and runs until 6:00 p.m. STARS runs a uniform schedule throughout the week, from 6:00 a.m. to 8:00 p.m. Monday through Saturday. The Midland systems are more varied, with Midland D.A.R.T. running from 8:30 a.m. to 5:00 p.m. Monday through Friday, but 8:30 a.m. to 1:00 p.m. on Saturdays. Midland County Connection runs latest, from 5:00 a.m. to 11:00 p.m. on the weekdays. On weekends, Midland County Connection operates from 5:30 a.m. to 9:30 a.m., and 2:30 p.m. to 6:30 p.m.

REVIEW OF REGIONAL TRANSIT AUTHORITIES IN MICHIGAN

Detroit Department of Transportation (City of Detroit)

Once the fourth-most populated city in the nation, Detroit is the still largest city in Michigan, and the eighteenth-largest city in the United States (Wisley & Spangler, 2011). The City of Detroit has a population of 721,500 (U.S. Census Bureau, 2011e). At the same time, The Metro Detroit Area of Macomb, Oakland, and Wayne Counties have a population of 3.8 million people, living in an area covering almost 2,000 square miles (U.S. Census Bureau, 2011q; U.S. Census Bureau, 2011v, U.S. Census Bureau, 2011aa). The area is served by two major transportation systems; the Detroit Department of Transportation, and the Suburban Mobility Authority for Regional Transportation.

Fixed Routes

DDOT was created in 1922 and has grown to accommodate the city and area primarily around Detroit (City of Detroit, 2013a). The bus system primarily offers fixed routes in the city of Detroit, but has limited routes to nearby cities such as Dearborn, Livonia, and Southfield. There are a total of 48 bus routes that serve approximately 138 square miles of territory, encompassing Detroit and 23 of the surrounding communities (City of Detroit, 2013b). The Detroit Department of Transportation does not operate a Dial-A-Ride service, instead, those services are provided by a separate entity, the Suburban Mobility Authority for Regional Transportation.

Rolling Stock

To accommodate the individuals who utilize this transportation system, the Detroit Department of Transportation operates 385 total vehicles throughout the city of Detroit. Not all 385 vehicles operate simultaneously, however. Between all the routes and working buses, total

mileage for the fiscal year of 2012 was approximately 13 million miles (MDOT Department of Transportation, 2013d).

Ridership

The Detroit Department of Transportation (DDOT) offers public transportation to over seven hundred thousand people in the city of Detroit. In the second quarter of 2013 the buses had an average daily ridership of 101,000 people, placing Detroit relatively high throughout the nation's public transit systems (American Public Transportation Association, 2013, pg. 8). Together, the Detroit Department of Transportation and the SMART System provide an average of 3.1 million rides per month. According to the U.S. Census Bureau, the Metro Detroit Area had a population of slightly less than 9.9 million, meaning a monthly per capita ridership of 3.2 rides per person for DDOT and the SMART system (US Census Bureau, 2011g).

Budget

The Detroit Department of Transportation system ran its operations with a fiscal year 2012 budget of \$130,529,668. The revenue streams for the Detroit Department of Transportation included operational fares of \$107,387,668, insurance claims of \$3,142,000, and State of Michigan and Federal grants of \$20,000,000. This generated a total of \$130,529,668 in revenue for fiscal year 2012 leaving no budget shortfall or surplus (City of Detroit, 2012).

Fare

Bus fare for the DDOT transit system is \$1.50, but there are ways that people can receive discounts. Students and Medicare card holders are eligible to ride for \$0.75 with valid identification, while senior or disabled riders only need to pay \$0.50 with an official card stating the impairment. To receive the Reduced Fares ID Pass Card all applicants must apply and show that they have a disability that leads to an inability to board or stand on moving vehicles. The

Detroit Department of Transportation also offers monthly passes for \$47.00, which allows the rider to board any DDOT bus (City of Detroit, 2013c).

Transit Hours

The bus schedule for the Detroit system is very accommodating for passengers as it runs seven days a week, generally all day. Several of the most populated routes, like 53 Woodward, make stops every thirty minutes at off times and every twelve to fifteen minutes at peak hours. The most used routes open at 4 a.m. and run until 1 a.m. daily, while a large portion of the rest open at 5 a.m. and close shortly after midnight. A large portion of city routes have Sunday service, while several ones traveling further distances may not be open or have the same availability (City of Detroit, 2013d).

Bike Racks

The Detroit Department of Transportation fleet is equipped with bike racks to accommodate a wider range of travelers. There is no additional fee for using these bike racks, but passengers are recorded by drivers as a separate fare category for tracking purposes. The bike racks are first come first serve, and bikes must fit in the rack. In addition, loading/unloading of bikes is the responsibility of the rider. Tandem bikes, bikes with oversized wheels, trailers, bikes with more than two wheels, and bikes with internal combustion engines are not allowed, bikes with a sealed electric battery are permitted (City of Detroit Department of Transportation, 2012).

Suburban Mobility Authority for Regional Transportation (Metro Detroit)

Fixed Routes

Southeast Michigan also has a regional bus system, SMART (Suburban Mobility Authority for Regional Transportation), to help aid people on commutes and general transportation for the region. There are a total of 5,325 bus stops on the 43 SMART routes that

are located within a quarter mile of over two million people (SMART, n.d.a). These routes serve a significant portion of the population of the Metro Detroit area, and are an integral part of the mass transportation system in Detroit.

Dial-A-Ride

As the SMART system has advanced, the services began to include curb-to-curb services, veteran's services, and online trip planning through the SMART website. One of these services is the advance reservation Connector Service, which helps individuals living more than 1/3 of a mile away from a fixed route stop to schedule trips to specific destinations like medical appointments (SMART, n.d.d.). Similar to what other public transportation services (such as the Detroit Department of Transportation) offer the SMART buses provide services for the elderly and people with disabilities who cannot access the regular bus route systems (SMART, n.d.c). There are also a number of other curb-to-curb services that serve similar purposes, such as the Somerset Shuttle, the Farmington and Farmington Hills Dial-A-Ride, as well as the Farmington and Farmington Hills Connector Service. The latter two specifically serve residents of the Detroit suburbs Farmington and Farmington Hills (SMART, n.d.e).

Rolling Stock

To accommodate the individuals who utilize this transportation system, SMART operates 591 total vehicles throughout the city of Detroit. This includes 234 fixed route vehicles, 111 SMART Connector Paratransit, 182 Community Transit Providers, and 64 Purchase of Service; the last two being vehicles owned by SMART but used solely by a local community (SMART, n.d.a). Between all the routes and working buses, total mileage for the fiscal year of 2012 was approximately 15 million miles (MDOT Department of Transportation, 2013e).

Ridership

SMART bus systems provide over ten million rides annually (MDOT Department of Transportation, 2013e). Together, the Detroit Department of Transportation and the SMART System provide an average of 3.1 million rides per month. According to the U.S. Census Bureau, the Metro Detroit Area had a population of slightly less than 9.9 million, meaning a monthly per capita ridership of 3.2 rides per person for DDOT and the SMART system (US Census Bureau, 2011g).

Budget

The Suburban Mobility Authority for Regional Transportation system ran its operations with a fiscal year 2012 budget of \$117,730,975 less ineligible expenses of \$35,116,253 leaving total eligible expenses of \$82,614,722. The revenue streams for the Suburban Mobility Authority for Regional Transportation included passenger fares of \$14,062,042, contract fares of \$586,630, advertising of \$599,560, rental of buildings or other property of \$51,610, sales of capital assets of \$466,272, other non-transportation revenues of \$44,428, taxes levied directly by transit system of \$41,278,877, local grants of \$540,414, State of Michigan grants of \$33,769,885, Federal grants of \$18,256,269, and other small miscellaneous revenues. This generated a total of \$109,700,177 in revenue for fiscal year 2012 with a surplus of \$27,085,455. Voters in Macomb County, communities participating in ACT 196 Transportation Authorities in Oakland County, and Wayne County approved a .59 property tax millage dedicated to public transportation. This property tax totaled \$39,903,784 in fiscal year 2012 (Plante & Moran, 2013).

Fare

The cost for riding on a SMART bus varies; however, the full fare for a fixed route is \$2.00 and \$4.00 for a connector ticket. There are discounts for youth (age 6-18), the elderly (over 65), and people with disabilities; which lowers the price on fixed route buses, Park & Ride,

connector tickets, and transfer vouchers. For frequent travelers on SMART vehicles there are unlimited ride passes available such as the 31 Day Pass, which is good for 31 days after initial insertion, and the Regional Pass, which is for riders that use a combination of DDoT and SMART vehicles. The cost for a full fare 31 Day Pass on fixed route vehicles is \$66.00, and the cost for a Regional Pass for fixed route vehicles is \$49.50 plus fifty cents every time a regional pass user boards a SMART vehicle (SMART, n.d.b).

Transit Hours

The bus schedule for the SMART system runs five days a week, generally all day. Several of the most popular routes, make stops every thirty minutes at off times and every six to fifteen minutes at peak hours. The most used routes open at 4:30 a.m. and run until 2:00 a.m. daily, while a large portion of the rest open at 5 a.m. and close shortly before midnight. (SMART n.d.f).

Bike Racks

The Suburban Mobility Authority for Regional Transportation fleet is equipped with bike racks to accommodate a wider range of travelers. There is no additional fee for using these bike racks, but passengers are required to load/unload bikes themselves, drivers may not physically assist passengers with bikes. SMART bus bike racks will not accommodate tandem bikes, tricycles, or recumbent bikes and bikes are not allowed inside the bus. SMART bus bike racks are available first come first serve and can hold up to two bikes. Unfortunately SMART Connector busses are not equipped with bike racks (SMART, 2014).

Grand Rapids

Grand Rapids, Michigan is the seat and largest city of Kent County. Grand Rapids had an estimated population of 190,000 in 2012, while Kent County had an estimated population of 614,000 (U.S. Census Bureau, 2011i; U.S. Census Bureau, 2011n). Kent County also covers an

area of 847 square miles (U.S. Census Bureau, 2011n). The region is served primarily by The Rapid.

Fixed Routes

The Rapid has 27 fixed routes that service the metro area, Comstock Park to the North, Grand Valley State University to the West, Kentwood to the South, East Grand Rapids to the East and everywhere in between. With 27 routes there is a line to service practically every resident in the Grand Rapids area (The Rapid, 2011c). The Rapid transit system has been successful enough to warrant an expansion of their current services. In an effort to provide more options for those traveling within Grand Rapids or to Kentwood and Wyoming, The Rapid board of directors, consisting of 15 members, has approved the construction of the Division Avenue Bus Rapid Transit (SilverLine) after a decade long planning process. This project will allow for not only more access to these area, but more jobs through the construction and need for additional bus drivers and maintenance workers (The Rapid, 2011e).

Dial-A-Ride

Among the services of The Rapid offers are the fixed route services and the mapped routes, as well as services that are more unique to Grand Rapids. The first, GO!Bus, is a door-to-door option for those who have a recognized disability or are over the age of 65 (The Rapid, 2011a). The second, PASS, is a connection from the rider's location to the nearest bus stop; and even provides assistance in setting up a car or van pool option (The Rapid, 2011b).

Rolling Stock

To accommodate the individuals who utilize this transportation system, The Rapid fleet consists of 128 active vehicles for their fixed-route service. The Rapid fleet is divided into four categories; 35-foot diesel buses, 40-foot diesel buses, 40-foot hybrid-electric, and 30-foot diesel

buses. In addition, the Rapid also subcontracts operation of 70 vehicles to operate their demand-response services (The Rapid, 2012).

Ridership

Fiscal year 2013 saw an estimated 12.5 million riders utilize the Rapid, an increase of 4.3% over fiscal year 2012, which included increases in every daily average category; weekday, weekday evening, Saturday, and Sunday ridership (The Rapid, 2011d). Despite the increasing number of riders, the Rapid is still an efficient system, as 84% of trips were considered on time in the Third Quarter of FY2013, slightly higher than the standard of 83% (The Rapid, 2013). The Rapid provided an average of about 1 million rides per month in 2013 (US Census Bureau, 2011j). According to the U.S. Census Bureau, Grand Rapids had a population of roughly 188,000, meaning a monthly per capita ridership of 5.3 rides per person for the Rapid.

Budget

The Rapid ran its operations with a fiscal year 2012 budget of \$37,200,834 with an additional \$1.1 million in capitalized expenses. The revenue streams for the Rapid included passenger fares of \$6,260,092, sales of \$5,739,221, State of Michigan Operating Assistance of \$11,214,546, property taxes of \$13,629,853, advertising of \$108,296, and interest and miscellaneous revenues of \$248,826. This generated a total of \$37,200,834 leaving no budget shortfall or surplus (Interurban Transit Partnership Board, 2013, pg. 63-65).

Fare

Bus fare for the Rapid is \$1.50, but there are ways that people can receive discounts. The elderly (over 65), and individuals with a qualifying disability are eligible to ride for \$0.75 with valid identification. Small children can also ride for free with a fare-paying adult. The Rapid also provides 10-day Farecards, which students with a valid student ID can get for \$9.00. They also

sell unlimited ride passes for 1, 4, and 31 days, at \$4.60, \$11.50, and \$40.00, respectively, although seniors and the disabled can obtain a 31-day pass for \$26.00 (The Rapid, 2011h).

Transit Hours

Due to the large number of routes and area serviced, there are a number of slight schedule variations from one bus top to another. In general, however, most weekday bus routes begin operating around 5:30 a.m., and run until 12:00 to 12:30 a.m. Saturday routes generally begin around the same time as weekday routes do, but only run until about 9:30 p.m. Sunday routes begin later, around 7:00 am, and run for about 12 hours until 7:00 p.m. Bus arrivals also vary from route to route and based on the time of day, but most bus stops see buses depart every 30 minutes (The Rapid 2011g).

Bike Racks

The Rapid fleet is equipped with bike racks to accommodate a wider range of travelers. There is no additional fee for using these bike racks, but passengers are required to load/unload bikes themselves, drivers are not able to assist. The bike racks will accommodate most two wheeled bikes including children's bikes. The bike racks can accommodate up to two bikes and are available on a first come first serve basis (The Rapid, 2011).

Lansing

Lansing, Michigan is the largest city in Ingham County, and the capital of the State of Michigan. Lansing had an estimated population of 114,000 in 2012, while Ingham County had a population of 281,000 (U.S. Census Bureau, 2011o; U.S. Census Bureau, 2011l). Ingham County also covers an area of 556 square miles (U.S. Census Bureau, 2011l). The region is primarily served by the Capital Area Transportation Authority.

Fixed Routes

The Capital Area Transportation Authority (CATA) offers a variety of services, but the majority of rides come in the form of fixed-route services. Buses run from the CATA Transportation Center in downtown Lansing to many points throughout the Greater Lansing Area. The system also works in accordance with Michigan State University to offer students rides throughout Lansing and the MSU campus itself. Michigan State University hosts a very large student body that can take advantage of the bus system to travel to and from school, ensuring a large ridership for the transit service. This is especially important, as, according to an EPIC-MRA poll, 43% of Michigan State University students that utilize the CATA system do not own a vehicle (Yu, 2012).

Dial-A-Ride

CATA also offers “Redi-Ride” curb-to-curb services in the surrounding areas of Mason and Williamston, as well as Dehli and Meridian Townships. These services allow riders not residing directly in CATA’s fixed-route service plans to take public transportation to their destinations. Services within Mason and Williamston can be reserved usually within 30 minutes, while reservations in Dehli and Meridian Townships can be made with 4 hours advanced notice (CATA, n.d.c). CATA Rural Services (CRS) operates as a curb-to-curb system with 24 hours advanced reservation. This service allows residents in the outlying areas of Ingham County to take public transportation to and from their destinations. This service operates Monday-Friday giving people the option of taking it to and from work, but also for seniors and disabled persons to take it to other engagements (CATA, n.d.c). CATA’s shopping bus service connects senior living centers throughout Lansing and the surrounding areas with major shopping centers throughout the region. These services operate Monday-Friday, and operate weekly (CATA, n.d.c).

Rolling Stock

To accommodate the number of individuals who utilize the system, The Capital Area Transportation Authority operates 213 total vehicles in their fleet. This includes 82 standard 40-foot transit busses, 12 articulated 60-foot transit buses, 60 smaller 25-foot buses, 2 trolley buses, and 51 passenger vans. They also own and operate 23 hybrid vehicles, with 16 of the 82 standard 40-foot buses being hybrid, as well as 5 of the 60-foot buses, and 2 medium-duty hybrids.

Ridership

In 2012, the Capital Area Transportation Authority gave nearly 11.9 million rides (CATA, n.d.a). Of the recorded amount of rides, 11,188,410 were fixed-route rides. Likewise, there were 2,801,675 Michigan State University fixed-route rides. The remaining rides recorded consisted of numerous other services, including both urban and rural services (CATA, n.d.b). Not including the route service to Michigan State University, CATA gave an average of 991,000 rides each month in 2012. According to the U.S. Census Bureau, Lansing had a population of 114,000 (US Census Bureau, 2011p), and East Lansing, the home of Michigan State University, housed a population of 48,500 (US Census Bureau, 2011h). This means a monthly per capita ridership of 6.1 rides per person for the Capital Area Transportation Authority.

Budget

The Capital Area Transportation Authority system ran its operations with a fiscal year 2012 budget of \$48,351,528. The revenue streams for the Capital Area Transportation Authority included operational of \$8,472,364, non-operational of \$33,454,757, and grants of \$12,347,511. This generated a total of \$54,274,632 in revenue for fiscal year 2012 with a surplus of \$5,923,104 (CATA, 2013).

Fare

CATA offers its services at affordable and consistent rates for riders. Current prices for a fixed-route service one way range from \$2.50 in Zone 2 to \$1.25 in Zone 1. Discounted fares of \$0.60 are available to students, seniors, and persons with disabilities. The Meridian-Dehli Redi-Ride service runs on the same rates as Zone 1. The shopping bus service runs with a fare of \$2.00 one-way, offering people with limited incomes a viable way of getting the goods they need for a reasonable price (CATA, n.d.d). CATA Rural Services offers curb-to-curb service in some of the more outlying areas of Ingham County. Trips of up to 10 miles operate at a one-way cost of \$2.25. Discounted rates are \$1.00, and are available under the same criteria as fixed route services. Rural services of over 10 miles cost \$3.25 for a one way ride, while discounted rates are \$1.50 for those eligible (CATA, n.d.c) The Connector Service running in Williamston and Webberville runs at the same rates for under 10 miles, as well as for over 10 miles (CATA, n.d.e). Spec-Tran services transport people with disabilities that are not able to use traditional fixed-route buses. The cost for a one-way ride in Zone 1 is \$2.50, while the cost for a one-way ride in Zone 2 is \$5.00 (CATA, n.d.f).

Transit Hours

With 27 different routes services a number of different destinations, the route schedules for CATA bus stops can vary significantly from one to another. For Monday through Friday, most routes begin operating between 5:30 and 6:30 a.m., and many run from between 10:30 and 11:30 p.m. Saturday routes often begin operating around 7:00 a.m., and run until approximately 11:30 p.m., while Sunday routes often begin around 7:30 a.m., and run for roughly 12 hours until 7:30 p.m. Because of the large number of routes and large area serviced, there is also significant variation in departure times for buses, with busier routes seeing buses leaving every 12 minutes, while other routes see one bus per hour (CATA n.d.g).

Bike Racks

The Capital Area Transportation Authority fleet is equipped with bike racks to accommodate a wider range of travelers. There is no additional fee for using these bike racks, but passengers are required to load/unload bikes themselves, drivers are not able to assist. The bike racks can carry two or three bikes and are available on a first come first serve basis. The bike racks do not safely accommodate recumbent bikes, tandem bikes, or three-wheeled bikes and thus they are not allowed in the bike racks, additionally motorized bikes with a gasoline tank are not allowed (CATA, 2013).

Summary

Each of the transit systems previously shown serves a very different demographic and population base, and as such, the systems have some significant differences. The Detroit Department of Transportation operates 48 fixed routes throughout the City of Detroit, while SMART operates 43 throughout the Metro Detroit Area. Outside of Detroit, however, the number of routes operated is significantly less. The Capital Area Transportation Authority in Lansing operates 30 fixed routes, while the Rapid in Grand Rapids runs 27. The Detroit Department of Transportation does not operate a dial-a-ride service, but residents of the Detroit area can utilize SMART for on-demand services. Both CATA and the Rapid offer dial-a-ride services.

The significant population and ridership of the areas that each of these systems serve means that they need to operate very large vehicle fleets. The Detroit Department of Transportation has the most, with 825 vehicles, while SMART has the second-largest fleet, with 593 vehicles. CATA and the Rapid have more equitable fleet sizes, with CATA operating 213 vehicles, and the Rapid utilizing 198.

The large fleets that these systems operate were procured to serve the large number of riders that use the system each year. The Detroit Department of Transportation sees 36.5 million riders on their buses each year, while SMART sees about 13.1 million. CATA is not too far behind SMART, with 11.9 million riders in Lansing each year, and the Rapid sees slightly more, with 12 million riders annually.

Each transit system operates on a budget that is dependent upon multiple sources of funding, including state and local funding, as well as ridership fare. The Detroit Department of Transportation has the largest annual budget, at about \$130.5 million, while SMART runs on roughly \$80 million per year. CATA has a budget of a little more than half of the SMART budget, at \$48 million. The Rapid also operates on about \$36 million annually.

There is less variation among ridership fare between the four transit systems, with most standard fares being between \$1.00 and \$2.00. Both the Detroit Department of Transportation and the Rapid operate on standard fares of \$1.50. SMART costs \$2.00 to ride one of their buses. CATA has two standard fares; \$1.25 for city routes, and \$2.50 for rural routes.

Each of the four transit systems operate all week, Monday through Sunday, though the hours vary significantly from system to system, and even between routes on a single transit system. The Detroit Department of Transportation runs a uniform schedule throughout the week for some of their routes, from 4:00 a.m. to 1:00 a.m., Monday through Sunday. SMART also runs some of their routes constantly, from 12:00 a.m. to 12:00 a.m. CATA is more varied, with some of their routes running from 6:00 a.m. to 11:00 p.m. on weekdays, then 7:00 a.m. to 11:30 p.m. on Saturday, and 7:30 a.m. to 7:30 p.m. on Sundays. The Rapid runs a little earlier, although many of their routes also have variable times. Many of the routes run from 5:30 a.m. to 12:30

a.m. on the weekdays, then 5:30 a.m. to 9:30 p.m. on Saturdays, and 7:00 a.m. to 7:00 p.m. on Sundays.

DISCUSSION

The Great Lakes Bay Regional Transit Authority

Introduction

This paper has now presented four larger transit authorities throughout the State of Michigan and four authorities within the Great Lakes Bay Region. The Great Lakes Bay Regional Transit Authority (GLBRTA) will be an umbrella organization that coordinates the current existing transportation systems in Saginaw, Bay City, and Midland. The GLBRTA will also create new direct routes and improve mobility within the region. The GLBRTA will operate a number of fixed route services that allow connectivity between the cities, while leaving intra-city transportation to the systems already in place. The creation of a larger transit system will turn a patchwork of transportation systems into an authority comparable to some of the larger regional transit authorities in Michigan.

The creation and implementation of the GLBRTA would not happen overnight. Creating change takes time, particularly for a large transit project. Because of this, the creation of the transit authority would take place in three distinct phases. Although the final phase is not being pushed at this time, this paper is largely a vision of what Phase 3 will look like, and the impacts that it will have. Even so, it is important to ensure that Phase 1 and Phase 2 are implemented first, and implemented well.

Phase 1

The first phase of implementation for the GLBRTA would be the testing phase. This would consist of sending one bus along a single route from each of the cities of the Great Lakes

Bay Region to another, once a day. The purpose of this phase would largely be to gauge public interest, and work through any possible problems with routes or rolling stock. Phase 1 could potentially be completed within 12 to 24 months of implementation

Phase 2

If Phase 1 is successful, the transition into Phase Two would begin. Phase 2 would include the acquisition of rolling stock and the planning of both “hub” and “spoke” routes throughout the Great Lakes Bay Region. Route planning would take into account feedback on the performance of the routes created during Phase 1. Phase 2 could potentially be completed within 48 to 60 months of initial implementation of the project.

Phase 3

The final phase would be the full combination of all existing transit systems in the Great Lakes Bay Region under the umbrella of the GLBRTA. Once phase three is complete and the Great Lakes Bay Regional Transit Authority is fully implemented, the citizens of the Great Lakes Bay Region will see the first comprehensive transportation system in the area.

This alternative would increase a more efficient and effective to the current systems in the Bay, Midland and Saginaw counties. These three counties have differing socio-economic bases, with Saginaw is similar to the economic bases of Genesee or Wayne County, while The City of Midland is similar in socio-economic patterns to an Ann Arbor or East Grand Rapids. Alternatively, the County of Bay is alike an Ingham County that has a vibrant economic center, but is surrounded by a rural-agricultural community.

The creation of an RTA has an established precedent in the creation and successful operation of several other transit system and authorities throughout the State of Michigan. In support of the GLBRTA, closely examining the models at SMART, CATA and The Rapid can serve as an adequate model for the establishment of a new transit system in Mid-Michigan.

Economic Benefits

Training and education will be an essential part to revitalizing the economy of the Great Lakes Bay Region. Central Michigan University, Delta College, Northwood and SVSU provide a high quality education to those in the surrounding region. However, without reliable transportation to and from these campuses, individuals are not able to utilize these educational resources.

Existing economic centers are already out of reach for many individuals in the Great Lakes Bay Region do to lack of access to transportation. Midland, Frankenmuth and Birch Run both enjoy economic activity greater than that available in Saginaw or Bay City. Through increased regional access of transportation to Midland / Frankenmuth / Birch Run, the additional workers and customers can come from Saginaw or Bay City.

Routes

The routes of the With Great Lakes Bay Regional Transit Authority will be divided into two categories; “hub” routes, and “spoke” routes. Hub routes are those that run directly between Saginaw, Bay City, and Midland, while spoke routes are those that run outside of the “hub” of Saginaw-Bay City-Midland to other areas of the Great Lakes Bay Region. This division will allow routes within the hub cities to remain effective and efficient, while expanding area of access to more people throughout the region.

The hub routes between Saginaw, Bay City, and Midland, would run from the downtown areas and major cultural and economic centers of each city. The hub routes would run directly from one city to another and back, with three separate lines serving the population centers, called the Saginaw Line, the Bay City Line, and the Midland Line. Each line would provide direct connections to some of the more popular locations throughout each city. Each line runs through two cities, their primary city, and the downtown circuit of the city the line connects to. This

downtown circuit will follow the same route as the primary line, but in the opposite direction to decrease wait time between pick-ups. See Appendix H for an overview of the proposed routes through Saginaw, Bay City, and Midland.

Saginaw Line

The Saginaw Line would run from north-to-south, from Saginaw to Bay City and back. A full circuit of the Saginaw Line would include 28 stops in Saginaw, and 11 stops in Bay City, for a total of 39 stops. One possible route could see the bus running from Court Street in “Old Town” Saginaw north to Covenant Healthcare, and the corner of Michigan and Genesee Avenues. From there the bus would travel east across the river, making two stops at the Temple Theatre and the Dow Event Center, two very popular cultural attractions in downtown Saginaw. The next stop, a little farther south, will provide access to the Castle Museum of Saginaw County and the Hoyt Public Library, which are within walking distance of one another. Continuing south, the bus can make a stop at the Saginaw Farmer’s Market, which will be very useful in providing more residents of the city with access to fresh fruits and vegetables.

The next stop for the Saginaw Line would likely be St. Mary’s of Michigan, followed by the Children’s Zoo at Celebration Square. Moving back across the river, the bus will head west, stopping at Fordney Park, and then the corner of Gratiot and Center Roads. Continuing west, the bus can make stops at two residential areas, the Birch Hill Apartments, and the Fox Glen Apartments further to the north. From here, the bus will begin traveling East back into the city, making stops at the Horizons Conference Center, Walmart, Kroger, and the Ramada Inn. The final stop within the city of Saginaw itself will be at the corner of State and Bay Streets, where the bus will begin traveling north toward Bay City. The bus will make four more stops before reaching Bay City, at the Fashion Square Mall, Saginaw Valley State University, Delta College, and Bay Valley Resort and Conference Center.

After the Bay Valley Resort stop, the Saginaw bus will travel into Bay City itself, stopping at the City Hall of Bay City, and then beginning a short circuit of the Bay City Line. This circuit will travel in the opposite direction of the Bay City Line, to increase the frequency of bus arrivals at each stop throughout the route. From City Hall, the Saginaw bus will make a stop at the stop, then travel west across the river to the Midland Street stop. The bus will continue west to the corner of Midland Street and Euclid Avenue, and then turn north, stopping at the Secretary of State, then stopping once again at the corner of Euclid Avenue and Wilder Road. From there, the bus will turn east, traveling along Wilder Road to Walmart and the Bay City Mall. Following Wilder Road will turn the bus to the south, back across the river, where it will make another stop at Maplewood Park. From there, the bus will stop once again in downtown Bay City and City Hall before heading back South toward Saginaw.

The route will continue down Bay Road toward Saginaw, stopping again at Bay Valley Resort and Conference Center, Delta College, Saginaw Valley State University, Fashion Square Mall, and the corner of State and Bay Streets, before finally ending/beginning again at the Court Street stop. To travel from Saginaw to Bay City along this route will run 19.5 miles and take approximately 32 minutes. Assuming a stop of 2 minutes at each bus stop, with 5 stops between Saginaw and Bay City, an individual can safely assume a travel time of approximately 45 minutes.

Bay City Line

The Bay City Line would run east-to-west, from Bay City to Midland and back. A full circuit of the Bay City Line would include 19 stops in Bay City and the area between Bay City and Midland, and 16 stops in the City of Midland itself. One possible route could see the bus running from the City Hall of Bay City stop north into downtown Bay City, and east toward Maplewood Park. From there the bus would travel north across the river, making two stops at the

Bay City Mall and Walmart. The next stop, farther west, will be at the corner of Wilder Road and Euclid Avenue. Traveling south from this stop, the bus will make a stop at the Secretary of State, and continue to the corner of Midland Street and Euclid Avenue. Turning back to the east, the bus will make one more stop on Midland Street before crossing the river and turning south back toward downtown Bay City.

The next stop for the Bay City Line will be outside the city limits. Following the downtown stop, the Bay City bus will travel west on the M-25 highway, before merging onto the US-10 highway. After approximately 5 miles, the bus will take the exit onto South Mackinaw Road, making a bus stop near the exit, and then continuing south toward Delta College. The Delta College stop can also serve as a secondary connection point for the Saginaw Line. The bus will continue along Mackinaw Road to Freeland Road, where it will turn to the west toward MBS International Airport. The stop at MBS can also serve as a secondary connection point to the Midland Line. After a stop at the airport, the Bay City bus will travel directly north toward the city of Auburn, which sits roughly halfway between Bay City and Midland. Following the Auburn stop, the bus will once again get on the US-10 highway heading west toward Midland. The bus will then merge onto the M-20 highway, and take the first exit to stop at the Dow Corporation in Midland.

The Midland portion of the Bay City Line will will travel in the opposite direction of the Midland Line, to increase the frequency of bus arrivals at each stop throughout the route. The bus will run northwest along Saginaw Street, stopping at the Eastlawn Center and Ashman Circle, before traveling north to the Midland Resort and Convention Center. The bus will follow the US-10 highway to the west for a short while before turning north and stopping at the Jack Barstow Municipal Airport. Turning to the east, the bus will make a stop at the Midland County

Fairgrounds, Meijer, NCG Cinema, and the Midland Mall. From here, the route turns south, with the bus stopping at the Northwest Plaza before turning west toward the Mid-Michigan Medical Center. Following this stop the bus will continue south and east, stopping at the Midland Center for the Arts before traveling to the downtown Midland stop. Continuing south, the bus can make a stop at the Midland Area Farmer's Market, which will be very useful in providing more residents of the city with access to fresh fruits and vegetables.

The next stop for the Bay City Line would likely be the Dow Diamond, before moving on to the M-20 highway and stopping once again at Dow. Following M-20 back toward the east will merge the Bay City Line bus onto US-10, which it will follow for approximately 5 miles, before exiting the highway to make another stop at the City of Auburn. From here it continue traveling East back toward Bay City, making the final stop of the circuit at City Hall before starting the route again. To travel from Bay City to Midland along this route will run 30 miles and take approximately 45 minutes. Assuming a stop of 2 minutes at each bus stop, with 5 stops between Bay City and Midland, an individual can safely assume a travel time of approximately 55 minutes. However, considering the high number of employees in the area who work at Dow Chemical Company in Midland, there is the possibility of creating an express route during the morning and evenings which would travel straight from downtown Bay City to Dow Chemical, which would run approximately 20 minutes.

Midland Line

The Midland Line would run northeast-to-southwest, from Midland to Saginaw and back. A full circuit of the Midland Line would include 21 stops in Midland and the area between Midland and Saginaw, and 18 stops in the City of Saginaw itself. One possible route could see the bus running from the Dow Chemical Company stop west along the M-20 highway to the Dow Diamond baseball field, a popular regional attraction. From there, the bus will travel northwest into

downtown Midland, stopping there, as well as the Midland Area Farmer's Market. The next stop, further north, would be the Midland Center for the Arts, followed by the Mid-Michigan Medical Center, to the Northwest. Following this stop, the bus will stop at Northwest Plaza at the corner of North Saginaw Road and Eastman Avenue, before moving north to the Midland Resort and Convention Center. From here, the bus will move north of the US-10 highway to stop at the Midland Mall, NCG Cinemas, Meijer, the Midland County Fairgrounds, and the Jack Barstow Municipal Airport. After the airport stop, the bus will travel south along Eastman Avenue to North Saginaw Road, where it will stop at Ashman Circle and the Eastlawn Center before making another stop at Dow Chemical Company.

After the Dow Chemical Company stop, the Midland Line bus will take the M-20 highway east and merge onto the US-10 highway. It will take this east for approximately 2 miles before exiting onto the M-47 highway, traveling south. The Midland Line bus will take M-47 to the City of Freeland, which lies about halfway between Midland and Saginaw. After stopping in Freeland, the bus will travel east through Freeland to MBS international airport. The stop at MBS can also serve as a secondary connection point to the Bay City Line. Following the Airport stop, the Midland Line will continue along M-47 to the southeast, heading toward the City of Saginaw.

The Saginaw portion of the Midland Line will travel in the opposite direction of the Saginaw Line, to increase the frequency of bus arrivals at each stop throughout the route. The bus will make the first stop at the Fox Glen Apartments off of M-47, before continuing south to the Birch Hill Apartments. From here, the bus will follow Gratiot Road to the east, making a stop at the corner of Gratiot and Center Roads, as well as Fordney Park. Following the Fordney Park stop, the bus will cross the river and begin traveling north along South Washington Avenue, making

stops at the Children's Zoo at Celebration Square, St. Mary's of Michigan, and the Saginaw Farmer's Market. The Midland Line bus would finish the downtown portion of the route with a stop at the Castle Museum, Dow Event Center, and the Temple Theatre, then travel west back across the river to stop at the corner of State and Bay. Turning south, the bus would travel along North Michigan Avenue, making stops at Covenant Healthcare and Court Street, then taking Court Street north to stop at State and Bay. From here, the bus will travel west along Davenport Avenue, stopping at the Ramada Inn, Kroger, Walmart, and the Horizons Conference Center. Following the Horizons Conference Center stop, the Midland Line bus will travel north along M-47, making another stop at Freeland and MBS, before continuing on to US-10. The highway will take the Midland Line bus back to Dow Chemical Company, where it will begin the route again. To travel from Midland to Saginaw along this route will run 20 miles and take approximately 30 minutes. Assuming a stop of 2 minutes at each bus stop, with 4 stops between Midland and Saginaw, an individual can safely assume a travel time of approximately 38 minutes. However, considering the high number of employees in the area who work at Dow Chemical Company in Midland, there is the possibility of creating an express route during the morning and evenings which would travel straight from Saginaw to Dow Chemical, which would run approximately 25 minutes.

Spoke Routes

The spoke routes of the With Great Lakes Bay Regional Transit Authority would reach out north, south, east, and west, unifying the area under the umbrella of a larger transportation authority. The North Line would run 34 miles north from Bay City to the city of Standish, home of the Saganing Eagles Landing Casino, a popular tourist attraction. The East Line would extend 30 miles east into the city of Caro. The South Line would run 37 miles south from Saginaw along I-75 to the City of Flint, making a stop in the major commercial shopping center of Birch

Run as well. The West Line would extend 27 miles west from Midland to the City of Mt. Pleasant, home to the Soaring Eagle Casino and Resort, and Central Michigan University. This line would only serve to strengthen the relationship between Saginaw Valley State University and Central Michigan University, as well as increase traffic between the two cities.

Through the use of these “hub” routes that would run between the three major transit centers in Bay City, Midland and Saginaw, and the “spoke” routes that would run to Caro, Flint, Birch Run, Mount Pleasant and Standish, well over 500,000 individuals would be within a 15-minute ride of a bus-stop. This would link a significant portion of the population of the region to the seven county area that is being described. These connections could provide access to more jobs and economic activities than would already be available in the Midland, Bay City, Saginaw, Birch Run area.

Feasibility

Understanding the public transportation systems in Detroit, Lansing and Grand Rapids show us that it is possible for a transit system to effectively serve the needs of metropolitan regions. Even though, the population in the GLBR does not approach the levels of population in the other metropolitan regions, a combined transit system would offer more access and be more efficient than the current four systems. These other regional systems can be an example of the framework for the implementation of the GLBRTA.

CATA, SMART and The Rapid operate under Michigan Public Act 196 of 1986. This act allows for the formation of public transportation authorities that would allow the withdrawal of local entities, effectively allowing for the consolidation under a newly formed authority. Along with the power to consolidate, Michigan Public Act 196 of 1986 makes it mandatory for the new entity to comply with any collective bargaining contracts in place upon acquisition as well as

keeping those protected as employees (Sec. 124.465) (Public Transportation Authority Act, 1986).

This law will serve as the framework for the consolidation of the four existing public transportation systems into one. This would effectively model the GLBRTA after the other regional transit authorities. The law also allows for the pooling of all revenue of existing authorities to support the new entity. After the new entity is formed, it would then have the power to do the above under its own name (Public Transportation Authority Act, 1986). Having the power to raise revenue under one name would streamline the effort. As seen with The Rapid in Grand Rapids, consolidating into one provider does not mean losing business, nor does it mean an unfair marketplace, it simply means gaining business and increasing efficiency.

Through the efficiencies that are created, the GLBRTA could spend the funds saved on fixed line revenue and create specialty services, such as GOBus and PASS in Grand Rapids.

As seen with the other regional authorities around the State of Michigan, operation of a single transit system is entirely feasible. CATA and The Rapid are successful models that show the positive benefits and public interest inherent in a well-run public transportation system. Not only that, but both systems proves that it is possible for a transit system to not only serve the public, but make a profit while doing so.

Rider Fares

Cost to the rider is important to take into account while considering any consolidation because it shows that the price of services can remain reasonable for the consumer.

Consolidation in the GLBR would give the new entity access to passengers throughout the region, and would allow the prices for fares to remain fairly low. When examining the averages

in the GLBR and throughout Michigan, adult cash single ride fares would be anywhere from \$1.50 to \$2.00 per ride.

Budget

The Great Lakes Bay Region Transportation Authority will have a proposed budget of \$18 million. The revenue streams for the Great Lakes Bay Region Transportation Authority will include an estimated \$3,319,200 from passenger fares, with the remaining portion of the proposed budget covered by a combination of Local, State, and Federal grants. The GLBRTA would seek to be financially viable without the need to propose a property tax on the Great Lakes Bay Region. Given the current combined revenue streams for the existing transportation systems in the Great Lakes Bay Region a need for property taxes is not anticipated.

Conclusion

It is in the best interest of the GLBR to consolidate the existing public transportation infrastructure under the umbrella of a GLBRTA. This authority would enable the public transportation systems in the region to operate more efficiently by saving money and increasing access to residents. It would also improve access to residents who wish to seek work outside of their current public transit service area and do not have any other options of transportation.

Currently, the counties of Bay, Midland and Saginaw, as well as the surrounding areas are being served by a disjointed patchwork of various transportation systems.

These fragmented systems increase operations cost and make it more difficult for residents to travel throughout the region. Although the current systems are able to provide a basic level of service to their constituents, the consolidation of the current systems into one over-arching GLBRTA will undoubtedly improve the efficiency and effectiveness of public transportation in the GLBR.

The GLBRTA will also serve to increase access to educational facilities, medical centers, among other places of interest throughout the GLBR.

Based up results of the CATA and The Rapid systems as a framework for implementing the GLBRTA we estimate that through consolidation of the existing public transportation systems, the following could happen. These include:

- Estimated savings in administrative costs associated with the system.
- Estimated increase in ridership within the first year of implementation.
- A further estimated increase in ridership within 10 years of implementation.
- Increased access to educational opportunities.
- Increased interconnectivity between the population centers within the region.
- Greater economic mobility for the members of low socioeconomic groups within the region.
- Greater leisurely opportunities for the elderly and disabled within the region.

In closing, the implementation of a single, consolidated public transit system in a regional metropolitan area would not only benefit the people therein, but the economy as whole. Access to reliable transportation is a need that far too many families throughout the GLBR go without. This isolation results in economic and social isolation that often prevents an individual from entering the job market. The creation of a GLBRTA would go a long way toward alleviating this problem and giving individual access to other needed amenities.

APPENDIX A

Possible Community Partners

The creation of any region-wide system will depend upon collaboration from regional partners to be truly effective. Fortunately, there are a number of social, economic, and regional benefits from the creation of a consolidated public transit system that many local organizations could take advantage of.

Bay City Mall

Like any business, a mall requires visitors to remain competitive and profitable. The Bay City Mall is located at the northern end of Bay City, across the Saginaw River, and is potentially too far for some residents of Bay City who do not have access to a vehicle, and certainly out of reach for residents of Midland and Saginaw who do not have reliable transportation. The Bay City Mall would likely benefit from the creation of a Great Lakes Bay Regional Transit Authority by potentially increasing the number of residents who have regular access to the mall.

Castle Museum of Saginaw County

The Castle Museum of Saginaw County is an important cultural and historic landmark for the City of Saginaw that works to preserve and document the history of the city. As a museum, it is a non-profit institution that relies on grants and voluntary contributions from patrons and visitors. The creation of a bus stop at the Castle Museum could potentially increase the number of people that visit (an important goal for any museum), which means a possibility for increased donations, as people begin to see and appreciate the history of the City of Saginaw, and the important role of the Castle Museum in preserving that history.

Children’s Zoo at Celebration Square

The Children’s Zoo at Celebration Square is a popular attraction in Saginaw that provides entertainment for children and families alike. The creation of a GLBRTA bus stop at the Children’s Zoo could potentially increase the number of visitors, which means an increase in revenue. This is particularly important as the Children’s Zoo at Celebration Square operates “completely independently of tax-based funding”, meaning that the only money they make comes from voluntary contributions and ticket sales (Children’s Zoo at Celebration Square, 2009). Any potential for increasing the number of visitors could be very beneficial for the organization.

Delta College

Delta College is a community college located in University Center, approximately half way between Saginaw and Bay City. As a community college, it does not have any on-campus housing, which requires students to commute. The creation of a bus stop at Delta College could increase the number of local residents who could enroll at Delta College who otherwise would find it difficult or impossible to attend classes because of a lack of reliable transportation.

Dow Chemical Company

Dow Chemical Company is a major employer in the Great Lakes Bay Region, with many employees living throughout Midland, Bay City, and Saginaw. Dow has been extremely active in funding or spearheading initiatives that improve the local community and the quality of life for residents in the community. Through programs such as the Dow Student Research and Creativity Institute, students and community leaders can work together and secure funding for projects that benefit the community (Saginaw Valley State University, 2012). By improving the Great Lakes Bay community, Dow can attract new interest and new talent, and hopefully reverse the trend of residents leaving the State, and turn Michigan – and the Great Lakes Bay Region in particular –

into a destination for those individuals looking for a vibrant, interconnected community. One of the first steps toward making that vision a reality is the creation of an inter-city transit system, and Dow can benefit greatly from its presence.

Dow Diamond

The Dow Diamond is a baseball field located in Midland. The field is a popular attraction during the baseball season, and regularly brings a large number of people into the downtown Midland area. The creation of a GLBRTA bus stop at the Dow Diamond could easily bring more people to events and games, including those who don't have access to reliable transportation. This increase in visitors means an increase in ticket sales and concession sales, and an overall bump in revenue for the organization.

Dow Event Center

The Dow Event Center is a major cultural attraction in downtown Saginaw, hosting concerts, hockey games, trade shows, and various other events. The Dow Event Center attracts a large number of people, but the creation of a GLBRTA bus stop outside the facility has the potential to bring people from all throughout the Great Lakes Bay Region that previously may not have been able or willing to travel there. An increase in the number of visitors will create an increase in revenue for the facility, and help ensure financial security for the future.

Fashion Square Mall

Like any business, a mall requires visitors to remain competitive and profitable. The Fashion Square Mall is located past the northern end of Saginaw, south of Saginaw Valley State University, and is potentially too far for some residents of Saginaw who do not have access to a vehicle, and certainly out of reach for residents of Midland and Bay City who do not have reliable transportation. The Fashion Square Mall would likely benefit from the creation of a Great Lakes Bay Regional Transit Authority by potentially increasing the number of residents

who have regular access to the mall. Additionally, a direct link from Delta College and Saginaw Valley State University to the Fashion Square Mall opens a very large pool of potential customers, many of whom do not have the transportation needed to reach the mall on their own.

Grace A. Dow Memorial Library

The Grace A. Dow Memorial Library serves as the primary public library for citizens of the City and County of Midland. The primary mission of any public library is to serve the educational needs of the general population, and as such, the creation of a GLBRTA bus stop by the library would provide easy access to a wider segment of the population. The Grace A. Dow Memorial Library would benefit by having increased visitors (and possibly increased patronage), while the community as a whole would benefit from the increased access to educational resources.

Horizons Conference Center

Conference centers generally act as multi-purpose, multi-use spaces that can play host to any number of different events and gatherings. These events often include a large number of visitors that travel from outside the immediate area. The creation of a GLBRTA bus stop at the Horizons Conference Center in Saginaw would allow more people in the area to attend events and conventions held there, but a line running from a hotel directly to the conference center would potentially draw more people from outside the area that do not have transportation.

Hoyt Library

The Hoyt Library serves as the primary public library for citizens of the City and County of Saginaw. The primary mission of any public library is to serve the educational needs of the general population, and as such, the creation of a GLBRTA bus stop by the library would provide easy access to a wider segment of the population. The Hoyt would benefit by having

increased visitors (and possibly increased patronage), while the community as a whole would benefit from the increased access to educational resources.

Midland Area Farmer's Market

Food Deserts are an increasing problem in many urban communities throughout the United States, particularly as obesity rates and the availability of cheap, processed food steadily climbs. The creation of a GLBRTA bus stop at the Midland Area Farmer's Market would give a much greater portion of the population access to fresh fruits and vegetables, something that many areas currently do not have. Additionally, there has been a general shift in demand for more locally-grown produce, and increasing access to the farmer's market could help fill that demand.

Midland Center for the Arts

The Midland Center for the Arts is an important cultural and historical landmark in the City of Midland that works to provide entertainment for residents of the Great Lakes Bay Region, as well as educate them through the historical museum on-site. It works to accomplish this through "two performance venues, two museums, art studios, lecture halls, a historical campus and more" (Midland Center for the Arts, 2014). As an educational and entertainment venue, the Midland Center for the Arts would benefit from more residents of the Great Lakes Bay Region visiting their facility. At the same time, the residents of the Great Lakes Bay Region would benefit from increased access to the educational and cultural resources the Midland Center for the Arts provides.

Midland Mall

Like any business, a mall requires visitors to remain competitive and profitable. The Midland Mall is located at the northern end of Midland, and is potentially too far for some residents of Midland who do not have access to a vehicle, and certainly out of reach for residents of Bay City and Saginaw who do not have reliable transportation. The Midland Mall would

likely benefit from the creation of a Great Lakes Bay Regional Transit Authority by potentially increasing the number of residents who have regular access to the mall.

Midland Resort and Conference Center

Conference centers generally act as multi-purpose, multi-use spaces that can play host to any number of different events and gatherings. These events often include a large number of visitors that travel from outside the immediate area. The creation of a GLBRTA bus stop at the Midland Resort and Conference Center would allow more people in the area to attend events and conventions held there, but a line running from a hotel directly to the conference center would potentially draw more people from outside the area that do not have transportation.

Saginaw Area Farmer's Market

Food Deserts are an increasing problem in many urban communities throughout the United States, particularly as obesity rates and the availability of cheap, processed food steadily climbs. The creation of a GLBRTA bus stop at the Saginaw Area Farmer's Market would give a much greater portion of the population access to fresh fruits and vegetables, something that many areas currently do not have. Additionally, there has been a general shift in demand for more locally-grown produce, and increasing access to the farmer's market could help fill that demand.

Saginaw Valley State University

Saginaw Valley State University is home to a large student body, many of whom have money to spend, but no transportation to popular economic centers like the Fashion Square Mall or the downtown areas of Saginaw and Bay City. The creation of a GLBRTA bus stop at Saginaw Valley State University would access an untapped demographic for many businesses throughout the area, while also increasing Saginaw Valley State University's appeal for incoming and potential students. Having access to a transportation system that can reliably get

them to major cultural and economic centers is the difference between going out and seeing the community, or spending the school year stuck on campus because of a lack of transportation.

Temple Theatre

The Temple Theatre is a major cultural attraction in downtown Saginaw, hosting concerts, shows, movies, and various other events. The Temple Theatre attracts a large number of people, but the creation of a GLBRTA bus stop outside the facility has the potential to bring people from all throughout the Great Lakes Bay Region that previously may not have been able or willing to travel there. An increase in the number of visitors will create an increase in revenue for the facility, and help ensure financial security for the future.

Possible Community Advocates

Saginaw/Bay City/Midland Area Chamber of Commerce

One of the primary missions of any Chamber of Commerce is to facilitate the creation of a good business environment that attracts new investment and entrepreneurs. This includes creating a community that is livable, engaging, and attractive to both new and current residents. Public transportation is one of the best ways to go about investing in a community to produce positive outcomes that are beneficial to individuals, business, and other organizations throughout the region. As A. Lee Blich, former President and CEO of the San Francisco Chamber of Commerce stated,

“If our transit system were to suddenly stop, our metropolitan transportation operation would grind to a halt. This would make it impossible for employees to get to work and for businesses to receive and ship goods. The metropolitan economy would eventually grind to a halt as well.” (The National Business Coalition for Rapid Transit, 2003, pg. 2)

This admission highlights the importance of public transit and transportation. And while the size and scope of the San Francisco transit system is rather different from the Great Lakes Bay Region's, the benefits to be gained from developing a strong public transit system are myriad. In addition to having clear economic benefits for areas that invest heavily in public transit, there are also personal benefits that affect the many lower-income and mobility-challenged households in the Great Lakes Bay Region (The National Business Coalition for Rapid Transit, 2003, pg. 5).

Saginaw Economic Development Corporation

Much like the Saginaw Chamber of Commerce, the Saginaw Economic Development Corporation (SEDC) has a primary goal of helping to “provide economic opportunities in the City of Saginaw for new and expanding businesses...” (Saginaw Economic Development Corporation, 2013). As such, the SEDC should have a vested interest in an effective and efficient public transit system throughout the Great Lakes Bay Region, due to the proven economic benefits that such systems provide. With the creation of a new transit system, the hub of which would be Saginaw and the surrounding areas, the Saginaw Economic Development Corporation can see a vast return on investment through increased business spending, increased traffic to Saginaw, and greater interconnectivity between the cities of the Great Lakes Bay Region (National Business Coalition for Rapid Transit, 2003, pg. 5).

Great Lakes Bay Regional Alliance

The Great Lakes Bay Regional Alliance developed through a mutual collaboration through groups representing Saginaw, Bay City, and Midland, which eventually expanded into Isabella County, the area immediately to the North of the Tri-Cities, as well as the Thumb region (The Great Lakes Bay Regional Alliance, 2013). The Great Lakes Bay Regional Alliance has several councils devoted to specific problems the Alliance wishes to address, and the

Communication and Branding Council could benefit greatly from a centralized Great Lakes Bay Regional Transit Authority. With the established goal of ensuring that the Great Lake Bay Region “brand” is properly and consistently used, as well as identifying opportunities to promote it, the Communication and Branding Council of the Great Lakes Bay Regional Alliance can be assured that the brand will actively reach every single individual who utilizes the Great Lakes Bay Regional Transit Authority. Each bus will act as a roaming brand presence that also provides for increased mobility, inter- and intra-city communication, and development within the Great Lakes Bay Region.

Morley Foundation

The Morley Foundation is a philanthropic, non-profit organization whose purpose is to responsibly invest resources and grant monies to legitimate needs in the areas of welfare, health, education, civic improvement and the humanities. The Foundation is exclusively for charitable, scientific, and educational purposes, in Michigan with major emphasis in Saginaw County (Morley Foundation, 2010). Infrastructure throughout the State of Michigan has been suffering for decades due to decreased revenue available for roads, bridges, parks, and other civic projects, and Saginaw is no exception. The establishment of a Great Lakes Bay Regional Transit Authority would be a good first step in reversing this trend of neglect that has been all too common throughout the region, and would do much toward improving the civic life of Saginaw County and the Great Lakes Bay Region as a whole.

Pride in Saginaw

"Positive Results in a Downtown Environment" (or PRIDE), is an organization of volunteers formed to develop and promote downtown Saginaw. The goals of PRIDE are to “attract new business to the downtown, encourage and support the existing business and professional community, and to improve and beautify the downtown environment” (PRIDE in

Saginaw, 2013). The Great Lakes Bay Regional Transit authority would do much toward improving and supporting local businesses by attracting new people from around the region to see local landmarks like the Castle Museum or the Temple Theater. This would also help boost the local economy and breathe new life into the downtown area, a goal that Pride in Saginaw has already been working toward.

Saginaw Community Foundation

The goal of the foundation is to help improve the quality of life for Saginaw County by serving as a community leader, supporting philanthropy in the community, helping individuals meet their charitable goals, and building permanent endowments (Saginaw Community Foundation, n.d.a). Some of the Saginaw Community Foundation’s primary tools for supporting positive change throughout the community are grants and scholarships. The grants support projects that are gearing toward “enhancing and preserving the quality of life in Saginaw County”, “Projects not adequately being served by existing community resources”, Projects providing leverage for generating other funds and community resources”, and “Projects facilitating cooperation and collaboration between organizations” (Saginaw Community Foundation, n.d.b). The Great Lakes Bay Regional Transit Authority meets and exceeds all of those criteria, by attempting to create a new transit system that coordinates a rather inefficient and ineffectual system already in place in order to improve the mobility of elderly and lower-income residents throughout the region, while also building interconnectivity between the cities in the region.

Bay Area Community Foundation

The Bay Area Community Foundation works with individuals, families, businesses and organizations to create permanent endowment funds that help our region meet the challenges of changing times. The Bay Area Community Foundation has an emphasis on both community

building and awarding grants that improve the quality of life throughout Bay City and the Great Lakes Bay Region. Specifically, the Bay Area Community Foundation likes to focus on making college available and affordable for first-generation students, providing scholarships and youth development resources, as well as investing in arts and culture, education and youth, the environment, health and wellness, human services, and recreation (Bay Area Community Foundation, 2008). The creation of a Great Lakes Bay Regional Transit Authority would directly or indirectly promote many of the stated goals of the foundation. A reliable transportation system that brings more people into the downtown areas can increase the number of people who frequent arts, culture, or recreational centers such as the Temple or State Theater, the Dow Event Center, or even the Dow Diamond. It can also reduce greenhouse gas emissions by taking cars off the road as people switch to more environmentally-friendly public transportation.

Midland Area Community Foundation

The Midland Area Community Foundation is focused on empowering individuals and organizations to change the community through philanthropy and positive action. They achieve this through grants and scholarships that allow individuals to invest in their community and serve “as a catalyst for collaboration and change by leading community dialogue and action on critical issues” (Midland Area Community Foundation, 2012). The Midland Area Community Foundation would be a perfect partner for the Great Lakes Bay Regional Transit Authority, and their grant money could go a long way toward kick starting economic investment in a centralized, collaborative transit system. This system would also help foster collaboration between the cities of the Great Lakes Bay Region, creating greater inter-connectivity and economic cooperation. This will help contribute to the creation a stronger overall region.

West Saginaw Civic Association

The West Saginaw Civic Association is a group of people dedicated to improving Saginaw’s west side. Their members are business owners, property owners, and managers of west Saginaw’s businesses and non-profits. (West Saginaw Civic Association, 2013).

Collectively, the members of the West Saginaw Civic Association would benefit greatly from the increased business spending and economic investment that accompanies greater financing of a public transit system. This would improve not only West Saginaw or Saginaw as a whole, but the entire Great Lakes Bay Region as well by stimulating economic activity and investment in a region that is chronically lacking in both.

Michigan Economic Development Corporation

According to the website, The Michigan Economic Development Corporation is “a public-private partnership serving as the state's marketing arm and lead agency for business, talent and jobs, tourism, film and digital incentives, arts and cultural grants, and overall economic growth” (About MEDC). The Michigan Economic Development Corporation has a number of community revitalization projects they are currently funding at the multi-million dollar level, all throughout the State. The creation of a centralized regional transit authority is entirely compatible with the stated goals of the MEDC, as the transit authority would help stimulate economic growth throughout the Michigan Great Lakes Bay Region, while also contributing to economic revitalization at the same time.

Midland Tomorrow

Midland Tomorrow is a private non-profit organization that serves Midland County, with the mission of enhancing “the quality of life for Midland County residents through the retention and creation of quality jobs and the diversification of the economic base” (About Midland Tomorrow). The Great Lakes Bay Regional Transit Authority would go far in supporting this

goal, helping improve mobility and economic opportunity for Midland residents, while also working toward improving the local and regional economy in the city.

Bay Future Incorporated

Bay Future is heavily involved in improving the economic and social conditions of Bay City. The mission put forth by Bay Future is “facilitating economic development strategies that promote and secure opportunities for business retention, growth, and the attraction of new industries that create quality jobs for community residents” (Bay Future, Inc. n.d.). The short and long-term benefits of the creation of this system would greatly benefit the attractiveness of Bay City to businesses and entrepreneurs, and would go far toward attracting new business to the region and retaining old ones.

APPENDIX B

Similarities among Transit Authorities

Fixed Routes

Bay METRO:	11 Fixed Routes
STARS:	12 Fixed Routes
Midland DART:	No.
Midland County Connection:	No.
<i>GLB RTA</i>	<i>32 Fixed Routes</i>
DDOT	48 Fixed Routes
SMART	43 Fixed Routes
CATA	30 Fixed Routes
The Rapid	27 Fixed Routes

Dial-A-Ride

Bay METRO:	Yes. (Seniors / Disabled)
STARS:	Yes. (Wheelchairs / Rural Service)
Midland DART:	Yes. (Primary Service)
Midland County Connection:	Yes. (Primary Service)
<i>GLB RTA</i>	<i>Yes. (Seniors / Disabled / Wheelchairs / Rural Service)</i>
DDOT	N/A

SMART	Yes.
CATA	Yes.
The Rapid	Yes. (Seniors / Disabled)

Rolling Stock

Bay METRO:	60 Vehicles
STARS:	83 Vehicles
Midland DART:	13 Vehicles
Midland County Connection:	N/A
<i>GLB RTA</i>	<i>156 Vehicles</i>
DDOT	825 Vehicles
SMART	593 Vehicles
CATA	213 Vehicles
The Rapid	198 Vehicles

Ridership

Bay METRO:	643,000
STARS:	1,000,000
Midland DART:	130,000
Midland County Connection:	71,000
<i>GLB RTA</i>	<i>1,844,000</i>
DDOT	36,500,000
SMART	13,140,000
CATA	11,900,000
The Rapid	12,000,000

Budget

Bay METRO:	\$8,000,000
STARS:	\$6,100,000
Midland DART:	\$1,600,000
Midland County Connection:	\$2,300,000
<i>GLB RTA</i>	<i>\$18,000,000</i>
DDOT	\$130,500,000
SMART	\$80,000,000
CATA	\$48,000,000
The Rapid	\$36,000,000

Fare

Bay METRO:	\$1.00
STARS:	\$1.25
Midland DART:	\$2.00
Midland County Connection:	\$3.00
<i>GLB RTA AVG</i>	<i>\$1.80</i>

DDOT	\$1.50
SMART	\$2.00
CATA	\$1.25 City Routes / \$2.50 Rural Routes
The Rapid	\$1.50

Transit Hours

Bay METRO (Runs every 45-minutes)

Monday - Friday: 6:40 a.m. to 5:35 p.m.

Saturday: 9:00 a.m. to 6:00 p.m.

STARS (Runs every 40-minutes)

Monday – Saturday: 6:00 a.m. to 8:00 p.m.

Midland DART (Dial-A-Ride)

Monday – Friday: 8:30 a.m. to 5:00 p.m.

Saturday: 8:30 a.m. to 1:00 p.m.

Midland County Connection (Dial-A-Ride)

Monday – Friday: 5:00 a.m. to 11:00 p.m. Saturday: 5:30 a.m.-9:30 a.m. / 2:30 p.m. - 6:30 p.m.

GLB RTA DAY SERVICE (Runs every 60-minutes)

Monday – Saturday: 6:00 a.m. – 8:00 p.m.

GLB RTA NIGHT SERVICE (Runs every 120-minutes—Limited Routes)

Monday – Saturday: 8:00 p.m. – 6:00 a.m.

Sunday: All Day

DDOT (Runs every 30-minutes)

Monday – Sunday: 4:00 a.m. to 1:00 a.m. (varies)

SMART

Monday – Sunday: 12:00 a.m. to 12:00 a.m. (varies)

CATA

Monday – Friday: 6:00 a.m. to 11:00 p.m. (varies)

Saturday: 7:00 a.m. to 11:30 p.m.

Sunday: 7:30 a.m. to 7:30 p.m.

The Rapid (Runs approximately every 30 minutes)

Monday – Friday: 5:30 a.m. to 12:30 a.m. (varies)

Saturday: 5:30 a.m. to 9:30 p.m.

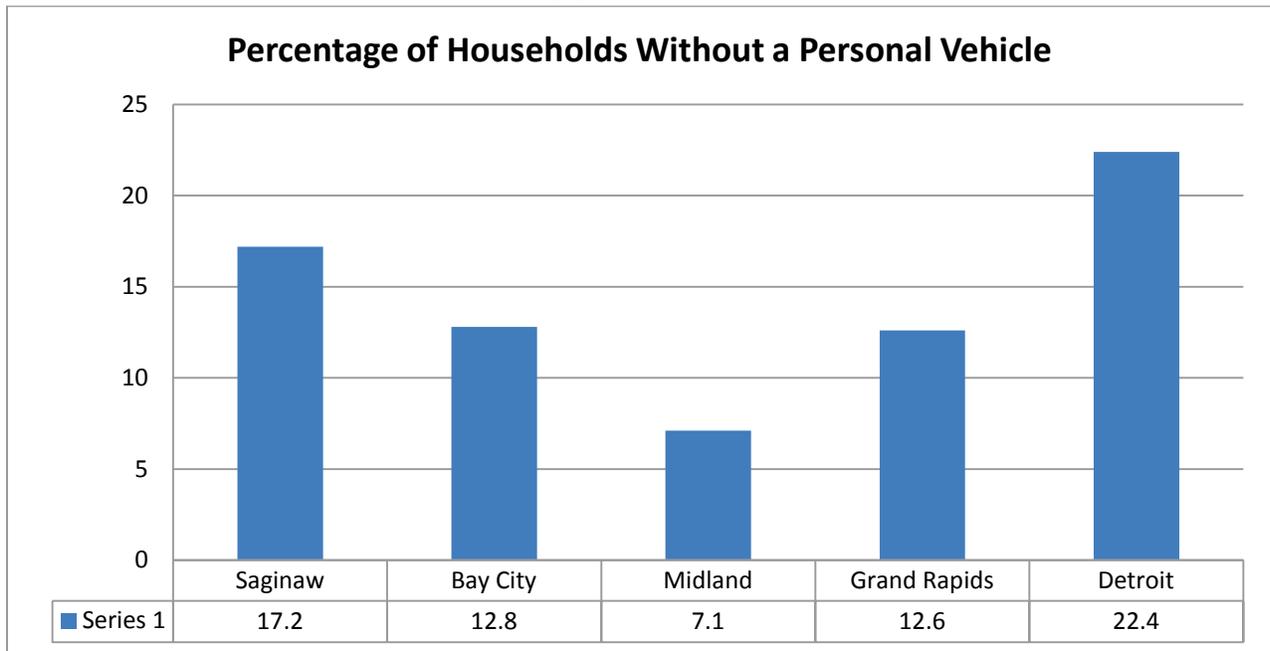
Sunday: 7:00 a.m. to 7:00 p.m.

Bike Racks

SMART

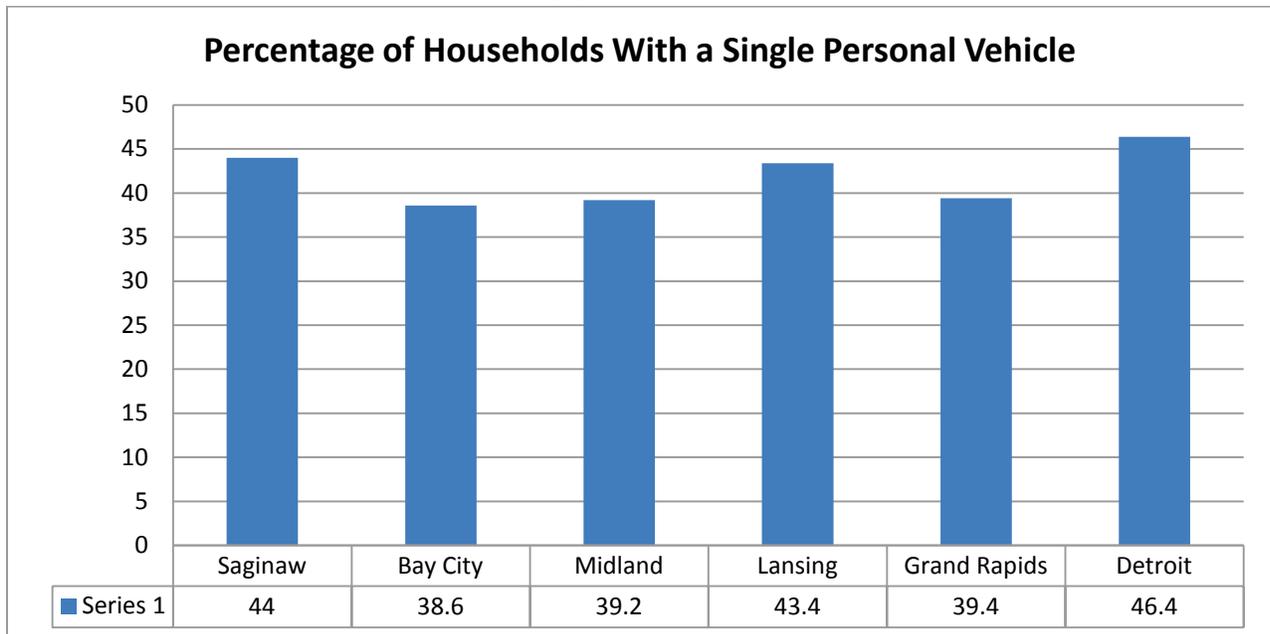
The Rapid
CATA

Appendix C



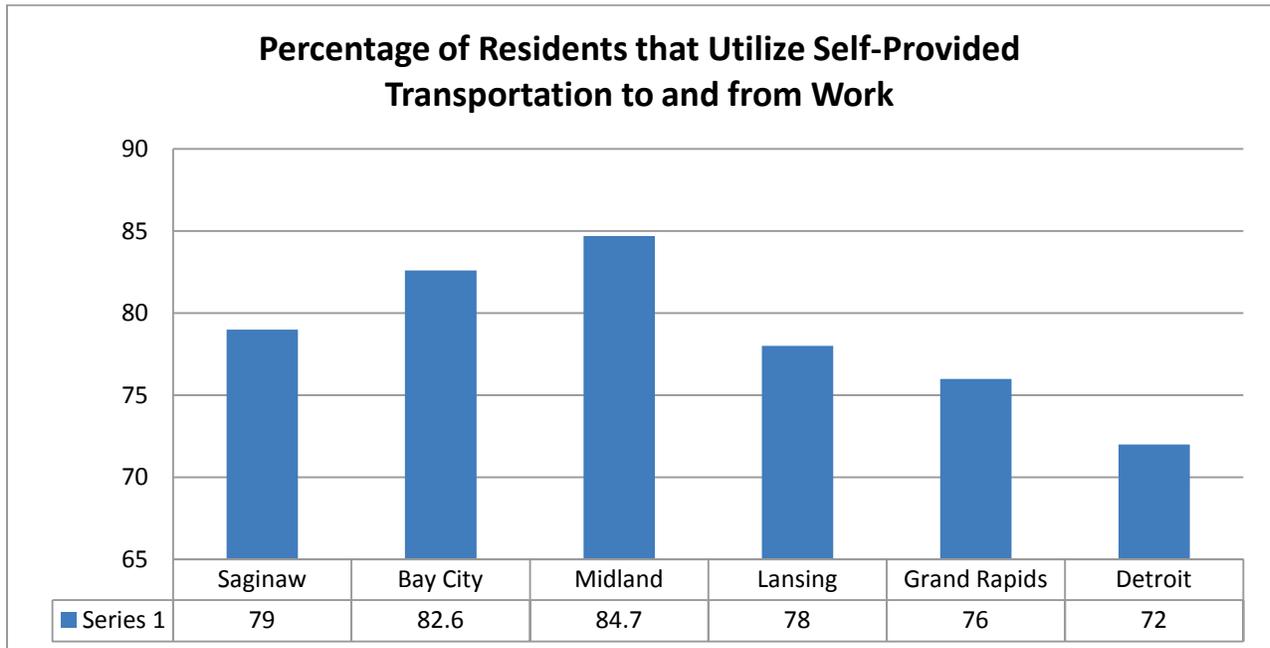
(US Census Bureau, 2011z; US Census Bureau, 2011c; US Census Bureau, 2011u; US Census Bureau, 2011k; US Census Bureau, 2011g).

Appendix D



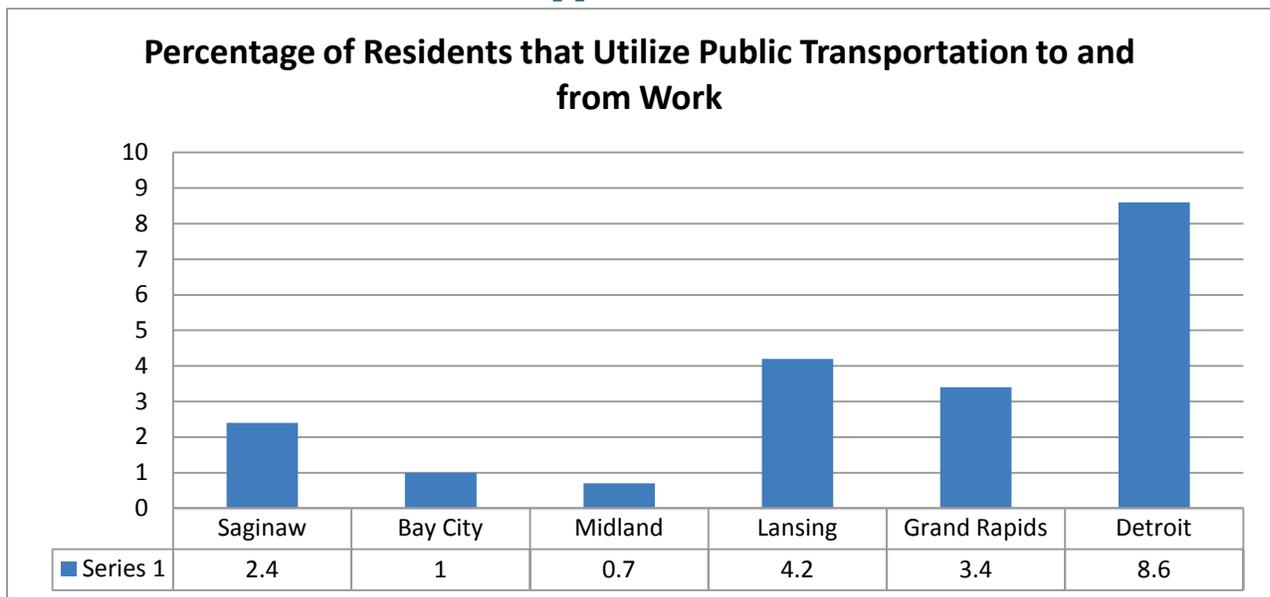
(US Census Bureau, 2011z; US Census Bureau, 2011c; US Census Bureau, 2011u; US Census Bureau, 2011p; US Census Bureau, 2011k; US Census Bureau, 2011g).

Appendix E



(US Census Bureau, 2011y; US Census Bureau, 2011b; US Census Bureau, 2011t; US Census Bureau, 2011p; US Census Bureau, 2011j; US Census Bureau, 2011f)

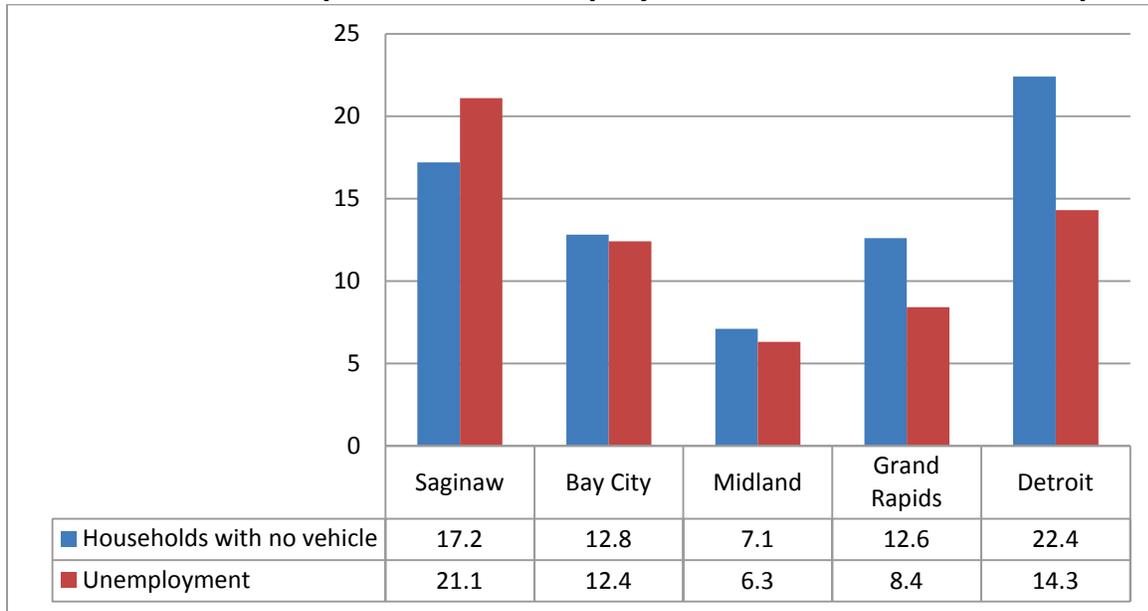
Appendix F



(US Census Bureau, 2011y; US Census Bureau, 2011b; US Census Bureau, 2011t; US Census Bureau, 2011p; US Census Bureau, 2011j; US Census Bureau, 2011f).

Appendix G

Relationship between Unemployment and Vehicle Ownership



(U.S. Census Bureau, 2011z; U.S. Census Bureau, 2011c; U.S. Census Bureau, 2011u; U.S. Census Bureau, 2011k; U.S. Census Bureau, 2011g; U.S. Census Bureau, 2011y; U.S. Census Bureau, 2011b; U.S. Census Bureau, 2011t; U.S. Census Bureau, 2011j; U.S. Census Bureau, 2011f).

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