Regional Master Transit Plan

State of the System and Transit Market Analysis Report

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1 Overview

Southeast Michigan is a large and complex region. The Regional Transit Authority of Southeast Michigan (RTA) was established by the Michigan Legislature in 2012 to coordinate transit investments and service within four of those counties – Wayne, Macomb, Oakland, and Washtenaw. Spanning over 2,600 square miles, the RTA area includes over 4 million residents and nearly 1.9 million jobs. The economic base of southeast Michigan has historically revolved around automotive manufacturing; in recent years, the region's economy has diversified as well as shifted across the four-county geographical region.

Four transit systems currently provide service in southeast Michigan: the Ann Arbor Area Transportation Authority (AAATA a.k.a. TheRide), the Detroit Department of Transportation (DDOT), the Detroit Transportation Corporation (DTC aka The People Mover), and the Suburban Mobility Authority for Regional Transportation (SMART). As shown in Figure 1-1, these services cover a portion of the larger metropolitan area. Over the next 25 years, regional economic patterns will continue to change and shift, producing new demands for transit service.

This report provides foundational information from which to craft a regional transit strategy for southeast Michigan, beginning with an assessment of current transit services and planned improvements; an analysis of underlying demand for quality transit connections; and an evaluation of how well existing systems match underlying demand both now and through 2040.

The information provided is a snapshot in time reflecting conditions as of June 2015 (unless otherwise noted). The region is dynamic. Transit service and productivity and growth forecasts for the region continue to improve as the economic recovery continues.

The Regional Transit Authority requires this information in order to understand and assess current services and the ability to successfully meet demand for transit across Wayne, Washtenaw, Oakland, and Macomb counties. This information will assist the RTA in its service planning initiatives and equip residents and stakeholders of the region with the information necessary to determine the value of and need for transit for a competitive and economically successful region.

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FIGURE 1-1 EXISTING TRANSIT SERVICE IN SOUTHEAST MICHIGAN



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2 Existing Services

Existing transit services in southeast Michigan are provided by a network of fixed routes providing scheduled service to the region; paratransit and demand-response services for persons with disabilities and seniors unable to utilize regular transit services, and/or where fixed-route service is not practical; and a number of privately provided shuttles primarily servicing limited locations in downtown and midtown Detroit and private transit operators providing city-to-city connections. Transit service is supported by sidewalks, paths, and bicycle facilities that provide the critical first and last mile connections to and from transit services.

This chapter lays out the services, operations, and financial support for existing public transit services as well as providing a brief overview of private transit services in the region and the supportive non-motorized network that connects transit systems to users' final destinations. It captures planned improvements across all systems and stated user perceptions, preferences, and desires and concludes with the collective performance of transit services across the RTA region.

Existing General Public Transit Services

Southeast Michigan is currently served by four separate and distinct transit providers. Three of
operate within or provide connections to the City of Detroit, while the fourth – Ann Arbor Area
Authority (AAATA) – presently has no integrated service with the larger region (

Figure 2-1):

- The Detroit Department of Transportation (DDOT) serves the cities of Detroit, Hamtramck, and Highland Park, as well as some limited service to parts of surrounding communities.
- The Detroit Transportation Corporation (DTC) operates the downtown People Mover.
- The Suburban Mobility Authority for Regional Transit (SMART) serves suburban Detroit communities, and operates some service to and from Detroit
- The Ann Arbor Area Transit Authority (AAATA) serves the Ann Arbor and Ypsilanti area.

Together, these transit providers operate 107 fixed transit routes that serve 156,000 passengers per weekday (see Table 2-1). With the exception of the People Mover and paratransit, transit in the region is traditional fixed-route bus service. Additionally, SMART operates a fleet of 107 demand-response small buses to provide service in member communities to complement fixed-route service, and SMART acquires small buses and vans and provides support to community-based transit services operated by municipalities and other agencies for local trips.

TABLE 2-1 OPERATING STATISTICS

| | DDOT | SMART | ΑΑΑΤΑ | DTC |
|---|------------|------------|-----------|-----------|
| Service Area Population | 713,777 | 3,734,090 | 212,492 | 92,477 |
| Service Area Population/Percentage of the Total -County Population (4.2 million) | 17% | 89% | 5% | 2% |
| Service Area (Square Miles) | 144 | 1,074 | 81 | 3 |
| Service Area/Percentage of the Total 4-County Service Area (2,757 sq. mi) | 5% | 39% | 3% | .1% |
| Service area pop. density (pop./sq. mile) | 4,953 | 3,477 | 2,623 | 30,826 |
| Annual Operating Budget ¹ | \$138.2 M | \$110.7 M | \$37.2 M | \$11.9 M |
| Routes | 35 | 43 | 28 | 1 |
| Fleet size | 366 | 235 | 78 | 12 |
| Vehicle Service Hours (Annual) | 1,449,926 | 740,113 | 309,373 | 50,373 |
| Ridership (Annual) | 31,181,285 | 10,114,794 | 6,760,881 | 2,331,655 |
| Ridership (Average Weekday) | 90,701 | 34,041 | 26,778 | 5,134 |
| Operating Cost per Passenger | \$3.68 | \$7.88 | \$3.69 | \$5.03 |
| Full Adult Fare | \$1.50 | \$2.00 | \$1.50 | \$0.75 |
| Farebox Recovery | 15% | 13% | 19% | 11% |

Source: National Transit Database 2013; transit providers

This section records the general characteristics and services of each of the four public transit providers, including:

- Service types: describes the different types of services provided by the systems. This includes
 fixed-route services, distinguished by their function in the system or route characteristics, as well
 as demand-responsive or flexible route services provided by the systems. Demand-response
 services are described in greater detail in the paratransit section, including both complementary
 ADA paratransit mandated by federal regulations as well as other demand-response service
 provided.
- Service characteristics: Characteristics assessed include service coverage both geographically and temporally; days of service, frequency of service, and hours during which service is operated (span of service).

¹ Budget numbers are shown for FY15, while all other numbers in the table are from FY13, the most recent data available from NTD.

- Ridership and productivity: these metrics capture both the number of people served, general indicators of quality of service (such as on-time performance), as well as the general financial efficiency with which these services are provided.
- System operations: these sections capture the various fare structures, maintenance facilities, fleet conditions, operating budgets, and general sources of operating funds.
- Planned improvements: The four systems continue to make investments in service and equipment improvements. Funded improvements are outlined as imminent factors in service planning.



FIGURE 2-1 EXISTING FIXED-ROUTE TRANSIT SERVICES IN THE RTA REGION BY PROVIDER

ANN ARBOR AREA TRANSIT AUTHORITY (AAATA)

The Ann Arbor Area Transportation Authority (AAATA) provides public transit service for the City of Ann Arbor, the City of Ypsilanti, and Ypsilanti Township, and contracts service with the townships of Superior and Pittsfield. Additionally, AAATA operates express commuter transit service to the communities of Canton and Chelsea and contracts for service to Detroit Metro airport (AirRide) through a partnership with the Michigan Flyer.

Service Types

As of June 2015, AAATA provides five main types of bus service in the greater Ann Arbor-Ypsilanti area (see Figure 2-2):

- **Fixed Routes** that provide services on 25 routes in Ann Arbor, Ypsilanti, Pittsfield Township, Superior Township, and Ypsilanti Township.
- **Express Routes** that provide two services that run non-stop from the Canton and Chelsea areas to downtown Ann Arbor and the University of Michigan Central and Medical campuses.
- AirRide service that operates between Ann Arbor and Detroit Metropolitan Airport.
- **Event Shuttle Services** are provided to thousands of people a year attending events such as University of Michigan home football games and the annual Art Fair in July.
- **NightRide** service, which provides curb-to-curb taxi service within the City of Ann Arbor and east to downtown Ypsilanti on weekdays from midnight to 6 AM, on Saturdays from 8 PM to 7:30 AM, and on Sundays from 7 PM to 7:30 AM, which are generally the hours that AAAT's fixed-route services do not operate.

AAATA's paratransit service is called A-Ride and provides service anywhere within AAATA's service area. This service operates during the same hours as fixed-route service.

TheRide also operates weekly bus trips for residents of several Ann Arbor senior housing communities to local grocery stores every Tuesday, provided that the senior community has a minimum of five individuals riding. Additionally TheRide provides curb-to-curb services during late-night hours and on major holidays when fixed-route, Express, and A-Ride services do not operate.

FIGURE 2-2 AAATA SYSTEM MAP



Service Characteristics

Coverage and Days of Service

On weekdays, TheRide provides service on 28 routes – 25 local routes, two express routes, and AirRide service. Nineteen of these routes also operate on Saturdays, and 13 operate on Sundays (see Figure 2-3 and Table 2-2).

On weekdays, service coverage is fairly comprehensive within Ann Arbor. However, service into areas east to Ypsilanti becomes a little more limited to the main corridors of North Huron Drive, Cross Street, Washtenaw Avenue, Packard and Ellsworth Road. Improvements are planned through AAATA's 5-Year Transit Improvement Program, including some additional service during 2015.



FIGURE 2-3 AAATA DAYS OF SERVICE (JUNE 2015)

Service Frequencies

On weekdays during peak periods, three routes operate every 15 minutes or less, 13 operate every 16 to 30 minutes, six provide service every 31 to 60 minutes, and the remainder provide peak period only service (see Figure 2-4).

| | | | Wee | kday | | | Saturday | | Sunday | | |
|------------|--|---------------|----------------------|-----------|--------|---------|---------------------|-----------|-----------------------|-----------|--|
| | | | Service | | | | | Service | | Service | |
| | | Service | Span of Service* | Frequency | | су | Span of Service* | Frequency | cy Span of Service* F | Frequency | |
| Route | | Туре | | Peak | Midday | Evening | | All Day | | All Day | |
| 1 | Pontiac | Fixed | 6:22 a.m 11:18 p.m. | 30 | 30 | 60 | 7:52 a.m 7:18 p.m. | 60 | 8:18 a.m 6:35 p.m. | 60 | |
| 1U | Pontiac University | Fixed | 6:59 a.m 5:51 p.m. | 35-40 | - | - | - | - | - | - | |
| 2 | Plymouth | Fixed | 6:19 a.m 11:18 p.m. | 20 | 30 | 30 | 8:13 a.m 6:48 p.m. | 60 | 8:48 a.m 5:48 p.m. | 60 | |
| 3 | Huron River | Fixed | 6:30 a.m 9:48 p.m. | 30 | 30 | 60 | - | - | - | - | |
| 4 | Washtenaw | Fixed | 6:08 a.m 11:48 p.m. | 5-10 | 10-20 | 30 | 7:30 a.m 6:48 p.m. | 30 | 8:10 a.m 5:48 p.m. | 60 | |
| 5 | Packard | Fixed | 6:10 a.m 11:18 p.m. | 7-15 | 15 | 60 | 8:30 a.m 6:48 p.m. | 60 | 8:48 a.m 5:48 p.m. | 60 | |
| 6 | Ellsworth | Fixed | 6:28 a.m 10:48 p.m. | 30 | 30 | 60 | 8:25 a.m 6:30 p.m. | 30-60 | 9:00 a.m 6:18 p.m. | 60 | |
| 7 | S. Main - East | Fixed | 6:05 a.m 11:06 p.m. | 30 | 30 | 60 | 8:00 a.m 7:00 p.m. | 60 | 8:18 a.m 5:52 p.m. | 60 | |
| 8 | Pauline | Fixed | 6:11 a.m 11:18 p.m. | 15 | 30 | 60 | 8:18 a.m 6:18 p.m. | 30-60 | 8:18 a.m 5:18 p.m. | 60 | |
| 9 | Jackson | Fixed | 6:25 a.m 10:48 p.m. | 30 | 30 | 60 | 7:55 a.m 6:18 p.m. | 30-60 | 7:55 a.m 5:48 p.m. | 60 | |
| 609 | Jackson University | Fixed | 6:30 a.m 5:42 p.m. | 30 | - | - | - | - | - | - | |
| 10 | Ypsilanti Northeast | Fixed | 6:02 a.m 10:15 p.m. | 60 | 60 | 60 | 7:15 a.m 7:15 p.m. | 60 | - | - | |
| 11 | Ypsilanti South | Fixed | 6:00 a.m 11:00 p.m. | 60 | 60 | 60 | 8:00 a.m 7:00 p.m. | 60 | - | - | |
| 12UM | Miller University | Fixed | | | | | | | | | |
| 13 | Newport | Fixed | 6:48 a.m 8:18 p.m. | 30 | 60 | 60 | 8:18 a.m 6:18 p.m. | 60 | - | - | |
| 14 | Geddes - E. Stadium | Fixed | 6:36 a.m 7:20 p.m. | 30 | 30 | - | 9:00 a.m 5:00 p.m. | 40 | - | - | |
| 15 | Scio Church - W. Stadium | Fixed | 6:48 a.m 10:48 p.m. | 30 | 60 | 60 | 8:48 a.m 6:48 p.m. | 60 | 8:48 a.m 5:48 p.m. | 60 | |
| 16 | Ann Arbor - Saline Rd. | Fixed | 6:18 a.m 11:03 p.m. | 30 | 30 | 60 | 8:03 a.m 7:03 p.m. | 60 | 9:03 a.m 6:03 p.m. | 60 | |
| 17 | Amtrak - Depot | Fixed | 6:48 a.m 11:48 p.m. | 30 | 30 | 60 | 8:48 a.m 6:48 p.m. | 60 | 9:48 a.m 5:48 p.m. | 60 | |
| 18 | Miller-University | Fixed | 6:22 a.m 6:43 p.m. | 20-26 | 30 | - | - | - | - | - | |
| 20 | Ypsilanti Grove - Ecorse | Fixed | 6:21 a.m 9:30 p.m. | 60 | 60 | 60 | 7:30 a.m 6:30 p.m. | 60 | - | - | |
| 22 | North - South Connector | Fixed | 6:30 a.m 11:25 p.m. | 30 | 30 | 60 | 8:15 a.m 6:42 p.m. | 60 | - | - | |
| 34 | EMU West Campus Shuttle | Fixed | | | | | | | | | |
| 60 | LINK | Fixed | | | | | | | | | |
| 46 | Huron - Textile | Fixed | 6:15 a.m 10:15 p.m. | 60 | 60 | 60 | 8:15 a.m 6:15 p.m. | 60 | 9:15 a.m 6:15 p.m. | 60 | |
| SR | Senior Ride | Event Shuttle | Special Event | | | | Special Event | | Special Event | | |
| FR | Football Ride | Event Shuttle | Special Event | | | | Special Event | | Special Event | | |
| AFS | Art Fair Shuttle | Event Shuttle | Special Event | | | | Special Event | | Special Event | | |
| 710 | Chelsea | Express | 6:08 a.m 4:14 p.m. 2 | 2 Trips | - | - | - | - | - | - | |
| 711 | Canton | Express | 6:00 a.m 4:19 p.m. 2 | 2 Trips | - | - | - | - | - | - | |
| 787 | AirRide | Airport | 3:55 a.m 10:15 p.m. | 60 | 60-90 | 60-105 | 3:55 a.m 10:15 p.m. | 60-105 | 3:55 a.m 10:15 p.m. | 60-105 | |
| *Span of s | ervice measured by starting time of first and last trip of the day | | | | | | | | | | |

TABLE 2-2 AAATA SERVICE CHARACTERISTICS (JUNE 2015)

During the midday, two routes operate as frequently as every 15 minutes, 12 operate every 30 minutes, six operate every 60 minutes, and AirRide service operates every 60 to 90 minutes. In the evening, two routes provide service that is more frequent than every 60 minutes, and those two routes operate every 30 minutes.

On weekends, two routes operate every 30 minutes and AirRide service operates every 60 to 105 minutes. All other routes operate every 60 minutes.



FIGURE 2-4 AAATA SERVICE FREQUENCIES

Span of Service

With the exception of AirRide service, which begins service at 3:55 AM, all AAATA weekday fixed-route service starts between 6 and 7 AM (see Table 2-2). This is approximately an hour later than the start times for most DDOT and SMART routes. However, a greater proportion of service operates later. Sixteen of 22 all day routes operate until at least 10 PM, and 10 operate past 11 PM. Four routes end service before 8 PM.

Weekend spans, however, are much shorter. On Saturdays, and again with the exception of AirRide, service begins between 7 and 9 AM and ends shortly after 7 PM. Sunday's spans are shorter, with all service except AirRide beginning after 8 AM and ending by 6:30 PM.

Overall, and relative to DDOT and SMART, AAATA's weekday service starts later but also ends later. Like DDOT, AAATA focuses much more heavily on weekday service than on weekend service, to the extent that nighttime weekend service is not provided.

Ridership and Productivity

Ridership and Productivity

AAATA operates six routes that carry more than 1,000 passengers on weekdays (see Table 2-3). The highest ridership route – 4 Washtenaw service – averages 5,100 passengers per day followed by 2 Plymouth service, with 3,350 passengers per day.

Nine fixed routes carry between 500 and 1,000 passengers. Thirteen routes carry fewer than 500 passengers per day, including two express routes and one airport service route. Many of the lower ridership fixed routes are geared towards university and shuttle type services. Across nearly all routes, passenger volumes decrease on weekends by one-third to one-half of weekday levels. The exception is 22 North-South Connector service, which connects the two main campus of UM and is popular among students who typically use transit during non-traditional periods.

In terms of productivity, seven routes carry more than 25 passengers per trip on weekdays, five carry 20 to 25 passengers per trip and five carry 15 to 20, and the balance carry fewer than 15 passengers per trip. Overall, the system averages 20.7 passengers per trip on weekdays. This number drops to 10.4 passengers per day on weekends. Passengers per revenue vehicle hour average 32.5 on weekdays and 15.9 on weekends.

<u>Reliability</u>

AAATA's on-time performance of 88% fluctuated very little in 2014, ranging from 83% to 91% (see Figure 2-5). This is a very minor drop from fiscal year 2013, which saw an 89% on-time performance rate.



FIGURE 2-5 AAATA ON-TIME PERFORMANCE

On-time performance data was also available on a per route basis. On weekdays, on-time performance by route ranges from a low of 61% on-time operations to a high of 98%. The system overall maintains approximately an 81% on-time performance on weekdays. Weekends perform at a very similar level, with a range of 61% to 93%, and also averaging 81% as a system (see Table 2-3). Transit agency on-time performance is often affected by external factors, such as detours due to construction and special event traffic.

System Performance Trends

AAATA has seen a steady growth in ridership over the past decade rising from about 4.4 million riders in 2004 to nearly 6.8 million in 2013 – an increase of over 50%. The recently approved millage increase (2014) will increase and expand AAATA service and is expected to further increase ridership.



FIGURE 2-6 AAATA ANNUAL RIDERSHIP 10-YEAR TREND

AAATA's annual revenue vehicle hours, at just over 300,000 in 2013, have been steady over the past decade, peaking in 2012 at 315,000 (see Figure 2-7). The numbers of vehicles operated in peak service have increased by 10 over the last decade – an 18% increase – due to higher ridership demand (see Figure 2-8).



FIGURE 2-7 AAATA ANNUAL REVENUE VEHICLE HOURS 10-YEAR TREND



FIGURE 2-8 AAATA PEAK VEHICLES OPERATED 10-YEAR TREND

| 4 | Service Stat | istics and Proc | ductivity | | | | | | | | | | | |
|---------------------------|----------------------------------|-------------------|---------------------------------|------------------------------------|--|--------------------------------------|---------|---------------------------------|------------------------------------|--|------------------------------|------------------|--|--|
| | | | | Wee | ekday | | | Weekend | | | | | | |
| Route | Aame | Service Type | Average Daily Ridership Rank | Average Ridership per Trip Rank | Passengers per Revenue Vehicle Hour Rank | Net Operating Cost per Rider Rank | On-Time | Average Daily Ridership Rank | Average Ridership per Trip Rank | Passengers per Revenue Vehicle Hour Rank | Net Operating Cost per Rider | Kalik On-Time | | |
| | | | RIDERS | PAX/TRIP | PAX/RVH | COST/PAX | | RIDERS | PAX/TRIP | PAX/RVH | COST/PAX | | | |
| 1 | Pontiac | Fixed | 1,096 8 | 18.6 14 | 24.6 19 | \$3.95 11 | 91% | 218 | 7.8 11 | 8.2 15 | \$11.91 6 | 88% | | |
| 10 | Pontiac University | Fixed | 102 27 | 12.8 20 | 22.2 23 | \$4.38 6 | 69% | - | - | - | - | - | | |
| 2 | Plymouth | Fixed | 3,350 2 | 21.6 11 | 36.8 11 | \$2.64 18 | 88% | 653 4 | 12.8 4 | 25.6 3 | \$3.79 18 | 75% | | |
| 3 | Huron River | Fixed | 1,371 6 | 24.5 8 | 32.7 12 | \$2.97 17 | 84% | | | - | - | - | | |
| 4 | Washtenaw | Fixed | 5,139 | 31.7 4 | 42.7 5 | \$2.27 24 | 81% | 1,298 | 20.3 2 | 27.1 2 | \$3.59 19 | 70% | | |
| 5 | Packard | Fixed | 2,168 4 | 17.5 15 | 27.2 16 | \$3.58 14 | 66% | 422 5 | 10.3 6 | 16.3 7 | \$5.98 14 | 61% | | |
| 6 | Ellsworth | Fixed | 2,310 3 | 38.5 1 | 39.8 9 | \$2.44 20 | 77% | 875 2 | 15.9 3 | 18.9 4 | \$5.13 17 | 83% | | |
| 7 | S. Main - East | Fixed | 1,338 7 | 21.9 10 | 23.7 20 | \$4.10 10 | 90% | 346 7 | 7.5 13 | 12.7 9 | \$7.64 12 | 69% | | |
| 8 | Pauline | Fixed | 930 9 | 23.8 9 | 48.9 3 | \$1.99 26 | 91% | 227 9 | 8.4 8 | 17.0 5 | \$5.72 16 | 62% | | |
| 9 | Jackson | Fixed | 578 14 | 19.3 13 | 38.9 10 | \$2.50 19 | 75% | 226 10 | 8.1 10 | 16.5 6 | \$5.88 15 | 75% | | |
| 10 | Ypsilanti Northeast | Fixed | 679 ¹³ | 37.7 2 | 51.4 2 | \$1.89 27 | 73% | 149 13 | 11.5 5 | 15.5 8 | \$6.28 13 | 91% | | |
| 11 | Ypsilanti South | Fixed | 373 18 | 20.7 12 | 41.5 7 | \$2.34 22 | 88% | 74 17 | 6.2 14 | 12.3 10 | \$7.88 11 | 88% | | |
| 12A/B | Miller Liberty | Fixed | 831 10 | 14.3 18 | 29.3 14 | \$3.32 15 | 79% | 268 8 | 6.1 15 | 12.2 11 | \$7.94 10 | 83% | | |
| 13 | Newport | Fixed | 172 24 | 8.6 26 | 17.5 25 | \$5.57 4 | 91% | 30 19 | 2.7 18 | 5.5 18 | \$17.82 3 | 89% | | |
| 14 | Geddes - E. Stadium | Fixed | 184 23 | 7.7 27 | 23.4 21 | \$4.15 9 | 61% | 13 20 | 0.5 20 | 1.6 20 | \$62.35 | 88% | | |
| 15 | Scio Church - W. Stadium | Fixed | 279 19 | 12.7 21 | 25.4 17 | \$3.82 12 | 80% | 120 14 | 5.7 16 | 11.5 12 | \$8.46 9 | 74% | | |
| 16 | Ann Arbor - Saline Rd. | Fixed | 530 17 | 17.1 16 | 23.4 22 | \$4.15 8 | 88% | 182 12 | 8.3 9 | 11.1 14 | \$8.76 7 | 92% | | |
| 17 | Amtrak - Depot | Fixed | 80 28 | 2.6 28 | 10.3 27 | \$9.44 2 | 91% | 31 18 | 1.6 19 | 6.2 17 | \$15.67 4 | 90% | | |
| 18 | Miller-University | Fixed | 577 15 | 9.9 24 | 30.2 13 | \$3.21 16 | 84% | - | - | - | - | - | | |
| 20 | Ypsilanti Grove - Ecorse | Fixed | 576 ¹⁶ | 33.9 ³ | 46.5 4 | \$2.09 25 | 79% | 102 15 | 8.5 7 | 11.3 13 | \$8.58 8 | 89% | | |
| 22 | North - South Connector | Fixed | 723 12 | 12.1 22 | 17.5 24 | \$5.56 5 | 61% | 712 3 | 32.4 | 49.4 | \$1.97 20 | 65% | | |
| 33 | EMU College of Business Shuttle | Fixed | 742 11 | 16.9 17 | 54.6 | \$1.78 28 | 98% | - | - | - | - | - | | |
| 36 | Wolverine Tower Shuttle | Fixed | 1,747 5 | 26.1 7 | 42.1 6 | \$2.31 23 | 83% | - | - | - | - | - | | |
| 46 | Huron - Textile | Fixed | 187 22 | 11.0 23 | 10.9 26 | \$8.93 3 | 90% | 78 16 | 3.7 17 | 3.7 19 | \$26.16 2 | 93% | | |
| 609 | Jackson University | Fixed | 263 20 | 13.9 19 | 40.4 8 | \$2.41 21 | 58% | - | - | - | - | - | | |
| 710 | Chelsea | Express | 111 25 | 27.7 5 | 28.8 15 | \$3.76 13 | 90% | - | - | - | - | - | | |
| 711 | Canton | Express | 107 26 | 26.7 6 | 24.9 18 | \$4.35 7 | 78% | - | - | - | - | - | | |
| 787 | AirRide | Airport | 238 21 | 9.2 25 | 9.7 28 | \$11.17 | 88% | 397 6 | 7.6 12 | 8.1 16 | \$13.39 5 | 88% | | |
| System | Total/Avg | | 26,778 | 20.7 | 32.5 | \$3.33 | 81% | 6,421 | 10.4 | 15.9 | \$6.80 | 81% | | |
| • All co | sts shown are based on fully all | located cost per | revenue hour (Bus | : \$119.98 / Cor | mmuter Bus: \$1 | 33.71 for NTD 2 | 2013) | | | | | | | |
| • Produ | ctivity data from October, 2014 | | | | | | | | | | | | | |
| Fareb | ox Recovery Rate based on sys | stemwide figure f | rom NTD 2013 | | | | | | | | | | | |

TABLE 2-3 AAATA RIDERSHIP AND PRODUCTIVITY

Fares

AAATA's full adult fixed-route fare is \$1.50 with free transfers valid for 90 minutes from issue. Express ride fares are \$6.25 per ride. Reduced fares are available for seniors, youths, and children under 5 ride for free.

AAATA also offers pass programs such as:

- Through a contractual agreement between the University and AAATA, **MRide** which provides service funded by University of Michigan for students and staff
- **EMU 30-day Pass** provides a 30% discount funded by Eastern Michigan University for EMU students, faculty, and staff.
- **Washtenaw Community Colleg**e covers the fare cost for eligible students and staff at WCC designated stops.
- The **go!Pass** is featured in the getDowntown program and is funded by the Ann Arbor Downtown Development Authority for employees of participating employers in downtown Ann Arbor.

Transit Facilities

AAATA's passenger facilities consist of major transit centers, Park & Ride lots, and bus stops, as follows:

Blake Transit Center

The new Blake Transit Center opened in 2014 on Fifth Avenue in downtown Ann Arbor. The fully ADAaccessible two-story facility includes restrooms, bicycle parking, a waiting lobby, and sales locations for fares and passes. The building also includes offices, conference rooms, and a number of environmental features which earned a LEED Gold status for the facility.

Ypsilanti Transit Center

The Ypsilanti Transit Center includes restrooms and a small indoor waiting area. There are plans to upgrade the facility.

Central Campus Transit Center

The CCTC opened in 2010, and is shared with the University of Michigan transportation system in a partnership.

Park & Ride Lots

There are five Park & Ride lots with a total of more than 1,000 spaces. These lots are maintained in partnership with the University of Michigan, MDOT, and Ann Arbor Public Schools.

Bus Stops

AAATA has over 1,200 bus stops, with bus shelters at 80 stops.

Fleet

AAATA operates a fleet of 82 buses, with 70 buses needed for peak service, which is therefore a spare ratio of 17%. There are also six additional buses that are maintained for emergency contingencies only. The active fleet has an average age of 7.4 years.

Operating Budget

AAATA's FY 2015 operating budget is \$38.7 million. This is the first fiscal year the 0.7 mil Transit Improvement Millage was in effect and represents a \$4.7 million increase over FY 2014 and over \$18 million in additional transit investment over FY 2004 levels.

Important sources of funding are local millages² (35%), state funding (28%), and federal funding (16%), and fares (16%). The balance is funded through purchase of service agreements and other revenue sources. AAATA's overall operating budget has steadily increased over the years, largely due to the increase in the local funds share after the expansion of service communities, as well as increasing property values and millages (see Figure 2-9).



FIGURE 2-9 AAATA ANNUAL OPERATING BUDGET 10-YEAR TREND

Recent and Future Changes

In May 2014, voters in Ann Arbor, Pittsfield, and Ypsilanti voted overwhelmingly in favor of a 0.7 mil increase over their existing 2.0 (Ann Arbor) or 1.0 (Ypsilanti) mil assessment. The vote was successful in large part because of the specific and detailed enumeration of the improvements the service area would enjoy as a result of the additional \$4.4 million in new annual revenues.

These improvements will be phased in over the five-year period of the millage and include:

² 2.0 mill and 0.98 mill are levied on the cities of Ann Arbor and Ypsilanti respectively. The May 2014 millage approved an additional 0.7 mill Transit Improvement Millage that went into effect July 1, 2014 and included Ypsilanti Township.

- Over 90,000 additional fixed-route bus service hours and 44% more fixed-route service
- Expanded hours of service, extended evening hours and increased weekend service
- Increased bus frequencies
- The introduction of three new routes (Route 46 Huron-Textile in Ypsilanti, Route 67 Platt-Michigan Avenue to Saline, and Route 41 EMU-Depot Town in Ypsilanti) and redesign of several existing routes
- Improved bus stops and amenities
- Additional Park & Ride facilities
- Expanded dial-a-ride services

DETROIT DEPARTMENT OF TRANSPORTATION (DDOT) SERVICES

As of June 2015, the Detroit Department of Transportation (DDOT) operates transit service within Detroit, Hamtramck, and Highland Park, as well as some limited service to surrounding communities in Wayne, Oakland, and Macomb counties. It is the largest of the four systems, provides service on 35 routes, and serves 90,000 passengers per weekday.

Service Types

This report classifies DDOT's fixed-route service into three types of routes, which are categorized as Mainline, Downtown, and Feeder (see Figure 2-10):

- Major corridor DDOT operates eight major corridor routes, which act as the backbone of DDOT's system. The major corridor routes have the longest spans of service, more frequent service, and in turn typically have the highest ridership in the system. Major corridor service is provided on many of the spoke streets, including Woodward, Jefferson-Fort, Grand River, Van Dyke and Gratiot. Of the Mainline routes, Seven Mile and Crosstown are the only routes that do not serve downtown Detroit and the Rosa Parks Transit Center.
- **Downtown** In addition to the six Mainline routes that serve the Rosa Parks Transit Center, there are 10 routes categorized as Downtown radial routes. These radial routes are comprised of a mix of north-south and east-west service into downtown.
- **Feeder** Seventeen feeder routes provide both east-west and north-south service that does not serve downtown Detroit. In comparison to the other route categories, feeder routes, outside of a few exceptions, typically have shorter spans of service and less frequent service

According to DDOT, starting in 2016 the transit agency be updating and reconfiguring its entire route network. The fundamental structure of Detroit's transit map has not changed in almost 100 years. DDOT's upcoming efforts will align transit services with modern and emerging trends. These efforts intend to increase the service's relevance to a changing city.

In addition, DDOT's ADA Paratransit service, MetroLift, offers complementary ADA paratransit service origin-to-destination anywhere within DDOT service area for those who are unable to use fixed-route buses and service. This service operates during the same hours as fixed-route service. DDOT switched from a single contractor to four different contractors to provide paratransit services. This change eliminated the past practice of trip denials and brought DDOT to full compliance with ADA and FTA regulations. Also, DDOT now allows MetroLift customers who do not require a wheelchair lift to travel directly to their destination without sharing the ride with another passenger.

In July 2014, DDOT launched Job Access and Reverse Commute (JARC) and New Freedom programs. JARC offers door-to-door service up to 30 miles each way for \$1.50. To be eligible, residents must be seeking work or going to school, and their incomes must be under 150% of the poverty level. In addition, New Freedom provides transportation options to people with disabilities seeking integration into the workforce and society beyond the current Americans with Disabilities Act (ADA) of 1990. As of June 2015, registered riders make over 4,000 JARC and 400 New Freedom trips each week.

Service Characteristics

Coverage and Days of Service

On weekdays, DDOT provides service on 36 fixed service routes. With a balance of both radial and crosstown services, service coverage is provided predominantly within the limits of the City of Detroit as shown in Figure 2-10.

Thirty-two of these routes operate seven days a week, two operate Monday through Saturday, and two operate only on weekdays (see Table 2-4 and Figure 2-11).



FIGURE 2-10 EXISTING DDOT FIXED-ROUTE TRANSIT SERVICES

TABLE 2-4DDOT SCHEDULE SUMMARY (JUNE 2015)

| | | Wee | ekday | | | Saturday | | Sunday | | |
|-------------------------|---------|---------------------|-------|-----------|---------|---------------------|-----------|--|-----------|--|
| | | | | Service | | | Service | | Service | |
| | Service | Span of Service* | | Frequence | ;y | Span of Service* | Frequency | Span of Service* | Frequency | |
| Route | Туре | | Peak | Midday | Evening | | All Day | | All Day | |
| 7 Cadillac - Harper | Radial | 4:48 a.m 12:00 a.m. | 22 | 22-32 | 60 | 5:55 a.m 11:06 p.m. | 40-60 | 6:00 a.m 8:00 p.m. | 60 | |
| 9 Chalmers | Feeder | 5:15 a.m 8:45 p.m. | 40 | 60 | 45-60 | 6:45 a.m 8:00 p.m. | 60 | 8:30 a.m 4:52 p.m. | 60 | |
| 10 Chene | Radial | 5:00 a.m 10:00 p.m. | 40 | 60 | 60 | 6:00 a.m 9:00 p.m. | 60 | 8:00 a.m 7:00 p.m. | 60 | |
| 11 Clairmount | Feeder | 5:30 a.m 8:10 p.m. | 45 | 45 | 45 | * | 2040 | 174 (1747) 174 | ÷ | |
| 12 Conant | Feeder | 5:50 a.m 8:00 p.m. | 50 | 50 | 50 | 7:30 a.m 7:25 p.m. | 55 | 8:00 a.m 6:00 p.m. | 60 | |
| 13 Conner | Feeder | 6:15 a.m 9:30 p.m. | 40 | 60 | 60 | 5:33 a.m 8:22 p.m. | 60 | 7:00 a.m 7:00 p.m. | 60 | |
| 14 Crosstown | Major | 4:05 a.m 1:30 a.m. | 20 | 20-30 | 60 | 4:20 a.m 11:30 p.m. | 40-60 | 4:10 a.m 11:30 p.m. | 40-60 | |
| 15 Chicago - Davison | Feeder | 5:02 a.m 8:38 p.m. | 20 | 60 | 45 | 6:55 a.m 7:40 p.m. | 45 | 7:00 a.m 7:00 p.m. | 45 | |
| 16 Dexter | Major | 3:56 a.m 12:56 a.m. | 12 | 15 | 30 | 4:00 a.m 12:00 a.m. | 30-60 | 4:30 a.m 11:30 p.m. | 25-60 | |
| 17 Eight Mile | Feeder | 4:50 a.m 11:35 p.m. | 20 | 25 | 60 | 5:40 a.m 10:27 p.m. | 35-40 | 7:20 a.m 8:15 p.m. | 50 | |
| 18 Fenkell | Radial | 5:00 a.m 10:00 p.m. | 25 | 40 | 60 | 6:05 a.m 9:00 p.m. | 35 | 7:40 a.m 7:40 p.m. | 60 | |
| 19 Fort | Major | 4:00 a.m 12:23 a.m. | 30 | 20-30 | 60 | 4:32 a.m 11:35 p.m. | 45-60 | 4:32 a.m 12:00 a.m. | 45 | |
| 21 Grand River | Major | 4:00 a.m 1:00 a.m. | 10 | 15 | 30 | 4:00 a.m 12:00 a.m. | 30-60 | 4:00 a.m 12:00 a.m. | 30-60 | |
| 22 Greenfield | Feeder | 4:55 a.m 12:00 a.m. | 15 | 15 | 60 | 5:57 a.m 10:00 p.m. | 20-30 | 8:00 a.m 8:25 p.m. | 36 | |
| 23 Hamilton | Radial | 5:52 a.m 10:00 p.m. | 30 | 40 | 60 | 7:00 a.m 9:00 p.m. | 55-60 | 7:05 a.m 7:50 p.m. | 55 | |
| 25 Jefferson | Major | 4:00 a.m 12:23 a.m. | 30 | 20-30 | 60 | 4:32 a.m 11:35 p.m. | 45-60 | 4:32 a.m 12:00 a.m. | 45 | |
| 27 Joy | Radial | 5:20 a.m 11:00 p.m. | 30 | 30-50 | 60 | 6:50 a.m 9:00 p.m. | 65 | 7:06 a.m 6:00 p.m. | 60 | |
| 29 Linwood | Radial | 5:15 a.m 11:00 p.m. | 30-35 | 60 | 60 | 7:00 a.m 9:00 p.m. | 60 | 7:00 a.m 7:00 p.m. | 60 | |
| 30 Livernois | Feeder | 5:45 a.m 8:26 p.m. | 30-40 | 60 | 60 | 6:58 a.m 9:00 p.m. | 60 | 7:00 a.m 7:00 p.m. | 60 | |
| 31 Mack | Radial | 5:00 a.m 12:00 a.m. | 20 | 30 | 60 | 5:53 a.m 10:05 p.m. | 33-60 | 7:00 a.m 8:10 p.m. | 60 | |
| 32 McNichols | Feeder | 4:56 a.m 11:25 p.m. | 30 | 40 | 60 | 5:50 a.m 10:40 p.m. | 32 | 7:20 a.m 8:40 p.m. | 55 | |
| 34 Gratiot | Major | 3:58 a.m 1:00 a.m. | 12 | 12 | 30 | 3:58 a.m 1:03 a.m. | 18 | 3:58 a.m 12:03 a.m. | 30-60 | |
| 37 Michigan | Radial | 5:15 a.m 1:00 a.m. | 30 | 40 | 60 | 7:00 a.m 12:18 a.m. | 45 | 7:00 a.m 12:00 a.m. | 60 | |
| 38 Plymouth | Feeder | 3:50 a.m 10:00 p.m. | 45 | 45 | 60 | 3:45 a.m 9:35 p.m. | 60 | 3:45 a.m 7:40 p.m. | 60 | |
| 39 Puritan | Feeder | 6:00 a.m 8:00 p.m. | 60 | 60 | 60 | 7:00 a.m 6:30 p.m. | 60 | 8:00 a.m 4:05 p.m. | 65 | |
| 40 Russell | Radial | 5:00 a.m 7:00 p.m. | 65 | 65 | 65 | + | (141) | 19 (19 (19 (19 (19 (19 (19 (19 (19 (19 (| - | |
| 41 Schaefer | Feeder | 5:10 a.m 8:45 p.m. | 55 | 55 | 55 | 7:00 a.m 8:46 p.m. | 60 | 7:00 a.m 8:45 p.m. | 60 | |
| 43 Schoolcraft | Feeder | 4:40 a.m 7:40 p.m. | 45 | 50 | 50 | 7:00 a.m 6:40 p.m. | 50 | 10:00 a.m 6:25 p.m. | 50 | |
| 45 Seven Mile | Major | 4:00 a.m 12:18 a.m. | 15 | 25 | 60 | 4:00 a.m 11:20 p.m. | 40 | 4:30 a.m 11:30 p.m. | 40-60 | |
| 46 Southfield | Feeder | 6:00 a.m 8:30 p.m. | 40 | 40 | 50 | 6:35 a.m 7:55 p.m. | 50 | | | |
| 47 Tireman | Radial | 5:10 a.m 7:45 p.m. | 50 | 50 | 50 | 7:15 a.m 6:30 p.m. | 50 | | - | |
| 48 Van Dyke - Lafayette | Major | 4:00 a.m 1:00 a.m. | 20 | 30 | 60 | 5:00 a.m 1:00 a.m. | 35-60 | 4:38 a.m 12:00 a.m. | 50-60 | |
| 49 Vernor | Feeder | 5:30 a.m 9:30 p.m. | 60 | 60 | 60 | 6:25 a.m 9:00 p.m. | 65 | 7:30 a.m 9:00 p.m. | 65 | |
| 53 Woodward | Major | 3:55 a.m 1:10 a.m. | 8-10 | 10 | 15-30 | 4:00 a.m 1:20 a.m. | 10-30 | 4:15 a.m 12:20 a.m. | 20-30 | |
| 54 Wyoming | Feeder | 5:00 a.m 9:00 p.m. | 60 | 60 | 60 | 7:00 a.m 8:00 p.m. | 60 | 8:00 a.m 7:00 p.m. | 60 | |
| 60 Evergreen | Feeder | 5:55 a.m 10:00 p.m. | 20 | 35 | 60 | 6:58 a.m 9:42 p.m. | 35 | 9:30 a.m 6:40 p.m. | 55 | |
| | | | | | | | | | | |

*Span of service measured by starting time of first and last trip of the day



FIGURE 2-11 DDOT DAYS OF SERVICE

Service Frequencies

DDOT provides comprehensive route coverage within Detroit city limits. As compared to other major cities, service levels and frequencies are largely less frequent. On weekdays during peak periods DDOT provides service at the following frequencies (see also Figure 2-12):

- Six routes provide service every 15 minutes or better
- Fourteen provide service every 16 to 30 minutes
- Fourteen provide service every 31 to 60 minutes
- One provides less than hourly service

During the midday on weekdays, five routes operate every 15 minutes or better, including along the spoke street routes of Woodward, Gratiot, and Grand River, as well as the Dexter and Greenfield routes. Five routes operate every 16 to 30 minutes, and the remaining 22 routes typically operate either every 40 or 60 minutes. All 35 routes provide evening service, however with less frequent service. Four routes provide 30-minute frequencies or better, and 23 routes operate every 60 minutes or less.



FIGURE 2-12 DDOT SERVICE FREQUENCIES

On Saturdays, nearly all service operates less frequently than weekday service. Three routes operate every 30 minutes or better, 29 operate every 31 to 60 minutes, and one route operates every 65 minutes. On Sundays, one route – 53 Woodward – operates as frequently as every 20 minutes, and the remaining routes run every 30 to 60 minutes.

Span of Service

On weekdays, most service begins before 6:00 AM, however, over half of DDOT's routes – 18 – end service at or before 10 PM, and 17 operate past that time (see Table 2-4). On Saturdays, nine routes operate past 10 PM, and on Sundays eight do.

Ridership and Productivity

DDOT services carry approximately 90,000 passengers per weekday, 51,000 per Saturday, and 34,000 per Sunday (see Table 2-5). Based on weekday ridership, the corridors with the most passenger trips are:

- Woodward -8,200 passengers
- Dexter 7,000 passengers
- Grand River 6,000 passengers
- Gratiot 5,700

• Greenfield – 4,300

Of the ten highest ridership routes, seven are major corridor routes, three are feeder routes, and none are radial routes.

Compared to weekday ridership, Saturday and Sunday ridership is relatively high. A very general rule is that Saturday ridership is often 50% of weekday ridership and that Sunday ridership is 50% of Saturday ridership. For DDOT's services, Saturday ridership is 65% of weekday ridership, and Sunday ridership is 63% of Saturday ridership – these percentages are higher than for SMART, for example.

By route, average ridership per trip varies widely –from more than 50 per trip to fewer than 10 on weekdays (this is an average over the whole day, peak/off-peak patterns also vary by route). Passengers per vehicle hour (a standard measure of productivity) vary in a similar manner, from 53.8 to 10.8. With relatively high Saturday and Sunday ridership and much lower service levels, weekend ridership per trip and per revenue vehicle hour is not significantly lower than on weekdays.

Reliability and On-Time Performance

The system overall, ranging by quarter from 64-67%, maintained approximately a 66% on-time performance rate for 2014 (see Figure 2-13). This is a slight drop from fiscal year 2013, which saw a 72% on-time performance rate. During 2015, DDOT has hired more than 100 additional bus operators and procured 80 new buses, which should result in increased on-time performance.



FIGURE 2-13 DDOT ON-TIME PERFORMANCE

In the last year, DDOT has experienced significant improvement in its ability to deploy its fleet on a daily basis (commonly referred to as a pull-out rate). From the first quarter of 2014 to the last, DDOT's pull-out rate improved from 71% to 91% (see Figure 2-14). Pull-out rates have continued to increase throughout 2015, with 99-100% pull-outs achieved on a regular basis in mid-September. This is significant step towards improving overall reliability of service and should result in near-term improved on-time performance.



FIGURE 2-14 DDOT PULL-OUT RATE

System Performance Trends

The City of Detroit's financial problems have been well documented and extensively publicized. The City filed for bankruptcy in July 2013, becoming the largest municipality in the US to ever have done so. Decimated by a half-century of population loss, the City's shrinking tax base is unable to adequately fund public services to meet the needs of its residents, putting city departments like DDOT in the position of having to cut vital core services due to lack of funds. As a result, DDOT has cut 30 percent of its service since 2010. DDOT's ridership levels have remained relatively steady until the most recent service reductions were implemented in Spring 2012 (see Figure 2-15). This suggests that many of DDOT's riders are economically transit dependent. This is further confirmed by Census data, which reports 60 percent of Detroit residents do not have regular access to an automobile. Moreover, recent on-board surveys confirm 68 percent of DDOT riders depend on transit for their daily mobility needs.



FIGURE 2-15 DDOT ANNUAL RIDERSHIP 10-YEAR TREND

DDOT's annual revenue vehicle hours, at just under 1.5 million in 2013, have experienced fluctuation over the last 10 years due to decreasing operating support from the City, peaking in 2004 at just over 1.8 million (see Figure 2-16). Vehicles operated during peak hours have experienced decline aligning with service reductions, peaking at 483 buses in 2006, before dropping to 223 buses in 2013 (see Figure 2-17). DDOT is working to add additional buses to its service. As of September 2015, 229 buses were in operation during peak hours and that number is expected to grow.







FIGURE 2-17 DDOT PEAK VEHICLES OPERATED 10-YEAR TREND
TABLE 2-5 DDOT RIDERSHIP AND PRODUCTIVITY

| S. | Serv | vice Statistic | s and Productivi | itv | | | | | | | | | | |
|-----------------------------|-------------------------------------|------------------|------------------------------------|---------------------------------------|---|---|------------------------------------|---------------------------------------|---|---|------------------------------------|---------------------------------------|---|---|
| DEPARTMEN | T OF TRANSPORTATION | | | Week | day | | Saturday | | | | Sunday | | | |
| Route | Name | Service Type | Average Daily Ridership Rank | Average Ridership per Trip Rank | Passengers per Revenue Vehicle Hour Rank | Net Operating Cost per Rider Rank | Average Daily Ridership Rank | Average Ridership per Trip Rank | Passengers per Revenue Vehicle Hour Rank | Net Operating Cost per Rider Rank | Average Daily Ridership Rank | Average Ridership per Trip Rank | Passengers per Revenue Vehicle Hour Rank | Net Operating Cost per Rider Rank |
| 7 | Cadillas Harper | Downtown | RIDERS | PAX/TRIP | PAX/RVH | COST/PAX | RIDERS | PAX/TRIP | PAX/RVH | COST/PAX | RIDERS | PAX/TRIP | PAX/RVH | COST/PAX |
| , 0 | Caulifac - Harper | Eeeder | 620 29 | 17 5 33 | 37.9 19 34.6 23 | \$3.45 17 | 914 19 257 32 | 26.9 19 | 24.9.26 | \$4.00 0 | 171 29 | 9.0 28 | 25.5 18 | \$5.00 |
| 10 | Chene | Downtown | 1027 25 | 25 1 27 | 28 9 31 | \$4.49.5 | 680_20 | 219 20 | 26.0.22 | \$4.99.12 | 396 23 | 16.5.20 | 210 23 | \$6.17.9 |
| 11 | Clairmount | Feeder | 543 34 | 13.3 34 | 13.5 35 | \$9.62 | - | - | - | - | - | - | - | - |
| 12 | Conant | Feeder | 900 28 | 25.0 28 | 37.0 20 | \$3.51 16 | 469 27 | 16.7 25 | 22.9 28 | \$5.67 6 | 304 26 | 13.8 24 | 18.9 28 | \$6.89 4 |
| 13 | Conner | Feeder | 575 32 | 12.2 35 | 25.5 33 | \$5.10 ³ | 269 31 | 8.7 32 | 23.8 27 | \$5.45 7 | 113 31 | 4.3 31 | 12.9 31 | \$10.07 |
| 14 | Crosstown | Mainline | 4,171 8 | 48.5 4 | 36.3 21 | \$3.58 15 | 2,084 8 | 38.6 7 | 32.7 15 | \$3.97 19 | 1,736 8 | 32.1 11 | 29.4 14 | \$4.42 18 |
| 15 | Chicago - Davison | Feeder | 1,473 20 | 27.8 25 | 34.4 24 | \$3.78 12 | 581 24 | 16.1 26 | 25.2 25 | \$5.15 9 | 452 20 | 13.7 25 | 22.2 20 | \$5.84 12 |
| 16 | Dexter | Mainline | 7,818 2 | 53.5 | 39.8 15 | \$3.26 21 | 3,878 3 | 53.9 3 | 42.2 9 | \$3.08 25 | 2,956 3 | 44.1 3 | 36.7 10 | \$3.54 22 |
| 17 | Eight Mile | Feeder | 4,513 7 | 53.1 2 | 45.4 7 | \$2.86 29 | 3,372 6 | 56.2 | 50.3 5 | \$2.58 29 | 1,786 7 | 57.6 | 53.2 4 | \$2.44 28 |
| 18 | Fenkell | Downtown | 2,505 14 | 42.5 12 | 38.6 17 | \$3.36 19 | 1,430 15 | 28.0 17 | 27.9 19 | \$4.65 15 | 758 17 | 29.2 13 | 31.7 13 | \$4.10 19 |
| 21 | Grand River | Mainline | 7,684 3 | 46.3 6 | 51.4 4 | \$2.53 32 | 3,827 4 | 54.7 2 | 62.7 ² | \$2.07 32 | 3,191 2 | 45.6 2 | 52.3 5 | \$2.48 27 |
| 22 | Greenfield | Feeder | 5,002 5 | 42.8 10 | 57.9 2 | \$2.24 34 | 3,556 5 | 38.2 8 | 51.8 4 | \$2.51 30 | 1,844 6 | 43.9 4 | 62.6 2 | \$2.08 30 |
| 23 | Hamilton | Downtown | 2,417 15 | 41.7 13 | 40.4 13 | \$3.22 23 | 1,001 17 | 31.3 14 | 37.5 13 | \$3.46 21 | 813 15 | 27.1 14 | 33.5 12 | \$3.87 20 |
| 25 | Jefferson - Fort | Mainline | 3,360 9 | 42.5 11 | 34.1 26 | \$3.81 10 | 2,001 9 | 40.8 5 | 42.4 8 | \$3.06 26 | 1,194 10 | 24.4 15 | 25.8 17 | \$5.03 15 |
| 27 | Joy | Downtown | 2,358 16 | 42.9 9 | 43.0 10 | \$3.02 26 | 968 18 | 35.9 10 | 38.9 12 | \$3.34 22 | 525 19 | 22.8 17 | 26.6 16 | \$4.88 16 |
| 29 | Linwood | Downtown | 1,291 22 | 28.1 24 | 40.0 14 | \$3.25 22 | 591 23 | 19.7 23 | 27.8 20 | \$4.67 14 | 415 21 | 16.0 21 | 24.0 19 | \$5.42 13 |
| 30 | Livernois | Feeder | 1,174 23 | 29.4 22 | 34.6 22 | \$3.76 14 | 600 22 | 20.0 22 | 22.1 30 | \$5.88 4 | 385 24 | 14.8 23 | 16.3 30 | \$7.97 2 |
| 31 | Mack | Downtown | 2,762 13 | 35.0 16 | 39.3 16 | \$3.30 20 | 1,682 13 | 29.0 16 | 33.3 14 | \$3.90 20 | 987 12 | 34.0 9 | 43.7 7 | \$2.97 25 |
| 32 | MCNICHOIS | Feeder | 2,816 12 | 4/./ 5 | 32.6 28 | \$3.99 8 | 1,886 10 | 32.5 12 | 25.6 24 | \$5.07 10 | 1,001 | 33.4 10 | 27.8 15 | \$4.67 17 |
| 34 | Gratiot | Mainline | 5,630 4 | 34.5 1/ | 41.0 12 | \$5.17 24 | 4,085 2 | 38.9 6 | 49.5 6 | \$2.63 28 | 2,909 4 | 41.6 5 | 56.7 5 | \$2.29 29 |
| 57 70 | Plumouth | Foodor | 2,141 | 45.2.7 | 71.7 29 | \$2.25 55 | 1,039 14 | 27.6 19 | 22.0 | \$2.07.55 | 760 16 | 21.4 18 | 39.4 9 20.7 25 | \$5.30 23 |
| 30 70 | Plymouth | Feeder | Z,230 17 | 45.2 7 | 31.2 29 | \$4.10 / | 705 29 | 12 7 29 | 711 17 | \$5.70 5 \$4.17.17 | 769 16 176 30 | 25.5 16 | 10.6 27 | \$6.64.5 |
| 40 | Pursell | Downtown | 586 30 | 217 29 | 42.3 T | \$5.00 25 | 505 25 | 12.7 23 | 5.1 17 | 94.1/ 1/ | 130 50 | 0.3 50 | 15.0 27 | \$0.04 5 |
| 40 | Schaefer | Feeder | 1 333 21 | 38.1.15 | 511.5 | \$2.54.31 | - 614_21 | 20.5.21 | - 29 3 18 | \$4.43.16 | 405.22 | 13.1.26 | 19.7.26 | \$6.58.6 |
| 43 | Schoolcraft | Feeder | 1,053 24 | 27.0 26 | 33.8.27 | \$3.84 9 | 478 26 | 15.9.27 | 25.8 23 | \$5.02 11 | 277 27 | 12.6.27 | 20.7 24 | \$6.27 8 |
| 45 | Seven Mile | Mainline | 4,912 6 | 48.6 3 | 38.3 18 | \$3.39 18 | 2,728 7 | 47.0 4 | 40.2 10 | \$3.23 24 | 2.075 5 | 38.4 6 | 33.8 11 | \$3.84 21 |
| 46 | Southfield | Feeder | 1,027 26 | 32.1 21 | 45.0 8 | \$2.88 28 | 273 30 | 13.6 28 | 19.5 32 | \$6.67 2 | - | - | - | - |
| 47 | Tireman | Downtown | 483 35 | 13.8 32 | 26.6 32 | \$4.89 4 | 105 33 | 3.7 33 | 11.8 33 | \$11.02 | - | - | - | - |
| 48 | Van Dyke - Lafayette | Mainline | 2,864 | 34.5 20 | 43.2 9 | \$3.00 27 | 1,842 12 | 29.7 15 | 39.2 11 | \$3.31 23 | 1,358 9 | 29.5 12 | 43.2 8 | \$3.01 24 |
| 49 | Vernor | Feeder | 586 31 | 17.8 31 | 29.7 30 | \$4.37 6 | 330 28 | 11.8 30 | 27.7 21 | \$4.69 13 | 233 28 | 9.0 29 | 21.1 22 | \$6.16 10 |
| 53 | Woodward | Mainline | 8,710 | 40.9 14 | 50.1 6 | \$2.59 30 | 5,812 | 31.4 13 | 52.7 3 | \$2.46 31 | 3,995 | 36.6 8 | 65.4 1 | \$1.99 31 |
| 54 | Wyoming | Feeder | 972 27 | 28.6 23 | 34.2 25 | \$3.80 11 | 514 25 | 18.4 24 | 21.2 31 | \$6.13 ³ | 356 25 | 14.8 22 | 17.1 29 | \$7.59 3 |
| 60 | Evergreen | Feeder | 2,900 10 | 44.6 8 | 62.0 | \$2.10 35 | 1,876 | 36.1 9 | 46.5 7 | \$2.79 27 | 897 14 | 37.4 7 | 50.2 6 | \$2.59 26 |
| SYSTEM | ITOTAL/AVG | | 90,701 | 38.0 | 40.8 | \$3.18 | 51,561 | 32.1 | 39.1 | \$3.32 | 33,948 | 29.4 | 36.5 | \$3.56 |
| All cos | ts shown are based | on fully allocat | ted cost per revenu | ie hour (\$152.7 | 9 for NTD 2013) | | | | | | | | | |
| Produce | Productivity data from October 2014 | | | | | | | | | | | | | |

Farebox Recovery Rate based on systemwide figure from NTD 2013

Fares

DDOT's regular adult cash fare is \$1.50 plus 25¢ for transfers. A variety of passes are available that bring per trip costs down for regular riders. As with all systems, DDOT provides discounted fares for students, seniors, and persons with disabilities. DDOT also offers a monthly GoPass for \$47, biweekly GoPass for \$27.40, weekly GoPass for \$14.40, \$10 value card, and a 5-day pass for \$14.00. A DDOT/SMART regional monthly pass can be purchased for \$49.50; however, the pass is not valid for the full SMART fare. Users must pay an additional 50¢ for continued travel on SMART buses since SMART's base fare is \$2.00, or purchase the Regional Plus Pass at a higher price.

Transit Facilities³

DDOT has a large number of passenger facilities associated with its bus services (see Figure 2-10), including transit centers, transfer points, and bus stops.

Rosa Parks Transit Center

The Rosa Parks Transit Center is located in downtown Detroit near the intersection of Michigan Avenue and Cass Avenue. The facility provides a centrally located transfer center for connecting services, including direct connections to 17 DDOT routes, as well as nearby connections to the Detroit People Mover, SMART, Transit Windsor, and Megabus.

The facility contains a customer service booth for ticket purchases and general information, kiosks for tickets and information, security booths, a restaurant, a Detroit Police sub-station, restrooms, and an indoor waiting area.

State Fair Transit Center

Located at Woodward Avenue just south of Eight Mile Road, the State Fair Transit Center (SFTC) facilitates connections between five DDOT routes and SMART. SFTC is a critical transfer point for City and suburban riders, as SMART does not provide mid-day, evening, or weekend service to Downtown Detroit. Many SMART routes, including Woodward, terminate at SFTC during these times. The plaza also provides passenger information display kiosks, ticket booths, and ADA compliant sidewalk ramps connecting Woodward Avenue to the transit boarding area.

Regional Transfer Points

Fairlane Town Center Mall

The northeastern parking lot of Fairlane Town Center Mall in Dearborn serves as a transfer hub between Detroit and the western suburbs, with five DDOT routes connecting to three SMART routes.

Northland Transit Center

The parking lot on the south side of the former Northland Center Mall in Southfield connects six DDOT routes to six SMART routes and the northwestern suburbs. Northland Center has recently closed; its role in the transit system is likely to change in turn.

³ See Figure 2-10 for location of transit center and maintenance facilities.

Bus Stops

Bus stops are a key element of the transit experience, and high quality stops provide a comfortable and appealing place for people to wait for the bus. DDOT has over 5,600 stops throughout its system, many of which feature shelters, benches, bike racks, trash receptacles, and other amenities.

Fleet

DDOT operates a fleet of 307 buses, 229 of which are operated in peak service. DDOT placed 80 new buses in service in 2015, resulting in a 34% spare ratio. Planned vehicle retirements and service expansions will bring the spare ratio to 20% by the end of 2016. In addition, DDOT currently has 85 buses pending disposal. After their retirements have been approved, these buses will be auctioned through the City of Detroit. Even with the spare ratio noted above, many active buses are nearing the end of their useful life.

Operating Budget

DDOT has an annual operating budget of \$144 million (see Figure 2-18). Passenger fares cover approximately 15% of this budget. State and local sources each provide about one-third and the balance (15%) is primarily covered through grant funding. DDOT has experienced a 23.6% decline is its operating budget over the last ten years, largely due to the City's shrinking general fund share corresponding with the decreasing tax base. The City of Detroit exited bankruptcy in December 2014 and adopted a 10-year Plan of Adjustment outlining annual budgets for each City department. The Plan of Adjustment supports DDOT slowly increasing its operating budget, and therefore, expanding service.



FIGURE 2-18 DDOT OPERATING BUDGET 10-YEAR TREND

Recent and Future Changes

Between January and September 2015, DDOT put 80 new buses into service. A combination of federal and state funding totaling \$45.6M supported the new bus purchase, including a FTA Ladders of Opportunity discretionary grant for \$25.9M. The new buses will permit retirement of buses that have exceeded their service life and have been contributing to DDOT's problems with reliability and on-time performance. The buses feature modern technologies and various features to improve security and comfort. Seventy of the new buses are standard 40-foot coaches, while 10 are 60-foot articulated buses that will help relieve chronic overcrowding on Woodward, Gratiot, and Grand River.

Concurrent with the deployment of the new buses, DDOT has hired more than 100 new Transportation Equipment Operators (bus drivers). Starting wages for drivers were increased and individuals without preexisting Commercial Driver's Licenses were accepted to help recruitment and retention.

Lastly, DDOT recently launched "Text my Bus" and a mobile phone app, DDOT Bus, to provide passengers with real-time bus location information and trip planning assistance.

DETROIT TRANSPORTATION CORPORATION (DTC) / THE PEOPLE MOVER

The Detroit Transportation Corporation (DTC), which is an agency of the City of Detroit, operates The People Mover, which is a 2.9 mile one-way elevated loop in Detroit's central business district (CBD). The People Mover serves 5,100 trips per weekday.

Service Type

The system consists of a single route, which is a one-way loop with 13 stations in downtown Detroit (see Figure 2-23). It is fully automated, with 12 driverless vehicles. The People Mover provides general circulation around the downtown core. During major events it is an important connector to sporting and convention events.

Service Frequencies and Span of Service

Service operates every three to four minutes from 6:30 AM to 12 midnight on weekdays and from 9: AM to 2 AM on weekends.

Ridership and Productivity

Ridership and Productivity

The People Mover averages just over 5,000 passengers on weekdays (see Table 2-6). However, even with limited service hours, ridership is highest on weekends, with Saturdays averaging 8,224 and Sundays averaging 5,575. This is due to the type of rider the People Mover attracts; primarily visitors to downtown Detroit who use the service for recreational trips related to special events, restaurants, and the casino.

In terms of productivity, the People Mover averages 29 passengers per one-way loop trip, or 45 passengers per revenue vehicle hour, at a net operating cost of \$4.61 per passenger.

TABLE 2-6 DTC RIDERSHIP AND PRODUCTIVITY



Reliability

DTC's People Mover is extremely reliable, with an on-time performance of 99%, well above the industry standard of 90% (see Figure 2-19). It has retained this level of performance year after year.



FIGURE 2-19 DTC ON-TIME PERFORMANCE

System Performance Trends

The People Mover's ridership saw a significant increase between 2004 and 2006 (the year Detroit hosted the Super Bowl championship) – from 900,000 to approximately 2.3 million riders – and generally retained this level of ridership for the past seven years (see Figure 2-20). With continued revitalization of the downtown core and increased destination activity at venues such as Ford Field, Comerica Park, Joe Lewis Arena, and Cobo Center, ridership is anticipated to remain steady or expand.



FIGURE 2-20 DTC ANNUAL RIDERSHIP 10-YEAR TREND

DTC's service levels have remained essentially the same the last decade, with 10 vehicles operating in peak service for a typical annual revenue vehicle hours of 45,000-50,000 (see Figure 2-21 and Figure 2-22). DTC's annual revenue vehicle hours did nearly double from 2008-2009, peaking at 108,000 hours.



FIGURE 2-21 DTC ANNUAL REVENUE VEHICLE HOURS 10-YEAR TREND







The full adult cash fare for the People Mover is 75¢. Monthly passes are available for \$10.



FIGURE 2-23 DETROIT PEOPLE MOVER

Operating Budget

In FY 2013, DTC's operating budget was \$11.9 million. Major sources of funding are unique funding sources (other), state funds (27%), and regular passenger fares (11%). DTC's budget has experienced minor fluctuation over the years, peaking at just over \$13 million in 2008, as there has been a shift from reliance on the City of Detroit's general fund to alternative funding sources (see Figure 2-24). The People Mover's fare increase, from 50¢ to 75¢, in 2011 has also helped offset lost funding.



FIGURE 2-24 DTC ANNUAL OPERATING BUDGET 10-YEAR TREND

SUBURBAN MOBILITY AUTHORITY FOR REGIONAL TRANSPORTATION (SMART)

SMART serves the three counties of Macomb, Oakland, and Wayne. It is the second largest of southeast Michigan's transit systems.

Service Types

SMART provides a variety of local and regional bus service (see Figure 2-25):

- **Main Corridor Routes** that provide local service within the suburban communities and peak hour services in Detroit.
- Limited Stop Routes that serve only limited stops.
- Community Routes that provide local circulation within communities.
- Crosstown Routes that operate between suburbs connecting to the Main Corridor routes.
- Commuter Routes that provide peak period services oriented toward commuters.
- **Commuter Express Routes** that provide peak period express service oriented toward commuters.
- **Park & Ride Routes** that serve Park & Ride lots and provide express service to and from Detroit during peak periods.
- Shuttle Routes that provide flexible, on-demand, curb-to-curb service Monday thru Friday 6:00 AM to 6:00 PM. There are two shuttle routes the Oakland Mall Shuttle and the Somerset Shuttle.
- **Dial-A-Ride Service** that operates within the city limits of Farmington and Farmington Hills. Buses are dispatched within 60 minutes of a requesting call.
- Flex Route Service, which operates within Groesbeck and provides service to destinations not easily accessible by Fixed-Route buses.

SMART also provides complementary ADA Paratransit service anywhere within the SMART service area. This service operates during the same hours as fixed-route service. SMART also provides a Connector service, which is an advance reservation, curb-to-curb service. The Connector service enables travel anywhere within a 10-mile radius of a designated SMART service area. Rides are available on a first-come, first-served basis, with priority given to medical trips, and reservations are required. A six-day notice is recommended for medical appointments and a two-day notice for other destinations.

Finally, SMART coordinates the Community Partnership Program, which allows local communities or groups to partner with SMART in the operation of local Community Transit Service. This includes arrangements such as partnership with Auburn Hills Senior Center to provide advanced reservation curb-to-curb service to seniors and persons with disabilities in that community or collaboration with Mount Clemens Community Transportation to provide a range of services to all members of that community. The Community Partnership Program is discussed further under the section Paratransit and Mobility Management.

FIGURE 2-25 SMART SYSTEM MAP



Service Characteristics

Coverage and Days of Service

On weekdays, SMART provides service on 46 routes, including 12 peak period-only and three Shuttle routes. On Saturdays, SMART provides service on 22 routes, and on Sundays, on 15 routes (see Table 2-7 and Figure 2-26).

On weekdays, service coverage is fairly comprehensive along the Woodward Avenue spine and on Crosstown routes north of the Wayne County line (8 Mile). However, service into areas north of 16 Mile becomes sparser. On weekends, service coverage is much more limited.

SMART provides weekday peak-hour service on many routes into downtown Detroit, but does not offer any off-peak service within Detroit.

Service Frequencies

Even more so than with DDOT service, SMART service operates relatively infrequently (see Figure 2-27). On weekdays during peak periods, four routes operate every 15 minutes or more frequently, and three of those routes are Park & Ride routes that provide short headways for only a very short period.

Of the 31 routes that operate during the midday, only service along Gratiot Avenue operates every 15 minutes, 11 operate every 25 to 30 minutes, 12 operate every 31 to 60 minutes, and eight operate less frequently. In the evening, service frequencies are even lower. Of the 25 routes that operate in the evening, none operate every 30 minutes or less.

On weekends, nearly all service operates infrequently and none consistently operates more frequently than every 40 minutes. On Sundays, eight routes operate every 30 to 60 minutes and five operate less frequently than hourly.

TABLE 2-7 SMART SCHEDULE SUMMARY

| | | | Weekday | | | | Saturday | | Sunday | |
|-------------|---|---------------|---------------------|-------|---------|---------|---------------------|-----------|---------------------|-----------|
| | | | Service | | Service | | | Service | | |
| | | Service | Span of Service* | | Frequen | су | Span of Service* | Frequency | Span of Service* | Frequency |
| Route | | Туре | | Peak | Midday | Evening | | All Day | | All Day |
| 125 | Fort St - Eureka Rd | Main Corridor | 4:34 a.m 11:16 p.m. | 29-39 | 25-34 | 40-70 | 5:30 a.m 11:45 p.m. | 36-54 | 6:10 a.m 8:18 p.m. | 65-70 |
| 140 | Southshore | Crosstown | 6:25 a.m 8:41 p.m. | 65 | 65 | 70 | - | - | - | - |
| 160 | Downriver | Community | 6:05 a.m 6:48 p.m. | 60-65 | 65-70 | - | 8:50 a.m 5:06 p.m. | 90 | - | - |
| 200 | Michigan Ave Local | Main Corridor | 4:34 a.m 12:00 a.m. | 20 | 30 | 40 | 4:45 a.m 1:23 a.m. | 40-50 | 4:49 a.m 12:20 a.m. | 40-50 |
| 250 | Ford Rd | Crosstown | 5:48 a.m 10:08 p.m. | 65 | 65 | 65 | - | - | - | - |
| 255 | Ford Rd Express | Commuter | 5:51 a.m 5:37 p.m. | 20-30 | - | - | - | - | - | - |
| 275 | Telegraph | Crosstown | 5:35 a.m 9:02 p.m. | 26-34 | 60-65 | 55-65 | 6:19 a.m 9:53 p.m. | 60 | - | - |
| 280 | Middlebelt South | Community | 5:41 a.m 11:00 p.m. | 60 | 60 | 60 | 5:41 a.m 11:07 p.m. | 60 | 5:25 a.m 7:55 p.m. | 65-70 |
| 330 | Grand River - Beech Daly | Crosstown | 4:52 a.m 11:38 p.m. | 60 | 60-65 | 60 | 6:00 a.m 10:26 p.m. | 55-65 | 7:30 a.m 8:03 p.m. | 60 |
| 400 | Southfield - Orchard Ridge | Community | 6:20 a.m 7:10 p.m. | 30-50 | 90-95 | - | - | - | - | - |
| 405 | Northwestern Highway | Crosstown | 5:45 a.m 6:49 p.m. | 30-60 | 55-65 | - | 7:45 a.m 6:55 p.m. | 55 | - | - |
| 415/420 | Greenfield / Southfield | Community | 5:48 a.m 10:02 p.m. | 40 | 40 | 60 | 6:00 a.m 9:55 p.m. | 50 | 8:00 a.m 7:42 p.m. | 50 |
| 430 | Main St - Big Beaver | Community | 6:40 a.m 6:22 p.m. | 25-65 | - | - | - | - | - | - |
| 445/475 | Woodward - Maple / Telegraph - Troy Limited | Commuter | 6:05 a.m 6:13 p.m. | 30 | - | - | - | - | - | - |
| 450/460 | Woodward Local - Pontiac / Somerset | Main Corridor | 4:25 a.m 1:49 a.m. | 30 | 30 | 60 | 4:55 a.m 1:38 a.m. | 20-60 | 5:44 a.m 12:08 a.m. | 50 |
| 465 | Auburn Hills Limited | Commuter | 4:08 a.m 5:02 p.m. | 30 | - | - | - | - | - | - |
| 494 | Dequindre | Crosstown | 5:58 a.m 12:16 a.m. | 45 | 45 | 45 | 6:15 a.m 12:13 a.m. | 45 | - | - |
| 495 | John R | Main Corridor | 5:00 a.m 10:50 p.m. | 20 | 30 | 40 | 6:40 a.m 12:08 a.m. | 40 | 7:50 a.m 7:37 p.m. | 40-50 |
| 510/515 | Van Dyke Local / Limited | Main Corridor | 4:28 a.m 12:09 a.m. | 20 | 30 | 60 | 5:55 a.m 2:02 a.m. | 35-40 | 6:45 a.m 9:45 p.m. | 35 |
| 530 | Schoenherr | Commuter | 6:10 a.m 5:30 p.m. | 20-30 | - | - | - | - | - | - |
| 550 | Garfield | Community | 6:08 a.m 9:32 p.m. | 38-42 | 40 | 38-43 | - | - | - | - |
| 560/565 | Gratiot Local / Limited | Main Corridor | 4:20 a.m 1:55 a.m. | 12-15 | 15 | 30-60 | 4:45 a.m 1:16 a.m. | 27-60 | 6:25 a.m 10:24 p.m. | 30 |
| 566 | Price School | Schools | | | | | - | - | - | - |
| 580 | Harper | Commuter | 6:00 a.m 5:22 p.m. | 25 | - | - | - | - | - | - |
| 610 | Kercheval - Harper | Main Corridor | 5:06 a.m 10:41 p.m. | 40 | 40 | 40 | 5:45 a.m 12:43 p.m. | 60 | 7:03 a.m 8:05 p.m. | 65 |
| 615 | Kercheval - Jefferson | Community | 5:30 a.m 6:57 p.m. | 40 | 40 | - | - | - | - | - |
| 620 | Charlevoix | Commuter | 6:12 a.m 5:33 p.m. | 30 | - | - | - | - | - | - |
| 635 | Jefferson Express | Commuter | 5:57 a.m 5:28 p.m. | 18-30 | - | - | - | - | - | - |
| 710 | Nine Mill Crosstown | Crosstown | 4:58 a.m 11:10 p.m. | 20-30 | 40 | 60 | 5:53 a.m 9:30 p.m. | 45-50 | 7:38 a.m 8:32 p.m. | 55-75 |
| 730 | Ten Mile Crosstown | Crosstown | 5:48 a.m 7:54 p.m. | 60 | 60 | 60 | 7:45 a.m 7:08 p.m. | 60 | - | - |
| 740 | Twelve Mile Crosstown | Crosstown | 4:40 a.m 11:17 p.m. | 45 | 31-65 | 55-70 | 4:45 a.m 9:10 p.m. | 60 | 7:55 a.m 8:00 p.m. | 60 |
| 752 | Pontiac - North Hills Farms | Community | 7:20 a.m 8:06 p.m. | 60 | 60 | 60 | 8:40 a.m 7:14 p.m. | 60 | - | - |
| 753 | Pontiac - Baldwin Road | Community | 6:40 a.m 9:00 p.m. | 60 | 60 | 60 | 7:20 a.m 9:50 p.m. | 60 | 9:30 a.m 6:02 p.m. | 90 |
| 756 | Pontiac - Perry - Opdyke | Community | 6:05 a.m 6:32 p.m. | 60 | 60 | - | 6:00 a.m 6:29 p.m. | 60 | - | - |
| 760 | Thirteen Mile - Fourteen Mile Crosstown | Crosstown | 5:00 a.m 7:14 p.m. | 45-48 | 43-45 | - | 5:40 a.m 7:05 p.m. | 90 | - | - |
| 780 | Fifteen Mile Crosstown | Crosstown | 5:00 a.m 10:14 p.m. | 50 | 50 | 50 | 6:10 a.m 8:29 p.m. | 60 | - | - |
| 805 | Grand River Park and Ride | Commuter | 5:36 a.m 5:34 p.m. | 5-26 | - | - | - | - | - | - |
| 830 | Downriver Park and Ride | Commuter | 5:50 a.m 5:38 p.m. | 15-25 | - | - | - | - | - | - |
| 851 | West Bloomfield - Farmington Hills Park and Ride | Commuter | 5:50 a.m 5:45 p.m. | 8-35 | - | - | - | - | - | - |
| *Span of se | rvice measured by starting time of first and last trip of the day | | | | | | | | | |



FIGURE 2-26 SMART DAYS OF SERVICE



FIGURE 2-27 SMART SERVICE FREQUENCIES

Span of Service

On weekdays, most routes begin service between 5 and 6 AM, and many start earlier, and as with DDOT service, these times are generally appropriate for major cities. In the evening, approximately half of the all-day routes provide service until at least 8 PM, and 15 provide service past 10 PM.

On Saturdays, 15 routes operate until at least 8 PM, and eight of those routes operate past 11 PM. On Sundays, nine of 13 routes operate past 8 PM.

Ridership and Productivity

<u>Ridership</u>

Not surprisingly, the Main Corridor routes carry the greatest passenger volumes. Six of the top ten ridership routes are Main Corridor (see Table 2-8). The highest ridership route – 560/656 Gratiot Local and Limited services – averages 5,500 passengers per day followed by 450/460 Woodward Avenue service, with 3,300 passengers per day.

Eight routes average between 1,000 and 2,500 daily riders, and seven, which are mostly Crosstown routes, carry between 500 and 1,000 passengers. Twenty routes carry fewer than 500 passengers per day. These lower ridership routes are roughly evenly divided between Community and Commuter service types. Across nearly all routes, passenger volumes decrease on Saturdays by one-third to one-half of weekday levels and drop again similar proportions between Saturday and Sunday service.

In terms of productivity, only seven routes carry more than 25 passengers per trip on weekdays, eight carry 20 to 25 passengers per trip and ten carry 15 to 20, and the balance carry fewer than 15 passengers per trip. Overall, the system averages 21 passengers per trip on weekdays. This number drops to 18 passengers per day on weekends. Passengers per revenue vehicle hour average 23.9 on weekdays, 23.4 on Saturdays and 26.3 on Sundays.

Reliability and On-Time Performance

SMART's on-time performance overall fluctuated very little in 2014, ranging from 81% to 83% (see Figure 2-28). This is a slight drop from fiscal year 2013, which saw an 87% on-time performance rate.



FIGURE 2-28 SMART ON-TIME PERFORMANCE

On-time performance data was also available on a per route basis. On weekdays, on-time performance by route ranges from a low of 63% on-time operations to a high of 91%. The system overall maintains approximately an 81% on-time performance on weekdays. Performance is slightly better on Saturdays with on-time performance ranging from 73% to 93%, and averages 82%. Sunday on-time performance ranges from 71% to 91%, and averages 84% (see Table 2-8).

System Performance Trends

SMART's ridership peaked in 2009 at 13.5 million, before the recession hit southeast Michigan, bringing with it significant population and employment decline and a roughly 25% decrease in ridership (see Figure 2-29).



FIGURE 2-29 SMART ANNUAL RIDERSHIP 10-YEAR TREND

SMART's annual revenue vehicle hours, at just under 750,000 in 2013, have been steadily declining over the past decade, peaking in 2005 at just over 925,000 and declining by about 15% since 2011 (see Figure 2-30). Due to financial constraints, service was reduced by 22% in December 2011. Vehicles operated in peak service have experienced a slight decline that closely aligns with reductions in service, peaking at 239 buses in 2006, before dropping to 229 buses that are operated as of 2013 (see Figure 2-31).



FIGURE 2-30 SMART ANNUAL REVENUE VEHICLE HOURS 10-YEAR TREND





Service Statistics and Productivity Weekday Saturday Sunday Pir Ser RIDERS PAX/TRIP PAX/RVH COST/PAX RIDERS PAX/TRIP PAX/RVH COST/PAX RIDERS PAX/TRIP PAX/RVH COST/PAX 125 Fort St - Eureka Rd 1,780 25.8 23.2 н \$5.40 78.4% 1,272 4 26.5 4 27.7 6 н \$4.50 82.7% 625 24.0 26.0 5 . \$4.81 9 80.7% 140 Southshore 366 12.6 17.4 2 \$7.20 86.1% 160 199 9.0 9.2 \$13.61 75.0% 40 22 3.3 22 6.3 22 \$19.99 83.5% Downriver 200 Main Corridor 1.993 80.5% 823 10 16.5 10 \$4.25 19 80.4% 83.7% Michigan Ave Local 25.9 29.5 \$4.23 29.4 4 586 13.6 8 24.4 7 \$5.12 435 18 ш 250 Ford Rd 14.0 2 22.5 16 \$5.56 83.8% 255 Ford Rd Express 263 2 20.2 21.0 \$5.96 71.3% -1,652 1 275 Telegraph 39.3 24.6 \$5.08 76.3% 992 30.12 19.0 10 \$6.56 84.0% 15.8 13 280 Middlebelt South 398 2 11.1 3 24.6 \$5.07 88.9% 252 7.0 \$7.91 92.8% 168 6.5 12 14.4 12 \$8,70 91.1% 330 Grand River - Beech Daly 533 14.0 17.0 \$7.34 83.4% 338 9.9 13.6 \$9.20 76.9% 166 6.4 15.2 \$8.24 91.6% 400 Southfield - Orchard Ridge Community 274 2 11.0 15.6 \$8.01 75.6% 405 Northwestern Highway 626 19.0 24.6 \$5.08 82.6% 335 16 13.4 12 18.6 11 \$6.73 12 93.6% 415/420 Greenfield / Southfield Community 1,451 17.1 2 24.9 \$5.01 83.3% 908 12.8 18.2 \$6.88 86.4% 385 8 12.8 19.0 8 \$6.57 6 85.9% 430 Main St - Big Beaver 95 3 3.7 3 8.1 3 90.6% \$15.34 381 25.4 1 21.4 75.8% 445/475 Woodward - Maple / Telegraph - Troy Limited \$5.84 25.1 450/460 Woodward Local - Pontiac / Somerset 3 337 27.2 \$4.60 81.6% 1971 18.3 9 26.17 \$4.80 16 83.2% 1 371 2 16.9.6 25.0 6 \$5.01 8 89.4% Auburn Hills Limited 465 288 2 26.2 14.3 3 \$8.711 82.1% 494 Dequindre 747 14 15.9 2 26.0 \$4.81 91.1% 529 11.0 15 20.4 8 \$6.12 15 91.6% 495 John R 1,449 10 17.5 19 34.5 \$3.62 89.4% 963 19.3 37.9 \$3.30 2 83.6% 562 18.1 5 \$3.32 12 87.4% 37.6 510/515 Van Dyke Local / Limited 2,507 30.6 30.0 \$4.16 79.2% 1,307 22.2 30.0 \$4.17 83.5% 852 19.4 27.4 4 . \$4.57 10 83.7% 530 Schoenherr 150 34 18.8 16,4 26 \$7.61 83.9% 550 Garfield Community **398** 20 8.8 3 15.2 28 \$8.23 85.1% 560/565 Gratiot Local / Limited Main Corridor 5,502 37.7 35.3 2 \$3.54 79.3% \$2.60 22 74.4% 2,041 37.1 42.9 \$2.91 13 83.7% 3.088 41.2 48.0 Schools 61 39 566 Price School 10.2 10.6 36 \$11.81 580 Commute 113 30 12.6 28 12.3 33 \$10.13 Harper 86.4% \$10.53 610 942 17.8 18 17.5 2 \$7.13 77.4% 11.3 14 14.3 15 10.9.10 11.9 13 77.5% Kercheval - Harper Main Corrido 428 14 \$8.75.8 85.7% 261 10 615 Kercheval - Jefferson 187 4.6 3 9.2 \$13.55 88.5% 620 Charlevoix **95** 3 13.6 2 12.6 3 \$9.93 84.6% 635 Jefferson Express Commuter **114** 3 11.4 29 11.5 3 \$10.87 86.4% 710 Nine Mill Crosstown Crosstowr 2,165 \$3.41 85.3% 27.3 29.3 \$4.26 79.2% Ш \$3.99 1 35.5 36.6 1.091 675 28.1 2 31.3 3 76.3% 18.3 \$8.79 730 Ten Mile Crosstown 858 29.6 23.3 н \$5.36 74.6% 458 14.2 78.0% 740 Twelve Mile Crosstown 1,531 39.3 22.5 ш \$5.55 83.0% 875 25.7 15.7 \$7.97 78.8% 15.0 18.0 \$6.94 87.1% Crosstown 361 752 Pontiac - North Hills Farms Community 164 3 6.3 3 11.1 3 \$11.25 73.5% 101 4.6 8.9 \$14.02 74.3% 753 280 883 18.5 20 \$6.74 77.6% 258 8.6 19.1 \$6.54.14 80.7% 122 13 10.2 11 \$7.85 Pontiac - Baldwin Road 15.9.10 715% 756 239 30 9.2 33 16.7.25 76.6% 142 5.5 20 \$12.01 \$7.48 10.4.19 73 9% Pontiac - Perry - Opdyke -760 Thirteen Mile - Fourteen Mile Crosstown 582 16 15.7 23 12.5 32 \$10.03 79.3% 104 5.5 19 9.3 20 \$13.47 76.1% 780 Fifteen Mile Crosstown 843 13 19.2 15 14.8 29 \$8.44 83.0% 459 15.3 11 13.2 18 \$9.47 81.2% 805 Grand River Park and Ride 424 19 24.9 12 22.7 14 . \$5.51 63.3% -830 Downriver Park and Ride **241** 29 16.1 21 17.7 21 \$7.06 81.5% 22.2 13 **19.7** 19 851 West Bloomfield - Farmington Hills Park and Ride Commute 378 \$6.34 71.5% System Total/Avg 34,041 21.8 23.9 \$5.22 80.9% 16,734 18.3 23.4 \$5.34 82.0% 8,175 18.3 26.3 \$4.75 83.8% All costs shown are based on fully allocated cost per revenue hour (\$143.60 for NTD 2013)

Ridership data from October, 2014

TABLE 2-8

SMART RIDERSHIP AND PRODUCTIVITY

Productivity data from January 2015

Farebox Recovery Rate based on systemwide figure from NTD 2013

Fares

SMART's full adult cash fares are \$2.00 for local service, \$2.50 for Park & Ride routes, and \$4.00 for Flex Routes. SMART also offers a variety of reduced fares for frequent riders, youths, seniors, and persons with disabilities. Passes for frequent riders include:

- **31 Day Passes** enable unlimited rides on Park & Ride, Fixed Route, and Connector service, depending on eligibility, for 31 consecutive days after activation.
- **Value Passes** provide a modest discount enabling \$11 of travel for \$10 of cost (or \$22 for a \$20 pass).
- As aforementioned, the DDOT/SMART Regional Pass permits use of both systems; however, SMART transfers are not issued in conjunction with the Regional Pass. Users must pay an additional 50¢ for continued travel on SMART buses, or purchase the Regional Plus Pass at a higher price.

Transfers are available for 25¢ and permit passengers up to three hours within which to change SMART buses. Passengers may not reverse ride on the same route from which they transferred. Within the RTA area, SMART has transfer agreements in place with AAATA, DDOT and The People Mover. DDOT transfers are accepted by SMART, with a supplemental fee of 50¢ per ride, since the SMART base fare is higher than DDOT.

Transit Facilities

SMART owns, operates, and maintains three terminals, the Royal Oak Transit Center, and 5,000 stops related to bus services (see Figure 2-25 for the locations of transit centers).

Royal Oak Transit Center

The Royal Oak Transit Center is located at the intersection of Lafayette Street and Sherman Street in Royal Oak. The transit center was developed to provide a centralized hub for multiple forms of public transportation with indoor waiting facilities and customer counters, including a staffed SMART office. The center functions as a hub for six of the SMART's routes serving both Main Corridor and Crosstown services. This facility also offers access to the national Amtrak Wolverine service.

Park-and-Ride Lots

SMART serves 13 Park & Ride lots (totaling 685 parking spaces). Almost all of the park-and-ride lots are shared use facilities, whereby the owner of the property is responsible for maintenance with nominal annual payments by SMART to offset maintenance costs.

Bus Stops

SMART serves 5,466 bus stops throughout its service area. A total of 273 stops have shelters, 256 of which are owned by SMART and 17 of which are owned by municipalities. Another 57 bus stops have benches, all of which are owned and maintained by SMART.

Fleet

SMART operates a fleet of 389 buses (including 235 for fixed-route service and 154 for demandresponse), 338 of which are operated in peak service providing a spare ratio of 15%. These buses have a combined average age of 9.9 years, which is the oldest bus fleet of the three bus systems. About 80% of the bus fleet has reached or exceeded 500,000 miles – the typical threshold the Federal Transit Administration defines as a useful life of a vehicle.⁴

Operating Budget

SMART's FY2015 operating budget is approximately \$111 million, of which 59% is funded through a property tax of 1 mil on member communities.⁵ State funds provide 23% of operating budget and passenger fares cover approximately 13%. The remaining 5% comes from federal and other sources. SMART's operating budget peaked in 2008 at just over \$115 million, before declining by 10% to \$104 million (see Figure 2-32). The steady decline is closely linked to dropping property values in southeast Michigan, and in turn a lower rate-of-return on SMART's millage. The 2014 millage increase has since raised SMART's operating budget back to 2011 levels.



FIGURE 2-32 SMART OPERATING BUDGET 10-YEAR TREND

Recent and Future Changes

Since 2008, SMART has been dealing with declining revenues due to lower property values. In 2009, with 24 percent less revenue from the millage, SMART took steps to cut expenses, wages, and benefits as well as reduce costs and increase fares, making \$11 million in overall budget adjustments.

⁴ <u>http://www.mhcc.org/index.php/latest-mhcc-news/300-why-your-smart-vote-matters-on-august-5th</u>

⁵ The millage was increased in August 2014 from 0.59 mill, but will expire in 2017. Communities may "opt out" of the mill. 37 jurisdictions – including communities with a high concentration of residents and/or jobs such as Novi, Livonia and Rochester – have opted not to participate in funding and therefore lack SMART transit service.

In August 2014, voters in southeast Michigan elected to provide increased funds to SMART. The millage vote renewed SMART's traditional millage of 0.59 mils and increased it by 70% to1.0 mils providing an additional \$27 million to the transit agency. The millage will be in effect for four years before coming before voters for a renewal in 2018.

The additional funds helped to stabilize SMART's budget, which saw a significant decline over the previous decade as property values in the region fell, and to purchase new buses to replace those that have exceeded their service life. Resources will also be used to meet commitments of the collective bargaining unit contracts.

The millage increase did not commit to any new routes, extended service hours, or increased service frequencies.

Even with the increased millage, SMART still has the lowest millage rate in Michigan for a major transit system, yet serves the largest population and geographic area, more than the next nine largest transit agencies in the state combined.

Paratransit and Mobility Management

SUMMARY OF PARATRANSIT AND DEMAND RESPONSE TRANSIT SERVICES

Three of the four transit providers – DDOT, SMART and AAATA – provide ADA paratransit services⁶ and other demand-responsive transportation (DRT) services in addition to fixed-route service. Together, these services provide 1.6 million trips annually, of which 27% reflect ADA trips and 73% are non-ADA paratransit or demand response trips.

Since each transit agency's paratransit service area mirrors their fixed-route service area, this means that many paratransit users need to transfer between systems in order to complete their trip, as is the case with the fixed-route system users. Since paratransit requires advance reservations and even greater coordination in order to complete a trip that crosses provider boundaries, this is yet another reason to make the region's transit service more integrated and seamless.

Although a relatively small portion of the agencies' overall budgets, paratransit trips are the most heavily subsidized on a per-trip basis, since the fares are \$2.50-\$4.00, while the agency's cost is \$20-28 per trip. For this reason, it is financially beneficial to encourage or enable paratransit and demand response customers to use the fixed-route system when possible – for example, a sidewalk improvement that will allow access to and from bus stops for wheeled mobility devices, or travel training which educates customers about the fixed-route system. With such changes, many paratransit customers can lead more independent lives.

| | ADA PARATRANSIT | OTHER PARATRANSIT/DRT | TOTAL |
|--------------------------|--------------------|--------------------------|-----------|
| AGENCY AND SERVICE | TRIPS | TRIPS | TRIPS |
| DDOT – MetroLift* | 263,000 | | 263,000 |
| DDOT – JARC/New Freedom | | 180,000 | 180,000 |
| SMART – Connector* | 50,000 | 273,000 | 323,000 |
| SMART – Flex/Shuttle/DAR | | 57,000 | 57,000 |
| SMART – Community | | 566,000 | 566,000 |
| Partnership | | | |
| AAATA – ARide*/GoldRide | 108,000 | 23,000 | 131,000 |
| AAATA – NightRide | | 37,000 | 37,000 |
| AAATA – MyRide | | 19,000 | 19,000 |
| Total | 421,000 | 1,155,000 | 1,576,000 |
| Percentage | 27% | 73% | 100% |

TABLE 2-9SUMMARY OF PARATRANSIT/DRT SERVICES IN RTA REGION AND
ANNUAL RIDERSHIP (CY2014)

In Table 2-9 the services indicated with an asterisk provide the federally mandated ADA paratransit service. All others are supplementary.

⁶ All transit providers receiving federal funds are required to provide services to persons with disabilities as defined by the Americans with Disabilities Act (ADA). Services must be provided to and from destinations located within three-quarters mile of a fixed transit route plus "islands" circumscribed by the route corridors that are no more than 2 miles in width or length.

ADA paratransit service is one of the few service obligations that are required of transit agencies operating fixed-route transit. In short, agencies are required by the Americans with Disabilities Act (ADA) to provide paratransit when and where those fixed-route services are provided to customers who because of their disabilities are unable to access or use their fixed-route services. By federal policy, ADA services must meet demands from the disabled community and not routinely deny access (e.g. be unable to meet service requests). ADA paratransit is generally funded out of the same resource pool as fixed-route services.

TABLE 2-10 presents a summary of the three ADA paratransit services.

TABLE 2-10 SUMMARY OF ADA PARATRANSIT SERVICES IN RTA REGION

| | | | | | SERVICE BEYOND |
|-------|--------------------|--|---|---|---------------------|
| | ADA DARATRANSIT | SERVICE AREA | SERVICE | FARE | |
| DDOT | MetroLift | City of Detroit | Mirrors fixed-route | \$2.50 | None |
| | | | hours; some service provided | | |
| SMART | Connector | Macomb, Oakland and western Wayne: ¾ mile corridors plus "islands" under 2 miles in width/length | Mirrors fixed-route hours: Some as many as 22 hours/day; most 7:00 am to 7:00 pm | \$4.00 | None |
| ΑΑΑΤΑ | ARide | Ann Arbor, Ypsilanti, and portions of Pittsfield and Superior within ¾ mile corridors | Mirrors fixed-route hours; most 6:30 am to 11:45 pm on weekdays; 8:00 am to 7:45 on Saturdays; 8:00 am to 6:30 pm on Sundays | \$3.00 for advance reservation trips; \$4.00 premium fare for same-day service | Same-day service |

Any additional paratransit or DRT services beyond the required ADA accommodation (Table 2-11) are optional and, in the RTA area, these services are funded with local resources or additional FTA grants.

| AGENCY | SERVICE NAME | ELIGIBLE RIDERS | SERVICE AREA AND TRIP LIMITS | SERVICE HOURS | FARE |
|--------|---------------------------------------|---|---|--|---|
| DDOT | JARC and New Freedom | Lower-Income (JARC) and Seniors and PwD* (New Freedom) | City of Detroit (JARC destinations beyond city): JARC trips to employment destinations; NF trips for non- emergency medical trips; 30 mile limit | 24/7 | \$1.50 |
| SMART | Connector | Non-ADA; Full fare customers must reside more than 1/3 miles from closest transit route | Macomb, Oakland and western Wayne: trips must be under 10 miles in length with destinations no more than 1 miles beyond county boundary | M-F: 6-6 | \$4.00 full fare (general public); \$1.00 reduced fare for seniors and PwD |
| SMART | Flex, Shuttles and Dial-A- Ride | General Public | Groesbeck, Oakland Mall, Somerset Mall, Farmington and Farmington Hills | M-F: 5:25-5:25 M-F: 6-10 / 2-6 M-F: 6-10 / 2-6 M-F: 6-6 | \$2.00 full fare + \$.25 transfer; \$1.00 reduced fare |
| SMART | Community Partnership | Determined by municipality; 57 are for seniors only, 16 for general public | 73 communities in tri-county area; most provide intra- community trips' some straddle municipal boundaries | Varies | Varies |
| AAATA | GoldRide | Seniors | Ann Arbor, Ypsilanti, and portions of Pittsfield and Superior within ¾ mile corridors | M-F: 6:30-11:45 Sat: 8- 7:45 Sun: 8- 6:30 | \$3.00 for advance reservation trips; \$4.00 premium fare for same-day service |
| ΑΑΑΤΑ | NightRide | General Public | Ann Arbor and Ypsilanti | Weekdays 12:00am to 6:00am; Sat 8:00pm to 7:30am; Sun 7:00pm to 7:30 pm | \$5.00 full fare; \$2.50 reduced fare + \$2.00 for immediate request trips to/from Ypsilanti |
| ΑΑΑΤΑ | MyRide | General Public | Washtenaw Co. beyond AAATA service area | Varies | Varies |

TABLE 2-11 ADDITIONAL PARATRANSIT AND DRT PROVIDED BY RTA PROVIDERS

*PwD = Persons with Disabilities

AAATA'S PARATRANSIT AND MOBILITY MANAGEMENT SERVICES

ARide (ADA Paratransit) and GoldRide (Senior Transportation)

AAATA's ADA paratransit service is called ARide, and serves Ann Arbor, Ypsilanti, and portions of Pittsfield and Superior. AAATA also provides GoldRide for seniors 65 years of age and older. GoldRide is provided throughout the City of Ann Arbor and to some areas within Pittsfield Township. Like SMART's Connector service, ARide and Gold-Ride are combined, with ADA paratransit and senior trips co-mingled on the same vehicles: approximately 82% of the trips are taken by ADA customers, and 18% by senior customers. (See Table 2-9.)

Advance requests may be made one to seven days ahead. Same-day service, while permitted, incurs a "premium" fare. Advance request fares are \$3.00. Same-day trip fare is \$4.00. Same-day service is an enhancement beyond the minimum ADA paratransit obligations.

No performance metrics were available at the time this report was prepared, although they are expected to be available later in the year

There are also additional paratransit services offered by other providers in Washtenaw County.

NightRide

AAATA also has a contract with Blue Cab to operate NightRide, a limited area late night demandresponsive service opens to the general public but with discounted fares available for ADA customers and seniors. NightRide operates from 12 midnight to 6 AM on weekdays, 8 PM to 7:30 AM on Saturdays, and 7 PM to 7:30 PM on Sundays.

Much like regular taxi service, riders can request immediate service or make an advanced reservation by phone or email. When requesting service, riders must provide their name, telephone number, origin and destination, and the number of passengers who will be taking the trip. Riders must also note their earliest available time for pick-up, whether they plan to bring a car seat or wheelchair, and if they would like to be contacted when their vehicle arrives.

For "immediate" requests, NightRide normally arrives within 25 to 60 minutes of the call.

All trips must be requested at least 45 minutes before the end of NightRide service.

NightRide vehicles are shared with other riders, and AAATA advises customers to allow at least one hour to complete a trip.

Advance reservations for trips between Ann Arbor and Ypsilanti are advised and confirmed by phone at least 60 minutes before pickup time. Trips requested without an advanced reservation cannot be guaranteed and are subject to an additional \$2 charge per person.

No service performance metrics were available, but are expected to be available later in the year.

MyRide Mobility Management Services

AAATA's MyRide is a mobility management service to transit-dependent individuals in Washtenaw County and select areas in Jackson, Lenawee, Livingston, Monroe, Oakland, and Wayne counties.

Services provided include:

- <u>Information, referrals, and trip planning assistance</u>. MyRide's Information Specialists/Call Takers match each caller's general or specific trip needs with specific services and can help with contact information for those services and help the customers plan specific trips.
- <u>Scheduling assistance</u>. MyRide's Information Specialists/Call Takers will assist callers with scheduling trips on their behalf. In order to guarantee a ride and avoid an increased fare, customers are encouraged to schedule trips 24 hours in advance. Same-day trips can be scheduled for a slightly higher fare and rides are based on provider space and availability. MyRide staff assisted with the booking of approximately 19,000 trips on nine different providers partnering with AAATA in FY 2014.
- <u>Trip fare assistance</u>. The MyRide program currently uses JARC and New Freedom grant funding to subsidize a portion of transportation fares for specific types of trips taken by individuals who are not able to use existing public transportation services.⁷ The amount of assistance provided is based on passenger income and the length of time such assistance is needed (as trip subsidies are only available on a temporary basis).⁸
- <u>Travel Training</u>. Individuals or small groups of customers can learn how to access and use public and demand-responsive transportation services available in the county. Training also includes developing individual transportation plans to ensure customers have realistic plans to maintain their travel independence if they depend on public transit for long-term use.

DDOT'S PARATRANSIT AND JARC/NEW FREEDOM SERVICES

MetroLift (ADA Paratransit)

DDOT's ADA paratransit service is called MetroLift. It essentially serves the City of Detroit plus some transit route corridors that extend beyond the city boundary. DDOT staff perform ADA eligibility certification functions, intake and book trip requests and assign trips to one of four service provider contractors based on trip origin and destination, available capacity, length of trip, need for accessible vehicles, and time of day.

MetroLift's on-time performance for CY 2014 was reported to be 84.6%, which is lower than the industry standard of 90% that is associated with services with 20-minute pick-up windows.

⁷ JARC funding assists low income customers with access to transportation to work and other work-related services or activities. New Freedom funding assists individuals with a disability (physical, mental, sensory and emotional) to access transportation for any trip purpose including work trips; however non-emergency medical trips are generally given priority.

⁸ With the discontinuance of these grant programs, AAATA will be using Section 5310 funding for this program beginning in FY 2016.

Job Access Reverse Commute (JARC) and New Freedom (NF) Program

The JARC program was established to (1) improve access to transportation services to employment and employment related activities for welfare recipients and eligible low income individuals; and (2) to transport residents of urbanized areas to suburban jobs. An eligible rider's income must be under 150% of the poverty level. Common destinations include suburban workplaces, education centers, job trainings, and interview locations, Registered riders may also utilize the system within city limits when traveling to/from eligible destinations when fixed-route service is not in operation. Trips are preferably scheduled in advance, although same-day services are available to allow riders flexible scheduling.

The New Freedom program seeks to reduce barriers to transportation services and expand the transportation mobility options available to people with disabilities beyond the requirement of the Americans with Disabilities Act of 1990 (ADA). Most often, New Freedom provides transportation for individuals to/from non-emergency medical commitments. Like JARC, New Freedom trips are preferably scheduled in advance, but same day trips are permitted.

SMART'S PARATRANSIT AND DRT SERVICES

Connector Service (ADA and Non-ADA Paratransit)

SMART's ADA paratransit service, called Connector, is operated totally in-house, and serves the ADA service area plus some circumscribed core areas in Macomb, Oakland, and western Wayne counties. Beyond qualified ADA trips, Connector service is available to the general public, with discounted fares for persons with disabilities (who are either not ADA eligible or are ADA-eligible but their trips are not ADA eligible), and by seniors. Non-ADA trips are co-mingled with ADA trips on the same fleet of vehicles. Interestingly, the ADA trips reflect only 15% of this combined ridership while non-ADA trips reflect 85% of the combined trips.

Unlike ADA trips, non-ADA trips are limited by trip length to no more than 10 miles. Additionally, trip origin or destination may not be more than one mile past the county border. Full fare customers may not take trips from their home if it is within one-third mile of a fixed bus route.

Reservations hours are weekdays from 7 AM to 4 PM, except on major holidays. ADA customers may request trips one to 14 days in advance. Non-ADA customers may submit requests one to six days in advance for medical trips and one to two days in advance for medical trips. No "new" same-day requests are taken.

Non-ADA paratransit service is only available on weekdays.

Connector's on-time performance for the first three quarters of FY 2015 was reported to be 89.2% – roughly meeting the expected standard.

Flex, Shuttle, and Dial-A-Ride Services

SMART also provides five demand-responsive flex/shuttle/dial-a-ride services available to the general public: the Groesbeck Flex Route, the Oakland Mall Shuttle, the Somerset Shuttle, Farmington/Farmington Hills Dial-A-Ride Service, and Farmington/Farmington Hills Connector

Service. Service requests from customers come through the same call center as Connector requests and can be made for same-day service.

No service performance was available for these services.

TABLE 2-12SMART'S FLEX, SHUTTLE, AND DIAL-A-RIDE SERVICES AVAILABLE TO
THE GENERAL PUBLIC

| | | OTHER P/U | OTHER | FARES |
|------------------------|-----------------|----------------------------|--------------------|------------------|
| Croophook Eloy | Designated | D/L doviations within | St. John Masamb | ¢2.00 full foro |
| Bouto | | P/U deviations within | St. JUIII Macuino | |
| Roule Manday Friday | siops at o | prescribed service | Hospital, Killari, | pius p.25 |
| Monday - Friday | locations | area can be | Meljer, Macomb | transier |
| 5:25am – 5:25 pm | along route | requested <u>one nour</u> | Academy | \$1.00 reduced |
| | | in advance | | fare with free |
| | | | | transfer |
| Oakland Mall | None, except | Anywhere within | Anywhere within | \$2.00 full fare |
| Shuttle <u>and</u> | for Oakland | prescribed service | prescribed service | plus \$.25 |
| Somerset Shuttle | Mall | areas; trip requests | areas | transfer |
| Monday – Friday | | scheduled/dispatched | | \$1.00 reduced |
| 6:00 am- 10:00 am | | within <u>one hour</u> of | | fare with free |
| 2:00 pm – 6:00pm | | call, no later than | | transfer |
| | | 9:30am & 5:00pm | | |
| Farmington and | 2 stops on | Anywhere within | Anywhere within | \$2.00 full fare |
| Farmington Hills | "peak hour | prescribed | prescribed | plus \$.25 |
| Dial-A-Ride | routes" and 4 | Farmington and | Farmington and | transfer |
| Monday – Friday | "local service" | Farmington Hills; can | Farmington Hills | \$1.00 reduced |
| 6:00 am to 6:00 pm | stops | be requested <u>one</u> | | fare with free |
| | | <u>hour</u> in advance, no | | transfer |
| | | later than 5:00 pm | | |
| Farmington and | 4 stops in Novi | Anywhere within | None | \$4.00 full fare |
| Farmington Hills | and 4 stops in | prescribed | | plus \$.25 |
| Connector Service | Livonia | Farmington and | | transfer |
| only for residents | | Farmington Hills; | | \$1.00 reduced |
| | | advance reservations | | fare with free |
| | | same as Connector | | transfer |

Community Partnership Program

SMART also has the Community Partnership Program that provides municipalities with vehicles, vehicle maintenance, and operating funds (in some instances supplemented by partner municipalities) for community-based and municipally operated or contracted services. Partner communities may uniquely determine their service (Table 2-13). Many focus on senior transportation services to/from the local senior center. Others operate general public dial-a-ride.

| COUNTY | COMMUNITY- BASED SERVICES FOR SENIORS AND PWD | COMMUNITY- BASED SERVICES FOR GENERAL PUBLIC | NO COMMUNITY- BASED OPTIONS (BEYOND CONNECTOR) |
|----------------|--|---|---|
| Macomb County | 19 | 8 | 0 |
| Oakland County | 19 | 4 | 1 |
| Wayne County | 19 | 4 | 2 |
| SMART area | 57 | 16 | 3 |

TABLE 2-13 SMART'S COMMUNITY PARTNERSHIP SERVICES BY COUNTY

Ridership information is provided in Table 2-9. No service performance data was available for these services.

Existing Institutional and Employer Transit Services

A handful of regional institutions and employers provide shuttle services that supplement those provided by the four public transit providers (see Figure 2-34). These include:

- University of Michigan
- Detroit Medical Center
- Wayne State University
- Henry Ford Health System
- Quicken Loans

This list is a sampling of the largest of numerous private shuttle services provided in southeast Michigan, and should not be considered an exhaustive list.

UNIVERSITY OF MICHIGAN

University of Michigan provides transit service focused primarily on serving the needs of the university community. This service consists of 13 routes, which are available to the public as well as the campus population and serves over 27,300 riders per weekday (see Figure 2-33).

Most routes operate from approximately 6 AM to 7 PM, however some routes have service as early as 5 AM extending past 2 AM (see Table 2-14). Service is generally reduced during spring and summer term and over holiday periods in response to lower student volumes.

The roughly \$7 million annual operating budget is primarily supported through state funds (65%) as a public university and student fees (28%).



FIGURE 2-33 U-M TRANSIT SYSTEM MAP

| TABLE 2-14 | SERVICE CHARACTERISTICS OF U-M TRANSIT SERVICES |
|------------|---|
|------------|---|

| | | | Weekday | | | Saturday | | Sunday | | |
|----------|---|---------|---------------------|-------|--------|----------|----------------------|-----------|---------------------|-----------|
| | | | Service | | | | Service | | Service | |
| | | Service | Span of Service* | | | су | Span of Service* | Frequency | Span of Service* | Frequency |
| Route | | Туре | | Peak | Midday | Evening | | All Day | | All Day |
| BB | Bursley-Baits Route | | 7:15 a.m 12:15 a.m. | 10 | 10 | 15 | 12:00 p.m 2:45 a.m. | 15 | 12:00 p.m 2:00 a.m. | 15 |
| CN | Commuter North | | 6:00 a.m 1:00 a.m. | 10-11 | 10-11 | 15 | - | - | - | - |
| CS | Commuter South | | 6:30 a.m 1:00 a.m. | 10-11 | 10-11 | 15 | - | - | - | - |
| DD | Diag to Diag Express | | 1:00 p.m 7:02 p.m. | 11 | 11 | - | - | - | - | - |
| МΧ | Med Express | | 5:20 a.m 7:20 p.m. | 10 | 30 | - | - | - | - | - |
| NO | Night Owl | | 10:00 p.m 3:00 a.m. | - | - | 20 | 10:00 p.m 3:00 a.m. | 20 | - | - |
| NES | North-East Shuttle | | 6:15 a.m 7:00 p.m. | 15 | 15 | - | - | - | - | - |
| NW | Northwood | | 6:35 a.m 11:55 p.m. | 10 | 10 | 20 | 11:55 a.m 11:55 p.m. | 20 | 6:35 a.m 11:55 p.m. | 20 |
| NX | Northwood Express | | 7:20 a.m 12:55 p.m. | 10 | 10 | - | - | - | - | - |
| NC | North Campus | | 12:18 a.m 2:38 a.m. | 20 | 20 | 20 | 8:30 a.m 3:03 a.m. | 20 | 8:30 a.m 2:23 a.m. | 20 |
| OS | Oxford Shuttle | | 5:00 p.m 1:49 a.m. | 15 | 15 | 15 | 5:04 p.m 9:49 p.m. | 15 | 5:04 p.m 9:49 p.m. | 15 |
| WS | Wall Street - NIB | | 6:00 a.m 6:50 p.m. | 11 | 11 | 11 | - | - | - | - |
| WX | Wall Street Express | | 5:10 a.m 1:00 a.m. | - | - | 15 | - | - | - | - |
| *Span of | service measured by starting time of first and last trip of the day | | _ | | | | | | | |



FIGURE 2-34 U-M TRANSIT SERVICE FREQUENCIES

DETROIT MEDICAL CENTER

Detroit Medical Center (DMC) operates 12 shuttles for patients, visitors, and staff. The Central Campus shuttle is in operation all day, while the other shuttles connecting parking structures to the Central Campus or connecting different hospital branches are generally available during peak hours and run on 10-minute headways. DMC's Midtown Shuttle connects to Wayne State University and is a part of the larger Midtown Connection Shuttle system.

Shuttles operate 24 hours a day, Monday through Friday. During the AM and PM peak hours shuttles operate every 10 to 15 minutes. The system carries approximately 2,500 riders per day.

WAYNE STATE UNIVERSITY

Wayne State University (WSU) operates its own complimentary Main Campus shuttle and a Medical Campus shuttle. The shuttle consists of two 25-person vans operating from 7 AM to 9 PM. The shuttle operates roughly every 15 minutes and serves 200 to 250 riders per day. WSU's shuttle services connect to the DMC and Henry Ford Health System as a part of the Midtown Connection Shuttle system.

COLLEGE FOR CREATIVE STUDIES

The College for Creative Studies (CCS) provides shuttle services for students, facility, and staff in the Midtown neighborhood, providing connections between college facilities and parking.

The College of Creative Studies also operates a small institutional shuttle program. The shuttles travel on Woodward Avenue between Kirby and Baltimore. This 24-hour system serves 1,500 riders per year.

HENRY FORD HEALTH SYSTEM

Henry Ford Health System (HFHS) operates three shuttle routes with various schedules and configurations to connect employees, patients, and visitors from the HFHS main campus to nearby medical facilities and parking lots in the New Center neighborhood. Shuttles run as early as 5:30 AM until as late as 10 PM. HFHS shuttles also provide connections to WSU's shuttle services at One Ford Place as a part of the Midtown Connection Shuttle system.

U-M DETROIT CENTER CONNECTOR

The U-M Detroit Center Connector provides shuttle service between Ann Arbor and Detroit for U-M faculty, staff and students, as well as partners involved in current University of Michigan initiatives based on the Ann Arbor Campus. Service began in fall 2013 as a free, pilot shuttle, with initial funding from the Transforming Learning for the Third Century grant out of the University of Michigan's Provost Office. After a successful two-year trial period, the Provost Office provided funding to operate a four-day schedule, to be managed by the Detroit Center and an Advisory Board comprised of faculty, staff and students.

QUICKEN LOANS/OPPORTUNITY DETROIT

Quicken Loans has roughly 10,000 employees working in downtown Detroit. Employees work in several different buildings around downtown. Quicken Loans partner Bedrock Ventures owns a number of parking facilities and residential buildings throughout downtown. To connect employees who park or reside in downtown to their work locations, Quicken Loans operates an extensive private shuttle bus system of ten routes around the downtown core. They operate 10 routes and coordinate 38 vanpools, with 188 participants.

Quicken Loans has built a unique and tailored app (QRide) to provide riders with real-time bus information including bus route, current location (refreshed every 3 seconds), and occupancy so riders may know not only when a bus will arrive but also whether or not the bus is full.⁹

⁹ See informational video at <u>https://www.youtube.com/watch?v=gDOyHybjuw0</u>


FIGURE 2-35 EXISTING SHUTTLE SERVICES

Existing Transit-Supportive Systems and Services

Transit trips don't start and end at the transit stop, but at one's destination, most often a home or workplace. "First and last mile" connections are necessary to support transit services and extend their reach. Walking is the most common mode for this connection, but bicycles, shared vehicles, shared rides, and personal vehicles also play an important role. This chapter looks at the infrastructure already in place in southeast Michigan that makes it safer and easier for riders to get to and from transit stops for those critical first and last mile connections.

IMPORTANCE OF WALKABILITY

Many communities in the region – particularly those built before World War II – have a finegrained grid of streets that provide many routes of connection. These so-called traditional neighborhood development (TND) patterns generally provide a highly walkable environment and robust access to transit services, though many still lack complete sidewalks and marked pedestrian crosswalks. Some examples of these areas within the region include Ann Arbor, Ypsilanti, Pontiac, Berkley, Birmingham, Royal Oak, Ferndale, Farmington, Dearborn, Grosse Pointe Park, Mt Clemens, Eastpointe, Lincoln Park, and Wyandotte.¹⁰

The areas with sidewalks available, including ongoing repairs and ADA compliant corners, even more so make connections to transit possible. Many communities in the region have content in their zoning with requirements, such as placement of parking behind buildings, which contribute to supporting transit use in that area.

TRANSIT-ORIENTED DEVELOPMENT

Transit-oriented development (TOD) is a mixed-use residential and commercial area that is integrated with transit services, and often incorporates features to encourage transit ridership. Successful TOD provides people with a variety of incomes levels with convenient access to jobs, social services, and educational opportunities throughout the region while expanding everyday transportation choices to include riding transit, walking, and bicycling.

Transit-oriented development is not a new concept for the region, in fact it is a very old one. Southeast Michigan evolved first around its waterfront and then around the region's major rail corridors. Many of the region's traditional town centers feature old rail stations. These compact, walkable centers have seen increasing attraction of new and younger residents, as household preferences and demographics shift.

Many communities view increasing TOD as a critical element to growing transit services in their region. By targeting land development near transit for transit-supportive development, other agencies have seen TOD lead to increases in transit ridership and fare revenues. However, the scale of these benefits depends on the extent and convenience of transit system they are built upon. If people do not feel that the transit service is useful or gets them to where they need to go, they will be less likely to use TOD neighborhoods for everyday activities.

¹⁰ "The WalkUp Wake-Up Call: Michigan Metro." Christopher Leinberger and Patrick Lynch. The George Washington University. June 2015.

BICYCLES

As bicycles become a more common way of transportation, accommodations for bicycles are also increasing in numbers. More cities are providing bike share opportunities and infrastructure for bicycles.

Bicycle Networks

In October 2014, SEMCOG adopted a regional non-motorized plan for southeast Michigan. This regional plan ties together and integrates the several plans created by individual jurisdictions in the region to provide a holistic system that supports bicycling and walking in the region. SEMCOG's plan recognizes that bike lanes serve as an important connector to transit and can extend the reach of transit. At present the four county RTA area has nearly 2,300 miles of non-motorized facilities ranging from shared use paths to signed bike routes – the majority of mileage (over 1,700) is in Oakland and Washtenaw counties. Another 1,200 miles of facilities are planned. Notably, there are over 170 miles of bicycle lanes in Detroit .

There are now 76 miles of bike lanes in Ann Arbor which translates to 85% of the primary road system, and as the amount of bike lanes have been increasing so too has transit ridership.

SMART provides some funding to support local communities installing bike racks at major activity centers, so that users can ride a bike and take transit on a combined trip. Bike racks have also been installed at some SMART bus stops.

Within the City of Detroit, the Dequindre Cut Greenway opened in 2009, and includes separate lanes for pedestrians and bicycles. There are numerous planned bicycle initiatives to be completed in 2015 or 2016, including an extension of Dequindre Cut, LINK Detroit, Inner Circle Greenway (full implementation would be 26 miles of pathway encircling Detroit), protected bike lanes on Jefferson and Chalmers, and other projects.

Bike Share

Bike share has proven to be a valuable first or last mile connection for regional transit services, and a number of different efforts have begun:

- Quicken Loans and DTE Energy each offer their employees access to an exclusive bike share network. Bikes are available on-demand at building entrances and in parking garages in and around Detroit's central business district.
- DDOT in collaboration with the Downtown Detroit Partnership, a non-profit organization, received a \$1.1M Transportation Alternatives Program grant from SEMCOG to launch a bike share program with 35 stations and 350 bikes in greater downtown Detroit and neighboring communities. System planning is in development with an anticipated launch in summer 2016.
- ArborBike has launched in Ann Arbor with six stations currently active on the University of Michigan campus and another eight scheduled to open in late May 2015. While the University of Michigan is the title sponsor of the service, the City of Ann Arbor and TheRide are critical cornerstone partners, along with Clean Energy Coalition, the operator.

CARSHARE

Two car share services presently operate in the region including Zipcar (in both Ann Arbor and Detroit) and Enterprise CarShare (in Pontiac). Lyft and Uber provide ridesharing services in addition to traditional taxi service.

RIDESHARING AND VANPOOLS

MichiVan, Michigan rideshare (MiRideshare), vRide and other providers offer vanpools and ride sharing options in the region. vRide is a full service vanpool provider covering payment transactions, vehicle maintenance, and rider matching services. SEMCOG maintains MiRideshare, which is the region's carpool matching system. MiRideshare is an online system that matches drivers with riders to share the commute. Currently more than 6,000 users have registered to use ridesharing services.

PARK & RIDE

As described previously, AAATA and SMART operate a total of 27 Park & Ride lots in the region (SMART has 21 while AAATA operates six). SMART also partners with local businesses in the region to enable riders to park at up to 1,500-2,000 additional parking spaces along their routes at shopping malls and other properties.

Planned and Anticipated Transit Services

In addition to the systems currently in operation in the region, a number of additional transit services are currently under construction or under study. These include M-1 RAIL, regional rapid transit studies, and commuter rail studies (see Figure 2-35). These projects build on previous efforts to plan and coordinate regional transit services in southeast Michigan, including a 2001 framework for improving transit in southeast Michigan that called for a four-tiered transit system: a 12-corridor, rapid transit network; enhanced fixed-route bus service; improved and expanded community transit; and the establishment of regional transit links and builds on the efforts of the Regional Transit Coordinating Council, which formed the basis for the establishment of the RTA.

In August 2007, the Regional Transit Coordinating Council unveiled a Vision Plan for Transit in southeast Michigan and released a Comprehensive Regional Transit Service Plan in November 2008. The plan provided a detailed analysis of existing transit services in the region; recommended enhancements; and identified future rapid transit corridors to build a robust transit network for southeast Michigan, including commuter rail service to/from Washtenaw, Monroe, and St. Clair counties. The short-term rapid transit corridors identified in the report are included in Figure 2-35.

M-1 RAIL

M-1 RAIL is a unique partnership of the private business and philanthropic community, and state/federal government agencies. These organizations are partnering together to fund the capital construction and initial operating years of a 3.3-mile modern streetcar in Detroit on Woodward Avenue (M-1) linking downtown with Midtown and the North End/New Center areas.

M-1 RAIL was officially established in 2008, but the reality of streetcar construction was realized when, in January 2013, the FTA granted \$25 million to fund streetcar construction. The partners of M-1 RAIL have pledged more than \$100 million in private and philanthropic dollars to construct the project, and gained financial support through the federal TIGER grant program. M-1 RAIL has also committed to operate the system for at least seven years and up to ten years. M-1 RAIL will use an endowment, coupled with fares and other measures like naming rights, to produce the funding needed to operate. The line is projected to serve 6,000 daily trips in Year 1, rising to 10,000 in 5 years.

The streetcar will run in mixed traffic. Its 20 stations serve 12 locations along the corridor. No plans are currently in place to alter existing connecting services. However, M-1 RAIL provides important opportunities to connect with DDOT, the People Mover, SMART (during peak hours), and Amtrak systems as they cross paths with the streetcar. These connections are important for future transit opportunities, such as the M-1 RAIL connection to the possible future service from downtown Detroit to Ann Arbor via commuter rail.

WOODWARD LIGHT RAIL (LRT) PROJECT

In August 2011, the Federal Transit Authorities (FTA) issued a Record of Decision (ROD) on the Woodward Avenue Light Rail Transit Project. The FTA concluded that the 9.3 mile light rail transit (LRT) line along Woodward satisfied the requirements of the National Environmental Policy Act. The LRT was approved to run in the median of Woodward Avenue from the Central Business

District in downtown Detroit to the Michigan State Fairgrounds at 8 Mile Road. This decision was made after the completion of the Final Environmental Impact Statement (FEIS) issued in June 2011. The purpose of the FEIS was to improve public transit options and mobility along the Woodward Corridor in response to the need for more transit options to support the growing ridership numbers in the corridor.

Following the receipt of the ROD, the City of Detroit and the State of Michigan agreed to not move forward with the final design phase of the Woodward Avenue LRT and instead pursue a Bus Rapid Transit system to be implemented on multiple corridors across the southeast Michigan region.

BUS RAPID TRANSIT (BRT)

Numerous studies over the past nearly two decades have called for the introduction of rapid transit services along dominant corridors of southeast Michigan. Among them:

- A 1997 transportation vision report from the Metropolitan Affairs Coalition and the Detroit Regional Chamber of Commerce
- Improving Transit in the SEMCOG Region: Framework for Action (2001, SEMCOG)¹¹
- Comprehensive Regional Transit Service Plan (2008, RTCC)
- Regional Long Range Transportation Plan Direction 2035 (2009, SEMCOG)
- Regional Long Range Transportation Plan (2013, SEMCOG)

These studies consistently identified four corridors to provide 113 miles of regional rapid transit services: Woodward Avenue, Gratiot Avenue, Grand River Avenue, and Michigan Avenue. Today, corridor studies are underway on three.

Woodward Avenue

SEMCOG led a study of rapid transit alternatives and facility design for the 27-mile Woodward Avenue corridor connecting Detroit to Pontiac, spanning both Wayne and Oakland counties. The intention is to improve travel choice and mobility options, enhance access to jobs and connections to major destinations, and enhance economic development opportunities along the corridor and the several communities it serves. A locally preferred alternative (LPA) was selected in 2014 calling for bus rapid transit on the corridor.

As a complement to the Alternatives Analysis study described above and ultimate introduction of enhanced transit, corridor communities initiated the Woodward Avenue Complete Streets study to ensure other supportive systems anticipated the arrival of transit and supported local access and placemaking. The RTA is now leading efforts to move the Woodward Avenue bus rapid transit project into the environmental phase, and these efforts are being coordinated with its Regional Master Transit Plan.

¹¹ "Improving Transit in Southeast Michigan: A Framework for Action. Southeast Michigan Council of Governments" (SEMCOG). October 2001

Gratiot Avenue

Gratiot Avenue is another corridor likely destined for future BRT. In addition to the recently initiated RTA study, the Gratiot Avenue Corridor Improvement Plan (2009) addressed Gratiot Avenue's development and urban design issues by promoting access management, complete streets design, and zoning that supports multimodal access.



FIGURE 2-36 FUTURE TRANSIT SERVICES UNDERWAY OR UNDER STUDY

Access Gratiot! is the implementation of the access management components of that plan – a project that includes a 26-mile long corridor segment in Macomb County. While the focus of the project is on access management, the goal of stakeholders is also to address urban form, setback, street and intersection design, development review processes, and economic development.¹² As with the other two corridor studies underway, efforts are being coordinated with the Regional Master Transit Plan.

Michigan Avenue

The Michigan Avenue corridor is 38 miles long, paralleling I-94, that links a number of critical major destinations and employment centers including Detroit, Dearborn, Detroit Metro Airport, Ypsilanti (and Eastern Michigan University), and Ann Arbor (and the University of Michigan). The corridor passes through vital and vibrant communities and neighborhoods and areas that have suffered disinvestment and decline.

In 2014, the Regional Transit Authority initiated a corridor planning effort for Michigan Avenue. The purpose of the study is to define the objectives for transit along the corridor and determine the appropriate technology, alignment, and operation of transit to meet these needs for the communities and stakeholders along it. The corridor planning effort dovetails with other priorities and initiatives, including airport service and connections and Ann Arbor to Detroit commuter rail. The corridor study will proceed concurrently with the Regional Master Transit Plan process and be closely integrated into this effort.

ANN ARBOR CONNECTOR

The AAATA, in partnership with the University of Michigan, City of Ann Arbor, and Ann Arbor Downtown Development Authority, is developing a plan for a high capacity transit service between northeast and south Ann Arbor. The 2011 feasibility study determined bus rapid transit, streetcar, or light rail services were feasible and ridership demand was sufficient. Six route alternatives were identified in late 2013 and presented to the public, with all six starting at Plymouth Road and US-23, traveling to U of M's North Campus and ultimately connecting to Briarwood Mall. The different alternatives connect to varying key destinations, including the University Hospital, U of M's Central and South campuses, downtown Ann Arbor, and the Blake Transit Center.

According to SEMCOG's 2040 Regional Transportation Plan, the environmental analysis and preliminary engineering phases of the project are expected to begin in 2016. The studies will cost an estimated \$10 million, of which \$2 million will be a local share.

COMMUTER RAIL

Two commuter rail lines are also under consideration and study in the RTA region.

¹² http://www.lslplanning.com/accessgratiot.htm, http://www.semcog.org/uploadedFiles/PlanReport.pdf

Ann Arbor Detroit Regional Rail Project

A commuter rail link was recommended as part of the Improving Transit in southeast Michigan: A Framework for Action, published in 2001. Service would run on the Great Lakes Central Railroad line operating in the same corridor as the Pontiac-Detroit-Chicago Amtrak line. The service would originate from the Amtrak station at Woodward Avenue and Grand Boulevard in Detroit and serve a new station in Ann Arbor in the vicinity of South First Street and West William Street. The original plan in 2010 called for four weekday round trips at five stations. In 2014, \$33 million in capital funds had been obligated, out of the total \$80 million cost.¹³ Service implementation has been largely stalled since 2010 due to this lack of funding¹⁴, although testing of rail cars began again in 2012.¹⁵

Washtenaw Livingston Rail Line

The Washtenaw and Livingston Line (WALLY) would consist of a 27-mile commuter rail line that would connect Ann Arbor and Howell. Running parallel to US-23, a heavily congested highway corridor, WALLY would provide an alternative to the drive commute.

While operational arrangements are still to be determined, it is likely that AAATA would administer the service. Projected ridership is 1,200 daily riders, and costs are estimated at \$32 million for capital and \$7 million per year for operations.

INTERCITY PASSENGER RAIL

Coast-to-Coast Line

AAATA, along with the Michigan Department of Transportation and other partners, has secured a federal grant, and a study is underway of potential rail service linking Detroit to Holland, Michigan. The Coast-to-Coast Line would traverse the entire state from east to west, and link Holland, Grand Rapids, Lansing, Ann Arbor, and Detroit.

¹³ PowerPoint Presentation, <u>http://www.semcog.org/AADD.aspx</u>

¹⁴ <u>http://www.annarbor.com/news/ann-arbor-to-detroit-rail-line-delayed/</u>

¹⁵ <u>http://www.annarbor.com/news/commuter-rail-cars-between-ann-arbor-and-detroit-slated-for-test-runs-starting-monday/</u>

Overall Assessment of Existing Services

Compared to the transit service provided in most major urban areas, the transit services in Southeast Michigan are more limited in many important ways. This includes the limited amount of service coverage, service frequency, and span of service (hours of operation). There is also little coordination between the service agencies (although there are some ongoing coordination efforts), making it difficult for patrons to transfer from one system to another, thus further limiting the benefit transit can provide the region. There is a strong need to further invest in transit service within the region to close the coverage gaps and increase service frequencies in order to increase the quality of life and enhance economic development opportunities within the region.

SERVICE LEVELS

The service levels provided by the current transit providers are too low as to be minimally convenient, thus they discourage most people with other options from using transit. Even during the peak, highest ridership periods, only a handful of lines in the region provide service that would be considered convenient or very convenient (see Figure 2-37). Saturday service is even sparser (see Figure 2-38). There is a need to provide increased service levels in order to connect people to the places they want to go with efficient and convenient service.

FIGURE 2-37 WEEKDAY PEAK PERIOD SERVICE FREQUENCIES



FIGURE 2-38 SATURDAY SERVICE FREQUENCIES



RIDERSHIP AND PRODUCTIVITY

Collectively, southeast Michigan's four transit systems carry an average of 156,000 passengers per weekday, 84,000 per Saturday, and 51,000 per Sunday (see Table 2-15). Relative to weekday ridership, weekend ridership is quite high on DDOT services and relatively low on SMART and AAATA services. On DDOT service, high weekend ridership exists in spite of limited service levels.

| | WEEKDAYS | SATURDAYS | SUNDAYS |
|-------|----------|-----------|---------|
| DDOT | 90,701 | 51,561 | 33,948 |
| SMART | 34,041 | 16,734 | 8,175 |
| ΑΑΑΤΑ | 26,778 | 7,276 | 3,403 |
| DTC | 5,134 | 8,224 | 5,575 |
| Total | 156,654 | 83,795 | 51,101 |

TABLE 2-15 REGIONAL SYSTEM RIDERSHIP

Source: transit providers October 2014 ridership

As expected, the top 25 highest ridership routes all serve the urban cores of Detroit or Ann Arbor (see Figure 2-39). Thirty-six of the top fifty ridership routes serve the City of Detroit in at least a limited capacity, with 28 of these routes being operated by DDOT. The highest ridership route – DDOT's Woodward route – averages 8,710 passengers per day, while DDOT's Dexter route has the highest passengers per trip with 53.5. DDOT's Evergreen route has the most passengers per revenue vehicle hour, at 62.0.

Forty-five routes average over 1,000 daily riders and 24 carry between 500 and 1,000 passengers (see Figure 2-39 and Figure 2-40). Thirty-four, mostly community and express, routes carry fewer than 500 passengers per day.

In terms of productivity, 46 routes carry more than 25 passengers per trip on weekdays, nine carry 20 to 25 passengers per trip, 16 routes carry 15 to 20 passengers per trip, and the balance carry fewer than 15 passengers per trip. Overall, southeast Michigan averages 28.0 passengers per trip on weekdays, while passengers per revenue vehicle hour average 34.0. These productivity statistics are comparable to peer systems, and could be maintained or improved with additional service that would attract new ridership.

| K | Service Statistics and Productivity | | Weekday | | | | |
|----------|-------------------------------------|--------|--------------------|------------------------------------|---------------------------------------|---|---|
| Route | Name | System | Service Type | Average Daily Ridership Rank | Average Ridership per Trip Rank | Passengers per Revenue Vehicle Hour Rank | Net Operating Cost per Rider Rank |
| | | | | RIDERS | PAX/TRIP | PAX/RVH | COST/PAX |
| 53 | Woodward | DDOT | Mainline | 8,710 | 40.9 14 | 50.1 8 | \$2.59 88 |
| 16 | Dexter | DDOT | Mainline | 7,818 2 | 53.5 | 39.8 23 | \$3.26 76 |
| 21 | Grand River | DDOT | Mainline | 7,684 3 | 46.3 6 | 51.4 6 | \$2.53 90 |
| 34 | Gratiot | DDOT | Mainline | 5,630 4 | 34.5 23 | 41.0 19 | \$3.17 80 |
| 560/565 | Gratiot Local / Limited | SMART | Main Corridor | 5,502 5 | 37.7 20 | 35.3 35 | \$3.54 68 |
| 4 | Washtenaw | AAATA | Fixed | 5,139 6 | 31.7 29 | 42.7 15 | \$2.27 96 |
| PM | People Mover | DTC / | Automated Guideway | 5,134 7 | 14.7 72 | 36.6 32 | \$5.66 28 |
| 22 | Greenfield | DDOT | Feeder | 5,002 8 | 42.8 10 | 57.9 2 | \$2.24 98 |
| 45 | Seven Mile | DDOT | Mainline | 4,912 9 | 48.6 3 | 38.3 28 | \$3.39 72 |
| 17 | Eight Mile | DDOT | Feeder | 4,513 10 | 53.1 2 | 45.4 | \$2.86 86 |
| 14 | Loffergage Fault | DDOT | Mainline | 4,1/1 | 48.5 4 | 36.3 34 | \$3.58 66 |
| 25 | Jerrerson - Fort | | Mainline | 3,360 12 | 42.5 | 34.1 4 | \$3.81 59 |
| 2 | Plymouth | | Fixed | 3,350 13 | 21.6 53 | 36.8 3 | \$2.64 87 |
| 450/460 | Woodward Local - Pontlac / Somerset | SMART | Main Corridor | 3,337 14 | 25.1 44 | 27.2 54 | \$4.60 44 |
| 60 | Evergreen | DDOT | Feeder | 2,900 15 | 44.6 8 | 62.0 | \$2.10 99 |
| 48 | Van Dyke - Larayette | DDOT | | 2,864 | 54.5 Zo | 43.2 13 | \$3.00 83 |
| 32 | McNichols | DDOT | Feeder | 2,810 1/ | 4/./ 5 | 32.0 44 | \$3.99 55 |
| 51 | Mack | | Downtown | 2,762 18 | 35.0 22 | 39.3 25 | \$5.30 75 |
| 510/515 | Van Dyke Local / Limited | SMART | Main Corridor | 2,507 19 | 30.6 30 | 30.0 4/ | \$4.10 5 |
| 18 | Hemilten | DDOT | Downtown | 2,505 20 | 42.5 12 | 38.0 Z/ | \$3.30 /3 |
| 25 | hamilton | DDOT | Downtown | 2,417 21 | 41.7 15 | 40.4 21 | \$3.22 70 |
| 6 | Juy | | Eixed | 2,536 22 | 42.9 9 79 5 17 | 45.0 14 | \$3.02 02 |
| 70 | Disworth | | Fixed | 2,510 25 | 45.2.7 | 71.2 45 | \$2.44 92 |
| 5 | Packard | | Fixed | 2,230 24 | 17.5 64 | 27.2 53 | \$4.10 50 |
| 710 | Nine Mill Crosstown | SMADT | Crosstown | 2,106 25 | 75 5 21 | 36.6 33 | \$3.38 07 |
| 710 | Michigan | | Downtown | 2,103 20 | 34.5.24 | 5773 | \$3.41 71 |
| 200 | Michigan Ave Local | SMART | Main Corridor | 1997 28 | 25.9.41 | 29.5.49 | \$4.23.49 |
| 125 | Fort St - Fureka Rd | SMART | Main Corridor | 1,353 20 | 25.8 42 | 23.2 70 | \$5.40.34 |
| 36 | Wolverine Tower Shuttle | ΔΔΔΤΔ | Fixed | 1747 30 | 26140 | 42 1 17 | \$2 31 95 |
| 7 | Cadillac - Harper | DDOT | Downtown | 1.691 31 | 34.5.25 | 37 9 29 | \$3.43 70 |
| 275 | Telegraph | SMART | Crosstown | 1.652 32 | 39.3 15 | 24.6 65 | \$5.08.38 |
| 740 | Twelve Mile Crosstown | SMART | Crosstown | 1.531 33 | 39.3 16 | 22.5 72 | \$5.55 32 |
| 15 | Chicago - Davison | DDOT | Feeder | 1.473 34 | 27.8 35 | 34.4 39 | \$3.78 61 |
| 415/420 | Greenfield / Southfield | SMART | Community | 1,451 35 | 17.1 67 | 24.9 59 | \$5.01 41 |
| 495 | John R | SMART | Main Corridor | 1.449 36 | 17.5 65 | 34.5 38 | \$3.62 65 |
| 3 | Huron River | ΑΑΑΤΑ | Fixed | 1.371 37 | 24.5 48 | 32.7 43 | \$2.97 84 |
| 7 | S. Main - East | ΑΑΑΤΑ | Fixed | 1,338 38 | 21.9 51 | 23.7 66 | \$4.10 54 |
| 41 | Schaefer | DDOT | Feeder | 1,333 39 | 38.1 18 | 51.1 7 | \$2.54 89 |
| 29 | Linwood | DDOT | Downtown | 1,291 40 | 28.1 34 | 40.0 22 | \$3.25 77 |
| 30 | Livernois | DDOT | Feeder | 1,174 41 | 29.4 32 | 34.6 36 | \$3.76 64 |
| 1 | Pontiac | ΑΑΑΤΑ | Fixed | 1,096 42 | 18.6 61 | 24.6 64 | \$3.95 56 |
| 43 | Schoolcraft | DDOT | Feeder | 1,053 43 | 27.0 37 | 33.8 42 | \$3.84 57 |
| 10 | Chene | DDOT | Downtown | 1,027 44 | 25.1 45 | 28.9 51 | \$4.49 45 |
| 46 | Southfield | DDOT | Feeder | 1,027 45 | 32.1 28 | 45.0 12 | \$2.88 85 |
| 54 | Wyoming | DDOT | Feeder | 972 46 | 28.6 33 | 34.2 40 | \$3.80 60 |
| 610 | Kercheval - Harper | SMART | Main Corridor | 942 47 | 17.8 62 | 17.5 80 | \$7.13 22 |
| 8 | Pauline | AAATA | Fixed | 930 48 | 23.8 49 | 48.9 9 | \$1.99 101 |
| 12 | Conant | DDOT | Feeder | 900 49 | 25.0 46 | 37.0 30 | \$3.51 69 |
| 730 | Ten Mile Crosstown | SMART | Crosstown | 858 50 | 29.6 31 | 23.3 69 | \$5.36 35 |

FIGURE 2-39 WEEKDAY RIDERSHIP TOP 50 RANKED ROUTES

Service Statistics and Productivity Weekday Derating Cost age Ridership Vehicle per ervice Type rage Daily evenue /stem RIDERS PAX/TRIP PAX/RVH COST/PAX 780 Fifteen Mile Crosstown SMAR' Crosstown 843 51 **19.2** 57 14.8 89 \$8,44 15 12A/B Miller Liberty AAATA **831** 52 **14.3** 73 **29.3** 50 \$3.32 74 494 SMART **747** 53 **15.9** 70 26.0 56 \$4.81 43 Dequindre Crosstow 33 EMU College of Business Shuttle AAATA Fixed **742** 54 н 16.9 68 54.6 4 \$1.78 103 22 North - South Connector ΑΑΑΤΑ Fixed **723** 55 н 12.1 86 17.5 81 \$5.56 31 \$1.89 102 10 Ypsilanti Northeast Fixed 679 56 37.7 19 51.4 5 405 626 57 24.6 63 \$5.08 39 Northwestern Highway 19.0 58 620 58 **13.5** 79 **34.6** 37 9 Chalmers \$3.76 63 Feeder 40 Russell 586 59 **21.7** 52 24.7 61 \$5.26 36 **29.7** 48 49 Vernor 586 60 17.8 63 \$4.37 47 760 Thirteen Mile - Fourteen Mile Crosstown SMAD. 582 61 **15.7** 71 12.5 93 \$10.03 9 9 Jackson ΑΑΑΤΑ Fixed 578 62 19.3 56 38.9 26 \$2.50 91 Ш **30.2** 46 18 Miller-University AAATA Fixed 577 63 9.9 92 \$3.21 79 576 64 **33.9** 27 46.5 10 \$2.09 100 20 Ypsilanti Grove - Ecorse ΑΑΑΤΑ Fixed 25.5 57 **575** 65 12.2 85 \$5.10 37 13 Conner Feeder **544** 66 **18.8** 59 42.5 16 39 Puritan \$3.06 81 11 Clairmount Feeder **543** 67 **13.3** 80 Ш 13.5 91 \$9.62 11 SMART Crosstow **533** 68 17.0 84 330 Grand River - Beech Daly **14.0** 75 \$7.34 20 16 Ann Arbor - Saline Rd. ΑΔΑΤΑ Fixed 530 69 . **17.1** 66 23.4 68 \$4.15 52 47 Tireman **483** 70 **13.8** 77 26.6 55 \$4.89 42 250 Ford Rd SMART **435** 71 14.0 74 22.5 73 \$5.56 30 **424** 72 **24.9** 47 22.7 71 805 Grand River Park and Ride SMART \$5.51.33 24.6 62 **398** 73 280 Middlebelt South SMART 11.1 88 \$5.07 40 550 Garfield SMART **398** 73 I 8.8 96 Ш 15.2 88 \$8.23 16 445/475 Woodward - Maple / Telegraph - Troy Limited SMART **381** 75 **25.4** 43 21.4 75 \$5.84 27 Commuter 851 West Bloomfield - Farmington Hills Park and Ride **378** 76 22.2 50 19.7 77 \$6.34 25 ΑΑΑΤΑ **373** 77 . 20.7 54 **41.5** 18 11 Ypsilanti South Fixed \$2.34 94 17.4 83 140 Southshore **366** 78 н 12.6 83 \$7.20 21 14.3 90 465 Auburn Hills Limited SMART Commuter 288 79 26.2 39 \$8.71 14 18.5 78 Ш SMART 280 80 88 97 753 Pontiac - Baldwin Road Communit \$6 74 24 AAATA Fixed 279 81 12.7 82 25.4 58 Scio Church - W. Stadium \$3.82 58 15 Southfield - Orchard Ridge SMAR' **274** 82 Ш 11.0 90 15.6 87 \$8.01 17 400 Communit 609 Jackson University AAATA Fixed 263 83 . **13.9** 76 40.4 20 \$2.41.93 21.0 76 255 Ford Rd Express SMAR' 263 84 20.2 55 \$5.96 26 Commuter Downriver Park and Ride SMART Commuter 241 85 н **16.1** 69 17.7 79 \$7.06 23 830 756 Pontiac - Perry - Opdyke SMART 239 86 I **9.2** 93 16.7 85 \$7.48 19 I 787 AirRide AAATA 238 87 **9.2** 94 9.7 100 \$11.17 6 I 9.2 102 90.95 160 Downriver SMART **199** 88 \$13.61 2 615 SMART **187** 89 4.6 101 9.2 101 \$13 55 Kercheval - Jefferson Community 46 Huron - Textile ΑΑΑΤΑ Fixed **187** 90 Ш 11.0 89 I 10.9 97 \$8.93 13 14 Geddes - E. Stadium AAATA Fixed **184** 91 I 7.7 99 23.4 67 \$4.15 53 I I 13 AAATA **172** 92 8.6 98 **17.5** 82 \$5.57 29 Newport Fixed 752 Pontiac - North Hills Farms SMAR' **164** 93 6.3 100 11.1 96 \$11.25 Communit 530 Schoenherr SMART Commuter **150** 94 . **18.8** 60 . 16.4 86 \$7.61 18 11.5 95 635 Jefferson Express SMART Commuter 114 95 11.4 87 \$10.87 **12.3** 94 **113** 96 12.6 84 1 580 Harper Commute \$10.13 8 28.8 52 ΑΑΑΤΑ Express 111 97 27.7 36 710 Chelsea \$3.76 62 ΑΑΑΤΑ **107** 98 26.7 38 24.9 60 711 Express \$4.35 48 Canton Fixed 102 99 н 12.8 81 22.2 74 \$4.38 46 1U Pontiac University 95 100 620 Charlevoix SMART **13.6** 78 I 12.6 92 \$9,93 10 Commuter SMART Community **95** 100 **3.7** 102 8.1 103 430 Main St - Big Beaver \$15.34 17 Amtrak - Depot ΑΑΑΤΑ **80** 102 2.6 103 10.3 99 \$9.44 12 61 103 566 Price School SMART 10.2 91 10.6 98 \$11.81 4 Schools

156,654

28.0

34.0

\$5.13

FIGURE 2-40 WEEKDAY RIDERSHIP 51-103 RANKED ROUTES

All costs shown are based on fully allocated cost per revenue hour (\$143.60 for NTD 2013)

Ridership data from October, 2014

Productivity data from January 2015

SE MI Totals/Averages

RELIABILITY

Another measure of a successful transit system is reliability; reliable service varies within the region. As would be expected, DTC's automated People Mover outperforms all other systems with an on-time performance of 99% (see Figure 2-41). AAATA, ranging between 84-91%, is very close to the industry standard for on-time performance, while SMART is slightly below at an average of 82% in 2014. As mentioned earlier, DDOT on-time performance is at 66%, but they made great strides in improving its pull-out rate (see Figure 2-42), and efforts for further improvement are underway.





FIGURE 2-42 PULL-OUT RATE BY SYSTEM



SYSTEM PERFORMANCE TRENDS

Even with the service cuts in 2012, DDOT provides the highest ridership system in southeast Michigan (see Figure 2-43). SMART's steady decline, coupled with AAATA's recent expansions of service, may eventually lead to AAATA becoming the second highest ridership system in southeast Michigan.



FIGURE 2-43 ANNUAL RIDERSHIP 10-YEAR TREND BY SYSTEM

However, due to its large service area, SMART operates a significantly larger number of revenue vehicle hours than AAATA (see Figure 2-44). DDOT has experienced the most fluctuation of service levels, in terms of both revenue hours and peak buses in service (see Figure 2-45).



FIGURE 2-44 ANNUAL VEHICLE REVENUE HOURS 10-YEAR TREND BY SYSTEM



FIGURE 2-45 PEAK VEHICLES OPERATED 10-YEAR TREND BY SYSTEM

ADA PARATRANSIT, DEMAND RESPONSIVE SERVICES AND MOBILITY MANAGEMENT ISSUES

While the required ADA services for the region are operated, there are a number of issues and opportunities to improve paratransit, demand-responsive service, and mobility management in the RTA region:

Eligibility

Throughout the region, a consistent procedure for determining eligibility for ADA-required paratransit should be developed. Ideally, this screening would include in-person assessment and travel training on how to use the fixed-route system where appropriate. Encouraging people to use the fixed-route system whenever possible can allow people with disabilities to have more flexibility and freedom in their travel, and can reduce agency costs. Eligibility for services that are not required by ADA should also be coordinated as appropriate.

Coordination Between Providers

For paratransit service, there are about 300 transfers a day between DDOT and SMART through eight transfer points. Transfers are arranged via three-way calls between the customer, DDOT, and SMART reservation agents. Both DDOT and SMART have a "drop-and-go" policy which helps preserve productivity, but which does not add to the customer experience, especially in cases where the customer has to wait a long time for the second vehicle to arrive. It should be a goal to reduce or eliminate these transfers, and offer paratransit service that is operated seamlessly throughout the region. There are currently no paratransit transfers between AAATA and DDOT/SMART. Increased coordination would facilitate a more regional paratransit system.

Missed and Late Trips

Reducing the number of missed trips, while still maintaining reasonable productivity, is best achieved by making use of the latest scheduling software specifically designed for paratransit and demand response service. This software can also minimize the number of excessively long trips, increase on-time

performance, and provide better data for continuous improvement. This should be combined with installation of AVL/MDT terminals in vehicles, such as SMART is already using. This allows data from actual trips to be recorded automatically, and compared to the schedule.

Mobility Management Services

Mobility management helps people understand their travel options, and assists with matching users to the most appropriate travel choice, regardless of the transportation provider. In addition to travel training for the fixed-route systems as noted above regarding eligibility for paratransit, other initiatives can be helpful. With AAA1b's MyRide 2 providing mobility management services in SMART's area (and beyond) and with AAA1b groviding MyRide mobility management in Ann Arbor and Washtenaw County, the City of Detroit remains a gap in mobility management. SMART awarded a New Freedom mobility management grant to AAA1b starting in 2010, and has provided subsequent additional mobility management funds as the AAA1B call center and website grow. In addition SMART applied for and has received a VTCLI grant on behalf of AAA1b that would enable the Myride2 service to better coordinate scheduling among SMART and the many demand-response services. While the grant has not yet been implemented, SMART should be encouraged to work with AAA1b and use this grant towards this goal.

FUNDING

At present, just over \$300 million is expended each year to provide transit services in Southeast Michigan (Table 2-17). This equates to roughly \$67 per capita invested in transit in the region. This is significantly lower than peer regions across the country, even those with substantially less population and economic activity than the RTA service area (Table 2-16). These peers were selected in order to illustrate a range of transit investment, including regions with population similar to southeast Michigan (Seattle, Boston, Atlanta), as well as economies which had been traditionally manufacturing-based (Chicago, Pittsburgh, Cleveland).

| METRO REGION | POP | SQ MILES | DENSITY | UE RATE | UMR RANK | OPERATING EXPENSES | PER CAPITA |
|--------------------------|-----------|-------------|---------|------------|-------------|-----------------------|---------------|
| Detroit | 4,040,112 | 1,497 | 2,699 | 6.6% | 15 | \$ 272,610,181 | \$ 67 |
| Atlanta | 4,515,419 | 2,645 | 1,707 | 6.0% | 22 | \$ 517,414,859 | \$ 115 |
| Cleveland | 1,780,673 | 772 | 2,307 | 5.5% | 61 | \$ 243,413,127 | \$ 137 |
| Minneapolis- St. Paul | 2,650,890 | 1,022 | 2,594 | 3.5% | 36 | \$ 427,550,984 | \$ 161 |
| Denver | 2,374,203 | 668 | 3,554 | 4.0% | 28 | \$ 448,336,187 | \$ 189 |
| Pittsburgh | 1,733,853 | 905 | 1,916 | 5.1% | 59 | \$ 374,173,666 | \$ 216 |
| Chicago | 8,608,208 | 2,443 | 3,524 | 6.3% | 7 | \$ 2,337,179,496 | \$ 272 |
| Boston | 4,181,019 | 1,873 | 2,232 | 4.5% | 9 | \$ 1,381,464,229 | \$ 330 |
| Seattle | 3,059,393 | 1,010 | 3,028 | 5.2% | 5 | \$ 1,309,322,839 | \$ 428 |
| | | | | | | Average | \$ 231 |

TABLE 2-16 TRANSIT SPENDING PER CAPITA

Density measured in persons per square mile

UE Rate = unemployment rate

UMR Rank = Urban Mobility Report Ranking, which ranks metro areas by congestion

Detroit region includes Detroit and Ann Arbor MSAs, except congestion ranking, which only includes Detroit

Sources

Population: 2010 Census (Urbanized area), Detroit includes Detroit and Ann Arbor UZAs Annual Transit Operating Expenses: 2013 NTD (all transit providers reporting to NTD) Unemployment Rate: 2015 Bureau of Labor Statistics (MSA) UMR Rank: 2015 Urban Mobility Report, Texas Transportation Institute

| TRANSIT PROVIDER | TOTAL OPERATING BUDGET | FEDERAL ASSISTANCE | STATE FUNDS | LOCAL FUNDS (SOURCE) | FARES AND OTHER FUNDS |
|------------------------------|------------------------------|-----------------------|----------------|-------------------------------------|--------------------------------|
| ΑΑΑΤΑ | \$38.7 million | \$6.1 million | \$11.0 million | \$14.6 million (millage) | \$7 million |
| DDOT | \$138.2 million | \$15.9 million | \$38.2 million | \$51.8 million (General Fund) | \$32.3 million |
| DTC | \$12.5 million | - | \$3.4 million | \$0.3 million (General Fund) | \$8.8 million |
| M-1 Rail ¹⁶ | \$5.1 million | - | - | - | - |
| SMART | \$110.7 million | \$0.3 million | \$31.3 million | \$65.3 million (millage) | \$13.8 million |
| TOTAL OPERATING RESOURCES | \$305.2 million | \$27.7 million | \$94.7 million | \$125.2 million | \$52.5 million |

TABLE 2-17 EXISTING REGIONAL TRANSIT FUNDING FOR FY2015 (EST.)

Source: Agency budget documents, some amounts estimated from prior years

Two of the four existing systems have dedicated sources of transit revenue and investment. Voters in both the SMART and AAATA service areas have approved millages that provide a reliable source of revenue. Although based on property values, which have generally decreased across the region in recent years, these millages still represent a relatively stable and consistent budget for the agencies. In contrast, DDOT and DTC rely on revenues from the Detroit's general fund.

The RTA establishing legislation introduced some major and minor changes for transit funding in the region.

With the legislation, the RTA became the designated funding recipient for federal transit funds in the region. This does not represent a dramatic change for DDOT and SMART as the Regional Transit Coordinating Council (RTCC) previously served as a fiduciary pass-through for these two systems; however AAATA previously was a direct grant recipient. Despite the RTA's role as the primary federal recipient, the new arrangement does not change the funding amounts that each UZA will receive as this is established by federal formulas based on system ridership. Local funds supporting the individual systems do not pass through the RTA but continue to go directly to individual service providers.

New rolling rapid transit in the region is not eligible for State operating assistance funds. These new services will need to be sustained primarily by locally raised operating revenues. Prior to the establishment of the Regional Transit Authority, the region lacked a mechanism for raising and managing regional transit funding. Revenue sources provided by the legislation include property tax assessments (millage) and vehicle registration fees. Voter approval is required for these new revenues and must be approved by a majority of voters in the four-county area (collectively). If approved, the adopted revenue mechanism will apply throughout the RTA service area. The legislation does not permit individual

¹⁶ Budget provided for operations when service commences in 2016.

jurisdictions to "opt out" of participation as is currently the case. However, it does require that 85% of revenues be spent in the jurisdiction (county or City of Detroit) in which they were raised.

PUBLIC INPUT

On Tuesday, May 12, 2015 the RTA officially launched a program to engage 4.2 million stakeholders throughout the four-county, 2,752 square mile-region of southeast Michigan in a community conversation about their vision for a future regional transit system.

The RTA CEO, Michael Ford, has attended dozens of public meetings to increase awareness of the RTA and obtain feedback from the public. This outreach effort has included meetings with neighborhood associations, community leaders, unions, business groups and religious organizations.

In addition to a large earned and social media campaign, six major public engagement events were held between May 12-21, 2015 including a rally and press conference in Campus Martius, Downtown Detroit and open houses in each of the four counties – Washtenaw, Wayne, Oakland, and Macomb. At each open house several stations were set up including a welcome video, informational display boards, a looping self-guided presentation, and a comment station. Staff members were on site to lead attendees through the stations and answer any questions they had. Spanish and Arabic interpreters were available on-site at meetings held in Wayne County.

Comment cards were distributed at each of the events to solicit feedback on two scenarios – the importance of transit in peoples' lives and where people wanted to go on transit. Nearly 235 comments were received, all supportive of the idea that southeast Michigan did indeed need a better transit system. Responses called the need for transit "crucial...vital...necessary" for the economic, social, and environmental well-being of the region. Below is a summary of the topics discussed in each of two scenarios.

Question 1: Regional transit is important to me because...

People commented that transit was important for such reasons as improving access to jobs, school, and medical appointments; saving time and money related to car ownership, maintenance, congestion, and parking; improving property values and the quality of neighborhoods; positioning the region as a competitive 21st century metro-region to attract business development and young talented workers; access to family and friends around the region, parks, entertainment, and shopping; overcoming mobility obstacles related to aging, disabilities, weather, and poor road conditions.

Question 2: I want regional transit to take me...

Everywhere! People commented that they want to travel primarily to work, school, medical appointments and social activities using transit. Service to the airport and train stations was mentioned as a priority in order to gain access to destinations beyond the regional transit boundary. Detroiters want to get to the suburbs and people living in suburban cities want to get into Detroit. Figure 2-46 shows all the places event participants indicated they wanted to go using transit.



FIGURE 2-46 REQUESTED TRAVEL DESTINATIONS

Existing Services Conclusion

Based on a snapshot review of the existing transit system, a number of conclusions can be drawn:

- Transit service is very limited compared to cities/regions of comparable size and population. Service is infrequent, does not reach a broad array of employers or residential areas, is often unreliable, and there is relatively little evening and weekend service available.
- The regional transit system is not as seamless, despite ongoing collaboration efforts. Specifically, the need to transfer between SMART and DDOT during off-peak hours significantly reduces the utility of some services.
- The Ann Arbor/Ypsilanti area and Detroit metro area are disconnected without any transit connections between these two areas or any way for residents or employers in western Wayne County to access either market via transit.
- Paratransit services are widely varied across the region with significant deficiencies in quality of service for many users, including coordination and transfers between agency systems, with significant opportunities to increase efficiency and mobility management across the region.
- With the exception of AAATA, the region's transit fleet is old with many vehicles reported to be beyond their recommended service life (some fleet replacement will occur during 2015).
- Service reliability is below national standards for both DDOT and SMART the two largest service providers in the region.
- Ridership has remained relatively stable over the past decades; however, with the exception of AAATA, there has been a slight decline in ridership since 2009 coinciding with declines in funding, population, as well as service reductions at DDOT and SMART. AAATA has seen a steady rise in ridership over the decade.
- Services do not meet expressed desires for many, particularly with regard to reliable and efficient access to work, access to the airport from metro Detroit and with regard to coordinated, high-quality paratransit services.

Because of these factors, transit service in southeast Michigan is commonly perceived as reserved for disadvantaged people with few other travel choices – those who typically lack the economic resources to own and operate a private automobile or for whom vehicle travel and parking is prohibitively expensive. Unfortunately, this perception to a large extent reflects reality, as transit service does not provide a compelling alternative to automobile travel. Thus, those with other choices than transit avail themselves of other ways to get to their destinations.

The impact of this inadequate regional transit system is felt in a number of ways:

- People living in the SE Michigan region have few options to get to work other than a personal automobile. Despite the region's history as being an automotive capital, a significant number of regional residents do not have access to an automobile. Many have limited incomes and cannot afford large monthly car payments, the region's high insurance rates, or costs associated with maintenance, gasoline, and parking.
- Employers have a more limited pool of potential employees to select from, and unreliable transit service is disruptive to employee attendance.
- As the state shifts its economy toward more knowledge and IT skill-based jobs, the attractiveness of the area for the employees to fill these jobs is diminished. The preference of Millennials and others to live in transit-friendly communities has been well-documented.

• Traffic congestion on the freeways, local streets, and at the airport affects everyone and has an impact not only on quality of life, but also the economy and the environment.

3 Transit Market Analysis

This chapter examines a number of factors that impact the underlying demand for transit in southeast Michigan. They include:

- **Development patterns:** In all cities across the United States, there is an extremely strong correlation between development patterns and transit ridership. In areas with denser development, mixed-use development, and a good pedestrian environment, transit can be very convenient, attractive, and well used. In most cases, these "external" factors outweigh those directly controlled by the service provider.
- **Population and employment densities:** Put simply, where larger numbers of people live and/or work in close proximity, transit demand is higher. Activity centers like medical facilities and shopping centers can also generate a disproportionate number of transit trips.
- **Socio-economic characteristics:** Demographic characteristics such as age, income, minority status, and disability status provide indications of demand among people who have a high propensity toward transit use.
- Existing and projected travel flows: Travel flows provide information on the trips that people make along with the mode of travel, allowing for broad conclusions of where people from certain locations need to travel inside and outside a county on various travel modes.

These factors are primary drivers of transit demand, and as such, provide strong indications of underlying transit demand. However, it should also be noted that other factors also influence transit demand, and these include:

- Walking conditions: Nearly all transit riders are also pedestrians, and thus walking environments strongly impact ridership, even when the quality and level of transit service is held constant. A common rule of thumb is that transit riders will walk one-quarter of a mile to access transit. However, in comfortable pedestrian environments, that have a lot of pedestrian activity, are perceived to be safe, and often have other amenities in close proximity, many transit riders will walk longer distances. Many will not walk that far in uncomfortable environments.
- Service design: Transit routes which aim to provide coverage over a larger service area can also be slow and circuitous. Such routes can be preferred by some riders who put the highest value on a shorter walking distance to and from the bus stop, such as older adults and individuals with disabilities. However, the longer trip times and slower speed make such routes inconvenient for many others. Thus, no matter the inherent demand for transit, service must be designed appropriately to appeal to local markets.
- **Travel times relative to other options, primarily driving:** Most people accept that trips by transit take longer than trips by car, and the time differences can be offset by other advantages. However, when the differences are smaller, ridership will be higher, and when the differences are larger, ridership will be lower.

- **Costs:** The cost of using transit is almost always lower than the cost of driving. Similar to travel time differences, when the costs of driving are higher (for example, due to high gasoline prices, auto insurance, car payments, tolls, and/or parking costs), transit ridership will be higher and when they are lower, transit ridership will be lower.
- Access to parking: Transit becomes more attractive in instances where parking is difficult to find or hard to access, such as at large sporting or cultural events, in downtown commercial districts, and at large employment centers such as hospitals.

This market analysis examines the primary factors described above, and subsequent development of the Regional Transit Master Plan will address the secondary factors.

Development Patterns and Transit Demand

Transit demand is strongly related to development patterns, and in particular, development density. In areas with denser development and more people and employees, transit can be provided in close proximity to many people. Combined with a good pedestrian environment, transit can become very convenient, and thus attractive to use and well used.

Like many American cities that were profoundly shaped by the automobile, areas of the region that developed prior to the 1940s have relatively dense land use patterns, while areas built since then are mostly lower density, single-use subdivisions. Development in the Detroit region has grown outward from the core, and continues to do so. More recently, development patterns have started to become more focused; two primary examples of this are the regeneration of the downtown Detroit area and increased mixed-use development in the Midtown area of Detroit. Macomb Township, Ann Arbor, Dearborn, Novi, and Rochester Hills, among other communities, continue to grow and urbanize. Comprehensive plans throughout the region call for infill development, more walkable communities, a more diverse mix of land uses and a large number of new residents moving into high density areas within Detroit's core nodes.

Today, the largest zoning districts in southeast Michigan are single-family residential, representing nearly 50% of the total land within four counties (see Figure 3-1). Although a majority of zoning is single family, there is a large variation in density. In communities with homes in older neighborhoods built before or shortly after WWII the densely packed arrangement is very conducive to transit.

The next two largest zoning categories are agricultural and recreational open space, accounting for 16% and 8% of the total land area in the region, respectively. Industrial land occupies roughly 5% of the total land in the entire region. Only 6% of land is designated for uses most suited for transit-oriented development (TOD) and frequent transit services – commercial use (presuming a mix of uses is permitted and encouraged) and multifamily residential. These uses occupy 5% and 1% of the region's land area respectively. Though the area designated for uses most suited for TOD is 6%, it serves a large percentage of residents and employers within the region.

THE "6DS"

As the RTA develops transit service in the region over the next 20 years, service and capital investments must be made in support of and response to current and future land use patterns. Population and employment density, land use diversity, design, regional destinations, and distance to quality transit are key factors that influence transit demand. Demand management (pricing, incentives, and other information-based programs) is also considered an important factor. Referred to as the "6Ds," these are major factors that will influence the demand for and success of transit in southeast Michigan (see Table 3-1).

FIGURE 3-1 CURRENT LAND USE

| 6D FACTOR | PRINCIPLE | |
|----------------------|---|-----------------------------------|
| Destinations | Align major destinations along reasonably direct corridors served by frequent transit | |
| Distance | Provide an interconnected system of pedestrian routes so that people can conveniently access transit | |
| Density | Concentrate higher densities close to frequent transit stops and stations and multimodal nodes | Demand Management |
| Diversity | Provide a rich mix of pedestrian-friendly uses to support street-level activity throughout the day and night | Transit-Supportive Development |
| Design | Design high-quality, pedestrian-friendly spaces that connect people seamlessly to transit | |
| Demand management | Provide attractive alternatives to driving by managing parking, providing incentives not to drive, and/or providing programs to help educate people about driving alternatives | Diversity |

TABLE 3-1 OVERVIEW OF FACTORS INFLUENCING TRANSIT DEMAND – THE "6DS"

DESTINATIONS

People are more likely to choose transit when it can conveniently take them where they want to go. At present, transit does serve most major destinations in the region. However, as described previous chapters, service frequencies on many routes are low, nonexistent at nonpeak hours, or bus stops are not located within easy walking distances, which makes service inconvenient or not usable for many potential users. Looking forward, more frequent service will be needed to make service more convenient to major destinations across existing geographical boundaries.

DISTANCE

Both street connectivity and block length strongly influence people's likelihood of walking or biking to transit. Interconnected streets in a grid pattern tend to shorten distances between transit stops and destinations. Neighborhoods where all roads are designed to connect to arterials or collector streets allow transit customers to reach bus stops without walking out of their way and provide more efficient routing options that can support high frequency service (see Figure 3-2). In addition to being important indicators of effective distance to transit, block length and street network connectivity are often used in transportation research to represent design quality. This is because short blocks and well-connected streets contribute to a higher-quality pedestrian experience and pedestrian realm, and they often occur in places where other elements of good design, such as adequate sidewalks and well-lit streets, are also in place.

FIGURE 3-2 STREET NETWORK DESIGN AND WALK DISTANCES TO TRANSIT

The grid-like street pattern in the heart of downtown, for example, supports easy and comfortable access to transit. The Rosa Parks Transit Center, which serves DDOT buses as well as the People Mover, is an easy walk away. Outside of downtown and beyond the city limits, access to transit becomes more difficult. For example, long blocks in the suburbs, wide roads, and major freeways are not attractive to walk on (minimal street frontage and a lack of sidewalks in some places), as shown in the figure below.

In August of 2010, the Michigan legislature signed Complete Streets legislation (Public Acts 134 and 135) which enabled initiatives across the state. In the RTA area, Complete Streets goals have been adopted by many communities. Over time, many streets have become, and will become, more walkable and transit friendly.

FIGURE 3-3 MICHIGAN AVENUE IN INKSTER, MI

DENSITY

Population and employment densities determine how many people will be able to access transit. By extension, they also strongly influence the amount of service that can be supported (see Figure 3-4). Due to the operating costs involved, and to avoid running empty buses, transit service levels are reflective of the amount of density and demand. Greater density and demand support higher frequency levels.

Population density in the southeast Michigan region is dispersed with several reasonably concentrated centers that can support high frequency transit (discussed in the following section). For example, many older jurisdictions in the region have relatively dense commercial corridors, such as those in Ann Arbor, Royal Oak, Ferndale, Dearborn, Roseville, and Birmingham, which could support transit.

FIGURE 3-4 RELATIONSHIP BETWEEN POPULATION AND EMPLOYMENT DENSITIES AND TRANSIT DEMAND

DIVERSITY

Traditional zoning separates land uses from one another so that housing and jobs or amenities are spatially distant. It sets maximum densities

Source: Composite data compiled by Nelson\Nygaard from various sources.

and minimum lot sizes, and usually contains explicit regulations such as bulk and height limits and minimum parking requirements. This approach generally results in land development patterns that encourage automobile use and discourage transit use.

While many of the older jurisdictions in the region have some mixing of land uses, new developments are starting to feature mixed land-uses as it creates a more interesting environment. Mixed-use development also encourages transit, walking, and bicycling, and focuses much less on automobiles and parking. A centerpiece of the renaissance in downtown Detroit is centered on both Campus Martius and Grand Circus Parks, which feature special events throughout the year and are surrounded by housing, restaurants, nightlife, offices, museums, and galleries. These types of developments create all day activity in walkable environments that can be well served by transit.

By comparison, many of the outer suburbs in the southeast Michigan region support auto-centric land use patterns with multiple lane roadways. Development patterns are dispersed and destinations are more easily accessed by automobile.

DESIGN

Accessible, well-designed streets are essential to ensure that people are able to get to bus stops easily and safely. As RTA plans for future investments in transit, local jurisdictions in the service area should be encouraged to prioritize safe bicycle and pedestrian access to transit. There can be negative perceptions about transit; the design and regular maintenance of transit facilities works to reduce these concerns. Transit stops and stations must be attractive, clean, and preferably include amenities like benches, trash cans and schedule information. A framework to invest in transit station amenities at high demand stops is important to build demand for transit.

DEMAND MANAGEMENT

Demand management measures can be utilized to encourage transit use and balance the attraction of non-auto modes with drive-alone alternatives. Effective strategies include education and outreach, transit pass programs in cooperation with major employers or institutions, commuter programs that offer a guaranteed ride home in the event of an emergency, parking management strategies, and improved pedestrian and bicycle networks. TheRide is a recognized national leader and already provides pass programs for the University of Michigan (MRide), Eastern Michigan University, and Washtenaw Community College to encourage more university students to ride transit. The getDowntown program in Ann Arbor is similarly held up as a model of an effective and comprehensive transportation demand management program. A founding partner and primary funder of getDowntown is the Ann Arbor Downtown Development Authority, which funds transit programs as an economic development tool to meet its mission. This model has applicability throughout the region and would serve as a tremendous benefit in working with employers and residents to provide information and incentives related to taking transit.

Elements Driving Transit Demand

For transit to be successful, it must be frequent, fast, and easy to access. More than any other factors, population and employment density determines whether this is possible:

- Transit needs to serve sufficiently high volumes of travelers to be cost-effective, and the density of development determines the overall size of the travel market. The reach of transit is generally limited to within a quarter to half mile of the transit line or station, and thus the size of the travel market is directly related to the density of development within that area.
- Transit service frequencies, in turn, are closely related to market size. Larger markets support more frequent service, while smaller markets can support only less frequent service.
- To attract travelers who have other options, such as automobiles, transit must be relatively frequent—at least every 30 minutes, and preferably every 10 to 15 minutes. Below that, transit can be expected to primarily serve only those who do not or cannot drive.

Population and employment levels and densities also provide an indication of the types of riders that transit will serve. In general terms, there are two types of transit riders:

- **Riders with many choices**, who have sufficient resources and the ability to operate private vehicles but choose to use transit for some or all trips. These riders may choose transit to avoid congestion, the high cost of long commutes, and/or high parking costs, among other reasons.
- Riders with limited choices, who are also often referred to as "transit-dependent riders," use transit services because they do not have an automobile available for their trip or are unable to operate a private vehicle. Because they have fewer choices for travel, they rely more on transit than riders with many choices. Riders with fewer choices are also more likely to use transit to get to appointments, shop, and visit friends/family.

Transit-dependent riders are also often located in densely populated areas, and the combination of discretionary and transit-dependent riders produces demand for even more frequent service that increases the attractiveness of transit for discretionary riders. However, in less densely developed areas, because there are fewer people, the overall demand is lower, and consequently service levels are lower.

The distribution and density of population and employment are key factors influencing the viability of transit service. Higher density communities have more people within walking distance of transit routes, and thus are stronger markets for transit. Conversely, areas with few residents or employees have little demand for transit service.

The reach of transit is generally limited to within quarter to half mile of the transit line or station as this is generally considered a comfortable walk distance; however, simple radii around transit stations or corridors can be misleading if the supporting street network is lacking, discontinuous, or unsafe for pedestrians. Transit's reach may be extended by "first and last mile" enhancements that extend the distance such as lively and inviting streetscapes with quality walk environments, bicycle networks, park-and-ride accommodations, taxis, ride share, or feeder services.

Existing Population-Based Transit Demand

As of 2010, the U.S. Census reports the four-county region of the RTA had 4.3 million residents, 1.9 million of whom live in Wayne County, 1.2 million live in Oakland County, 830,000 live in Macomb County, and 348,000 live in Washtenaw County. Detroit is by far the largest jurisdiction in terms of both population (714,000 residents) and geography; however a number of other nearby communities also rank among the 10 largest in the state of Michigan including: Warren (134,000), Sterling Heights (130,000), Ann Arbor (114,000), Clinton Township (100,000), Dearborn (98,000) and Livonia (97,000). In general, population is concentrated in and around the City of Detroit and drops significantly with distance. However, there are exceptions, with high population concentrations in Ann Arbor and Ypsilanti, attributable in part to their respective universities – the University of Michigan and Eastern Michigan University.

Of note is that this is a recovering region. Between 2005 and 2010 the region saw a substantial loss of population – so profound, in fact, that despite population gains in the first half of the decade, the exodus of people in the latter half eclipsed these gains and left the region with a net loss of 51,000 people. Demographic shifts across the region were very uneven, however. While the City of Detroit saw substantial declines, communities including Macomb Township, Ann Arbor, Dearborn, Novi and Rochester Hills, continued to grow as residents left Detroit. Detroit is in transition and has seen positive growth trends in Midtown, New Center, Southwest Detroit, and a few other neighborhood pockets. The urban core of Wayne County saw a nearly 8% decline in population over this period while Macomb and Washtenaw counties saw substantial growth (43,000 residents, or +5%, and 25,000 residents or +8% respectively) contributing to the changing population concentrations in the region.

As shown in Figure 3-5, a large portion of the southeast Michigan's population resides beyond the reach of existing transit service. Approximately 47% of the residents of the four county area reside within a quarter mile of some transit service, and 57% live within a half-mile. In general terms, about half of southeast Michigan's population is served by some sort of existing transit, and half is not.

A second important indicator of transit demand is population density. For transit to be successful there must be sufficient numbers of people who can access it. As such, population densities provide an indication of the underlying population-based demand for transit in terms of the type and frequency of service that would be most appropriate.

In general, eight to 12 residents per acre are required to produce demand for hourly service. This is the lowest level of service that is generally considered to be acceptable (see Table 3-2). As densities grow, the demands for transit grow, particularly with respect to more frequent service. Population densities higher than roughly 31 residents per acre produce demand for frequent transit services (every 15 minutes or less) and premium services. A majority of southeast Michigan's population lives in areas with sufficient density to support some fixed-route transit service.

| TRANSIT SERVICE LEVEL | POPULATION/ACRE | % OF REGIONAL POPULATION |
|-----------------------|-----------------|-----------------------------|
| 60-minute frequency | 8 - 16 | 40.7% |
| 30-minute frequency | 16 - 31 | 11.9% |
| 15-minute frequency | 31-47 | 2.5% |
| 10-minute frequency | 47 - 92 | 1.0% |
| 5-minute frequency | >92 | 0.5% |
| | TOTAL: | 56.5% |

TABLE 3-2 TRANSIT-SUPPORTIVE POPULATION DENSITIES

Source: Nelson\Nygaard compiled from various national sources.


FIGURE 3-5 POPULATION DISTRIBUTION (2010) AND TRANSIT SERVICE COVERAGE

Southeast Michigan's existing transit network does serve most of the areas where there are sufficient densities to support effective transit service (see Figure 3-6), although the level of service currently provided is often significantly less than warranted by demand. However, there are also areas with significant transit demand that do not currently have service at all. These areas extend outward from the Detroit core and have opted to not include transit in their community, such as Livonia, Plymouth, Rochester, Wixom, and Woodhaven. This indicates that the extent of transit services in southeast Michigan needs to grow.

POPULATIONS WITH A HIGH PROPENSITY FOR TRANSIT USE

Beyond just population levels and densities, many population groups have a higher "propensity" to use transit than others, for example, older adults, Millennials, and lower income individuals. Conversely, other population groups, for example, very high income households and those with many vehicles, tend to use transit less. Population groups that have a particularly high propensity to use transit include:

- Older adults, who as they age often become less comfortable or less able to operate a vehicle. Transit offers older adults the ability to remain active and independent, and the freedom to "age in place" – staying in their homes as they transition away from being able to use personal vehicles.
- Baby Boomers, who are quickly becoming older adults.
- **Millennials** (defined loosely as those born between the early 1980s and early 2000s) seek convenience and efficiency in transportation. They have shown a greater interest in transit, walking, and biking than previous generations as opposed to private auto travel. For many the availability of good transit is an important factor in where they choose to live.
- **Persons with disabilities,** many of whom cannot drive or have difficulty driving. Public transportation, including regular fixed-route bus service as well as specialized paratransit services, is an essential resource to ensure people with disabilities are able to remain active, productive, and engaged in the community.
- Low-income individuals, who tend to use transit to a greater extent than those with higher income because transit provides significant cost savings over automobile ownership and use.
- Zero-vehicle households, which have limited transportation options other than transit. In large cities, many residents do not have an automobile by choice because transit is available, car ownership is a hassle, and there are plentiful options such as taxis, car sharing, and car rentals for the times when a car is desired or needed. However, in cities like Detroit that are more oriented toward automobile travel and where transit options are much more limited, persons without automobiles largely consist of those with lower incomes or those who do not drive.
- **Minorities** (for this market analysis, minorities are defined as non-white, Hispanic or non-Hispanic), who use transit more often than non-minorities. Minority populations tend to be located in denser neighborhoods closer to the urban core. There is a large amount of overlap between minority populations and low-income and zero-auto households. The presence of high numbers of minority residents provides an additional strong indicator of transit demand. The provision of effective transit service to minority populations is also particularly important to the Federal Transit Administration, and a requirement under Title VI of the Civil Rights Act of 1964.
- Young people are also more likely to use transit since they are unable to drive. However, data used to derive propensity is based on the trip to work. As this population group is too young to work, their propensity cannot be reliably measured. However school trips and other trips made by young people can be a significant ridership constituency.

Older Adults

Like many areas of the country, southeast Michigan's population is aging, and as of 2010, nearly 590,000, or 14%, of the region's population was 65 years old or older. Seniors are distributed across the region with few obvious concentrations, such as just east of Downtown Detroit (see Figure 3-7).



FIGURE 3-6 POPULATION DENSITIES AND TRANSIT DEMAND

FIGURE 3-7 OLDER ADULT POPULATION (2010)



Baby Boomers

Baby Boomers – those who were born between 1946 and 1964 – are entering the ranks of senior citizens. The Baby Boomer generation is large and the wealthiest in the nation and the region. Serving and retaining this generation will be critical to retaining them as economic contributors to the region.

As of 2010, there were 1.2 million Baby Boomers in southeast Michigan who comprised 28% of the region's population. By county, 490,000 live in Wayne County, 237,000 live in Macomb County, 357,000 live in Oakland County, and 86,000 live in Washtenaw County. Consistent with general population loss, the region also saw a notable loss of members of the Baby Boom generation from the 2000 to 2010 census years. However, the distribution of Baby Boomers generally tracks with overall population, but with more in the suburbs and outlying communities and fewer in more urban areas (see Figure 3-8).

Millennials

Millennials, who are loosely defined as those born between the early 1980s and early 2000s, are important to regional economic strength in that they are vital to attracting and retaining leading and growing industries. Millennials have become one of the strongest new markets for transit. They desire to travel using a variety of modes, and have less interest in driving than older generations and a greater interest in living in places with effective and convenient transit.

Throughout the United States, most cities have been attracting large numbers of Millennials. While the recession saw a profound loss of Millennials in southeast Michigan, it also saw a tremendous shifting of this population. Where in 2000 the Millennials – then school-aged children – were distributed across the region, though concentrated in the City of Detroit (see Figure 3-9), by 2010 the Millennials who stayed in the region clearly concentrated in the urban centers with big gains in the university areas of Ann Arbor, Ypsilanti, Rochester Hills/Auburn Hills, and Detroit's Midtown, but also increases in the traditionally tight-knit immigrant communities of Dearborn, Hamtramck, and Southwest Detroit (see Figure 3-10).

As of 2010, southeast Michigan had 844,000 residents who were Millennials, who represented 20% of the region's population. By county, 374,000 live in Wayne County, 156,000 live in Macomb County, 216,000 live in Oakland County, and 98,000 live in Washtenaw County.

Persons with Disabilities

As of 2010, a total of 323,000, or 8%, of southeast Michigan's population has a disability. By county, 176,000 of these individuals live in Wayne County, 61,000 live in Macomb County, 70,000 live in Oakland County, and 17,000 live in Washtenaw County. Persons with disabilities live throughout the region, but with significant clusters in the City of Detroit, southern Oakland and Macomb counties as well as west and southwest of Detroit in central Wayne County (see Figure 3-11).

Low-Income Individuals

With southeast Michigan's economic struggles, the region has a large number of low-income residents. As of 2010, with low income defined as those living in households at 150% of poverty limits or less, a total of 1.0 million of the region's population, or 9%, are considered low income. By county, 624,000 of these individuals live in Wayne County, 173,000 live in Macomb County, 199,000 live in Oakland County, and 73,000 live in Washtenaw County. Low-income residents are heavily concentrated in its urban cores, particularly in the cities of Detroit, Pontiac, Mount Clemens, Ann Arbor, and Ypsilanti (see Figure 3-12).

<complex-block>

FIGURE 3-8 BABY BOOMER POPULATION (2010)



FIGURE 3-9 MILLENNIAL POPULATION (2000)

FIGURE 3-10 MILLENNIAL POPULATION (2010)





FIGURE 3-11 POPULATION OF PERSONS WITH DISABILITIES

FIGURE 3-12 LOW INCOME INDIVIDUALS (2010)



Zero-Vehicle Households

In many cities with robust transit systems, such as New York, Boston, Washington, DC, and San Francisco, many people choose not to own cars because they can easily get around without them. In cities with less robust transit systems, those without cars are more often carless because they can't afford them. Southeast Michigan is in the latter category. Most of the households in southeast Michigan that do not have personal vehicles are low-income households. As such, there is a large amount of overlap between low-income populations and households without vehicles.

 As of 2010, a total of 395,000 households in the RTA area of southeast Michigan, or 9%, did not have a vehicle. The large majority of these households are in Wayne County, followed by Oakland, Macomb, and Washtenaw counties. As with low-income residents, these households are heavily concentrated in its urban cores, particularly in the cities of Detroit, Pontiac, Mount Clemens, Ann Arbor, and Ypsilanti (see Figure 3-13). Many more residents have only a single vehicle. Those with more than one person in the household would also benefit from efficient transit services.

Minorities

As of 2010, the U.S. Census reports that minorities (non-white, Hispanic, or non-Hispanic) comprise roughly one-third of the population of southeast Michigan (roughly 1.3 million minority residents). There is significant corrolation between the home locations of minorities and those of low-income residents and households without automobiles. Wayne County was the most diverse with over 45% of the population being minorities (about 850,000 individuals). Approximately a quarter of the populations of Oakland and Washtenaw counties are minority (277,000 and 86,000 respectively) while Macomb County has the lowest proportion of minority populations at just 16% or roughly 138,000 residents. Minority populations are most concentrated in the City of Detroit, with additional concentrations in Dearborn Heights, Plymouth, River Rouge, and Southfield, as well as in the region's university centers (see Figure 3-14).

IMPACTS OF DEMOGRAPHIC CHARACTERISTICS ON TRANSIT DEMAND

When all of these factors are considered, the population-based demand for transit is adjusted to be higher or lower than would be indicated solely by population distribution and density absent these demographic characteristics (see Figure 3-15).¹⁷ Areas in green are estimated to have a demand higher than would be assumed based on population numbers alone while areas in pink may actually have demand somewhat lower than would be assumed strictly by their general population. Areas where demand for transit is disproportionately higher, as compared to population, include:

- Detroit, where residents are 1.5 to 2 times more oriented toward transit than other southeast Michigan residents
- Western Wayne County along the M-10/John Lodge Freeway corridor including Oak Park, Southfield and Farmington Hills

¹⁷ Transit index factors were developed for each demographic characteristic for the population aged 16 and over who are employed. These factors measure the likelihood of certain demographic groups to use transit relative to southeast Michigan's general population, with factors developed on a county-by-county basis. These factors were then applied to the population at the census block level, calculating a transit propensity factor for each census block and producing an "adjusted" population density based on the population's transit propensity.

- The River Rouge and Ecorse communities adjacent to southwest Detroit
- Southern portions of Macomb County including New Haven, Utica and Mt. Clemens
- Pontiac and the southeastern portion of Oakland County, including Rochester, Rochester Hills, Wixom, and Walled Lake
- Much of Ann Arbor and Ypsilanti in Washtenaw County



FIGURE 3-13 ZERO VEHICLE INDIVIDUALS (2010)



FIGURE 3-14 MINORITY POPULATIONS (2010)



FIGURE 3-15 INCREASE AND DECREASE IN DEMAND BASED ON DEMOGRAPHIC CHARACTERISTICS (2010)

Existing Employment-Based Transit Demand

Although comprising approximately one-fifth of all trips taken by a household¹⁸, work trips typically comprise a much higher proportion of transit trips. These trips also generally occur during peak travel times contributing to overall traffic conditions and transportation operations in a region. The mode, frequency, and destination of the work trip shapes how many other household trips are made. Therefore, the location, type, and number of jobs is a strong indicator of transit demand.

In Southeast Michigan, jobs are concentrated in the central business district of Detroit, and outside of the city along major arterials and transportation corridors (see Figure 3-16). The City of Detroit has the largest concentration of employment – primarily in the central downtown area which is experiencing a resurgence of growth and radiating up the Woodward Avenue corridor to Midtown and New Center – however this is only a portion of the total jobs in the region. Other major centers of employment include the City of Ann Arbor, Troy, the combined area of Auburn Hills and Pontiac, Warren, and Dearborn (see Table 3-3). Employment is generally concentrated in town centers and along major transportation corridors; however in some suburban areas, such as Troy and Dearborn, it is more diffuse.

| TABLE 3-3 TOP 10 EMPLOYMENT JURISDICTIONS IN SOUTHEAST MICHIGA |
|--|
|--|

| JURISDICTION | JOBS |
|------------------------|---------|
| Detroit | 391,795 |
| Ann Arbor | 139,084 |
| Troy | 99,213 |
| Auburn Hills + Pontiac | 98,980 |
| Warren | 97,257 |
| Dearborn | 96,775 |
| Southfield | 89,808 |
| Livonia | 85,133 |
| Sterling Heights | 66,677 |
| Farmington Hills | 61,625 |
| | |

Source: Southeast Michigan Council of Governments (SEMCOG)

Overall, approximately two-thirds of the RTA area jobs are within one-quarter mile of a transit route, and over 70% are within half mile. As with the population distribution, however, this does not necessarily mean that available services provide convenient service from where workers live.

¹⁸ U.S. Census, American Community Survey, 2009

FIGURE 3-16 2010 REGIONAL EMPLOYMENT DISTRIBUTION



In the same manner as population densities, employment densities provide a strong indication of underlying employment-based transit demand. As shown in Table 3-4, four to six jobs per acre typically produce demand sufficient for hourly bus service. As densities grow, the demands for transit grow, particularly with respect to more frequent service. Employment densities higher than around 16 jobs per acre produce demand for frequent services (every 15 minutes or less) and premium services. More than 3⁴ of the region's jobs are in areas with sufficient density to support some fixed-route transit services.

| TRANSIT SERVICE LEVEL | JOBS/ACRE | % OF REGIONAL JOBS |
|-----------------------|-----------|-----------------------|
| 60-minute frequency | 4 - 8 | 13.5% |
| 30-minute frequency | 8 - 16 | 15.2% |
| 15-minute frequency | 16 - 24 | 6.4% |
| 10-minute frequency | 24 - 48 | 11.0% |
| 5-minute frequency | >48 | 33.8% |
| | TOTAL: | 79.8% |

TABLE 3-4TRANSIT-SUPPORTIVE EMPLOYMENT DENSITIES

Source: Nelson\Nygaard compiled from various national sources.

When employment densities are considered, it becomes even clearer that a large proportion of Southeast Michigan's job clusters are not served by transit (see Figure 3-17). Examples surrounding the City of Detroit include around Livonia to the west of the city, Novi to the northwest, Rochester and Rochester Hills to the north, and Dearborn and Romulus to the southwest. Sterling Heights in Macomb County has only limited services. Furthermore, in areas where transit is provided, it is often provided with radial routes that operate to and from downtown Detroit, rather than from denser residential areas that many workers commute from; this is especially true in the areas farther out from Detroit. Few connections exist between employment centers unless they are located along some of the radial corridors.

MAJOR EMPLOYERS

Distinct sites of large employers can generate additional demand for transit beyond the underlying demand of the surrounding area. In addition, these sites are often easier to serve with transit, since a large concentrated number of workers need to travel to and from the same work site location, and in some cases at similar times.

Major clusters of employment are in Detroit, Dearborn, Warren, and Ann Arbor (see Figure 3-18¹⁹). A significant number of major employers are also located north of Detroit along I-75; along I-94 and I-96 between Detroit and Ann Arbor; and around the Detroit Metropolitan Wayne County Airport.

The automotive industry still plays a significant role in regional employment. Automotive facilities and related industries are predominant in each of the four counties, composing three of the five biggest employers in the region. The Big 3 automakers alone account for nearly 100,000 workers in the region and the whole of the auto industry employs an additional 17,000 people in Macomb County, 6,000 in Washtenaw County, 18,000 in Oakland County, and 39,000 in Wayne County.

¹⁹ Note that the map presents each employer's primary address; other offices or worksites that may be located in the region are not shown.

Major employment sectors also include "Eds and Meds" – the region's major universities and schools systems and health care providers. The University of Michigan (Ann Arbor and Dearborn), Eastern Michigan (Ypsilanti), Wayne State University (Detroit), Oakland University (Rochester Hills) and the community colleges in each of the four counties, among other institutions, all present significant opportunity for transit demand.



FIGURE 3-17 EMPLOYMENT DENSITY RELATIVE TO TRANSIT DEMAND (2010)

FIGURE 3-18 SOUTHEAST MICHIGAN EMPLOYMENT CLUSTERS



The University of Michigan and its hospital affiliate is the region's second largest employer. Henry Ford Health System, Trinity Health, Detroit Medical Center (DMC), Beaumont Hospital and Health System, and St. John Providence Health System round out the Top 10 employers. The health care industry employs roughly the same proportion of the regional workforce as the auto industry.

The public sector – federal, state, county, and municipal – is a major regional employer as well.

Other major regional private sector employers include Quicken Loans, DTE Energy, and Comerica Bank (see Table 3-5).

| EMPLOYER | JOBS | COUNTY |
|------------------------------------|--------|--------------------------------------|
| Ford Motor Company | 43,977 | Wayne, Macomb, Washtenaw |
| University of Michigan | 29,551 | Washtenaw, Wayne |
| Chrysler Group LLC | 29,006 | Oakland, Macomb |
| General Motors, Co. | 26,843 | Macomb, Oakland, Washtenaw, Wayne |
| US Government | 18,600 | Macomb, Oakland, Wayne |
| Henry Ford Health System | 17,831 | Oakland, Macomb, Wayne |
| Trinity Health | 14,062 | Oakland, Washtenaw, Wayne |
| Detroit Medical Center | 13,458 | Wayne, Oakland |
| Beaumont Hospital/Health | 13,134 | Oakland, Wayne |
| St. John Providence Health System | 12,002 | Oakland, Macomb |
| State of Michigan | 9,693 | Macomb, Oakland, Wayne |
| US Postal Service | 9,666 | Oakland, Wayne, Macomb |
| City of Detroit | 9,591 | Wayne County |
| Quicken Loans | 9,423 | Wayne County |
| Detroit Public Schools | 6,586 | Wayne County |
| Blue Cross Blue Shield of Michigan | 6,502 | Wayne |
| DTE Energy | 6,213 | Wayne, Oakland, Macomb, Washtenaw |
| Oakwood Healthcare, Inc. | 6,172 | Wayne County |
| Wayne State University | 6,023 | Wayne County |
| Comerica Bank | 4,814 | Wayne, Oakland, Macomb, Washtenaw |
| Johnson Controls | 4,425 | Wayne, Oakland |
| Faurecia | 4,240 | Oakland County |
| Wayne County Government | 3,374 | Wayne County |
| Oakland County Government | 3,211 | Oakland County |
| Botsford Health Care | 3,053 | Oakland County |
| | | |

TABLE 3-5 TOP 25 EMPLOYERS IN SOUTHEAST MICHIGAN

Source: Crain's Detroit, 2013.

OVERALL EXISTING UNDERLYING TRANSIT DEMAND

A large number of factors drive transit demand, the most important of which are population and employment densities and many demographic characteristics of the region's residents. When these factors are considered together,²⁰ the highest underlying demand for transit is in the cities of Detroit, Ann Arbor, and Ypsilanti; along the M-10/John Lodge Freeway and 16 Mile Road corridors and in the town centers along Woodward Avenue out to Pontiac; as well as the communities of Dearborn, Hamtramck, Livonia, Plymouth, Rochester, Romulus (to and around the airport), and Utica (see Figure 3-19). In general, and with the exception of Ann Arbor and Ypsilanti, transit demand is highest in Detroit's core, and then decreases with distance from the Detroit core. Again, with the exception of Ann Arbor and Ypsilanti, there are few areas in the outer portions of Macomb, Oakland, and Washtenaw counties that have sufficient demand to support productive transit service.

As shown in Figure 3-19, there are significant mismatches between transit demand and supply, including large areas with demand but little or no service. These mismatches are described in more detail in the following section.

UNDERLYING TRANSIT DEMAND RELATIVE TO EXISTING SERVICE

As described in many of the previous sections, Southeast Michigan's transit network provides service coverage to many areas where demand is the highest. However, as a greater proportion of residents and development are now farther from the core, the demand for transit now significantly extends beyond the reach of the current transit network. There are also gaps within the extent of the existing network.

Wayne County

Wayne County's population is heavily concentrated in Detroit, and Detroit residents are much more oriented toward transit than residents of other areas. There are also major concentrations of populations in the Detroit suburbs, including Allen Park, Dearborn, Dearborn Heights, Garden City, Grosse Pointe, Lincoln Park, Livonia, Plymouth, and River Rouge.

DDOT provides fairly comprehensive service coverage within Detroit, and some limited service outside of the city borders. SMART provides service to most of the suburban communities where demand is high, including to and from Detroit. However, transit demand extends farther west and south than SMART service does. Communities with significant demand but little or no service include Belleville, Livonia, Northville, Plymouth, and Woodhaven, since these communities have "opted-out" of funding SMART. Even in many of the outer communities served by SMART, service coverage is thin. Though there is transit service, in many of the communities within Wayne County, service is infrequent and the span of service is limited.

²⁰ Figures were combined by adding demand-based on population and employment densities and then factoring that combined demand up or down based on demographic characteristics.

FIGURE 3-19 OVERALL 2010 UNDERLYING TRANSIT DEMAND







Note: The frequency of service matched to the density of an area should only be used as a guide; the results do not indicate definite success or failure of a service operated at that frequency.

Macomb County

All of Macomb County is opt-in to SMART. SMART's fixed-route service primarily serves the communities south of Hall Road (M-59), while Northern Macomb County is served by SMART's Connector services and various Community Partnership Services. The southern area of the County largely encompasses the areas with the highest levels of underlying transit demand. Most of these areas such as Warren, Lakeside Center, and Mount Clemens are currently served, but often with less service than current demand warrants. While Sterling Heights has transit service, the areas of highest transit propensity are somewhat removed from the transit route.



FIGURE 3-21 2010 MACOMB COUNTY UNDERLYING TRANSIT DEMAND

There is also demand north of Hall Road, although to a lesser extent than in communities to the south. Except for Community Connector service, this demand is not served. There is modest underlying demand, but little or no transit service provided along the Van Dyke Freeway corridor north of Utica to Washington Township.

Oakland County

Oakland County's population is primarily clustered around the southeastern portion of the county in the cities of Farmington Hills, Pontiac, Royal Oak, and Troy, as well as other communities bordering Detroit. Most communities that have significant demand for transit are served by SMART; however, there are exceptions such as Novi, Rochester Hills, Rochester, and Wixom, since these communities have "opted-out" of funding SMART. As in Wayne and Macomb counties, even in "opt-in" areas, SMART service coverage in many outer communities is thin with limited frequencies.



FIGURE 3-22 2010 OAKLAND COUNTY UNDERLYING TRANSIT DEMAND

WASHTENAW COUNTY

Most of the county's population is concentrated in Ann Arbor and Ypsilanti, which have transit service provided by AAATA's TheRide, covering most parts in and between these two cities. Chelsea has limited service to Ann Arbor from a park-and-ride facility on Interstate 94. In addition, Amtrak serves Ann Arbor for service to Chicago and Detroit; however, departure times are not during peak commute times, so this currently is not useful for most work trips. There are additional smaller clusters of populations, such as Dexter, Milan, Saline, and Whitmore Lake that have some limited demand for transit service that is presently unserved.²¹

²¹ Note that AAATA will extend service to Saline Meadows, Saline High School, and the Walmart northeast of Saline beginning in August 2015 as a result of the 2014 millage funding.



FIGURE 3-23 2010 WASHTENAW COUNTY UNDERLYING TRANSIT DEMAND

Existing Travel Flows

For transit to be convenient, it needs to operate between the places where people start and end their trips. However in other areas, largely outer areas, trips are too highly dispersed to be effectively served with transit. As described below, there are a number of strong origin-destination markets for transit in Southeast Michigan, as well as many areas where volumes are too low.

Travel pattern demands were evaluated based on two levels: demand generated specifically by commute trips (home-based work trips) and demand generated by all trips made in the region. All trips include trips made to drop off children at school, go shopping, or travel to workday meetings. Home-based work trips are specifically trips made between home and work. Generally speaking, home-based work trips are more consistent, occurring along the same corridors at roughly the same time of day whereas all trips include a diversity of different routes and travel times. Both are important indicators of travel flows in the region in order to meet not only peak hour commuting needs, but also permit households to meet the other demands of daily life via alternative modes to the private automobile.

Travel flows assess trips made between sub areas of the region; such as trips made between Livonia and Plymouth. (Trips made within a community are not presented in this assessment.)

Travel flows reflect general demand irrespective of mode taken (for example driving or transit). Given current mode splits in Southeast Michigan, the majority of trips at present are generally made as a single occupant in a private auto.

ALL TRIP PURPOSES

General household travel flows are well spread throughout the region, although the M-10 (Lodge Freeway)/M-5(Grand River Avenue) corridor is somewhat of a boundary, as travel flows across that corridor are relatively lower than to the sides (see Figure 3-24). Major travel flows include:

- Between destinations within and adjacent to the City of Detroit, predominantly east and west between Dearborn and Grosse Pointe.
- East and west along the M-59 corridor between Pontiac/Auburn Hills and Macomb Township/New Baltimore.
- Along an extended line roughly following the M-5/I-275 corridors from Clarkston down to Wayne Township by way of Orchard Lake, Farmington Hills, Livonia, and Garden City. This corridor is mirrored by slightly lower travel flows on a corridor to the west roughly extending from Commerce Township down to Van Buren Township via Novi and Plymouth.

Flows into and out of the Mount Clemens area and around Troy, Royal Oak and Rochester are also significant.

FIGURE 3-24 2010 REGIONAL TRAVEL FLOW – ALL TRIPS





FIGURE 3-25 2010 REGIONAL TRAVEL FLOW – WORK TRIPS

WORK TRIPS

Compared to trips made for all purposes, work trip travel flows – which are a particularly important transit market – are much more concentrated. The highest volumes flows are (see Figure 3-25):

- In and out of the downtown Detroit core along the Gratiot, Woodward and Michigan Avenue corridors with a particular concentration of demand occurring between New Center, Midtown, and the central business district.
- Along the western edge of Detroit extending from Southfield/Oak Park down to Dearborn.
- East to west between Pontiac and Macomb Township roughly paralleling M-59, and particularly between Pontiac and Rochester.
- Between Farmington Hills and Warren by way of Southfield, Royal Oak, and Ferndale.
- To and from Troy and Warren, which, as the major economic centers of the region aside from Detroit, are the epicenter for travel from many directions. Demand between Troy and Royal Oak/Ferndale is particularly high as is the flow north of Mt. Clemens along the M-53 corridor.
- Between communities around Novi and Farmington Hills and north and south from Farmington Hills to Orchard Lake and Livonia.
- Within and between Ann Arbor and Ypsilanti.

Future Transit Demand

Shifts are occurring in Southeast Michigan that will impact the future demand for transit. SEMCOG projects that regional population losses will continue through 2020, after which time the region will start to grow again, albeit modestly. On the other hand, many fundamental efforts are underway to change this trajectory and stimulate more robust growth, including the focus on building a 21st century regional transit system. In addition to overall demand, there will also be some shifts in where people live and work, although these changes are not expected to be as dramatic as they have been over recent years.

2040 POPULATION-BASED TRANSIT DEMAND

As a whole, SEMCOG projects Southeast Michigan will grow very slowly through 2040. By county, based on SEMCOG projections, Wayne County and the City of Detroit will continue to lose population, but at relatively slow rates. Macomb, Oakland, and Washtenaw counties will grow, but also at very slow rates. Accordingly, SEMCOG projects population levels in 2040 will be very similar to what they are today (see

Table 3-6 and Figure 3-26). According to SEMCOG:

- Wayne County is projected to continue to lose population through 2040. The county lost over 150,000 residents from 2000 to 2010 and is expected to lose over 41,000 additional residents this decade (2015 to 2020). Most of these will be from within the City of Detroit (-23,600) but the suburban county is also forecasted to lose nearly 18,000 residents. Losses in Detroit will average 0.2% per year, which is slower decline then the previous ten years. Detroit's population is expected to stabilize at around 615,000 by 2030 and maintain that level through 2040.
- Macomb County saw some growth even during the recession adding roughly 14,000 residents between 2010 to 2015. Growth will continue at an average annual rate of 0.2%.
- Oakland County is expected to continue to grow very modestly as it has in the past decade. From 2000 to 2010, Oakland County slightly increased its population. This trend will continue through 2040 with average annual growth of 0.1%.

- Washtenaw County also grew throughout the recession, and percentage-wise, is Southeast Michigan's fastest growing county. Still, average annual growth between 2015 and 2040 is projected at 0.4%.
- As a whole, SEMCOG projects the RTA region will continue to lose population through 2020; however after that time its population will stabilize, and between 2015 and 2040 the region is projected to grow at an average annual rate of 0.3%.

Major shifts in the location of population are likewise not expected (see Figure 3-27). Population growth will generally be within already developed areas. However, population is not expected to become significantly more concentrated, with the possible exception of Detroit. The growth that does occur is expected in the least urbanized counties of the region – Macomb and Washtenaw.

Many fundamental efforts are underway, however, to reposition the region and achieve more robust population growth. For example, in the wake of the City of Detroit's historic bankruptcy, unprecedented efforts are underway to improve city services, enhance public safety, combat blight, reinvest in neighborhoods, and improve DDOT's performance. Multiple initiatives have been launched to address mortgage financing challenges and enable more people to move into Detroit's neighborhoods. The City of Detroit is reporting occupancy rates in Downtown and Midtown Detroit are approximately 98%, with demand for an estimated 7,000 new housing units over the next five years. This supports the view that the City of Detroit and the entire region are at an inflection point, and that the regional transit plan must not only recognize these efforts to stimulate greater regional growth, but set regional growth as a core objective.

| | NUMBER | | | | TOTAL CHANGE | AVG ANNUAL |
|---------------|-----------|-----------|-----------|-----------|-----------------|---------------|
| | 2010 | 2015 | 2020 | 2040 | 2015-40 | 2010-40 |
| Wayne | 1,820,584 | 1,742,296 | 1,700,850 | 1,656,961 | -8.99% | -0.19% |
| Detroit | 713,777 | 648,350 | 624,705 | 615,029 | -13.83% | -0.20% |
| Other | 1,106,807 | 1,093,946 | 1,076,145 | 1,041,932 | -5.86% | -0.19% |
| Wayne | | | | | | |
| Macomb | 840,978 | 855,378 | 863,380 | 905,354 | 7.65% | 0.22% |
| Oakland | 1,202,362 | 1,215,322 | 1,218,432 | 1,246,854 | 3.70% | 0.10% |
| Washtenaw | 344,791 | 350,784 | 354,116 | 386,290 | 12.04% | 0.37% |
| RTA REGION | 4,208,715 | 4,163,780 | 4,136,778 | 4,195,459 | -0.31% | 0.03% |

TABLE 3-6 RTA REGIONAL FORECASTED POPULATION CHANGE 2010 TO 2040

Source: Southeast Michigan Council of Governments (SEMCOG), 2015.



FIGURE 3-26 POPULATION GROWTH 2010 - 2040

Population distribution in the RTA region is expected to remain similar in the future as it is today. Population will continue to be highest in and around the City of Detroit and close-in urbanized areas, plus the urban centers of Ann Arbor and Ypsilanti. Growth is expected to continue in these cities as well as Macomb Township, Rochester Hills, Dearborn, and Novi, among others. The existing transit network provides service to many, but not all, of these areas. These same communities will see modest population growth providing increased demand for transit (see Figure 3-28).

FIGURE 3-27 POPULATION DISTRIBUTION (2040)





FIGURE 3-28 POPULATION DENSITIES AND TRANSIT DEMAND (2040)

2040 Employment-Based Transit Demand

While the region lost population over the last decade, each of the four counties and the City of Detroit still experienced a net gain in jobs. Southeast Michigan is expected to end the decade with a net increase in jobs (see Table 3-7 and Figure 3-29).

| | NUMBER | | | TOTAL CHANGE | AVG ANNUAL | |
|---------------|-----------|-----------|-----------|-----------------|---------------|---------|
| | 2010 | 2015 | 2020 | 2040 | 2015-40 | 2010-40 |
| Wayne | 859,414 | 882,094 | 882,604 | 899,195 | 4.63% | 0.07% |
| Detroit | 349,555 | 359,262 | 355,262 | 356,832 | 2.08% | -0.03% |
| Other | 509,859 | 522,832 | 527,342 | 542,363 | 6.38% | 0.14% |
| Wayne | | | | | | |
| Macomb | 362,517 | 377,116 | 379,981 | 409,886 | 13.07% | 0.32% |
| Oakland | 842,222 | 901,219 | 921,533 | 970,797 | 15.27% | 0.29% |
| Washtenaw | 236,676 | 246,721 | 252,598 | 285,655 | 20.69% | 0.57% |
| RTA REGION | 2,646,154 | 2,803,391 | 2,855,626 | 3,047,021 | 15.15% | 0.32% |

TABLE 3-7 RTA REGION FORECASTED EMPLOYMENT CHANGE 2010 TO 2040

Source: Southeast Michigan Council of Governments (SEMCOG), 2015.



FIGURE 3-29 EMPLOYMENT GROWTH 2010 - 2040

As with population growth, SEMCOG projects that employment growth rates will also be low, although higher than population growth. According to SEMCOG:

- Wayne County will see the slowest job growth both in terms of net jobs and percent growth. It will have an annual growth of less than 0.1%, the lowest rate of increase in southeast Michigan.
- Oakland County, which has the highest number of jobs in Southeast Michigan, and has increased its number of jobs since 2010, will continue to add jobs at an average annual rate of 0.3%.
- Macomb County will add jobs at a similar rate as Oakland County, at an average annual rate of 0.3%.
- Washtenaw County will have the region's highest job growth rate, at 0.6% per year.

Most of the growth in new jobs will be in current employment areas and centers. This will be primarily in downtown and Midtown Detroit, Ann Arbor and its immediate vicinity, along the M-10 (Lodge Freeway) and M-1 (Woodward Avenue) corridors, and in Dearborn and Warren/Royal Oak (see Figure 3-30). Other major centers of employment will include Troy, Auburn Hills/Pontiac, Sterling Heights, and Clinton Township.

In terms of employment-based demand for transit, the Detroit CBD to New Center area will continue to produce demand for frequent transit service (see Figure 3-31). The Woodward Avenue and John C. Lodge Freeway corridors will also continue to have transit supportive concentrations of employment, as will the Ann Arbor/Pittsfield Township area.

OVERALL 2040 UNDERLYING TRANSIT DEMAND

When SEMCOG's population and employment are considered together, along with available information on demographic characteristics, the demand for transit in 2040 is not projected to be significantly different than today (see Figure 3-32). In general, the areas where there is demand for transit today will only expand or shrink marginally. However, within those areas, there are places where demand will either strengthen or weaken:

- There will be slight increases in demand in suburban employment centers particularly along major corridors in the northwest of the region.
- Transit demand will increase in Ann Arbor and Ypsilanti, and these two cities are among the few areas where the geographic extent of demand will increase.
- There will be a modest increase in demand in Dearborn and other communities along the I-94/Michigan Avenue corridor.

Wayne County

- Detroit neighborhoods that have experienced recent growth like Midtown, New Center, Southwest
 Detroit
- Plymouth near I-96
- Canton along Ford Road
- Livonia near I-96 and I-275
- Wayne south of Michigan Ave and east of I-275
- Dearborn along the Telegraph Road (US-24) corridor

FIGURE 3-30 EMPLOYMENT DISTRIBUTION (2040)





FIGURE 3-31 EMPLOYMENT DENSITY RELATIVE TO TRANSIT DEMAND (2040)



FIGURE 3-32 COMPOSITE TRANSIT INDEX 2040



FIGURE 3-33 2040 WAYNE COUNTY UNDERLYING TRANSIT DEMAND

MACOMB COUNTY

Much of the new demand in Macomb County will be in areas that SMART currently serves. (See Figure 3-34.)

- The Van Dyke corridor through Warren, Sterling Heights, and Utica, primarily due to the number of businesses along the corridor
- The Gratiot Avenue corridor through Roseville, Mount Clemens, and Chesterfield, due to both its residential and employment-based development
- The Lakeside Center near Utica, due to both its residential and employment-based development

Some areas currently without or underserved by transit, but will have increased demand in the future include:

- Northern Shelby Township, north of M-59
- Shelby Township near M-53, 25 Mile Road, and 26 Mile Road



FIGURE 3-34 2040 MACOMB COUNTY UNDERLYING TRANSIT DEMAND

OAKLAND COUNTY

In Oakland County, areas with emerging transit demand include:

- Lake Orion
- Milford
- Novi
- Rochester
- Rochester Hills
- Troy
- Wixom



FIGURE 3-35 2040 OAKLAND COUNTY UNDERLYING TRANSIT DEMAND

WASHTENAW COUNTY

In addition to demand increasing in areas currently served, demand will increase to some new areas:

- Pittsfield Township
- Saline
- Dexter, Chelsea and Scio Township
- Northfield Township and Whitmore Lake



FIGURE 3-36 2040 WASHTENAW COUNTY UNDERLYING TRANSIT DEMAND

2040 Future Travel Flows

In 2040, travel patterns will also be very similar to current travel patterns, although volumes will increase in some areas.

ALL TRIP PURPOSES

General household travel flows for all trip purposes in 2040 will remain similar to 2010 patterns. As shown in Figure 3-37, these patterns will continue to be very dispersed. Furthermore, unlike in most major U.S. urban areas, the major flows will not be to and from the core city's downtown (in this case, Detroit), but between suburban areas and between Ann Arbor and Ypsilanti. Still, travel volumes to and from downtown Detroit and the rest of the city will remain high.

Areas between which travel volumes will increase between 2010 and 2040 include:

- East and west travel along the M-59 corridor between Pontiac/Auburn Hills and Macomb Township/New Baltimore
- Along the I-275 corridor
- Increased demands into and out of the regional centers of Detroit, Southfield, Warren, Ann Arbor/Ypsilanti, and Royal Oak/Ferndale
- Between Romulus and the airport

HOME-BASED WORK TRIPS

Commute trip flows (home-based work trips) in 2040 will also very much reflect the travel flows of today (see

Figure 3-38). As with trips for all purposes, work trips to downtown Detroit, while high, will not represent the largest travel flows. Instead, the highest flows with be in southern Macomb County, southeastern Oakland County, and within Ann Arbor and Ypsilanti. These will include:

- Along the western edge of Detroit from Southfield/Oak Park to Dearborn
- East-west along a corridor paralleling M-59 from Pontiac to Macomb Township with a particular concentration between Pontiac and Rochester; and between Farmington Hills and Warren by way of Southfield, Royal Oak, and Ferndale
- To and from Warren, Southfield, and Novi
- Within Ann Arbor and Ypsilanti, and to a lesser extent between the two cities

To, from, and within Detroit, the highest volume travel flows will include:

- Woodward Avenue between New Center and Downtown by way of Midtown
- To and from downtown via the Gratiot, Woodward, and Michigan Avenue corridors

SPECIAL PURPOSE TRIPS

In addition to everyday household trips and typical commute trips, there are also some special purpose trips that must be considered in the region. These trips are typically episodic and often made by visitors to the region and therefore difficult to capture in the regional travel demand model from which travel flows are derived.

Special purpose trips include transit access to major airports and access to large and frequently used event venues.

Most major metropolitan areas provide service to their airports. In southeast Michigan:

- AAATA provides express service between Ann Arbor and Detroit Wayne County International Airport (DTW). That service, which is provided with over-the-road coaches, operates to and from Ann Arbor's Blake Transit Center approximately every 90 minutes from 4 AM to 11 PM. One-way trip times are 45 to 55 minutes.
- SMART provides local service between downtown Detroit and the airport. Route 125 provides service between the airport and downtown approximately every 30 minutes only during the AM and PM peak travel periods (6:30 to 9 AM and 3 to 5:30 PM). At all other times, Route 125 operates only approximately once an hour but only between the airport and the Detroit city line, where riders must transfer to DDOT's Fort route. One-way trip times from end-to-end between Detroit and the airport are over one hour and 15 minutes, and longer when connections need to be made. There is no express or limited stop service between Detroit and the airport.

In addition, in Downtown Detroit, there are numerous sporting events and conventions. The People Mover and DDOT buses provide service to these events within downtown, but services from outer areas are much more limited.

Conclusions and Summary

In evaluating the existing transit market and propensity for transit use:

- In general, southeast Michigan is not expected to see significant population or employment growth over the next 25 years. Some localities will see marginal growth including Ann Arbor/Washtenaw, southern Oakland County and southern Macomb County; areas that may continue to see decline or near stagnant growth include the City of Detroit and western Wayne County.
- The current system serves many, but not all, major areas of demand; however, underlying demand along many corridors would support more frequent service than is currently provided.
- The region's slow growth, while presenting many economic challenges, may also make the development of a stronger transit system more achievable, as it will allow the RTA to focus on strengthening existing services without simultaneously needing to address a large-scale expansion of services to new areas.



FIGURE 3-37 2040 REGIONAL TRAVEL FLOW – ALL TRIPS





4 Conclusions and Next Steps

Introduction

The previous chapters presented an overview of existing transit services in southeast Michigan and an analysis of the underlying transit market, and both identified a number of issues with existing services. This chapter expands upon those issues.

Major Issues

There are a number of issues that must be addressed to significantly improve transit in southeast Michigan:

Existing services are not attractive to most residents. Because service coverage, service frequencies, and the hours and day of service are limited, transit service is not convenient for most residents and employees who have other options – in other words, the broad cross-section of southeast Michigan's population.

Many areas with significant demand are unserved or underserved. As a region, southeast Michigan has been experiencing population and job losses. However, these losses have not been uniform, and have occurred largely in Wayne County. As population and jobs have shifted out of Detroit, there have been increases in surrounding areas. Transit service has yet to follow these shifts, and there are now many areas with significant transit demand that are either unserved or underserved.

Transit services are not aligned with travel patterns. In Wayne, Macomb, and Oakland County, transit services are primarily oriented toward providing service to and from downtown Detroit. While downtown remains one of the region's major travel destinations, especially for work trips, an increasing number of trips are being made to locations that are not served well by transit. This includes trips to Metro Airport, which currently has very little transit service.

Service reliability needs to improve. Historically DDOT service has had issues with on-time performance, which discourages many from using transit within the city and other areas that DDOT serves. New buses put into service have already begun to improve performance, reliability, and quality of experience.

Service integration/coordination needs to improve. Southeast Michigan's four transit providers all independently design service and determine service policies. Although there are some ongoing collaboration efforts, service is less seamless than it should be, especially with respect to:

- Providing information about trip planning and travel alternatives
- Fare payment

- Real-time information
- Regional connections

Specifically, the fact that many people are forced to transfer between SMART and DDOT routes at the City border during off-peak times reduces the usefulness of the existing services. Many SMART routes continue into downtown during peak hours, which helps those with traditional work shifts. However, the transfer required during middays, evenings and weekends is a significant barrier to job access for many people with non-traditional work shifts, including many of those employed in service industries. The transfer causes travel time delay, creates more uncertainty for each trip, and affects many non-work trips as well.

Few premium services are provided. Regular bus service is important, but certain corridors warrant service which can provide greater frequency, speed, reliability, and amenities. This premium service can be bus or rail, but the overall quality should be sufficient to attract riders, and even to influence residents and businesses to move near such corridors. M-1 Rail streetcar service is now being constructed on Woodward Avenue in Detroit, and studies are underway to determine how to develop premium service in the Gratiot, Woodward, and Michigan corridors. These efforts represent a good start, but more will need to be done to provide better services throughout the region.

Insufficient funding is available to meet the region's transit needs. Compared to other similarsized areas, much less funding is available. Consequently less service is provided and transit ridership is low. For example, southeast Michigan spends \$67 per person per year on public transit, while Pittsburgh area spends \$216, Denver area spends \$189, and Boston area spends \$330. As a result, southeast Michigan provides far fewer transit options and ridership is much lower.

Paratransit and demand response services need improvement. Existing services are not wellcoordinated. There are also issues with late and missed trips.

EXISTING SERVICE NOT CONVENIENT

Most riders consider service that operates every 10 minutes or less as very convenient and service that operates every 15 minutes or less as relatively convenient. Conversely, service that operates every 30 minutes or more becomes too infrequent for most travelers who have other ways to travel, such as driving.

At present, the service levels provided by the region's transit providers are too low to provide service that most people consider to be sufficiently convenient, and this discourages most people with other options from using transit. Even during weekday peak periods, a few routes operate every 15 minutes or better (see Figure 4-1). Midday, evening and weekend service is even less frequent (Figure 4-2 for midday). Metro Detroit area service also ends relatively early. Half of SMART's services end before 8 PM, and the rest ends by 10 PM. Over half of DDOT's services end before 10 PM. Riders transferring between SMART and DDOT during off peak hours are doubly affected; their travel times made even longer by greatly diminished service frequencies which contribute to long wait times during the transfer.

The lack of frequent service is one of the major issues facing southeast Michigan. As indicated in Chapter 3, there are many areas where there is significant transit demand that are either underserved or unserved. To make service more attractive, the amount of service that is provided needs to be better matched with underlying demand. In most cases, this will require services that operate more frequently and for longer hours.

FIGURE 4-1 WEEKDAY PEAK PERIOD SERVICE FREQUENCIES





FIGURE 4-2 WEEKDAY MIDDAY SERVICE FREQUENCIES

As part of providing more frequent service, southeast Michigan will also need to develop a network of frequent services that serves the region's highest demand areas. This "Frequent Transit Network," consistent with how service is provided in other major cities, should consist of routes that operate every 10 to 15 minutes from the beginning of the AM peak until at least mid-evening, and with a total span of service of at least 18 to 20 hours. The Frequent Transit Network would also provide a backbone around which other transit services can be oriented and developed.

Candidate corridors for frequent services would certainly include the three corridors being studied for premium service (Woodward, Gratiot, and Michigan), but also many others including Fort/Eureka, Grand River, Greenfield, Plymouth, Telegraph, Van Dyke, Warren, 8 Mile, and 12 Mile in the areas in and around Detroit. In the Ann Arbor area, such corridors would include Liberty, Miller, Packard, Washtenaw and others. Since these routes have already shown demand, the upgrades to span and frequency are likely to attract new ridership, both from people already living and working along those bus routes, as well as individuals and companies who move in order to be near the higher-quality transit service.

For other corridors with significant but slightly less demand, establishing peak frequencies of at least every 15 minutes, and off-peak frequencies of at least every 30-40 minutes, can still attract ridership. The span of service on these corridors can also be slightly less.

MANY AREAS ARE UNDERSERVED

As described in Chapter 3, as population and jobs have shifted out of Detroit, there have been increases in surrounding areas. Transit service has yet to follow these shifts, and there are now many areas with significant transit demand that are either unserved or underserved (see

Figure 4-3). Examples include Auburn Hills, Livonia, Northville, Novi, Plymouth, Rochester, Rochester Hills, Wixom and Woodhaven (all communities which have "opted out" of SMART service). There are also many areas that are currently served, but where less service is provided than is now warranted. Examples include Hamtramck, Lathrup Village, and Huntington, and much of southern Macomb County.

There are a number of ways to serve this demand:

- New premium services, for example in the Michigan corridor, and as part of a Frequent Transit Network.
- New local bus services.
- The extension of existing routes into new areas
- The provision of Flex services, which combine properties of fixed-route and demand-response service, and can be the best option for lower demand areas.

Additional ways to extend the transit network include partnerships with taxis, transportation network companies like Uber and Lyft, private shuttles, and bike share. Also encouraging communities in the RTA area to expand the number and length of bike lanes and support walkability initiatives such as ongoing sidewalk and curb ramp repairs, snow management, and zoning.

SERVICE NOT ALIGNED WITH CURRENT TRAVEL PATTERNS

Much existing transit service is focused on serving trips to and from downtown Detroit; however, much of the region's travel has shifted to outer areas (see Figure 3-24). As a result, demands have increased for transit service to locations outside of downtown Detroit, including the airport, and future projections indicate a continuation of this trend. Examples include travel between Novi and Farmington Hills, between Rochester Hills and Auburn Hills, between Troy and Madison Heights, and between Mount Clemens and Sterling Heights.

FIGURE 4-3 TRANSIT ACCESS AND AREAS OF POTENTIAL DEMAND



FIGURE 4-4 2010 REGIONAL TRAVEL FLOW – ALL TRIPS



SERVICE RELIABILITY IN DETROIT NEEDS TO IMPROVE

Passengers, especially those with other options, will avoid transit if it is unreliable. It is important to make sure that sufficient vehicles and operators are available to operate the scheduled service. Schedules should also allow sufficient recovery time after each trip in order to account for the variability inherent in bus service, due to traffic, fare payment, wheelchair boardings, and other factors. In addition, optimizing bus stop spacing and locations can significantly improve both the speed and reliability of service.

Equipment and facilities must be kept in good condition as well. This can include vehicles, stations, bus stops, and any passenger facilities, in order to make the customer experience more pleasant, as well as service more reliable. This should also include maintenance equipment and facilities – while these aren't often seen by passengers, the maintenance quality and capacity is a huge determining factor for service reliability. Upgrading these "back-of-the-house" facilities can allow for more efficient work flow, and contribute to more vehicles being available and in better condition. DDOT has a capital investment plan that prioritizes regular vehicle purchases, so that vehicles are not pressed into service when they are beyond their useful life – a typical transit bus can last 12-15 years as long as it receives proper maintenance, usually including a mid-life overhaul. Although DDOT is making significant improvements by hiring additional bus operators and procuring new buses, additional funding for their capital, operating and fleet maintenance plans could mitigate issues related to vehicle maintenance, facilities, amenities, and frequency.

REGIONAL COORDINATION NEEDS TO IMPROVE

Southeast Michigan's four transit providers all independently design service and determine service policies. As a result, service is significantly less seamless than it should be, especially with respect to:

- The ability to choose between alternative services
- Fare payment
- Information
- Regional connections

Complementary Services

In major radial corridors where both DDOT and SMART operate, services are operated independently with limits on travel within Detroit and forced transfers at the Macomb/Wayne County line during off-peak hours. Ideally, all service in the region should be planned and operated as if it were one system, since many passengers need to use it that way. Seamless integration should also extend to trip planning, fare payment, and real-time information.

Fare Payment

The complicated nature of the existing system for fare payment among the various providers is a significant barrier to ridership. Many people are deterred from trying transit because they don't feel comfortable that they know the policies regarding payment. And even experienced passengers who don't want or need a monthly pass are inconvenienced by the system of transfers. There are always logistical issues to implementing fare payment mechanisms across different systems, but the recent improvements in technology make this easier and the experience of other metro areas who have successfully integrated fare payment across multiple transit providers show that it can be done (e.g. Chicago and the Bay Area). Joint fare programs are an important piece of making the regional transit service more seamless for

users. The RTA is working in partnership with all the transit providers in the region to develop an integrated fare payment system.

Information

Providing better travel information can attract new ridership, as well as making the system of multiple providers easier to use. Different transit users access information in different ways. There is still a role for posted notices in vehicles and stations, especially regarding existing or upcoming changes to service. Many passengers also look to websites, social media, mobile phone apps, and automated alert systems for information. Multiple modes of communication should be utilized to best deliver information. Ideally, customers can get complete real-time information about vehicle arrivals, since this eliminates the uncertainty which is a significant barrier to increasing ridership. Trip planning information should be easily obtainable, regardless of which transit provider operates the service. And all information should be accessible to those with all types of disabilities.

Regional Connections

There is also a need for better transit connections between the major regional destinations, including more service to Detroit Metro Airport, and potentially between Ann Arbor and Detroit.

FEW PREMIUM SERVICES ARE PROVIDED

Throughout the country, there has been an increased emphasis on the development of new types of higher quality transit services. These include commuter rail, rapid transit, light rail, Bus Rapid Transit, Rapid Bus, streetcar, and more. As indicated by the development of M-1 Rail streetcar service, plans for commuter rail, and ongoing studies of service improvements in the Michigan, Gratiot, and Woodward corridors, southeast Michigan's transit agencies have started to develop premium services. However, with those exceptions, southeast Michigan's most important bus routes continue to provide regular local service.

To develop a great transit system, the RTA and the region will need to significantly expand efforts to develop high quality services. The development of a High Capacity Transit Network of BRT, BRT Lite, and other high quality services—as discussed above—would make it convenient to travel throughout the region. While the specific types of high quality services that could be included in this network will need to be determined, a High Capacity Transit Network consisting of premium services will be a key element in developing more compelling transit service. These can be bus or rail services, but they must provide trips with good frequency, speed, reliability, and amenities, in order to attract ridership.

TRANSIT FUNDING IS INSUFFICIENT

Southeast Michigan spends less per capita on transit service than peer regions (see Figure 4-5). Consequently, much less service is provided, and transit ridership is much lower. To develop a more robust transit system that can help make southeast Michigan a more competitive place, significant increases in transit spending will be needed.

More robust transit service increases mobility for those who choose to or must live without access to a private automobile. This has significant benefits, including allowing people to live more affordably without the expense of maintaining a car (or being able to live with fewer cars). Since metro Detroit's attractiveness in coming years will include a lower cost of living than some peer cities, better transit

service can therefore help retain and recruit both residents and businesses who value an affordable lifestyle.

Improved transit also increases the independence of those who cannot drive, due to age, disability, poverty, or other reasons. Transit can therefore be an important enhancement to meeting social justice goals. Good transit also has public health benefits, as more people get around without driving, and use more active transportation modes (walking, bicycling, etc.) in connection with or in addition to transit trips.

Finally, other benefits of enhancing transit service include reductions of vehicle emissions which help with easing local pollution as well as global climate change; and alleviating traffic congestion as some people switch from driving to transit. All of these reasons are why many successful metropolitan areas are viewing transit service as an increasingly important tool for competitiveness.



FIGURE 4-5 PER CAPITA TRANSIT SPENDING

Paratransit, Demand Response, and Mobility Management

Similar to the fixed-route public transit, paratransit services should also be better coordinated and more seamless. In addition, service improvements should increase on-time performance, reduce missed trips, minimize excessively long trips, and provide better real-time information about vehicle arrivals. Modern scheduling software can help achieve these objectives, while providing better data for service improvement.

Eligibility screening for ADA paratransit should be consistent, and include in-person assessments. Encouraging use of the fixed-route system wherever possible can not only increase the independence of those individuals with disabilities but also reduce the agency costs for paratransit services. Travel training about the fixed-route system should be provided.

A "family of services" should be offered, especially in lower-density areas where fixed-route options will inevitably be limited. There is a spectrum of options between fixed route and demand response, including deviated fixed route, and point deviation, which may be appropriate for different areas. In addition, many private transportation providers will have a role in addition to public transit agencies. Good mobility management services can provide valuable assistance so that people know their travel options.

Next Steps

The information in this document, coupled with stakeholder outreach, identifies the major obstacles to quality regional transit in the four-county area. The next steps are to clearly define the goals, objectives and priorities for transit in the region and develop a range of strategies and system improvements to address current deficiencies and meet these goals. Existing services assessment and market demand estimates will provide the foundation for an improved regional system. In the coming weeks and months, a number of strategies will be examined. These include improvements to existing services, expanded services, a network of frequent routes and premium transit services, improvements to street operations and public information, and enhanced partnerships. Alternatives will be evaluated against the goals for transit in the region and assessed for financial viability. Working in consultation with stakeholders, including existing transit providers, the RTA will develop the Regional Master Transit Plan including a phased plan for implementation for review by the public.