Chapter IV

EVALUATION OF THE WASHINGTON COUNTY TRANSIT SYSTEM

INTRODUCTION AND SUMMARY

This chapter details the performance evaluation of the existing Washington County Transit System, as part of preparations to study various alternatives to serve unmet transportation needs and improve or expand existing transit services, if warranted. This evaluation was performed using the standards identified in Chapter III of this report to determine if the objectives selected by the Advisory Committee for the Washington County Transit Development Plan are fulfilled by the existing transit system.

The two services provided by the County Transit System were analyzed, with the applicable standards for each service listed under their associated objective in the sections of this chapter. A number of standards require comparing the Commuter Express service or the Shared-Ride Taxi service to peer groups. The peer groups are made up of six transit systems that provide a similar type, level, and quantity of service as each of the Washington County services. The process for selecting the systems that make up the peer groups is described in more detail later in this chapter. The remaining sections in this chapter present the findings of the performance evaluation of the Washington County Commuter Express service and the Washington County Shared-Ride Taxi service. Figure 10 and the remaining text in this section provide a brief summary of the results of the performance evaluation.

Summary of the Performance Evaluation of the Washington County Commuter Express

Objective No. 1: The Commuter Express service has relatively good performance under the standards associated with Objective No. 1, successfully fulfilling the Rapid Fixed-Route Transit Service Standard, and partially fulfilling the Major Activity Centers, Population, and Employment Standards by meeting the demand and need for transit services. Half of the residential facilities for transit-dependent populations in Washington County and over 40 percent of the County's residents are within three miles of a Commuter Express stop. The Commuter Express would perform better under the Major Activity Centers and Population Standards by locating additional stops near the unserved concentrations of population in the County, particularly the City of Hartford. Approximately one-third of major employers and nearly one-fourth of all jobs in Milwaukee County are accessible from the Commuter Express or a short ride on a connecting local bus service. About 40 percent of Milwaukee County's major medical facilities and four of the seven institutions of higher education are served by the Commuter Express or a connecting local bus service. Serving additional medical centers, institutions of higher education, major employers and concentrations of jobs in Milwaukee County would improve the Commuter Express's performance under the Major Activity Centers and Employment Standards.

Figure 10

SUMMARY OF THE RESULTS OF THE PERFORMANCE EVALUATION OF THE WASHINGTON COUNTY TRANSIT SYSTEM

Objective	Standard	Commuter Express	Shared-Ride Taxi
Objective No. 1 Meeting the demand and need for transit services	Rapid Fixed-Route Transit Service	Fulfilled	Not Applicable
	Demand-Responsive Transit Service	Not Applicable	Fulfilled
	Major Activity Centers	Partially Fulfilled	Fulfilled
	Population	Partially Fulfilled	Fulfilled
	Employment	Partially Fulfilled	Fulfilled
Objective No. 2 Operating safely, reliably, conveniently, comfortably, and efficiently	Route Design	Partially Fulfilled	Not Applicable
	Bus Stop and Park & Ride Lot Design	Partially Fulfilled	Not Applicable
	Service Frequency and Availability	Partially Fulfilled	Not Fulfilled
	Service Travel Speeds	Fulfilled	Fulfilled
	Passenger Demand	Fulfilled	Fulfilled
	Ridership and Service Effectiveness	Partially Fulfilled	Fulfilled
	On-Time Performance	Fulfilled	Fulfilled
	Travel Time	Fulfilled	Fulfilled
Objective No. 3 Achieving the other objectives at the lowest possible cost	Fare Structure	Fulfilled	Fulfilled
	Operating Expenses	Partially Fulfilled	Partially Fulfilled
	Cost Effectiveness	Fulfilled	Partially Fulfilled

Source: SEWRPC.

Objective No. 2: The Commuter Express was also relatively successful at fulfilling Objective No. 2, which encourages a system that operates safely, reliably, conveniently, comfortably, and efficiently. In order to completely fulfill the Route Design Standard, the two existing Commuter Express routes would need to be extended from their northern terminus to collect and distribute passengers in the neighborhoods of the City of West Bend. To fulfill the Bus Stop and Park and Ride Lot Design Standard, the Paradise Park and Ride lot in West Bend would need to have better directional signage to assist motorists in finding the lot. The Medical Center Route has peak service frequency less than that recommended by the Service Frequency and Availability Standard, and would need to have its service level increased to once every 30 minutes during peak periods to meet the standard. Service travel speeds on all Commuter Express routes are greater than 25 miles per hour, meeting the Service Travel Speeds Standard successfully. The Ridership and Service Effectiveness Standard requires comparison to the Commuter Express peer group of six systems, and the standard is fulfilled under two of the four performance measures used to compare the service to its peers. The Commuter Express performs particularly well on the passenger miles per vehicle mile standard, indicating that the service fills seats at a higher rate than many of its peers, but does not perform as well under the passengers per capita and passengers per revenue vehicle mile measures due to the limited number of routes operated by the service and the long journey distance for all passengers. Finally, the Commuter Express meets both the On-Time Performance and Travel Time Standards, with more than 90 percent of bus trips leaving stops on time and travel time for individuals taking the service remaining competitive with the automobile for comparable trips.

Objective No. 3: This objective recognizes that there are limited public funds available to support public transit, and encourages efficient use of financial resources when providing public transit. The Commuter Express rates well on two of the three applicable standards associated with this objective. The fare structure of the service recognizes its premium nature and provides discounts to priority riders such as seniors and people with disabilities, fulfilling the Fare Structure Standard. The Operating Expenses Standard uses five performance measures to determine if the Commuter Express is meeting this standard. Operating expenses per total vehicle mile, per total vehicle hour, and per revenue vehicle hour all grew faster than the median of the peer group between 2007 and 2011—failing the standard—but the unit cost for each of these performance measures is low compared to systems in the peer group. Operating expenses per revenue vehicle mile grew at a slower rate than the median between 2007 and 2011, meeting that standard. Under the fifth measure of the Operating Expenses Standard, operating assistance per passenger, the Commuter Express performed well, as continued increases in ridership reduced the assistance level to $6.88 per passenger by 2011. In contrast to the Operating Expenses Standard, the Commuter Express successfully meets all the requirements of the Cost Effectiveness Standard, with an operating cost per passenger, operating cost per passenger mile, and a farebox recovery ratio well within the range recommended by the standard.

Reductions in Emissions and Traffic Volume: Although it is not included as an objective for the transit system, the operations of the fixed-route part of the County's transit system were initially funded by Federal Congestion Mitigation and Air Quality (CMAQ) grants. Washington County continues to receive CMAQ funding for marketing and therefore an estimate of the reduction in traffic volumes and emissions due to the Commuter Express is included in this Chapter. Approximately 482 private automobile trips per day and 14,700 vehicle miles of travel per day were removed by the Commuter Express in 2012. The Commuter Express prevents 1,254 pounds of volatile organic compounds, 2,092 pounds of nitrous oxide, and 268 pounds of particulate matter 2.5 microns or less in size from entering the atmosphere each year.

Summary of the Performance Evaluation of the Washington County Shared-Ride Taxi

Objective No. 1: The Shared-Ride Taxi completely fulfills Objective No. 1 by meeting the demand and need for transit across all of Washington County. All major activity centers, residents, and jobs are served by the Shared-Ride Taxi service.

Objective No. 2: Objective No. 2 encourages operating a system that is safe, comfortable, reliable, convenient, and efficient, and the Shared-Ride Taxi successfully fulfills this objective in all but one applicable standard. This one standard is the Service Frequency and Availability Standard, which requires that a demand-response service pick up customers within 45 minutes of being called in a urban area and within four hours of being called in a rural area. As the Shared-Ride Taxi only guarantees service if a reservation is made 24 hours ahead of the travel time, it does not meet this standard. A sample of trips from May 2012 verifies that the Shared-Ride Taxi has average trip speeds greater than 10 miles per hour, fulfilling the Service Travel Speeds Standard. This service also meets the Ridership and Service Effectiveness Standard, exceeding the requirements in passengers per capita, passengers per revenue vehicle hour, passengers per revenue vehicle mile, and passenger miles per vehicle mile when compared to its peer group. The Shared-Ride Taxi performs particularly well on the passengers per capita measure, especially considering that no peer system has additional shared-ride taxi systems operating within its service area. The Shared-Ride Taxi service meets both the On-Time Performance and Travel Time Standards, with more than 90 percent of trips leaving their pickup location on time and travel time for individuals taking the service remaining competitive with the automobile for comparable trips.

Objective No. 3: The Shared-Ride Taxi is less successful in meeting the third objective, which involves using limited public funds cost effectively. The service meets the Fare Structure Standard by charging a premium fare for a premium service and providing discounted fares for transit-dependent population groups, but fails to fulfill the Operating Expenses and Cost Effectiveness Standards. None of the five performance measures under the Operating Expenses Standard is within the acceptable range for percent annual changes in operating expenses and operating assistance. Despite this result, the Shared-Ride Taxi service has the least expensive unit costs in 2011 among its peers under four of the five measures (all but operating assistance per passenger). The service meets

Table 17

SELECTED 2011 SERVICE CHARACTERISTICS FOR THE WASHINGTON COUNTY COMMUTER EXPRESS SERVICE AND ITS PEER SYSTEMS

Transit System	Metropolitan Area	Time Period Served	Days Served	Reverse Commute Service	Adult Cash Fare	Urbanized Area Population	Operating Budget	Revenue Vehicle Miles Operated	Annual Passenger Trips
Ozaukee County Express	Milwaukee	Peak	Weekdays	Provided	$3.25	1,320,000	$1,140,000	180,000	110,000
Waukesha County Express Bus	Milwaukee	Peak	Weekdays	Provided	$3.25	1,320,000	$3,310,000	540,000	240,000
Clermont Transportation Connection	Cincinnati	Peak	Weekdays	Provided	$3.75	1,530,000	$600,000	150,000	80,000
Loudoun County Commuter Bus	Washington, D.C.	Peak	Weekdays	Provided	$8.00	4,320,000	$8,660,000	1,570,000	1,210,000
Cobb Community Transit	Atlanta	Peak	Weekdays	Provided	$5.00	3,950,000	$15,730,000	3,380,000	4,373,551
Georgia Regional Transportation Authority	Atlanta	Peak	Weekdays	Provided	$5.00	3,950,000	$17,490,000	2,380,000	1,590,000
Washington County Commuter Express	Milwaukee	Peak	Weekdays	Not Provided	$3.75	1,320,000	$1,250,000	250,000	130,000

Source: National Transit Database and SEWRPC.

the standard for two performance measures under the Cost Effectiveness Standard—operating cost per passenger and operating cost per passenger mile—but does not meet the standard for farebox recovery. The low farebox recovery ratio, combined with the rapid growth in operating assistance per passenger under the Operating Expenses Standard, indicates that the County may want to consider raising the fare for the Shared-Ride Taxi to improve performance under both measures.

PEER SYSTEMS

As part of the evaluation of the Washington County Transit System's services, a number of standards require comparing the performance of the two County transit services to the performance of a peer group of transit systems. In order to make this comparison, six peer transit systems were identified for each County transit service. These peer systems were selected based on their service type and characteristics, annual ridership, urban area population, total vehicle miles operated annually, total annual operating budget, and proximity to Washington County. Peer systems for the County's Shared-Ride Taxi service were also selected based on the size of their respective service areas and the number of residents within their service areas. In addition, systems were eliminated from the peer group for both County services if they served a state capital or had a high percentage of college students in their urban areas. The six peer systems identified for each of the County's transit services most closely matched the characteristics of each service according to data gathered from the National Transit Database (NTD) for 2011.

Washington County Commuter Express Peer Group

Selecting similar peer systems for the Washington County Commuter Express service was complicated by the service type and characteristics of the Commuter Express service. Prior to 2011, local and commuter bus services were categorized as "motor bus" services by the NTD. Without the ability to differentiate between the service data for commuter and local bus services provided by larger regional transit authorities, only other agencies that provided only or mostly rapid commuter bus service could be used as peers. Table 17 lists the service characteristics of the systems selected for the Commuter Express peer group, all of which offer services that are generally similar to the Commuter Express. One important difference between the Commuter Express and the

Table 18

SELECTED 2011 SERVICE CHARACTERISTICS FOR THE WASHINGTON COUNTY SHARED-RIDE TAXI SERVICE AND ITS PEER SYSTEMS

Transit System	Metropolitan Area	Service Type	Weekday Service Hours	Service Days	Adult Cash Fare
Ozaukee County Shared-Ride Taxi	Milwaukee	Advanced Reservation	6:00 AM - 9:00 PM	7 Days a Week	$3.00 - $6.75
Miami County Public Transit	Dayton	Advanced Reservation	5:00 AM - 6:00 PM	Weekdays and Saturday	$4.00
Butler County Regional Transit Authority	Cincinnati	Advanced Reservation	6:00 AM - 11:00 PM	Weekdays	$5.00 - $35.00
Greene County Area Transit Service	Dayton	Advanced Reservation	6:00 AM - 9:00 PM	7 Days a Week	$1.50 - $6.00
Clermont Transportation Connection	Cincinnati	Advanced Reservation	6:00 AM - 6:00 PM	Weekdays and Saturday	$4.75
Fort Bend County Public Transit	Houston	Advanced Reservation	8:00 AM - 5:00 PM	7 Days a Week	$1.00
Washington County Shared-Ride Taxi	Milwaukee	Advanced Reservation	5:00 AM - 10:00 PM	7 Days a Week	$4.25 - $9.00

Transit System	Urbanized Area Population	Operating Budget	Vehicle Miles Operated	Service Area in Square Miles	Population in Service Area	Annual Passenger Trips
Ozaukee County Shared-Ride Taxi	1,320,000	$1,520,000	840,000	235	86,000	80,000
Miami County Public Transit	680,000	$970,000	410,000	410	99,000	44,000
Butler County Regional Transit Authority	1,530,000	$1,860,000	600,000	470	333,000	53,000
Greene County Area Transit Service	680,000	$2,740,000	830,000	425	148,000	159,000
Clermont Transportation Connection	1,530,000	$1,180,000	470,000	452	178,000	36,000
Fort Bend County Public Transit	4,400,000	$2,760,000	940,000	875	464,000	102,000
Washington County Shared-Ride Taxi	1,320,000	$2,140,000	1,170,000	435	128,000	99,000

Source: National Transit Database and SEWRPC.

peer group is that the entire peer group provides both traditional and reverse commute peak services, whereas the Commuter Express provides only traditional commute service. Additionally, some peers are much larger than the Washington County Commuter Express, some have significantly higher passenger fares, and two—Clermont Transportation Connection near Cincinnati, Ohio, and Cobb Community Transit near Atlanta, Georgia—provide a small amount of local bus service in addition to their rapid commuter services.

Washington County Shared-Ride Taxi Peer Group

The six peer systems selected for the Washington County Shared-Ride Taxi are shown in Table 18. These systems have the most similar service characteristics of the systems with five or more years of data available from the NTD. The persons per square mile within each peer's service area is relatively similar to the County's Shared-Ride Taxi service, but no peer system has other shared-ride taxi services operating within its service area. Similar to the peer group for the Commuter Express, fares vary between the peer systems.

Figure 11

OBJECTIVE NO. 1 AND ASSOCIATED STANDARDS APPLICABLE TO THE EVALUATION OF THE WASHINGTON COUNTY COMMUTER EXPRESS

Objective No. 1

Washington County's public transit system should effectively serve existing travel patterns, meeting the demand and need for transit services, particularly the travel needs of the transit-dependent population.

Applicable Design and Operating Standards

1. Rapid Fixed-Route Transit Service Rapid fixed-route transit service should serve major travel corridors, connecting major activity centers and concentrations of significant urban development within the County and the Region.

Applicable Performance Standards and Associated Performance Measures

1. Major Activity Centers	2. Population	3. Employment
The number of major activity centers and facilities for transit-dependent persons served should be maximized. This will be measured by the number of activity centers within one-quarter mile of a local bus or shuttle route and one-half mile of a rapid transit route. Major activity centers include the following[a]: a. Commercial areas b. Educational institutions c. Medical centers d. Employers e. Facilities serving transit-dependent populations	The population served should be maximized, particularly those who are transit dependent. Residents will be considered served if they are within the following distances of a fixed-route transit service. Service Type — Distance from Bus Stop: Walking / Driving Rapid Transit: 1/2 Mile / 3 Miles Local Shuttle: 1/4 Mile / - - This standard will be measured by the number of people residing within the appropriate service area for a transit service.	The number of jobs served should be maximized. This will be measured by the total employment at businesses located within one-quarter mile of local bus or shuttle routes or one-half mile of a rapid transit route.

[a] *In order to be considered a major activity center, the following definitions must apply:*
Commercial areas are concentrations of retail and service establishments that typically include a department store or a discount store along with a supermarket on 15 to 60 acres, totaling 150,000 or more square feet of gross leasable floor space;
Educational institutions are the main campus of traditional four-year institutions of higher education and public technical colleges;
Medical centers are all hospitals and clinics with 10 or more physicians;
Employers are all employers with more than 100 employees, or clusters of adjacent employers with collectively more than 100 employees such as business or industrial parks;
Facilities serving transit-dependent populations are senior centers, senior meal sites, residential facilities for seniors and/or people with disabilities, residential facilities for low-income individuals, and government facilities that provide significant services to members of transit-dependent population groups.

Source: SEWRPC.

PERFORMANCE EVALUATION OF THE WASHINGTON COUNTY COMMUTER EXPRESS

Evaluating the performance of the Commuter Express service requires identifying which standards from Figure 9 need to be examined to determine if the service is meeting the public transit service objectives established in Chapter III of this report. The three objectives in Figure 9 seek to provide a service that meets the demand and need for transit service between Washington County and other areas of the Region; operates safely, reliably, conveniently, comfortably, and efficiently; and utilizes public resources cost effectively.

Objective 1: Meeting the Need and Demand for Service

In order to determine if the Commuter Express effectively serves existing travel patterns, meeting the demand and need for transit services between Washington County and other areas of the Region, each applicable standard and associated performance measure was individually evaluated. These individual evaluations were collectively considered to determine how effectively the current service meets the overall objective. Figure 11 contains the full text of Objective 1, the applicable design and performance standards, and associated performance measures used to evaluate the Commuter Express service's fulfillment of the objective.

Rapid Fixed-Route Transit Service Design and Operating Standard
The Commuter Express service successfully fulfills the Rapid Fixed-Route Transit Service Design and Operating Standard, as it serves a major travel corridor and connects major activity centers and concentrations of significant urban development within the Region.

Major Activity Centers Performance Standard
The Major Activity Centers Performance Standard encourages maximizing the number of major activity centers used by transit-dependent persons within the service area of the transit service. Determining how many major activity centers are served by the Commuter Express requires looking at different types of activity centers in both Washington County and Milwaukee County. Because the Commuter Express only provides first-shift, traditional commute service, it makes sense to consider only residential facilities for transit-dependent populations in Washington County, and the other types of major activity centers in Milwaukee County.

Map 7 displays the location of the residential facilities for transit-dependent populations in Washington County, while Table 19 quantifies the number and percentage of these facilities within a three-, five-, and seven-mile drive or taxi ride of a park and ride lot served by the Commuter Express. Table 19 indicates that half of the residential facilities for transit-dependent populations are within three miles of a Commuter Express stop. Map 7 indicates that an additional route with stops in the City of Hartford and the Village of Slinger would result in all but six of these residential facilities being within the service area identified by the standard.

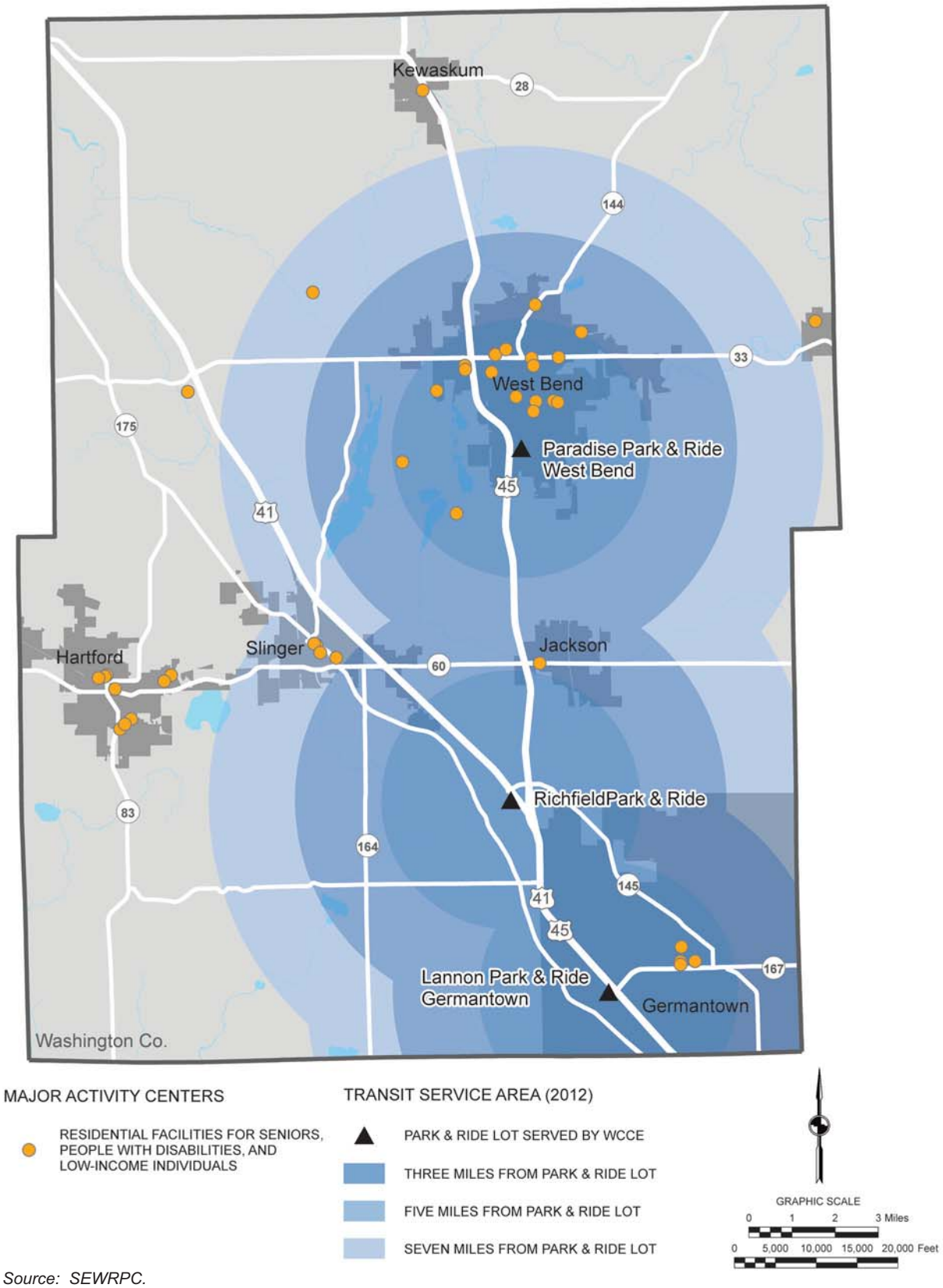
Map 8 shows the locations of job resource centers, major employers, major medical centers, major institutions of higher education, and major commercial areas in Milwaukee County, and also outlines the areas within one-half mile of a Commuter Express stop and one-quarter mile of a 15-minute ride on a connecting local bus service provided by the Milwaukee County Transit System. Table 20 displays the quantity and percentage of these major activity centers within the service area of the Commuter Express and connecting local bus services. As data shown in Table 3 in Chapter II of this report demonstrate, the vast majority of trips served by the Commuter Express are for work purposes, and Table 20 shows that more than one-third of major employers in Milwaukee County are served by the Commuter Express and local connecting bus service. New routes or route extensions could increase this coverage. Additionally, Table 3 indicates that a number of trips on the Commuter Express are for school purposes, suggesting that an extension of the Downtown Route to serve the University of Wisconsin-Milwaukee campus may be worth considering. Forty percent of Milwaukee County's major medical facilities are accessible from the Commuter Express or a connecting local bus route, while shopping accessibility is quite limited, with only 11 percent of major commercial areas accessible by transit.

Population Performance Standard
The Population Performance Standard recommends maximizing the number of residents with access to transit. In the case of the Commuter Express, this is measured using the number of people within a three-mile driving access distance to the park and ride lots served. Recognizing that an individual may choose to drive farther than three miles to reach the park and ride lot, five-mile and seven-mile access distances are also measured. Map 9 displays the residential population density by quarter-section in Washington County, with three-, five-, and seven-mile access distances from each park and ride lot served by the Commuter Express included. As of the 2010 U.S. Census, approximately 54,800 residents (42 percent of all County residents) live within a three-mile drive or taxi ride of a park and ride lot served by the Commuter Express, 84,100 residents (64 percent of all County residents) live within a five-mile drive or taxi ride of a park and ride lot served by the Commuter Express, and 99,300 residents (75 percent of all County residents) live within a seven-mile drive or taxi ride of a park and ride lot served by the Commuter Express. An additional route serving the City of Hartford would result in the majority of the remaining 25 percent of County residents receiving easy access to a rapid fixed-route transit service.

Employment Performance Standard
The total employment within walking distance of a Commuter Express stop or a 15-minute ride on a connecting local bus service was measured to determine how well the Commuter Express fulfills the Employment Performance Standard. Map 10 displays the employment density by quarter-section in Milwaukee County, with transit service walk access distances included. Many of the highest employment density areas are served by the Commuter Express or a connecting local service, with approximately 293,400 jobs (23 percent of all Milwaukee County jobs in 2000) accessible.

Map 7

MAJOR ACTIVITY CENTERS IN WASHINGTON COUNTY SERVED BY THE WASHINGTON COUNTY COMMUTER EXPRESS



Source: SEWRPC.

Objective 2: Operating Safely, Reliably, Conveniently, Comfortably, and Efficiently

Figure 12 describes the applicable standards used to determine whether the Commuter Express is providing service that is safe, reliable, convenient, and comfortable for users in order to promote the efficient utilization of transit services.

Route Design and Operating Standard

Although both routes of the Commuter Express service have direct alignments with a limited number of turns, and minimize unnecessary transfers, there is a lack of a collector-distributor function at the end of the route in the City of West Bend. Extending both routes north of the Paradise Park and Ride lot to provide direct service to denser West Bend neighborhoods would result in this standard being fulfilled.

Table 19

RESIDENTIAL FACILITIES FOR TRANSIT-DEPENDENT POPULATIONS SERVED BY THE COMMUTER EXPRESS

Distance from Park & Ride Lot Served by Commuter Express	Number of Residential Facilities Served	Percentage of County Residential Facilities Served
3 Miles or Less.....	23	50.0
5 Miles or Less.....	26	56.5
7 Miles or Less.....	31	67.4

Source: SEWRPC.

Bus Stop and Park and Ride Lot Design and Operating Standard

The park and ride lots and bus stops served by the Commuter Express are appropriately spaced and located, with accessible driving and walking paths to each, distances of more than one mile between each park and ride, and bus stops placed at least every two blocks, on average. Although the bus stops and two of the three park and ride lots are well marked with clear signage, the Paradise Park and Ride lot in the City of West Bend is difficult to find due to poor directional signage along Paradise Drive. The County should coordinate with the Wisconsin Department of Transportation to improve this situation and also provide signage for the overflow lot across the street at Paradise Theatres.

Service Frequency and Availability Design and Operating Standard

Fulfilling the Service Frequency and Availability Standard requires that service be provided every 30 minutes during weekday peak periods. The Downtown Route meets this standard; the Medical Center Route provides service only about once every hour.

Service Travel Speeds Design and Operating Standard

The Service Travel Speeds Standard requires that rapid fixed-route transit services achieve average travel speeds of at least 25 miles per hour for the duration of the route. The slowest Commuter Express trip is scheduled for an average travel speed of 27 miles per hour, indicating that all scheduled trips exceed the standard.

Passenger Demand Design and Operating Standard

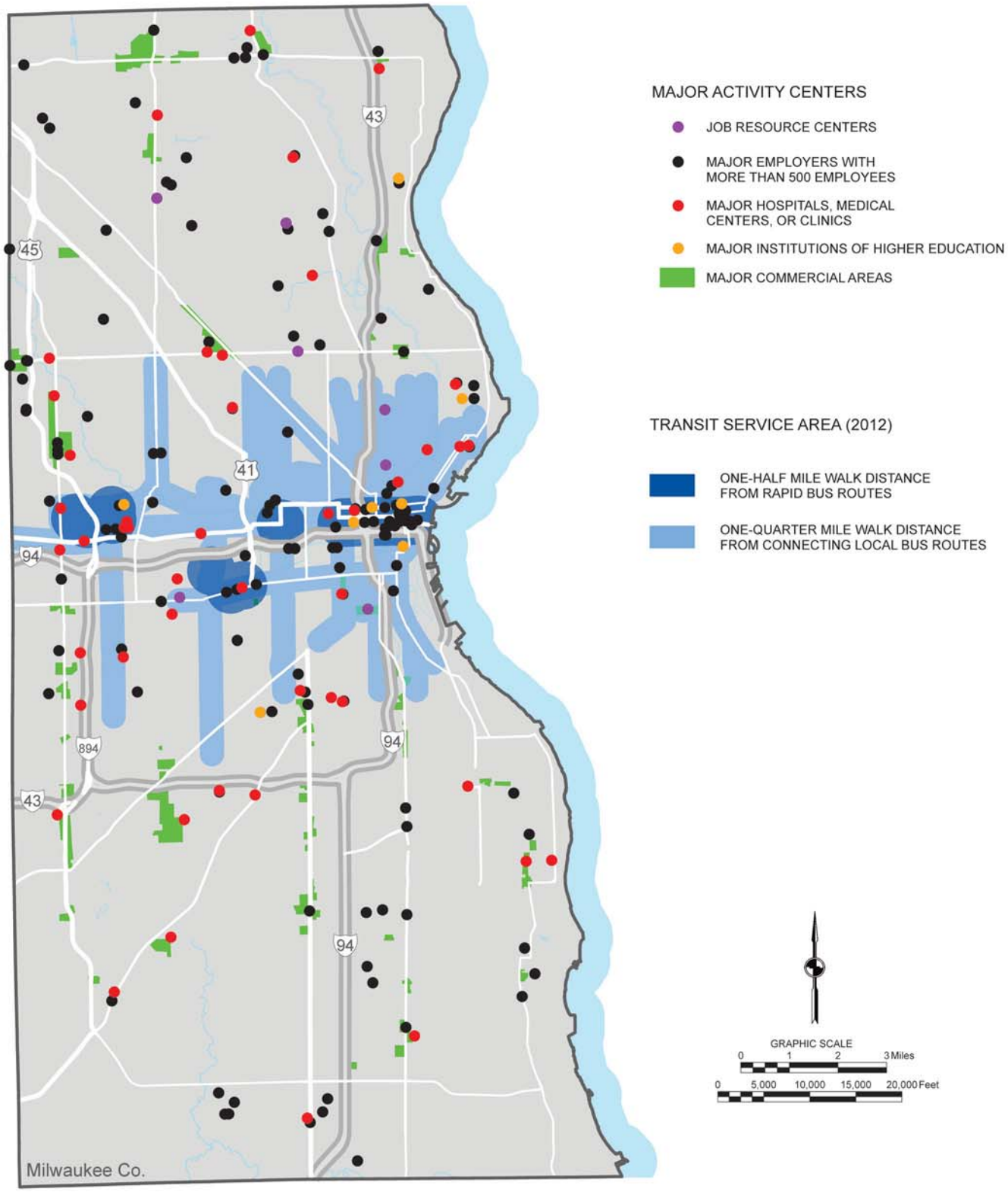
Due to the high speeds at which rapid fixed-route bus services travel, the ratio of passengers to seats on the services should not exceed 1.00. This passenger load factor is never exceeded by the Commuter Express, fulfilling the Passenger Demand Standard.

Ridership and Service Effectiveness Performance Standard

The Ridership and Service Effectiveness Standard uses four performance measures (passengers per capita, passengers per revenue vehicle hour, passengers per revenue vehicle mile, and passenger miles per revenue vehicle mile) to compare the service effectiveness of the Commuter Express service to six peer transit systems from around the Nation. If the service effectiveness measures are more than 20 percent below the median of the peer comparison group, this standard encourages consideration of modifications to routes, runs, service areas, or service periods. Figure 13 shows the results of this comparison of the Commuter Express to its peers by displaying the range of the peer group's performance, the median of the peer group's performance, the range of performance that meets the standard, and the performance of the Commuter Express for each measure. The data for each peer system are presented in Table 21.

Map 8

MAJOR ACTIVITY CENTERS IN MILWAUKEE COUNTY SERVED BY THE WASHINGTON COUNTY COMMUTER EXPRESS



Source: SEWRPC.

Table 20

MAJOR ACTIVITY CENTERS IN MILWAUKEE COUNTY SERVED BY THE WASHINGTON COUNTY COMMUTER EXPRESS

Major Activity Center Type	Accessible by Walking		Accessible by Walking or Connecting to Local Transit Service	
	Number	Percent	Number	Percent
Job Resource Centers	- -	- -	4	57.1
Major Employers	95	19.4	159	32.5
Major Hospitals, Medical Center, or Clinics	8	18.2	17	38.6
Major Institutions of Higher Education	4	57.1	4	57.1
Major Commercial Areas	2	3.6	6	10.9

Source: SEWRPC.

Figure 13 indicates that the Commuter Express is slightly out of the acceptable range for two of the four performance measures. Passengers per capita is largely dependent on how well a system covers its service area, and with only two routes, the Commuter Express does not serve as many origin-destination pairs as many of its peer systems, leading to a relatively poor passengers per capita performance. Compared to systems in the peer group, the majority of Commuter Express passengers are traveling much longer distances per trip, which reduces the service's passengers per revenue vehicle hour and passengers per revenue vehicle mile. Because of this characteristic, the service is only slightly above the standard (within range) for the passengers per revenue vehicle hour performance measure and is only slightly below the standard (outside range) for the passengers per revenue vehicle mile performance measure.

In contrast to the other three performance measures that are associated with the Ridership and Service Effectiveness Standard, the Commuter Express significantly exceeds the median of the peer group in passenger miles per vehicle mile. This performance measure essentially serves as a proxy for the average number of seats filled on a vehicle over the course of its revenue trip, and Table 21 shows that the Commuter Express outperforms all but two of its peers in this measure. Because of this strong performance in passenger miles per revenue vehicle mile, and despite being on the lower end of the peer group for three out of the four measures, the Commuter Express performs reasonably well on this standard, given its limited routes and long travel distances.

On-Time Performance Standard

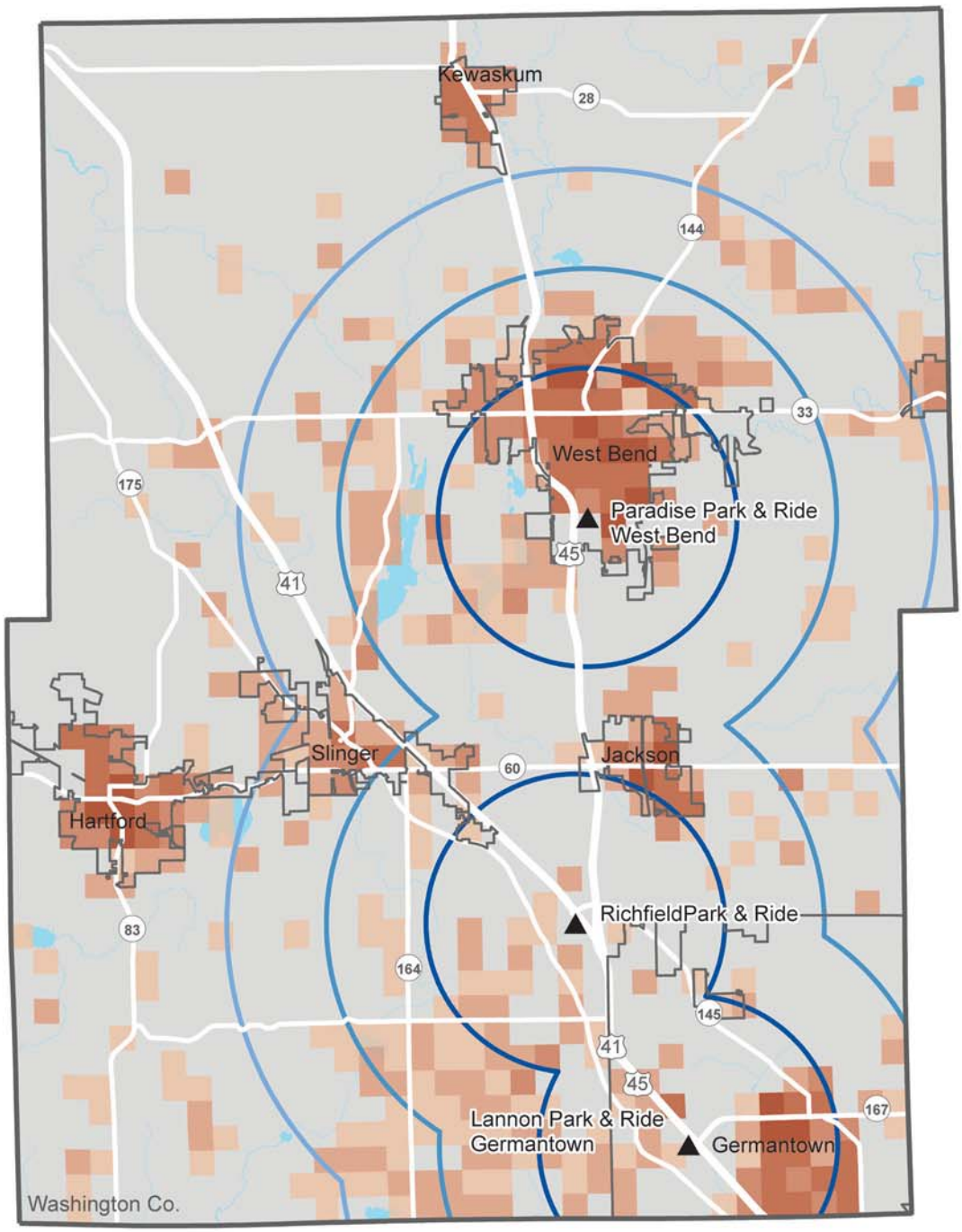
The On-Time Performance Standard states that 90 percent of trips on a fixed-route service should be within zero minutes early and three minutes late. Data for the Commuter Express from April and May of 2013 were used to develop Table 22, which shows that the service is meeting the standard overall. However, the Medical Center Route does not meet the standard, which may be due to the ongoing construction around the Zoo Interchange. This would indicate that the on-time performance of this route should be monitored and schedule adjustments considered if vehicles are unable to meet the printed schedule.

Travel Time Performance Standard

The Travel Time Performance Standard encourages that travel times by transit be kept reasonable in comparison to travel times by automobiles for similar trips. Table 23 compares congested in-vehicle automobile travel times to typical in-vehicle Commuter Express travel times, and shows that the ratio between transit travel times and automobile travel times does not exceed 1.45. This result indicates that the difference in travel time between private automobile travel and travel on the Commuter Express is reasonable.

Map 9

POPULATION IN WASHINGTON COUNTY SERVED BY THE WASHINGTON COUNTY COMMUTER EXPRESS



2010 PERSONS PER U.S. PUBLIC LAND SURVEY ONE-QUARTER SECTION

- 0 - 49
- 50 - 99
- 100 - 249
- 250 - 499
- 500 - 999
- 1,000 - 3,500

TRANSIT SERVICE AREA (2012)

- PARK & RIDE LOT SERVED BY WCCE
- THREE MILES FROM PARK & RIDE LOT
- FIVE MILES FROM PARK & RIDE LOT
- SEVEN MILES FROM PARK & RIDE LOT

GRAPHIC SCALE

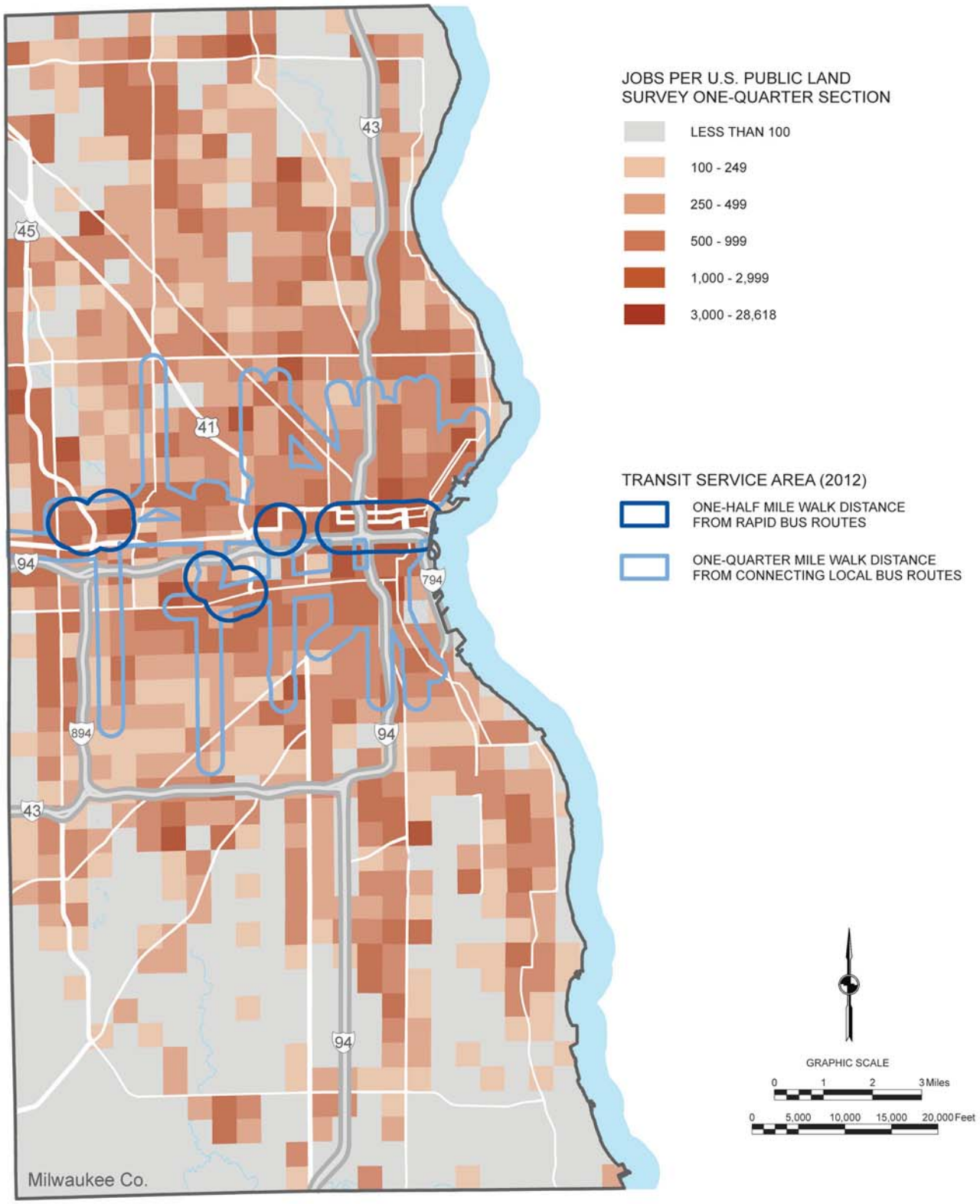
0 1 2 3 Miles

0 5,000 10,000 15,000 20,000 Feet

Source: SEWRPC.

Map 10

EMPLOYMENT IN MILWAUKEE COUNTY SERVED BY THE WASHINGTON COUNTY COMMUTER EXPRESS



Source: SEWRPC.

Figure 12

OBJECTIVE NO. 2 AND ASSOCIATED STANDARDS APPLICABLE TO THE EVALUATION OF THE WASHINGTON COUNTY COMMUTER EXPRESS

Objective No. 2

Washington County's public transit system should promote efficient utilization of its services by operating a system that is safe, reliable, convenient, and comfortable for users.

Applicable Design and Operating Standards

1. Route Design Rapid bus routes should be extended as needed or paired with a local shuttle to perform a collection-distribution function at the ends of the route. Routes should have direct alignments with a limited number of turns, and should be arranged to minimize duplication of service and unnecessary transfers.	**2. Bus Stop and Park & Ride Lot Design** Bus stops and park & ride lots should be clearly marked by easily recognizable signs and located so as to minimize the walking or driving distance over an accessible path to and from residential areas and major activity centers, and to facilitate connections with other transit services where appropriate. Stops should be placed every two to three blocks on local bus routes and placed at least one-mile apart on rapid transit routes.	**4. Service Frequency and Availability** Fixed-route services should operate at least every 30 minutes during the weekday peak period.
5. Service Travel Speeds Transit services should be designed and operated so that average travel speeds on a trip are not less than 25 miles per hour for rapid fixed-route services.	**6. Passenger Demand** Transit services should provide adequate service and vehicle capacity to meet existing and anticipated demand. The average passenger load factor, measured as the ratio of passengers to seats, should not exceed 1.00 during any period for rapid fixed-route transit services.	

Applicable Performance Standards and Associated Performance Measures

1. Ridership and Service Effectiveness Ridership on transit services and the overall effectiveness of such services should be maximized. This will be measured using passengers per capita, total passengers per vehicle hour, total passengers per vehicle mile, and passenger miles per vehicle mile which will be compared to similar transit systems. Transit services with service effectiveness measures more than 20 percent below the median of the peer comparison group will be reviewed for potential changes to their routes, runs, service areas, and service periods.	**2. On-Time Performance** The fixed-route service provided should closely adhere to published timetables and be "on time." Performance should be regularly monitored and a transit service with less than 90 percent of trips on time (defined as being between zero minutes early and three minutes late for fixed-route services) should be reviewed for changes.	**3. Travel Time** Travel times on transit services should be kept reasonable in comparison to travel time by automobiles for similar trips. This standard will be measured using the ratio of transit to automobile travel time.

Source: SEWRPC.

Objective 3: Utilizing Public Resources Cost Effectively

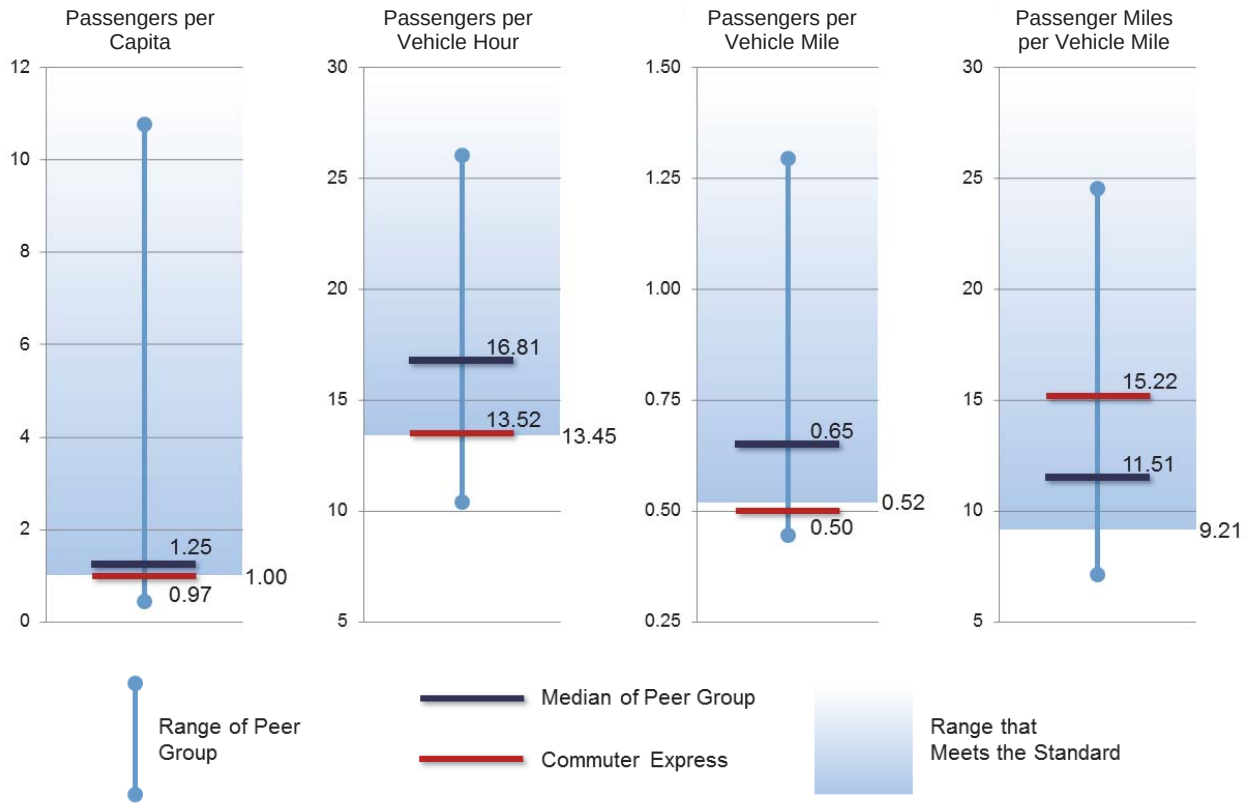
Objective 3 recognizes that public funds are limited, and must be used efficiently. In order to determine whether public funds are being well-spent, the following analyses compare the Commuter Express to its peer group using a number of performance measures. The applicable standards and performance measures used to measure how efficiently the Commuter Express is using public funds are shown in Figure 14.

Fare Structure Design and Operating Standard

The Fare Structure Standard recommends premium fares for premium services and discounts for priority users, such as seniors or people with disabilities. The Commuter Express fulfills this standard, with $3.75 base standard adult fare—higher than that of a typical local bus service in the Region—and a discounted fare for seniors and people with disabilities. The service also offers packets of 10 discounted fare tickets for $32.50 to reduce the cost of travel for frequent passengers.

Figure 13

**RIDERSHIP AND SERVICE EFFECTIVENESS STANDARD:
COMPARISON OF WASHINGTON COUNTY COMMUTER EXPRESS TO PEER GROUP
FOR ASSOCIATED PERFORMANCE MEASURES**



Source: National Transit Database and SEWRPC.

Operating Expenses Performance Standard

By comparing the annual percentage increase between 2007 and 2011 in operating expenses per total vehicle mile, operating expenses per revenue vehicle mile, operating expenses per total vehicle hour, operating expenses per revenue vehicle hour, and operating assistance per passenger, the Operating Expenses Performance Standard ensures that the inflationary growth in operating costs is comparable to that of peer systems. In order to fulfill the standard, none of the annual percentage increases in the five performance measures should exceed the median percentage increases experienced by the peer group. Figure 15 displays a comparison of the annual percentage change for each metric for 2007 to 2011 between the range of the peer group's performance, the range of performance that meets the standard, the median of the peer group's performance, and the performance of the Commuter Express. Table 24 provides the detailed data used to develop Figure 15.

For the four measures that examine operating expenses per unit of service, the performance of the Commuter Express is mixed. The average annual percentage change in operating expenses per revenue vehicle mile meets the corresponding standard, with the growth rate of the Commuter Express less than the median of the peer group for that performance measure. For three of the remaining four performance measures—operating expenses per revenue vehicle hour, operating expenses per total vehicle mile, and operating expenses per total vehicle hour—costs for the Commuter Express have increased faster than the median of the peer group, and therefore the standard is not met. However, the actual unit costs in 2011 (shown in Table 24) for these three performance measures are lower than four or five of the systems in the peer group, depending on the measure. The growth in unit costs mostly occurred between 2007 and 2008, as the County entered into a new contract for the operation of the service at the beginning of 2008.

Table 21

WASHINGTON COUNTY COMMUTER EXPRESS PEER GROUP DATA FOR THE RIDERSHIP AND SERVICE EFFECTIVENESS PERFORMANCE STANDARD

Performance Measures		Ozaukee County Express Milwaukee, WI	Waukesha County Express Bus Milwaukee, WI	Clermont Transportation Connection Cincinnati, OH	Loudoun County Commuter Bus Washington, D.C.	Cobb Community Transit Atlanta, GA	Georgia Regional Transportation Authority Atlanta, GA	*Washington County Commuter Express* *Milwaukee, WI*
Passengers per Capita	2007	1.35	1.11	0.01	2.40	11.42	0.91	*0.72*
	2011	1.32	0.44	0.44	3.90	10.77	1.17	*0.97*
	Average Annual Change	-0.21%	-18.07%	888.60%	13.34%	-1.34%	7.66%	*8.36%*
Passengers per Revenue Vehicle Hour	2007	13.94	18.28	5.98	24.45	29.73	15.83	*8.63*
	2011	16.65	10.40	15.46	26.05	25.15	16.97	*13.52*
	Average Annual Change	4.67%	-12.73%	42.93%	1.88%	-3.97%	2.58%	*14.46%*
Passengers per Revenue Vehicle Mile	2007	0.52	0.91	0.18	0.77	1.47	0.96	*0.41*
	2011	0.64	0.45	0.54	0.77	1.29	0.67	*0.50*
	Average Annual Change	5.34%	-15.56%	49.21%	0.02%	-3.01%	-7.94%	*6.27%*
Passenger Miles per Revenue Vehicle Mile	2007	11.57	11.04	4.00	25.42	12.59	17.03	*12.03*
	2011	13.03	9.53	7.15	24.52	9.99	16.32	*15.22*
	Average Annual Change	3.35%	-2.95%	21.66%	-0.83%	-5.46%	-0.48%	*6.72%*

Source: National Transit Database and SEWRPC.

Table 22

ON-TIME PERFORMANCE OF THE WASHINGTON COUNTY COMMUTER EXPRESS: APRIL – MAY 2013

Direction and Route	Late Runs	Early Runs	Total Runs	Percent of Runs On-Time
Inbound to Downtown	4	9	352	96.3
Outbound from Downtown	35	4	440	91.1
Inbound to Medical Center	36	- -	176	79.5
Outbound from Medical Center	18	- -	176	89.8
Total	93	13	1,144	90.7

Source: GoRiteway, Inc. and SEWRPC.

Table 23

TRAVEL TIME COMPARISON BETWEEN THE WASHINGTON COUNTY COMMUTER EXPRESS AND AUTOMOBILES

Trip Origin	Trip Destination	Travel Time (minutes)		Difference (minutes)	Ratio (transit to automobile)
		Commuter Express	Automobile		
Paradise Park & Ride	Northwestern Mutual Downtown Campus	71	49	22	1.45
Richfield Park & Ride		58	40	18	1.45
Lannon Road Park & Ride		50	36	14	1.39
Paradise Park & Ride	Milwaukee Regional Medical Center	48	36	12	1.33
Richfield Park & Ride		34	27	7	1.26
Lannon Road Park & Ride		26	23	3	1.13

Source: GoRiteway, Inc. and SEWRPC.

Figure 14

OBJECTIVE NO. 3 AND ASSOCIATED STANDARDS APPLICABLE TO THE EVALUATION OF THE WASHINGTON COUNTY COMMUTER EXPRESS

Objective No. 3

Washington County's public transit system should be economical and cost effective, meeting all other objectives at the lowest possible cost. Given limited public funds, achieving this objective may result in some standards listed under Objectives 1 and 2 becoming unattainable.

Applicable Design and Operating Standards

2. Fare Structure
The fare policies for transit services should provide for premium fares for premium services, as well as discounted fares for priority population groups and frequent transit riders.

Applicable Performance Standards and Associated Performance Measures

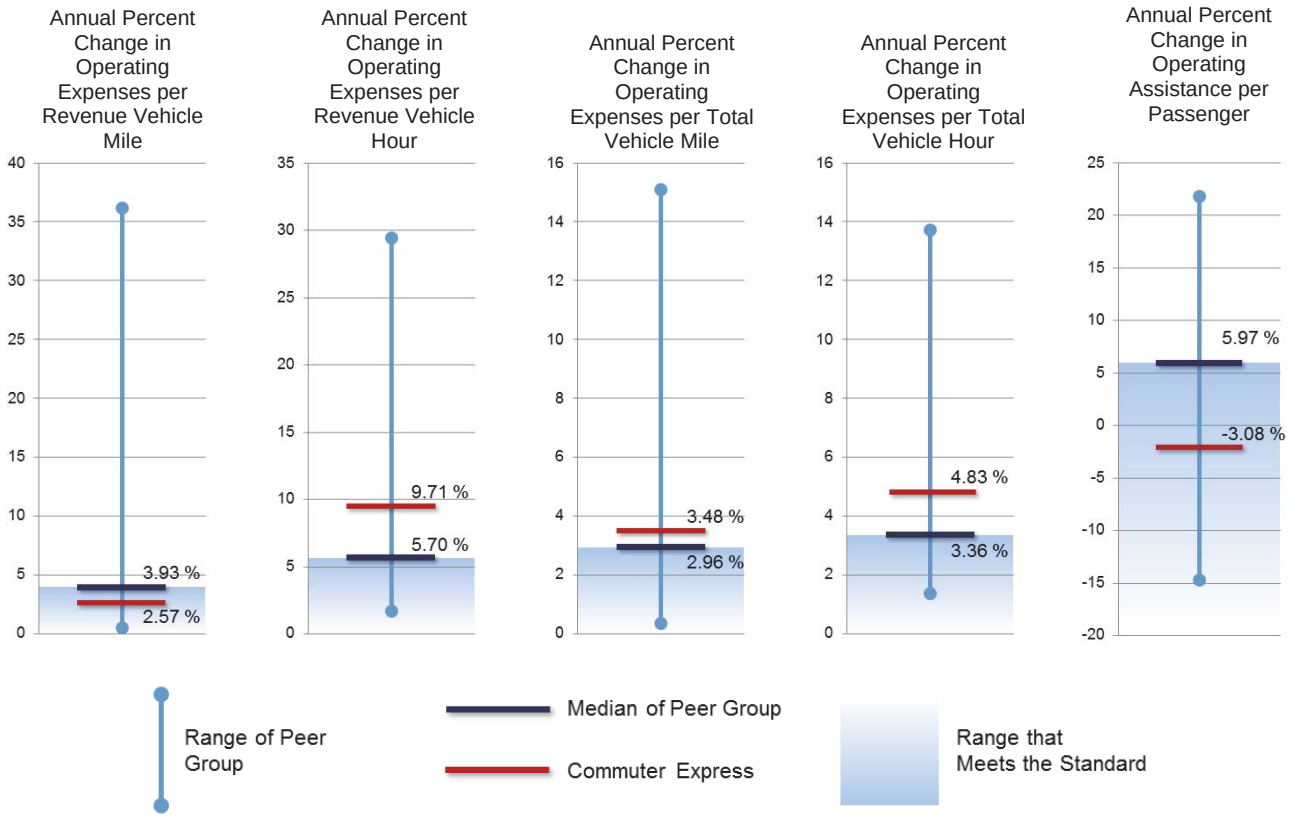
1. Operating Expenses
The operating expense per total and revenue vehicle mile, the operating expense per total and revenue vehicle hour, and the operating assistance per passenger should be minimized. Annual increases in such costs should not exceed the median percentage increases experienced by comparable transit systems.

3. Cost Effectiveness
Transit services with substandard cost effectiveness should be reviewed for potential changes to their routes, runs, service areas, and service periods. Cost effectiveness will be considered substandard when the operating cost per passenger, or operating expense per passenger mile are more than 20 percent above, or the farebox recovery ratio is more than 20 percent below, the median for comparable transit systems.

Source: SEWRPC.

Figure 15

OPERATING EXPENSES STANDARD:
COMPARISON OF WASHINGTON COUNTY COMMUTER EXPRESS TO PEER GROUP FOR ASSOCIATED PERFORMANCE MEASURES



Source: National Transit Database and SEWRPC.

The Commuter Express performed quite well in the annual percentage change in operating assistance per passenger performance measure, as the continued growth in ridership reduced the assistance level to $6.88 per passenger by 2011 despite increasing costs over the five-year period. Other than Clermont Transportation Connection, which initiated service in 2007, the Commuter Express service had a larger decline in operating assistance per passenger than any system in the peer group.

Cost Effectiveness Performance Standard

The Cost Effectiveness Standard recommends that the operating cost per passenger and operating cost per passenger mile should be no greater than 20 percent above the median of the peer group, and that the farebox recovery ratio should not be more than 20 percent below the median of the peer group. If a transit service is substandard under any of these performance measures, it may indicate that changes to routes, runs, service areas, and service periods need to be considered. Figure 16 shows the range of the peer group's performance, the median of the peer group's performance, the range of performance that meets the standard, and the performance of the Commuter Express for these performance measures. Table 25 provides the detailed data used to develop Figure 16.

Table 24

WASHINGTON COUNTY COMMUTER EXPRESS PEER GROUP DATA FOR THE OPERATING EXPENSES PERFORMANCE STANDARD

Performance Measures		Ozaukee County Express	Waukesha County Express Bus	Clermont Transportation Connection	Loudoun County Commuter Bus	Cobb Community Transit	Georgia Regional Transportation Authority	*Washington County Commuter Express*
		Milwaukee, WI	Milwaukee, WI	Cincinnati, OH	Washington, D.C.	Atlanta, GA	Atlanta, GA	*Milwaukee, WI*
Operating Expenses per Revenue Vehicle Mile	2007	$5.31	$6.05	$1.84	$4.53	$4.23	$7.07	*$4.48*
	2011	$6.37	$6.15	$4.10	$5.50	$4.65	$7.34	*$4.89*
	Average Annual Change	5.03%	0.51%	36.22%	5.20%	2.83%	1.30%	*2.57%*
Operating Expenses per Revenue Vehicle Hour	2007	$142.34	$121.61	$60.19	$143.71	$85.48	$116.69	*$95.47*
	2011	$166.87	$143.38	$116.80	$186.35	$90.42	$186.75	*$132.00*
	Average Annual Change	4.39%	4.34%	29.47%	7.01%	1.68%	15.18%	*9.71%*
Operating Expenses per Total Vehicle Mile	2007	$3.78	$4.53	$1.51	$2.39	$3.68	$4.10	*$2.25*
	2011	$4.07	$4.55	$2.23	$3.07	$4.26	$4.32	*$2.55*
	Average Annual Change	2.05%	0.34%	15.09%	6.70%	3.86%	1.60%	*3.48%*
Operating Expenses per Total Vehicle Hour	2007	$109.28	$98.01	$49.31	$83.07	$77.30	$79.03	*$66.29*
	2011	$117.41	$113.13	$61.07	$87.11	$86.13	$120.57	*$78.52*
	Average Annual Change	2.05%	3.79%	10.94%	1.37%	2.92%	13.73%	*4.83%*
Operating Assistance per Passenger	2007	$8.27	$4.97	$8.65	$1.32	$2.10	$5.35	*$8.06*
	2011	$7.73	$10.73	$5.36	$1.46	$2.26	$7.10	*$6.88*
	Average Annual Change	-0.64%	21.83%	-14.72%	8.85%	3.08%	10.58%	*-3.08%*

Source: National Transit Database and SEWRPC.

Table 25

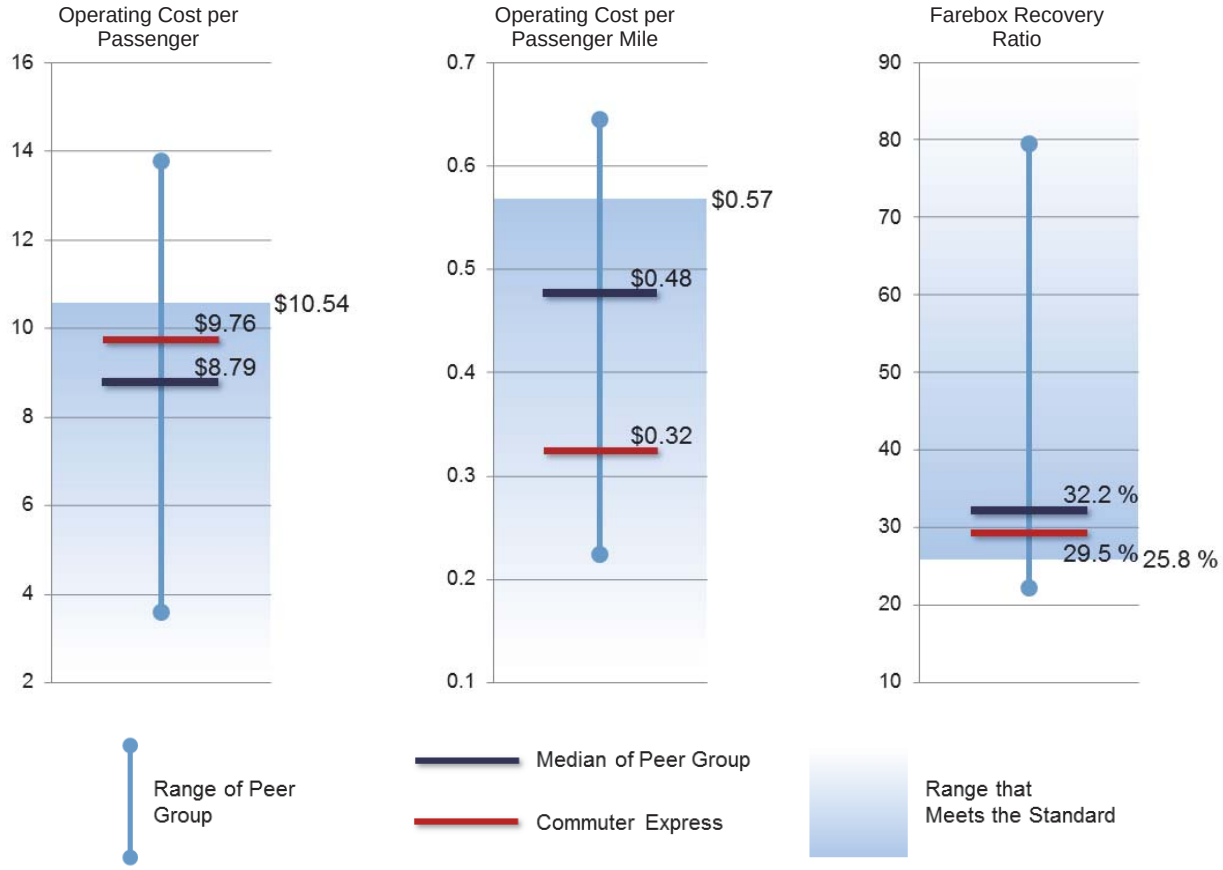
WASHINGTON COUNTY COMMUTER EXPRESS PEER GROUP DATA FOR THE COST EFFECTIVENESS PERFORMANCE STANDARD

Performance Measures		Ozaukee County Express	Waukesha County Express Bus	Clermont Transportation Connection	Loudoun County Commuter Bus	Cobb Community Transit	Georgia Regional Transportation Authority	*Washington County Commuter Express*
		Milwaukee, WI	Milwaukee, WI	Cincinnati, OH	Washington, D.C.	Atlanta, GA	Atlanta, GA	*Milwaukee, WI*
Operating Costs per Passenger	2007	$10.21	$6.65	$10.06	$5.88	$2.88	$7.37	*$11.06*
	2011	$10.02	$13.78	$7.55	$7.15	$3.60	$11.00	*$9.76*
	Average Annual Change	0.11%	20.56%	-9.07%	5.08%	6.29%	12.38%	*-2.77%*
Operating Costs per Passenger Mile	2007	$0.46	$0.55	$0.46	$0.18	$0.34	$0.42	*$0.37*
	2011	$0.49	$0.65	$0.57	$0.22	$0.47	$0.45	*$0.32*
	Average Annual Change	2.71%	4.69%	11.40%	6.00%	8.90%	2.70%	*-3.40%*
Farebox Recovery Ratio	2007	19.03%	25.24%	14.03%	77.50%	26.95%	27.43%	*27.17%*
	2011	22.86%	22.15%	28.98%	79.61%	37.28%	35.44%	*29.49%*
	Average Annual Change	5.64%	-3.03%	29.43%	0.90%	9.66%	7.94%	*2.71%*

Source: National Transit Database and SEWRPC.

Figure 16

COST EFFECTIVENESS STANDARD:
COMPARISON OF WASHINGTON COUNTY COMMUTER EXPRESS TO PEER GROUP FOR ASSOCIATED PERFORMANCE MEASURES



Source: National Transit Database and SEWRPC.

The Commuter Express successfully fulfills this standard, exceeding the requirements for all three performance measures. At $9.76, the operating cost per passenger for the Commuter Express is greater than the median of the peer group, but lower than both of the regional peers (Ozaukee County Express and Waukesha County Express Bus). Additionally, operating cost per passenger declined between 2007 and 2011, as ridership increased on the Commuter Express. Similarly, operating cost per passenger mile also declined over the same time period, and is lower than all but one of the peer systems.

The Commuter Express has a farebox recovery ratio of 29.5 percent, which is high compared to its regional peers. Although lower than some of the systems in the peer group, it also improved between 2007 and 2011. It is important to note that the exceptionally high farebox recovery ratio experienced by the Loudoun County Commuter Bus service can be attributed to its high ticket price and use of High Occupancy Vehicle (HOV) lanes. Despite a lower farebox recovery ratio than some peers, the Commuter Express meets the standard for this performance measure.

Analysis of Reductions in Traffic Volume and Emissions

In addition to the evaluations of the Commuter Express required by the objectives listed in Chapter III, Committee members requested an evaluation of the effects of the Commuter Express on transportation emissions produced and the traffic volume generated in Southeastern Wisconsin. The operations of the fixed-route services

of the County transit system were originally funded by a Federal Congestion Mitigation and Air Quality (CMAQ) grant, which are intended to fund programs that reduce congestion and improve air quality. In addition, the County has continued to receive a small CMAQ grant to fund marketing efforts that encourage members of the public to ride the Commuter Express.

Traffic Volume
Assuming that, if the Commuter Express service was unavailable, current passengers would make the same journey in private automobiles, and that they would carpool at the same rate as the rest of the Region's travelers, approximately 482 private automobile trips per day were removed by the 26 runs of the Commuter Express in 2012. Based on the average travel distance of passengers, approximately 14,700 vehicle miles of travel per day, or 3.7 million miles per year, were removed from the Region's arterial street and highway network in 2012 by the Commuter Express.

Emissions
Three criteria pollutants and precursors to ozone are used as part of the evaluation of projects competing for CMAQ funding, and the reduction in those three types of emissions are used here to determine the effectiveness of the Commuter Express at reducing emissions in the Region. By eliminating 482 private automobile trips per day, and reducing the Region's total vehicle miles of travel by private automobiles by 14,700 per year, the Commuter Express prevents 1,254 pounds of volatile organic compounds, 2,092 pounds of nitrous oxide, and 268 pounds of particulate matter 2.5 microns or less in size from entering the atmosphere each year.

PERFORMANCE EVALUATION OF THE WASHINGTON COUNTY SHARED-RIDE TAXI

In order to evaluate the performance of the County's Shared-Ride Taxi service, the applicable standards from each of the public transit service objectives established in Chapter III of this report need to be identified from those listed in Figure 9. Those three objectives seek to provide a service that meets the demand and need for transit service between Washington County and other areas of the Region; operates safely, reliably, conveniently, comfortably, and efficiently; and utilizes public resources cost effectively. This evaluation uses the applicable standards to determine how well the Shared-Ride Taxi fulfills each objective.

Objective 1: Meeting the Need and Demand for Service
Determining if the Shared-Ride Taxi effectively serves existing travel patterns, meeting the demand and need for transit services within Washington County, requires each applicable standard and associated performance measure(s) to be individually evaluated. These individual evaluations were collectively considered to determine how effectively the current service meets the overall objective. Figure 17 contains the full text of Objective 1, the applicable design and performance standards, and the associated performance measures used to evaluate the Shared-Ride Taxi service.

Demand-Responsive Transit Service Design and Operating Standard
The Shared-Ride Taxi service successfully fulfills the Demand-Responsive Transit Service Standard, as it provides local transportation to all County residents, connecting residential areas with each other and with major activity centers.

Major Activity Centers Performance Standard
The Major Activity Centers Performance Standard encourages maximizing the number of major activity centers used by transit-dependent populations within the service area of the transit service. The Shared-Ride Taxi service fulfills this standard by serving all major activity centers in Washington County, and providing a connection to the Commuter Express for transit-dependent individuals.

Population Performance Standard
The Population Performance Standard recommends maximizing the number of residents with access to transit. The Shared-Ride Taxi fulfills this standard, serving all Washington County residents.

Figure 17

OBJECTIVE NO. 1 AND ASSOCIATED STANDARDS APPLICABLE TO THE EVALUATION OF THE WASHINGTON COUNTY SHARED-RIDE TAXI

Objective No. 1

Washington County's public transit system should effectively serve existing travel patterns, meeting the demand and need for transit services, particularly the travel needs of the transit-dependent population.

Applicable Design and Operating Standards

3. Demand-responsive transit service Should be available to provide local transportation to the County's residents, particularly those that can be considered transit-dependent, to connect residential areas with each other and with major activity centers.

Applicable Performance Standards and Associated Performance Measures

1. Major Activity Centers	2. Population	3. Employment
The number of major activity centers and facilities for transit-dependent persons served should be maximized. This will be measured by the number of activity centers within the service area of a demand-response service. Major activity centers include the following[a]: a. Commercial areas b. Educational institutions c. Medical centers d. Employers e. Facilities serving transit-dependent populations	The population served should be maximized, particularly those who are transit dependent. Residents will be considered served if they are within the service area of a demand-response service. This standard will be measured by the number of people residing within the appropriate service area for a transit service.	The number of jobs served should be maximized. This will be measured by the total employment at businesses located within the service area of a demand-response service.

[a] *In order to be considered a major activity center, the following definitions must apply:*
Commercial areas are concentrations of retail and service establishments that typically include a department store or a discount store along with a supermarket on 15 to 60 acres, totaling 150,000 or more square feet of gross leasable floor space;
Educational institutions are the main campus of traditional four-year institutions of higher education and public technical colleges;
Medical centers are all hospitals and clinics with 10 or more physicians;
Employers are all employers with more than 100 employees, or clusters of adjacent employers with collectively more than 100 employees such as business or industrial parks;
Facilities serving transit-dependent populations are senior centers, senior meal sites, residential facilities for seniors and/or people with disabilities, residential facilities for low-income individuals, and government facilities that provide significant services to members of transit-dependent population groups.

Source: SEWRPC.

Employment Performance Standard

All jobs within Washington County are served by the Shared-Ride Taxi service, fulfilling this standard. Similar to major activity centers, a number of jobs in Milwaukee County are also served through a transfer from the Shared-Ride Taxi service to the Commuter Express service.

Objective 2: Operating Safely, Reliably, Conveniently, Comfortably, and Efficiently

Figure 18 contains the applicable standards used to determine whether the Shared-Ride Taxi is providing a service that is safe, reliable, convenient, and comfortable for users to promote the efficient utilization of transit services.

Service Frequency and Availability Design and Operating Standard

The Service Frequency and Availability Standard recommends that Shared-Ride Taxi services offer a response time—which is defined as the time between a call for service being placed and a vehicle arriving to pick up a passenger—of 45 minutes in urban areas and four hours in rural areas. The Shared-Ride Taxi service does not meet this standard, as it requires 24-hour advanced reservation to guarantee service.

Figure 18

OBJECTIVE NO. 2 AND ASSOCIATED STANDARDS APPLICABLE TO THE EVALUATION OF THE WASHINGTON COUNTY SHARED-RIDE TAXI

Objective No. 2

Washington County's public transit system should promote efficient utilization of its services by operating a system that is safe, reliable, convenient, and comfortable for users.

Applicable Design and Operating Standards

4. Service Frequency and Availability Shared-ride taxi services should offer a response time of 45 minutes or less in urban areas and four hours or less in rural areas.	**5. Service Travel Speeds** Transit services should be designed and operated so that average travel speeds on a trip are not less than 10 miles per hour for demand-responsive services.

Applicable Performance Standards and Associated Performance Measures

1. Ridership and Service Effectiveness Ridership on transit services and the overall effectiveness of such services should be maximized. This will be measured using passengers per capita, total passengers per vehicle hour, total passengers per vehicle mile, and passenger miles per vehicle mile which will be compared to similar transit systems. Transit services with service effectiveness measures more than 20 percent below the median of the peer comparison group will be reviewed for potential changes to their service policies, service areas, and service periods.	**2. On-Time Performance** Demand-response services should be designed and operated to maximize adherence to scheduled rider pickup times. Performance should be regularly monitored and a transit service with less than 90 percent of trips on time (defined as being between 15 minutes early and 15 minutes late for demand-response services) should be reviewed for changes.	**3. Travel Time** Travel times on transit services should be kept reasonable in comparison to travel time by automobiles for similar trips. This standard will be measured using the ratio of transit to automobile travel time.

Source: SEWRPC.

Service Travel Speeds Design and Operating Standard

The Service Travel Speeds Standard requires that demand-response transit services average travel speeds of at least 10 miles per hour for the duration of a passenger's trip. The Shared-Ride Taxi exceeds this standard in a sample of trips taken from two weeks of trip logs from May 2012. Speeds in this sample of trips range from 28 to 45 miles per hour.

Ridership and Service Effectiveness Performance Standard

The Ridership and Service Effectiveness Standard uses four performance measures (passengers per capita, passengers per revenue vehicle hour, passengers per revenue vehicle mile, and passenger miles per revenue vehicle mile) to compare the service effectiveness of the Shared-Ride Taxi service to six peer services. If the service effectiveness measures are more than 20 percent below the median of the peer comparison group, this standard encourages modifications to routes, runs, service areas, or service periods. Figure 19 shows the results of this comparison of the Shared-Ride Taxi to its peers by displaying the range of the peer group's performance, the median of the peer group's performance, the range of performance that meets the standard, and the performance of the Shared-Ride Taxi for each measure. The data for each peer system is presented in Table 26.

As indicated in Figure 19, the Shared-Ride Taxi's performance is within the range meeting the standard for all four performance measures. The passengers per capita measure is 0.76, which is well above the median of the peer group and remarkable given that none of the other peer systems have other shared-ride taxi services operating within their respective service areas. Considering the high passengers per capita utilization rate, the fact that the County's Shared-Ride Taxi service performs lower than the median on the three service effectiveness standards is notable. The service's long average trip length and high travel speeds contribute to this performance,

Table 26

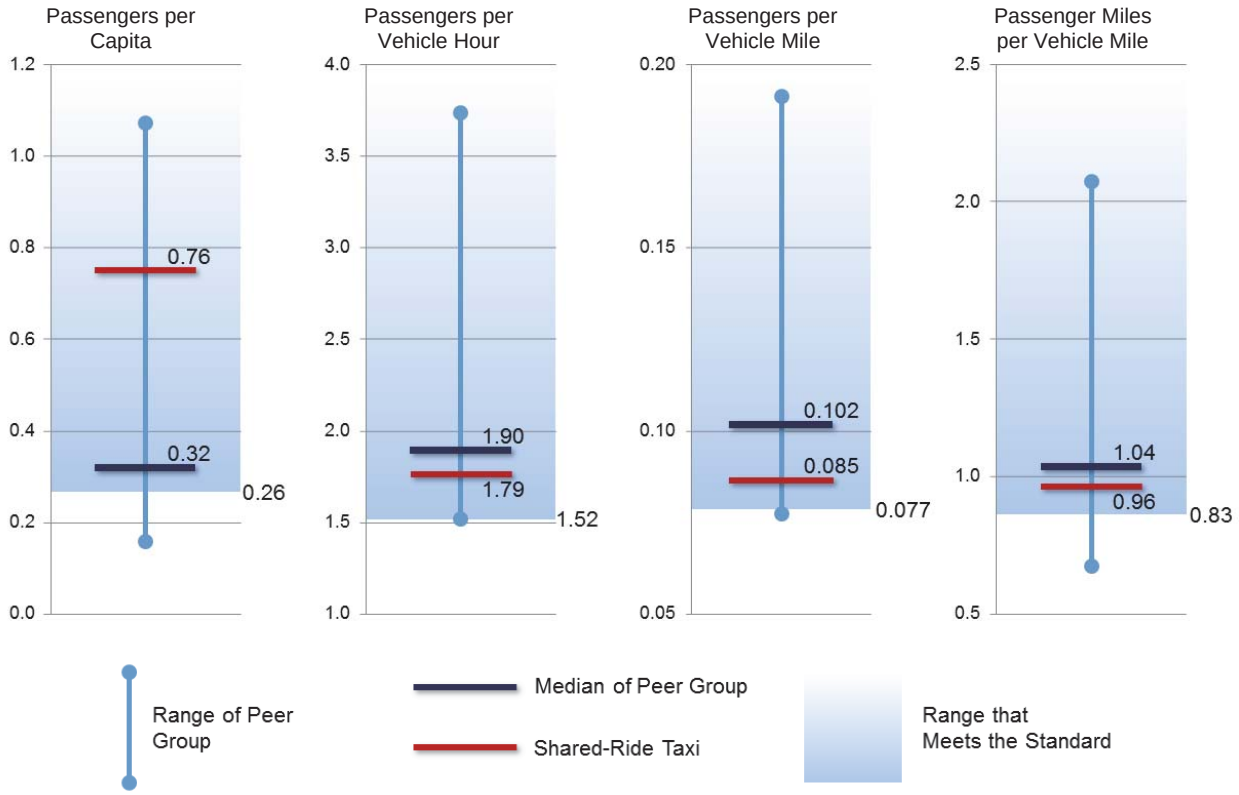
WASHINGTON COUNTY SHARED-RIDE TAXI PEER GROUP DATA FOR THE RIDERSHIP AND SERVICE EFFECTIVENESS PERFORMANCE STANDARD

Performance Measures		Ozaukee County Express Milwaukee, WI	Waukesha County Express Bus Milwaukee, WI	Clermont Transportation Connection Cincinnati, OH	Loudoun County Commuter Bus Washington, D.C.	Cobb Community Transit Atlanta, GA	Georgia Regional Transportation Authority Atlanta, GA	*Washington County Commuter Express* *Milwaukee, WI*
Passengers per Capita	2007	0.87	0.52	0.86	0.07	0.26	0.07	*0.76*
	2011	0.93	0.44	1.07	0.16	0.20	0.17	*0.76*
	Average Annual Change	1.80%	-2.78%	6.29%	46.72%	-5.62%	29.06%	*0.02%*
Passengers per Revenue Vehicle Hour	2007	2.07	1.85	3.13	1.67	2.25	1.60	*2.06*
	2011	1.79	2.00	3.74	1.55	1.52	2.19	*1.79*
	Average Annual Change	-3.05%	3.64%	4.75%	-3.62%	-9.37%	8.83%	*-3.30%*
Passengers per Revenue Vehicle Mile	2007	0.11	0.10	0.16	0.12	0.11	0.10	*0.09*
	2011	0.10	0.11	0.19	0.09	0.08	0.11	*0.09*
	Average Annual Change	-2.40%	2.48%	4.07%	-15.04%	-7.84%	1.99%	*-1.79%*
Passenger Miles per Revenue Vehicle Mile	2007	0.73	0.77	1.72	1.66	1.20	1.15	*0.99*
	2011	0.67	0.89	2.08	1.53	0.89	1.18	*0.96*
	Average Annual Change	-1.99%	5.04%	5.44%	-2.97%	-6.11%	1.14%	*-0.59%*

Source: National Transit Database and SEWRPC.

Figure 19

**RIDERSHIP AND SERVICE EFFECTIVENESS STANDARD:
COMPARISON OF WASHINGTON COUNTY SHARED-RIDE TAXI TO PEER GROUP
FOR ASSOCIATED PERFORMANCE MEASURES**



Source: National Transit Database and SEWRPC.

as the shorter trips that would increase the Shared-Ride Taxi's passengers per revenue vehicle hour, passengers per revenue vehicle mile, and passenger miles per revenue vehicle mile, are mostly served by the Hartford City Taxi and West Bend Taxi services.

On-Time Performance Standard

The On-Time Performance Standard states that 90 percent of trips should begin between 15 minutes before or after their scheduled passenger pickup time for demand-response services. Data for the Shared-Ride Taxi service from May 2013 were used to develop Table 27, which shows that the service is meeting the standard, with 96 percent of trips on-time. Assuming that many—if not all—of the trips that were considered "early" left their pickup point because the passenger was onboard, the percentage of trips on time was likely even higher.

Travel Time Performance Standard

The Travel Time Performance Standard encourages that travel times by transit be kept reasonable in comparison to travel times by automobiles for similar trips. Table 28 compares average travel times between 10 randomly selected origin-destination pairs for users of the Shared-Ride Taxi service to travel times by private automobile for the same journey, and shows that the ratio between transit travel times and automobile travel times does not exceed 1.75. This result indicates an acceptable difference in travel time between private automobile travel and travel using the Shared-Ride Taxi, fulfilling the standard.

Table 27

ON-TIME PERFORMANCE OF THE WASHINGTON COUNTY SHARED-RIDE TAXI: MAY 2013

Number of Early Pickups (minutes early)					Number of Late Pickups (minutes late)				
More than 30	26-30	21-25	16-20	Total	More than 30	26-30	21-25	16-20	Total
49	43	28	28	148	65	5	5	5	80
Total Number of Pickups in May 2013									5,706
Percent Late Pickups				2.6	Percent Early Pickups				1.4
Percent of On-Time Pickups									96.0

Source: Specialized Transport Services, Inc. and SEWRPC.

Table 28

TRAVEL TIME COMPARISON BETWEEN THE WASHINGTON COUNTY SHARED-RIDE TAXI AND AUTOMOBILES FOR SELECTED TRIPS

Trip Origin	Trip Destination	Travel Time (minutes)		Difference (minutes)	Ratio (transit to automobile)
		Shared-Ride Taxi	Automobile		
Private Residence W203 N16234 White Oak Circle, Jackson	Northbrook Church 4014 State Highway 167, Richfield	20	16	4	1.25
Rogan's Shoes 1511 W Washington Street, West Bend	Whatever 's Inn 501 Main Street, Newburg	13	13	- -	1.00
Private Residence 5462 Arthur Road, Slinger	Hartford Union High School 805 Cedar Street, Hartford	22	17	5	1.29
New Life Church 4125 County Road D Barton	Private Residence 7463 Brookhaven Drive, Wayne	14	8	6	1.75
The Threshold, Inc. 600 Rolfs Avenue, West Bend	Private Residence 8059 North Salisbury Road, Barton	14	10	4	1.40
Private Residence 834 Center Street, Hartford	The Threshold, Inc. 2375 Stonebridge Circle, West Bend	29	29	- -	1.00
Private Residence 1512 Riverview Drive, Jackson	Our Savior Lutheran Church 1044 South Silverbrook Drive, West Bend	24	18	6	1.33
Private Residence 437 West Paradise Drive, West Bend	Private Residence W156 N11340 Pilgrim Road, Germantown	34	21	13	1.62
Private Residence 5223 Indian Drive, Hartford	Dog Federation of Wisconsin 742 South Indiana Avenue, West Bend	25	22	3	1.14
Laser Finishing, Inc. N115 W18835 Edison Drive, Germantown	Apartment Complex N165 W20012 Hickory Lane, Jackson	30	19	11	1.58

Source: Specialized Transport Services, Inc. and SEWRPC.

Figure 20

OBJECTIVE NO. 3 AND ASSOCIATED STANDARDS APPLICABLE TO THE EVALUATION OF THE WASHINGTON COUNTY SHARED-RIDE TAXI

Objective No. 3

Washington County's public transit system should be economical and cost effective, meeting all other objectives at the lowest possible cost. Given limited public funds, achieving this objective may result in some standards listed under Objectives 1 and 2 becoming unattainable.

Applicable Design and Operating Standards

2. Fare Structure The fare policies for transit services should provide for premium fares for premium services, as well as discounted fares for priority population groups and frequent transit riders.

Applicable Performance Standards and Associated Performance Measures

1. Operating Expenses The operating expense per total and revenue vehicle mile, the operating expense per total and revenue vehicle hour, and the operating assistance per passenger should be minimized. Annual increases in such costs should not exceed the median percentage increases experienced by comparable transit systems.	**3. Cost Effectiveness** Transit services with substandard cost effectiveness should be reviewed for potential changes to their routes, runs, service areas, and service periods. Cost effectiveness will be considered substandard when the operating cost per passenger, or operating expense per passenger mile are more than 20 percent above, or the farebox recovery ratio is more than 20 percent below, the median for comparable transit systems.

Source: SEWRPC.

Objective 3: Utilizing Public Resources Cost Effectively

Objective 3 recognizes that public funds are limited, and must be used efficiently. In order to determine whether public funds are being well-spent, the following analyses compare the Shared-Ride Taxi service to its peer group using a number of performance measures. The applicable standards and performance measures used to measure how efficiently the Shared-Ride Taxi is using public funds are shown in Figure 20.

Fare Structure Design and Operating Standard

The Fare Structure Standard encourages premium fares for premium services, and discounts for priority users, such as seniors or people with disabilities. The Shared-Ride Taxi service fulfills both these recommendations, with a distance-based standard fare that is higher than a typical local bus service and a discounted fare for seniors and people with disabilities.

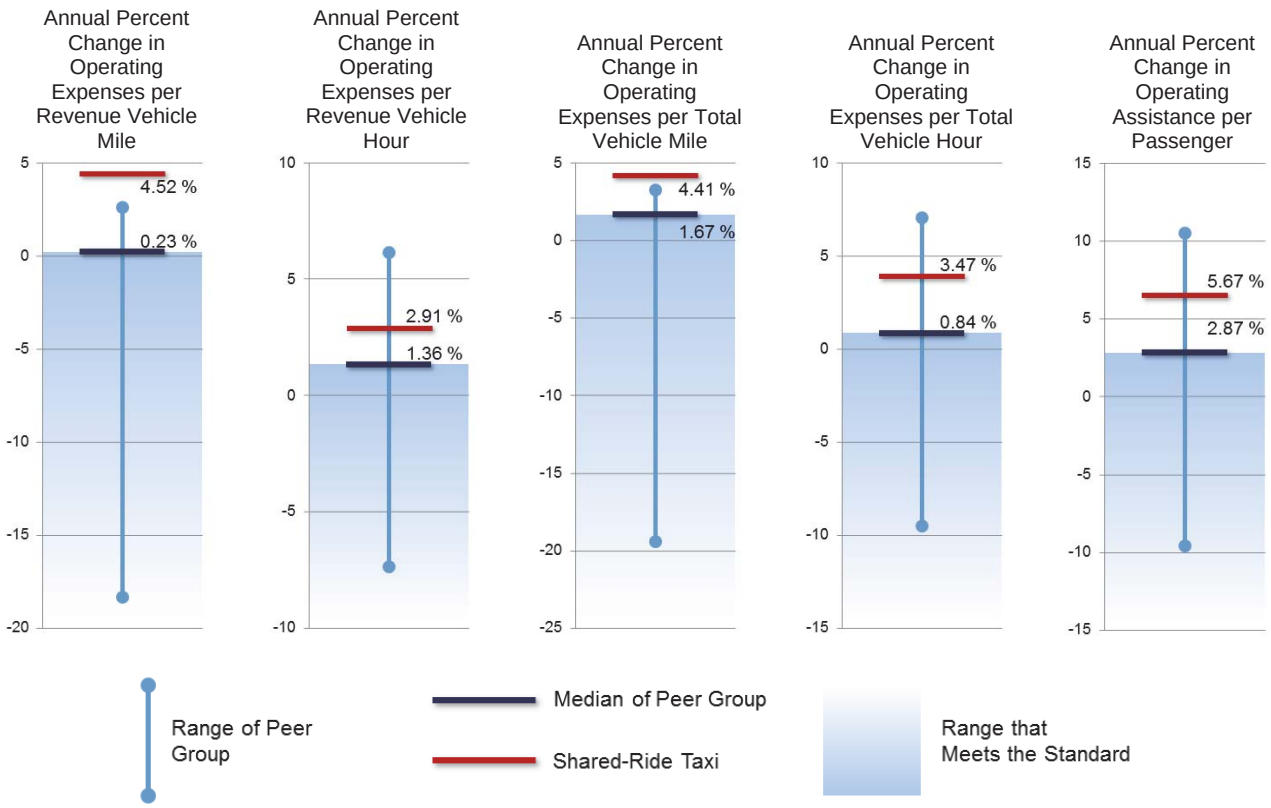
Operating Expenses Performance Standard

By comparing the annual percentage increase between 2007 and 2011 in operating expenses per total vehicle mile, operating expenses per revenue vehicle mile, operating expenses per total vehicle hour, operating expenses per revenue vehicle hour, and operating assistance per passenger, the Operating Expenses Performance Standard ensures that the inflationary growth in operating costs is comparable to that of peer systems. In order to fulfill the standard, none of the annual percentage increases in the five performances measures should exceed the median percentage increases experienced by the peer group. Figure 21 displays a comparison of the annual percentage change for each metric for 2007-2011 between the range of the peer group's performance, the range of performance that meets the standard, the median of the peer group's performance, and the performance of the Shared-Ride Taxi service. Table 29 provides the detailed data used to develop Figure 21.

The Shared-Ride Taxi does not meet the standard under any of the five performance measures that were examined. From 2007 to 2011, the operating expenses and operating assistance for the Shared-Ride Taxi increased faster than the median of the peer group, and for some performance measures, faster than any of the systems in the peer group. However, for the four measures that study operating expenses per unit of service, the

Figure 21

OPERATING EXPENSES STANDARD:
COMPARISON OF WASHINGTON COUNTY SHARED-RIDE TAXI TO PEER GROUP
FOR ASSOCIATED PERFORMANCE MEASURES



Source: National Transit Database and SEWRPC.

actual unit costs (shown in Table 29) of the Shared-Ride Taxi service are lower than all or lower than all but one of the peer systems, creating a mixed result for this standard. For the fifth measure, operating assistance per passenger, the Shared-Ride Taxi's unit costs are exactly in the middle of the peer systems, with three systems with lower costs and three with higher costs.

Cost Effectiveness Performance Standard

The Cost Effectiveness Standard recommends that operating cost per passenger and operating cost per passenger mile should be no greater than 20 percent above the median of the peer group, and that the farebox recovery ratio should be no greater than 20 percent below the median of the peer group. If a transit service is substandard under any of these performance measures, it may indicate that changes to service policies, service areas, and service periods need to be considered. Figure 22 shows the range of the peer group's performance, the median of the peer group's performance, the range of performance that meets the standard, and the performance of the Shared-Ride Taxi service for these performance measures. Table 30 provides the detailed data used to develop Figure 22.

The Shared-Ride Taxi fulfills this standard in two of the three performance measures. At $21.48, the operating cost per passenger for the Shared-Ride Taxi is lower than the median of its peer group. Additionally, operating cost per passenger mile was lower than the median of the peer group, at $1.89. Despite the low unit costs, costs under both measures increased faster than those of all but one peer system between 2007 and 2011.

Table 29

WASHINGTON COUNTY SHARED-RIDE TAXI PEER GROUP DATA FOR THE OPERATING EXPENSES PERFORMANCE STANDARD

Performance Measures		Ozaukee County Shared-Ride Taxi	Miami County Public Transit	Butler County Regional Transit Authority	Greene County Area Transit Service	Clermont Transportation Connection	Fort Bend County Public Transit	*Washington County Shared-Ride Taxi*
		Milwaukee, WI	Dayton, OH	Cincinnati, OH	Dayton, OH	Cincinnati, OH	Houston, TX	*Milwaukee, WI*
Operating Expenses per Revenue Vehicle Mile	2007	$1.96	$2.21	$2.98	$4.70	$2.44	$3.06	*$1.53*
	2011	$1.81	$2.38	$3.30	$3.12	$2.52	$2.94	*$1.83*
	Average Annual Change	-0.90%	2.03%	2.64%	-18.33%	1.25%	-0.79%	*4.52%*
Operating Expenses per Revenue Vehicle Hour	2007	$38.60	$39.61	$56.77	$63.31	$50.74	$47.22	*$34.39*
	2011	$34.07	$43.91	$64.52	$54.28	$49.53	$59.31	*$38.49*
	Average Annual Change	-1.23%	2.94%	3.32%	-7.34%	-0.22%	6.17%	*2.91%*
Operating Expenses per Total Vehicle Mile	2007	$1.72	$1.99	$2.40	$3.87	$1.99	$2.27	*$1.34*
	2011	$1.63	$2.18	$2.64	$2.50	$2.01	$2.56	*$1.59*
	Average Annual Change	-0.22%	2.55%	2.56%	-19.40%	0.80%	3.24%	*4.41%*
Operating Expenses per Total Vehicle Hour	2007	$33.47	$36.04	$47.53	$53.13	$45.91	$41.69	*$29.58*
	2011	$30.87	$40.62	$51.95	$43.33	$38.42	$54.24	*$33.80*
	Average Annual Change	-0.66%	3.10%	2.35%	-9.49%	-3.28%	7.08%	*3.47%*
Operating Assistance per Passenger	2007	$16.18	$14.36	$4.55	$29.75	$20.97	$29.13	*$14.65*
	2011	$16.18	$15.58	$5.58	$24.27	$30.79	$26.44	*$18.16*
	Average Annual Change	0.90%	4.84%	6.69%	-9.60%	10.55%	-1.82%	*5.67%*

Source: National Transit Database and SEWRPC.

Table 30

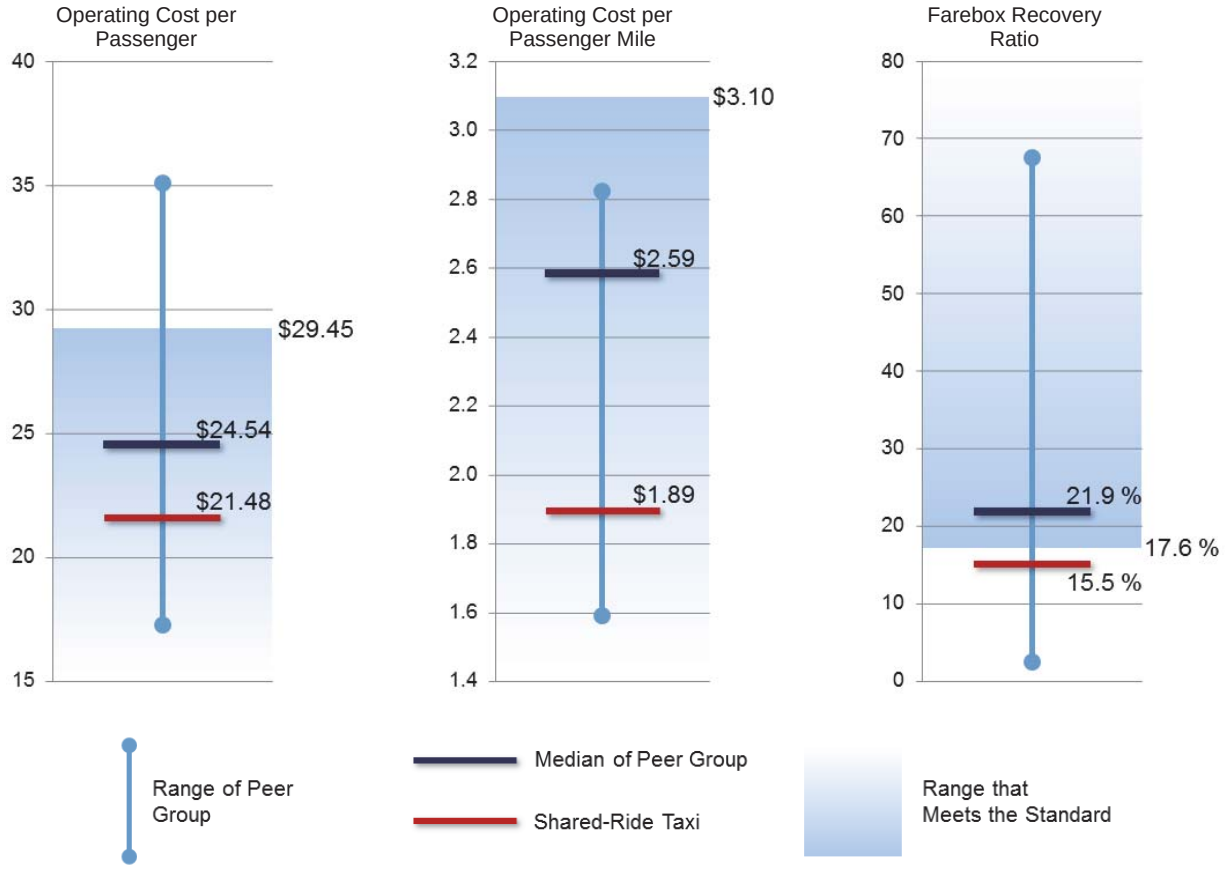
WASHINGTON COUNTY SHARED-RIDE TAXI PEER GROUP DATA FOR THE COST EFFECTIVENESS PERFORMANCE STANDARD

Performance Measures		Ozaukee County Shared-Ride Taxi	Miami County Public Transit	Butler County Regional Transit Authority	Greene County Area Transit Service	Clermont Transportation Connection	Fort Bend County Public Transit	*Washington County Shared-Ride Taxi*
		Milwaukee, WI	Dayton, OH	Cincinnati, OH	Dayton, OH	Cincinnati, OH	Houston, TX	*Milwaukee, WI*
Operating Costs per Passenger	2007	$18.63	$21.38	$18.15	$37.96	$22.51	$29.50	*$16.73*
	2011	$19.01	$21.95	$17.26	$35.12	$32.59	$27.13	*$21.48*
	Average Annual Change	1.37%	3.33%	-1.09%	-3.81%	10.00%	-1.53%	*6.71%*
Operating Costs per Passenger Mile	2007	$2.69	$2.87	$1.73	$2.82	$2.03	$2.66	*$1.55*
	2011	$2.70	$2.68	$1.59	$2.04	$2.82	$2.49	*$1.89*
	Average Annual Change	1.18%	1.00%	-1.55%	-13.10%	11.23%	-0.27%	*5.56%*
Farebox Recovery Ratio	2007	13.14%	32.84%	74.91%	21.62%	6.88%	1.26%	*12.39%*
	2011	14.92%	29.01%	67.67%	30.91%	5.53%	2.54%	*15.49%*
	Average Annual Change	3.85%	-2.13%	-2.31%	20.98%	-2.74%	21.43%	*6.14%*

Source: National Transit Database and SEWRPC.

Figure 22

COST EFFECTIVENESS STANDARD:
COMPARISON OF WASHINGTON COUNTY SHARED-RIDE TAXI TO PEER GROUP
FOR ASSOCIATED PERFORMANCE MEASURES



Source: National Transit Database and SEWRPC.

In contrast to operating cost per passenger and passenger mile, the Shared-Ride Taxi's farebox recovery ratio is lower than many peer systems, and does not meet the standard. It has been improving over time, but still does not reach the levels of some of its more efficient peers. This result, combined with the rapid growth in operating assistance per passenger under the Operating Expenses Standard, indicates that the County may want to consider raising the fare for the Shared-Ride Taxi to improve performance under both measures.

CONCLUSION

This chapter's evaluation of the Commuter Express and Shared-Ride Taxi services provided by the Washington County Transit System indicates potential areas for service changes to help the system better fulfill the objectives and standards laid out in Chapter III of this report. Additional commuter services from Hartford, reverse commute services, improvements to the Paradise Park and Ride Lot in West Bend, decreased response times on the Shared-Ride Taxi, changes in passenger fares, and other possible service improvements could increase the transit system's performance under various standards. Chapter V of this report presents potential service improvement alternatives, and analyzes their costs and influence on the performance of the transit system.