



*Credit: Ozaukee County*

## 4.1 INTRODUCTION AND SUMMARY

This chapter details the performance evaluation of the existing Ozaukee County Transit Services, 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 3 of this report to determine if the objectives selected by the Advisory Committee for the Ozaukee County Transit Development Plan are fulfilled by the existing transit system.

The two transit services provided by the County were analyzed, with the applicable standards for each service listed under their objective in the sections of this chapter. A number of standards require comparing the Express service or the Shared-Ride Taxi service to a peer group, which is made up of six transit systems that provide a similar type, level, and quantity of service as each of the Ozaukee 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 Ozaukee County Express service and the Ozaukee County Shared-Ride Taxi service. Figure 4.1 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 Ozaukee County Express**

The Express service performed reasonably well under the performance evaluation summarized in Figure 4.1, with a few specific weaknesses that resulted in poor performance under some standards. The service provides robust coverage of the County, with easy access to the service for the vast majority of residents. It also serves many key destinations within Milwaukee County, focusing on areas where congestion and parking costs increase the likelihood that an individual would choose to take transit rather than drive. However, compared to peers in the Region and across the Nation, the Express has relatively high operating costs, as measured by revenue hour or by revenue mile. Combined with the decline in ridership that occurred in 2015, these high costs result in relatively high levels of operating assistance per passenger and a relatively low farebox recovery ratio. In addition, the on time performance and travel time of the Express are poorer than recommended by the standards, although truly addressing these weaknesses would require coordinating with the Wisconsin Department of Transportation regarding developing a bus-on-shoulder initiative that would allow the Express to avoid congestion when traveling on the Region's freeway system.

**Figure 4.1**  
**Summary of the Results of the Performance Evaluation of the Ozaukee County Transit Services**

Objective	Standard	Express	Shared-Ride Taxi
<u>Objective 1</u> Meeting the demand and need for transit services	Commuter Bus Service	Fulfilled	Not Applicable
	Shared-Ride Taxi Service	Not Applicable	Fulfilled
	Major Activity Centers	Partially Fulfilled	Fulfilled
	Population	Partially Fulfilled	Fulfilled
	Employment	Partially Fulfilled	Fulfilled
<u>Objective 2</u> Operating safely, reliably, conveniently, comfortably, and efficiently	Route Design	Partially Fulfilled	Not Applicable
	Bus Stop and Park-Ride Lot Design	Partially Fulfilled	Not Applicable
	Vehicle Age and Condition	Not Applicable	Fulfilled
	Service Frequency and Availability	Partially Fulfilled	Fulfilled
	Service Travel Speeds	Partially Fulfilled	Fulfilled
	Passenger Demand	Fulfilled	Fulfilled
	Ridership and Service Effectiveness	Partially Fulfilled	Partially Fulfilled
	On-Time Performance	Not Fulfilled	Fulfilled
<u>Objective 3</u> Achieving the other objectives at the lowest possible cost	Travel Time	Partially Fulfilled	Fulfilled
	Fare Structure	Fulfilled	Fulfilled
	Operating Expenses	Partially Fulfilled	Fulfilled
	Cost Effectiveness	Not Fulfilled	Fulfilled

Source: SEWRPC

### Summary of the Performance Evaluation of the Ozaukee County Shared-Ride Taxi

The Shared-Ride Taxi service provides a robust level of service, and performs well compared to peers in the Region and across the Nation. The service is cost effective, with reasonable operating expenses that are growing more slowly than those of peer systems. The most obvious type of improvement to the Shared-Ride Taxi to be studied would be potential modifications to operating procedures that would increase the usefulness of the service for residents (including Milwaukee County residents) to get to work, and therefore address some of the labor shortage that is being reported by businesses in Ozaukee County.

## 4.2 PEER SYSTEMS

As part of the evaluation of the Ozaukee County Transit 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 Ozaukee 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. The six peer systems identified for each of the County's transit services were the systems that most closely matched the characteristics of each service according to data gathered from the National Transit Database (NTD) for 2015.

### Ozaukee County Express Peer Group

Table 4.1 lists the service characteristics of the systems selected for the Express peer group, all of which offer services that are generally similar to the Express. Some of the peers are much larger than the Express and some serve larger metropolitan areas as well. Those serving larger metropolitan areas have significantly higher passenger fares. Nearly all of the peer systems provide local fixed route bus service or shuttle service in addition to their commuter bus service. The data contained within Table 4.1 reflect only their commuter bus service.

### Ozaukee County Shared-Ride Taxi Peer Group

The six peer systems selected for the Ozaukee County Shared-Ride Taxi are shown in Table 4.2. These systems have the most similar service characteristics of the systems that had five or more years of data available from the NTD. Due to Ozaukee County's relatively unusual size, the peers mostly serve larger geographic areas than the Ozaukee County Shared-Ride Taxi, with one operator that serves a collection of

**Table 4.1**  
**Selected 2015 Service Characteristics for the Ozaukee County 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 Unlinked Passenger Trips
Washington County Commuter Express	Milwaukee	Peak	Weekdays	Not Provided	\$3.75	1,390,000	\$1,110,000	250,000	100,000
Waukesha County Express Bus <sup>a</sup>	Milwaukee	Peak	Weekdays	Provided	\$3.25-\$4.00	1,390,000	\$2,240,000	380,000	160,000
Butler County Regional Transit Authority <sup>a</sup> – Express	Cincinnati	Peak	Weekdays	Provided	\$3.50	1,650,000	\$860,000	300,000	70,000
Cobb Community Transit <sup>a</sup>	Atlanta	All Day	No Sundays	Provided	\$5.00	4,800,000	\$3,100,000	630,000	450,000
Merrimack Valley Regional Transit Authority <sup>a</sup> – Commuter Bus	Boston	Peak	Weekdays	Not Provided	\$6.00	4,340,000	\$420,000	90,000	64,000
Western Contra Costa Transit Authority <sup>a</sup>	San Francisco	All Day	Everyday	Provided	\$5.00	3,470,000	\$1,460,000	360,000	230,000
Ozaukee County Express	Milwaukee	Peak	Weekdays	Provided	\$3.50	1,390,000	\$1,110,000	180,000	90,000

<sup>a</sup> These transit systems provide additional fixed-route transit services in addition to providing commuter bus services. The statistics listed in this table apply only to the commuter bus services provided by these transit systems.

Source: National Transit Database and SEWRPC

**Table 4.2**  
**Selected 2015 Service Characteristics for the Ozaukee County Shared-Ride Taxi Service and Its Peer Systems**

Transit System	Metropolitan Area	Service Type	Weekday Service Hours	Service Days	Adult Cash Fare	Urbanized Area Population	Operating Budget	Revenue Vehicle Miles Operated	Service Area in Square Miles	Population in Service Area	Annual Passenger Trips
Washington County Shared-Ride Taxi	Milwaukee	Advanced Reservation	5:00 a.m. - 11:00 p.m.	7 Days a Week	\$4.25 - \$9.00	1,390,000	\$2,200,000	1,150,000	435	134,000	94,000
Miami County Public Transit	Dayton	Advanced Reservation	5:00 a.m. - 6:00 p.m.	Weekdays and Saturday	\$4.00	720,000	\$1,040,000	360,000	410	105,000	40,000
Greene County Area Transit Service	Dayton	Advanced Reservation	6:00 a.m. - 9:00 p.m.	7 Days a Week	\$3.00 - \$6.00	720,000	\$3,270,000	970,000	425	165,000	181,000
Clermont Transportation Connection	Cincinnati	Advanced Reservation	6:00 a.m. - 6:00 p.m.	Weekdays and Saturday	\$4.75	1,650,000	\$2,160,000	890,000	452	203,000	118,000
Cumberland Area Transit System	Philadelphia	Advanced Reservation	8:00 a.m. - 4:00 p.m.	Weekdays	Free	5,510,000	\$2,370,000	440,000	484	154,000	75,000
Valley Transit District	New Haven, CT	Advanced Reservation	6:00 a.m. - 5:30 p.m.	Weekdays	\$4.50	960,000	\$1,430,000	260,000	58	89,000	73,000
Ozaukee County Shared-Ride Taxi	Milwaukee	Advanced Reservation	5:00 a.m. - 10:00 p.m.	7 Days a Week	\$3.00 - \$6.75	1,390,000	\$1,770,000	1,060,000	235	88,000	110,000

Source: National Transit Database and SEWRPC

communities making up a much smaller geographic area. The people per square mile within each peer’s service area is relatively similar to the County’s Shared-Ride Taxi service, and fares are generally similar to those charged by Ozaukee County, excluding one service that does not charge a fare.

### 4.3 PERFORMANCE EVALUATION OF THE OZAUKEE COUNTY EXPRESS

Evaluating the performance of the Express service requires identifying which standards from Figure 3.1 need to be examined to determine if the service is meeting the public transit service objectives established in Chapter 3 of this report. Those three objectives seek to provide a service that meets the demand and need for transit service between Ozaukee County and Milwaukee County; operates safely, reliably, conveniently, comfortably, and efficiently; and utilizes public resources cost-effectively.

**Figure 4.2**  
**Objective 1 and Associated Standards Applicable to the Evaluation of the Ozaukee County Express**

OBJECTIVE 1													
<b>Serve the travel needs of residents traveling within Ozaukee County, County residents commuting to jobs in Milwaukee County, and County employers seeking workers.</b>													
Applicable Design and Operating Standards													
<p><b>1. Commuter Bus Service</b>            Serve major travel corridors with commuter bus service by connecting major activity centers and concentrations of significant urban development within the County and the Region.</p>													
Applicable Performance Standards and Associated Performance Measures													
<p><b>1. Major Activity Centers</b>            Maximize the number of major activity centers and facilities for transit-dependent people served by transit. This is measured by the number of activity centers within one-quarter mile of a local bus or shuttle route, one-half mile of a commuter bus route, or within the service area of a shared-ride taxi service. Major activity centers include the following:<sup>a</sup></p> <ol style="list-style-type: none"> <li>a. Commercial areas</li> <li>b. Educational institutions</li> <li>c. Medical centers</li> <li>d. Employers</li> <li>e. Facilities serving transit-dependent populations</li> </ol>	<p><b>2. Population</b>            Maximize the population served by transit. Residents are considered served if they are within the following distances of a fixed-route transit service, or are within the service area of a shared-ride taxi service.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2" style="text-align: left;"><u>Service Type</u></th> <th colspan="2" style="text-align: center;">Distance from Bus Stop</th> </tr> <tr> <th style="text-align: center;"><u>Walking</u></th> <th style="text-align: center;"><u>Driving</u></th> </tr> </thead> <tbody> <tr> <td>Commuter Bus</td> <td style="text-align: center;">½ Mile</td> <td style="text-align: center;">3 Miles</td> </tr> <tr> <td>Local Shuttle</td> <td style="text-align: center;">¼ Mile</td> <td style="text-align: center;">--</td> </tr> </tbody> </table>	<u>Service Type</u>	Distance from Bus Stop		<u>Walking</u>	<u>Driving</u>	Commuter Bus	½ Mile	3 Miles	Local Shuttle	¼ Mile	--	<p><b>3. Employment</b>            Maximize the number of jobs served by transit. This is measured by the total employment at businesses located within one-quarter mile of local bus or shuttle routes, one-half mile of a commuter bus route, or within the service area of a demand-response service.</p>
<u>Service Type</u>	Distance from Bus Stop												
	<u>Walking</u>	<u>Driving</u>											
Commuter Bus	½ Mile	3 Miles											
Local Shuttle	¼ Mile	--											

<sup>a</sup> 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

### **Objective 1: Meet the Need and Demand for Service**

In order to determine if the Express effectively serves existing travel patterns, meeting the demand and need for transit services between Ozaukee County and Milwaukee County, each applicable standard and associated performance measure(s) were individually evaluated. These individual evaluations were collectively considered to determine how effectively the current service meets the overall objective. Figure 4.2 contains the full text of Objective 1, the applicable design and performance standards, and associated performance measures used to evaluate the Express service’s fulfillment of the objective.

#### **Commuter Bus Service Design and Operating Standard**

The Express service successfully fulfills the Commuter Bus 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 people within the service area of the transit service. Determining how many major activity centers are served by the Express requires looking at different types of activity centers in Ozaukee County and Milwaukee County. One set of activity centers must be analyzed to determine how well the Express meets the standard for individuals who live in Ozaukee County and wish to travel to Milwaukee County, while a separate set must be analyzed to determine how well the Express meets the standard for individuals who live in Milwaukee County and wish to work in Ozaukee County.

To analyze access to major activity centers for individuals making a traditional commute trip into Milwaukee County, Map 4.1 displays the location of the residential facilities for transit-dependent populations in Ozaukee County, while Table 4.3 quantifies the number and percentage of these facilities within a three-, five-, and seven-mile drive or taxi ride of a park-ride lot served by the Express. Table 4.3 indicates that almost two-thirds of the residential facilities for transit-dependent populations are within three miles of a park-ride lot, and almost all residential facilities for transit-dependent populations in Ozaukee County are within seven miles of a park-ride lot.

Map 4.2 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 Express stop and one-quarter mile of a 15-minute ride on a connecting local bus service provided by the Milwaukee County Transit System (MCTS). Table 4.3 displays the quantity and percentage of these major activity centers within the service area of the Express and connecting local bus services. As data shown in Table 2.3 in Chapter 2 of this report demonstrate, the vast majority of trips served by the Express are for work purposes, and Table 4.3 shows that more than one-quarter of the major employers in Milwaukee County are served by the Express and connecting local bus service. New routes or route extensions could increase this coverage. More than half of the main campuses of technical colleges or four-year traditional institutions of higher education are accessible via the Express or a connecting local service, while only 14 percent of Milwaukee County's major medical facilities are accessible from the Express or a connecting local bus route.

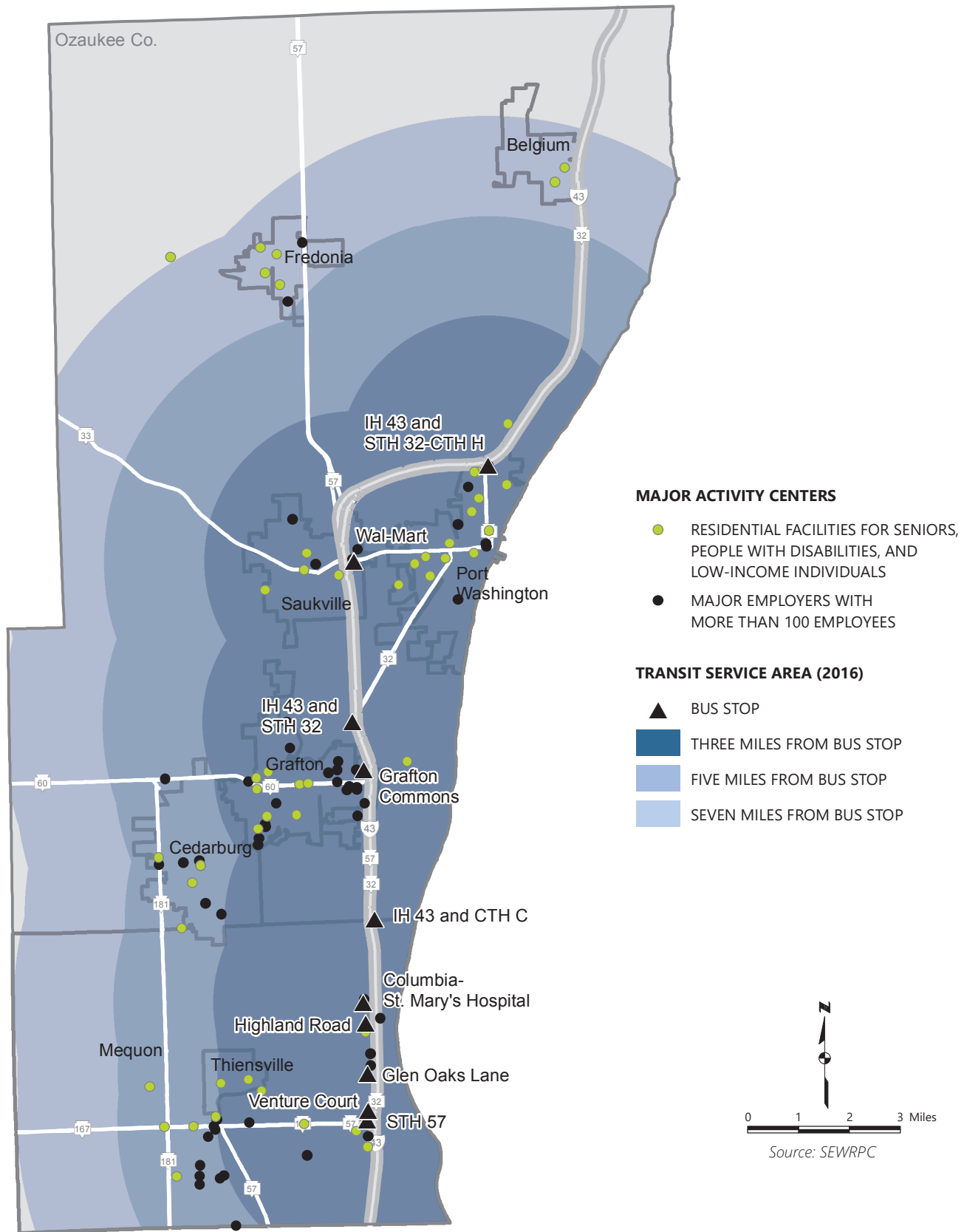
To analyze accessibility to and from major activity centers for individuals making a reverse commute trip to a job in Ozaukee County, Map 4.1 also displays major employers in the County. Major employers are considered accessible if they are within walking distance of an Express stop, or within a 15-minute ride on a connecting Shared-Ride Taxi trip. Using a typical average travel speed for a Shared-Ride Taxi trip, it is assumed that a destination within five miles of an Express stop is accessible via a connecting Shared-Ride Taxi trip of 15 minutes or less. Table 4.3 displays the quantity and percentage of employers within the service area of the Express and a connecting Shared-Ride Taxi trip of 15 minutes or less. Nearly all of the County's major employers are accessible from the Express via a relatively short connecting trip on the Shared-Ride Taxi service.

For the same reason, Map 4.2 includes residential facilities for transit-dependent populations in Milwaukee County, and Table 4.3 quantifies the number of those facilities that are served by the Express. As the Express does not serve any park-ride lots in Milwaukee County, potential travelers from these residential facilities would most likely rely on walking to an Express stop or using a connecting local transit service and transferring to the Express. As with other measures in this section, it is assumed that 15 minutes on a connecting local service is the upper limit for a residential facility to be considered served. More than 11 percent of Milwaukee County's residential facilities for transit-dependent populations are within a 15-minute ride on a connecting local transit service of a bus stop served by the Express.

### ***Population Performance Standard***

The Population Performance Standard recommends maximizing the number of residents with access to transit. In the case of the Express, this is measured using the number of people within a three-mile driving access distance to the park-ride lots served (or within one-half mile walking distance of non-park-ride bus stop, whichever is greater). Recognizing that an individual may choose to drive farther than that to reach the park-ride lot, five-mile and seven-mile access distances are also measured. Map 4.3 displays the residential population density by quarter-section in Ozaukee County, with a three-, five-, and seven-mile access distance from each park-ride lot served by the Express overlaid on top. As of the 2010 U.S. Census,

**Map 4.1**  
**Major Activity Centers in Ozaukee County Served by the Ozaukee County Express**



**Table 4.3**  
**Major Activity Centers Served by the Ozaukee County Express**

<b>In Ozaukee County</b>				
<b>Major Activity Center Type</b>	<b>Distance from Bus Stop Served by Express</b>	<b>Number of Activity Centers Served</b>	<b>Percent of All Activity Centers of Type Within County</b>	
Residential Facilities for Transit-Dependent Populations	3 Miles or Less	34	64.2	
	5 Miles or Less	46	86.8	
	7 Miles or Less	52	98.1	
Major Employers	5 Miles or Less	54	96.4	

<b>In Milwaukee County</b>				
<b>Major Activity Center Type</b>	<b>Within Walking Distance of a Bus Stop Served by Express</b>		<b>Within 15 Minutes on a Connecting Local Transit Service</b>	
	Number	Percent	Number	Percent
Major Employers	82	16.0	131	25.5
Job Resource Centers	1	14.3	1	14.3
Major Medical Facilities	1	2.9	5	14.3
Major Institutions of Higher Education	3	33.3	5	55.6
Major Commercial Areas	3	20.0	5	33.3
Residential Facilities for Transit-Dependent Populations	4	0.7	71	11.6

Source: SEWRPC

approximately 43,100 residents (50 percent of all County residents) lived within a three-mile drive or taxi ride of a park-ride lot served by the Express, 67,000 residents (78 percent of all County residents) lived within a five-mile drive or taxi ride of a park-ride lot served by the Express, and 83,500 residents (97 percent of all County residents) lived within a seven-mile drive or taxi ride of a park-ride lot served by the Express.

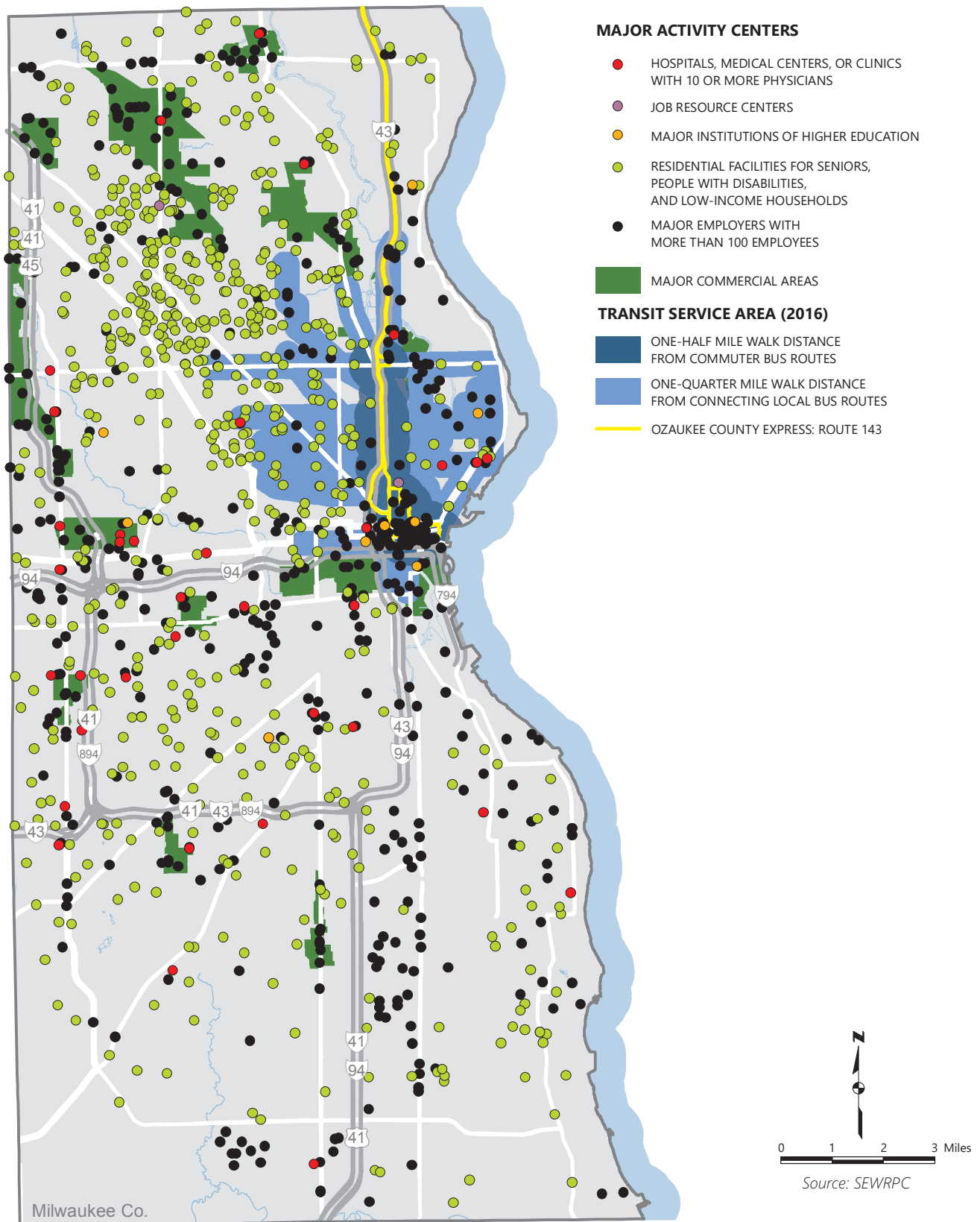
To measure access to transit for individuals commuting to a job in Ozaukee County, Map 4.4 displays the residential population density by quarter-section in Milwaukee County, with a one-half mile walking distance of an Express stop and a one-quarter mile walking distance of a 15-minute ride on a connecting local bus service overlaid on top. As of the 2010 U.S. Census, approximately 72,300 residents (8 percent of all County residents) live within a one-half mile walk of a bus stop served by the Express and 254,500 residents (27 percent of all County residents) live within a one-quarter mile walk of a local route that connects to the Express in 15 minutes or less. Due to the size of census blocks and tracts in some areas of Ozaukee County, quarter section data developed from the 2010 U.S. Census were used to develop the estimates of population served, rather than more recent data from the American Community Survey.

**Employment Performance Standard**

The employment standard recommends maximizing the number of jobs accessible via transit. The total employment within walking distance of an Express stop or a 15-minute ride on a connecting local bus service was measured to partially determine how well the Express fulfills the Employment Performance Standard. Map 4.5 displays the employment density by quarter-section in Milwaukee County, with transit service walk access distances overlaid on top. Many of the highest employment density areas in the region are served by the Express or a connecting local service, with approximately 110,800 jobs (19 percent of all County jobs in 2010) within a one-half mile walk of a bus stop served by the Express and 195,800 jobs (34 percent of all County jobs in 2010) within a one-quarter mile walk of a local route that connects to the Express in 15 minutes or less. This is not intended to indicate that all of those jobs are served, as service hours and frequency on the Express are unlikely to align with every job within walking distance of a bus stop.

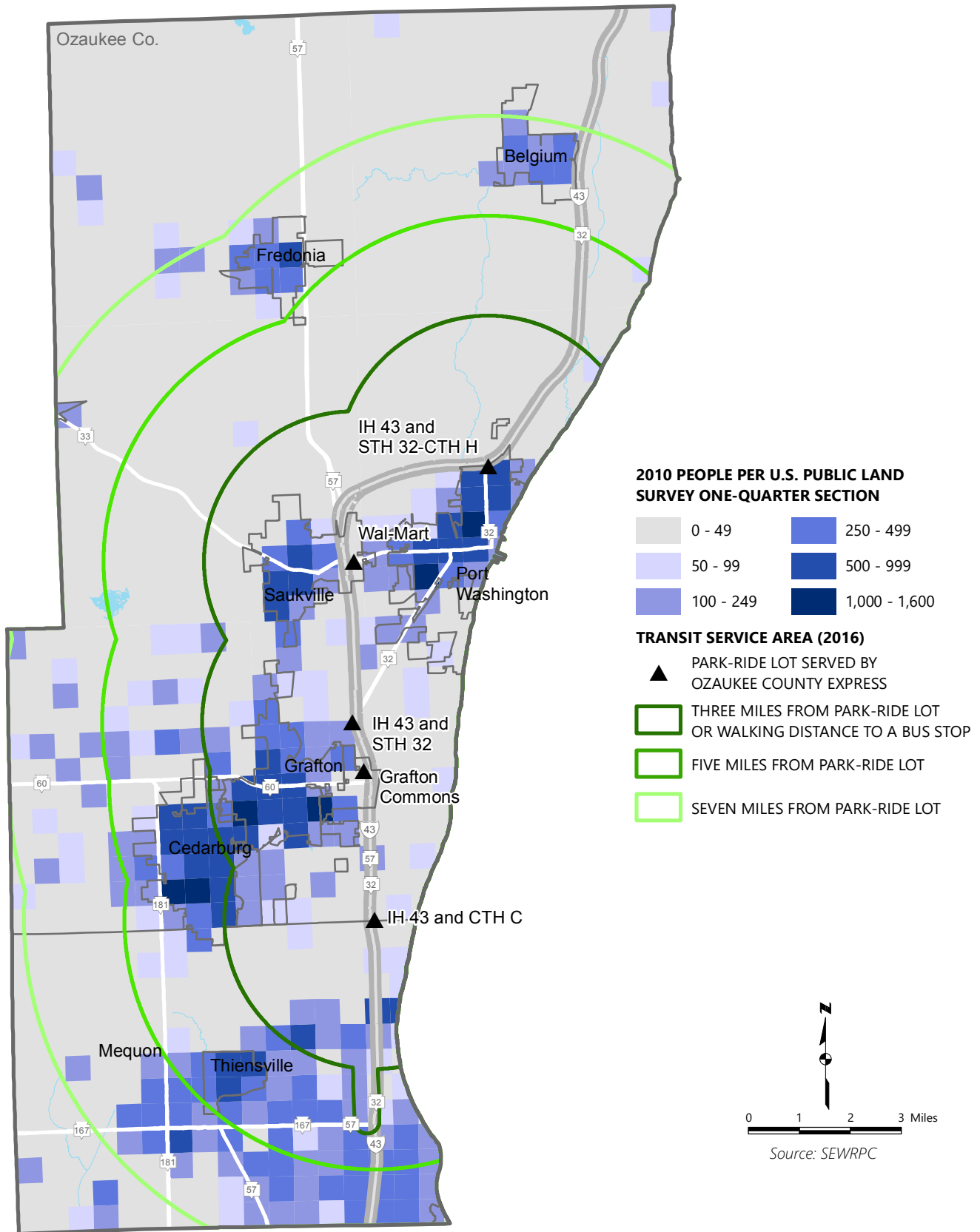
To measure access to transit for individuals commuting to a job in Ozaukee County, Map 4.6 displays the employment density by quarter-section in Ozaukee County, with five-mile buffer around each Express stop, representing a 15-minute ride via the Shared-Ride Taxi. Nearly all of the employers in the County are within a 15-minute ride on the Shared-Ride Taxi of an Express stop, with approximately 49,100 jobs (96 percent of all Ozaukee County jobs in 2010) within that area. This is not intended to indicate that all of those jobs are served, as service hours and frequency on the Express are unlikely to align with every job within that buffer.

**Map 4.2**  
**Major Activity Centers in Milwaukee County Served by the Ozaukee County Express**

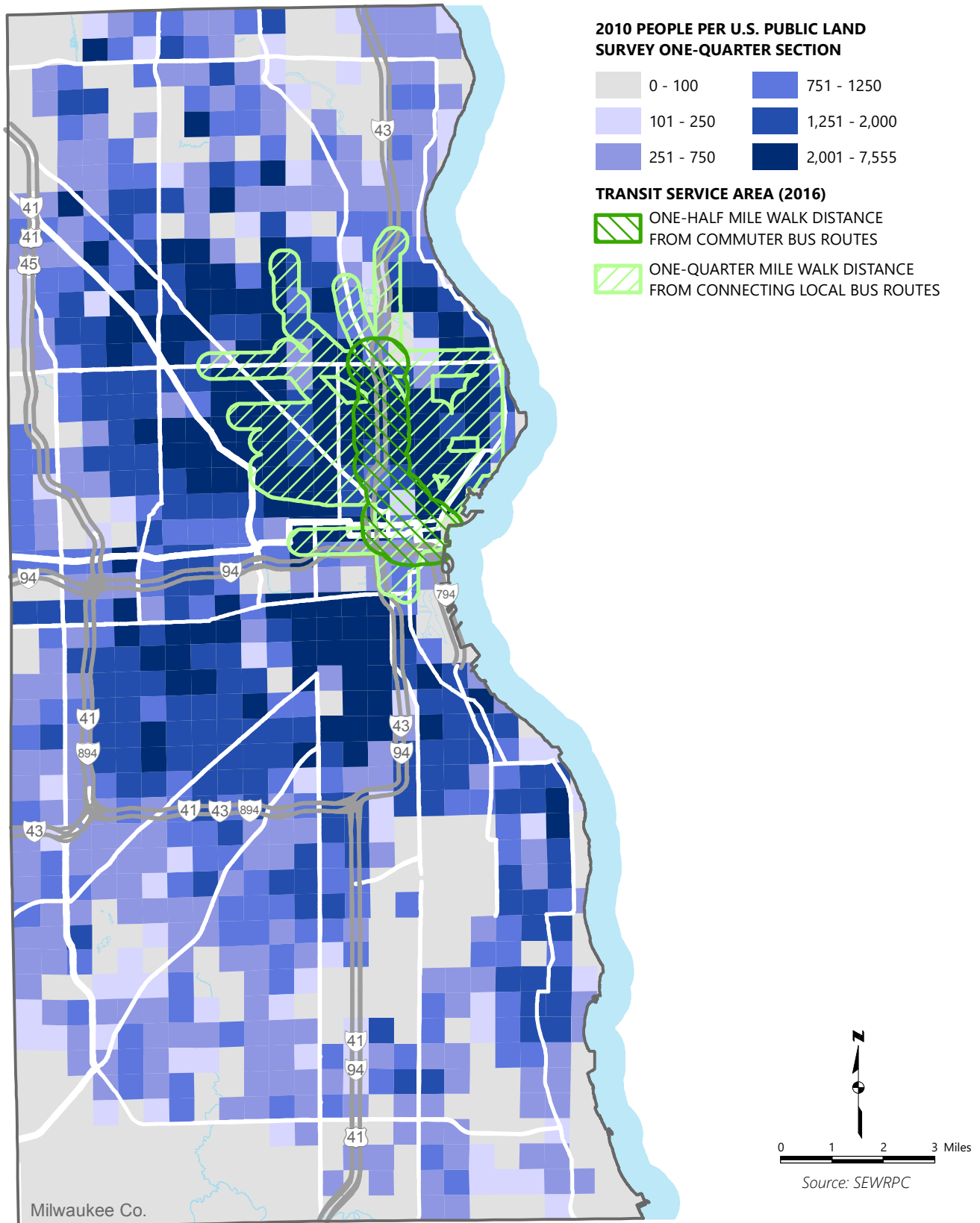




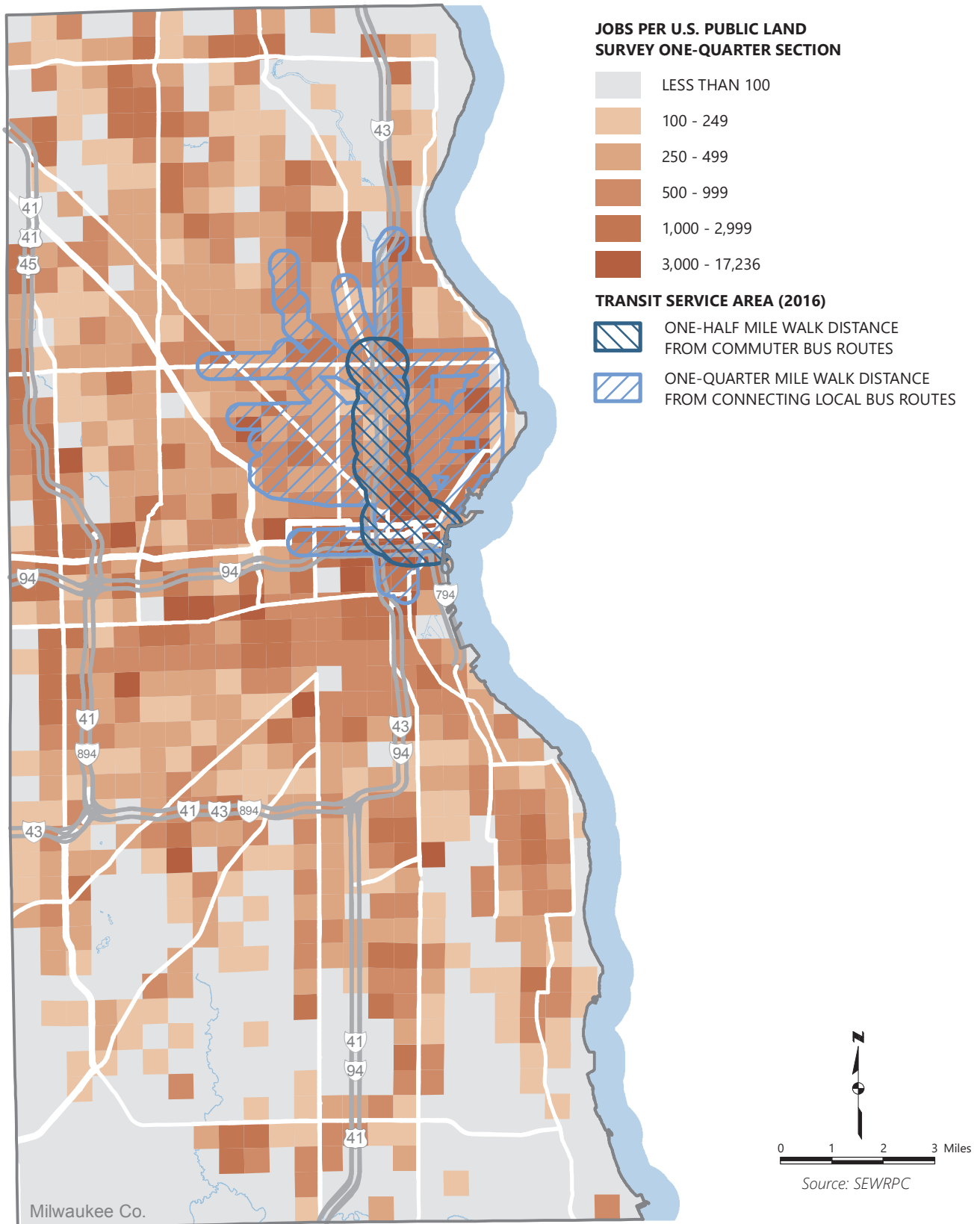
**Map 4.3**  
**Population in Ozaukee County Served by the Ozaukee County Express**



**Map 4.4**  
**Population in Milwaukee County Served by the Ozaukee County Express**

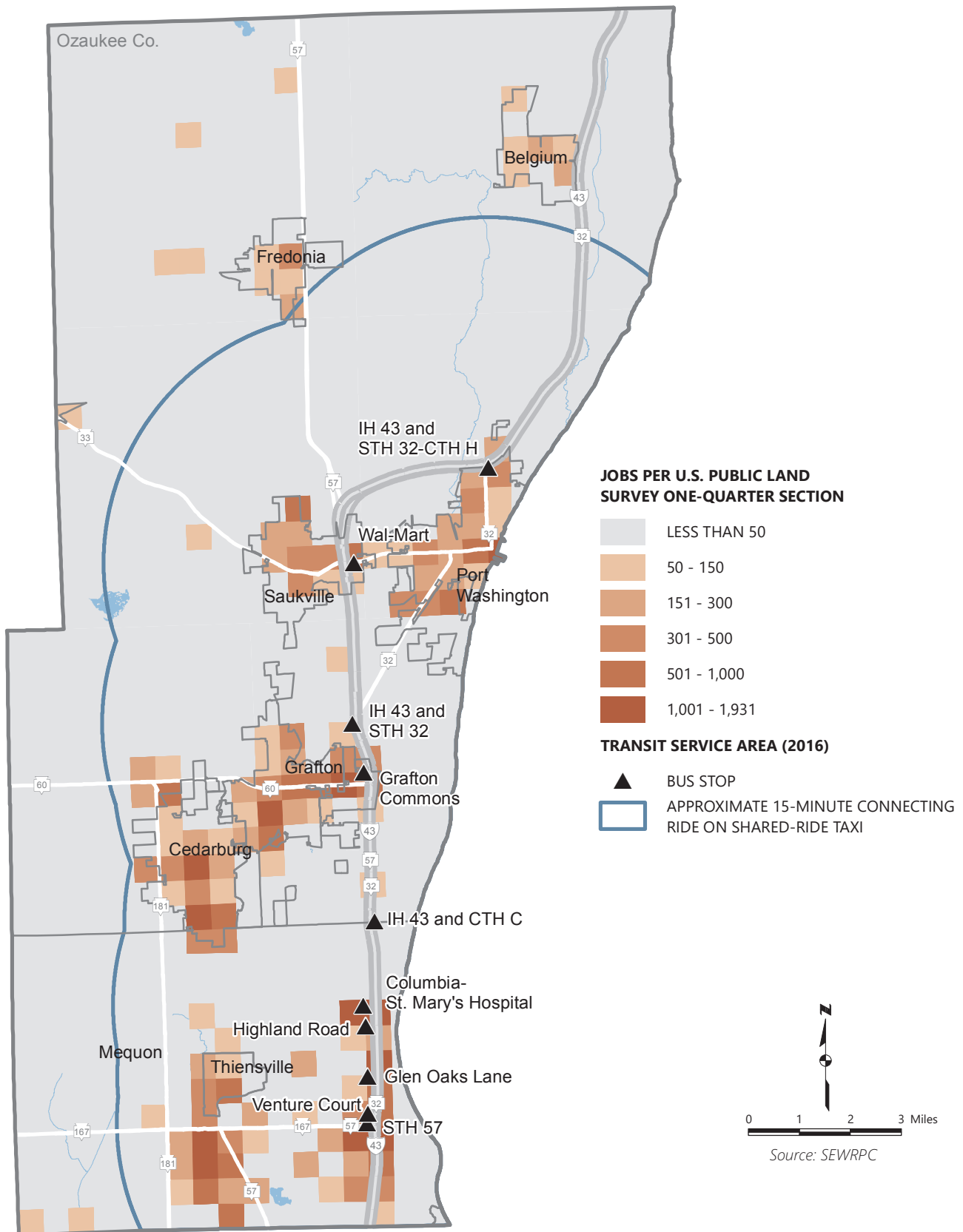


**Map 4.5**  
**Employment in Milwaukee County Served by the Ozaukee County Express**



**Map 4.6**

**Employment in Ozaukee County Served by Shared-Ride Taxi Connecting to the Ozaukee County Express**



**Figure 4.3**  
**Objective 2 and Associated Standards Applicable to the Evaluation of the Ozaukee County Express**

OBJECTIVE 2		
<b>Provide efficient, safe, reliable, convenient, and comfortable transit services in Ozaukee County.</b>		
Applicable Design and Operating Standards		
<p><b>1. Route Design</b>                      Extend commuter bus routes as needed or pair them 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.</p>	<p><b>2. Bus Stop and Park/Ride Lot Design</b>                      Clearly mark bus stops and park-ride lots with easily recognizable signs and locate them 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. Place stops every two to three blocks apart on local bus routes and place park-ride lots at least one mile apart on commuter bus routes. Within business parks, shuttle route stop spacing may need to differ from standard local route stop spacing based on the spacing between businesses and the presence or lack of sidewalks and crosswalks.</p>	
<p><b>4. Service Frequency and Availability</b>                      Operate all fixed-route transit services at least every 30 minutes during the weekday peak period, and operate local fixed-route services at least every 60 minutes during off-peak service hours. Shared-ride taxi services should have a maximum advance reservation requirement of 24 hours, and seek to have less than 3 percent of same day service requests denied.</p>	<p><b>5. Service Travel Speeds</b>                      Operate transit services such that travel speeds are not less than 10 miles per hour for local fixed-route and shared-ride taxi services, and not less than 25 miles per hour for commuter bus services.</p>	<p><b>6. Passenger Demand</b>                      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 shared-ride taxi. Fixed route transit services should not exceed an average passenger load factor of 1.50.</p>
Applicable Performance Standards and Associated Performance Measures		
<p><b>1. Ridership and Service Effectiveness</b>                      Maximize ridership on and the effectiveness of transit services. This is 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.</p>	<p><b>2. On-Time Performance</b>                      Maximize adherence to published schedules for fixed-route transit services and scheduled rider pickup and drop off times for shared-ride taxi services. Regularly monitor performance and make adjustments to any local transit service with less than 90 percent and any commuter bus service with less than 70 percent of trips on time (defined as being between zero minutes early and three minutes late for fixed-route services and 30 minutes early or late for shared-ride taxi services).</p>	<p><b>3. Travel Time</b>                      Keep travel times on transit services reasonable in comparison to travel time by automobiles for similar trips. This standard is measured using the ratio of transit to automobile distance and the ratio of transit to automobile travel time.</p>

Source: SEWRPC

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

Figure 4.3 contains the applicable standards that were used to determine if the Express is providing a service that is efficient, safe, reliable, convenient, and comfortable.

**Route Design and Operating Standard**

The Express service has a direct alignment with a limited number of turns, and minimizes unnecessary transfers. It does not currently serve a collector-distributor function at the end of its route, although it does along N. Port Washington Road in the City of Mequon. Also, there are no existing local shuttle routes connected to the Express to perform that collector-distributor function for other parts of the County not adjacent to IH 43.

### ***Bus Stop and Park-Ride Lot Design and Operating Standard***

The park-ride lots and bus stops served by the Express are appropriately spaced and located, with accessible driving and walking paths to each, distances of more than one mile between each park-ride, and bus stops placed at least every two blocks on average. In general, the park-ride lots served by the Express are well-located and easy to access via driving, largely due to being accessible via arterials with quick access to IH 43. The two park-ride lots on private property (at the Walmart on STH 33 and at Grafton Commons near STH 60) are not signed, although they include robust amenities and well-designed, accessible paths to the lot and bus shelter. Awareness of these lots and the Express service would be improved by signage directing residents to these lots on adjacent arterials and segments of IH 43. The three publicly-owned park-ride lots (the Port Washington Lot at STH 32, the Grafton Lot at CTH V and STH 32, and the Cedarburg Lot at CTH C) are well-signed—with directional signage on nearby arterials, IH 43 off-ramps, and advisory signage on IH 43 itself—and include robust amenities such as bike lockers and shelters. However, accessible sidewalks to the Port Washington Lot could be improved by providing a more protected path to the shelter from nearby sidewalks. The Grafton Lot and the Cedarburg Lot do not have accessible paths, although there is little development nearby from which a pedestrian could travel.

All of the bus stops served by the Express are properly signed, and most have accessible sidewalks to and from the stop. The stops adjacent to Ascension/Columbia St. Mary's Hospital on N. Port Washington Road in Mequon should be improved with a bus pad and an accessible sidewalk to the hospital. The stops at Highland Road and N. Port Washington Road could be improved with sidewalk access to adjacent businesses, while a bus pad connecting to the nearby sidewalk should be added to the stop at W. Mequon Road and N. Port Washington Road. To implement accessibility improvements to bus stops and park-ride lots, the County could pursue Federal Transit Administration Enhanced Mobility for Seniors and Individuals with Disabilities Program (Section 5310) funding, which would reimburse 80 percent of the cost of construction. Additional information on specific improvements can be found in Chapter 5, Transit Service Alternatives for the Ozaukee County Transit System.

### ***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 Express meets this standard in the peak direction, which serves first shift jobs of all types in and near downtown Milwaukee. The service does not meet this standard in the reverse direction, which serves largely retail and service jobs near IH 43 in Ozaukee County.

### ***Service Travel Speeds Design and Operating Standard***

The Service Travel Speeds Standard requires that commuter bus services achieve average travel speeds of at least 25 miles per hour over the duration of the route. As scheduled, most of the Express runs meet this standard, with the few that do not occurring during the period of highest congestion on IH 43. Without a method of avoiding congestion on IH 43, the service will not meet this standard for every run.

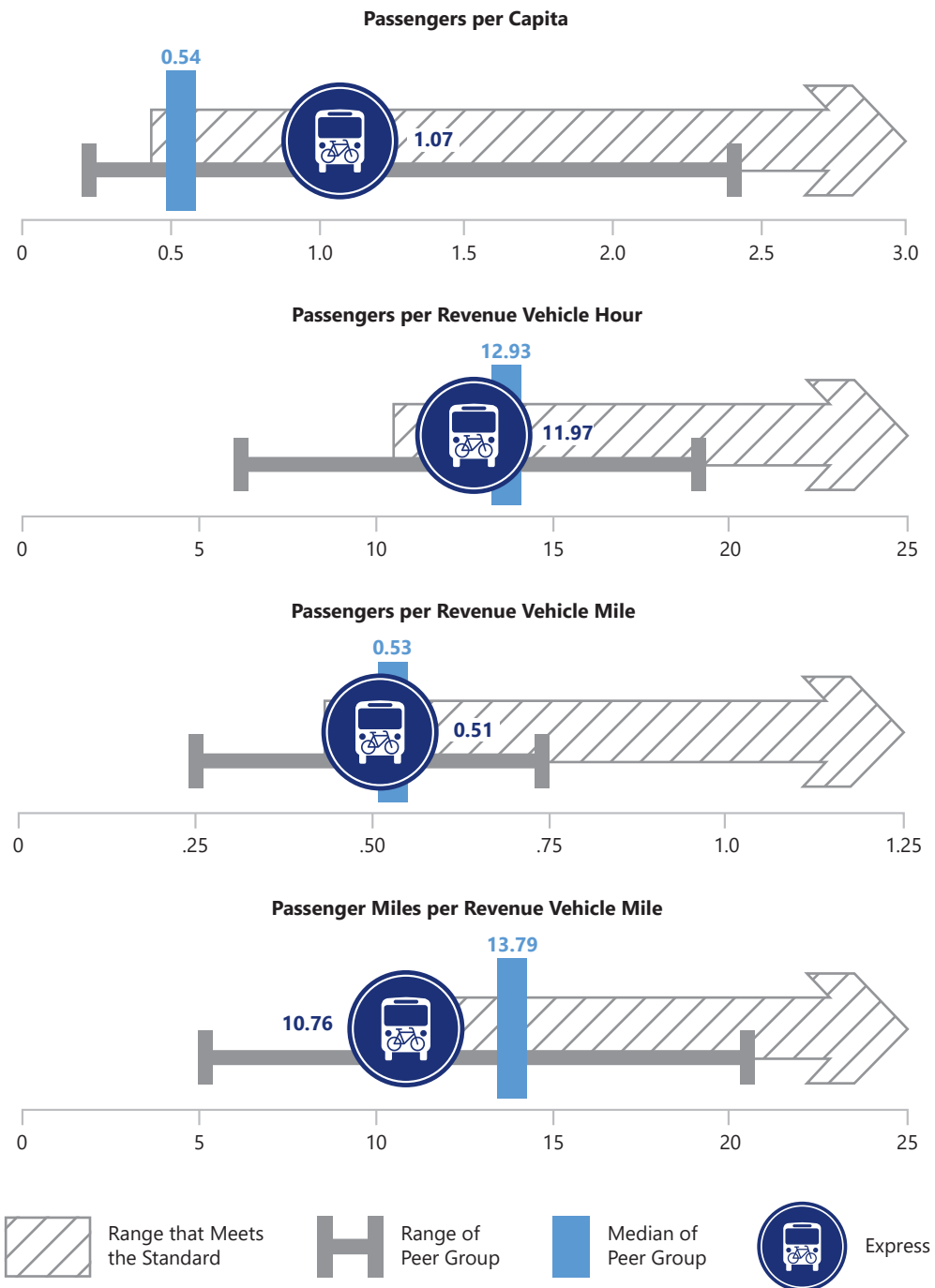
### ***Passenger Demand Design and Operating Standard***

This standard recommends that the average ratio of peak passengers to seats on the Express not exceed 1.50. The vehicles used to operate the Express have 35 seats, so the average peak passenger load on the Express should not exceed 52 passengers. During sample data provided by MCTS for the month of September 2016, the peak leave load on any run was 34 passengers. Based on these data, it is likely that the only runs that exceed 52 passengers are special runs operated each summer during Summerfest, meaning that the annual peak average is well within this 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 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 modifying routes, runs, service areas, or service periods. Figure 4.4 shows the results of this comparison of the 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 Express for each measure. The data for each peer system is presented in Table 4.4.

**Figure 4.4**  
**Ridership and Service Effectiveness Performance Standard: Comparison of**  
**Ozaukee County Express to Peer Group for Associated Performance Measures**



Source: National Transit Database and SEWRPC

**Table 4.4**  
**Ozaukee County Express and Peer Group Data for the Ridership and Service Effectiveness Performance Standard**

Peer System and Metropolitan Area	Performance Measures											
	Passengers per Capita			Passengers per Revenue Vehicle Hour			Passengers per Revenue Vehicle Mile			Passenger Miles per Revenue Vehicle Mile		
	2011	2015	Average Annual Change	2011	2015	Average Annual Change	2011	2015	Average Annual Change	2011	2015	Average Annual Change
Washington County Commuter Express (Milwaukee)	0.96	0.77	-5.33%	13.52	11.47	-3.95%	0.50	0.41	-4.73%	15.22	12.71	-4.29%
Waukesha County Express Bus (Milwaukee)	0.62	0.42	-8.72%	10.40	10.45	0.97%	0.45	0.43	-0.27%	9.53	9.44	0.39%
Butler County Regional Transit Authority – Express <sup>a</sup> (Cincinnati)	0.08	0.20	54.28%	4.05	4.80	12.48%	0.19	0.24	14.74%	4.07	4.87	10.82%
Cobb Community Transit (Atlanta)	0.98	0.32	-9.47%	19.10	19.01	0.30%	0.68	0.72	1.40%	17.76	15.10	-2.36%
Merrimack Valley Regional Transit Authority – Commuter Bus (Boston)	0.16	0.21	7.37%	15.90	12.46	-5.26%	0.97	0.75	-5.29%	27.09	20.64	-5.57%
Western Contra Costa Transit Authority (San Francisco)	2.00	2.44	6.96%	16.50	18.84	4.65%	0.52	0.64	7.45%	12.36	14.86	7.01%
<b>Ozaukee County Express (Milwaukee)</b>	<b>1.32</b>	<b>1.07</b>	<b>-4.66%</b>	<b>16.65</b>	<b>12.93</b>	<b>-5.84%</b>	<b>0.64</b>	<b>0.51</b>	<b>-5.27%</b>	<b>13.03</b>	<b>10.76</b>	<b>-4.64%</b>

<sup>a</sup> The Butler County Regional Transit Authority did not report complete commuter bus information to the National Transit Database in 2011. 2012 information is displayed in this table.

Source: National Transit Database and SEWRPC

Figure 4.4 indicates that the Express is slightly out of the acceptable range for one of the four performance measures. Passengers per capita is largely dependent on how well a system covers its service area, and as Ozaukee County is a relatively long, thin County, with much of its population adjacent to the corridor served by the Express, it is perhaps unsurprising that the Express performs extremely well compared to its peers on this measure.

Likely due to the reasonably high ridership on the Express and the relatively minimal amount of congestion on IH 43 at most times of the day, the Express performs well compared to peers in regards to passengers per revenue vehicle hour of service. The Express also performs well, although not quite as strongly, on the passengers per revenue vehicle mile of service measure, averaging near the median of the peer group (and well within the limit of the standard). Compared to systems in the peer group, the majority of Express passengers are traveling shorter average distances per trip, as the parts of Ozaukee County that generate much of the Express' ridership are relatively close to downtown Milwaukee compared to peers in this metro area, and this metro area is relatively compact compared to the metro areas served by the other peer services.

In contrast to the other three performance measures that are associated with the Ridership and Service Effectiveness Standard, the Express is not quite within 20 percent of the median of the peer group under the passenger miles per revenue vehicle mile of service measure. 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 some of the low performance on this measure is related to the relatively low ridership on Express runs that serve reverse commute trips. In addition, as mentioned previously, a large proportion of the Express ridership comes from the Grafton area, meaning that the vehicles would have a low number of passengers on board for the additional miles of service to and from the Port Washington Area. In general, the Express performs reasonably well on this standard, meeting the standard under three of the four associated measures.



### ***On-Time Performance Standard***

The On-Time Performance Standard states that 70 percent of trips on a fixed-route service should be within zero minutes early and three minutes late. Based on information provided by MCTS from September 2015, the Express is within zero minutes early and three minutes late on 68.3 percent of trips, just slightly below the standard. If certain runs are regularly late, schedule adjustments may improve on-time performance. However, it is likely that a large number of late trips are related to congestion, and therefore a large improvement in on-time performance would likely require reducing the impact of congestion on the Express through dedicated lanes or bus-on-shoulder operations.

### ***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 4.5 compares congested in-vehicle automobile travel times to typical in-vehicle Express travel times, and shows that the ratio between transit travel times and automobile travel times generally is reasonable. However, a few trips do exceed a ratio of 2.00, which is generally beyond what many riders are willing to accept when determining whether to use a transit service. Reducing this ratio on those trips that exceed 2.00 would likely require that the Express have a reliable way to avoid congestion during peak periods.

### **Objective 3: Utilizing Public Resources Cost-Effectively**

Objective 3 recognizes that public funds are limited, and must be used efficiently. In order to determine if public funds are being spent well, the following analyses compare the Express to its peer group using a number of performance measures. The applicable standards and performance measures used to measure how efficiently the Express is using public funds are shown in Figure 4.5.

### ***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 Express fulfills this standard, with \$3.50 base standard adult fare—higher than that of a typical local bus service in the Region—and a discounted fare of \$1.60 for seniors and people with disabilities. In cooperation with MCTS, frequent Express riders can also purchase discounted 7- and 31-day passes.

### ***Operating Expenses Performance Standard***

By comparing the annual percent increase between 2011 and 2015 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 percent increases in the five performance measures should exceed the median percentage increases experienced by the peer group. Figure 4.6 displays a comparison of the annual percent change for each metric for 2011 to 2015 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 Express. Table 4.6 provides the detailed data used to develop Figure 4.6.

The Express performs well on the four measures that compare growth in operating expenses per various measures of amounts of service provided. The average annual percent change in operating expenses per revenue vehicle mile, per revenue vehicle hour, per total vehicle mile, and per total vehicle hour all meet the corresponding standard, with the growth rate of operating expenses per unit of service for the Express less than the median of the peer group for these performance measures. However, the actual unit costs in 2015 (shown in Table 4.6) for these four performance measures are higher than all of the systems in the peer group, which is perhaps a cause for concern.

The Express performed less well in the annual percent change in operating assistance per passenger performance measure, as the decline in ridership between 2014 and 2015 increased the average subsidy amount per passenger significantly. However, even with the recent increase, the amount of operating assistance per passenger is still lower than two of the peer systems, most notably Waukesha County's commuter bus services. Overall, the Express performs reasonably well on this standard, with generally declining operating costs per unit of service between 2011 and 2015.

**Table 4.5**  
**Travel Time Comparison Between the Ozaukee County Express and Automobiles: Minimum and Maximum Typical Travel Times**

Trip Origin	Trip Destination	Traditional Commute Trips						Ratio (transit to automobile)
		Minimum Typical Travel Time (minutes)			Maximum Typical Travel Time (minutes)			
		Express	Automobile <sup>a</sup>	Difference (minutes)	Express	Automobile	Difference (minutes)	
Port Washington Park & Ride	E. Wisconsin Avenue and N. Cass Street	54	31	23	59	37	22	1.74
		39	23	16	52	29	23	1.70
		27	18	9	38	24	14	1.50
		28	20	8	46	26	20	1.40
E. Wisconsin Avenue and N. Cass Street	Port Washington Park & Ride	59	30	29	73	35	38	1.97
		35	23	12	52	27	25	1.52
		27	18	9	39	23	16	1.50
		30	20	10	47	25	22	1.50
<b>Reverse Commute Trips</b>								
Trip Origin	Trip Destination	Minimum Typical Travel Time (minutes)			Maximum Typical Travel Time (minutes)			Ratio (transit to automobile)
		Express	Automobile <sup>a</sup>	Difference (minutes)	Express	Automobile	Difference (minutes)	
		N. 6th Street and W. Highland Avenue	Grafton Commons	28	21	7	38	
34	19			15	34	23	13	1.79
24	16			8	24	21	3	1.50
20	14			6	20	18	2	1.43
N. 6th Street and W. Highland Avenue	Venture Court	44	21	23	44	27	17	2.10
		36	19	17	36	25	11	1.89
		33	16	17	33	22	11	2.06
		24	14	10	25	19	6	1.71

<sup>a</sup> Minimum travel times for automobiles were derived from free flow travel occurring during off-peak travel periods.

Source: MCTS and SEWRPC

**Figure 4.5**  
**Objective 3 and Associated Standards Applicable to the Evaluation of the Ozaukee County Express**

OBJECTIVE 3	
<b>Meet all other objectives at the lowest possible cost. Given limited public funds, this objective seeks to permit elected officials the flexibility to balance the standards associated with Objectives 1 and 2 with the level of public funding required to fully meet those standards.</b>	
Applicable Design and Operating Standards	
<b>2. Fare Structure</b> Charge premium fares for premium services, and discounted fares for priority population groups and frequent riders.	
Applicable Performance Standards and Associated Performance Measures	
<b>1. Operating Expenses</b> Minimize the operating expenses per total and revenue vehicle mile, the operating expenses per total and revenue vehicle hour, and the operating assistance per passenger. Annual increases in such costs should not exceed the median percentage increases experienced by comparable transit systems.	<b>3. Cost Effectiveness</b> Review transit services with substandard cost effectiveness for potential changes to their routes, runs, service areas, and service periods. Cost effectiveness is considered substandard when the operating expenses per passenger, or operating expenses 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

### **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 4.7 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 Express for these performance measures. Table 4.7 provides the detailed data used to develop Figure 4.7.

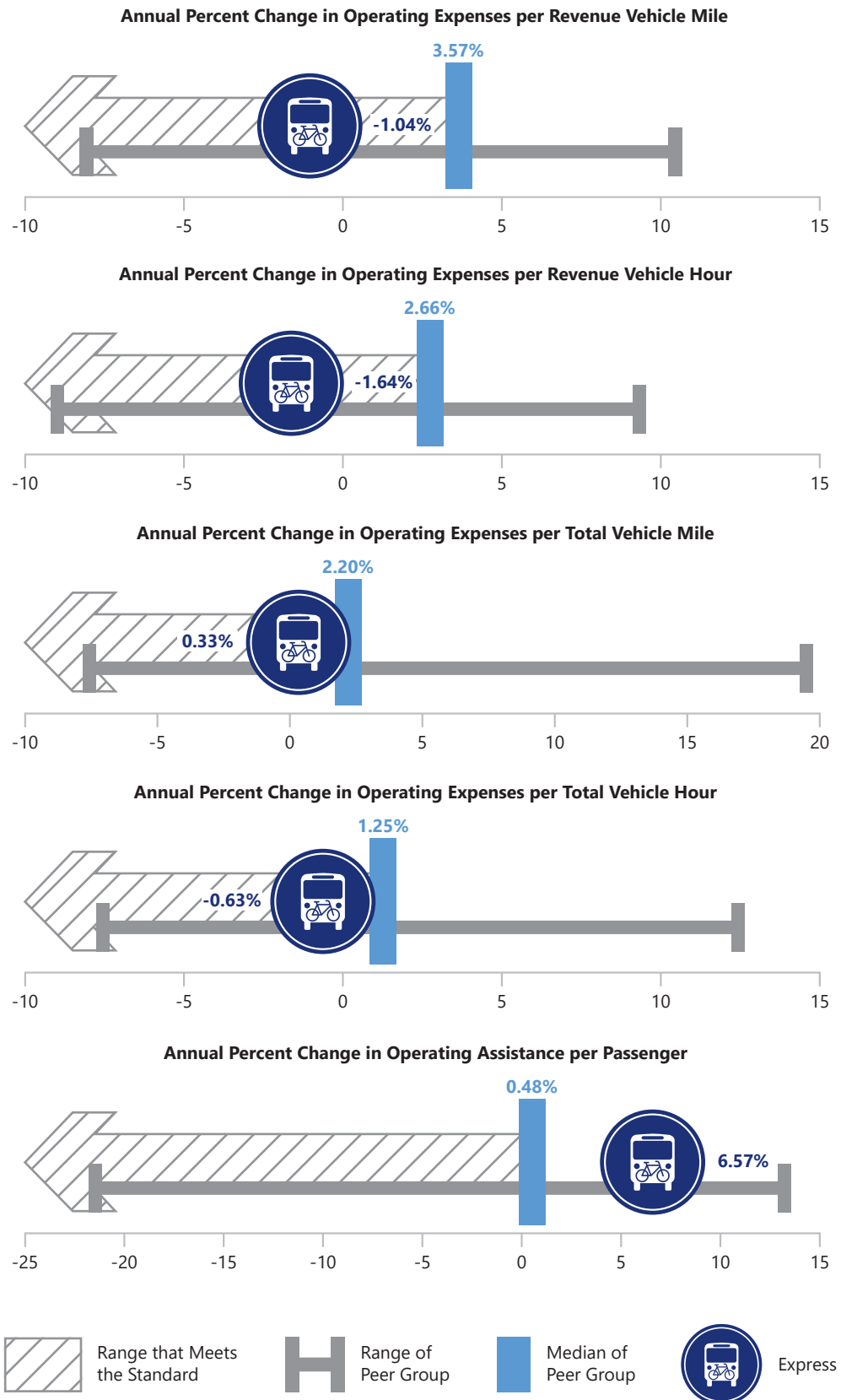
Given the relatively high level of operating expenses per unit of service and decline in ridership in 2015 discussed previously, it is unsurprising that the Express does not perform well under this standard, failing to meet the requirements for all three performance measures. At \$12.01, the operating cost per passenger for the Express is greater than all but the Waukesha County Express Buses. Similarly, operating cost per passenger mile is higher than all but two of the peer systems.

In 2015, the Express had a farebox recovery ratio of 17.67 percent, which is low compared to its regional and most of its national peers. It was already low in 2011 (partially due to the relatively high operating costs per unit of service, and partially due to average fares that are lower than many other commuter bus systems), and declined relatively significantly between 2011 and 2015, due to the decrease in ridership between 2014 and 2015. Overall, the Express does not meet this standard.

## **4.4 PERFORMANCE EVALUATION OF THE OZAUKEE 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 3 of this report need to be identified from those listed in Figure 3.1. Those three objectives seek to provide a service that meets the demand and need for transit service within Ozaukee County; 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.

**Figure 4.6**  
**Operating Expenses Performance Standard: Comparison of Ozaukee County**  
**Express to Peer Group for Associated Performance Measures**



Source: National Transit Database and SEWRPC

**Table 4.6**  
**Ozaukee County Express and Peer Group Data for the Operating Expenses Performance Standard**

Peer System and Metropolitan Area	Performance Measures														
	Operating Expenses per Revenue Vehicle Mile			Operating Expenses per Revenue Vehicle Hour			Operating Expenses per Total Vehicle Mile			Operating Expenses per Total Vehicle Hour			Operating Assistance per Passenger		
	2011	2015	Average Annual Change	2011	2015	Average Annual Change	2011	2015	Average Annual Change	2011	2015	Average Annual Change	2011	2015	Average Annual Change
Washington County Commuter Express (Milwaukee)	\$4.89	\$4.45	-2.03%	\$132.00	\$124.14	-1.22%	\$2.55	\$2.31	-1.98%	\$78.75	\$74.55	-1.05%	\$6.88	\$7.48	2.52%
Waukesha County Express Bus (Milwaukee)	\$6.15	\$5.87	-0.90%	\$143.38	\$142.49	0.14%	\$4.55	\$4.10	-2.20%	\$98.58	\$98.14	0.36%	\$10.73	\$10.67	1.10%
Butler County Regional Transit Authority – Express <sup>a</sup> (Cincinnati)	\$2.39	\$2.87	10.01%	\$49.96	\$56.87	7.38%	\$1.93	\$2.77	19.78%	\$39.98	\$50.45	12.68%	\$11.61	\$11.23	-0.80%
Cobb Community Transit (Atlanta)	\$3.30	\$4.93	10.69%	\$92.56	\$130.97	9.47%	\$2.18	\$2.77	6.38%	\$71.50	\$75.71	2.14%	\$3.04	\$4.93	13.55%
Merrimack Valley Regional Transit Authority –Commuter Bus (Boston)	\$8.43	\$4.90	-8.36%	\$138.52	\$81.73	-9.27%	\$3.59	\$2.21	-7.91%	\$87.40	\$54.58	-7.76%	\$4.78	\$0.27	-21.87%
Western Contra Costa Transit Authority (San Francisco)	\$3.21	\$4.04	8.04%	\$102.07	\$118.66	5.18%	\$2.23	\$3.74	19.42%	\$98.95	\$110.41	3.95%	\$2.18	\$2.16	-0.14%
<i>Ozaukee County Express (Milwaukee)</i>	<i>\$6.37</i>	<i>\$6.07</i>	<i>-1.04%</i>	<i>\$166.87</i>	<i>\$155.23</i>	<i>-1.64%</i>	<i>\$4.07</i>	<i>\$4.11</i>	<i>0.33%</i>	<i>\$117.33</i>	<i>\$113.99</i>	<i>-0.63%</i>	<i>\$7.73</i>	<i>\$9.88</i>	<i>6.57%</i>

<sup>a</sup> The Butler County Regional Transit Authority did not report complete commuter bus information to the National Transit Database in 2011. 2012 information is displayed in this table.

Source: National Transit Database and SEWRPC

**Objective 1: Meeting the Need and Demand for Service**

Determining if the Shared-Ride Taxi effectively serves the needs of residents traveling within Ozaukee 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 4.8 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.

**Shared-Ride Taxi Service Design and Operating Standard**

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

**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 Shared-Ride Taxi service. The Shared-Ride Taxi service fulfills this standard by serving all major activity centers in Ozaukee County, and providing a connection to and from the Express for individuals who cannot or do not wish to drive to and from a park-ride lot.

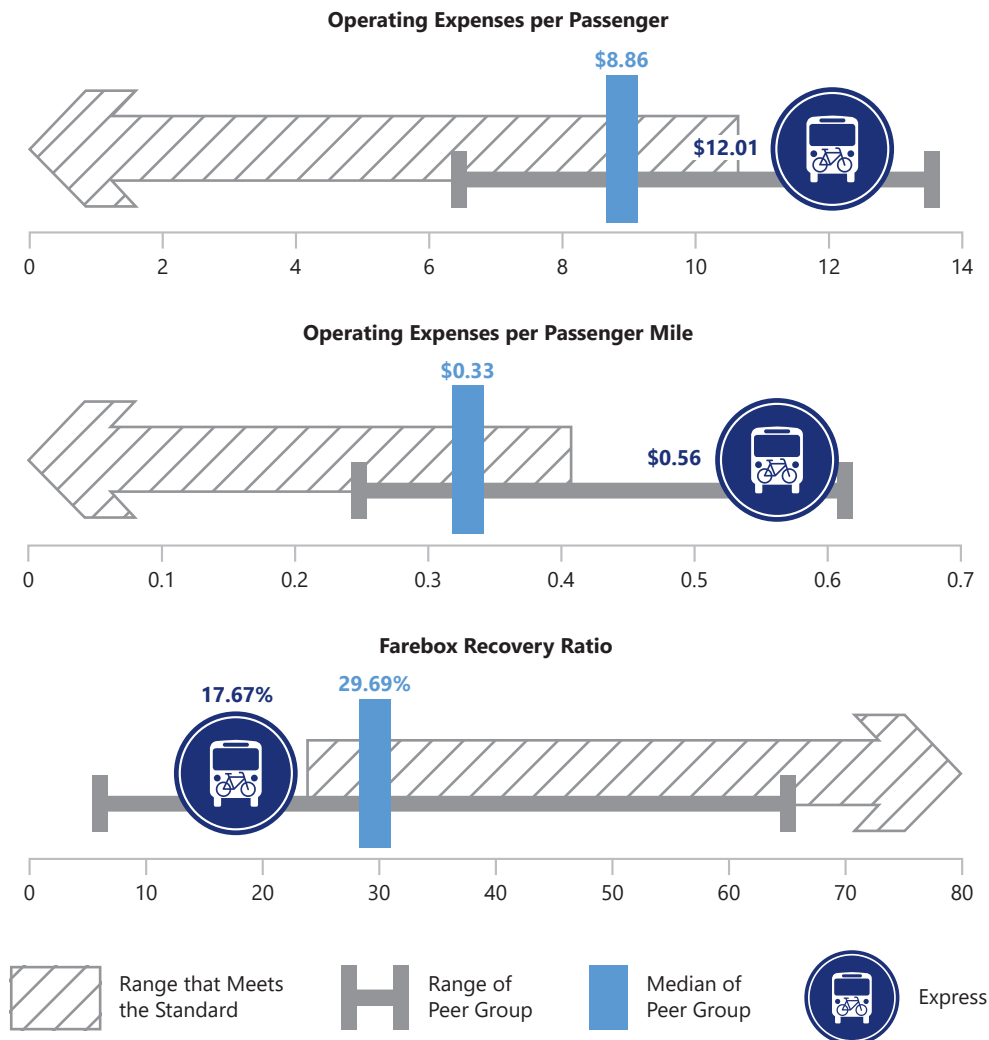
**Population Performance Standard**

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

**Employment Performance Standard**

Nearly all jobs within Ozaukee County are served by the Shared-Ride Taxi service, fulfilling this standard. Some jobs may be inaccessible if their start and/or end time is outside of the service hours of the Shared-Ride Taxi. 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 Express service.

**Figure 4.7**  
**Cost Effectiveness Performance Standard: Comparison of Ozaukee County**  
**Express to Peer Group for Associated Performance Measures**



Source: National Transit Database and SEWRPC

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

Figure 4.9 contains the applicable standards that were used to determine if the Shared-Ride Taxi is providing a service that is efficient, safe, reliable, convenient, and comfortable for users.

**Vehicle Age and Condition Design and Operating Standard**

The Vehicle Age and Condition Standard recommends that vehicles used by the County to provide its Shared-Ride Taxi service be rehabilitated or replaced once they have reached the end of their useful life. The County is currently replacing vehicles on an appropriate schedule once they reach the end of their useful life, meeting this standard.

**Service Frequency and Availability Design and Operating Standard**

The Service Frequency and Availability Standard recommends that Shared-Ride Taxi services should have a maximum advance reservation requirement of 24 hours, and seek to have less than three percent of same day service requests denied. Based on ridership and service denial data from Ozaukee County for the three months within the first quarter of 2017, service denials account for 1.4 percent, 1.1 percent, and 0.9 percent, respectively. Given that approximately 99 percent of rides were provided as requested during this time period, the Shared-Ride Taxi meets this standard.

**Table 4.7**

**Ozaukee County Express and Peer Group Data for the Cost Effectiveness Performance Standard**

Peer System and Metropolitan Area	Performance Measures								
	Operating Expenses per Passenger			Operating Expenses per Passenger Mile			Farebox Recovery Ratio		
	2011	2015	Average Annual Change	2011	2015	Average Annual Change	2011	2015	Average Annual Change
Washington County Commuter Express (Milwaukee)	\$9.76	\$10.82	2.79%	\$0.32	\$0.35	2.32%	29.49%	30.88%	1.57%
Waukesha County Express Bus (Milwaukee)	\$13.78	\$13.63	0.43%	\$0.65	\$0.62	-0.26%	22.15%	21.74%	0.26%
Butler County Regional Transit Authority – Express <sup>a</sup> (Cincinnati)	\$12.32	\$11.85	-0.90%	\$0.59	\$0.59	0.49%	5.78%	5.22%	-1.08%
Cobb Community Transit (Atlanta)	\$4.85	\$6.89	9.35%	\$0.19	\$0.33	17.42%	37.28%	28.49%	-5.80%
Merrimack Valley Regional Transit Authority – Commuter Bus (Boston)	\$8.71	\$6.56	-4.47%	\$0.31	\$0.24	-4.23%	45.10%	45.94%	1.20%
Western Contra Costa Transit Authority (San Francisco)	\$6.19	\$6.30	0.65%	\$0.26	\$0.27	1.98%	64.69%	65.65%	0.51%
<i>Ozaukee County Express (Milwaukee)</i>	<i>\$10.02</i>	<i>\$12.01</i>	<i>4.73%</i>	<i>\$0.49</i>	<i>\$0.56</i>	<i>3.75%</i>	<i>22.86%</i>	<i>17.67%</i>	<i>-5.93%</i>

<sup>a</sup> The Butler County Regional Transit Authority did not report complete commuter bus information to the National Transit Database in 2011. 2012 information is displayed in this table.

Source: National Transit Database and SEWRPC

**Service Travel Speeds Design and Operating Standard**

The Service Travel Speeds Standard requires that shared-ride taxi services average travel speeds of at least 10 miles per hour for the duration of a passenger’s trip. The Shared-Ride Taxi meets this standard in a sample of trips taken from a month of trip logs in May 2017. Speeds in this sample of trips range from 4 to 55 miles per hour, with an average speed of 24 miles per hour.

**Passenger Demand Design and Operating Standard**

The Passenger Demand Standard recommends that the average passenger load factor for shared-ride taxi services not exceed 1.00 at any point during operations. The Shared-Ride Taxi service meets this 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 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 service areas or service periods. Figure 4.10 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 4.8.

As indicated in Figure 4.10, the Shared-Ride Taxi’s performance is within the range meeting the standard for two of the four performance measures. The passengers per capita measure is 1.23, which is well above the median of the peer group. 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. It appears that, compared to peer services, the Shared-Ride Taxi has lower numbers of shared trips, as evidenced by its relatively low passenger miles per revenue vehicle mile. In addition, the

**Figure 4.8**  
**Objective 1 and Associated Standards Applicable to**  
**the Evaluation of the Ozaukee County Shared-Ride Taxi**

OBJECTIVE 1		
<b>Serve the travel needs of residents traveling within Ozaukee County, County residents commuting to jobs in Milwaukee County, and County employers seeking workers.</b>		
Applicable Design and Operating Standards		
<p><b>3. Shared-Ride Taxi Service</b>            Should provide local transportation to the County’s residents, particularly those that can be considered transit-dependent, by connecting residential areas with each other, major activity centers, and areas of employment.</p>		
Applicable Performance Standards and Associated Performance Measures		
<p><b>1. Major Activity Centers</b>            Maximize the number of major activity centers and facilities for transit-dependent people served by transit. This is measured by the number of activity centers within one-quarter mile of a local bus or shuttle route, one-half mile of a commuter bus route, or within the service area of a shared-ride taxi service. Major activity centers include the following:<sup>a</sup></p> <ol style="list-style-type: none"> <li>a. Commercial areas</li> <li>b. Educational institutions</li> <li>c. Medical centers</li> <li>d. Employers</li> <li>e. Facilities serving transit-dependent populations</li> </ol>	<p><b>2. Population</b>            Maximize the population served by transit. Residents are considered served if they are within the service area of a shared-ride taxi service.</p>	<p><b>3. Employment</b>            Maximize the number of jobs served by transit. This is measured by the total employment at businesses located within the service area of a demand-response service.</p>

<sup>a</sup> 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

better performance of the Shared-Ride Taxi under the passengers per revenue vehicle hour measure relative to its performance under the passengers per revenue vehicle mile measure implies that the Shared-Ride Taxi provides more short, slow trips than many of its peer systems, perhaps reflecting the amount of time spent by the Taxi vehicles in the denser parts of the County.

**On-Time Travel Performance Standard**

The On-Time Performance Standard states that 90 percent of trips should occur 30 minutes before or after their scheduled passenger pick-up or drop-off times for Shared-Ride Taxi services. Data for the Shared-Ride Taxi service from May 2017 were used to develop Table 4.9, which shows that the service is currently meeting the standard for 91.1 percent of the trips analyzed. Therefore, the Shared-Ride Taxi service meets this performance standard.



**Figure 4.9**  
**Objective 2 and Associated Standards Applicable to**  
**the Evaluation of the Ozaukee County Shared-Ride Taxi**

**OBJECTIVE 2**

**Provide efficient, safe, reliable, convenient, and comfortable transit services in Ozaukee County.**

Applicable Design and Operating Standards																		
<p><b>3. Vehicle Age and Condition</b>                      Rehabilitate or replace vehicles once they reach the end of their normal service life. Federal Transit Administration guidelines (listed below) require a transit vehicle to reach a minimum service life before it is replaced.</p> <table border="1"> <thead> <tr> <th rowspan="2">Vehicle Type</th> <th>Length</th> <th colspan="2">Service Life</th> </tr> <tr> <th>(feet)</th> <th>Years</th> <th>Mileage</th> </tr> </thead> <tbody> <tr> <td>Light-Duty Bus</td> <td>20-30</td> <td>5</td> <td>150,000</td> </tr> <tr> <td>Cars and Vans</td> <td>--</td> <td>4</td> <td>100,000</td> </tr> </tbody> </table>		Vehicle Type	Length	Service Life		(feet)	Years	Mileage	Light-Duty Bus	20-30	5	150,000	Cars and Vans	--	4	100,000	<p><b>4. Service Frequency and Availability</b>                      Shared-ride taxi services should have a maximum advance reservation requirement of 24 hours, and seek to have less than 3 percent of same day service requests denied.</p>	
Vehicle Type	Length		Service Life															
	(feet)	Years	Mileage															
Light-Duty Bus	20-30	5	150,000															
Cars and Vans	--	4	100,000															
<p><b>5. Service Travel Speeds</b>                      Operate transit services such that average travel speeds are not less than 10 miles per hour for shared-ride taxi services.</p>		<p><b>6. Passenger Demand</b>                      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 shared-ride taxi services.</p>																

Applicable Performance Standards and Associated Performance Measures		
<p><b>1. Ridership and Service Effectiveness</b>                      Maximize ridership on and the effectiveness of transit services. This is 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.</p>	<p><b>2. On-Time Performance</b>                      Maximize adherence to scheduled rider pickup and drop off times. Regularly monitor performance and make adjustments to any local transit service with less than 90 percent of trips on time (defined as being between 15 minutes early and 15 minutes late for shared-ride taxi services).</p>	<p><b>3. Travel Time</b>                      Keep travel times on transit services reasonable in comparison to travel time by automobiles for similar trips. This standard is measured using the ratio of transit to automobile distance and the ratio of transit to automobile travel time.</p>

Source: SEWRPC

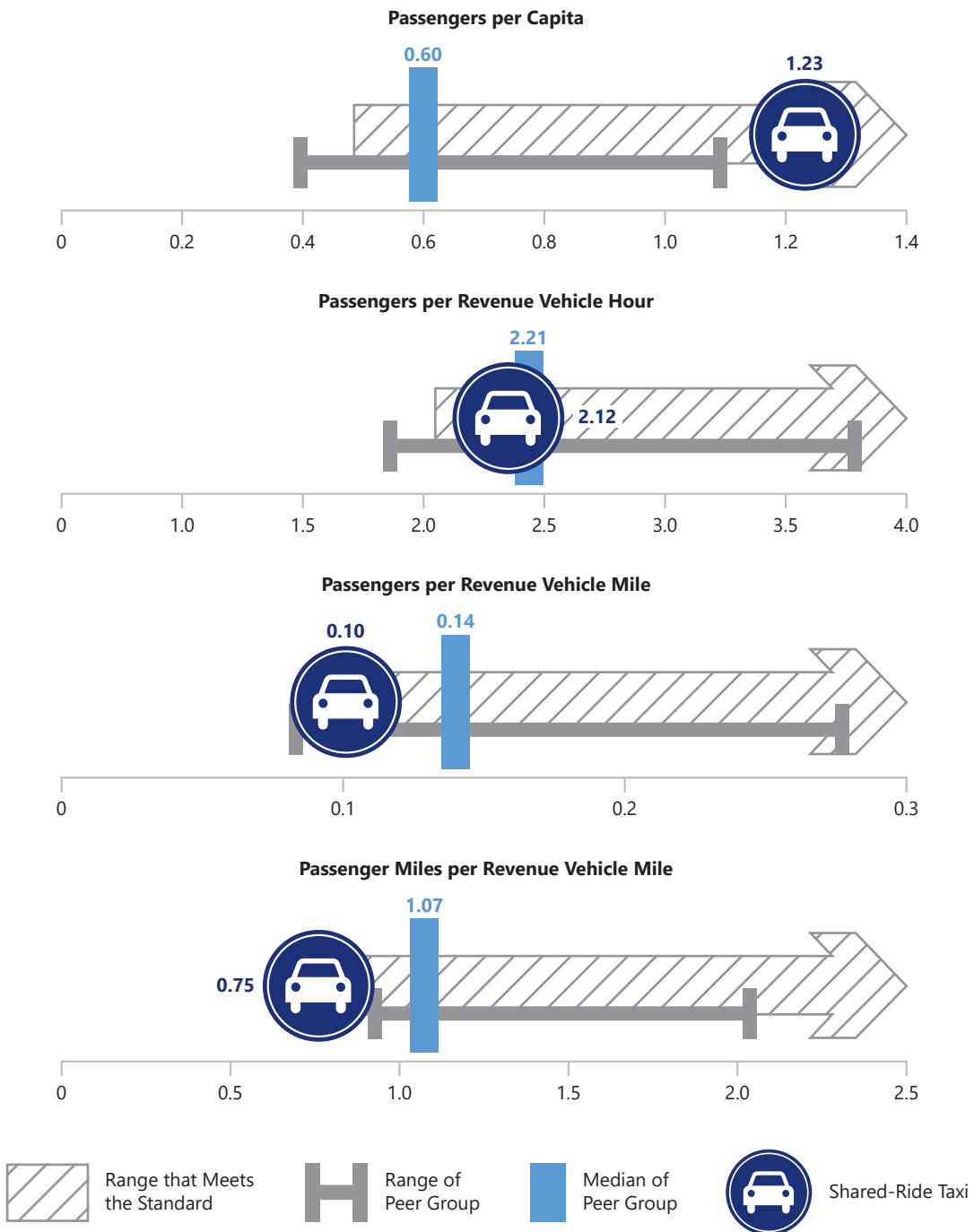
**Travel Time Performance Standard**

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 4.5 compares 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 on average. This result indicates an acceptable difference in travel time between private automobile travel and travel using the Shared-Ride Taxi, meeting this standard.

**Objective 3: Utilizing Public Resources Cost-Effectively**

Objective 3 recognizes that public funds are limited, and must be used efficiently. In order to determine if 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 4.11.

**Figure 4.10**  
**Ridership and Service Effectiveness Performance Standard: Comparison of**  
**Ozaukee County Shared-Ride Taxi to Peer Group for Associated Performance Measures**



Source: National Transit Database and SEWRPC

**Table 4.8  
Ozaukee County Shared-Ride Taxi and Peer Group Data for  
the Ridership and Service Effectiveness Performance Standard**

Peer System and Metropolitan Area	Performance Measures											
	Passengers per Capita			Passengers per Revenue Vehicle Hour			Passengers per Revenue Vehicle Mile			Passenger Miles per Revenue Vehicle Mile		
	2011	2015	Average Annual Change	2011	2015	Average Annual Change	2011	2015	Average Annual Change	2011	2015	Average Annual Change
Washington County Shared-Ride Taxi (Milwaukee)	0.74	0.70	-1.28%	1.79	1.70	-1.23%	0.08	0.08	-0.84%	0.96	0.90	-1.69%
Miami County Public Transit (Dayton)	0.42	0.38	-2.73%	2.00	2.02	0.31%	0.10	0.11	0.37%	0.89	0.90	0.61%
Greene County Area Transit Service (Dayton)	0.96	1.10	3.52%	3.73	3.56	-1.21%	0.19	0.19	-0.56%	2.08	2.05	-0.25%
Clermont Transportation Connection (Cincinnati)	0.47	0.41	-4.44%	1.55	1.52	-0.43%	0.09	0.09	2.70%	1.06	1.10	1.27%
Cumberland Area Transit System (Philadelphia)	0.62	0.49	-5.94%	2.86	2.41	-4.16%	0.18	0.17	-2.10%	1.30	1.05	-5.16%
Valley Transit District (New Haven, CT)	0.91	0.82	-2.64%	3.51	3.79	2.11%	0.27	0.28	0.71%	1.67	1.67	0.32%
<i>Ozaukee County Shared-Ride Taxi (Milwaukee)</i>	<i>0.91</i>	<i>1.23</i>	<i>8.10%</i>	<i>1.79</i>	<i>2.12</i>	<i>4.40%</i>	<i>0.10</i>	<i>0.10</i>	<i>1.75%</i>	<i>0.67</i>	<i>0.75</i>	<i>2.79%</i>

Source: National Transit Database and SEWRPC

### **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 zone-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 percent increase between 2011 and 2015 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 percent increases in the five performance measures should exceed the median percentage increases experienced by the peer group. Figure 4.12 displays a comparison of the annual percent change for each metric for 2011 through 2015, showing 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 4.9 provides the detailed data used to develop Figure 4.12.

The Shared-Ride Taxi meets the standard under all five performance measures that were examined. From 2011 to 2015, the operating expenses and operating assistance for the Shared-Ride Taxi increased slower than the median of the peer group, and for three performance measures, decreased faster than any of the systems in the peer group. For the four measures that study operating expenses per unit of service, the actual unit costs (shown in Table 4.9) of the Shared-Ride Taxi service were lower than all of the peer systems, leading to an extremely successful result for this standard. For the fifth measure, operating assistance per passenger, the Shared-Ride Taxi's unit costs are lower than all but one of the peer systems, and decreased significantly from 2011 to 2015, largely due to the implementation of agency fares and the increased number of shorter, more cost effective trips following the discontinuation of the City of Port Washington's taxi service.

### **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

**Table 4.9**  
**Ozaukee County Shared-Ride Taxi and Peer Group Data for**  
**the Operating Expenses Performance Standard**

Peer System and Metropolitan Area	Performance Measures														
	Operating Expenses per Revenue Vehicle Mile			Operating Expenses per Revenue Vehicle Hour			Operating Expenses per Total Vehicle Mile			Operating Expenses per Total Vehicle Hour			Operating Assistance per Passenger		
	2011	2015	Average Annual Change	2011	2015	Average Annual Change	2011	2015	Average Annual Change	2011	2015	Average Annual Change	2011	2015	Average Annual Change
Washington County Shared-Ride Taxi (Milwaukee)	\$1.83	\$1.91	1.21%	\$38.49	\$39.70	0.81%	\$1.59	\$1.68	1.44%	\$34.13	\$35.04	0.68%	\$18.16	\$19.09	1.31%
Miami County Public Transit (Dayton)	\$2.38	\$2.88	4.93%	\$43.91	\$52.88	4.99%	\$2.18	\$2.36	2.09%	\$36.66	\$41.06	3.20%	\$15.58	\$19.99	6.61%
Greene County Area Transit Service (Dayton)	\$3.30	\$3.37	0.52%	\$64.52	\$64.19	-0.12%	\$2.64	\$2.67	0.27%	\$51.59	\$51.39	-0.09%	\$5.58	\$6.02	2.48%
Clermont Transportation Connection (Cincinnati)	\$2.05	\$2.42	5.76%	\$36.62	\$39.33	2.67%	\$1.68	\$1.95	5.34%	\$30.18	\$32.60	2.85%	\$23.00	\$25.24	3.19%
Cumberland Area Transit System (Philadelphia)	\$5.01	\$5.34	1.69%	\$77.66	\$75.89	-0.43%	\$4.31	\$4.52	1.29%	\$69.24	\$66.71	-0.81%	\$27.20	\$31.54	3.92%
Valley Transit District (New Haven, CT)	\$4.23	\$5.43	6.66%	\$55.03	\$74.62	8.24%	\$3.80	\$4.89	6.73%	\$49.60	\$71.32	9.99%	\$14.96	\$18.68	5.77%
<i>Ozaukee County Shared-Ride Taxi (Milwaukee)</i>	<i>\$1.81</i>	<i>\$1.67</i>	<i>-1.90%</i>	<i>\$34.07</i>	<i>\$34.69</i>	<i>0.65%</i>	<i>\$1.63</i>	<i>\$1.54</i>	<i>-1.25%</i>	<i>\$30.96</i>	<i>\$32.29</i>	<i>1.27%</i>	<i>\$16.18</i>	<i>\$11.76</i>	<i>-7.62%</i>

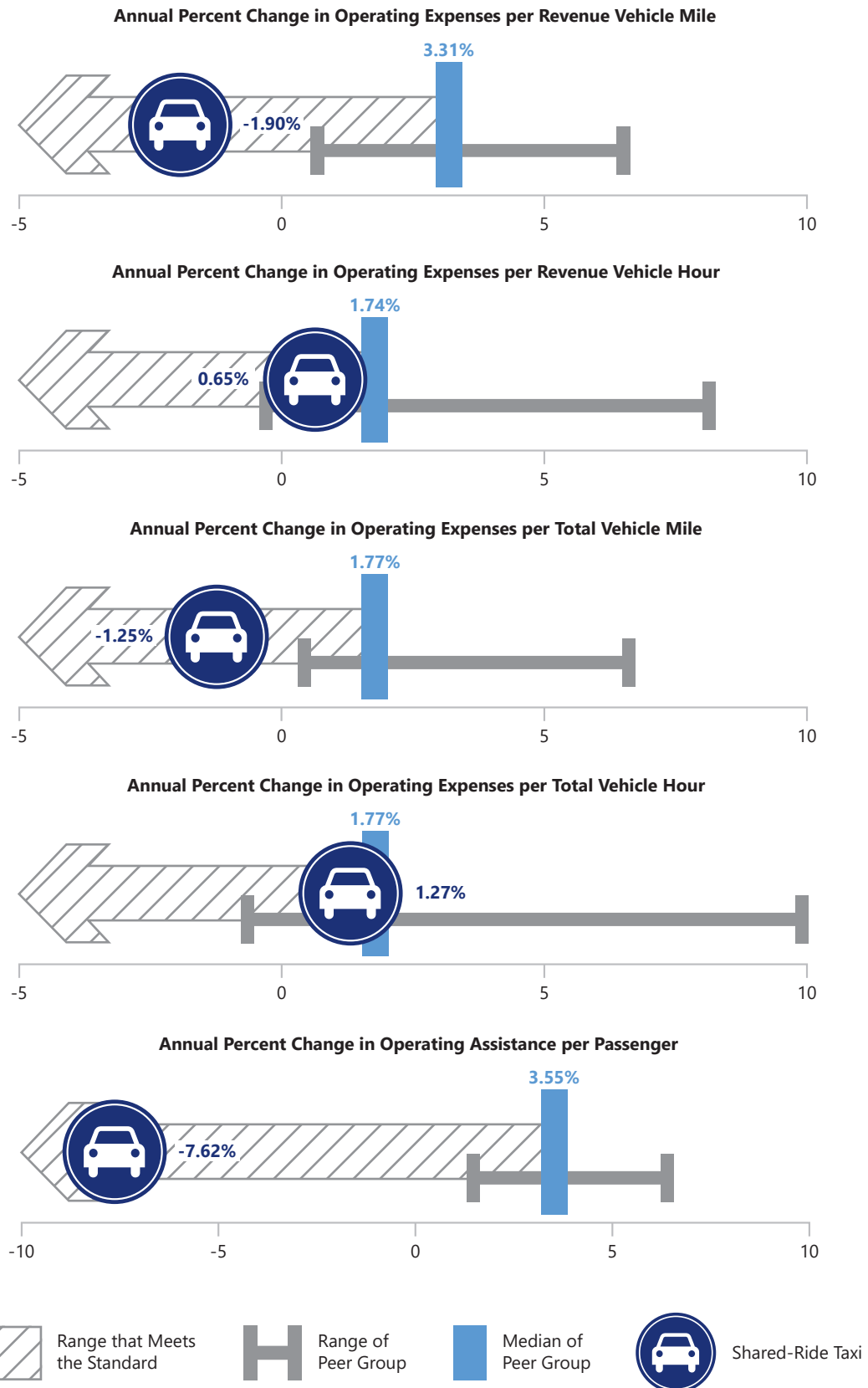
Source: National Transit Database and SEWRPC

**Figure 4.11**  
**Objective 3 and Associated Standards Applicable to**  
**the Evaluation of the Ozaukee County Shared-Ride Taxi**

OBJECTIVE 3	
<p><b>Meet all other objectives at the lowest possible cost. Given limited public funds, this objective seeks to permit elected officials the flexibility to balance the standards associated with Objectives 1 and 2 with the level of public funding required to fully meet those standards.</b></p>	
Design and Operating Standards	
<p><b>2. Fare Structure</b>            Charge premium fares for premium services, and discounted fares for priority population groups and frequent riders.</p>	
Performance Standards and Associated Performance Measures	
<p><b>1. Operating Expenses</b>            Minimize the operating expenses per total and revenue vehicle mile, the operating expenses per total and revenue vehicle hour, and the operating assistance per passenger. Annual increases in such costs should not exceed the median percentage increases experienced by comparable transit systems.</p>	<p><b>3. Cost Effectiveness</b>            Review transit services with substandard cost effectiveness for potential changes to their routes, runs, service areas, and service periods. Cost effectiveness is considered substandard when the operating expenses per passenger, or operating expenses 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.</p>

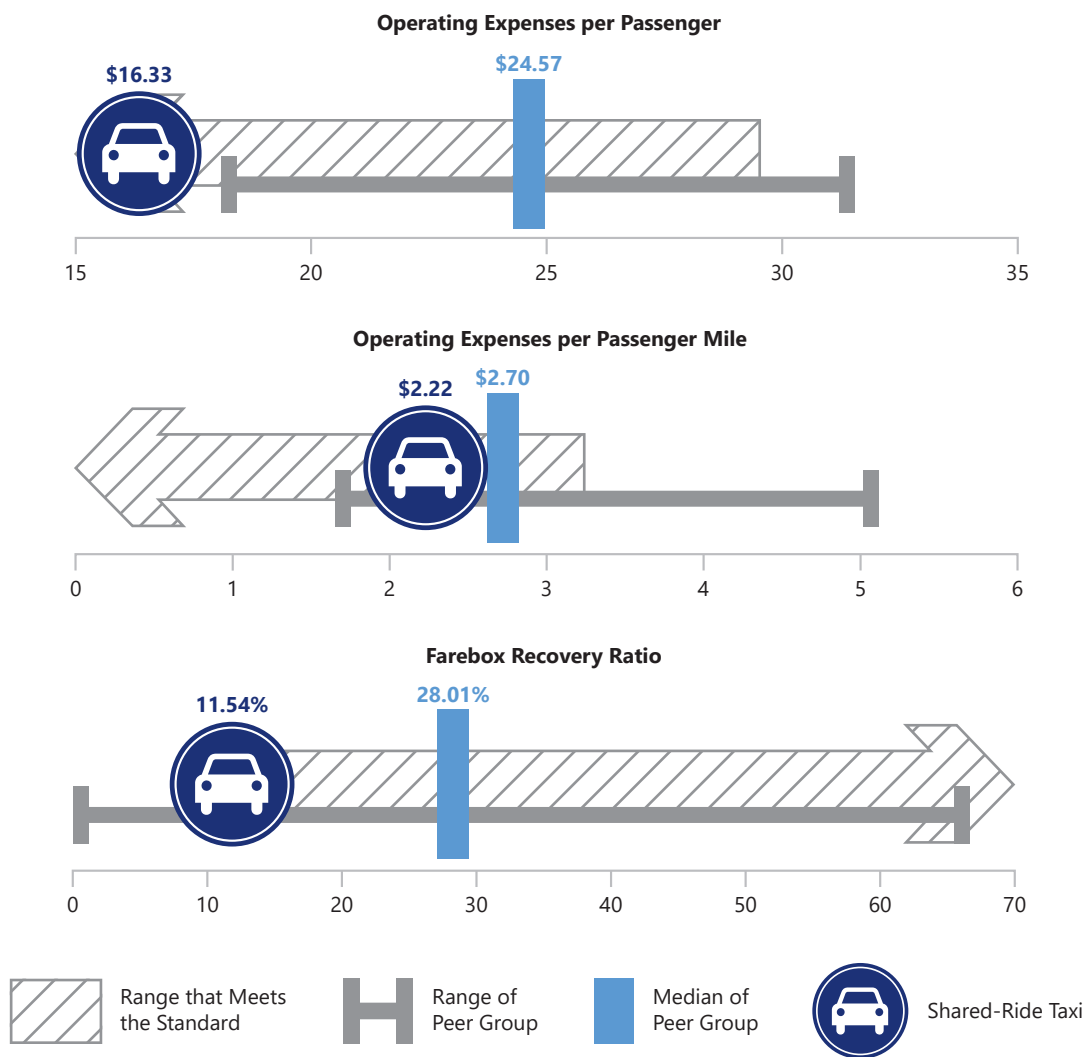
Source: SEWRPC

**Figure 4.12**  
**Operating Expenses Performance Standard: Comparison of Ozaukee County**  
**Shared-Ride Taxi to Peer Group for Associated Performance Measures**



Source: National Transit Database and SEWRPC

**Figure 4.13**  
**Cost Effectiveness Performance Standard: Comparison of Ozaukee County Shared-Ride Taxi to Peer Group for Associated Performance Measures**



Source: National Transit Database and SEWRPC

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 4.13 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 4.10 provides the detailed data used to develop Figure 4.13.

The Shared-Ride Taxi fulfills this standard under all three performance measures. At \$16.33, the operating expenses per passenger for the Shared-Ride Taxi are lower than any system in its peer group. Additionally, operating expenses per passenger mile was lower than the median of the peer group, at \$2.22. Notably, all of the systems in the peer group saw increases in these measures of expenses between 2011 and 2015, while the Shared-Ride Taxi experienced a decrease.

The Shared-Ride Taxi’s farebox recovery ratio is higher than all but one peer system and has grown more quickly than any other peer system during this time period. As mentioned previously, this is likely related to the implementation of agency fares during this period, and an increase in shorter, more cost-efficient trips following the discontinuation of the City of Port Washington’s taxi service.

**Table 4.10**  
**Ozaukee County Shared-Ride Taxi and Peer Group Data for**  
**the Cost Effectiveness Performance Standard**

Peer System and Metropolitan Area	Performance Measures								
	Operating Expenses per Passenger			Operating Expenses per Passenger Mile			Farebox Recovery Ratio		
	2011	2015	Average Annual Change	2011	2015	Average Annual Change	2011	2015	Average Annual Change
Washington County Shared-Ride Taxi (Milwaukee)	\$21.48	\$23.29	2.07%	\$1.89	\$2.13	3.10%	15.49%	18.03%	4.01%
Miami County Public Transit (Dayton)	\$21.95	\$26.23	4.59%	\$2.68	\$3.18	4.55%	29.01%	23.81%	-4.18%
Greene County Area Transit Service (Dayton)	\$17.26	\$18.05	1.15%	\$1.59	\$1.64	0.83%	67.67%	66.68%	-0.18%
Clermont Transportation Connection (Cincinnati)	\$23.65	\$25.85	3.09%	\$1.94	\$2.21	4.52%	2.77%	2.36%	5.68%
Cumberland Area Transit System (Philadelphia)	\$27.20	\$31.54	3.92%	\$3.86	\$5.09	7.45%	0.00%	0.00%	0.00%
Valley Transit District (New Haven, CT)	\$15.69	\$19.67	5.87%	\$2.53	\$3.24	6.55%	4.64%	5.04%	2.37%
<i>Ozaukee County Shared-Ride Taxi (Milwaukee)</i>	<i>\$19.01</i>	<i>\$16.33</i>	<i>-3.66%</i>	<i>\$2.70</i>	<i>\$2.22</i>	<i>-4.47%</i>	<i>14.92%</i>	<i>28.01%</i>	<i>19.42%</i>

Source: National Transit Database and SEWRPC

## 4.5 CONCLUSION

This chapter’s evaluation of the Express and Shared-Ride Taxi services provided by Ozaukee County Transit Services indicates potential areas for service changes to help the system better fulfill the objectives and standards laid out in Chapter 3 of this report. Improvements to park-ride lots, more competitive travel times for the Express, and other possible service improvements could increase the transit system’s performance under various standards. Chapter 5 of this report presents potential service improvement alternatives, and analyzes their costs and influence on the performance of the transit system.

