

Preliminary Draft

SEWRPC Community Assistance Planning Report No. 286

RACINE COUNTY PUBLIC TRANSIT PLAN: 2010-2014

**Chapter IV**

**PUBLIC TRANSIT SERVICE  
OBJECTIVES AND STANDARDS**

**INTRODUCTION**

One of the critical steps in the preparation of a transit system development plan is the articulation of the objectives to be served by public transit, together with the identification of supporting standards that can be used to measure the degree of attainment of the objectives. The objectives and standards provide the basis for assessing the performance of the existing transit system, identifying unmet transit service needs, designing and evaluating alternative transit system plans, and recommending service changes and improvements. The objectives and standards formulated under this study are intended to represent the level of transit performance desired by Racine County.

This chapter presents the public transit service objectives, principles, and standards that were formulated and applied under the County's transit system development plan. The objectives and supporting standards set forth in this chapter may also be used by the County to guide in the design, operation, and review of its transit services after completion of this planning effort.

**OBJECTIVES**

The transit service objectives, principles, and standards set forth in this chapter are intended to reflect the underlying values of the elected officials and residents of Racine County. One of the important functions of the Racine County Public Transit Planning Work Group was to articulate transit service objectives, principles, and supporting standards for the planning effort. By drawing upon the collective knowledge, experience, views, and values of the members of the Work Group, it is believed that a meaningful expression of the performance desired

for the Racine County Transit System was obtained, and a relevant set of transit service objectives and supporting principles and standards was defined.

The specific objectives adopted envision a transit system that will effectively serve transit travel by Racine County residents both within the County and between the County and other adjacent communities in the Racine urbanized area. More specifically, the following objectives were adopted by the Work Group:

1. The public transit system should effectively serve the existing land use pattern and support the implementation of planned land uses, meeting the demand and need for transit services, and particularly the needs of the transit-dependent population;
2. The public transit system should promote effective utilization of transit services and operate service that is safe and reliable and provides for user convenience and comfort;
3. The public transit system should be economical and efficient, meeting all other objectives at the lowest possible cost.

## **PRINCIPLES AND STANDARDS**

Complementing each of the foregoing transit service objectives are planning principles and a set of service standards. The planning principle supports each objective by asserting its validity. Each set of standards is directly related to the transit service objective and serves several purposes. The service design and operating standards are intended to primarily provide guidelines for the design of new and improved services, the operation of the transit system, and the acquisition of capital equipment and construction of facilities. The service performance standards primarily facilitate the evaluation of the performance of the existing transit system and of alternative service improvements. For each performance standard, one or more criteria are identified which can be used to quantify the performance of the transit service for measurement against the standard. For the Racine County transit planning effort, separate planning principles and service standards were developed for public fixed route transit services like those provided by the City of Racine Belle Urban System (BUS), and public demand-responsive transit services including route- or point-deviation services and shared-ride taxicab services. The principles and standards are shown in Tables 4-1 and 4-2, respectively.

The performance evaluation of the existing transit services undertaken for the current study included assessments of transit performance on a both a broad systemwide or countywide basis and also on an individual route basis for the Racine BUS. The performance standards identified in Tables 4-1 and 4-2 represent the specific standards and performance measures that were applied in conducting these evaluations. The performance standards in the tables

Table 4-1

**PUBLIC TRANSIT SERVICE OBJECTIVES, PRINCIPLES, STANDARDS,  
 AND PERFORMANCE MEASURES FOR FIXED-ROUTE TRANSIT SERVICES  
 IN RACINE COUNTY INCLUDING THE CITY OF RACINE BELLE URBAN SYSTEM**

Objective	Fixed-route Transit Principle	Fixed-route Transit Standard	Fixed-route Transit Performance Measure
<p>1. Public transit service should effectively serve the existing land use pattern, meeting the demand and need for transit services, particularly, the transit travel needs of the transit-dependent population and of employers for workers</p>	<p>Fixed-route transit services can provide an important means of mobility for all segments of the population in urban areas and particularly for persons residing in low- to middle-income households, students, seniors, and disabled individuals. Fixed-route public transit services generally are best suited for operating within and between large and medium-size urban areas including the City of Racine and its immediate environs and other urban areas which are developed to medium or high densities. These are the areas within the County that should receive the highest levels of fixed-route service. Fixed-route services can also be important to businesses and the economy in these areas by providing transit access to job opportunities.</p>	<p><u>Design and Operating Standards</u></p> <p>1. Fixed-route transit service should be provided to serve the travel and mobility needs of the County population generated by contiguous areas of high and medium density urban development. The highest levels of service availability, frequency, coverage, and connectivity to major destinations should be provided in such areas</p>	<p>1. --</p>
		<p>3. Fixed-route transit services should be provided that addresses the varied travel and mobility needs of the County population. The service types that should be considered include:</p> <ul style="list-style-type: none"> <li>a. Rapid and express service designed to reduce travel times for the longest trips made between component parts of the transit service area and to connect areas of urban development to the largest major activity centers within the County or in adjacent counties</li> <li>b. Local service designed to provide transit within and between residential areas, to link residential areas with nearby major activity centers, and to provide for transfer connections with rapid, express, local, shuttle, or demand-responsive transit services</li> <li>c. Local shuttle services serving major activity centers designed to connect with rapid, express, and other local services</li> <li>d. Paratransit service designed to meet the needs of disabled individuals who are unable to use fixed-route bus service</li> </ul>	<p>2. --</p>
		<p>4. Fixed-route transit services should serve and connect the major activity centers within the transit service area including:</p> <ul style="list-style-type: none"> <li>a. Shopping centers</li> <li>b. Educational institutions</li> <li>c. Medical Centers</li> <li>d. Major employers (those with 100 or more employees)</li> <li>e. Governmental and public institutional centers</li> <li>f. Facilities serving elderly individuals</li> <li>g. Facilities serving disabled individuals</li> <li>h. Facilities serving low income individuals</li> </ul>	<p>1. Number of major activity centers within one-quarter mile of a local bus route or one-half mile of a rapid or express bus stop.</p>

Table 4-1 (continued)

Objective	Fixed-route Transit Principle	Fixed-route Transit Standard	Fixed-route Transit Performance Measure												
1. (continued)		<p><u>Performance Standards</u></p> <p>1. The population served should be maximized, particularly those who are transit-dependent. The population should be considered as served when it resides within the following distances of fixed-route transit services:</p> <table border="0" data-bbox="743 415 1031 556"> <tr> <td></td> <td colspan="2" style="text-align: center;"><u>Maximum Distance From a Bus Stop</u></td> </tr> <tr> <td style="text-align: left;"><u>Service Type</u></td> <td style="text-align: center;"><u>Walking</u></td> <td style="text-align: center;"><u>Driving</u></td> </tr> <tr> <td>Rapid/Express</td> <td style="text-align: center;">1/2 Mile</td> <td style="text-align: center;">3 Miles</td> </tr> <tr> <td>Local/Shuttle</td> <td style="text-align: center;">1/4 Mile</td> <td style="text-align: center;">--</td> </tr> </table> <p>-----</p> <p>2. The major activity centers and jobs served should be maximized. Major activity centers and jobs should be considered as served when located within the walking distances identified in Performance Standard 1 of this Objective</p> <p>-----</p> <p>3. The transit supportive land area served should be maximized. To be considered transit supportive, an area should have a density of at least 4 dwelling units per net residential acre, or at least 4 jobs per gross acre</p>		<u>Maximum Distance From a Bus Stop</u>		<u>Service Type</u>	<u>Walking</u>	<u>Driving</u>	Rapid/Express	1/2 Mile	3 Miles	Local/Shuttle	1/4 Mile	--	<p>1. The number of people residing within the appropriate walking or driving distance of a bus stop and the percent of the total population represented</p> <p>-----</p> <p>2. The number of major activity centers and jobs located within appropriate walking distance of a bus stop and the percent of the total activity centers and jobs represented</p> <p>-----</p> <p>3. The proportion of the transit supportive land area located within one-quarter mile of a local bus route</p>
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<u>Service Type</u>	<u>Walking</u>	<u>Driving</u>													
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Local/Shuttle	1/4 Mile	--													
2. The public transit system should promote effective utilization of transit services and operate service that is safe and reliable and provides for user convenience and comfort	The benefits of fixed-route transit services are, to a large extent, greatly related to the degree to which they are used as measured by transit ridership. Ridership is a function of the degree to which people have access to services that are reliable and provide for quick, convenient, comfortable, and safe travel. Riders view transit services with these attributes as an effective and attractive alternative to the private automobile	<p><u>Design and Operating Standards</u></p> <p>1. Bus routes should have direct alignments with a limited number of turns, and should be arranged to minimize duplication of service and unnecessary transfers which would otherwise discourage transit use.</p> <p>-----</p> <p>2. Rapid and express bus routes should be extended as needed to perform a collection-distribution function at the ends of the route</p> <p>-----</p> <p>3. Local bus routes should be spaced one-half mile apart in high-density and medium-density areas</p> <p>-----</p> <p>4. Bus stops should be clearly marked by easily recognized signs and located so as to minimize the walking distance to and from residential areas and major activity centers, and to facilitate connections with other transit services where appropriate. The suggested locations and spacing for stops are as follows:</p> <table border="0" data-bbox="743 1543 1161 1791"> <tr> <td style="text-align: left;"><u>Service Type</u></td> <td style="text-align: left;"><u>Stop Locations and Spacing</u></td> </tr> <tr> <td>Rapid</td> <td>At terminal areas and one-mile or more on line-haul sections</td> </tr> <tr> <td>Express</td> <td>At terminal areas, intersecting transit routes, signalized intersections with arterial streets, and major activity centers</td> </tr> <tr> <td>Local/Shuttle</td> <td>Two to three blocks apart</td> </tr> </table>	<u>Service Type</u>	<u>Stop Locations and Spacing</u>	Rapid	At terminal areas and one-mile or more on line-haul sections	Express	At terminal areas, intersecting transit routes, signalized intersections with arterial streets, and major activity centers	Local/Shuttle	Two to three blocks apart	<p>1. --</p> <p>-----</p> <p>2. --</p> <p>-----</p> <p>3. --</p> <p>-----</p> <p>4. --</p>				
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*Table 4-1 (continued)*

Objective	Fixed-route Transit Principle	Fixed-route Transit Standard	Fixed-route Transit Performance Measure																																																																																																											
		5. Bus service should provide adequate service and vehicle capacity to meet existing and projected demand. The average maximum load factor, measured as the ratio of passengers to bus seats at that point on a route where passenger loads are highest, should not exceed the following during any one-hour period:	5. Average maximum load factor by route for the weekday peak hour of service																																																																																																											
2. (continued)		<table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2"></td> <td align="center" colspan="2"><u>Average Maximum Load Factor</u></td> </tr> <tr> <td></td> <td align="center"><u>Peak</u></td> <td align="center" colspan="2"><u>All Other</u></td> </tr> <tr> <td><u>Service Type</u></td> <td align="center"><u>Periods</u></td> <td align="center"><u>Times</u></td> <td></td> </tr> <tr> <td>Rapid</td> <td align="center">1.00</td> <td align="center">1.00</td> <td></td> </tr> <tr> <td>Express/Local/Shuttle</td> <td align="center">1.25</td> <td align="center">1.00</td> <td></td> </tr> </table> <p>6. Operating headways should be capable of accommodating passenger demand at the specified load standards. Headways should not exceed the following maximum headways if service is offered during a period:</p> <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2"></td> <td align="center" colspan="3"><u>Maximum Headway (minutes)</u></td> </tr> <tr> <td colspan="2"></td> <td align="center" colspan="2"><u>Weekday</u></td> <td align="center"><u>Weekend</u></td> </tr> <tr> <td></td> <td align="center"><u>Peak</u></td> <td align="center"><u>Off-Peak</u></td> <td align="center" colspan="2"><u>Periods/</u></td> </tr> <tr> <td><u>Service Type</u></td> <td align="center"><u>Periods</u></td> <td align="center"><u>Periods</u></td> <td align="center" colspan="2"><u>Holidays</u></td> </tr> <tr> <td>Rapid</td> <td align="center">30</td> <td align="center">60</td> <td align="center" colspan="2">60</td> </tr> <tr> <td>Express</td> <td align="center">30</td> <td align="center">60</td> <td align="center" colspan="2">60</td> </tr> <tr> <td>Local/Shuttle</td> <td align="center">30</td> <td align="center">60</td> <td align="center" colspan="2">60</td> </tr> </table> <p>7. Fixed-route transit services should be designed and operated so as to achieve the following minimum overall travel speeds by area based on average weekday conditions:</p> <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2"></td> <td align="center" colspan="2"><u>Travel Speed (miles per hour)</u></td> </tr> <tr> <td><u>Service Type</u></td> <td align="center"><u>CBD</u></td> <td align="center" colspan="2"><u>Other Areas</u></td> </tr> <tr> <td>Rapid</td> <td align="center">5-10</td> <td align="center" colspan="2">20-35</td> </tr> <tr> <td>Express</td> <td align="center">5-10</td> <td align="center" colspan="2">18-25</td> </tr> <tr> <td>Local/Shuttle</td> <td align="center">5-10</td> <td align="center" colspan="2">15-20</td> </tr> </table> <p>8. Consideration should be given to rehabilitating or replacing the vehicles used to provide fixed-route transit services at the end of its normal service life as defined below:</p> <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2"></td> <td align="center" colspan="2"><u>Normal</u></td> </tr> <tr> <td colspan="2"></td> <td align="center"><u>Length</u></td> <td align="center"><u>Service Life</u></td> </tr> <tr> <td><u>Vehicle Type</u></td> <td align="center"><u>(feet)</u></td> <td align="center"><u>Years</u></td> <td align="center"><u>Mileage</u></td> </tr> <tr> <td>Heavy-duty bus</td> <td align="center">35 or more</td> <td align="center">12</td> <td align="center">500,000</td> </tr> <tr> <td>Heavy-duty bus</td> <td align="center">25-30</td> <td align="center">10</td> <td align="center">350,000</td> </tr> <tr> <td>Medium-duty bus</td> <td align="center">25-30</td> <td align="center">7</td> <td align="center">200,000</td> </tr> <tr> <td>Light-duty bus</td> <td align="center">25-30</td> <td align="center">5</td> <td align="center">150,000</td> </tr> <tr> <td>Cars and Vans</td> <td align="center">-</td> <td align="center">4</td> <td align="center">100,000</td> </tr> </table> <p>9. Consideration should be given to providing passenger shelters of an attractive design at all fixed-route stops where:</p> <ol style="list-style-type: none"> <li>a. The location serves major facilities designed specifically for the use of, or is frequently used by, elderly or disabled individuals</li> <li>b. The location has a boarding passenger volume of 50 or more passengers per day</li> <li>c. The location is a major passenger transfer point between bus routes or with other transit services</li> <li>d. The location is in a wide open space where waiting patrons are unprotected from harsh weather conditions</li> </ol>			<u>Average Maximum Load Factor</u>			<u>Peak</u>	<u>All Other</u>		<u>Service Type</u>	<u>Periods</u>	<u>Times</u>		Rapid	1.00	1.00		Express/Local/Shuttle	1.25	1.00				<u>Maximum Headway (minutes)</u>					<u>Weekday</u>		<u>Weekend</u>		<u>Peak</u>	<u>Off-Peak</u>	<u>Periods/</u>		<u>Service Type</u>	<u>Periods</u>	<u>Periods</u>	<u>Holidays</u>		Rapid	30	60	60		Express	30	60	60		Local/Shuttle	30	60	60				<u>Travel Speed (miles per hour)</u>		<u>Service Type</u>	<u>CBD</u>	<u>Other Areas</u>		Rapid	5-10	20-35		Express	5-10	18-25		Local/Shuttle	5-10	15-20				<u>Normal</u>				<u>Length</u>	<u>Service Life</u>	<u>Vehicle Type</u>	<u>(feet)</u>	<u>Years</u>	<u>Mileage</u>	Heavy-duty bus	35 or more	12	500,000	Heavy-duty bus	25-30	10	350,000	Medium-duty bus	25-30	7	200,000	Light-duty bus	25-30	5	150,000	Cars and Vans	-	4	100,000	<p>7. --</p> <p>8. --</p> <p>9. --</p> <p>10. --</p>
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Table 4-1 (continued)

Objective	Fixed-route Transit Principle	Fixed-route Transit Standard	Fixed-route Transit Performance Measure												
		<p><u>Service Performance Standards</u></p> <p>1. Ridership on fixed-route bus services and the overall effectiveness of such services should be maximized.</p>	<p>1a. Total passengers</p> <p>1b. Total passengers per capita</p> <p>1c. Revenue vehicle hours per capita</p> <p>1d. Total passengers per revenue vehicle hour</p> <p>1e. Total passengers per revenue vehicle mile</p>												
2. (continued)		<p>2. Bus routes with ridership and service effectiveness levels which are less than 80 percent of the average for all routes of the transit system should be reviewed for potential service changes unless special circumstances warrant otherwise<sup>a</sup>.</p> <hr/> <p>3. The service provided over bus routes should closely adhere to published timetables and be "on time." Performance should be regularly monitored and routes with marginal or unsatisfactory on-time performance levels as defined below should be reviewed for corrective actions:</p> <table border="0" data-bbox="743 911 1170 1115"> <tr> <td></td> <td style="text-align: center;">Percent of Scheduled Bus Trips On-Time (Between Zero Minutes Early and Three Minutes Late)</td> </tr> <tr> <td><u>Category</u></td> <td></td> </tr> <tr> <td>Good</td> <td>90.0 percent or more</td> </tr> <tr> <td>Satisfactory</td> <td>85.0- 89.9 percent</td> </tr> <tr> <td>Marginal</td> <td>80.0- 84.9 percent</td> </tr> <tr> <td>Unsatisfactory</td> <td>Less than 80.0 percent</td> </tr> </table> <hr/> <p>4. Travel times for bus riders should be kept reasonable in comparison to travel times for similar trips made by automobile between component parts of the service area</p>		Percent of Scheduled Bus Trips On-Time (Between Zero Minutes Early and Three Minutes Late)	<u>Category</u>		Good	90.0 percent or more	Satisfactory	85.0- 89.9 percent	Marginal	80.0- 84.9 percent	Unsatisfactory	Less than 80.0 percent	<p>2a. Total passengers</p> <p>2b. Total passengers per route mile</p> <p>2c. Total passengers per revenue vehicle hour</p> <p>2d. Total passengers per revenue vehicle-mile</p> <p>2e. Percent of weekday passengers riding on Saturday</p> <hr/> <p>3. Percent of scheduled bus trips on time</p> <hr/> <p>4a. Ratio of bus transit to highway distance</p> <p>4b. Ratio of bus transit to highway travel time</p>
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3. The public transit system should be economical and efficient, meeting all other objectives at the lowest possible cost.	The total financial resources available to be expended on fixed-route transit services by the County and the municipalities within its boundaries are limited. Therefore, total bus system costs should be minimized for the desired level of transit service, and transit revenues should be maximized to maintain the financial stability of the system. The attainment of this objective may at times conflict with, and require the modification or elimination of, other standards	<p><u>Design and Operating Standards</u></p> <p>1. The total operating and capital investment for fixed-route bus services should be minimized and reflect efficient utilization of resources</p> <hr/> <p>2. The fare policy for fixed-route bus services should provide for premium fares for premium services, as well as special or discounted fares for priority population groups, including transit-dependent individuals and frequent riders</p> <hr/> <p>3. Periodic increases in passenger fares should be considered to maintain the financial stability of fixed-route bus services when:</p> <p>a. The farebox recovery rate for the transit system goes below levels determined to be acceptable by local officials</p> <p>b. Operating expenses for the bus system have increased by 10 to 15 percent since fares were last raised</p> <p>c. Projected levels of Federal and State operating assistance funds would require an increase in projected local operating assistance levels above that determined to be acceptable by local officials</p>	<p>1. --</p> <hr/> <p>2. --</p> <hr/> <p>3. --</p>												

Table 4-1 (continued)

Objective	Fixed-route Transit Principle	Fixed-route Transit Standard	Fixed-route Transit Performance Measure
		<p><u>Service Performance Standards</u></p> <p>1. The operating expense per unit of bus service, the operating expense per passenger, and the total operating assistance per passenger should be minimized for the bus system as a whole. Annual increases in such costs should not exceed the average percentage increase experienced by comparable urban bus systems</p>	<p>1a. Operating expense per total vehicle mile</p> <p>1b. Operating expense per revenue vehicle hour</p> <p>1c. Operating expense per passenger</p> <p>1d. Total operating assistance per passenger</p>
2. (continued)		<p>2. Operating revenues generated from passenger fares and sources other than public operating assistance should be maximized.</p> <hr style="border-top: 1px dashed black;"/> <p>3. Bus routes with financial performance levels which are less than 80 percent of the average for all routes of the bus system should be reviewed for service changes, unless special circumstances warrant otherwise.<sup>a</sup></p>	<p>2. Percent of operating expenses recovered through passenger and other operating revenues, excluding public operating assistance</p> <hr style="border-top: 1px dashed black;"/> <p>3a. Operating expense per boarding passenger</p> <p>3b. Total operating assistance per boarding passenger</p> <p>3c. Percent of operating expenses recovered through passenger and other operating revenues, excluding public operating assistance</p>

<sup>a</sup> A reasonable period of time should be allowed for ridership to develop and stabilize before evaluating the performance of new fixed-route bus services to determine if the service is to be continued, modified, or eliminated. Performance goals should be for new bus services to achieve 30 percent of average performance levels for existing routes after six months of operation; 60 percent of average performance levels for existing routes after one year of operation; and 100 percent of average performance levels for existing routes after two years of operation.

Source: SEWRPC.

Table 4-2

**PUBLIC TRANSIT SERVICE OBJECTIVES, PRINCIPLES, STANDARDS, AND PERFORMANCE MEASURES FOR DEMAND-RESPONSIVE TRANSIT SERVICES IN RACINE COUNTY**

Objective	Demand-Responsive Transit Principle	Demand-Responsive Transit Standard	Demand-Responsive Transit Performance Measure
<p>1. Public transit service should effectively serve the existing land use pattern, meeting the demand and need for transit services, particularly, the transit travel needs of the transit-dependent population and of employers for workers</p>	<p>Demand-responsive transit services can provide an important means of mobility for all segments of the population in both urban and rural areas and particularly for persons residing in low- to middle-income households, students, seniors, and for disabled individuals who have difficulty getting to and from a bus stop. Demand-responsive public transit services are more cost-efficient than fixed-route transit services when serving areas with low-density urban development, small urban areas, and rural areas. Demand-responsive transit services can also be important to businesses and the economy in these areas by providing transit access to job opportunities</p>	<p><u>Design and Operating Standards</u></p> <p>1. Demand-responsive transit service should be available to provide local transportation to the County's resident population, particularly the portion that is transit-dependent and to connect residential areas with each other and with major activity centers</p>	<p>1. --</p>
		<p>2. Different types of demand-responsive transit service should be provided to address the varied travel and mobility needs of the County population. The service types that should be considered include:</p> <p>a. Flexibly routed transit services designed to serve both the general public and disabled persons in areas where conventional fixed-route bus service would not be cost-effective</p> <p>b. Shared-ride taxicab services designed to serve both the general public and disabled persons in areas where conventional fixed-route bus service would not be cost-effective</p> <p>c. Employment transportation services designed to connect unemployed and underemployed individuals with employers and job training centers or to provide childcare transportation service</p> <p>d. Community service routes designed to link residential locations of transit dependant individuals with major activity centers and provide group transportation to nutrition sites, adult daycare centers, medical or rehabilitation centers, and education or training facilities</p> <p>e. Volunteer driver programs designed to serve individuals who do not have access to an automobile or public transit for their travel need</p>	<p>2. --</p>
		<p>3. Demand-responsive transit service should be provided, to serve major activity centers and facilities for transit-dependent persons in the County including:</p> <p>a. Shopping centers</p> <p>b. Educational institutions</p> <p>c. Medical Centers</p> <p>d. Major employers (those with 100 or more employees)</p> <p>e. Governmental and public institutional centers</p> <p>f. Facilities serving elderly individuals</p> <p>g. Facilities serving disabled individuals</p> <p>h. Facilities serving low income individuals</p>	<p>3. Number of major activity centers within the service areas of demand-responsive transit services</p>
		<p><u>Performance Standards</u></p> <p>1. The population served and, particularly that portion which is transit-dependent, shall be maximized</p>	<p>1. Total population residing within the service areas of demand-responsive transit services</p>
<p>1. (continued)</p>		<p>2. The number of jobs served should be maximized</p>	<p>2. Total employment at businesses within the service areas of demand-responsive transit services</p>



**Table 4-2 (continued)**

Objective	Demand-Responsive Transit Principle	Demand-Responsive Transit Standard	Demand-Responsive Transit Performance Measure												
<p>2. The public transit system should promote effective utilization of transit services and operate service that is safe and reliable and provides for user convenience and comfort</p>	<p>The benefits of demand-responsive transit services are, to a large extent, greatly related to the degree to which they are used as measured by transit ridership. Ridership is a function of the degree to which people have access to services that are reliable and provide for quick, convenient, comfortable, and safe travel. Riders view transit services with these attributes as an effective and attractive alternative to the private automobile</p>	<p><u>Design and Operating Standards</u></p> <p>1. Demand-responsive transit services should be designed to provide adequate capacity to meet existing and potential demand. The maximum load factor for such services should not exceed 1.0 person per seat at all times of operation</p>	<p>1. --</p>												
		<p>2. The minimum overall travel speed for demand-responsive transit services should average 10 miles per hour</p>	<p>2. --</p>												
		<p>3. Demand-responsive transit services should provide a level of service commensurate with potential demand.</p> <p>Response times for service requests should be as follows:</p> <table border="0"> <thead> <tr> <th><u>Service Type</u></th> <th><u>Maximum Response Time</u></th> </tr> </thead> <tbody> <tr> <td>Flex route service</td> <td>Next day</td> </tr> <tr> <td>Shared-ride taxi service</td> <td>45 minutes in urban areas and four hours in rural areas</td> </tr> <tr> <td>Employment transportation services</td> <td>24 hours</td> </tr> <tr> <td>Community service Routes</td> <td>24 to 48 hours</td> </tr> <tr> <td>Volunteer driver programs</td> <td>48 to 72 hours</td> </tr> </tbody> </table>	<u>Service Type</u>	<u>Maximum Response Time</u>	Flex route service	Next day	Shared-ride taxi service	45 minutes in urban areas and four hours in rural areas	Employment transportation services	24 hours	Community service Routes	24 to 48 hours	Volunteer driver programs	48 to 72 hours	<p>3. --</p>
		<u>Service Type</u>	<u>Maximum Response Time</u>												
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		Employment transportation services	24 hours												
		Community service Routes	24 to 48 hours												
Volunteer driver programs	48 to 72 hours														
<p>4. Demand-responsive transit services should minimize the number of trip requests for which service must be denied. Service for subscription trips provided on a regular basis should be provided only to the extent that at least 50 percent of the capacity of the service remains available during peak periods for serving other trip requests</p>	<p>4. --</p>														
<p>5. Each vehicle should be rehabilitated or replaced at the end of the normal service life which shall be defined as follows:</p> <table border="0"> <thead> <tr> <th rowspan="2"><u>Vehicle Type</u></th> <th rowspan="2"><u>Length (feet)</u></th> <th colspan="2"><u>Normal Service Life</u></th> </tr> <tr> <th><u>Years</u></th> <th><u>Mileage</u></th> </tr> </thead> <tbody> <tr> <td>Automobiles/Vans</td> <td>--</td> <td>4</td> <td>100,000</td> </tr> <tr> <td>Light-duty bus</td> <td>25-30</td> <td>5</td> <td>150,000</td> </tr> </tbody> </table>	<u>Vehicle Type</u>	<u>Length (feet)</u>	<u>Normal Service Life</u>		<u>Years</u>	<u>Mileage</u>	Automobiles/Vans	--	4	100,000	Light-duty bus	25-30	5	150,000	<p>5. --</p>
<u>Vehicle Type</u>			<u>Length (feet)</u>	<u>Normal Service Life</u>											
	<u>Years</u>	<u>Mileage</u>													
Automobiles/Vans	--	4	100,000												
Light-duty bus	25-30	5	150,000												
<p>6. Demand-responsive transit services should be utilized where cost-effective to provide collection-distribution services at the ends of bus routes to effectively extend fixed-route bus service to major employment centers and commercial developments</p>	<p>6. --</p>														
<p>7. Shelter from harsh weather conditions should be provided at major boarding locations and where passengers transfer between demand-responsive and bus transit services</p>	<p>7. --</p>														
<p><u>Performance Standards</u></p> <p>1. Ridership on, and the overall effectiveness of, demand-responsive transit services should be maximized</p>	<p>1a. Total passengers 1b. Total passengers per capita 1c. Vehicle hours per capita 1d. Total passengers per vehicle mile 1e. Total passengers per vehicle hour</p>														

**Table 4-2 (continued)**

Objective	Demand-Responsive Transit Principle	Demand-Responsive Transit Standard	Demand-Responsive Transit Performance Measure												
2. (continued)		2. Demand-responsive transit services with substandard ridership and service effectiveness levels should be reviewed for potential changes to their service areas and service periods unless special circumstances warrant otherwise. <sup>a</sup> Levels shall be considered substandard if they are more than 20 percent below the statewide average for the service being provided in similar areas	2a. Total passengers per service area 2b. Total passengers per service request 2c. Total passengers per vehicle mile 2d. Total passengers per vehicle hour 2e. Percent of weekday ridership carried on weekends and holidays												
		3. Demand-responsive transit services should be designed and operated to maximize adherence to scheduled rider pick-up times and be "on-time." Performance should be regularly monitored and services with marginal or unsatisfactory on-time performance levels as defined below should be reviewed for corrective actions:  <table border="0" data-bbox="711 684 1078 894"> <tr> <td></td> <td style="text-align: center;">Percent of Scheduled Rider Pick-ups On-Time (Between 10 Minutes Early and 10 Minutes Late)</td> </tr> <tr> <td><u>Category</u></td> <td><u>Early and 10 Minutes Late</u></td> </tr> <tr> <td>Good</td> <td>90.0 percent or more</td> </tr> <tr> <td>Satisfactory</td> <td>85.0- 89.9 percent</td> </tr> <tr> <td>Marginal</td> <td>80.0- 84.9 percent</td> </tr> <tr> <td>Unsatisfactory</td> <td>Less than 80.0 percent</td> </tr> </table>		Percent of Scheduled Rider Pick-ups On-Time (Between 10 Minutes Early and 10 Minutes Late)	<u>Category</u>	<u>Early and 10 Minutes Late</u>	Good	90.0 percent or more	Satisfactory	85.0- 89.9 percent	Marginal	80.0- 84.9 percent	Unsatisfactory	Less than 80.0 percent	3. Percent of scheduled rider pick-ups on time
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Good	90.0 percent or more														
Satisfactory	85.0- 89.9 percent														
Marginal	80.0- 84.9 percent														
Unsatisfactory	Less than 80.0 percent														
4. Travel times on demand-responsive transit services should be kept reasonable in comparison to travel times by automobiles for trips made between component parts of the County.	4a. Ratio of transit to automobile distance 4b. Ratio of transit to automobile travel time														
3. Demand-responsive public transit services should be economical and cost effective, meeting all other objectives at the lowest possible cost.	The total financial resources available to be expended on demand-responsive transit services by the County and the municipalities within its boundaries are limited; therefore, the total costs of demand-responsive services should be minimized for the desired level of service, and revenues should be maximized to maintain the financial stability of the services. The attainment of this objective may at times conflict with, and require the modification or elimination of, other standards	<u>Design and Operating Standards</u>													
		1. The total operating and capital investment for demand-responsive transit services should be minimized and reflect efficient utilization of resources	1. --												
		2. The fare policies for demand-responsive transit services should provide for premium fares for premium transit services, as well as special or discounted fares for priority population groups and frequent transit riders	2. --												
3. Periodic increases in the passenger fares for should be considered to maintain the financial stability of demand-responsive transit services when: a. The farebox recovery rate for the service goes below the level determined to be acceptable by local officials b. Operating expenses per unit of service for the service have increased by 10 to 15 percent since fares were last raised c. Projected levels of Federal and State operating assistance funds would require an increase in projected local operating assistance levels above that determined to be acceptable by local officials	3. --														
<u>Performance Standards</u>															
1. The operating expense per unit of service, the operating expense per passenger, and the total operating assistance per passenger should be minimized. Annual increases in such costs should not exceed the average percentage increase experienced by comparable transit systems	1a. Total operating expense per vehicle mile 1b. Total operating expense per vehicle hour 1c. Total operating expense per passenger 1d. Total operating assistance per passenger														

**Table 4-2 (continued)**

Objective	Demand-Responsive Transit Principle	Demand-Responsive Transit Standard	Demand-Responsive Transit Performance Measure
3. (continued)		2. Operating revenues generated from passenger fares, including private sources, should be maximized	2. Percent of operating expenses recovered through passenger and other operating revenues, excluding public operating assistance
		3. Demand-responsive transit services with substandard cost effectiveness levels should be reviewed for potential changes to their service areas and service periods unless special circumstances warrant otherwise. <sup>a</sup> For this standard, levels shall be considered as substandard when the operating cost or operating assistance per passenger or per passenger mile are more than 20 percent above, or the farebox recovery rate is more than 20 percent below, the average for comparable transit systems	3a. Total operating expense per boarding passenger 3b. Total operating assistance per boarding passenger 3c. Total operating expense per passenger mile 3d. Total operating assistance per passenger mile 3e. Percent of total operating expenses recovered through passenger and other operating revenues, excluding public operating assistance

<sup>a</sup>A reasonable period of time should be allowed for ridership to develop and stabilize before evaluating the performance of new transit services to determine if the service should be continued, modified, or eliminated. Generally, new transit services should achieve 30 percent of average performance levels for existing routes after six months of operation; 60 percent of average performance levels for existing routes after one year of operation; and 100 percent of average performance levels for existing routes after two years of operation.

Source: SEWRPC.

also include the transit system performance measures which the Wisconsin Department of Transportation utilizes to assess the performance of Wisconsin transit systems on a regular basis, and which the State requires be included in the multi-year service and performance goals identified in annual applications for State operating assistance. Such measures include operating ratio, or farebox recovery rate; operating expense per passenger; passengers per capita; passengers per revenue vehicle hour of service; operating expenses per revenue vehicle hour of service; and revenue vehicle hours of service per capita. The performance standards and evaluation findings of this study can, therefore, provide guidance to the County and the City of Racine in establishing the required multi-year service and performance goals.

## **OVERRIDING CONSIDERATIONS**

The objectives, principles, and standards set forth in Tables 4-1 and 4-2 were intended to be used to guide the evaluation of the performance of existing transit system and the design and evaluation of alternative service improvements. In the application of the objectives, principles, and standards, several overriding considerations must be recognized:

1. It must be recognized that an overall evaluation of the existing transit services and the alternative service plans must be made based on cost and revenue. Such an analysis may show the attainment of one or more standards to be beyond the economic capability of the County or its member communities and, therefore, the standards cannot be met practically and must be either modified or eliminated.
2. A public transit system is unlikely to fully meet all the standards and that the extent to which each standard is met, exceeded, or violated must serve as the final measure of the ability of the system to achieve the objective that a given standard supports.
3. Certain intangible factors, including the perceived value of the public transit service to the County or its member communities, and its potential acceptance by the concerned elected officials, may influence the selection of the transit service recommendations and the preparation of the final Racine County transit plan. Inasmuch as transit service may be perceived as a valuable service, it could be determined that they should be initiated or retained regardless of performance or cost. Only if a considerable degree of such acceptance exists will the service recommendations of the plan be implemented and their anticipated benefits realized.

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