Chapter III

PUBLIC TRANSIT SERVICE OBJECTIVES AND STANDARDS

INTRODUCTION

In order to thoroughly evaluate the existing transit services offered by Washington County and any alternatives proposed for the Washington County Transit System, this chapter establishes the objectives to be served by the transit system and identifies the standards that will be used to measure how successful the existing system and any proposed alternatives are at fulfilling those objectives. The objectives and standards provide the basis upon which the performance of existing transit services will be assessed, alternative service plans designed and evaluated, and service improvements recommended. Therefore, the objectives formulated under this study are intended to represent the level of transit service and performance desired by the residents of Washington County. Only if the objectives and standards clearly reflect the transit-related goals of the community will the recommended plan provide the desired level of service within the limits of available financial resources.

Given the need for objectives to reflect the desired level of transit service for Washington County, the task of formulating objectives, principles, and standards must involve interested and knowledgeable public officials and private citizens representing a broad cross-section of interests in the community, as well as individuals familiar with the technical aspects of providing transit service. Accordingly, one of the important functions of the Washington County Transit Development Plan Advisory Committee 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 Advisory Committee, a relevant set of transit service objectives, supporting principles, and standards was defined and is listed in Figure 9.

OBJECTIVES

The following objectives adopted by the Advisory Committee envision a transit system that will effectively serve Washington County while minimizing costs:

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

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

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

PRINCIPLES AND STANDARDS

Complementing each of the service objectives is a planning principle and a set of standards, as shown in Figure 9. The planning principle supports each objective, and the associated standards describe how service can fulfill the objective. The service design and operating standards are intended to provide guidelines for the design of new and improved services, for the operation of the transit system, and for purchasing capital equipment or constructing facilities. The performance standards provide the basis for evaluating the performance of the existing transit system and proposed alternative services. For each performance standard, one or more performance measures are identified that can be used to quantify the performance of the transit service or system for measurement against the standard.

The service performance standards and the associated performance measures also reflect the recommendations of the Transit Advisory Council, which was created in March 1996 by the Wisconsin Department of Transportation. Among the charges to the Council was the identification of appropriate transit system performance measures and standards. The Council recommended that six measures be used to assess the performance of Wisconsin transit systems, including: 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. All of these performance measures have been incorporated into the performance standards and measures included in Figure 9 or were used to identify peer transit systems for evaluating the Washington County Transit System. The performance standards in Figure 9 can also provide guidance to the transit system in establishing the multi-year service and performance goals that are required for systems receiving State transit operating assistance.

The performance evaluation of the existing transit system utilized in this study included assessments of transit performance on both a system-wide and an individual service basis. The service standards set forth in this chapter represent a comprehensive list from which specific performance standards and measures, as deemed appropriate, were drawn in conducting the system-wide and service performance evaluations. A more complete description of the evaluation process is presented in Chapter VI.

ADDITIONAL CONSIDERATIONS

The objectives, principles, and standards set forth in Figure 9 are intended to guide the evaluation of the performance of the existing transit system and the design and evaluation of alternative service improvements. In the application of these objectives, principles, and standards, the limitations of public resources must be pragmatically considered in the following ways:

- An overall evaluation of the existing public transit services and the alternative service plans must be made based on costs and revenue. This analysis may show the attainment of one or more standards to be beyond the fiscal capability of the community, and, therefore, the standards cannot be practically met and must be either modified or eliminated.

- A 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 each standard supports.

- Certain intangible factors, including the perceived value of the transit service to the community and its potential acceptance by the concerned elected officials, may influence the preparation and selection of a recommended plan. Given that transit service may be perceived as a valuable service within the community, the community may decide to initiate or retain such services regardless of performance or cost.

Figure 9

PUBLIC TRANSIT SERVICE OBJECTIVES AND STANDARDS

Objective No. 1

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

Associated Public Transit Principle

Transit services can increase mobility for all segments of the population in urban and rural areas, particularly for persons residing in low- to middle-income households, students, seniors, and individuals with disabilities. Fixed-route public transit services are generally best suited for operating within and between large and medium-sized urban areas, serving the mobility needs of the population and the labor needs of employers. Demand-response public transit services are more cost effective than fixed-route transit services where demand for transit is low such as when serving areas with low-density urban development, small urban areas, and rural areas.

Design and Operating Standards

1. Rapid fixed-route transit service	2. Local fixed-route transit services	3. Demand-responsive transit service
Should serve major travel corridors, connecting major activity centers and concentrations of significant urban development within the County and the Region.	Should be designed to provide local transportation within and between residential areas, to link residential areas with nearby major activity centers, and to provide for transfer connections with rapid transit services.	Should be available to provide local transportation to the County's residents, particularly those that can be considered transit-dependent, to connect residential areas with each other and with major activity centers.

Performance Standards and Associated Performance Measures

1. Major Activity Centers

The number of major activity centers and facilities for transit-dependent persons served should be maximized. This will be measured by the number of activity centers within one-quarter mile of a local bus or shuttle route, one-half mile of a rapid transit route, or within the service area of a demand-response service. Major activity centers include the following.[a]

a. Commercial areas
b. Educational institutions
c. Medical centers
d. Employers
e. Facilities serving transit-dependent populations

2. Population

The population served should be maximized, particularly those who are transit dependent. Residents will be considered served if they are within the following distances of a fixed-route transit service, or are within the service area of a demand-response service.

Service Type	Distance from Bus Stop: Walking	Distance from Bus Stop: Driving
Rapid Transit	1/2 Mile	3 Miles
Local Shuttle	1/4 Mile	- -

This standard will be measured by the number of people residing within the appropriate service area for a transit service.

3. Employment

The number of jobs served should be maximized. This will be measured by the total employment at businesses located within one-quarter mile of local bus or shuttle routes, one-half mile of a rapid transit route, or within the service area of a demand-response service.

4. Density

The transit-supportive land area accessible by public transit should be maximized. Land area is considered transit-supportive if it has a density of at least 4 dwelling units per net residential acre, or at least 4 jobs per gross acre. This standard will be measured by the proportion of the County's total transit-supportive land area within one-quarter mile of a local bus or shuttle route, one-half mile of a rapid transit route, or within the service area of a demand-response service.

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

Figure 9 (continued)

Objective No. 2

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

Associated Public Transit Principle

The benefits to the entire public of a transit service are directly related to the level of utilization—measured by ridership—of that service. Ridership is influenced by the level of access the public has 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.

Design and Operating Standards

1. Route Design
Rapid bus routes should be extended as needed or paired with a local shuttle to perform a collection-distribution function at the ends of the route. Routes should have direct alignments with a limited number of turns, and should be arranged to minimize duplication of service and unnecessary transfers.

2. Bus Stop and Park & Ride Lot Design
Bus stops and park & ride lots should be clearly marked by easily recognizable signs and located so as to minimize the walking or driving distance over an accessible path to and from residential areas and major activity centers, and to facilitate connections with other transit services where appropriate. Stops should be placed every two to three blocks on local bus routes and placed at least one-mile apart on rapid transit routes.

3. Vehicle Age and Condition
Vehicles should be rehabilitated or replaced once they reach the end of their normal service life. Federal Transit Administration guidelines require a transit vehicle to reach a minimum service life before it is replaced. These guidelines are listed below.

Vehicle Type	Length (feet)	Service Life Years	Service Life Mileage
Heavy-duty bus	35+	12	500,000
Heavy duty bus	25-30	10	350,000
Medium-duty bus	25-30	7	200,000
Light-duty Bus[a]	20-30	5	150,000
Cars and Vans[a]	- -	4	100,000

4. Service Frequency and Availability
Fixed-route services should operate at least every 30 minutes during the weekday peak period, with local fixed-route services operating at least every 60 minutes during off-peak service hours. Shared-ride taxi services should offer a response time of 45 minutes or less in urban areas and four hours or less in rural areas.

5. Service Travel Speeds
Transit services should be designed and operated so that average travel speeds on a trip are not less than 10 miles per hour for local fixed-route and demand-responsive services, and not less than 25 miles per hour for rapid fixed-route services.

6. Passenger Demand
Transit services should provide adequate service and vehicle capacity to meet existing and anticipated demand. The average passenger load factor, measured as the ratio of passengers to seats, should not exceed 1.00 during any period for demand-responsive and rapid fixed-route transit services. Local bus routes and shuttles should not exceed an average passenger load factor of 1.25.

Performance Standards and Associated Performance Measures

1. Ridership and Service Effectiveness
Ridership on transit services and the overall effectiveness of such services should be maximized. This will be measured using passengers per capita, total passengers per vehicle hour, total passengers per vehicle mile, and passenger miles per vehicle mile which will be compared to similar transit systems. Transit services with service effectiveness measures more than 20 percent below the median of the peer comparison group will be reviewed for potential changes to routes, runs, service areas, and service periods.

2. On-Time Performance
The fixed-route service provided should closely adhere to published timetables and be "on time." Demand-response services should be designed and operated to maximize adherence to scheduled rider pick-up times. Performance should be regularly monitored and a transit service with less than 90 percent of trips on time (defined as being between zero minutes early and three minutes late for fixed-route services and between 15 minutes early and 15 minutes late for demand-response services) should be reviewed for changes.

3. Travel Time
Travel times on transit services should be kept reasonable in comparison to travel time by automobiles for similar trips. This standard will be measured using the ratio of transit to automobile distance and the ratio of transit to automobile travel time.

[a]*This vehicle type is currently owned by the Washington County Transit System.*

Figure 9 (continued)

Objective No. 3

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

Associated Public Transit Principle

Given limited public funds, the cost of providing transit at a desired service level should be minimized and revenue gained from the service should be maximized to maintain the financial stability of services.

Design and Operating Standards

1. Costs	2. Fare Structure	3. Fare Increases	4. Total Assistance
The total operating expenditures and capital investment for transit services should be minimized and reflect efficient utilization of resources.	The fare policies for transit services should provide for premium fares for premium services, as well as discounted fares for priority population groups and frequent transit riders.	Periodic increases in passenger fares should be considered to maintain the financial stability of transit service when: a. The farebox recovery ratio falls below the level determined to be acceptable by local officials b. Operating expenses per unit of service have increased by more than 10 percent since fares were last raised c. Projected levels of Federal and State operating assistance would require an increase in local operating assistance above the level deemed acceptable by local officials d. A fare increase would be projected to generate more revenue than would be lost due to potential decreases in ridership	The sum of capital investment and operating assistance in the transit system from all sources should be minimized, while meeting other objectives.

Performance Standards and Associated Performance Measures

1. Operating Expenses	2. Farebox Revenue	3. Cost Effectiveness
The operating expense per total and revenue vehicle mile, the operating expense per total and revenue vehicle hour, and the operating assistance per passenger should be minimized. Annual increases in such costs should not exceed the median percentage increases experienced by comparable transit systems.	Operating revenues generated from passenger fares should be maximized. This will be measured using the percentage of operating expenses recovered through passenger fare revenue.	Transit services with substandard cost effectiveness should be reviewed for potential changes to their routes, runs, service areas, and service periods. Cost effectiveness will be considered substandard when the operating cost per passenger, or operating 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.