

2004-2008
Transit Development Program (TDP)
for the Madison Urban Area

*Recommendations Approved by the
City of Madison Common Council
on July 20, 2004
and by the
Madison Area Metropolitan Planning Organization
on August 4, 2004*



SERVICE EVALUATION & PERFORMANCE MEASUREMENT PROGRAM

Within the City's Framework for Excellence is an emphasis on Organizational Performance. The goal is to develop processes and outcome measures about service quality, customer satisfaction, financial considerations, and human resources.

Madison Metro routinely compiles performance information for federal, state and local funding agencies. Performance audits are conducted every five years. Recently, working with a concept known as SPRAC (Strategic Planning and Resource Allocation Cycle), Metro has defined a service planning and programming cycle that is tied to performance evaluation.

Metro's *Service Evaluation and Performance Measurement Program* is intended to guide the process leading to annual service modifications. The program includes broad policy direction contained in mission and vision statements and detailed design and performance standards with which to assess service provision, service quality, and route-level productivity.

This booklet is a reference source for the policy, standards and procedures used in this program.

BROAD POLICY DIRECTION

Mission Statement

It is the mission of the Metro Transit System, through the efforts of dedicated, well-trained employees, to provide safe, reliable, convenient and efficient public transportation to the citizens and visitors of the Metro service area.

Vision Statement

It is the vision of Madison Metro, as a mass transit service provider, to be an attractive, vital and necessary mode of transportation within the Madison Urban Area.

For our customers, we will provide a safe, reliable, economic and quality service. It is our goal to attract the maximum number of riders by maintaining mass transit service and developing innovative means to meet our customers' needs. These needs will be identified through surveys, suggestions and data analysis.

For our employees, we will provide a safe, healthy and enjoyable place to work that values diversity and freedom of expression. Everyone will be provided an opportunity to reach his or her full potential. To maintain a high quality of work life, we will continually improve our work environment and provide for participation in decision-making processes.

SERVICE AND PERFORMANCE EVALUATION

Service Goals and Standards (Table 1)

- Where service should be provided.
- What type, hours and frequency of service should be offered.
- Route design.
- Bus stop design and location.

Service Modification Standards (Table 2)

- Types of service changes made to routes and schedules.
- When changes are warranted to improve productivity and efficiency.

Level of Service Assessment (Table 3)

- A level-of-service (LOS) classification system A through F representing what are acceptable and unacceptable conditions from the customer's perspective.

Route Productivity (Table 4)

- Monthly and quarterly route rankings.
- Minimum performance standards and review procedures.

ANNUAL ROUTE AND SCHEDULE REVIEW PROCESS

Metro Procedural Memorandum No. 3-1 establishes a Route and Schedule Committee charged with preparing and evaluating an annual service plan. No service changes can be made unless approved through the process established by the PM.

Composition

The Route and Schedule Committee will consist of the following management staff:

- General Manager (Chair)
- Transit Planning and Scheduling Manager
- Transit Scheduler
- Transit Planners (2)
- ITS/IS Coordinator
- Transit Marketing Manager
- Asst. Marketing Manager
- Chief of Operations or designee

Scope

The Route and Schedule Committee will develop recommendations for the allocation of service resources. Activities and issues that come under the purview of the committee include:

- Fixed route service and operations
- School and special operations
- New service priorities/proposals

Service Development

Under the general direction of the Transit General Manager, the committee will meet weekly to identify service needs and prepare service proposals, drawing on customer feedback, TDP and other plans, route/trip performance reports, identified scheduling issues and operator concerns. From this information, the Committee will prioritize service needs and prepare service proposals.

TABLE 1: METRO SERVICE GOALS AND STANDARDS

GOALS	STANDARDS
<p>Transit resources should be allocated to areas or along routes with the highest densities and highest concentrations of transit dependent people in the urban area.</p>	<p>Provide the highest level of service to the downtown area and along the major corridors leading to and from downtown.</p> <p>University Avenue: Maximum frequencies of 7/15 minutes. Johnson/Gorham: Maximum frequencies of 7/15 minutes. East Washington Ave: Maximum frequencies of 12/15 minutes. Jenifer Street: Maximum frequency of 7/15 minutes. Monroe Street: Maximum frequency of 12/15 minutes. Regent Street: Maximum frequency of 12/15 minutes. Park/Mills Street: Maximum frequencies of 12/15 minutes.</p> <p>Provide a base level of service that classifies routes according to purpose and service level.</p> <p>Provide service to new areas based on development type, density and mix of services.</p>
<p>Routes should be classified according to their function and correlate with service level criteria.</p>	<p>Core Routes - Major routes serving high volume corridors, the downtown area and other major activity centers. These routes carry the highest passenger volumes and have the highest productivity.</p> <p>Peak Hour Frequencies - 15 minutes Base Frequencies – 30/60 minutes Bus Stop Spacing – No greater than ¼ mile</p> <p>Peripheral Routes - Secondary routes serving outlying neighborhoods. They carry lower passenger volumes and have lower productivity, yet provide vital access to more frequent services to the urban core and major peripheral destinations.</p> <p>Peak Hour Frequencies - 30 minutes Base Frequencies - 30/60 minutes Bus Stop Spacing - ¼ TO ½ mile</p> <p>Connecting Routes - Routes that connect transfer points with other transfer points and major peripheral activity centers.</p> <p>Peak Hour Frequencies - 30 minutes Base Frequencies - 30/60 minutes Bus Stop Spacing - As needed, generally only at major destinations.</p> <p>Commuter Routes - Peak hour routes that connect neighborhoods with downtown and peripheral employment centers. They are designed to meet the specific needs of the centers they serve. Commuter routes should operate 10-25 percent faster than other routes.</p> <p>Peak Hour Frequencies - 20/30 minutes Base Frequencies - Usually none. Bus Stop Spacing - ¼ - ½ mile in residential area; only as needed to supplement other services in corridors leading to employment center.</p> <p>Circulator Routes - These are routes that operate within the geographical confines of a major activity center.</p>

	<p>Peak Hour Frequencies - 7 minutes Base Frequencies - 30/60 minutes Bus Stop Spacing - less than ¼ mile.</p> <p>Flexible Routes - These are routes which incorporate real-time demand modifications such as deviations and other convenience features. They tend to operate in lower density areas. Peak Hour Frequencies - 30/60 minutes Base Frequencies - 60 minutes Bus Stop Spacing - Flag stop areas</p> <p>Special Purpose Routes - These are routes designed to meet a specific need.</p> <p>Special Event Service - These are routes that operate to specific event destinations.</p> <p>Timed-Transfer – Schedules should be coordinated for direct transfer to the extent possible at transfer points. During commute times, some routes may bypass transfer points to achieve travel time standards.</p>
<p>Good route design should minimize travel time.</p>	<p>Directness Of Service - Routes should be designed to maximize directness of travel and minimize circuitous patterns. Routes should not be more than 50% longer in route mileage distance than a comparable trip by car.</p> <p>Loops - Two-way loops should be used to equalize travel times in the loop area or serve predominant commute pattern at different times of the day. One-way loops should be used only when warranted by operational considerations.</p> <p>Route Spacing - In urban core areas, routes should be spaced ¼ mile apart. In less densely populated areas, routes should be spaced no further than 1 mile apart.</p>
<p>Bus stops should provide convenient access to the system without negatively affecting operating speed.</p>	<p>Bus Stop Location - The specific location of bus stops is influenced by convenience for patrons and traffic conditions:</p> <ol style="list-style-type: none"> 1. Far-side Stops - Are preferable where buses can pull out of the main traffic lane and maneuver to the curb. 2. Near-side Stops - Are preferable where traffic is heavier on the leaving side than on the approach side of the intersection. 3. Mid-block Stops - Should be avoided unless block-faces are long or unless stops serve a major trip generator. <p>Shelter Location - Shelters are a passenger amenity and are placed where they will have the greatest benefit:</p> <ol style="list-style-type: none"> 1. A minimum of 50 boarding passengers (average weekday); 2. Proximity to housing for elderly and/or disabled persons; 3. At major generators served by multiple routes. <p>Park and Ride Lots - New lots should be established which minimize route deadhead and promote TDM goals or opportunities for shared use with other services.</p> <p>Benches – Benches should be placed in shelters and at locations with a minimum of 25 boarding passengers.</p>

TABLE 2: SERVICE MODIFICATION STANDARDS

<p>ROUTE RESTRUCTURING -- Major adjustments in route alignment and/or level of service affecting travel patterns and cost.</p> <ul style="list-style-type: none"> ▪ Should be considered no more than once every three years. ▪ Should be made only when there is a demonstrable benefit to the public or when it is necessary to reduce operating costs or solve a performance problem. 									
<p>SERVICE ADJUSTMENTS -- Minor operating and scheduling adjustments, at the discretion of management, which do not affect the router structure or appreciably change the level and cost of service.</p> <ul style="list-style-type: none"> ▪ Should be conducted annually. ▪ Should include schedule changes to overcome operating problems such as overloads or schedule adherence problems. ▪ Should include fine-tuning adjustments that improve productivity without major service degradation to customers e.g. elimination/addition of selected trips, changes in through-route combinations, minor route changes. 									
<p>NEW SERVICE EXTENSIONS -- Extensions of existing routes or creation of new routes that add vehicle hours of service.</p> <ul style="list-style-type: none"> ▪ Should be reviewed annually in response to service requests or to serve newly developing areas. ▪ Should be prioritized based on the following: <table border="0" style="width: 100%;"> <tr> <td style="width: 35%; vertical-align: top;"> <p>Built Environment -- This factor rewards areas with transit-efficient street and pedestrian networks and transit amenities.</p> </td> <td style="vertical-align: top;"> <p>0 – Poor design for transit; large setbacks, limited pedestrian mobility. 1 – Curvilinear street network, cul de sacs, basic pedestrian mobility. 2 – Grid street network, good pedestrian mobility. 3 – Grid street network, enhanced pedestrian mobility, passenger amenities.</p> </td> </tr> <tr> <td style="vertical-align: top;"> <p>Transit Linkages -- This factor gives greater weight to requests that offer routing and pedestrian efficiencies.</p> </td> <td style="vertical-align: top;"> <p>0 – Significant route extension in periphery, undeveloped access. 1 – Minor route extension in periphery, developed access to area. 2 – Minor route extension or deviation from existing route in periphery. 3 – Minor deviation from existing route in core service area.</p> </td> </tr> <tr> <td style="vertical-align: top;"> <p>Distance from Existing Service --This factor penalizes requests based on the level of accessibility to nearby services).</p> </td> <td style="vertical-align: top;"> <p>0 – Good pedestrian accessibility to a major transit corridor. 1 – Good pedestrian accessibility to existing service. 2 -- Poor pedestrian accessibility to existing service. 3 – Significant barriers to pedestrian access to existing service.</p> </td> </tr> <tr> <td style="vertical-align: top;"> <p>Ridership -- This factor rewards areas with housing and employment types that have higher transit ridership propensity.</p> </td> <td style="vertical-align: top;"> <p>1 – Large lot development, limited variety of land uses /trip generators 2 – Detached housing, some mix with small-scale commercial/ employment sites. 3 – Clustered/corridor development, balanced with commercial/ employment. Add 1 point for sites in core service area; Subtract 1 point for sites in periphery.</p> </td> </tr> </table>		<p>Built Environment -- This factor rewards areas with transit-efficient street and pedestrian networks and transit amenities.</p>	<p>0 – Poor design for transit; large setbacks, limited pedestrian mobility. 1 – Curvilinear street network, cul de sacs, basic pedestrian mobility. 2 – Grid street network, good pedestrian mobility. 3 – Grid street network, enhanced pedestrian mobility, passenger amenities.</p>	<p>Transit Linkages -- This factor gives greater weight to requests that offer routing and pedestrian efficiencies.</p>	<p>0 – Significant route extension in periphery, undeveloped access. 1 – Minor route extension in periphery, developed access to area. 2 – Minor route extension or deviation from existing route in periphery. 3 – Minor deviation from existing route in core service area.</p>	<p>Distance from Existing Service --This factor penalizes requests based on the level of accessibility to nearby services).</p>	<p>0 – Good pedestrian accessibility to a major transit corridor. 1 – Good pedestrian accessibility to existing service. 2 -- Poor pedestrian accessibility to existing service. 3 – Significant barriers to pedestrian access to existing service.</p>	<p>Ridership -- This factor rewards areas with housing and employment types that have higher transit ridership propensity.</p>	<p>1 – Large lot development, limited variety of land uses /trip generators 2 – Detached housing, some mix with small-scale commercial/ employment sites. 3 – Clustered/corridor development, balanced with commercial/ employment. Add 1 point for sites in core service area; Subtract 1 point for sites in periphery.</p>
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TABLE 3: LEVEL OF SERVICE PERFORMANCE STANDARDS

Service Frequency LOS

LOS	Headway	Vehicles/Hr	Comments
A	<10	>6	Passengers don't need schedules.
B	10-14	5-6	Frequent service, passengers consult schedules.
C	15-20	3-4	Maximum desirable time to wait if bus missed.
D	21-30	2	Service unattractive to riders with other travel choices.
E	31-60	1	Service available during the hour.
F	>60	<1	Service unattractive to all riders.

Hours of Service LOS

LOS	Hrs./Day	Comments
A	19-24	Night or owls service provided (midnight to start of next-day service.
B	17-18	Late evening service provided (9 p.m. to midnight).
C	14-16	Early evening service provided (7 p.m. to 9 p.m.)
D	12-13	Daytime service provided.
E	4-11	Peak hour service/limited midday service.
F	0-3	Very limited or no service.

Passenger Load LOS

LOS	P/Seat	Comments
A	0.00-0.50	No Passenger need sit next to another.
B	0.51-0.75	Passengers can choose where to sit.
C	0.76-1.00	All passengers can sit.
D	1.01-1.25	Comfortable standee load.
E	1.26-1.50	Maximum schedule load.
F	>1.50	Crush loads.

Transfer Connection LOS

LOS	Wait Time (mins)	Comments
A	0-3	Coordinated transfer.
B	4-10	Coordinated transfers with some wait time.
C	11-20	Untimed transfer, tolerable for choice riders.
D	21-30	Untimed transfer, unacceptable for choice riders.
E	31-60	Untimed transfer, tedious wait time for all riders.
F	>60	Untimed transfer, unacceptable wait time for all riders.

Transit/Auto Travel Time LOS

LOS	Travel Time Difference (mins.)	Comments
A	≤ 0	Faster by transit than auto.
B	1-15	About as fast by transit as by auto.
C	16-30	Tolerable for riders with other travel choices.
D	31-45	Round-trip at least an hour longer by transit.
E	46-60	Tedious for all riders.
F	>60	Unacceptable for most riders.

TABLE 4: ROUTE LEVEL PERFORMANCE STANDARDS

MONTHLY ROUTE PRODUCTIVITY EVALUATION

Route reports showing *Passengers per Revenue Hour*, *Revenue Mile* and *Cost per Ride* will be prepared monthly. These reports will be distributed to the General Manager, Planning Staff, SMT, Parking and Transit Commission.

ANNUAL ROUTE PRODUCTIVITY RANKINGS

Routes within their functional classification will be evaluated annually. The evaluation will rank routes on the basis of *Passengers/Revenue Hour* and *Cost/Ride*. Each route is required to meet a minimum standard of 60 percent of the average productivity in its classification. Routes falling below 60 percent for three consecutive quarters will be placed on a Review List.

REVIEW LIST PROCEDURES

A Route and Schedule Committee will evaluate all routes placed on the Review List. This committee will examine routes to determine what, if any, remedial actions should be taken to improve performance. Actions could include schedule adjustments and increased marketing. Routes that improve will be removed from the list. Routes that do not improve after appropriate measures will be placed on a Target List and recommended to the Parking and Transit Commission for restructuring, reduction or elimination.

TARGET LIST

Routes placed on the Target List will go to public hearing. The Parking and Transit Commission will make the final determination on whether to eliminate any service.