



**OPERATIONS COMMITTEE
JANUARY 20, 2005**

SUBJECT: METRO TRANSIT SERVICE POLICY UPDATE

ACTION: ADOPT UPDATED METRO TRANSIT SERVICE POLICY

RECOMMENDATION

Adopt the updated Transit Service Policy, provided as attachment 1.

ISSUES

The existing Transit Service Policy was adopted in September 2003 and has recently been updated. The policy communicates service development priorities and initiatives to the public and documents the process for considering changes to Metro bus and rail system. It also establishes a framework for decision making during the service change process.

POLICY IMPLICATIONS

The policy changes are directed at improving service quality and operational efficiency, improving the timeliness of public notification, and incorporating performance targets from the FY2005 budget into the program review and monitoring process. Thus, the proposed changes to the Transit Service Policy are aligned with FY2004 Metro Strategic Goals 1,3, and 4, which call for improving transit services, exercising fiscal responsibility, and providing leadership for the regional mobility agendas.

OPTIONS

The primary alternative is to not update the Transit Service Policy. This alternative is not recommended since the existing policy needs to be refined and updated to keep up with the changes that have occurred in the region over the past year and to better support key initiatives such as the expansion of Metro Rapid, the development of bus lanes, and other on-going planning efforts.

FINANCIAL IMPACT

The Transit Service Policy does not have a direct financial impact. The policy charts a course of action to increase ridership and overall service quality.

BACKGROUND

The original Metro Transit Service Policy was adopted in 1986 and revised in 1991 for the opening of rail service. In September 2003, the Transit Service Policy was updated and adopted by the Board of Directors. The policy is to be reviewed and updated annually.

The existing policy guides decision-making during the service change process. The policy is organized into four main sections: 1) Bus Route and Design Guidelines; 2) Bus Performance Measures; 3) Rail Policies, and 4) Planning process.

As shown in the Attachment 2, the update includes refinements to five existing policies and four new provisions. The four new provisions are: 1) Metro Rapid Warrants; 2) Bus Lane Criteria; 3) Public Notification Tasks and Calendar, and 4) Service Change Program template.

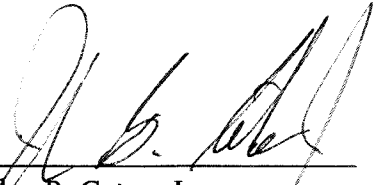
NEXT STEPS

Once adopted by the Board of Directors, the updated policy will be effective immediately. Staff will use the updated policy to improve Metro Bus and Rail services.

ATTACHMENT

1. Transit Service Policy (with strikethroughs and underlines)
2. Summary of Key Changes

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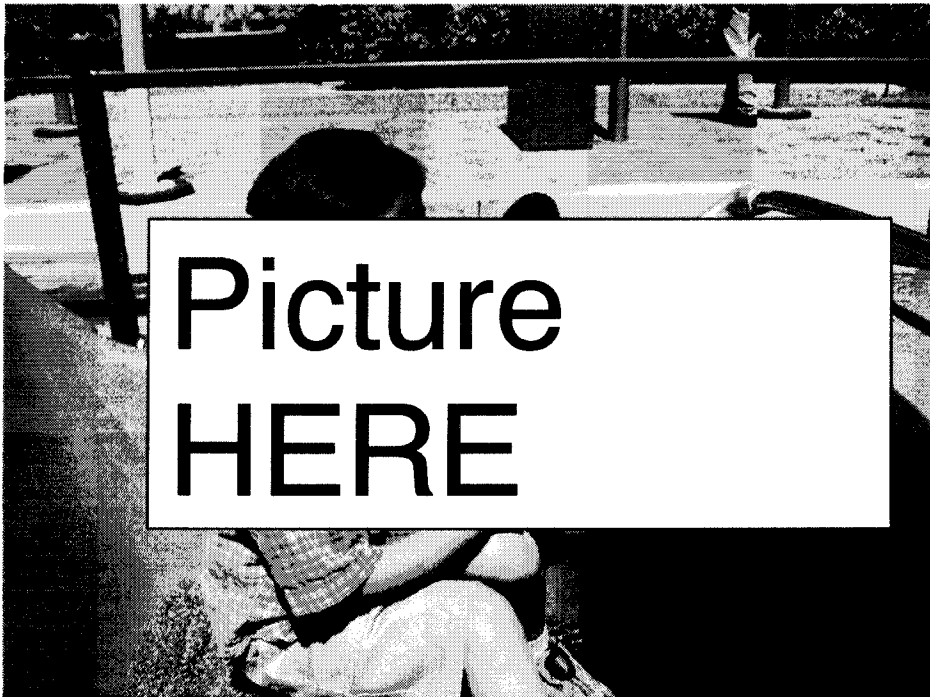


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Transit Service Policy

January 2005



SECTION 1: PURPOSE AND BACKGROUND

The Metro Transit Service Policy was adopted in 1986 and revised in 1993 ~~for the opening of rail service~~. Since then, there have been significant changes in the operating environment, including the expansion of rail service, the establishment of Service Sectors, and greater emphasis on Metro 's regional role. A new policy was developed to address these changes and to reflect the agency direction.

This report provides a brief discussion of specific guidelines and is organized into six sections:

- Purpose and Background
- Bus Route and Design Guidelines
- Bus Performance Measures
- Rail Policies
- Planning Process
- Conclusion

1.1 PURPOSE

The purpose of the policy is to guide decision-making during the service change process and ensure a fair and consistent evaluation of service. It calls for service adjustments that best meet customer needs and expectations within the constraints of the budget and equipment availability. For the public, the policy communicates agency priorities and initiatives.

The guiding principles that provide a framework for the development of the transit policy are:

Increasing Ridership

- The network structure shall maximize regional mobility.
- The Metro will focus its service investment on providing high quality service to major travel markets within Los Angeles County.
- Corridors served by bus routes that offer service frequencies of 5 minutes or less will be candidates for Metro Rapid, the deployment of high capacity vehicles and bus preferential treatment (e.g. signal programs, bus lanes etc).
- Resources will be allocated in a manner that balances customer expectations with the fiscal responsibilities of the agency.



Transit Policy:

- *Guides decision-making;*
- *Promotes consistency among Service Sectors;*
- *Links service changes and strategic plan; and*
- *Communicates agency priorities.*



Improving Service Quality

- Sufficient seating capacity will be offered on Metro Bus and Rail lines to meet the need of Metro 's current and future riders, and ensure that patronage is not discouraged by overcrowded vehicles.
- All bus routes shall provide at least a 30-minute service during weekday rush hours, as resources permit. Routes that cannot support this level of service should be modified or operated by other means.
- There will be regular reviews of the operation to assess customer satisfaction and service delivery.

Using Resources Wisely

- The performance of each bus route in the system will be evaluated annually and bus lines not meeting the performance standards will be modified. Bus lines that do not meet the minimum performance standard after 18 months of operation will be cancelled.
- The Metro will assist in funding and operating shuttles, circulators and neighborhood-oriented services only when there is a demonstrated need and no other entity available to provide the service.
- New services will be considered for implementation when there are available resources and if ridership projections indicate the potential to support 30-minute service and to meet the minimum performance standard.
- The Metro will review its service and work with the local bus operators to reduce service duplication that results in a sub-optimal use of resources.
- Decisions regarding the provision of service will consider the cost effectiveness, appropriateness and operating roles of other operators, as well as alternative service delivery options.

Transit Policy Goals:

- *Increase Ridership*
- *Improve Service Quality*
- *Use Resources Wisely*

1.1.1 LINK TO THE METRO STRATEGIC PERFORMANCE PROGRAM

The FY 2004 Metro Strategic Plan (~~The Metro Strategic Performance Program (FY 2003-2007)~~) sets the agency direction for the next five years and establishes a framework for key agency plans and policies. The transit service policy was developed to support the Metro's vision, mission and key objectives of the strategic plan.



The Transit Service Policy is aligned with the agency’s strategic plan and supports the implementation of key goals and objectives, as outlined below:

Metro Strategic Plan Goals and Objectives

Goal 2	Improve transit systems
–Objective B	Improve service quality for the bus system
–Objective C	Improve service quality of the rail system
–Objective D	Increase capacity of the Metro transit system
Goal 4	Create a positive image of the MTA
–Objective	Increase awareness and improve public participation
Goal 6	Provide leadership for the region’s mobility agenda through responsive planning and resource allocation
–Objective	Provide quality planning, technical analysis and programming

Goal 1	Improve transit systems
Objective A	Efficiently and effectively operate service sectors
Objective B	Improve service quality and capacity for bus and rail systems
Goal 3	Exercise fiscal responsibility
Objective A	Manage the approved budget
Objective B	Implement efficient and effective cost allocation plans
Goal 4	Provide leadership for the region’s mobility agenda
Objective B	Coordinate implementation of Multi-modal transportation programs with partner agencies.

Vision:

Metro...Leading the nation in safety, mobility and customer satisfaction.

Mission: *Metro is responsible for the continuous improvement of an efficient and effective transportation system for Los Angeles County.*

1.2 BACKGROUND

The Metro has the second largest bus fleet in the United States, the world’s largest CNG bus fleet and one of the most heavily patronized light rail lines in the nation. During the current fiscal year, over 440 million passengers are expected to board Metro bus and rail lines.

The Metro is the principal transit provider in Los Angeles County, serving about 75 percent of all transit trips. Over the next 25 years, the population of Los Angeles County will increase by 2.8 million. As congestion increases and auto speeds decline, more and more people are turning to public transportation. Keeping pace with growing demand is a challenge. Adding to the complexity is the fact that travel patterns are becoming more dispersed and new funding is very limited.

Improving the safety, capacity and quality of the Metro Bus and Rail service is a top agency priority. To do this, the Metro is focusing on serving major travel markets and implementing a series of progressive strategies to improve service productivity and attract new riders.

METRO

- The bus system includes 189 routes and operates with over 2,000 buses during rush hour.
- Metro has the 2nd largest bus fleet in the United States and the world’s largest CNG Fleet.
- Metro Rail has 4 rail lines including a subway and 3 light rail lines, with over 73 miles of track and 65 stations.
- The Metro Bus and Rail systems transport over 1.3 million passengers daily.



These strategies include improving service quality, restructuring the bus system; expanding the Metro Rapid program; deploying high capacity buses; providing a universal fare system; expanding signal synchronization for transit, implementing Metro Liner (Metro Rapidway service), and increasing service coordination efforts with the other operators in the region.

1.21 SERVICE RESTRUCTURING PLANS

Metro is working with the other local transit operators to develop a world-class public transportation system in Los Angeles County that is customer driven, regionally oriented and efficient. To achieve this goal, a comprehensive service-restructuring plan, referred to as Metro Connections, is being developed. The restructuring will change service from the current grid layout to a multi-centered network that will allow for faster and more convenient travel.

Key goals of the project include:

- Improve service quality
- Use resources more effectively
- Match capacity with demand
- Increase service coordination with other transit operators
- Increase transit's market share
- Increase utilization of the Metro Rail and Metro Liner services

As part of the study, current travel patterns of transit users and non-transit users are being reviewed against the existing bus system structure. Bus service will be realigned to better match travel demand and individual bus routes will be modified to provide faster travel.

The heart of the redesign is the creation of a network of 19 regional centers that are key points of origin and destination. Examples include: LAX/Aviation Station, Union Station/Patsaouras Plaza, Universal Red Line Station, El Monte Transit Center, and the Long Beach Transit Mall. Several of these locations do not have room for additional bus routes. In the interim, different types of routing strategies, such as remote layover or through routing of service, will be required. In the long term, a facility improvement plan will be developed.

As part of the transition, the MTA is focusing on regional services such as Metro Rail, Metro Liner and Metro Rapid. These services form a high speed/ high frequency network connecting the regional centers. The role of the municipal and local operators will be expanded, especially with respect to operating local and feeder services. They will operate much of the network that connects other activity centers and residential areas with regional activity centers.

Preliminary plans for the system restructuring will be completed by early 2005 and implementation will be phased in over a two or three year period.

Metro Connections:

- *Matching service to travel patterns*
- *Faster service*
- *Seamless travel*
- *More riders*



SECTION 2: BUS ROUTE AND DESIGN GUIDELINES

Bus route and service design guidelines are used in the development of proposed new services, the evaluation of existing services, and the evaluation of proposed modifications of existing services. The following guidelines are used to maximize the overall usefulness of the system to riders, ensure the consistency of route structure, and provide objective and consistent criteria for the establishment of service. They are used during the planning process to strike a balance between service attractiveness and resource availability.

The Metro operates an integrated transit system designed to focus on regional travel markets. It provides effective linkages and seamless connections with the other public transportation services within Los Angeles County.

2.1 TYPES OF METRO BUS SERVICE

Metro bus services are classified into five service categories, which reflect their functional and operational characteristics: These categories become the framework by which transit services will be developed, modified and evaluated. A summary of the features characterizing each service category follows:

- Metro Liner (~~Metro Rapidway~~)– Metro Liner is a new service that is yet to be implemented. It is a bus rapid transit service that will operate in a dedicated right-of-way. Metro Liner service will be introduced in the San Fernando Valley Sector along the Chandler Corridor and in the Westside Central Sector along the Wilshire Corridor.
- Metro Express – Metro Express bus service usually operates daily peak service only from a collector area directly to a specific destination or in a particular corridor with stops en-route at major transfer points or activity centers. A major portion of the service is operated along freeways and busways. There are approximately 15 (~~20~~) express bus routes. Some express service operate all day and on weekends. These services are designated with route numbers between 400 and 599.
- Metro Rapid – Metro Rapid is an expedited bus service that is being introduced in the most heavily traveled corridors. It features specially painted buses, signal priority and special stations. Currently there are 11 (~~9~~) (~~6~~) Metro Rapid lines in operation and there are plans to implement 15 (~~17~~) (~~21~~) additional Metro Rapid lines. Metro Rapids are designated with route numbers between 700 and 799 (~~800~~).



- Metro Local – Metro Local service includes both purely local routes and limited stop service. This is the primary service provided by the MTA. This service includes approximately 150 bus routes that account for over 75 percent of the annual ridership. Some local bus routes operate a limited stop service and/or owl service. These services are designated with route numbers between 1 and 399.
- Metro Rail Feeder and Shuttle Services - These are local circulation, special event shuttle and rail feeder services. These bus routes generally operate on secondary streets and focus on short distance markets. These services are designated with route numbers between 600 and 699.

2.2 METRO RAPID DESIGN CRITERIA

The Metro Rapid program is based on Curitiba, Brazil, urban design and public transportation model. This model uses 13 key design attributes in the development of Bus Rapid Transit service. The initial Metro Rapid services incorporated seven of these features, while the remaining six will be incorporated during the expansion of the program. Design features included in the initial stages of the program are: a simple route layout, frequent service, headway based schedules, and less frequent stops. Level boarding and alighting, color-coded buses and stations, and bus signal priorities are also key design features.



In August of this year, service warrants were developed to guide the design, monitoring and development of the Metro Rapid program. The warrants are specific targets or objectives that are linked to each of the programs key attributes. These warrants are presented in Appendix A.

Curitiba Key Attributes

Curitiba Key Attributes	Phase I	Phase II
	Demonstration	Expanded system
1. Simple Route Layout	Yes	Yes
2. Frequent Headways	Yes	Yes
3. Less Frequent Stops	Yes	Yes
4. Level Boarding and Alighting	Yes	Yes
5. Color Coded Buses and Stations	Yes	Yes
6. Station Stops	Yes	Yes
7. Signal Prioritization	Yes	Yes
8. Exclusive Bus Lanes	No	Yes
9. Higher Capacity Buses	No	Yes
10. Multiple-Door Boarding and Alighting	No	Yes
11. Fare Prepayment	No	Yes
12. Feeder Network	No	Yes
13. Coordinated Land Use Planning	No	Yes

Design features that may be added during the expansion of the program include:



exclusive lanes, higher capacity buses, and multiple doors boarding and alighting to expedite the operation. Off-vehicle fare payments, an integrated feeder network and coordinated land use planning are features that are also considered.

2.3 EXPRESS AND LIMITED STOP SERVICE

Express bus service usually operates daily peak service only from a collector area directly to a specific destination or in a particular corridor with stops en-route at major transfer points or activity centers. A major portion of the service is operated along a freeway or busway. Express services are designed to provide a high-speed link between suburban areas and urban centers. They require a transit center or parking facility to collect ridership on the home end of the trip.

Whenever practical, commuter oriented coaches should be operated on these services. These coaches include features such as high back seats, reading lights and storage areas for passenger luggage.

These services may be considered when the following conditions are met:

- Travel time between the proposed route terminuses is more than 40 minutes.
- The proposed service will not compete with an existing rail line
- Service will be designed to operate with a minimum number of stops
- There is an opportunity to operate the service at a speed of approximately 20 miles per hour (~~20% faster than local bus~~) or to achieve a time saving greater than the frequency of the underlying bus service, over the entire trip.
- Ridership projections or the prepayment of monthly bus passes indicates that minimum performance standards will be met.

Limited stop service will be provided in local bus corridors where the demand requires service frequencies of 6 minutes or greater. Limited service will make significantly fewer stops than local service, and the key design objective is to operate a minimum of 10% faster than local service.

2.4 OPERATING AND FUNDING SHUTTLES OR RAIL FEEDER SERVICES

Shuttle and rail feeder services generally operate on secondary streets, carry less than 2,000 passengers a day, and serve short distance trips. The Metro should only operate these services when:

- No other operator is available
- There is a demonstrated need
- Resources are available



In terms of funding for community-based services to be operated by others, some capital funds may be available through the Call For Projects Operating funding for existing services is available through local return funds, or other regional funding programs such as the Transit Service Expansion Program, Proposition A and C Incentives Program and the Formula Allocation Process. However, these funding programs are generally at their limit. New services that meet a regional need will be considered on a case-by-case basis and will require a specific funding agreement with Metro.

2.5 ALTERNATIVE SERVICE DELIVERY METHODS

Alternative service delivery options are other methods of providing service other than a standard transit bus that is directly operated by a Metro employee. These options include van service, taxicabs, flexible destination operations, contracted services, scrip programs and beginning tier/wages operators. When designing new services or assessing marginally performing existing services, each of these delivery options should be considered.

2.6 BUS/RAIL INTERFACE GUIDELINES

As the Metro Rail system expands, adjustments are made to the bus system to improve access to rail stations; to take advantage of new transfer facilities and to reduce bus and rail service duplication. The following guidelines provide direction to routing and scheduling changes that will be necessary as the Metro Rail system is expanded:

- Cancellation of Parallel Limited and Express Service: Competing limited stop and express service, which parallel the rail corridor, will be discontinued when duplication exists.
- Diverting Service: Bus routes that run parallel to a rail line may be diverted to a station when:
 - The walk time from the nearest station is greater than 3 minutes.
 - The diversion time in one direction is 5 minutes or less.
 - The average three-hour peak load factor is less than 50 percent.
 - There is a net travel time benefit for connecting and through traveling riders.



Intersecting bus lines or bus lines that travel in a perpendicular direction to a rail line will be diverted to serve the closest rail station when:



- The diversion time in one direction is 5 minutes or less.
- The average three-hour peak load factor is less than 75 percent.
- There is a net travel time benefit for connecting and through traveling riders.
- Extending Terminating Lines: Bus routes that end within one mile of a rail station will be extended to terminate at the station. Routes that terminate at distances greater than one mile may be extended if the rerouting will create a valuable link to the rail system or will result in a reduction in travel time for a significant number of riders.
- New Bus Routes: New rail feeder service will be considered as part of the service change process, if there is a need that can be demonstrated, available funding, and as part of the service change process.
- Scheduling Bus Interface: During peak travel periods, bus arrival and departure times should be governed by the rail arrival and departure times when predominant movement is from bus to rail. During off-peak times, bus routes with frequencies of 20 minutes or greater and that terminate at a rail station, should be scheduled to arrive 5 minutes before the rail departure time. When the predominant movement is from rail to bus, terminal buses should also be scheduled to depart 5 minutes after the scheduled rail arrival time.

2.7 BUS STOP SPACING

Bus stop spacing refers to the average distance between consecutive stops on a bus route. Guidelines for bus stop spacing are established at a level where service is within a reasonable walking distance and stop delays do not significantly reduce travel time. As shown below, the primary determinants for stop spacing are bus service type and population densities. Stop spacing for shuttles should be determined on a case by case as these services can be operated in a variety of environments and in a number of different way

Bus Stop Spacing Guidelines

Service Type	Population Density (Persons per Square Mile)			Route Average (Stops per one-way mile)
	Over 20,000	10,000-20,000	Under 10,000	
Express	500-2,600 ft.	1500-4000 ft.	2,600-5,200 ft.	1
Rapid	800-1,500 ft.	1,000-4000 ft.	2,600-5,200 ft.	0.7
Limited	750-1,000 ft.	750-1,500 ft.	1,000-4,000 ft.	0.5
Local	500-800 ft.	500-1000 ft.	500-1,300 ft.	0.2
Shuttle	TBD	TBD	TBD	TBD



It is Metro’s intent to design bus routes to meet maximum spacing levels and overall route averages, unless superceded by such factors as: land barriers or topography which limit access, high passenger demand levels, surrounding attractors and major connections with other public transit services. Additionally, route spacing will be a key consideration in the classification or numbering of bus routes. For example, limited stops services or bus routes with a 300 number designation should have stop spacing approximately twice that of the local service group average.

2.7 BUS STOP SPACING

Bus stop spacing refers to the average distance between consecutive stops on a bus route. Bus stop spacing is dictated primarily by land use characteristics, walking distances and density of development along a route. Greater stop spacing allows transit vehicles to achieve higher average speeds and improve travel time for passengers, while requiring passengers to walk a further distance to access service. Closer stop spacing provides greater accessibility to passengers, increasing convenience, while reducing the speed of the operation. Where possible, stops shall be planned in a manner that provides convenient access and reasonable speed.

Bus Stop Spacing Guidelines

Location	Recommended Spacing Range
Major Commercial Centers	500-800 feet
Urban Areas	700-1000 feet
Suburban Areas	1000-1500 feet

In core areas, local service stops are generally located ¼ mile apart depending on population and transit dependency. In less developed areas, stops will be located from ¼ to ½ mile apart whenever practical. It is the policy of the Metro to establish stops and zones in a manner that is mutually acceptable to the Metro and the jurisdiction in which they are located.

2.8 DUPLICATION OF SERVICE

Service duplication occurs when two or more bus routes operated by one or more carriers serve the same roadways in a transit corridor.



In some instances duplication is desirable and unavoidable, due to the presence of activity centers or the lack of alternate routing options. However, duplication is not desirable in those instances where it is avoidable and it results in either sub-optimal resource utilization or passenger confusion caused by different fare structures applied to the same set of origin/destination pairs. Transit operations along the El Monte Busway provide good examples of this condition where Metro and Foothill Transit provide duplicative service between the El Monte Station and Downtown Los Angeles.

Under certain operational conditions, (road construction, traffic congestion, etc.) some duplication of a Metro route segment may occur by other operators. If the duplication impacts Metro Ridership, the Metro may require restricted operations, such as a closed-door operation by the duplicating agency.

2.9 FREQUENCY OF SERVICE

The frequency of service refers to the interval of time, expressed in minutes, between consecutive trips on a transit line. All Metro bus routes are scheduled based on demand, using the passenger loading standards in Section 3. The following table defines the maximum headways for each service type.

Maximum Service Frequency

Service	Peak	Midday	Evening /Owl	Weekends
Metro Express	30	---	---	---
Metro Rapid	10	20	20	20
Metro Local	30	60	60	60
Metro Rail Feeder/Shuttle	30	60	60	60

An overall Metro service improvement goal is to ensure that all Metro bus lines provide a minimum of 30-minute peak hour service along the trunk portion of the route. Currently, about 37 (40) Metro bus lines operate with peak trunk headways that are greater than 30 minutes. These lines are listed in Appendix B. Beginning with the fiscal year 2004 Service Change Program, these lines will be reviewed for potential headway improvements as resource availability permits. Lines that cannot support 30-minute service may be modified, cancelled, or operated by other means, subject to the approval of the Sector Governance Council.



2.10 HIGH CAPACITY VEHICLES

High capacity vehicles are vehicles that have 45 seats or more. Conventional transit buses offer seating for about 40 passengers. Ideally, high capacity vehicles are used on lines with high ridership demand where there would be an opportunity to reduce vehicle requirements and service hours, thereby reducing overall operating costs. However, their deployment should not increase service intervals to the point where riders notice degradation in service quality. For this reason, bus lines with peak frequencies of five minutes or less are ideal candidates for this type of vehicle. In evaluating services for higher capacity vehicles other factors must be considered, including: facility compatibility, street design and potential impacts to services where schedules have been interlined.



2.11 BUS LANES

A bus lane is a lane on a street or highway reserved primarily or exclusively for buses, either all day or for specified periods. Other traffic is typically limited to emergency vehicles and in some cases taxis, may be allowed. Automobiles may be given limited access, such as for making left or right turns.

Bus lanes are a key attribute of Metro Rapid and an important strategy for improving traffic congestion, mobility and air quality. They make transit usage more attractive by reducing transit travel times, increasing service reliability, and improving safety. Bus lanes are most effective in those areas where a high percentage of the travel is on transit buses operating on congested arterials.

With the recent success of the Wilshire Boulevard Bus Lane Project and the ongoing Metro Connections Study, opportunities to expand the bus lane program are being actively pursued. Candidates for this treatment are those corridors with peak hour bus volumes of a least 50 buses per hour and direction of travel; and arterials with significant congestion. In the evaluation of candidate corridors other factors are considered, such as: traffic and parking impacts; overall travel time savings, and street design considerations.

2.12 NEW SERVICE GUIDELINES

Proposals for new service come from a variety of sources including: customers, employees, technical studies, and from reviewing system performance and the development process. These proposals are considered during the development of service change programs, based on customer need and resource availability. As part of the evaluation process, opportunities to satisfy the request with existing service of Metro or other local operators are also explored.



New services are only implemented where projections indicate that ridership can support at least 30-minute peak hour headways and can meet the minimum productivity standard.

After one year of operation, new services are included in the annual service review and are expected to meet the minimum productivity standard by their second year of operation.

2.13 ROUTE SPACING

Route spacing refers to the average distance between two or more parallel bus routes. This is a measure of service accessibility. Bus service is designed to link transit oriented communities with educational, shopping, employment, recreational and health care centers. In core-developed areas, routes should be spaced approximately ½-mile apart. In residential areas routes will be spaced approximately 1-mile apart, and in undeveloped areas, the distance between parallel routes will be determined by demand and by street pattern. Metro bus and rail services and services operated by other operators are considered when measuring compliance with these standards.

Bus Route Spacing Guidelines

Development Characteristics	Distance Between Parallel Routes
Urban	½ mile
Suburban	1 mile
Low Density Residential/Undeveloped	As needed/Pursue alternative delivery methods

- Includes Metro bus and rail services, as well as services of other operators. ~~(Includes Metro bus and rail services, as well as services of other operators)~~

2.14 PLANNING (SERVICE) WARRANTS

Planning (Service) warrants are minimum demand thresholds that are used to identify the most effective transit solution for a particular corridor. In public transportation, there are a variety of service solutions available. These range from paratransit service to heavy rail. Paratransit service is generally any public transportation service operated with a vehicle smaller than a 30-foot transit bus. It can include Dian-A-Rides, Shuttles, Circulators and subsidized taxi programs.

Determining the most appropriate transit service in a corridor depends on a number of factors, including level of demand, resource availability, site or corridor characteristics, environmental considerations and community acceptance.

The planning (service) warrants, shown on the following page, are guidelines that are used during the initial review of new service proposals, such as the expansion of the rail or Metro Rapid programs and when considering proposals to upgrade existing operations. The planning warrants use minimum demand thresholds and corridor characteristics to help identify the appropriate service type and to select candidate corridors for major investment. The demand thresholds include the combined ridership levels for all services operating in the corridor.



PLANNING WARRANTS (Metro SERVICE WARRANTS)

SERVICE	DESCRIPTION	WARRANT(S)
RAIL		
Heavy Rail	Operating 100 percent within an exclusive right of way.	3,000 boardings or more in the peak hour and direction of travel. Total daily boardings greater than 50,000. Ability to construct a fully grade separated facility.
Light Rail	Operating in mixed flow traffic or within an exclusive right of way.	1,500 boardings or more in the peak hour and direction of travel. Total daily boardings greater than 25,000. Ability to construct a guide way within or adjacent to the corridor.
BUS		
Expedited Transit Bus	A regular or articulated bus operating in a fixed guide way or a limited stop service in mixed flow with signal <u>priority</u> treatment.	300 or more boardings during peak hour and in peak direction of travel. Daily average of more than 500 boardings per route mile <u>or</u> over 10,000 total daily boardings. Ability to implement operating speed improvements in the corridor.
Standard Transit Bus	A 30-40 foot bus operating fixed route/fixed schedule in either local or express mode.	80 or more passengers during peak hour and in a single direction of travel. Total daily boardings greater than 2,000.
Paratransit Service	Service operated with a van, sedan, mini-bus or other vehicle smaller than a 30-foot transit bus (Dial-A-Ride, Shuttles, Circulators and subsidized taxi, etc.).	Services that do not meet the standard transit bus warrants are only operated by Metro when there is a demonstrated need and no other operator available.



2.15 SPAN OF SERVICE

Span of service refers to the hours that service is available on a given day and defines the minimum period of time that service will operate at any point in the system. This provides customers with the confidence that direct and connecting service will be provided.

Some of the criteria used to determine the span of service on a bus route include: existing ridership and productivity levels, the span of service on connecting and alternative services with expanded service; resource availability, customer requests; and the hours of operation of major job sites or activity centers along the alignment.

Span of Service

Service	Weekday	Weekends
Metro Express	Peak Hours Only	N/A
Metro Rapid	5am - 9pm	6am - 9pm
Metro Local	5am - 11pm	6am - 9pm
Metro Rail Feeder/ Shuttle	5am - 9pm	6am - 9pm

The above table summarizes the approximate span of service for each service type. The hours of operation on individual bus routes or rail lines are ultimately based on demand and resource availability. For example 18 of the busiest local bus routes operate 24 hours a day and selected express services operate all day and on weekends.

2.16 SPECIAL EVENT SERVICE

Special event services are bus routes that are designed to take passengers to a specific venue and are not part of the regular scheduled operation.

The Metro will provide service under contract to other entities only if the provision of these services do not interfere with the Metro’s ability to meet its regularly scheduled service obligations and fits within the scope of the agency’s regular operation, in terms of route structure, fares and span of service. Contracted services will be provided on a full cost recovery basis.



SECTION 3: BUS PERFORMANCE MEASURES

Performance measures are used to evaluate Metro bus service. They address customer satisfaction, passenger loading and productivity.

3.1 MYSTERY RIDER PROGRAM

An ongoing "Mystery Rider" survey has been developed to help evaluate product and service delivery, reward high quality performance, and identify service quality issues. The program uses a team of anonymous "mystery riders" who use the system and rate service from the customer's perspective. The survey provides a detailed evaluation of operator-controlled issues (such as courtesy and safety) as well as maintenance issues (such as cleanliness and climate systems). Knowledge gained from these surveys will help to target service initiatives and training programs to improve customer satisfaction.

Beginning in FY 2005, mystery shoppers will perform approximately 50 observations per month throughout the system. Feedback from the surveys will be provided to Sector management for appropriate action, along with incentive rewards for operators and divisions scoring highly in the survey.

3.1 ANNUAL SHOPPER SURVEY

~~A shopper survey is an interactive survey used to measure how well corporate initiatives and customer service objectives are being implemented. During these surveys, a team of riders uses the system and evaluates service from the customer's perspective, based on specific criteria set by the client. Results from these surveys help to target service campaigns and training programs to improve customer satisfaction.~~

~~Beginning in FY 2004, annual shopper surveys will be conducted. The shopper survey may include such things as: telephone call wait time and accuracy of information provided through the information center; enforcement of fares; cleanliness and staffing at major transfer centers; fare box and ticket vending machine defects; stop announcements by operator, and the handling of passengers using wheelchairs or with other special needs.~~



3.2 PASSENGER LOADING

Passenger loading is a measure of seating capacity on a bus or rail car. It is typically expressed as a percentage of the total passengers on board a vehicle compared to the seats available.



These standards are set at a level to offer sufficient seating capacity on Metro Bus and Rail lines to meet the need of Metro’s current and future riders, and ensure overcrowded vehicles do not discourage patronage.

Passenger Loading Standard

Service	Standard
Metro Bus	120%

The table above shows the current passenger loading standard for Metro Bus service.

3.3 PRODUCTIVITY GUIDELINES AND ANNUAL LINE REVIEW

Productivity guidelines are used to ensure that Metro services are effective and provide a reasonable return on investment. These measures are applied to all Metro bus routes in operation for more than a year.

These measures are used to flag problem services that are not performing up to expectations. Specific corrective actions are decided during the service change process. Corrective actions could include marketing, service restructuring, serving the demand with an alternative service or elimination of service. The chart on the following page outlines performance review process and the application of the minimum productivity standard for Metro bus service.

The evaluation process focuses on three factors:

Utilization of Resources – Passenger boardings per service hour is used as a measure to determine how effectively resources are being used. This measure is determined by dividing the total number of boardings on the line by the service hours operated. Routes having a higher number of passengers per hour represent a better utilization of resources such as buses, operators and fuel.

Utilization of Capacity – Passenger miles per seat miles is the measure used to evaluate how well the seating capacity of the system is being used. Passenger miles are calculated by multiplying the average distance traveled per passenger by the number of passengers using the service. Seat miles are calculated by determining the number of seats per vehicle by the number of service miles operated. The higher resulting number indicates greater utilization of system capacity. ~~(The higher resulting number indicates greater utilization of system capacity.)~~

Fiscal Responsibility – Subsidy per passenger is the measure for fiscal responsibility. Subsidy refers to the amount of public funding required to cover the difference between the cost of operation and the passenger revenues collected. Higher subsidy services require more public funding support.

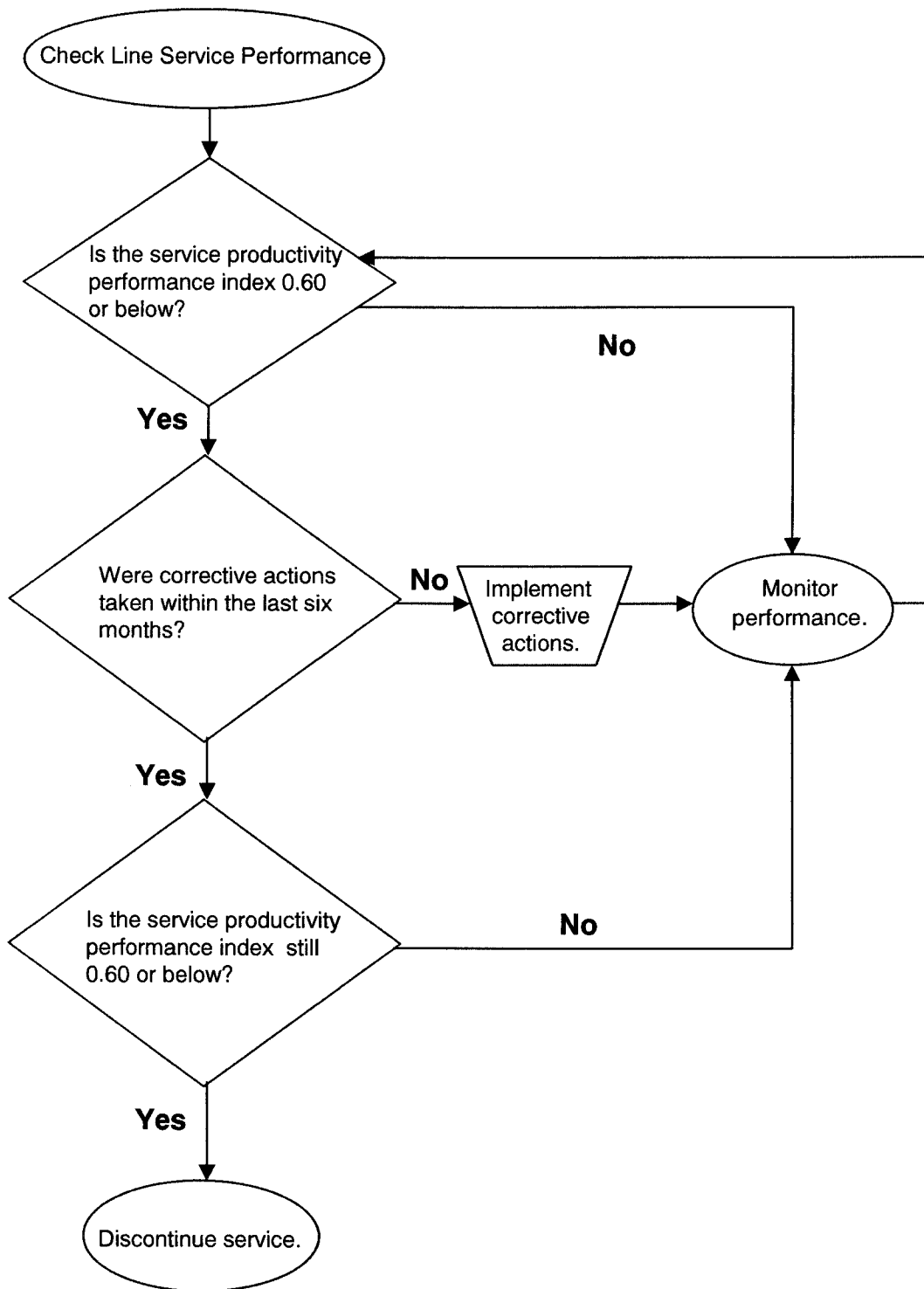
During the evaluation process, a route performance index is developed and used to objectively measure the performance of each route in the system, relative to other routes in the same category. The following categories are used during the performance evaluation process:

- Metro Express
- Metro Rapid
- Metro Local
- Metro Rail/Feeder Shuttles

Specific indices are developed for each measure and category of service performance. Lines with an index of 1.0 perform at the category average, while lines with an index of less than 1.0 perform below the average. Routes with a performance index lower than 0.6 are defined as performing poorly and targeted for corrective action. Lines that have been subjected to corrective actions and do not meet the 0.60 productivity index after six additional months of operation may be cancelled subject to Sector Governance Council approval. [Appendix C \(A\)](#) contains a more detailed discussion of how the productivity index is developed.



ANNUAL REVIEW PROCESS FOR METRO BUS LINES IN OPERATION FOR MORE THAN ONE YEAR



SECTION 4: RAIL SERVICE POLICIES

The Metro Rail system serves as the backbone of the public transportation system in the greater Los Angeles region. Service is provided on four separate lines to 65 stations, operating over 70 route miles in heavily congested travel corridors. The lines provide connections to many key multi-modal transportation hubs and account for 220,000 weekday boardings, (over 59 million annual boardings in Fiscal Year 2003). The Red (red) (heavy rail subway) and Green Lines (light rail) operate entirely within dedicated right-of-ways, while the Blue and Gold Lines (both light rail) operate primarily on grade separated alignments and surface streets, with numerous vehicles and pedestrian crossings.



The system will continue to expand over the next several years with ongoing construction of the Gold Line Eastside Extension and final planning of Exposition Line. As a result, ridership levels will not stabilize for many years. Current planning efforts are focused on matching service levels with demand. Key rail policies address the frequency of service, span of service and passenger loading.

SECTION 4: RAIL SERVICE POLICIES

~~The Metro Rail system includes a subway (Red Line) and three light rail lines (Blue Line, Green Line and Gold Line). On an average weekday, there are over 220,000 boardings on the Metro Rail system. The rail system is operated within dedicated right of ways and has the ability to move large numbers of people along congested corridors, while having little impact on street congestion. For these reasons, the Metro Rail system serves as the backbone of the public transportation system.~~

~~Metro Rail service operates along a fixed network. The system is undergoing expansion and ridership levels have not yet stabilized. Current planning efforts are focused on matching service levels with demand. Key rail policies address the frequency of service, span of service and passenger loading.~~

4.1 FREQUENCY OF SERVICE

The frequency of service refers to the interval of time, expressed in minutes, between consecutive trips on a transit line. The frequency of service on rail lines is determined based on policy and demand.



Service frequencies are set in a manner that ensures a reasonable, attractive level of service is provided throughout the day and to provide sufficient capacity to adequately meet ridership demand.

The table below defines the maximum (longest) headways for each service period operated by the Metro along the trunk portion of a line. Service along branches may be less frequent.

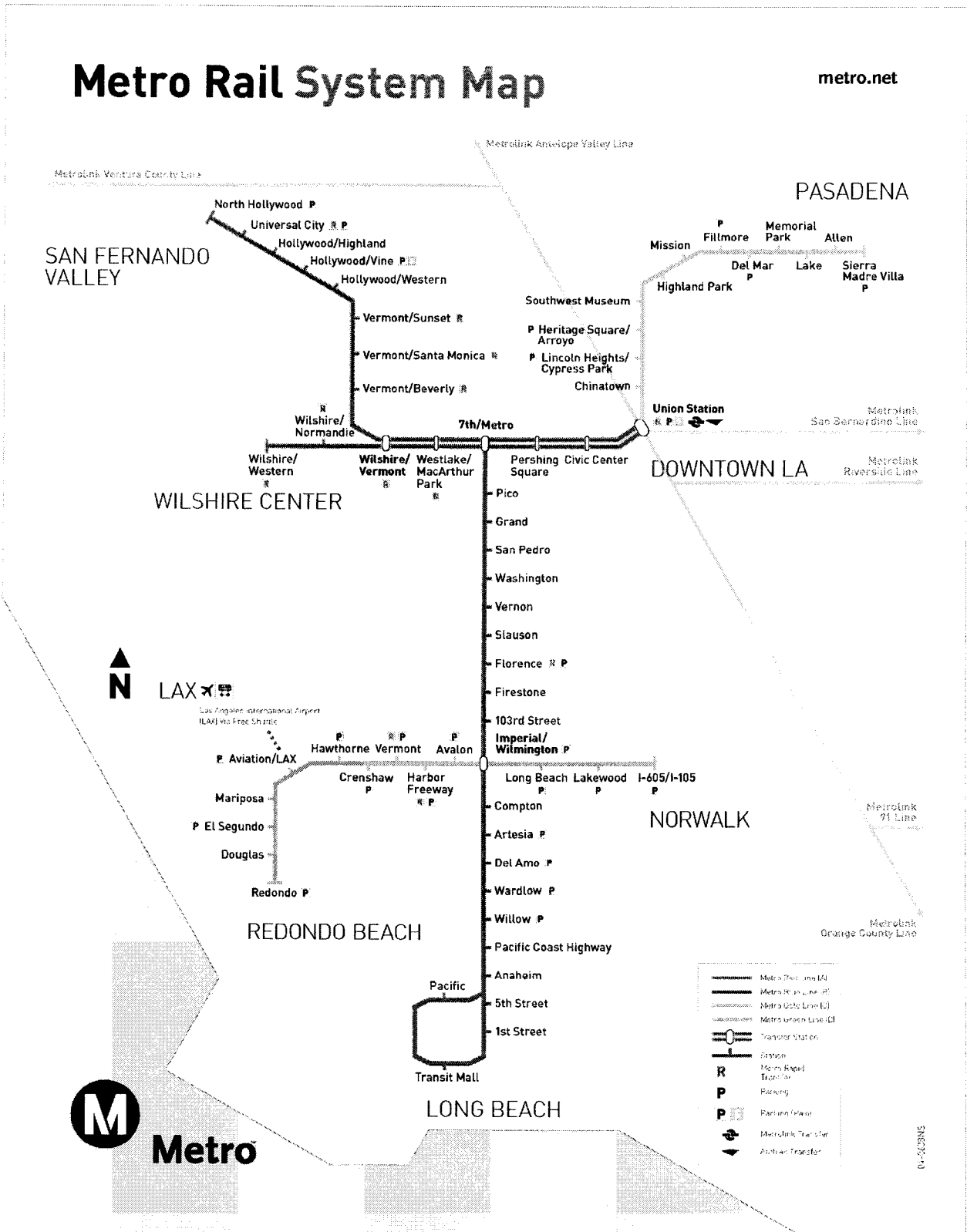
Recommended Maximum Frequency

<u>Service</u>	<u>AM/PM</u> <u>Peak</u>	<u>Midday</u> <u>(9am-3pm)</u>	<u>Evening</u> <u>(6pm-9pm)</u>	<u>Night</u> <u>(9pm-2am)</u>	<u>Weekends</u>
Light Rail (Blue Line, Green Line, Gold Line)	12 (15)	15	20	20	20
Heavy Rail (Red Line)	5	7	12	15 (12)	15 (12)



Metro Rail System Map

metro.net



4.2 SPAN OF SERVICE

Span of service refers to the hours of the day and days of the week that service is operated. For the rail system the span of service is determined based on the hours of key activity centers located along the alignment and ridership demand. A key factor in determining the span of service on individual lines is system connectivity. Evening schedules are designed to provide connections at the 7th St./Metro /Julian Dixon Station, Union Station and Imperial/Wilmington/Rosa Parks Station. The approximate span of service for light and heavy rail service is summarized below.

Approximate Span of Service

Service	Weekdays	Weekends
Light Rail (Blue Line, Green Line, Gold Line)	3:50 am - 2:00am	3:50 am - 2:00 am
Heavy Rail (Red Line)	4:30 am - 1:30 am	4:30 am - 1:30 am

4.3 PASSENGER LOADING

Passenger loading is a measure of seating capacity. It is typically expressed as a percentage of the total passengers compared to the seats available. These standards are set at a level to offer sufficient seating capacity on the Metro Rail lines to meet the need of Metro’s current and future riders, and ensure overcrowded vehicles do not discourage patronage.

Passenger Load Standards

Service	Standard
Light Rail	190%
Heavy Rail	230%

The above table shows the current passenger loading standards for each service type. The standards vary to reflect differences in seating and available space for standees by vehicle type.



SECTION 5: SERVICE CHANGE PROCESS

The Metro traditionally implements service changes to its bus service system twice a year. Each service change takes about one year to plan and implement.

Service Change Timeline

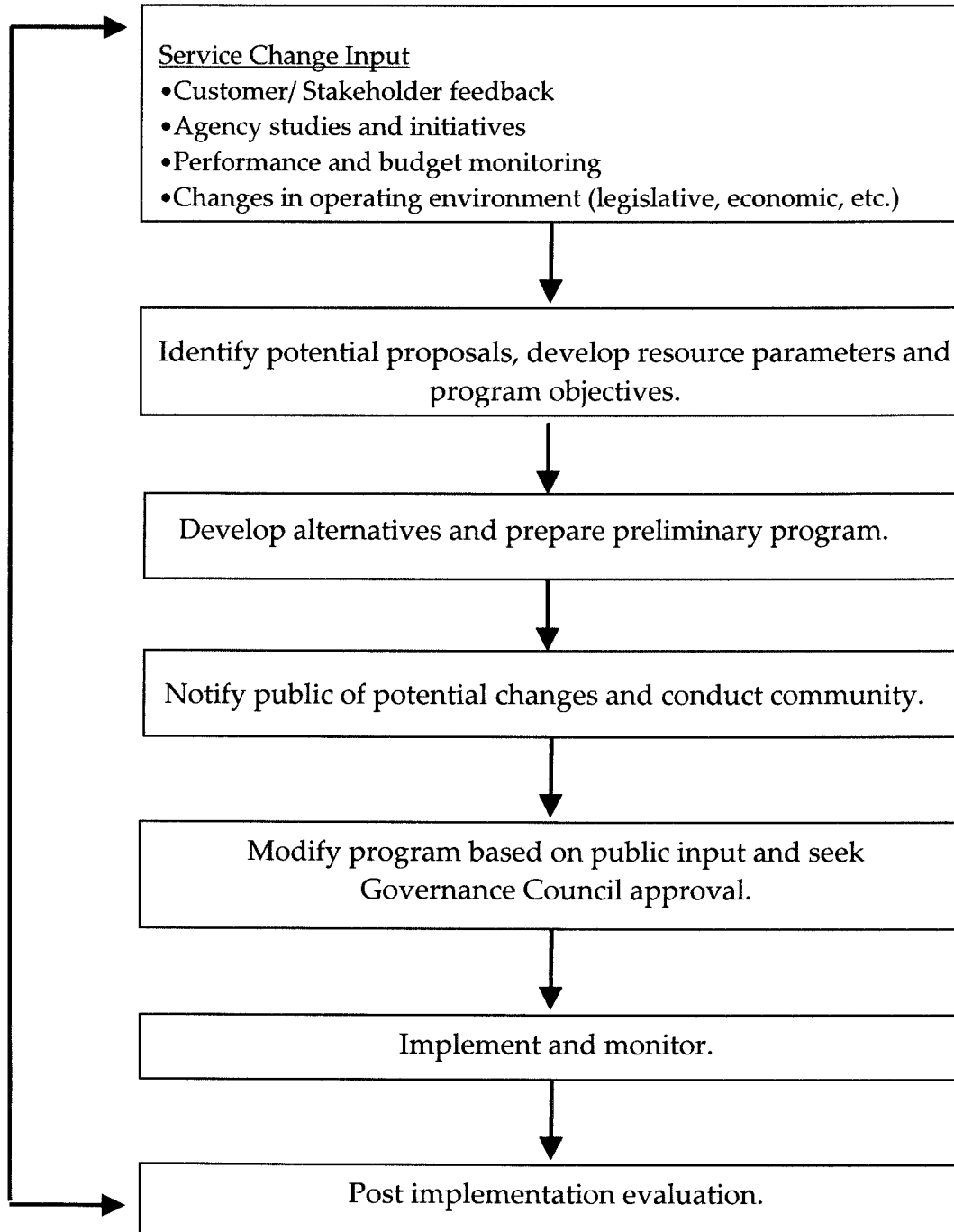
Key Activities	Required Lead Time (Months Prior to Implementation)
Initiate Planning Process	12
Develop Preliminary Recommendations	7-8 (8)
Public Review and Input	5-7 (7-8)
Finalize Program	5 (6)
Program Approval	5
Develop New Service Schedules	3-5
Print Public Time Tables and Operator Assignments	1-2
Implement Service Change	

The service change programs are developed based on input generated by a wide variety of sources. Sources include customer and employee input, service restructuring studies, requests from other local operators and performance monitoring results. The evaluation process includes public review of the proposals, environmental considerations, coordination with key stakeholders in the regional bus system, and review and approval by the Sector Governance Councils and/or Board of Directors. Once a program is approved, the public is notified of the upcoming changes and new public timetables and bus operator work assignments are developed. Appendix D presents the template that is used when presenting service change programs. It includes budget targets, goals and objectives, as well as a summary of key impacts.

Changes to the rail system occur less frequently. They generally relate to the opening of a new line or adjustments to the frequency or hours of operation for existing service. Changes in rail and bus service follow the same planning and implementation process.



SERVICE CHANGE PROCESS



5.1 INTERNAL REVIEW AND OVERSIGHT OF THE SERVICE CHANGE PROCESS

The Sector Governance Councils oversee the planning and implementation of service within their area, while coordination of the overall Service Change Program is an agency function. The responsibilities of the Governance Councils include: approval of the sector budget within designated funding levels; calling and conducting public hearings for sector bus lines; approval and evaluation of sector programs; implementation of service changes; review and development of policy recommendations to the Metro Board and ensuring compliance with Metro policies procedures and legal agreements.

The Metro has an internal review team, known as the Service Development Team, which provides oversight during the service change process. The committee includes the Chief Executive Officer (CEO), the Deputy Chief Executive Officer (Deputy CEO) ~~Chief Operating Officer (COO)~~, the Sector General Managers, the General Manager of Rail Operations and other key executive staff. The committee establishes targets and objectives for each service change program; helps to prioritize proposals; and provides a forum for coordination among the sectors, especially when there are proposals involving major bus lines serving two or more sectors. When there are service issues that cannot be resolved among the sectors, the Service Development Team will intervene. The Service Development Team also oversees the development of fare and service policies and other agency initiatives that will have a major impact on transit services.

5.2 PUBLIC INVOLVEMENT AND NOTIFICATION

Customer input and feedback are vital to the planning process. Throughout the process, and especially during the period leading up to the public hearing, staff conducts outreach activities to engage key stakeholders in the review process. These groups include: Councils of Governments, the Metro Citizen's Advisory Council, special advocacy groups and regional Metro subcommittees (Technical Advisory Committee, Bus Operations Subcommittee, and the Local Transit System Subcommittee). In addition to these formal groups, staff frequently meets with neighborhood and business groups to discuss specific proposals or issues of concern.



As summarized in the table below, a number of efforts are made to notify the public and elected officials of pending changes in Metro bus and rail service. In advance of public meetings on Metro service changes, legal notices are published in several newspapers, and written notification and descriptions of the proposed changes are sent to elected officials, other local transit operators and key stakeholder groups. Also, information is posted on the Metro website and there is an on-board system wide distribution of public hearing notices. There are also related press releases.



Timeline For Key Public Notification Activities

<u>Activity</u>	<u>Months Prior to the Service Change</u>
<u>Service Development Team reviews preliminary proposals.</u>	<u>7 (6)</u>
<u>Service Sectors set dates or public meetings publish meeting notices in local newspapers and send written notification to elected officials, other operators and key stakeholder groups.</u>	<u>6-7 (5)</u>
<u>Service Sectors provide information on proposed changes to the Metro Bus Operators Subcommittee.</u>	<u>6 (5)</u>
<u>Communication Department posts information proposed changes on Metro website.</u>	<u>6 (5)</u>
<u>Sectors distribute meeting notices on-board vehicles.</u>	<u>At least two weeks prior to public hearings</u>
<u>Sectors conduct public meetings.</u>	<u>5 (4)</u>
<u>Sector Governance Councils approve final program.</u>	<u>4 (3)</u>
<u>Communication Department prepares press releases on final program and program brochures are distributed on-board Metro vehicles.</u>	<u>1</u>
<u>New Timetables are distributed and available on-board Metro vehicles</u>	<u>At least two weeks prior to changes</u>

Public meetings are conducted when there are major changes to service or changes to the fare policy (see Appendix C). The meeting process provides the public with an opportunity to comment on major service change proposals approximately two weeks prior to the meeting an information packet is prepared for the public. The packet includes maps and descriptions of the changes requiring a public hearing and estimates of ridership and financial impacts. This information is made available to the public through the Service Sector Offices. After the public meetings, staff reviews all the feedback and develops final recommendations.

After a service change program is approved, a second round of public notification begins. This includes distributing brochures on bus lines



that will be affected by the service change and advance distribution of new timetables. When key changes are being implemented, field representatives known as Transit Ambassadors are often deployed to major boarding locations in the system to distribute information and answer customer questions. When new lines are being implemented there are often targeted promotional campaigns, which include radio and print media, as well as promotional fares.

5.3 IMPLEMENTING MINOR CHANGES ON AN INTERIM BASIS

Minor service changes are generally route modifications that can be accommodated without impacting the vehicle or operator requirements of the service. Each Sector has been delegated the authority to make minor route modifications (not requiring a public hearing) not to exceed an annual cost based on the annual CEO signature authority. These limits are based on the CEO's signature authority. Minor changes to service are reported to the Board of Directors on a quarterly basis.

5.4 COORDINATION WITH OTHER OPERATORS

In addition to the service provided by the Metro, 40 other local operators provide fixed route service and there is more than 100 other local return and non-profit agencies that provide community based transportation services. As the regional planning agency for Los Angeles County, the Metro plays a lead coordination role.

The Metro Service Sector staffs are responsible for coordinating with the other operators within their area, especially when changes in service are being considered. Additionally, there are other more formal means of coordination.

The Bus Operations Subcommittee (BOS) and the Local Transit Systems Subcommittee (LTSS) were established to serve as a forum for interagency service coordination within Los Angeles County. These groups meet monthly at the Metro headquarters. The BOS is comprised of representatives from entities that provide fixed route bus and paratransit service and are eligible to receive funds from the Formula Allocation Process (FAP). The LTSS is comprised of representatives from entities that provide fixed route or paratransit service funded with local return dollars.

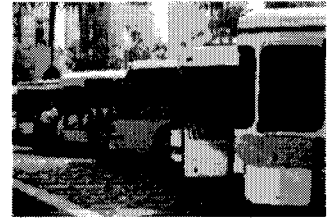
In April, 2001 the Metro Boards of Directors approved the Municipal Operations Service Improvement Program. As part of this program, \$15 millions of Proposition C funds are programmed from 2002 through 2006. The funds were established to help reduce MTA operating costs in corridors where there is overlapping service and to reduce overcrowding.



In October 2002, a Regional Transit Plan was adopted and is in the process of being updated. The plan outlines key service coordination issues and action plans for addressing them.

The BOS is monitoring the implementation of the Regional Transit Plan. Key service issues include the implementation of the Universal Fare System, reducing service duplication, improving regional transit centers, and increasing the participation of the LTSS during the regional transit planning process.

As part of the public hearing outreach period of the Metro service Change process, the Sector General Managers are responsible for coordinating with the local operators and municipalities within their area. This includes providing an opportunity to participate in the planning process (service changes, rail feeder plans, bus/rail interface plans, system restructuring), and providing advance notification of service proposals, which may affect the local operators or communities within their sector. Similarly, the local operators are to provide the Metro with advance notification of proposals that may affect Metro Bus operators or ridership.



SECTION 6: CONCLUSION

The Metro Transit Service Policy will be used to guide decision-making during the service change process and the development of other longer term plans, such as transition to the hub and spoke network. This policy supersedes any other agency service policies.

The application of the policy will be supported by service monitoring which will provide updated information on the performance of individual bus lines, the overall system and customer satisfaction. Specific system objectives will also be monitored, including the number of bus lines operating with peak hour headways greater than 30-minutes; the number of bus lines conforming with the minimum productivity indices, and seating capacity.

The transit policy reflects current practices and agency direction. However, the environment is constantly changing and the policy will be reviewed annually. Any changes to the policy will require the approval of the Board of Directors.



APPENDIX A: METRO RAPID PROGRAM SERVICE WARRANTS

PROGRAM PRINCIPAL: Improve Operating Speed and Frequency.

PROGRAM GOAL: Minimum operating speed improvement is 20% over existing limited-stop service or 25% over existing local service.

Program Element	Program Component	Program Objective
PLANNING DEPARTMENT RESPONSIBILITIES		
	Maximize patronage and minimize costs	Identify core segment of corridor for Metro Rapid operation to maximize patronage (500 passengers per route mile or greater) and minimize operating costs (no net increase in corridor revenue vehicle hours).
	Linear corridor alignment	Minimize corridor turning movements to maximize safe and reliable operating speeds, improve customer understanding and confidence in service structure, and provide reliable service operations.
OPERATIONS DEPARTMENT RESPONSIBILITIES		
Corridor Alignment	Alignment modification	Changes to the alignment that affect one-way revenue route miles or which impact planned or existing infrastructure (stations and TPS) require a technical memorandum analyzing impacts on customers, line performance, operating costs, and capital costs.
	Addition of shortlines and branches	Proposed shortlines and branches must occur at a point where less than 30% of the maximum passenger load remains so as to avoid passenger pass-ups on through-trips. Shortlines or branches must occur every other trip to avoid confusion and bunching due to erratic loading of passengers. All shortlines and branches require a technical memorandum analyzing impacts on customers, line performance, operating costs, and capital costs.
	Addition of express trips	Consideration of express service can be undertaken only as a separate route and where justified in a technical memorandum analyzing impacts on customers, line performance, operating costs, and capital costs.
	Maintenance of operating speed	Maintenance of the Program Goal is required. Corridor vehicle run times will be monitored. Improvements in operating speed are encouraged through improved stop placement, signal priority software, elimination of unproductive stops, introduction of bypass lanes, and improved BOCC and TOS management.



Program Element	Program Component	Program Objective
PLANNING DEPARTMENT RESPONSIBILITIES		
<p>Stop spacing will average no less than 0.70 miles per corridor and be based on existing ridership and connections with other bus and rail service. Stop locations must be planned to accommodate either 45-foot or 60-foot buses.</p>		
<p>Far-side stop locations are required to realize TPS and must be planned at all intersections. The only exceptions are where far-side stop locations are not possible within a reasonable walk from the intersection or where nearside locations facilitate access for greater than 75% of the boardings, e.g., intersecting Metro Rail station portals. Near-side stations require 120 feet of red curb in all cases.</p>		
<p>Shared Metro Rapid and local bus stop locations must be avoided to reduce delay, minimize bus congestion at the stop, and eliminate passenger confusion with "next trip" displays.</p>		
OPERATIONS DEPARTMENT RESPONSIBILITIES		
<p>Stops may be added only if they exceed 250 daily boardings (100 boardings if within one mile of line terminal) and only where the Time Delay Index¹ of existing on-board passengers to the additional riders expected at the new stop is (a) less than 5 for the addition of a new stop that is between 0.5 and 0.7 miles from an existing stop; (b) less than 7.5 for the addition of a new stop that is between 0.7 and 1.0 miles; or (c) less than 10 for the addition of a new stop that is over 1 mile from an existing stop. Stops less than 0.5 miles from an existing stop must have a Time Delay Index less than 3 and can only be added in extraordinary circumstances. Added stops require a technical memorandum that analyzes the impacts on customers, line performance, operating costs, and capital costs. Station construction costs associated with stops added beyond those approved in the September 2002 Metro Rapid Board report will be paid by the Managing Sector.</p>		
Stop Location	Addition of new stop	Stops may be eliminated only if (a) after the first six months the Time Delay Index is greater than 15; or (b), where use of the station results in operating speed, reliability, or safety problems. A technical memorandum is required that analyzes the impacts on customers, line performance, operating costs, and capital costs.
	Elimination of stop	Stations may be relocated only when required by a city or the County and where the station relocation does not negatively impact ridership. If possible, relocations should be made prior to the construction of the permanent station facility. A technical memorandum is required that analyzes the impacts on customers, line performance, operating costs, and capital costs.
	Relocation of station	Stations may be relocated only when required by a city or the County and where the station relocation does not negatively impact ridership. If possible, relocations should be made prior to the construction of the permanent station facility. A technical memorandum is required that analyzes the impacts on customers, line performance, operating costs, and capital costs.

¹ The Time Delay Index is the average on-board passengers arriving at the proposed new stop multiplied by the average delay at the new stop (average expected people to board per trip at the new stop multiplied by one second each plus 30 seconds delay to compensate for vehicle arrival and departure speeds) divided by the average expected boardings at the new stop. The recommended thresholds are based on analysis of available Profile 50 data for the Van Nuys, Florence, and Wilshire-Whittier Metro Rapid corridors.



Program Element	Program Component	Program Objective
<p>Station Facility</p>		<p>PLANNING DEPARTMENT RESPONSIBILITIES</p>
	<p>Full Metro Rapid station with canopy</p>	<p>All stations will have the "branded" Metro Rapid canopy facility with flagpole, kiosk, and "next trip" display unless it is physically impossible without extreme cost. For terminal stations and stops on turnaround loops that only discharge passengers, the full station facility will not be provided; a Metro Rapid "discharge only" sign on a channel post will be provided.</p>
	<p>Double canopies will be installed only at high demand stops</p>	<p>Double canopies will be located only at high demand stops, such as high ridership Metro Rail station portals or where high ridership bus lines meet.</p>
	<p>All stations will be designed to accommodate either 45-foot or 60-foot buses</p>	<p>Farside stations require a total clear space (red curb) of 120 feet unconstrained or 100 feet constrained. The largest vehicle required for the Metro Rapid Program is the 60-foot articulated bus.</p>
<p>Transit Priority</p>		<p>OPERATIONS DEPARTMENT RESPONSIBILITIES</p>
	<p>Station Maintenance Monitoring</p>	<p>All stations will be maintained by the city or County responsible for the station and kept in good repair with regular cleaning and emptying of trash receptacles such that a positive, properly maintained image is projected and problems with adjacent land owners are minimized.</p>
		<p>PLANNING DEPARTMENT RESPONSIBILITIES</p>
	<p>All signalized intersections should provide bus signal priority for Metro Rapid</p>	<p>Signal priority should include terminal movements to reduce operating costs.</p>
	<p>Identification of by-pass lane needs</p>	<p>At points of significant delay due to traffic congestion, an analysis will be developed of the feasibility of establishing by-pass lanes for Metro Rapid service.</p>
	<p>Monitor effectiveness of transit priority measures</p>	<p>The effectiveness of the transit priority measures will be periodically analyzed and recommendations will be developed for potential further improvements where warranted.</p>
		<p>OPERATIONS DEPARTMENT RESPONSIBILITIES</p>
	<p>Signal priority at intersections along major deadhead movements is desired</p>	<p>Metro Rapid not-in-service vehicle movements should be operated off the route-of-line to avoid invalid requests for bus signal priority and false "next trip" information on the station displays. Consideration should be given to consolidating several Metro Rapid not-in-service routes along the same streets to benefit from signal priority.</p>



Program Element	Program Component	Program Objective
<p>Vehicles and Vehicle Planning</p>	<p>Metro Rapid lines are assigned one vehicle size, i.e., 40-ft, 45-ft, or 60-ft articulated</p>	<p>PLANNING DEPARTMENT RESPONSIBILITIES</p> <p>The planned service frequency will be based on deployment of a particular size bus and these vehicles will need to be assigned to the particular line and operating Division. Only one size vehicle should be scheduled and operated on each line in order to avoid passenger overcrowding and service bunching.</p>
	<p>Vehicles must be in Metro Rapid livery</p>	<p>OPERATIONS DEPARTMENT RESPONSIBILITIES</p> <p>Metro Rapid vehicles may be operated only on Metro Rapid routes. On the rare occasion that a red bus is unavailable for pullout, a local bus may be substituted to ensure pullout. Operation of "red and white" Metro Rapid buses is integral to the operating speed, simplicity of service, and customer experience.</p>
<p>Service Frequencies</p>	<p>Weekday peak frequency</p>	<p>OPERATIONS DEPARTMENT RESPONSIBILITIES</p> <p>The minimum weekday peak frequency is 10 minutes or less. Large capacity vehicles must be considered based on capacity needs, without violating the 10-minute frequency threshold; comparison of overall daily operating cost will determine which vehicle is the best choice at this minimum service level.</p>
	<p>Weekday off-peak frequency</p>	<p>The minimum weekday off-peak frequency is 12 minutes or less. Minimum frequency is subjected to funding availability and may be relaxed to 15 or 20 minutes in unique, cost-constrained funding situations, or not operated at all during the off-peak; owl service with underlying local owl service may also operate at a frequency up to 20 minutes</p>
	<p>Local service frequency at start-up 75-100% of planned Metro Rapid</p>	<p>Initial local service levels (trips) must be set at 75-100% of Metro Rapid service levels based on individual corridor needs; adjustments can be initiated during the next shakeup once actual ridership splits are known.</p>
	<p>Cost-neutral operating expense</p>	<p>Consistent with the September 2002 Metro Rapid Board Report, annual corridor revenue hours at start-up will be scheduled within 1% of pre-Metro Rapid corridor revenue hours. Service frequencies may be adjusted thereafter based on passenger demand.</p>
		<p>OPERATIONS DEPARTMENT RESPONSIBILITIES</p>
<p>Service Span</p>	<p>Seven-day service span is desirable</p>	<p>Corridors will be operated consistent with the September 2002 Metro Rapid Board Report. Service span is to be adjusted based on passenger demand, once actual ridership is known.</p>



Program Element	Program Component	Program Objective
Schedule Development	Terminal departure timepoints	OPERATIONS DEPARTMENT RESPONSIBILITIES Operating schedules and running boards must be developed for free running time by operators with schedule adherence timepoints for terminal departure only; no other timepoints will be shown on the operator running board.
	Headway interval-managed service operation	OPERATIONS DEPARTMENT RESPONSIBILITIES Metro Rapid service allows for dynamic optimization of operating speeds through free running time operation following scheduled terminal departures; vehicle spacing must be managed in real time by the BOCC and/or assigned TOSS.



PROGRAM PRINCIPAL: Improve Operating Speed and Frequency.

PROGRAM GOAL: Minimum operating speed improvement is 20% over existing limited stop service or 25% existing local service.

Program Element	Program Component	Program Objectives
Corridor Alignment	<u>Maximize patronage and minimize costs</u>	<u>Identify core segment of corridor for Metro Rapid operation to maximize patronage (500 passengers per route mile or greater) and minimize operating costs (no net increase in corridor revenue vehicle hours).</u>
	<u>Linear corridor alignment</u>	<u>Minimize corridor turning movements to maximize safe and reliable operating speeds, improve customer understanding and confidence in service structure, and provide reliable service operations.</u>
	<u>Alignment modification</u>	<u>Changes to the alignment that affect one-way revenue route miles or which impact planned or existing infrastructure (stations and TPS) require a technical memorandum analyzing impacts on customers, line performance, operating costs, and capital costs.</u>
	<u>Addition of shortlines and branches</u>	<u>Proposed shortlines and branches must occur at a point where less than 30% of the maximum passenger load remains so as to avoid passenger pass-ups on through trips. Shortlines or branches must occur every other trip to avoid confusion and bunching due to erratic loading of passengers. All shortlines and branches require a technical memorandum analyzing impacts on customers, line performance, operating costs, and capital costs.</u>
	<u>Addition of express trips</u>	<u>Consideration of express service can be undertaken only as a separate route and where justified in a technical memorandum analyzing impacts on customers, line performance, operating costs, and capital costs.</u>
	<u>Maintenance of operating speed</u>	<u>Maintenance of the Program Goal is required. Corridor vehicle run times will be monitored. Improvement in operating speed are encouraged through improved stop placement, signal priority software, elimination of unproductive stops, introduction of bypass lanes, and improved BOCC and TOS management.</u>
Stop Location	<u>Station spacing average no less than 0.70 miles</u>	<u>Stop spacing will average no less than 0.70 miles per corridor and be based on existing ridership and connections with other bus and rail service. Stop locations must be planned to accommodate either 45-foot or 60-foot buses.</u>



Program Element	Program Component	Program Objectives
	<u>Far side station location</u>	<u>Far side stop locations are required to realize TPS and must be planned at all intersections. The only exceptions are where far side stop locations are not possible within a reasonable walk from the intersection or where nearside locations facilitate access for greater than 75% of the boardings, e.g., intersecting Metro Rail station portals. Near side stations require 120 feet of red curb in all cases.</u>
	<u>Full separation from local stop</u>	<u>Shared Metro Rapid and local bus stop locations must be avoided to reduce delay, minimize bus congestion at the stop, and eliminate passenger confusion with "next trip" displays.</u>
	<u>Addition of new stop</u>	<u>Stops may be added only if they exceed 250 daily boardings (100 boardings if within one mile of line terminal) and only where the Time Delay Index² of existing on-board passengers to the additional riders expected at the new stop is (a) less than 5 for the addition of a new stop that is between 0.5 and 0.7 miles from an existing stop; (b) less than 7.5 for the addition of a new stop that is between 0.7 and 1.0 miles; or (c) less than 10 for the addition of a new stop that is over 1 mile from an existing stop. Stops less than 0.5 miles from an existing stop must have a Time Delay Index less than 3 and can only be added in extraordinary circumstances. Added stops require a technical memorandum that analyzes the impacts on customers, line performance, operating costs, and capital costs. Station construction costs associated with stops added beyond those approved in the September 2002 Metro Rapid Board report will be paid by the Managing Sector.</u>
	<u>Elimination of stop</u>	<u>Stops may be eliminated only if (a) after the first six months the Time Delay index is greater than 15; or (b), where use of the station results in operating speed, reliability, or safety problems. A technical memorandum is required that analyzes the impacts on customers, line performance, operating costs, and capital costs.</u>
	<u>Relocation of station</u>	<u>Stations may be relocated only when required by a city or the County and where the station relocation does not negatively impact ridership. If possible, relocations should be made prior to the construction of the permanent station facility. A technical memorandum is required that analyzes the impacts on customers, line performance, operating costs, and capital costs.</u>

² The Time Delay Index is the average on-board passengers arriving at the proposed new stop multiplied by the average delay at the new stops (average expected people to board per trip at the new stop multiplied by one second each plus 30 seconds delay to compensate for vehicles arrival and departure speeds) divided by the average expected boardings at the new stop. The recommended thresholds are based on analysis of available Profile 50 data from the Van Nuys, Florence, and Wilshire-Whittier Metro Rapid corridors.



Program Element	Program Component	Program Objectives
Station Facility	Full Metro Rapid station with canopy	All stations will have the "branded" Metro Rapid canopy facility with flagpole, kiosk, and "next trip" display unless it is physically impossible without extreme cost. For terminal stations and stops on turnaround loops that only discharge passengers, the full station facility will not be provided; a Metro Rapid "discharge only" sign on a channel post will be provided.
	Double canopies will be installed only at high demand stops	Double canopies will be located only at high demand stops, such as high ridership Metro Rail station portals or where high ridership bus lines meet.
	All stations will be designed to accommodate either 45-foot or 60-foot buses	Farside stations require a total clear space (red curb) of 120 feet unconstrained or 100 feet constrained. The largest vehicle required for the Metro Rapid Program is the 60-foot articulated bus.
	Station Maintenance Monitoring	All stations will be maintained by the city or County responsible for the station and kept in good repair with regular cleaning and emptying of trash receptacles such that a positive, properly maintained image is projected and problems with adjacent land owners are minimized.
Transit Priority	All signalized intersections should provide bus signal priority for Metro Rapid	Signal priority should include terminal movements to reduce operating costs.
	Identification of by-pass lane needs	At points of significant delay due to traffic congestion, an analysis will be developed of the feasibility of establishing by-pass lanes for Metro Rapid service.
	Monitor effectiveness of transit priority measures	The effectiveness of the transit priority measures will be periodically analyzed and recommendations will be developed for potential further improvements where warranted.
	Signal priority at intersections along major deadhead movements is desired	Metro Rapid not in service vehicle movements should be operated off the route of line to avoid invalid requests for bus signal priority and false "next trip" information on the station displays. Consideration should be given to consolidating several Metro Rapid not in service routes along the same streets to benefit from signal priority.
Vehicles and Vehicle Planning	Metro Rapid lines are assigned one vehicle size, i.e., 40 ft, 45 ft, or 60 ft articulated	The planned service frequency will be based on deployment of a particular size bus and these vehicles should be scheduled and operated on each line in order to avoid passenger overcrowding and service bunching.



<u>Program Element</u>	<u>Program Component</u>	<u>Program Objectives</u>
	Vehicles must be in Metro Rapid livery	Metro Rapid vehicles may be operated only on Metro Rapid routes. On the rare occasion that a red bus is unavailable for pullout, a local bus may be substituted to ensure pullout. Operation of "red and white" Metro Rapid buses is integral to the operating speed, simplicity of service, and customer experience.
<u>Service Frequencies</u>	Weekday peak frequency	The minimum weekday peak frequency is 10 minutes or less. Large capacity vehicles must be considered based on capacity needs, without violating the 10-minute frequency threshold; comparison of overall daily operating cost will determine which vehicle is the best choice at this minimum service level.
	Weekday off-peak frequency	The minimum weekday off-peak frequency is 12 minutes or less. Minimum frequency is subject to funding availability and may be relaxed to 15 or 20 minutes in unique, cost-constrained funding situations, or not operated at all during the off-peak; owl service with underlying local owl service may also operate at a frequency up to 20 minutes.
	Local service frequency at start-up 75-100% of planned Metro Rapid	Initial local service levels (trips) must be set at 75-100% of Metro Rapid service levels based on individual corridor needs; adjustments can be initiated during the next shakeup once actual ridership splits are known.
	Cost-neutral operating expense	Consistent with the September 2002 Metro Rapid Board Report, annual corridor revenue hours at start-up will be scheduled within 1% of pre-Metro Rapid corridor revenue hours. Service frequencies may be adjusted thereafter based on passenger demand.
<u>Service Span</u>	Seven-day service span is desirable	Corridors will be operated consistent with the September 2002 Metro Rapid Board Report. Service span is to be adjusted based on passenger demand, once actual ridership is known.
<u>Schedule Development</u>	Terminal departure timepoints	Operating schedules and running boards must be developed for free running time by operations with schedule adherence timepoints for terminal departure only; no other timepoints will be shown on the operator running board.
<u>Operating Protocols</u>	Headway interval-managed service operation	Metro Rapid service allows for dynamic optimization of operating speeds through free running time operation following scheduled terminal departure; vehicle spacing must be managed in real time by the BOCC and/or assigned TOSs.



APPENDIX A: DEFINITION OF SERVICE TIERS

Service Tiers—A functional classification of transit service used as a tool for guiding transit service development and coordination activities. Within Los Angeles County, a three-tier system is used to classify service. The Tiers are defined below:

- **Tier 1**—This network of core regional service includes: Metro Rail, corridors proposed for BRT, Rapid Bus and the supporting core regional line haul services, as well as the core regional services operating in corridors included in the Rapid Bus Expansion Plan. These bus lines generally carry over 10,000 passengers per day.
- **Tier 2**—These are intercommunity bus routes that provide either line haul, express or limited stop service and supplement the Tier 1 network. These bus routes generally carry between 2,000 and 10,000 passengers per day, serve more than one community, and operate on primary arterials.
- **Tier 3**—These are community based transportation services. They generally carry less than 2,000 passengers per day, operate on secondary streets and offer more limited hours of operation.



APPENDIX B:
BUS LINES WITH PEAK HOUR TRUNK HEADWAYS GREATER THAN 30 MINUTES
(EFFECTIVE: June 27, 2004)

Line	Description	Headway Range (Minutes)
65	Washington Blvd. - Indiana St. - Gage Ave.	45
102	E. Jefferson Blvd. - Coliseum St.	35-45
119/126	108 th St. - Yukon Ave. - Manhattan Beach Blvd.	60
124	El Segundo Blvd.	35-50
127	Compton Blvd - Bellflower Blvd.	60
128	Alondra Blvd.	30-50
154	Tampa Ave. - Ventura Blvd. - Burbank Blvd. - Oxnard St.	30-60
158	Devonshire St. - Woodman Ave.	30-45
161	Thousand Oaks - Canoga Park	47-55
167	Plummer St. - Coldwater Canyon Ave.	30-45
168	Lassen St. - Paxton St.	60
169	Saticoy St - Sunland Blvd.	60
170	Hellman Ave. - El Monte via South El Monte	50
176	Glassell Park - Highland Park - Alhambra - El Monte	50-52
177	La Canada - Pasadena - Arcadia - Monrovia - Duarte	50
201	Silverlake Blvd.	35-50
205	San Pedro - Willowbrook	30-35
209	Van Ness Ave. - Arlington Ave.	35-40
211/215	Prairie Ave. - Inglewood Ave.	23-45
220	Robertson Blvd. - Culver Blvd. - LAX	50-60
225/226	Palos Verdes Peninsula - San Pedro	45-50
243	De Soto Ave. - Winnetka Ave.	15-35
245	Topanga Canyon Blvd. - Mulholland Dr. - Valley Circle Blvd.	35-45
254	Willowbrook - Gage Ave. - Lorena St.	30-50
255	Griffin Ave. - County Hospital - Rowan Ave.	45
256	Eastern Ave. - Ave. 64 - North Hill Ave.	30-45
265/275	Paramount - Whittier - Cerritos	60
266	Rosemead Blvd. - Lakewood Blvd.	25-40
267/264	Temple City Blvd. - Del Mar Blvd. - Lincoln Ave. - Altadena Dr. - Duarte	30-40
268	Washington Blvd. - Baldwin Ave.	25-47
270	Monrovia - El Monte - Norwalk	44-45
439	LA - LAX - Redondo Beach	35
444	LA - Torrance - Rancho Palos Verdes	30-35
445	LA - San Pedro via Harbor Transitway	40
607	North Inglewood Community Shuttle	40
608	Crenshaw Connection	60
684	Brea Mall - Pomona Transit Center	44-45



APPENDIX B:**BUS ROUTES WITH PEAK HOUR TRUNK HEADWAYS GREATER THAN 30 MINUTES****(EFFECTIVE: FEBRUARY 04, 2004)**

<u>Line</u>	<u>Description</u>	<u>Trunk Headway (Minutes)</u>
<u>42</u>	<u>L.A./Westchester/LAX</u>	<u>36-40</u>
<u>65</u>	<u>Washington Blvd/Indiana St/Gage Av.</u>	<u>45</u>
<u>90</u>	<u>L.A./Sunland/Sylmar via Pennsylvania Av.</u>	<u>60</u>
<u>96</u>	<u>Los Angeles/Burbank/Sherman Oaks via Los Angeles Zoo</u>	<u>40-60</u>
<u>102</u>	<u>E. Jefferson Blvd/Coliseum St.</u>	<u>35-45</u>
<u>107</u>	<u>54th St./Fairview Bl/Santa Ana St.</u>	<u>50</u>
<u>108/358</u>	<u>Slauson Av.</u>	<u>40</u>
<u>111</u>	<u>LAX/Florence Av./Leffingwell Rd.</u>	<u>50-60</u>
<u>115/315</u>	<u>Manchester Av./Firestone Blvd</u>	<u>40</u>
<u>119</u>	<u>108th St.</u>	<u>60</u>
<u>124</u>	<u>El Segundo Blvd/Santa Fe Av.</u>	<u>35-50</u>
<u>126</u>	<u>Yukon Av./Manhattan Beach Blvd/Branch of line 119</u>	<u>60</u>
<u>127</u>	<u>Compton Blvd/Bellflower Blvd</u>	<u>60</u>
<u>128</u>	<u>Alondra Bl</u>	<u>50</u>
<u>152</u>	<u>Fallbrook Av./Roscoe Blvd/Vineland Av./Burbank</u>	<u>40-60</u>
<u>154</u>	<u>Tampa Av./Ventura Blvd/Burbank Blvd/Oxnard St.</u>	<u>60</u>
<u>158</u>	<u>Devonshire St./Woodman Av.</u>	<u>45</u>
<u>161</u>	<u>Thousand Oaks/Canoga Park</u>	<u>47-55</u>
<u>167</u>	<u>Plummer St./Coldwater Canyon Ave./Chatsworth Trans. Center</u>	<u>45</u>
<u>168</u>	<u>Lassen St/Paxton St.</u>	<u>60</u>
<u>169</u>	<u>Saticoy St/Sunland Blvd.</u>	<u>60</u>
<u>170</u>	<u>Hellman Av./El Monte via South El Monte</u>	<u>50</u>
<u>176</u>	<u>Glassell Pk./Highland Pk./Alhambra/El Monte</u>	<u>50-52</u>
<u>177</u>	<u>Glendale/La Canada/Pasadena/Arcadia/Monrovia/Duarte</u>	<u>50</u>
<u>183</u>	<u>Magnolia St/Kenneth Rd./E. Colorado St./Branch of line 234</u>	<u>50-60</u>
<u>201</u>	<u>Silverlake Blvd</u>	<u>35-50</u>
<u>202</u>	<u>Willowbrook/Compton/Wilmington</u>	<u>60</u>
<u>205</u>	<u>Willowbrook/Harbor City/San Pedro/Imperial Wilmington Metro Rapid Station</u>	<u>35</u>
<u>207</u>	<u>Western Av./120th St</u>	<u>35</u>
<u>209</u>	<u>Van Ness Av./Arlington Av.</u>	<u>35-40</u>
<u>211</u>	<u>Prairie Av.</u>	<u>45</u>
<u>215</u>	<u>Inglewood Av./Redondo Beach/Branch of line 211</u>	<u>45</u>
<u>220</u>	<u>Robertson Blvd/Culver Blvd/LAX</u>	<u>50-60</u>
<u>225</u>	<u>LAX City Bus Center/Aviation Blvd/Palos Verdes Peninsula/San Pedro</u>	<u>45-50</u>
<u>226</u>	<u>Palos Verdes/Palos Verdes Drive West</u>	<u>50</u>
<u>236</u>	<u>Balboa Bl/Sylmar</u>	<u>50-60</u>
<u>237</u>	<u>Balboa Bl/Rinaldi St/Woodley Av./Van Nuys/Branch of line 236</u>	<u>45-60</u>
<u>239</u>	<u>White Oak Av./Zelzah Av./Rinaldi St./Branch of Line 230</u>	<u>40-45</u>



<u>Line</u>	<u>Description</u>	<u>Trunk Headway (Minutes)</u>
<u>240</u>	<u>Ventura Blvd/Reseda Blvd/Branch of line 150</u>	<u>31</u>
<u>243</u>	<u>De Soto Av./Ventura Bl./Winnetka Av.</u>	<u>35</u>
<u>245</u>	<u>Topanga Canyon Blvd/Mulholland Dr./Valley Circle Blvd.</u>	<u>35-45</u>
<u>254</u>	<u>Willowbrook/Gage Ave/Lorena St.</u>	<u>40-50</u>
<u>255</u>	<u>Griffin Av./Co. Hospital/Rowan Av.</u>	<u>45</u>
<u>256</u>	<u>Eastern Av./Av. 64/North Hill Av.</u>	<u>45</u>
<u>258</u>	<u>Arizona Av./Alhambra/Branch of Line 259</u>	<u>44-50</u>
<u>259</u>	<u>Eastern Av./Arizona Av./Emery Park</u>	<u>4-45</u>
<u>264</u>	<u>Altadena Dr./Foothill Blvd/Duarte Rd./Branch of line 267</u>	<u>35-40</u>
<u>265</u>	<u>Paramount Blvd/Pico Rivera</u>	<u>60</u>
<u>266</u>	<u>Rosemead Blvd/Lakewood Blvd.</u>	<u>40</u>
<u>267</u>	<u>Temple City Blvd/Del Mar Blvd/Lincoln Av./Altadena Dr./Duarte</u>	<u>40</u>
<u>268</u>	<u>Washington Blvd/Balwin Ave.</u>	<u>35-47.5</u>
<u>270</u>	<u>Monrovia/El Monte/Whittier/Santa Fe Springs/Norwalk/Cerritos</u>	<u>44-45</u>
<u>275</u>	<u>Pico Rivera/Whittier/Cerritos (Branch of line 265)</u>	<u>60</u>
<u>362</u>	<u>Telegraph Rd./Pioneer Blvd</u>	<u>35-50</u>
<u>439</u>	<u>L.A./LAX/Redondo Beach</u>	<u>35</u>
<u>444</u>	<u>L.A./West Torrance/Rolling Hills/Rancho Palos Verdes</u>	<u>40</u>
<u>445</u>	<u>L.A./San Pedro via Harbor Transitway</u>	<u>40</u>
<u>446</u>	<u>L.A./Carson/Wilmington/San Pedro</u>	<u>40-50</u>
<u>447</u>	<u>L.A./Carson/Wilmington/San Pedro/7th St.</u>	<u>40-50</u>
<u>484</u>	<u>L.A./El Monte/La Puente/Cal Poly Pomona</u>	<u>45-50</u>
<u>490</u>	<u>L.A./El Monte/Covina/Cal Poly Pomona</u>	<u>60</u>
<u>607</u>	<u>Inglewood Transit Center</u>	<u>36-40</u>
<u>608</u>	<u>Crenshaw Connection: Crenshaw/Baldwin Hills Plaza/48th St. & Normandie Av.</u>	<u>60</u>
<u>625</u>	<u>Aviation Metro Rail Station/Supreme Court</u>	<u>40</u>
<u>684</u>	<u>Brea Mall Pomona Transit Center</u>	<u>40</u>



APPENDIX B:**BUS ROUTES WITH PEAK HOUR TRUNK HEADWAYS GREATER THAN 30 MINUTES
(EFFECTIVE JUNE 30, 2003)**

Line	Description	Trunk Headway (Minutes)
102	East Jefferson Boulevard/Exposition Boulevard/Coliseum Boulevard	35-40
107	54 th Street/Fairview Boulevard/Santa Ana Street	50
119/126	108 th /Yukon Avenue/Manhattan Beach Boulevard	60
124	El Segundo Boulevard/Santa Fe Avenue	60
126	Yukon Avenue/Manhattan Beach Boulevard	60
127	CSUDH/Compton Boulevard/Bellflower Boulevard	60
128	Martin Luther King Jr. Transportation Center/La Mirada	50
130	Artesia Boulevard	31
154	Tampa Avenue/Ventura Boulevard/Burbank Boulevard/Oxnard St.	36
158	Devonshire St./Woodman Avenue	37
161	Westlake Village/Agoura Hills/Woodland Hills/Canoga Park	50
168	Chatsworth Transportation Center/Lassen Street/Paxton Street	60
169	Saticoy Street/Sunland Boulevard	60
170	CSULA/Montebello Town Center/El Monte Station	60
176	Glassel Park/Highland Park/El Monte Station	60
177	La Canada Flintridge/Pasadena/Monrovia/Duarte	60
201	Silverlake Boulevard/Glendale	40-50
209	Van Ness/Arlington Avenue	35
211	Prairie Avenue/South Bay Galleria Transit Center	45
215	Inglewood Avenue/Redondo Beach	45
220	Robertson Boulevard/Culver Boulevard/LAX City Bus Center	60
225/226	LAX/Aviation Boulevard/Prospect Avenue/Palos Verde Drive	60
239	White Oak Avenue/Zelzah Avenue/Rinaldi Avenue	40
245	Chatsworth Transportation Center/Topanga Boulevard	40-50
250/253	Boyle Avenue/State Street/Euclid Avenue/Evergreen Avenue	40
254	Rosa Parks Imperial/Wilmington Station/Lorena Street	60
255	Griffin Avenue/Rowan Avenue	60
256	Eastern Avenue/Avenue 64/North Hill Avenue	38
264	Altadena Drive/San Gabriel Boulevard/Montebello Town Center	60
265/275	Paramount Boulevard/Pico Rivera/Whittier/Cerritos	60
266	Rosemead Boulevard/Lakewood Boulevard	33
267	Temple City Boulevard/Del Mar Boulevard/Lincoln Avenue	35
268	El Monte Bus Station/Baldwin Avenue/Jet Propulsion Labor.	45
270	Monrovia/El Monte/Norwalk/Cerritos	50-60
439	Redondo Beach/LAX City Bus Center/Patsaouras Transit Plaza/Union Station Express	41
445	Union Station/Patsaouras Transit Plaza/Artesia Transitway Station/San Pedro	32
471	Puente Hills Mall Whitwood Center via Colima Road	60
485	Altadena/Pasadena/Los Angeles Express	40



APPENDIX C: ROUTE PERFORMANCE INDEX

The route performance index is designed to provide an objective measure of a bus routes performance relative to other similar types of service. The index is based on system ridership and financial targets from the FY 2004 Operating Budget. The following categories are used during the performance evaluation process:

- Metro Express
- Metro Rapid
- Metro Local
- Metro Rail/Feeder Shuttles

The evaluation process focuses on three factors:

- **Utilization of Resources** – Boardings per service hour is used as a measure to determine how effectively resources are being used. This measure is determined by dividing the total number of boardings on the line by the service hours operated. Routes having a higher number of passengers per mile represent a better utilization of resources such as buses, operators and fuel.
- **Utilization of Capacity** - Passenger miles per seat miles is the measure used to evaluate how well the seating capacity of the system is being used. Passenger miles are calculated by multiplying the average distance traveled per passenger by the number of passengers using the service. Seat miles are calculated by determining the number of seats per vehicle and multiplying by the number of vehicles on the route and then by the number of service miles operated. The higher the resulting number, the greater the utilization of system capacity.
- **Fiscal Responsibility** - Subsidy per passenger is the measure for fiscal responsibility. Subsidy refers to the amount of public funding required to cover the difference between the cost of operation and the passenger revenues collected. Higher subsidy services require more public funding support.

The index for passengers per service hour and passenger miles per seat miles are normalized measures where the performance of the individual route is divided by the standard set for the category. The subsidy per passenger measure is an inverse relationship and is therefore calculated by dividing the category standard by the individual routes performance.

The following formula is used to develop the route performance index:

$$\text{Route Performance Index} = [(BSH_i / BSH) + (PMSM_i / PMSM) + (SUB / SUB_i)]$$

Explanation of Variables

BSH	Category standard for boardings per service hour performance measure
PMSM	Category standard for passenger miles per seat miles performance measure
SUB	Category standard for subsidy per passenger performance measure
BSH_i	Individual boardings per service hour measure for route during evaluation period
PMSM_i	Individual passenger miles per seat miles measure for route during evaluation period



SUB_i Individual subsidy per passenger measure for route during evaluation period The route performance index is calculated and reported annually. The performance measurement standards for each route category are to be set annually relative to the percentage improvement of overall system performance relative to the previous years performance. This percentage improvement will be based on the performance objectives outlined in the FY 2004 Operating Budget.

The method for establishing the Route Performance Index standard for each category includes the following:

- Obtaining the budget performance measurement targets for FY 2004, and
- Increasing the average category performance measurement by the percentage increase established for that measure.

The mathematical explanation for this process is as follows:

$$BSH_y = F_H [(1/n) \Sigma (BSH_i)] \quad PMSM_y = F_c [(1/n) \Sigma (PMSM_i)] \quad SUB_y = F_s [(1/n) \Sigma (SUB_i)]$$

Explanation of Variables

BSH_y	Individual boardings per service hour performance measure for route for previous year
PMSM_y	Individual passenger miles per seat mile performance measure for route during previous year
SUB_y	Individual subsidy per passenger performance measure for route during previous year
Σ	Summation of all data items
F_H	Passenger boardings per service hour adjustment relative to annual budget performance measurement goal
F_c	Passenger miles per seat miles adjustment factor relative to annual budget performance measurement goals
F_s	Subsidy per passenger adjustment factor relative to annual budget performance measurement goals

The result of this calculation would be the standard for the category for the remainder of the fiscal year.



Index For Selected Bus Routes

To better illustrate how the index would vary according to the performance of an individual route, the performance index for three local bus routes was calculated using operating statistics from FY 2003 (~~2002~~). These bus routes include Route 207: Western Avenue which is one of the most heavily patronized bus lines in the system; Line 2: Sunset Boulevard which is a line that performs very close to the group average for local bus routes, and Route 58: Alameda St. (~~Route 264: San Gabriel Boulevard~~) which is a low ridership bus route.

The resulting performance indices are shown in the following table. Route 207: Western Avenue has an index of 1.8 or about three times the .60 minimum performance index. The performance index for Route 2: Sunset Boulevard is 0.9 (~~1.0~~), or 50 (~~40~~) percent above the minimum performance standard. Line 58: Alameda St. (~~Route 264: San Gabriel Boulevard~~) has a productivity index of 0.2 (~~0.34~~), which is well below the minimum performance standard, and according to the transit policy, this service will require corrective action.

ROUTE PERFORMANCE INDEX FOR SELECTED LOCAL BUS ROUTES

Line Number	Name of Line	Service Type	Subsidy per Psgr.	Boardings per Revenue Hr.	Psgr. Miles Per Seat Miles	Performance Index
207	WESTERN AVE.	Local	<u>\$0.52</u> (\$0.59)	<u>85</u> (83)	0.5	<u>1.8</u> (1.70)
2	SUNSET BLVD. - BEVERLY DR.	Local	<u>\$1.54</u> (\$1.42)	<u>46</u> (50)	0.44	<u>0.9</u> (1.00)
<u>58</u> (264)	<u>ALAMEDA ST. (SAN GABRIEL BLVD- ALTEDENA DR.)</u>	<u>Contract-Local</u> (Local)	<u>\$5.30</u> (4.46)	8.59 (20)	<u>0.07</u> (0.13)	<u>0.2</u> (0.34)



APPENDIX D:

DRAFT TEMPLATE FOR PRESENTING PRELIMINARY SERVICE CHANGE THOUGHTS TO THE SERVICE DEVELOPMENT TEAM

PRELIMINARY THOUGHTS FOR THE DECEMBER 2004 SERVICE CHANGE PROGRAM

Annual Budget Targets For Metro Bus

<u>Budget Parameter</u>	<u>June 2004</u>	<u>December 2004</u>
<u>Ridership (millions)</u>	356.3	365.8
<u>Service Hours (millions)</u>	7.326	7.567
<u>Peak Vehicles</u>	2,216	2,331

* Includes directly operated and contract services.

Sector Budget Targets For December 2004 Shake-up

<u>Budget Parameter</u>	<u>Westside Central</u>	<u>South Bay</u>	<u>Gateway Cities</u>	<u>San Fernando Valley</u>	<u>San Gabriel Valley</u>	<u>Total</u>
<u>Ridership</u>						
<u>Service Hours</u>						
<u>Peak Vehicles</u>						

Key Service Change Dates

Service Development Team Reviews Preliminary Thoughts and Targets and Objectives	7-12-04
Public Hearing Notice Published	7-19-04
Conduct Public Meetings	8-23-04
Final Recommendations To Council	9-13-04
Finalize Schedule Input	10-20-04
Send all Timetables to Print Shop	11-12-04
Post Work Runs For Bidding	11-17-04
Distribute Timetables, Summaries and other Operating Documents	12-03-04



DRAFT TEMPLATE FOR PRESENTING PRELIMINARY SERVICE CHANGE THOUGHTS TO THE SERVICE DEVELOPMENT TEAM

DEVELOPMENT TEAM

Goals and Objectives

<u>Goals</u>	<u>Objectives</u>
<u>Increase Ridership</u>	<u>Implement New Service</u> <u>Expand Service Coverage</u>
<u>Improve Service Quality</u>	<u>More Frequent Service/30 minute Policy Headway</u> <u>Increase Speed</u> <u>Longer Hours of Operation/Span</u> <u>Provide More Seating/Capacity</u>
<u>Increase Operating Efficiency</u>	<u>Reduce or Cancel Unproductive or Duplicative Service</u> <u>Restructure or Reroute</u> <u>Reduce Deadhead Miles and Hours</u> <u>Employ most cost effective options for operating new services</u>

FY 2005 Major Initiatives

- December 2004 Shake-up
 - Add Capacity (100 buses and 125,000 hours)
 - Implement 2 New Rapids (Hawthorne and Fairfax)
 - Implement more efficient divisional line assignments
- June 2005
 - Implement 3 New Metro Rapids (Long Beach, Beverly, and Sepulveda)
 - Increase inter-stop spacing and operating speed
 - Revamp Express network and fares



DRAFT TEMPLATE FOR PRESENTING PRELIMINARY SERVICE CHANGE THOUGHTS TO THE SERVICE DEVELOPMENT TEAM

Summary of Proposed Service Sector Proposals For Public Hearing

LINE	DESCRIPTION	INCREASE RIDERSHIP		IMPROVE SERVICE QUALITY				INCREASE OPERATING EFFICIENCY			ANNUAL IMPACTS		
		New Service	Expand Route Coverage	Frequency	Speed	Capacity	Span	Service Reduction	Service Cancellation/Restructuring	Reduce Deadhead	Ridership	Service Hours	Peak Buses
40/340	Hawthorne Blvd.							●					
108/358	Slauson Ave.							●					
111	Florence Ave.							●					
254	120 th St./Huntington Park							●					
711	Florence Metro		●										
740	Hawthorne Metro	●											
TBD	Consent Decree						●						
Glendale Cities													
270	Monrovia		●										
265/275	Norwalk/Whittier		●										
362	Hawaiian Gardens		●				●						
576	Pacific Palisades Express								●				
TBD	Consent Decree						●						
										Subtotal			
San Gabriel Valley													
78/378	Arcadia/Las Tunas						●						
85	Cypress Ave./Verdugo Rd.								●				
170	Montebello/Hellman								●				



DRAFT TEMPLATE FOR PRESENTING PRELIMINARY SERVICE CHANGE THOUGHTS TO THE SERVICE DEVELOPMENT TEAM

LINE	DESCRIPTION	INCREASE RIDERSHIP		IMPROVE SERVICE QUALITY				INCREASE OPERATING EFFICIENCY				ANNUAL IMPACTS				
		New Service	Expand Route Coverage	Frequency	Speed	Capacity	Span	Service Reduction	Service Cancellation/Restructuring	Reduce Deadhead	Ridership	Service Hours	Peak Buses			
267	Temple City Boulevard															
380	Hollywood/Glendale															
487	San Gabriel Blvd. Express		●									●				
491	Sierra Madre Express											●				
670	Montebello Town Center Shuttle	●														
671	Montebello Town Center Shuttle	●														
685	Eagle Rock/Glendale Shuttle	●														
787	Fairfax Rapid	●														
TBD	Consent Decree								●							
Westside Central																
2/302	Sunset Blvd.		●													
217	Fairfax/Hollywood												●			
TBD	Consent Decree								●							
											Subtotal					



DRAFT TEMPLATE FOR PRESENTING PRELIMINARY SERVICE CHANGE THOUGHTS TO THE SERVICE DEVELOPMENT TEAM

LINE	DESCRIPTION	INCREASE RIDERSHIP		IMPROVE SERVICE QUALITY				INCREASE OPERATING EFFICIENCY			ANNUAL IMPACTS					
		New Service	Expand Route Coverage	Frequency	Speed	Capacity	Span	Service Reduction	Service Cancellation/Restructuring	Reduce Deadhead	Ridership	Service Hours	Peak Buses			
<i>San Fernando Valley</i>																
TBD	Consent Decree					●										
										Subtotal						
										GRAND TOTAL						



APPENDIX E: GLOSSARY OF TERMS

Bus Priority – A system of traffic controls in which buses are given special treatment over other forms of transportation.

Community Based Service – These are local or neighborhood oriented services that operate on secondary streets and generally serve short distance travel needs and carry less than 2,000 passengers per day.

Headway Based Schedule – A flexible service schedule where departure times are based on maintaining a certain interval between departures rather than fixed schedule times.

High Capacity Vehicle – Any bus that provides seating for more than 40 passengers. Includes double deck, 45-foot and articulated buses.

Paratransit Service – Service provided with a vehicle smaller than a 40-foot bus. This would include services such as DASH, ACCESS, and Dial-A-Ride services.

Passenger Loading – A measure used to evaluate seating utilization on a transit vehicle. It is usually expressed as the ratio of passengers to seats.

Passenger Mile - Cumulative passenger miles traveled by each passenger in revenue service.

Service Duplication – When two or more services operate along the same streets, during the same hours of the day and serve common origins and destinations.

Service Warrants – Flexible guidelines used to determine when there is sufficient demand to support a specific type of transit service.

Shopper Survey - A physical interaction survey of operations to ensure conformance to quality, service, and safety standards. Results reported for employee performance, property condition, general liabilities, and product or service quality.

Span of Service - The days and hours when service is available.

Special Event Service – These are services that not part of the regular scheduled daily service to the general public and are oriented toward serving a special venue, on selected days.

Subsidy – The portion of the cost of operation that is not offset by passenger revenues. This can be expressed based on passenger boardings, service hours, passenger miles or other units of operation.

Trunk Service – This is the portion of a bus route or rail line that offers the most frequent service.



ATTACHMENT 2: SUMMARY OF KEY CHANGES TO THE EXISTING METRO TRANSIT SERVICE POLICY

POLICY SECTION	POLICY SUBJECT	TYPE OF CHANGE		DESCRIPTION
		Revision	New Provision	
Bus Route and Design Guidelines	Bus Stop Spacing	X		Refine guidelines to reflect service type and population density
	Metro Rapid Service Warrants		X	Guidelines for key attributes of the program and for monitoring the program implementation
	Bus Lane Criteria		X	General Planning Criteria
Bus Service Performance Measure	Shopper Survey	X		Initial survey rescheduled for FY 2005
	Bus Route Performance Index	X		Index for each line was developed using new budget targets and updated performance data (not in the report)
Rail Service Policies	Frequency of Service	X		Minor adjustments to recommended service levels
Planning Process	Public Notification		X	Timeline for key notification tasks has been added
	Service Change Program Template		X	New template for presenting preliminary service proposals will be included as an appendix