

BRIEFING MEMO

AC TRANSIT DISTRICT
Board of Directors
Executive Summary

GM Memo No. 05-137

Meeting Date: June 15, 2005

Committees:

- | | | | |
|----------------------------|-------------------------------------|------------------------------|--------------------------|
| Planning Committee | <input checked="" type="checkbox"/> | Finance Committee | <input type="checkbox"/> |
| External Affairs Committee | <input type="checkbox"/> | Operations Committee | <input type="checkbox"/> |
| Board of Directors | <input type="checkbox"/> | Financing Corporation | <input type="checkbox"/> |

SUBJECT:

Receive further review of the Transit Capacity and Quality of Service Manual: Part 3, Chapter 2: *Quality of Service Factors*

RECOMMENDED ACTION:

- Information Only Briefing Item Recommended Motion

Fiscal Impact:

None; background only.

Background/Discussion:

In May, staff provided an overview of Part 3, Chapter 1 of the *Transit Capacity and Quality of Service Manual (TCQSM): Transit Trip Decision-Making Measures*.

Chapter 1 presented issues relating to quality of service in broad terms. This month's review of Chapter 2 provides greater detail and discussion of the factors introduced in

BOARD ACTION: **Approved as Recommended** [] **Other** []
 Approved with Modification(s) []

[To be filled in by District Secretary after Board/Committee Meeting]

The above order was passed on _____, 2005.

Rose Martinez, District Secretary
By _____

the earlier chapter, focusing on availability, comfort and convenience factors as they relate to transit Quality of Service.

Transit Trip Decision-Making Process Summary:

As identified in the May 2005 GM Memo, the main factors influencing transit trip decision-making are availability, comfort and convenience. These factors are defined as follows:

- **Availability:** Transit service is only an option for any given trip if it is available for use. It must be available within a reasonable walking distance of one's origin and destination. Riders need to know where and when service is scheduled. Availability factors include service coverage, scheduling, capacity and information.
- **Comfort and Convenience:** If the Availability factors have been met, passengers weigh a variety of other factors in determining whether to use a particular transit mode for their trip. These factors include convenience in getting to the bus stop, ability to find a seat, reliability, wait times, safety, ride comfort, cleanliness, and cost.

Role of Availability in Transit Quality of Service:

Service Coverage is the most detailed of the four availability factors, but also the easiest to understand. Simply put, people use transit when it is near their origin and destination. The transit vehicle can either be brought to the passenger, or the passenger can be brought to the transit vehicle. Common options for getting from one's origin to access transit include walking, bicycling, and driving to park and ride facilities.

Pedestrian access is the most traditional of access modes. For traditional bus systems, most passengers (about 75 to 80 percent) walk 1/4 mile or less (about a five minute walk) to access transit. For rail systems, the distance doubles and the time increases to about a 10 minute walk. BRT systems are anticipated to have walking access times characteristic of rail transit. However, there is not current research confirming this expectation. It should also be noted that the pedestrian environment is an important consideration for passengers walking to transit – if it isn't safe, and if the street isn't easy to cross, then the pedestrian access can be poor. If passengers can't get to the bus stop, then they can't get to the bus and use the system. In addition, stops

need to meet the needs of disabled passengers with minimum widths, curb cuts, and sufficient space for safe wheelchair lift/ramp deployment.

AC Transit practice: Board Policy 550 identifies a preferred route spacing of 1/4 mile in high density areas (more than 20,000 persons per square mile), and up to 1/2 mile in medium density areas (10,000 - 20,000 persons per square mile). The District's bus stop standards mandate stopping about every 1,000 feet. This allows a trade-off between fewer bus stops, and faster service and a longer walking distance to the stop. As part of the bus stop relocation work, including new vehicle deployment, staff considers the physical safety of the bus stop and the personal safety of transit passengers, as well as accessibility issues for disabled patrons. Staff works closely with public works departments to ensure safe, accessible and convenient transit stops.

Street Patterns affect access to transit stops. Grid systems with reasonably sized blocks, found in the District's older communities, provide direct walking paths and shorter walking distances. Suburban street patterns, with dead-end and discontinuous streets, make walking difficult and create long walks to transit stops even though the straight-line distance may be short.

AC Transit practice: For many years the District advocated transit-friendly street and subdivision design. The "Guide for Including Public Transit in Land Use Planning," issued by AC Transit in 1983, specifically encouraged municipalities to eliminate barriers to transit stops and create well-defined pathways to bus stops. In addition, Board Policy 520, adopted in 1994 and revised in 1997, specifically argues for narrow setbacks and direct pedestrian paths. The District's newly issued handbook, "Designing with Transit," makes an even stronger case for transit-friendly design. Included in this document is a *Summary of Safe Routes to Transit Policies and Practices*, the most relevant of which states, "Develop networks that provide pedestrian access to all locations in a community." This policy recognizes that transit patrons are pedestrians, and without good pedestrian access, the transit market is severely limited. Among the best practices identified in "Designing with Transit" are recommendations that communities provide sidewalks on all blocks, make blocks part of a grid pattern connected to other streets, and create alternative pedestrian access where blocks are long or end in cul-de-sacs or dead-ends.

Bicycle Access to transit is a fairly recent phenomenon. Cycling can greatly increase the availability of transit by increasing the catchment area. However, effective linking of bicycling and transit requires:

- Bicycle connections to the transit stop

- Bicycle parking at the transit stops
- Bicycle racks on the bus

The Transit Capacity Manual estimates that bicyclists can be as far away as five or six miles from a transit stop and still be within a 15 minute journey to the stop. At a five minute radius from a transit stop, the catchment area for bicycles increases by about 25 percent above walking due to a cyclist's faster speed. For optimal connections, good bicycle lanes are required, as well as either bicycle parking or on-vehicle racks.

AC Transit practice: The District supports cycling access. Every bus has a rack for bicyclists, and some vehicles have luggage-bay racks. In addition, new park and ride facilities will feature bicycle parking facilities, such as are available in BART stations.

Park and Ride Access is now part of the vernacular. Most people accept the connection of park and ride facilities and transit. The Transit Capacity Manual notes that park and ride facilities tend to be most successful when they are at least five miles from the major destination (although the Manual notes that a 10 mile distance is preferred). There are many types of park and ride facilities, including shared use lots (churches and shopping centers); dedicated lots (transit centers and suburban lots); informal lots (street parking in neighborhoods near transit service); and satellite lots (near activity centers; people are shuttled in for short distances to their destination).

The Transit Capacity Manual notes that park and ride lots are successful when:

- Convenient and frequent bus service is available
- Parking at the destination is expensive
- Park and Ride facilities are easily visible, and
- HOV access exists for at least part of the transit trip

A series of studies suggests that suburban park and ride lots draw people in a parabola extending along a major corridor. Typically about half of the users are within 2.5 miles of the park and ride lot, with another third extending up the corridor about 10 miles. In effect, the park and ride lot has extended the reach of the transit system by up to 10 miles.

AC Transit practice: The Board has adopted the park and ride facility development policies in GM Memo 03-262a. The District's general policy is to rely on walking as the primary means of access to AC Transit vehicles. However, the Board's guidance identifies exceptions in the highly suburbanized and less dense areas of Fremont-Newark and Richmond-Pinole. AC Transit is working with partner agencies to expand both the Ardenwood site and the Richmond Parkway Transit

Center into larger and more useful sites that are professionally managed. As part of this management need, and in accordance with Board guidance, parking fees will be charged at these facilities. Both are highly visible, with frequent bus service, and parking at the destination is either expensive or the bus has a significant travel time advantage over the single-occupant automobile.

Scheduling includes both scheduled frequency and span of service. The Transit Capacity Manual notes that how often transit is provided, and when, are important factors in the decision to use transit. Where service is frequent, prospective patrons will have shorter wait times, and increased flexibility. These factors increase the likelihood of the patron choosing to use transit. Conversely, if a service is not available at the time that a patron needs or wishes to travel, then transit will likely not be an option for that trip.

AC Transit practice: Board Policy 550 identifies minimum service frequency by area density. In areas of more than 10,000 persons per square mile, the preferred service level includes a weekday base frequency of 10 minutes on trunk lines, and 15 minutes on crosstown lines. From a passenger perspective, 15 minute service allows for random transfers without onerous wait times. Included in Policy 550 is a commitment to operate all services from 5am to 10pm. Unfortunately, District finances have not permitted AC Transit to operate all of its service in conformance with Board Policy 550. However, service reductions were guided by Board policies – as an example, entire routes have been discontinued to preserve the Board mandated service frequencies on well-used trunk routes. In addition, as new funding becomes available, the District will use those revenues to meet the requirements of Policy 550.

Capacity, as considered from an availability perspective, simply means that there is room for the passenger to board the transit vehicle. There is no transit availability if there is no capacity.

AC Transit practice: Board Policy 550 identifies load factors of 1.25 for all services other than Transbay, which has a 1.00 load factor. Almost all AC Transit services meet these requirements, and “pass-ups” are rare.

Information regarding transit is critical to the success of the agency. Riders need to know where and when transit service is available, and how to use it. This information is important to the occasional user as well as the regular patron. Information can be disseminated in a variety of ways, including:

- Printed information, such as timetables, maps, service change notices, etc.
- Telephone information

- Internet information, available 24 hours daily
- Posted information, such as system maps posted on vehicles
- Audible announcements, to assist passengers and visually impaired passengers with bus stop locations, transfer points, etc.
- Signs and Displays, such as wayfinding signs to transit centers and park and ride lots

In addition, real-time information is also identified as another important component of information, and one that is now available due to new technology.

AC Transit practice: The District employs almost all of these methods to communicate information to the public and make the transportation market aware of these services. The Next Bus system is used for the Rapid services, and will expand as the BRT network expands.

Future Considerations:

The District does not currently have policies that assess transit service delivery from a passenger's standpoint--specifically with regard to the questions that passengers ask themselves when determining whether or not to use transit if they have a choice. Irrespective of policy, however, the District proposes service based on the factors presented in the Manual. Attention is paid to the appropriate "service window," and automatic passenger counters (APC's) provide additional data for service recommendations (temporal availability). Information on how one may use AC Transit service is available in a variety of formats: internet, telephone, printed materials including pocket timetables, car cards on buses, etc. (information availability). Lines are routinely analyzed for loads (capacity availability). Finally, where service is provided, and how one gets to it, is a fundamental concern when proposing new service or service changes.

The next review of the Transit Capacity and Quality of Service Manual will provide a discussion of Chapter 3, *Fixed-Route Transit Service Measures*. As staff presents more information about these concepts and the measurements that could be used to assess how well the District meets them, the Board may wish to direct staff to develop standards and measurement methods.

Prior Relevant Board Actions/Policies:

GM Memo 05-027: Designing with Transit

GM Memo 03-262a: Approve Actions Related to Park and Ride Transit Centers

GM Memo 05-109: Part 3, Transit Decisionmaking

GM Memo 05-083: Part 3, Transit Performance Measures

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GM Memo 05-062: Part 1 TCRP Manual

GM Memo 05-022: Review Timeline for Review of TCRP Manual

GM Memo 04-361: Overview of TCRP Manual

Board Policy 520 – Promoting Public Transit in Land Use Planning

Board Policy 550 – Service Standards and Design Policy

Attachments: Attachment A: Transit Availability Factors

Approved by: Rick Fernandez, General Manager
Nancy Skowbo, Deputy General Manager, Service Development

Prepared by: Anthony Bruzzone, Manager Service and Operations Planning

Date Prepared: June 10, 2005

Transit Availability Factors

