

ATTACHMENT F SERVICE DESIGN CONCEPTS

NextGen service design concepts are being developed and used to redesign the Metro bus network. These concepts are guidelines established based on the feedback received through the various stakeholder and public outreach sessions. Network characteristics most important to the public include:

- Faster service
- Frequent service throughout the day
- More reliable service
- Better network connectivity
- Accessibility to key destinations
- Improved security

Based on these service themes, the following service design concepts will guide the redesign of the Metro bus network:

Hybrid Local/Rapid Stop Spacing – Currently stop spacing is determined by route classification. For example, local lines are planned with ¼ mile stop spacing while Rapid lines have ¾ to 1 mile stop spacing. As a result, customers travelling on local lines go slower between communities but have closer access to origins and destinations. Conversely, Rapid customers travel faster along a corridor, but may be picked up or dropped off much further from their origin or destination. In addition, resources are split between the local and Rapid lines resulting in wider headways for each service. Therefore, overall end to end travel time including walking/rolling to the stop, waiting for the bus and finally the in-vehicle run time may result in longer travel times on the Rapid, especially for shorter distance trips.

Consolidating local and Rapid resources along a corridor will provide much better headways, and customizing stop spacing along the corridor based on changing land use densities along a corridor results in shorter wait times, faster on board travel times compared to the local, and shorter walk/roll compared to Rapid service. In addition, this standardizes the frequency along the entire corridor, vs inconsistent frequencies between local and Rapid services that have different speeds.

Shorter Route Lengths and Subarea Transit Hubs – The cell phone location based data indicates that almost half of all travel in Los Angeles County are within 1 to 5 miles. In addition, the origin-destination travel patterns indicate that many people travel locally and not necessarily regionally across the region. Creating shorter route lengths will improve schedule reliability. Being able to tie the lines to subarea transit hubs will improve network efficiencies and provide a safer and more convenient location for transfers.

Municipal Operator Coordination – Roughly one third of transit service in LA County is provided by municipal bus operators and Metrolink. Their coverage is especially strong in Santa Monica, South Bay, Gateway Cities, and eastern San Gabriel Valley. Therefore, it is imperative that Metro bus service is closely coordinated with municipal transit service. Given that several of the municipal operators are currently undergoing their own system redesigns, there is an opportunity to work together to develop service change ideas between Metro and municipal services to improve overall coordination for customers.

Microtransit and Other On-Demand – Some areas of the County are difficult to serve with fixed route transit due to terrain, narrow streets, and dispersed lower density destinations. In addition, travel activity in some areas are low during certain times of day or days of week. Metro is currently piloting Mobility on Demand and will be implementing a pilot program for Microtransit. These service modes may be more appropriate for areas and times of day where fixed route cannot be competitive and will be considered for application in lieu of fixed route if warranted.

Standardize Frequencies by Service Tiers – Currently, schedules are written based on the Board adopted load standard for frequent services (15 min or better) and based on policy for in-frequent services (wider than 15 min). To ensure the core network has consistent frequencies and span of service, corridors will be categorized into tiers based on transit propensity, current ridership, and overall travel demand. Each tier will be assigned a frequency designation (e.g. 10 min peak/12 min base) to ensure that all services within the tier provide consistent service levels for ease of transfer along the network. If a line requires better frequencies than the tier designation, it will be set based on the Board adopted load standard.

Routing to Reflect Current Travel Patterns and Transit Propensity – Currently corridors are being evaluated by segments. Based on the origin – destination travel patterns identified using the cell phone location based data as well as regional TAP data, the segments will be connected together to create lines. Better aligning the routing with travel patterns is expected to reduce the number of transfers required to make a trip and increase the distance travelable and access to opportunities along the network within 15 min, 30 min, etc. While resources will be focused in areas with high transit propensity, there will be a concerted effort to maintain service in areas of low demand but with the greatest mobility needs.

Transit Supportive Infrastructure – The service design will identify transit supportive infrastructure that either improves overall travel time and reliability or reduces inefficiencies in the network. Speed and reliability improvements include bus only lanes, queue jumpers, bus bulb outs, signal retiming, All Door Boarding, fare payment technology, etc. improves the attractiveness and competitiveness of transit while reducing revenue hours that can be reapplied to better use. Infrastructure that optimizes terminals and layover locations, reduce out of direction movements, and improves transfer movements will reduce non-revenue miles and hours that can be reallocated to revenue service.

Table 1 illustrates how each service concept will address the various themes expressed by the public and stakeholders.

Table 1
Service Design Concepts

| | Faster service | Frequent service throughout the day | More reliable service | Better network connectivity | Accessibility to key destinations | Improved security |
|---|----------------|-------------------------------------|-----------------------|-----------------------------|-----------------------------------|-------------------|
| Routing to Reflect Current Travel Patterns and Transit Propensity | | | | X | X | X |
| Standardize Frequencies by Service Tiers | X | X | | | | |
| Subarea Transit Hubs | | | | X | | X |
| Shorter Route Lengths | | | X | | | |
| Hybrid Local/Rapid Stop Spacing | X | | X | | | |
| Municipal Operator Coordination | | | | X | X | |
| Microtransit and Other On-Demand | | X | | | X | |
| Transit Supportive Infrastructure | X | | X | | | X |