



Board Report

File #: 2016-0658, File Type: Policy

Agenda Number: 28.

**SYSTEM SAFETY, SECURITY AND OPERATIONS COMMITTEE
OCTOBER 20, 2016**

SUBJECT: TITLE VI SERVICE MONITORING REPORT

ACTION: ADOPT FINDINGS

RECOMMENDATION

ADOPT the findings of a **Title VI Triennial Review of FTA required service standards that found no disparate impact** in the attainment of service standards relative to minority and non-minority services operated by Metro. This review was conducted for Metro bus and rail service during the fourth quarter of fiscal year 2016:

- A. Finding that the Metro bus system conforms to the adopted Bus Passenger Loading Standards and results in no disparate impact on minorities. The Rail Passenger Loading Standards cannot accurately be determined, due to the Metro Rail ridership data collection methodology. It relies on a limited number of staff counting the boarding and alighting passengers while riding a limited number of rail cars. (Attachment A); and
- B. Finding that the Metro bus system and rail system conform to the adopted Headway Standards and result in no disparate impact. (Attachment B); and
- C. Finding that while Metro bus lines are not in conformance with the adopted In-Service On-Time Performance Standards (ISOTP) of 80%, there was no disparate impact. The system wide average bus ISOTP was 73.0% on weekdays, 71.6% on Saturdays, and 76.8% on Sundays. The percentage of bus lines meeting this standard were 43.5% of weekday, 42.4% on Saturday and 54.8% during Sunday. All rail lines meet the standard of 90% for light rail and 95% for heavy rail. The assessment of the current findings are contained in (Attachment C); and
- D. Finding that Metro and its fixed route operating partners are in conformance and no disparate impact with the adopted System Accessibility Standard. (Attachment D); and
- E. Finding that Metro bus and rail service passenger facilities are in conformance and no disparate impact with the adopted Passenger Amenities Standards. (Attachment E); and
- F. Finding that the Metro bus system is in conformance and no disparate impact with adopted Vehicle Assignment Standards. Conformity of the Metro rail system was reviewed in early May

2016 and was impacted by the initial delivery of new light rail vehicles and the recent start of operation of the Metro Gold Line Foothill Extension. Only 15 of 235 new vehicles had been accepted at that time with most, of necessity, assigned to the Metro Gold Line. Metro rail system conformance should be reviewed at a later time after new vehicle deliveries are substantially complete. (Attachment F)

ISSUE

Federal Transit Administration (FTA) requires a review of conformance with specified transit performance standards at least once every three years.

DISCUSSION

Federal Transit Administration Circular 4702.1B provides requirements and guidelines for Title VI and Environmental Justice obligations of federal funds recipients. Page IV-9 of these guidelines requires “transit providers to monitor the performance of their transit system relative to their system-wide service standards and service policies (i.e. passenger load, vehicle type and age assignment, transit amenities, etc.) not less than every three years”. Per the guidelines, system-wide standards must be established and monitored, which are discussed in this report.

Operators are required to establish a threshold of significance for when the difference in attainment of minority and non-minority lines would constitute a disparate impact. Metro’s current standard establishes a disparate impact whenever the attainment of non-minority lines exceeds that of minority lines by more than 10%. In the event that a disparate impact is identified “the transit provider shall take corrective action to remedy the disparities to the greatest extent possible, and shall discuss in the Title VI program these disparate impacts and actions taken to remedy the disparities”.

Findings

Approval of the findings for the service monitoring evaluations fulfills a Title VI obligation of Metro. There is no Environmental Justice requirement for service monitoring.

DETERMINATION OF SAFETY IMPACT

There are no safety issues associated with completing Title VI evaluations.

FINANCIAL IMPACT

Fulfilling Title VI obligations ensures continued eligibility for federal funding. Failure to do so could have an adverse impact on budgeted expenditures.

ALTERNATIVES CONSIDERED

The FTA service monitoring requirement must be fulfilled to maintain federal funding eligibility. There are no practical alternatives to the performance of these analyses and the adoption of their findings.

NEXT STEPS

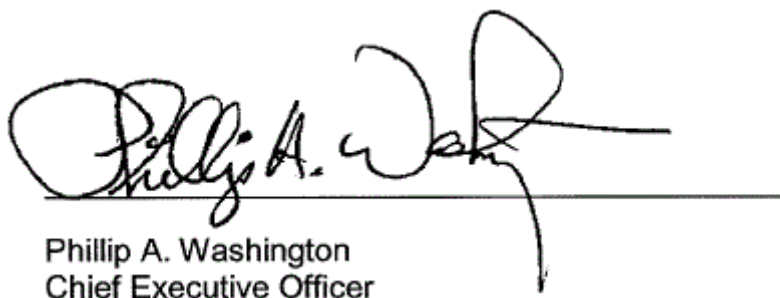
Approval of the findings of the service monitoring evaluations will be submitted to FTA along with the supporting evaluations.

ATTACHMENTS

- Attachment A - Passenger Loading Standards
- Attachment B - Headway Standards
- Attachment C - On-Time Performance Standards
- Attachment D - Accessibility Standards
- Attachment E - Passenger Amenities Standards
- Attachment F - Vehicle Assignment Standards

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ATTACHMENT A PASSENGER LOADING STANDARDS

Passenger Loading Standards were recently revised in October 2015 to provide for variation by time of day and frequency of service. The current standards are depicted in Table A-1. A line must meet the applicable standard in at least 95% of all time periods monitored.

Table A-1
Passenger Loading Standards by Service Type

| Weekday AM and PM Peak Periods | | | | | Off-Peak and Weekends | | | | | | |
|--------------------------------|----------------|----------------|--------------------------|---------|----------------------------|----------------|--------------------|----------------|------------------------------|--|--|
| | | Psgrs per Seat | Max Peak Loads (per car) | | | | | Psgrs per Seat | Max Off-Peak Loads (per car) | | |
| Heavy Rail | | 2.30 | 124 | | | Heavy Rail | | 1.60 | 86 | | |
| Light Rail | | 1.75 | 133 | | | Light Rail | | 1.25 | 95 | | |
| Bus Types | | | | | Bus Types | | | | | | |
| Frequency Range in Minutes | Psgrs per Seat | 40-foot | 45-Foot | 60-Foot | Frequency Range in Minutes | Psgrs per Seat | 40-foot | 45-Foot | 60-Foot | | |
| | | Max Peak Loads | | | | | Max Off-Peak Loads | | | | |
| 1-10 | 1.40 | 56 | 65 | 80 | 1-10 | 1.30 | 52 | 60 | 74 | | |
| 11-20 | 1.30 | 52 | 60 | 74 | 11-20 | 1.25 | 50 | 58 | 71 | | |
| 21-40 | 1.20 | 48 | 55 | 69 | 21-40 | 1.10 | 44 | 51 | 63 | | |
| 41-60 | 1.10 | 44 | 51 | 63 | 41-60 | 1.00 | 40 | 46 | 57 | | |
| 60+ | 1.00 | 40 | 46 | 57 | 60+ | 0.75 | 30 | 35 | 43 | | |

Effective October 2015

Each line must meet standard at least 95% of all hours monitored

The conformance of Metro bus lines to these standards is summarized in Table A-2 for weekday peak and off-peak periods, Saturdays and Sundays. Overall, 136 of 139 weekday bus lines (97.8%), 107 of 108 Saturday bus lines (99.1%), and all of 101 Sunday bus lines (100.0%) meet the standard by not exceeding the relevant load ratio in at least 95% of all time periods operated.

The adopted standard for when the disparity between minority and non-minority conformance would constitute a disparate impact is a difference of more than 10%. In this instance conformance is consistently high for all categories.

An evaluation of Metro Rail conformity with the Passenger Loading Standards is not yet possible as rail passenger data is obtained through aggregation of small samples over a period of time. This sampling method does not permit evaluation of passenger loading. New rail cars are now being delivered with APC capability which should permit evaluation of passenger loading in the future.

Table A-2
 Metro Bus Passenger Loading Standards Conformance

| WEEKDAY | Minority Bus Lines | Non- Minority Bus Lines |
|---------------------------|-----------------------|-------------------------------|
| # of Lines Monitored | 110 | 29 |
| # of Lines Exceeding Std. | | 3 |
| % Compliance | 100.0% | 89.7% |
| SATURDAY | | |
| # of Lines Monitored | 82 | 26 |
| # of Lines Exceeding Std. | 1 | |
| % Compliance | 98.8% | 100.0% |
| SUNDAY | | |
| # of Lines Monitored | 76 | 25 |
| # of Lines Exceeding Std. | | |
| % Compliance | 100.0% | 100.0% |

Monitoring Data from Jan-Mar 2016

Must meet standard at least 95% of all time periods

ATTACHMENT B HEADWAY STANDARDS

The adopted standard establishes the maximum scheduled headway (in minutes) between trips in the peak direction at the maximum load point of a line by time of day. Table B-1 depicts the peak and off-peak standard by service type. These standards should not be exceeded for at least 90% of all hourly periods.

Table B-1
Headway Standards by Service Type

| Service Type | Peak | Off-Peak |
|-----------------|------|----------|
| Heavy Rail | 10 | 20 |
| Light Rail | 12 | 20 |
| BRT | 12 | 30 |
| Rapid | 60 | 60 |
| Express | 30 | 60 |
| Limited | 60 | 60 |
| Local & Shuttle | 60 | 60 |

As of October 2015

Standard should be met at least 90% of the time at the max load point in peak direction

How Metro bus lines conform to these standards is summarized below in Table B-2 for weekday peak and off-peak periods, Saturdays and Sundays. Overall, 142 of 150 weekday bus lines (94.7%), 106 of 108 Saturday bus lines (98.1%), and 95 of 101 Sunday bus lines (94.1%) are above the standard of 90%.

Metro has established a 10% threshold for when the disparity between minority and non-minority compliance is considered significant. On Sundays non-minority compliance is significantly less than minority compliance. Because minority compliance is higher on Sundays there is no disparate impact.

An evaluation of Metro Rail conformity with the Headway Standard found all rail lines meeting the standard. All five Metro Rail lines are considered minority lines.

Table B-2
Metro Bus Headway Standards Conformance

| WEEKDAY | Minority Bus Lines | Non-Minority Bus Lines |
|-----------------------------|-----------------------|---------------------------|
| # of Peak Period Lines | 115 | 35 |
| # of Lines Not Meeting Std. | 7 | 1 |
| % Compliance | 93.9% | 97.1% |
| | | |
| # of Off-Peak Period Lines | 105 | 35 |
| # of Lines Exceeding Std. | 0 | 0 |
| % Compliance | 100.0% | 100.0% |
| | | |
| SATURDAY | | |
| # of Lines | 82 | 26 |
| # of Lines Not Meeting Std. | 1 | 1 |
| % Compliance | 98.8% | 96.2% |
| | | |
| SUNDAY | | |
| # of Lines | 76 | 25 |
| # of Lines Not Meeting Std. | 2 | 4 |
| % Compliance | 97.4% | 84.0% |

Schedule Data from Jan 31 2016

Must meet standard at least 90% of all hourly periods

Table B-2
Metro Rail Headway Standards Conformance

| WEEKDAY | Minority Rail Lines | Non-Minority Rail Lines |
|-----------------------------|------------------------|----------------------------|
| # of Peak Period Lines | 5 | |
| # of Lines Not Meeting Std. | | |
| % Compliance | 100.0% | |
| | | |
| # of Off-Peak Period Lines | 5 | |
| # of Lines Not Meeting Std. | | |
| % Compliance | 100.0% | |
| | | |
| SATURDAY | | |
| # of Lines | 5 | |
| # of Lines Not Meeting Std. | | |
| % Compliance | 100.0% | |
| | | |
| SUNDAY | | |
| # of Lines | 5 | |
| # of Lines Not Meeting Std. | | |
| % Compliance | 100.0% | |

Schedule Data from Feb 21 2016

Must meet standard at least 90% of all hourly periods

ATTACHMENT C ON-TIME PERFORMANCE STANDARDS

On-Time Performance Standards were last revised in the October 2015 Transit Service Policy. The current standards are depicted in Table C-1. As the policy states, ninety percent of bus lines must meet the standard in at least 90% of all time periods monitored (originally established in 2011). Rail lines are expected to achieve the standard or better on a daily basis. Monitoring data is from the January-March 2016 time period.

Table C-1
On-Time Performance Standards by Service Type

| Service Type | Standard |
|---------------------|-----------------|
| Heavy Rail | 95% |
| Light Rail | 90% |
| Bus | 80% |

As of October 2015
90% of bus lines should achieve
the standard for at least 90% of
monitored hours

These standards however are systemwide, and the standard of 80% ISOTP (In Service On Time Performance) 90% of the time is difficult to achieve in the operating environment of Los Angeles. Increasing traffic congestions related to low gas, high car sales, and a large number of newly issued driver licenses. Traffic congestion continues to worsen resulting in bus service being slowed down.

To improve Metro's compliance with our ISOTP standards, staff is surveying methods used by other agencies.

Table C-2
 FY 2017 ISOTP Targets by Division

| Bus FY17 ISOTP Goal | |
|----------------------------|--------------------|
| FY17 Division | FY17 Target |
| 1 | 74.85% |
| 2 | 77.05% |
| 3 | 77.84% |
| 5 | 77.75% |
| 6 | 0.00% |
| 7 | 75.49% |
| 8 | 86.28% |
| 9 | 80.37% |
| 10 | 74.92% |
| 13 | 75.36% |
| 15 | 79.66% |
| 18 | 75.64% |
| Metro | 78.00% |
| 95 | 80.00% |
| 97 | 80.00% |
| 98 | 80.00% |
| Contract | 80.00% |
| System | 78.15% |

Bus On-Time Performance

Overall compliance, shown in Table C-3, is low with only 8 of 140 weekday bus lines (5.7%), 8 of 108 Saturday bus lines (7.4%), and 16 of 101 Sunday bus lines (15.8%) meeting the 80% standard at least 90% of all time periods operated. Metro has established a 10% threshold for determining when the disparity between minority and non-minority performance is significant. There are no significant differences in ISOTP compliance.

It should be kept in mind that Metro monitors and reports bus ISOTP on every line. These measurements are also made even during unusual occurrences such as short term street or lane closures, presidential visits to Los Angeles, construction projects and even during rare winter storms.

When conformity is observed by time of day, consistent patterns emerge. ISOTP compliance deteriorates as the day progresses reaching its lowest level of compliance during the PM Peak time period. As the evening progresses compliance continues to improve. This is not uncommon historically, as traffic worsens quickly in the PM peak. Service Planning and Scheduling are reviewing these time periods by line to improve schedule adherence. Also, an All Door Boarding (ADB) demonstration project on the Metro Silver Line has produced very positive results in boarding time savings, thereby improving ISOTP. Once the demonstration period is completed, other Metro services will be reviewed for possible ADB expansion.

Table C-3
Metro Bus On-Time Performance Standards Conformance

| WEEKDAY | Minority Bus Lines | Non-Minority Bus Lines |
|-------------------------|--------------------|------------------------|
| # of Bus Lines | 105 | 35 |
| # of Lines Meeting Std. | 6 | 2 |
| % Compliance | 5.7% | 5.7% |
| SATURDAY | | |
| # of Bus Lines | 81 | 27 |
| # of Lines Meeting Std. | 4 | 4 |
| % Compliance | 4.9% | 14.8% |
| SUNDAY | | |
| # of Bus Lines | 75 | 26 |
| # of Lines Meeting Std. | 10 | 6 |
| % Compliance | 13.3% | 23.1% |

Observed data from Jan-Mar 2016

90% of lines must meet standard at least 90% of all time periods

Rail On-Time Performance

Conformance for rail lines is summarized below in Table C-4. All rail lines are classified as minority lines, and all lines meet the ISOTP standards of 90% for light rail lines (Blue, Green, Gold, Expo) and 95% for heavy rail lines (Red, Purple).

Table C-4

Metro Rail On-Time Performance Standards

| | |
|-----------------|--------|
| Red/Purple Line | 99.45% |
| Blue Line | 96.10% |
| Green Line | 98.52% |
| Gold Line | 97.60% |
| Expo Line | 98.61% |

ATTACHMENT D ACCESSIBILITY STANDARDS

The current accessibility standard is shown in Figure D-1 as adopted in December 2011. The standard ensures the availability of fixed route service to virtually all residents of Metro's service area while limiting duplication of service by using services operated by others to meet the standard.

Figure D-1
Accessibility Standard

Service is to be provided within ¼ mile of 99% of Census tracts within Metro's service area having at least three households per acre and/or at least four jobs per acre. Fixed route service provided by other operators may be used to meet this standard.

Metro meets the accessibility standard. There are 2,261 Census tracts within Metro's service area of which 1,971 meet the minimum population and/or jobs thresholds to be entitled to access to fixed route service. Three of the eligible Census tracts (0.2%) are not within one-quarter mile of at least one fixed route bus stop. Two of these are not served by paved roads.

ATTACHMENT E PASSENGER AMENITIES STANDARDS

The current Metro passenger amenities standard is shown in Figure E-1 as adopted by the Metro Board in December 2011. The standard applies to all off-street facilities owned by Metro that permit passenger boardings.

Figure E-1
Passenger Amenities Standards

| | |
|--------------------|--|
| Shelters: | HR – not applicable |
| | LR – at least 80 linear ft. |
| | Bus – at least 6 linear ft. per bay |
| Seating: | HR – at least 12 seats |
| | LR – at least 10 seats |
| | Bus – at least 3 seats per bay |
| Info Displays: | HR – at least 12 |
| | LR – at least 10 |
| | Bus – at least 3 |
| LED Displays: | HR – at least 8 arrival/departure screens |
| | LR – not applicable |
| | Bus – not applicable |
| TVMs: | HR/LR – at least 2 |
| | Bus – not applicable |
| Elevators: | HR – at least 2 |
| | LR – at least 1 for elevated/underground |
| | Bus – at least 1 for multi-level terminals |
| Escalators: | HR – at least 4 (2 Up / 2 Down) |
| | LR – not applicable |
| | Bus – not applicable |
| Waste Receptacles: | HR – at least 6 |
| | LR – at least 2 |
| | Bus – at least 1 per 3 bays / 2 minimum |

As of July 2016, all Metro facilities met these minimum standards. Since the prior triennial review the following facilities have been added:

| | | |
|-------------------------------------|------------|--------------------|
| Expo Line to Culver City | May 2012 | 10 new LR stations |
| Orange Line Extension to Chatsworth | July 2012 | 5 new Bus stations |
| Gold Line Extension to Azusa | March 2016 | 6 new LR stations |
| Expo Line Extension to Santa Monica | May 2016 | 7 new LR stations |

All of the added stations conform to the adopted standard.

ATTACHMENT F VEHICLE ASSIGNMENT STANDARDS

The current vehicle assignment policy is shown in Figure F-1 as adopted in December 2011. The policy ensures that vehicles are assigned in accordance with service requirements.

Figure F-1
Vehicle Assignment Policy

| |
|--|
| <p><u><i>Buses</i></u></p> <p><i>Buses will be assigned to individual facilities on the basis of vehicle size requirements for lines supported by each facility.</i></p> <p><u><i>Light Rail</i></u></p> <p><i>Light rail cars will be assigned to individual lines on the basis of compatibility of vehicle controllers with each line's signal system. The number of vehicle types/manufacturers will be kept to no more than two at any facility to minimize parts storage and maximize maintenance expertise.</i></p> <p><u><i>Heavy Rail</i></u></p> <p><i>This assignment policy is not applicable to heavy rail as the Red and Purple Lines operate out of the same division and both employ the same vehicle type.</i></p> |
|--|

All buses are assigned to individual lines in accordance with this policy. The resulting distribution of vehicles as of January 2016 (the time of the last major service change prior to the conduct of this evaluation) is displayed in Tables F-1 and F-2.

Table F-2
Fleet Distribution by Minority Bus Lines Classification – Jan 2016

| | # of Peak Buses | Average Age | Average # of Seats |
|--------------------|-----------------------|----------------|--------------------------|
| Minority Lines | 1,566 | 7.77 | 43.4 |
| non-Minority Lines | 368 | 6.88 | 43.1 |
| Combined | 1,934 | 7.60 | 43.3 |

The Minority average bus age is 2.2% higher than the peak fleet average, however the non-Minority average bus age is 9.5% less than the peak fleet average. The adopted standard for what would constitute a disparate impact is a difference greater than 10%. Because the average age of buses assigned to minority lines is significantly older than the age of buses assigned to non-minority lines there is a disparate impact.

With delivery over the last year of approximately 800 new buses, and with the full opening of new bus Division 13, the implementation of the June 2016 Service Change Program bus assignments were significantly realigned. Because of this the assignment analysis was redone using June 2016 bus assignments. The results are shown in Table F-3. It can be seen that there is no longer a disparate impact.

Table F-3
Fleet Distribution by Minority Bus Lines Classification – June 2016

| # of Peak Buses | Average Age | Average # of Seats |
|-----------------------|----------------|--------------------------|
| 1,548 | 6.87 | 43.5 |
| 384 | 7.04 | 43.1 |
| 1,932 | 6.91 | 43.4 |

Heavy rail vehicle assignment is constrained as both the Red and Purple lines are operated out of Division 20. There are 104 vehicles averaging 19.1 years old. Light rail vehicles support the operation of four rail lines from five facilities. Assignment of light rail vehicles is summarized in Table F-3 as of May 5, 2016.

Table F-4
Light Rail Vehicle Assignments

| | # of Vehicles | Average Age |
|------------|---------------|-------------|
| Blue Line | 69 | 21.8 |
| Green Line | 29 | 14.8 |
| Gold Line | 62 | 5.2 |
| Expo Line | 26 | 19.8 |
| | 186 | 14.9 |

All light rail vehicles are originally provided with 76 seats. Vehicles assigned to the Blue, Green and Gold Lines have five seats removed to accommodate bicycles and other bulky items. The fleet is currently in transition as new car deliveries are being processed and will continue at least through 2017. As of May 5, 2016, 15 of these vehicles had been accepted and placed into service. The total order, including options, is anticipated to be 235 vehicles – a portion will replace older vehicles and some will support further expansion of the system including the Regional Connector and the Crenshaw Line.

The current distribution of vehicles by age is distorted because the Metro Gold Line received almost all of the initially accepted new vehicles to support the Azusa Extension that opened in March 2016; since then over 20 have been delivered and distributed between the Expo and Gold Lines. The Blue and Expo Lines will receive a large complement of new vehicles as they are accepted to support the Expo Extension that opened in late May 2016. Because the current vehicle distribution will be undergoing significant change over the next few months it would be inappropriate to draw any conclusions regarding disparate impacts at this time. It is known that the newest cars currently under construction over the next two years will be assigned to replace the

original Blue Line cars placed into service in 1991. All rail lines are classified as minority lines.

A draft of the proposed Rail Vehicle Management Plan proposes a new standard for rail vehicle assignment. It is proposed that *no line shall have an average fleet age greater than 20% of the average for the mode*. By that standard the Blue and Expo lines would be disparately impacted based upon the March fleet data, though the addition of the Expo Line Santa Monica Extension and the introduction of the remaining 220 new light rail vehicles are not reflected in this analysis. However, three years from now when the next tri-annual audit is conducted, the new cars will be placed on the proper lines to meet the rail vehicle assignment standard.