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OP7

REVISED
OPERATIONS COMMITTEE
JUNE 16, 2011

**SUBJECT: ADDITIONAL INFORMATION PERTAINING TO PAST, PRESENT,
FUTURE SERVICE CHANGES – PART 2**

ACTION: RECEIVE AND FILE

RECOMMENDATION

Receive and file additional information pertaining to past, present and future service changes, part 2, and evaluation program for impacts of previous service changes.

SUMMARY

The regional transit network has evolved over the years, and it will continue to progress with Measure R. Adjustments to the MTA bus system are required to ensure that resources are allocated appropriately, the entire regional network is managed effectively and focus is placed on service quality through real-time service management. This provides the most cost effective means of improving service.

The regional transit network also has changed with respect to the mix of operators after June 2011 service changes:

- Municipal operators represent ~~35%~~ 39% of the system today compared to 26% in 1997;
- The system increased by ~~33%~~ 43% from 1997 to 2011, including Rail;
- System wide passenger capacity hours (Vehicle Hour * Seats * Load Factor) have increased by ~~48%~~ 62% from 1997 to 2011.

Prudent management of a sustainable transit system includes rightsizing capacity to demand, ensuring major origins and destinations are well served, reducing duplicative and unproductive services, and integrating bus and rail services. The June 2011 Service Changes continue MTA's efforts from the two previous years. As such, a significant amount of resources are being reinvested into improving the quality, reliability, and safety of the system with an emphasis on real-time service management. Ultimately, the current regional transit network ensures a firm foundation for growth and progress as a result of Measure R.

ISSUE: SUMMARY OF BOARD REQUESTS

At its March 24, 2011 meeting, the MTA Board of Directors (Board) approved service changes that will go into effect June 26, 2011 or later. During the deliberation, there was significant public comment and discussion on the impacts and benefits of these, as well as recent and future changes. Subsequently, the Board requested that additional information be presented to provide context around the change in the regional transit network since 1997. This report represents Part 2 of the response to this request. The first part of this response was reported back in April.

Specifically, the Board requested staff to report back no later than June 2011 MTA Board cycle with responses to issues raised in the motion, as follows:

Previous Service Changes – Addressed in April Board report:

- Net service changes (revenue service hours) from July 2009 through March 2011 (inclusive of the current recommendation);
- Change in service quality metrics (e.g. on-time performance over the same period) since a basis for the recommended reductions is improved service quality;
- Total cost savings generated from each service change (shake-up) since July 2009;
- Description of how savings were used and reinvested to improve bus service, including savings generated by the June 2011 shake-up;

Service levels – Report on the change in service levels based on total passenger capacity provided (service hours x seats x load factor) between 1997 and current for transit service funded by MTA:

- MTA bus service (excluding Orange Line);
- Municipal operator bus service;
- Total bus service (MTA and municipal operator);
- MTA rail service (heavy rail, light rail, and Orange Line);
- Metrolink service;
- Total transit service

Future service changes – report on the following:

- Proposed new or modified policy criteria that ensure continued service to regionally significant destinations, including but not limited to health care and educational facilities, is maintained;

- New policy for reinvesting savings from bus service reductions which were not made for budgetary reasons;
- Five-year vision for the overall level MTA transit services (including future service changes) in light of new busway and light rail lines that are opening in the next five years (e.g. Expo Phase 1, Orange Line Canoga, Foothill Extension, and Expo Phase 2)

Service quality – Report on current service quality by mode (local bus, limited bus, express bus, rapid bus, busway, light rail, heavy rail, and commuter rail) for metrics below. Where applicable, analyze the specific management practices that have led to increases in service quality for each metric:

- Travel speed
- Service frequency (headway)
- Hours of operation
- On-time performance
- Cleanliness

Cost effectiveness – Report on the cost effectiveness of each mode (i.e., cost per passenger mile):

- MTA bus service (excluding Orange Line)
- Municipal operator bus service
- MTA heavy rail
- MTA light rail
- MTA busway (Orange Line)
- Metrolink
- Service enhancements – Evaluate potential changes to MTA’s current fare and transfer policy, including but not limited to:
 - Unlimited transfers within a fixed time window (to mitigate new forced transfers created by service reductions and restructuring)
 - Restoration of reduced cost transfers
 - Reduction in the price of the MTA day pass
 - Distance based fares

DISCUSSION

When the Los Angeles County Metropolitan Transportation Authority (LACMTA) was created in 1993, it assumed responsibilities of both the Los Angeles County Transportation Commission (LACTC), and Southern California Rapid Transit District (RTD). Specifically, MTA’s primary responsibilities are: (1) Transit Construction; (2) Transit Operations of rail and busways, and bus routes previously operated by RTD;

and, (3) Transportation Planning and Programming (including the requirement to allocate certain bus operating funds to municipal bus operations).

As such, the regional transit landscape has evolved over the years from a predominantly RTD bus network providing conventional local service throughout the county, to a robust multimodal transit network providing an appropriate mix of service modes, such as Rail, Rapid Bus, Metro Liner (Bus Rapid Transit), and levels to meet the distinct needs of various travel markets. Within this framework, the most cost effective means of improving service is better system integration of all services and a focus on improved real-time service management.

With significant investment in bus technology, tools are available to provide information that allows transportation, maintenance, and scheduling staff the ability to manage the system and respond immediately to situations that arise on a daily and hourly basis. These systems will alert Transit Operation Supervisors (TOS) as to the location of all buses, so they can work with operators to ensure that buses are running on-time and trips are provided as scheduled. Excessive loads can be remedied on an immediate basis by adding trippers, followed by further analysis to determine the appropriate long term solution. With fewer buses in the fleet, more maintenance and diagnostic time can be assigned to each bus to ensure they are cleaner and more reliable, improving safety and trip completion.

The information is captured and stored in a consolidated data warehouse where daily, weekly, and monthly reports can be produced to assist managers in monitoring the system, identifying deficiencies to remedy, and preplanning for issues that occur on a regular basis. Scheduling and planning staff review the data to ensure appropriate levels of service are provided, and running times reflect actual on street operations. To complement data collected from technology, personal communications provide constant information flow between operators, mechanics, TOS, managers, schedulers, and planners to collaboratively respond to and preplan for issues on an immediate and long term basis.

As mentioned previously, the regional transit network also has changed with respect to the mix of operators. Tables 1 and 2 show that while MTA bus service levels have increased since 1997, municipal operators have grown even more to represent 39% of the transit system compared to 26% in 1997. Including rail, the system increased by 43% from 1997 to 2011.

System wide passenger capacity hours (Vehicle Hour * Seats * Load Factor) have grown largely due to increases in high capacity buses and rail cars. Including rail, the system increased by 62% from 1997 to 2011.

Table 1
Change in Revenue Hours 1997-2011

Revenue Hours		1997	2011	% Change
Bus	LACMTA (Bus)	6,292,124	6,709,197	7%
	Muni/Local Operators	2,307,471	5,066,210	120%
	Subtotal (Bus)	8,599,595	11,775,407	37%
Rail	LACMTA (Rail)	283,844	811,205	186%
	Metrolink	126,254	255,625	102%
	Subtotal (Rail)	410,098	1,066,830	160%
Total (System)		9,009,693	12,842,237	43%

Notes: *1997 Data from NTD
 *2011 Data from FAP Formula (Muni Operators), Metro scheduling for June 2011 (LACMTA Bus and Rail including Expo Phase 1 of 110,000 annual revenue vehicle hours) after June 2011 service changes, Data extrapolated from July *2010 – March 2011 (Metrolink)

Table 2
Change in Capacity Hours 1997-2011

Capacity Hours		1997	2011	% Change
Bus	LACMTA (Bus)	302,021,952	354,245,602	17%
	Muni/Local Operators	110,758,608	243,178,080	120%
	Subtotal (Bus)	412,780,560	597,423,682	45%
Rail	LACMTA (Rail)	36,487,933	103,777,871	184%
	Metrolink	17,675,560	32,208,750	82%
	Subtotal (Rail)	54,163,493	135,986,624	151%
Total (System)		466,944,053	733,410,303	57%

Notes: MTA Bus avg seats/vehicle - 40 (1997), 44 (2011)
 Muni Operations avg seats/vehicle – 40 (1997, 2011)
 MTA Bus includes Orange Line
 Bus Load Factor – 1.20
 Light Rail Load Factor – 1.75
 Heavy Rail Load Factor – 2.30
 Commuter Rail Load Factor – 1.00

Therefore, recent MTA bus service reductions of roughly 620,000 annual revenue hours from June 2009 to March 2011 (December 2010 Service Change Program), as indicated in Table represents only a **5 percent reduction in revenue hours when considering all regional bus and rail services combined, not solely MTA Bus.** Including June 2011 changes, 894,000 annual revenue hours will have been reduced from MTA Bus service starting from June 2009. These changes have been made to improve coordination with municipal and local return operators, better integration of bus and rail services, and to reduce wasteful service duplication. After the service reductions, the network continues to be robust in terms of service levels. Table 4 shows frequencies and service spans for different elements of the transit network.

**Table 3
Change in MTA Bus Revenue Hours**

Service Change Program	Annual Rev Hours	Change from Previous Program	
		Number	Cum Percent
June 2009	7,581,571	21,315	0%
Dec 2009	7,378,319	203,252	3%
June 2010	7,220,730	157,589	5%
Dec 2010	6,982,934	237,796	8%
June 2011	6,709,197	273,736	11%

**Table 4
Service Frequency and Span**

Mode	Service Span	Range of Headways
Local & Limited Bus	24 hours	3 - 70 min
Express Bus	4:20am - 1:30am	10 - 60 min
Shuttle Bus	4:30am - 12:00am	10 - 60 min
Rapid Bus	4:45am - 2:15am	3 - 30 min
Metroliner	3:45am - 1:50am	4 - 60 min
Heavy Rail	4:30am - 1:20am	5 - 20 min
Light Rail	3:30am - 2:00am	5.5 - 20 min
Metrolink**	4:00am - 12:30am	20 - 240 min

With the June 2011 service changes, the Metro bus system is improved relative to demand and support resources. Future service changes will continue to focus on improving service quality, matching capacity to demand, improving bus and rail connections, and adjusting routes to improve service to key origins and destinations. Over the next five years, it is anticipated that changes to the existing regional bus network will be made to integrate with new fixed guide way services, including Expo Phase II, Gold Line Foothill Extension, and the Orange Line Canoga Extension. MTA will coordinate with municipal and local return operators to best integrate the new services with the existing regional transit network. In addition, the Transit Service Policy will be revised to include criteria for evaluating continued service to regionally significant destinations, such as health care and educational facilities, as a consideration of future service changes. Attachment A provides such an analysis of the June 2011 service changes.

The service changes implemented recently help to create a seamless network of transit services leveraging the strengths of each transit mode. The advent of Metro Rapid,

Metro Liner (Bus Rapid Transit), Metro Rail, and Metrolink, results in services that are becoming faster for all patrons. Table 5 shows that local bus service (the predominant transit mode in 1997) operates at speeds of about 12.6 mph. Today, new innovations in service provide a much more expedited trip with Bus Rapid Transit at 23.3 mph, Metro Rail between 22.3 and 34.1 mph, and Metrolink at 39.0 mph. Trip lengths also are longer on rail and express services. In addition, higher capacity buses and rail cars provide much more capacity per hour of service than in the past.

Table 5
Speeds and Average Trip Lengths by Transit Mode

	Speed (MPH)	Avg Trip Length (mi)
Bus		
Busway (Orange Line)	23.3	6.28
Express	19.5	11.38
Limited	14.2	3.64
Local	12.6	
Rapid	13.7	5.13
Bus network average	13.3	4.16
Rail		
Light Rail	26.7	7.1
Heavy Rail	27.4	4.8
Rail network average	27.0	6.0
Metrolink	39.0	34.4

These new transit modes also result in more cost effective operations. Cost per passenger mile can be a good indication of cost efficiency as it measures the cost to operate each mile traveled by passengers. While on a cost per revenue hour basis, it appears that local bus is cheapest to operate, however, with higher speeds, longer travel distances, and increased capacity, the cost per passenger mile is lower on rail and busway services compared to local bus service as indicated in Table 6.

Table 6
Cost per Passenger Mile

	Cost/ Passenger Mile	Cost/ Revenue Hour
Municipal Bus	\$0.69	\$96
MTA Bus (excl. Orange Line)	\$0.62	\$126
Busway (Orange Line)	\$0.48	\$224
MTA Light Rail	\$0.47	\$375
MTA Heavy Rail	\$0.42	\$346
Metrolink	\$0.40	\$551

Improvements in Service Quality and Performance

With the evolution of the regional transit network, there also have been significant improvements in service quality and performance. After the June 2011 service change, it is anticipated that system productivity will increase from 51 boardings/revenue hour to 54, closer to the peer group average of 55 boardings/revenue hour.

Table 7 shows that MTA bus is improving in various aspects of service quality, including on-time performance, vehicle reliability, and fewer complaints. These improvements are a result of better matching the amount of service and size of fleet to the level of resources available to support operations and maintenance of the bus system. Resources can now support more supervision of on-time pull outs at the yard and major terminals, supervision from Bus Operations Control Center, and supervision of lines and operators with poor on-time performance. Buses also can be maintained and cleaned more frequently resulting in cleaner and more reliable vehicles. Chart 1 shows the fleet cleanliness by division.

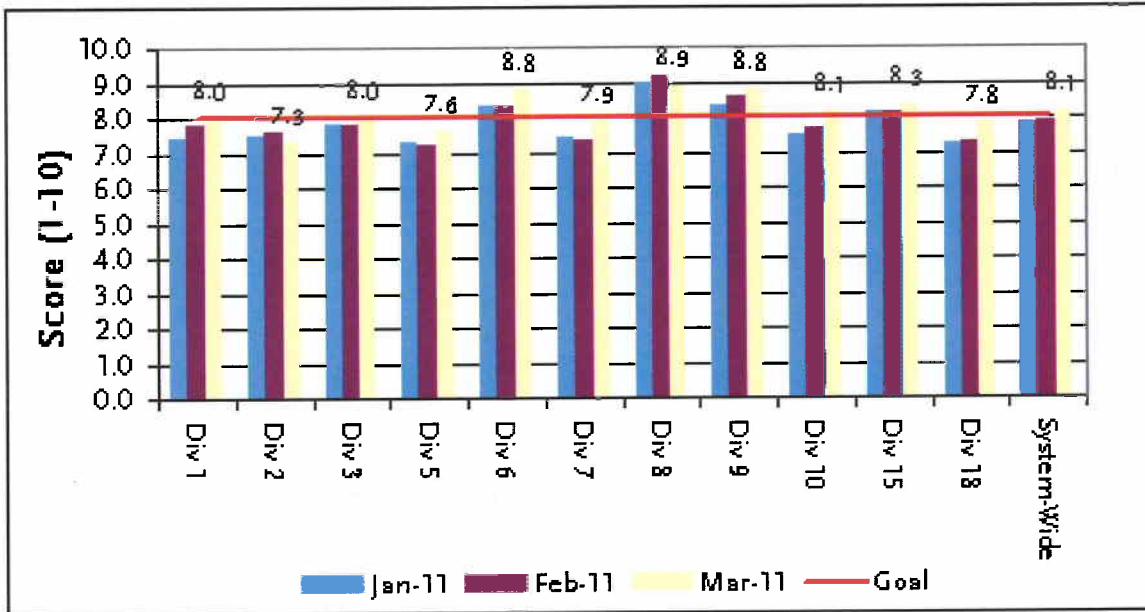
Table 7
Key Performance Indicators

Performance Indicator	FY2009	Jan 2011	% Change
On-Time Performance*	64%	77%	+20%
Mean Miles Between Mechanical Failures	3,369	3,732	+11%
Complaints per 100K Boardings	2.94	2.64	-10%

*On-Time Performance compared to peer agencies listed below:

- San Francisco (MTA) – 72%
- New York (NYCT) – 64%
- Philadelphia (SEPTA) – 75%
- Washington DC (WMATA) – 77%

**Chart 1
Fleet
Cleanliness**



In order to continue improving in these and other service quality areas, resources made available from optimizing the Metro bus system will be redeployed back into the bus system. Table 8 shows that roughly \$30 million dollars has and will be redeployed to improve the bus network with the efforts identified in Attachment B being critical elements of the service improvement program.

**Table 8
Change in Revenue Hours and Operating Cost**

Service Change	Annual Reduction in Revenue Hours	Marginal Cost/Hr*	Savings
Jun-09	21,315		
Dec-09	203,252		
Jun-10	157,589		
Dec-10	237,796		
Jun-11	290,000	\$105.64	\$30,635,600
Total	909,952		\$30,635,600

* Based on proposed FY12 budget assumptions

The FY12 service adjustments and related savings will be utilized in the following manner:

- \$9 million in retained work force to improve the fleet and service delivery

