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Metro

NOVEMBER 18, 2011

TO: BOARD OF DIRECTORS

THROUGH: ARTHUR T. LEAHY
CHIEF EXECUTIVE OFFICER

FROM: NALINI AHUJA
EXECUTIVE OFFICER, OFFICE OF MANAGEMENT AND BUDGET

SUBJECT: ANALYSIS OF FACTORS AFFECTING BOARDINGS

ISSUE

In response to Director Najarian's request for information regarding the effect of fare changes on Metro boardings, and the CEO's request to include Metrolink in the discussion, the following is an analysis of some factors including fare changes affecting Metro and Metrolink boardings.

DISCUSSION

We analyzed the impact of factors such as fares, gasoline price and employment on Metro Boardings from Fiscal Year (FY) 2007 to FY 2011. A study identifying the effects of the same factors on Metrolink ridership was provided by Southern California Regional Rail Authority (SCRRA) for the period FY 2001 to FY 2009 and is included in this report as well.

To be consistent with the analysis of Metro boardings we have also analyzed the effect of these factors on Metrolink boardings for FY07 to FY11 period.

METRO

Factors Affecting Metro Boardings (FY 2007- FY 2011)

The process was initiated by identifying a range of factors that could potentially impact Metro boardings, such as price of unleaded gasoline, Los Angeles County employment and average fare increases.

A. Impact of Price of Unleaded Gasoline on Boardings (Attachment A)

Bus Boardings

Metro bus boardings went down when price of gasoline went up in FY08, FY10 and FY11. In FY09 the price of gas dropped by 16.5% and boardings remained unchanged.

With increasing gas prices bus boardings were expected to increase as well. However, that was not the case during our study period, showing that gas prices did not have a significant impact on Metro bus boardings. The trend of bus boardings has been downward during this period.

Accordingly, the impact of gas prices was not as significant as other factors on Metro bus boardings.

Rail Boardings

There was no detectable relationship between Metro rail boardings and price of gas other than for the Metro Gold Line where the ridership kept going up during this period. It should be noted that the Metro Gold Line service was extended to East Los Angeles in November 2009 partially contributing to this ridership increase.

B. Impact of Employment on Boardings (Attachment B)

Bus Boardings

In FY08, Los Angeles County employment increased by 4.9% but bus boardings declined by 6.3%. The decline in Metro bus boardings could be explained by a 10% increase in average fares.

Los Angeles County employment went down during FY09, FY10 and FY11 so did Metro bus boardings.

Therefore, LA County employment decline negatively impacted bus ridership.

Rail Boardings

In FY08, Los Angeles County employment increased by 4.9% and Metro Gold Line boardings increased by 10.5%.

Los Angeles County employment decline in FY09, FY10 and FY11 did not seem to have an impact on the Metro Gold Line boardings which increased regardless.

In FY08 and FY09, other Metro rail boardings increased by 5.1% and 6.6% respectively when LA County employment increased by 4.9% and decreased by 7.6% respectively.

In FY10, other Metro rail boardings remained unchanged when LA County employment decreased by 4%, and in FY11 other Metro rail boardings decreased by 1.1% when LA County employment remained almost unchanged.

Therefore, there was also no noticeable relationship between Metro rail boardings and Los Angeles County employment.

C. Impact of Average Fare Increases on Boardings (Attachment C)

Bus Boardings

From FY07 to FY08 average fares increased by 10% and Metro bus boardings decreased by 6.3%.

From FY08 to FY09 average fares remained unchanged and bus boardings declined slightly (0.4% decrease).

From FY09 to FY10 average fares remained unchanged and bus boardings decreased by 5.2%.

From FY10 to FY11 average fares increased by 10%. During this period Metro bus boardings decreased by 2.4%.

In spite of having the same percentage increases (10%) in average fares in FY08 and FY11, Metro bus boardings did not decrease in FY11 by the same rate as it did in FY08. The continuous drop in ridership in prior years, specifically 5.2% ridership decrease in FY10 was the result of cumulative decreases in LA County employment during FY09 and FY10. The lower ridership base in FY10 could be the contributing factor to the smaller percentage decrease in ridership in FY11 in spite of having the same percentage of average fare increases as in FY08.

Fare increases negatively impacted Metro bus boardings.

Rail Boardings

From FY07 to FY08 average fares increased by 10%. During this period Metro Gold Line boardings increased by 10.5%, and other Metro rail boardings increased by 5.1%.

From FY08 to FY09 average fare remained unchanged. During this period Metro Gold Line boardings increased by 14.2%, and other Metro rail boardings increased by 6.6%.

From FY09 to FY10 average fare remained unchanged. During this period Metro Gold Line boardings increased by 22.4% partially due to Metro Gold Line Eastside Extension (MGLEE), and other Metro rail boardings remained unchanged.

From FY10 to FY11 average fares increased by 10%. During this period, Metro Gold Line boardings increased by 23%, and other Metro rail boardings decreased by 1.1%.

Fare increases did not seem to significantly impact rail boardings.

METROLINK

Factors Affecting Metrolink Boardings (FY 2001- FY 2009) (Attachment D)

During FY01 – FY09 changes in the price of gasoline appeared to be consistently the most important variable governing changes in ridership. This was due in large part to the magnitude of its changes over this period. The highest price for unleaded gasoline during the period was more than four times the lowest price.

The magnitude of the changes in gasoline prices might have resulted in other factors appearing less important than they actually were. This was especially true of non-farm employment, which had a significant correlation with unleaded gasoline prices.

The elasticities generated by this model suggested that:

- 10% increase in price of gas resulted in 1.15% in ridership gain;
- 10% increase in Los Angeles Metropolitan Statistical Area Non-Farm Employment resulted in 3.38% ridership gain;
- 10% increase in average fares resulted in 2.14% decrease in ridership;
- 10% increase in Train Miles of Service resulted in 1.3% ridership gain;
- And, 10% increase in weekend ridership resulted in 0.54% increase in ridership (Attachment D).

A. Impact of Metrolink Average Fare Increases on Boardings (Attachment E)

The result of our analysis of Metrolink ridership report is as follows:

- In FY08 average fares increased by 3.5% and boardings went up by 4.5%.
- In FY09, average fares increased by 5.5% and boardings went up by 2.4%.
- In FY10 average fares increased by 3% and boardings went down by 8.7%.
- In FY11 average fares increased by 6% and boardings went down by 1.6%.

In FY10 Metrolink boardings decreased significantly in spite of having less increases in average fares compared to FY09 (3% versus 5.5%), which shows that other factors, such as employment and/or price of gas have bigger impact on Metrolink boardings.

B. Impact of Employment and Price of Gas on Metrolink Boardings

In FY08, Metrolink systemwide ridership increased by 4.5%, LA County employment increased by 4.9% and price of gas increased by 16.1%. Therefore, the increase in LA County employment and price of gas could be leading factors to increase in ridership.

In FY09, Metrolink ridership increased by 2.4%, LA County employment decreased by 7.6% and price of gas decreased by 16.5%. The smaller increase in ridership in FY09 compared to FY08 could be explained by the decline in LA County employment and the significant drop in price of gas.

In FY10, Metrolink ridership dropped by 8.7%, price of gas increased by 7.4% and LA County employment decreased by 4%. Therefore, in FY10 the impact of LA County employment on Metrolink ridership was greater than the impact of gas prices.

In FY11, Metrolink ridership dropped by 1.6%, LA County employment remained almost unchanged and price of gas increased by 16.4%.

Prices of gas impacted Metrolink boardings; however LA County employment had bigger impact on Metrolink boardings compared to price of gas.

NEXT STEPS

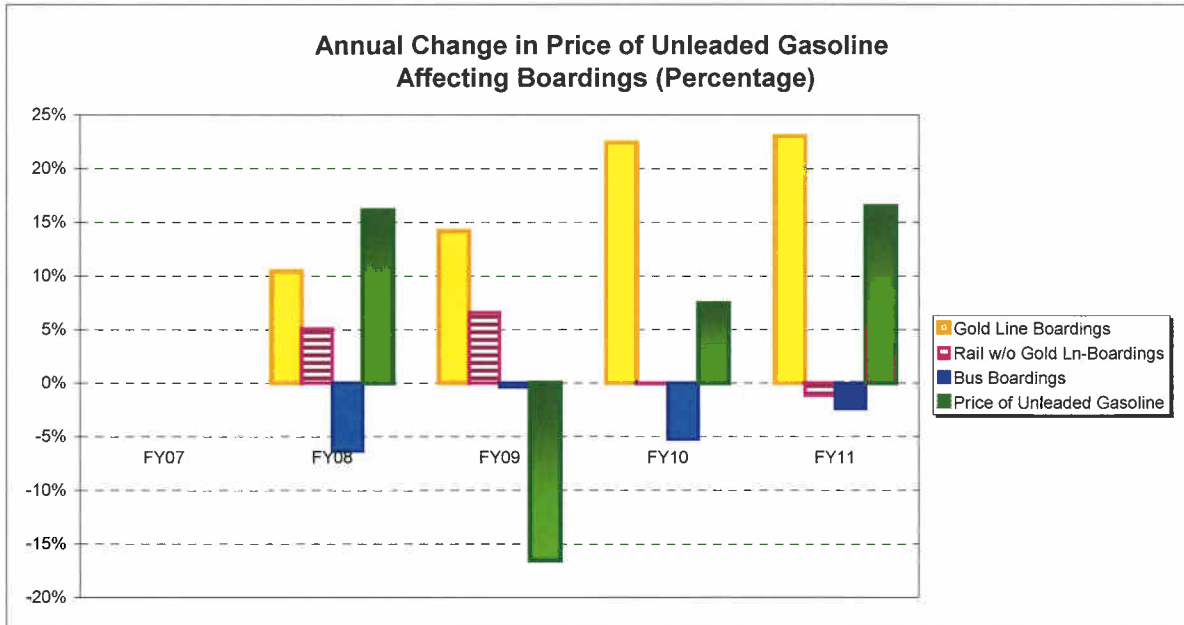
We will monitor the factors impacting boardings and in case of any deviation from the current trend we will get back to the board with updated information.

ATTACHMENTS

- A. Annual Percentage Change in the Price of Unleaded Gasoline Affecting Metro Boardings
- B. Annual Change in Employment Affecting Metro Boardings
- C. Annual Change in Average fares Affecting Metro Boardings
- D. Metrolink Ridership Modeling (provided by SCRRA)
- E. Metrolink Annual Change in Average fares Affecting Boardings

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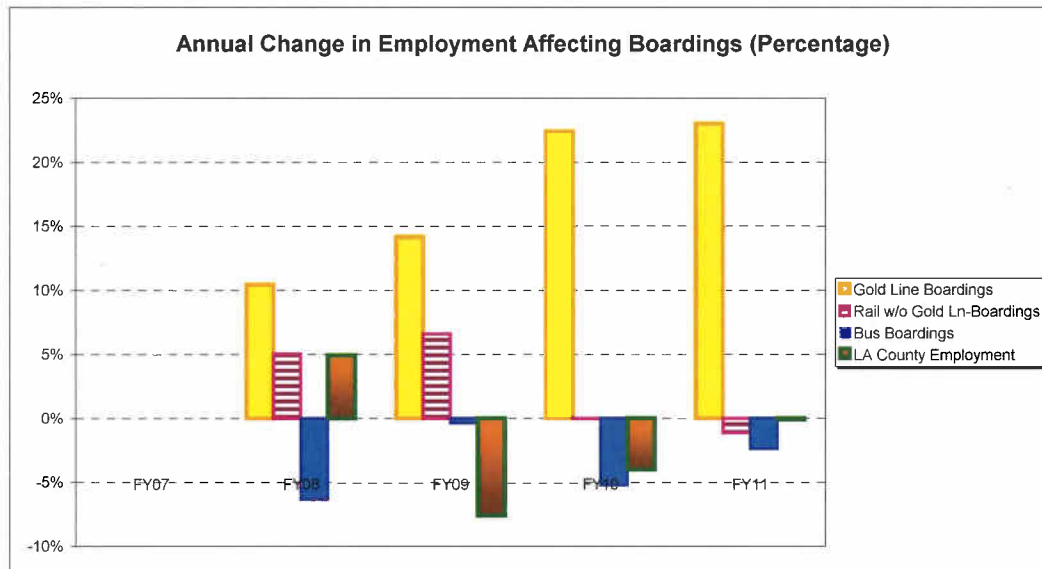
Annual Change in the Price of Unleaded Gasoline Affecting Metro Boardings



Fiscal Year	Gold Line Boardings	Annual Change in Gold Line Boardings	Rail w/o Gold Ln-Boardings	Annual Change in Rail w/o Gold Line Boardings	Bus Boardings	Annual Change in Bus Boardings	Price of Unleaded Gasoline	Annual Change in Unleaded Gasoline Price
FY07	5,955,172		76,273,500		413,684,065		\$2.92	
FY08	6,577,690	10.5%	80,129,450	5.1%	387,521,565	-6.3%	\$3.39	16%
FY09	7,510,300	14.2%	85,408,228	6.6%	386,160,348	-0.4%	\$2.83	-17%
FY10	9,192,624	22.4%	85,369,993	0.0%	365,971,033	-5.2%	\$3.04	7%
FY11	11,306,314	23.0%	84,399,730	-1.1%	357,257,675	-2.4%	\$3.54	16%

- Bus boardings go down and the price of gas goes up particularly in FY08, FY10 and FY11.
- In FY09 the price of gas decreases by 16.5% and bus boardings remain unchanged.
- Price of gas does not explain bus ridership as significantly as employment does.
- There is no detectable relationship between rail boardings and price of gas including Gold Line where the ridership keeps going up during this period.

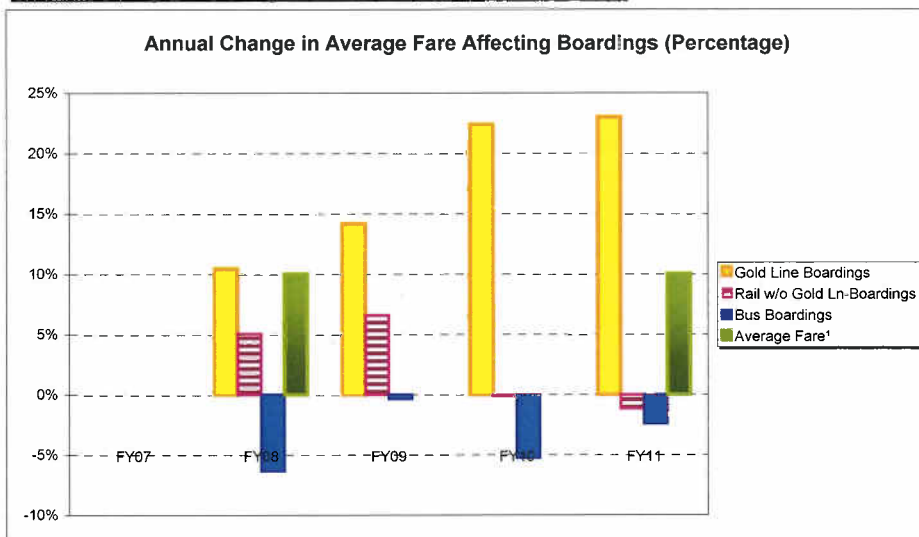
Annual Change in Employment Affecting Metro Boardings



Fiscal Year	Gold Line Boardings	Annual Change in Gold Line Boardings	Rail w/o Gold Ln Boardings	Annual Change in Rail w/o Gold Line Boardings	Bus Boardings	Annual Change in Bus Boardings	LA County Employment	Annual Change in LA County Employment
FY07	5,955,172		76,273,500		413,684,065		4,596,125	
FY08	6,577,690	10.5%	80,129,450	5.1%	387,521,565	-6.3%	4,822,775	4.9%
FY09	7,510,300	14.2%	85,408,228	6.6%	386,160,348	-0.4%	4,455,717	-7.6%
FY10	9,192,624	22.4%	85,369,993	0.0%	365,971,033	-5.2%	4,276,417	-4.0%
FY11	11,306,314	23.0%	84,399,730	-1.1%	357,257,675	-2.4%	4,271,642	-0.1%

- LA County employment goes down during FY09, FY10 and FY11 so do bus boardings.
- Metro Gold Line Eastside Extension (MGLEE) opened in November 2009 (FY10).
- LA County employment decline does not seem to have an impact on the Gold Line boardings in FY09, FY10 and FY11, which have increased regardless.
- In FY08, other Metro rail boardings increased by 5.1% when LA County employment increased by 4.9%.
- In FY09 other Metro rail boardings increased by 6.6% when LA County employment decreased by 7.6%.
- The boardings remained unchanged in FY10 when LA County employment decreased by 4%.
- Other Rail boardings decreased by 1.1% in FY11, but LA County employment remained almost unchanged.
- There was no noticeable relationship between Metro rail boardings and Los Angeles County employment.

Annual Change in Average Fare Affecting Metro Boardings



Fiscal Year	Gold Line Boardings	Annual Change in Gold Line Boardings	Rail w/o Gold Ln-Boardings	Annual Change in Rail w/o Gold Line Boardings	Bus Boardings	Annual Change in Bus Boardings	Weekly Pass	Day Pass	Cash Fare	Monthly Pass	Average Fare Increase
FY07	5,955,172		76,273,500		413,684,065		\$ 14.00	\$ 3.00	\$ 1.25	\$ 52.00	0%
FY08	6,577,690	10.5%	80,129,450	5.1%	387,521,565	-6.3%	\$ 17.00	\$ 5.00	\$ 1.25	\$ 62.00	10%
FY09	7,510,300	14.2%	85,408,228	6.6%	386,160,348	-0.4%	\$ 17.00	\$ 5.00	\$ 1.25	\$ 62.00	0%
FY10	9,192,624	22.4%	85,369,993	0.0%	365,971,033	-5.2%	\$ 17.00	\$ 5.00	\$ 1.25	\$ 62.00	0%
FY11	11,306,314	23.0%	84,399,730	-1.1%	357,257,675	-2.4%	\$ 20.00	\$ 5.00	\$ 1.50	\$ 75.00	10%

- From FY07 to FY08 average fare increased by 10%:
 - Bus boardings decreased by 6.3%.
 - Gold Line boardings increased by 10.5%.
 - Other Metro rail boardings increased by 5.1%.
- From FY08 to FY09 average fare remained unchanged:
 - Bus boardings declined slightly (0.4% decrease).
 - Metro Gold Line boardings increased by 14.2%.
 - Other Metro rail boardings increased by 6.6%.
- From FY09 to FY10 average fare remained unchanged:
 - Bus boardings declined by 5.2%.
 - Metro Gold Line boardings increased by 22.4%.
 - Other Metro rail boardings remained unchanged.
- From FY10 to FY11 average fare increased by 10%:
 - Bus boardings declined by 2.4%.
 - Gold Line boardings increased by 23%.
 - Other Metro rail boardings declined by 1.1%.

Fare increases negatively impact Metro bus boardings.

Fare increases do not impact Metro rail boardings.

