

**Metro**

Metropolitan Transportation Authority

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metro.net**PLANNING AND PROGRAMMING COMMITTEE  
NOVEMBER 14, 2007****SUBJECT: METROLINK COST/BENEFIT STUDY****ACTION: APPROVE RECOMMENDATION****RECOMMENDATION**

- A. Direct the Chief Executive Officer to request that negotiations be re-opened with the other four Southern California Regional Rail Authority (SCRRA) member agencies to pursue changes to the operations formula that would provide a better balance between the cost of service and the benefit to Los Angeles County residents; and
- B. Recommend that the SCRRA continue collecting ridership information by county of residence on a regular basis, so that Metrolink may incorporate the information in its cost allocation approach.

**ISSUE**

In September 2006, the Board of Directors approved a new formula for allocating subsidies to Metrolink. As part of the approval, the Board directed us to: 1) review and revise the formula within three years; and 2) perform a cost-benefit study to determine how best to direct Metro's subsidy to Metrolink. We developed the requested cost/benefit study (Attachment A) to address both motions.

**POLICY IMPLICATIONS**

Depending on the success of negotiations with the other SCRRA member agencies to implement the study recommendations, Metro could realize cost savings in its operating subsidy to the SCRRA and could reinvest cost savings into additional service. Study findings also provide insight into how Metro can best direct its subsidy to SCRRA among the six lines that operate within Los Angeles County.

## OPTIONS

The Board of Directors may choose not to approve all or part of the recommended actions. The Board instead could direct us not to re-open negotiations with the other SCRRA member agencies, and instead accept the current subsidy allocation method. We do not recommend this option as the Metro Board has previously indicated a desire to revise the formula by September 2009.

## FINANCIAL IMPACT

Approval of our recommendation will not affect the FY 2007-08 Metro Budget. However, depending on negotiations with the other SCRRA member agencies to implement the study recommendations, Metro could experience cost savings that would start in FY 2008-09 or FY 2009-10. The cost savings also could be reinvested into further service improvements for Los Angeles County.

## BACKGROUND

The SCRRA has operated Metrolink service since 1992. The Metrolink system provides regional passenger service between communities, employment centers and activity venues in Los Angeles County and the four surrounding counties of Ventura, Riverside, San Bernardino and Orange, as well as northern San Diego County.

### Metrolink Operating Budget Subsidy Allocation Formula

The SCRRA and its member agencies began the most recent round of discussions on the cost allocation method in Summer 2004. The negotiations resulted in the SCRRA Board adopting a new subsidy allocation method that was used for the FY 2007-08 Metrolink budget. The new method is based on allocating line item costs to the member agencies in correlation to how they are incurred by Metrolink. Thus, many of the costs are allocated by the train miles operated within each county. A weakness of this approach is that it does not value the benefit received by each county associated with the Metrolink services operated there relative to county resident riders. For instance, if a train operates 20 miles through County A and 20 miles through County B, but 50 residents of County A board the train and no residents of County B use the train, under the current formula Counties A and B would pay nearly the same for their Metrolink service.

As a key part of the study, the consultant analyzed a number of factors and alternative formulae to place more emphasis on county residency and test the cost impact to Metro. The lowest cost option for Metro is the formula in which, wherever train miles appear, they are changed to 50% train miles and 50% county of residents. Of a number of formulae and factors analyzed, this alternative would be the lowest cost alternative for Metro.

Another key finding of the study, however, is that service to Los Angeles County residents is not the only measure of benefit from Metrolink service. Metrolink has an important congestion benefit for Los Angeles County, freeing up from 0.7 to 1.3 lanes worth of capacity on adjacent highways. Metrolink provides many economic benefits, such as new jobs, an

expanded labor pool, and increased worker productivity. Metrolink service is highly cost effective as it relates to Metro subsidy per Los Angeles County work-trip.

### Cost Effectiveness Motion (Amendment)

In September 2006 the Board also directed staff to perform a cost/benefit analysis to determine if Metro's funding would be better served by improving service in Los Angeles County (e.g., the Metrolink Antelope Valley Line, which is entirely in the county) or by continuing to fund the other counties' expansions. As shown in Figure 10 of the study, the Metro subsidy per Los Angeles County resident passenger varies considerably between all six of the lines for which we participate in funding. Of the six Metrolink lines serving Los Angeles County, the three lines with the lowest Metro subsidy per Los Angeles County Resident are the San Bernardino, Line, at \$5.27, the Orange County Line at \$6.09, and the Antelope Valley Line at \$7.30. With respect to employees coming into Los Angeles County, the line with the lowest Metro subsidy per Los Angeles County work trip is the 91 Line at \$1.49, followed by the Orange County Line at \$1.69, and the San Bernardino Line at \$1.98.

Under a previous, zone-based Metrolink fare structure, fares from some stations on the Antelope Valley Line were significantly discounted. The SCRRA is gradually phasing in mileage-based fare over a 10-year period, thus the old discount may still have some impact on the cost effectiveness of the Antelope Valley Line. Directing our investments to the lines with lower subsidy per Los Angeles County resident and/or employee, as well as negotiating for formula changes as explored in the study, can each help us to maximize the benefits received by Los Angeles County residents.

### NEXT STEPS

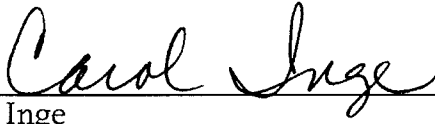
With Board approval of our recommendation, we will re-open negotiations with the other member agencies and report back to the Board of Directors on the results and any other issues requiring Board action.

Prepared by: Patricia Chen, Transportation Planning Manager  
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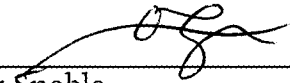
### ATTACHMENTS

- A. Final Draft Cost/Benefit Assessment of Metro's Funding for Metrolink



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Carol Inge  
Chief Planning Officer



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Roger Snoble  
Chief Executive Officer

**Final Draft Report**

October 16, 2007

**COST/BENEFIT ASSESSMENT OF  
METRO'S FUNDING FOR METROLINK**

Prepared for:

**LOS ANGELES COUNTY METROPOLITAN  
TRANSPORTATION AUTHORITY (METRO)**

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In Association with:

**SHARON GREENE AND ASSOCIATES**

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## ES-1 Executive Summary

The purpose of this study, prepared by the HNTB/SGA Consultant Team, is to provide the key analysis and findings of the Cost/Benefit Assessment of the Los Angeles Metropolitan Transportation Authority's (Metro) Funding for Metrolink Study. The study's goal was to determine if the cost paid by Metro for Metrolink service is commensurate with the benefits received.

The key components of this study were:

1. The development and comparison of alternative cost allocation formula scenarios;
2. An analysis of the operating subsidy per resident passenger per line to determine if it is more cost effective to invest in Metrolink lines in Los Angeles (LA) County vs. two or more counties; and
3. The evaluation of congestion reduction and economic benefits received due to Metrolink.

The study was divided into the following four tasks:

Task 1 Report: The first task was incorporated into a report which analyzed:

- The September 2006 Board report and action to approve the Alternative C - proposed formula for allocating Metrolink's net operating costs among the member agencies beginning with the FY 2007-08 Metrolink Budget;
- The September 2006 Metro Board motion which directed this analysis; and
- The adopted Metrolink subsidy allocation formula including the data used. The consultant team received a copy of the description of the formula and the working spreadsheets from Metrolink staff as well as Metro staff's working spreadsheets.

The consultant team also held meetings and conference calls with Metrolink staff and Metro staff to review the data.

Tasks 2 and 3 Report: The second and third tasks were incorporated into a second report, which:

- Analyzed the benefit factors by Metrolink line, by county; and
- Developed Metrolink subsidy allocation formula alternatives.

Task 4 Report: The fourth and final task, which is incorporated into this report, is a cost/benefit assessment of Metro's cost sharing of the Metrolink system and the development of alternative cost allocation scenarios. This report includes the following sections:

Section 1 – Overview: This section discusses the report's purpose and goals.

Section 2 - Alternative Costs Allocation Scenarios: Section 2 describes the development of the alternative cost allocation scenario and compares three scenarios on Metro's share of Metrolink commuter rail operating and maintenance (O&M) costs compared to the existing formula. The following seven tests were done:

1. Train Miles Test;
2. Ridership (allocated based on Train Miles);

3. Ridership (allocated based on Unduplicated Stations);
4. Resident Ridership: allocates all Direct and Base cost components based on the results of SCRRA's 2006 on-board ridership by residency survey;
5. Unduplicated Stations Test;
6. Fare Revenue Test; and
7. Point in Time Methodology Test.

Three alternative scenarios were analyzed:

1. 50 percent Train Miles / 50 percent Unduplicated Station Scenario: Compared to the current allocation formula, this scenario replaces all cost components currently allocated 100 percent based on train miles to 50 percent train miles and 50 percent unduplicated stations.
2. 50 percent Train Miles / 50 percent Residency Scenario: Compared to the current allocation formula, this scenario replaces all cost components currently allocated 100 percent based on train miles to 50 percent train miles and 50 percent of each county's share of ridership (residency of ridership) based on the SCRRA's 2006 on-board survey.
3. Point in Time Scenario: This scenario allocates Base cost components based on the Point in Time formula (50% train miles, 25% route miles, and 25% unduplicated stations) and allocates Direct costs based a combination of train miles, direct to lines/then members and ridership/revenue distribution.

**Section 3 - Cost Effectiveness Analysis:** Section 3 provides an analysis of the operating subsidy per county resident rider by line by county. This analysis was done in order to determine whether it is more cost effective for Metro to invest in Metrolink services that operate solely within Los Angeles County or that operate in two or more counties. The purpose of this analysis was to:

1. Compare LA County's percent share of the operating subsidy based on the Current Allocation Methodology relative to its percent share of ridership for each Metrolink Line; and
2. Identify LA County's operating subsidy per resident passenger compared to the average operating subsidy per total rider based on the Current Allocation Methodology.

**Section 4 - Economic and Congestion Relief Analysis:** Section 4 summarizes the congestion reduction and economic benefits of the Metrolink system analysis. The SCRRA performed a freeway equivalency analysis in its Strategic Assessment document and showed that Metrolink lines reduced congestion in the afternoon peak hour by, on average, one freeway lane's capacity on adjacent freeways, including I-10, I-5, SR 60, SR 91 and SR 14.

An investment in public transportation has been shown, based on national studies, to provide a broad and sustainable economic stimulus to local communities, metropolitan regions, states and the nation. According to these studies, transit:

1. Boosts business revenues and profits;
2. Creates jobs and expands the labor pool;
3. Stimulates development and redevelopment;



4. Expands local and state tax revenues and reduces expenditures required for other essential public services; and
5. Reduces household and business costs and enhances worker and business productivity.

**Section 5 - Key Conclusions:** Section 5 highlights the following key conclusions based on the results of the alternatives cost allocation formula scenario analysis, operating subsidy analysis, and congestion reduction and economic benefits analysis:

#### **1. Alternative Cost Allocation Formula Scenario Analysis:**

**LA County Share of Metrolink Costs:** As a result of changes in levels of service (primarily train miles) and ridership projected over the 2007-2030 period in the Metrolink Strategic Assessment, LA County's share of Metrolink costs is projected as follows:

- o In comparison to 2007, LA County's share of Metrolink costs is projected to decrease in 2010 due to proposed increases in service and ridership within Orange County.
- o In 2020 and 2030, higher levels of service and associated increases in ridership are projected to occur on the lines operating within LA County, in particular on the Antelope Valley line. As a result, LA County's share of Metrolink costs is projected to increase in these time periods.
- o In all future years, LA County's share of costs is projected to be lower than in 2007.

**SCRRA Strategic Plan Assessment Impact:** Over the 2007-2030 period, all of the allocation scenarios are affected by changes in the levels of service (as measured by train miles) and changes in projected ridership on the individual Metrolink lines, based on the SCRRA Strategic Plan Assessment. As a result:

- o The shares of train miles and ridership by county are projected to change over the 2007-2030 period; and
- o As there is only one additional Metrolink station proposed, each county's share of unduplicated stations remains relatively constant.

**Lowest Cost Scenarios:** All three alternative allocation scenarios that introduce a ridership-related variable are lower in cost to LA County compared to the current formula. The lowest cost alternative is the 50 percent Train Miles / 50 percent by Residency Ridership allocation.

**Additional Data Required:** Unduplicated Stations provides an available and predictable variable for incorporation into the formula. On the other hand, the other scenarios would require the collection of detailed data for incorporation into the cost allocation approach used by Metrolink. The Ridership by Residency scenarios would require an annual survey, system-wide, of ridership by county of residency.

- 2. Operating Subsidy Analysis:** The operating subsidy analysis shows that in 2007 LA County's percent share of operating costs (based on the Current Allocation

Methodology) is greater than the percent share of LA County residents using the individual Metrolink lines. In summary:

Subsidy per Line: The Ventura County Line has the highest subsidy per LA County resident rider at \$12.47 followed by the Riverside County Line (\$8.12), 91 Line (\$7.96), Antelope Valley Line (\$7.30), Orange County Line (\$6.09), and San Bernardino Line (\$5.27).

LA County's Subsidy Share: Relative to the operating subsidy for all passengers, LA County's operating subsidy per LA County resident rider is higher than the average subsidy per passenger for all lines. The greatest difference (\$4.49) is for the 91 Line and the smallest difference (\$2.07) is for the San Bernardino Line.

Most Cost Effective Lines by LA County Resident Rider: The analysis shows that the most cost effective lines for LA County based on subsidy paid compared to LA County resident ridership are the following three lines (see **Figure 10**):

1. San Bernardino Line - \$5.27
2. Orange County Line - \$6.09
3. Antelope Valley Line - \$7.30

Most Cost Effective Lines by Work Trip Riders with a Destination of LA County: The analysis shows that the most cost effective lines for LA County based on subsidy paid compared to work trip riders with a destination to LA County are the following three lines (see **Figure 11**):

1. 91 Line - \$1.49
2. Orange County Line - \$1.69
3. San Bernardino Line - \$1.98

### 3. Congestion Reduction and Economic Benefits Analysis

Congestion Reduction Benefits Freeway congestion reduction can be measured by the number of riders that are taken off the freeway in their single occupant auto to ride transit. Metrolink Lines free up one of the adjacent Los Angeles County freeway lane's capacity in the afternoon peak hour.

Economic Benefits The economic benefits to LA County based on Metro's \$71.2 million gross annual investment to Metrolink results in increased business sales (\$214 million), economic returns (\$427 million) and jobs creation (3,384 jobs).

### 4. Overall Impact of Metro Investment in Metrolink

A balanced investment of LA County and regional Metrolink lines brings Los Angeles resident ridership, cost effectiveness, congestion relief and economic benefits to Los Angeles County. Although LA County's share of Metrolink costs will decrease over the 20 year time period, introducing a ridership factor to the formula may result in benefits to Metro.

## 1. OVERVIEW

The purpose of this report is to provide the key analysis and findings of the Cost/Benefit Assessment of the Los Angeles County Metropolitan Transportation Authority's (Metro) Funding for Metrolink Study. The study's goal was to determine if the cost paid by Metro for Metrolink service is commensurate with the benefits received. The key components of this study were the development and comparison of alternative cost allocation formula scenarios, an analysis of the operating subsidy per resident passenger per line, and the evaluation of congestion reduction and economic benefits received due to Metrolink.

The development of the alternative cost allocation formula scenarios was driven by two factors:

1. The comprehensive review of data on potential allocation variables including train miles, ridership, unduplicated stations (which can be considered a proxy for ridership), and fare revenue. Of interest in this review was the impact of key allocation variables on Los Angeles (LA) County's share of Metrolink costs relative to the Current Allocation Methodology; and
2. The operating subsidy analysis. This analysis compared LA County's existing level of operating subsidy, allocated to each line based primarily on the number of train miles in the county, to the level of county resident ridership. The results of the analysis identified an imbalance between LA County's share of operating costs allocated based primarily on train miles and the level of county resident ridership.

The remainder of this report is as follows: Section 2 describes the development of the alternative cost allocation scenario and compares three scenarios on Metro's share of Metrolink commuter rail operating and maintenance (O&M) costs compared to the existing formula; Section 3 provides an analysis of the operating subsidy per county resident rider by line by county; Section 4 summarizes the economic and congestion reduction benefits of the Metrolink system analysis; and Section 5 provides the study's key conclusions.

## 2. Methodology and Overview of Alternative Cost Allocation Scenarios

### 2.1 Metrolink Strategic Assessment

The Metrolink Strategic Assessment<sup>1</sup> was used as the basis to project Metrolink growth in Los Angeles as well as the other SCRRA counties.

As a result of changes in levels of service and ridership projected over the 2007-2030 period in the Metrolink Strategic Assessment, LA County's share of Metrolink costs is projected to change over time. For example, in comparison to 2007, LA County's share of Metrolink Direct costs is projected

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<sup>1</sup> SCRRA Strategic Assessment, Southern California Regional Rail Authority, January 26, 2007

to decrease in 2010 from approximately 54 percent to 45 percent, primarily due to proposed increases in service and ridership within Orange County.

In 2020 and 2030, higher levels of service and associated increases in ridership are projected to occur on the lines operating within LA County, in particular on the Antelope Valley line. As a result, LA County's share of Metrolink costs is projected to increase to 49 percent in these time periods.

## 2.2 Review of Data and Allocation Variable Tests

Based on data provided by SCRRA staff, the consultant team analyzed the existing and potential additional allocation variables by line, by county and/or both by line and county. Spreadsheet models were developed to test the seven allocation variables listed below. As documented in Technical Memorandum 4, these tests were compared to SCRRA's Current Allocation Methodology which is based on applying individual variables considered to reflect individual direct and base cost components. It is important to note that the train miles variable accounts for nearly 70 percent of the cost component allocation in the Current Allocation Methodology.

1. Train Miles Test: allocates all Direct and Base cost components based on Metrolink-projected train miles by county;
2. Ridership (allocated based on Train Miles) Test: allocates all Direct and Base cost components based on Metrolink-projected ridership by line and then suballocated to the county level based on train miles (Note: the projected ridership was based on travel demand model results. These results were generated by line but not by line and by county. As a result, under this allocation test, the ridership by line projections were allocated based on train miles in each county);
3. Ridership (allocated based on Unduplicated Stations) Test: allocates all Direct and Base cost components based on Metrolink-projected ridership by line and then suballocated to the county level based on unduplicated stations; (Note: the projected ridership was based on travel demand model results. These results were generated by line but not by line and by county. As a result, under this allocation test, the ridership by line projections were allocated based on unduplicated stations in each county);
4. Resident Ridership: allocates all Direct and Base cost components based on the results of SCRRA's 2006 on-board ridership by residency survey. The 2006 results were projected for the future time periods for all counties except for LA County and Orange County. To account for the large increases in service within Orange County in 2010 and within LA County in 2030, the 2006 percentage was adjusted based on the variation in train miles between these two counties for the 2010 and 2030 time periods.
5. Unduplicated Stations Test: allocates all Direct and Base cost components based on unduplicated stations by county;
6. Fare Revenue Test: allocates all Direct and Base cost components based on Metrolink-projected fare revenue by line and then suballocated to the county level based on train miles; and

7. Point in Time Methodology Test: allocates most Base cost components based the Point in Time formula (1/2 train miles, 1/4 route miles, and 1/4 unduplicated stations) and allocates Direct costs based a combination of train miles, direct to lines/then members and ridership/revenue distribution.

**Figures 1 and 2** provide a summary of the seven allocation variable tests compared to the Current Allocation Methodology (dark blue line) for LA County. Based on these figures, key results from the seven allocation variable tests included:

Direct Cost Allocation Comparisons:

- Point in Time Formula, Train Miles, Residency of Ridership and Unduplicated Stations would provide savings compared to the Current Allocation Methodology in 2010;
- Use of the Train Miles variable tracks very closely to the current Allocation Methodology. This is due to the majority of costs in the Current Allocation Methodology being allocated by train miles (approximately 70 percent).
- In 2020 and 2030, use of a Ridership variable based on the travel demand model results and allocated to counties either based on train miles or unduplicated stations, or a Fare Revenue variable would result in an increase to LA County compared to the Current Allocation Methodology. However, use of a Ridership variable based on residency of ridership projected from the 2006 SCRRA would result in a decrease for LA County compared to the Current Allocation Methodology; and
- The Point in Time formula would result in little savings compared to the Current Allocation Methodology.

Base Cost Allocation Comparison:

- Only the use of Train Miles, the Point in Time formula, Residency of Ridership or Unduplicated Stations would provide savings compared to the Current Allocation Methodology in 2010;
- Similar to the Direct Cost Allocations, use of the Train Miles variable tracks very closely to the Current Allocation Methodology;
- Use of a Ridership variable based on the travel demand model results and allocated to counties either based on train miles allocation or unduplicated stations allocation, or a Fare Revenue variable would result in an increase to LA County compared to the Current Allocation Methodology. However, use of a Ridership variable based on Residency of Ridership projected from the 2006 SCRRA would result in a decrease for LA County compared to the Current Allocation Methodology; and
- The Point in Time formula would result in little savings compared to the Current Allocation Methodology.

**Overall Conclusions:**

- Only the provision of greater emphasis on the Unduplicated Stations variable (a proxy for ridership) or a Ridership variable based on Residency of Ridership from the SCRRA's on-board survey will significantly reduce LA County's share of O&M costs over the next 20 years. However, while this would benefit LA County, formula shares for the other SCRRA members would increase.
- Point in Time allocation would result in a slight reduction in LA County's share in 2010, by approximately 1 percentage point, compared to the current allocation formula.
- In comparison to the current allocation formula, allocation based on Train Miles would track closely to the current allocation formula.
- If a Ridership variable is considered important, agreement would be needed among the SCRRA member agencies concerning the data that would best reflect county level ridership and whether the benefit of adding such a variable would merit the cost of its collection if a regular on-board survey is required.

Figure 1: Results of Seven Allocation Variable Tests – Direct Costs

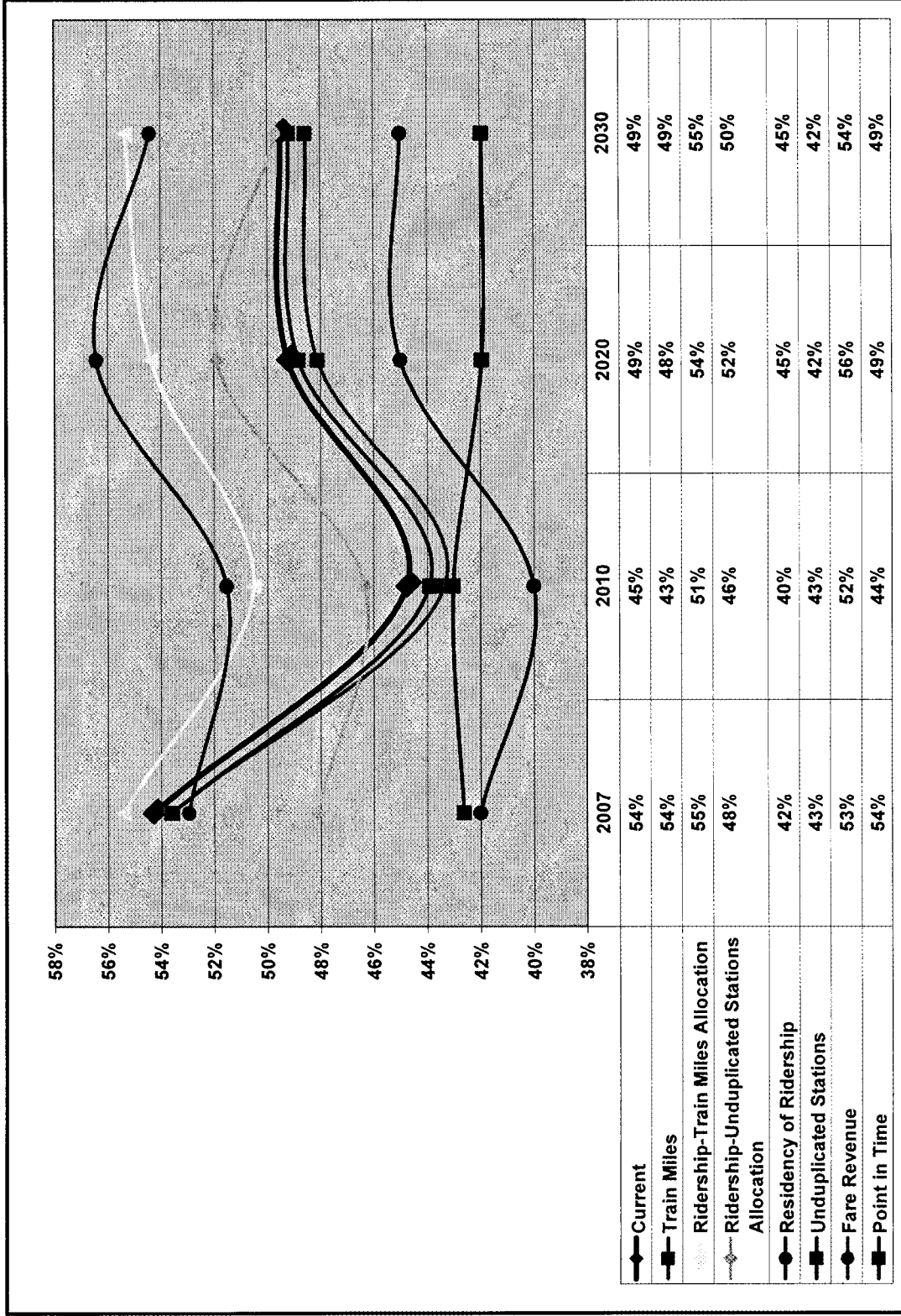
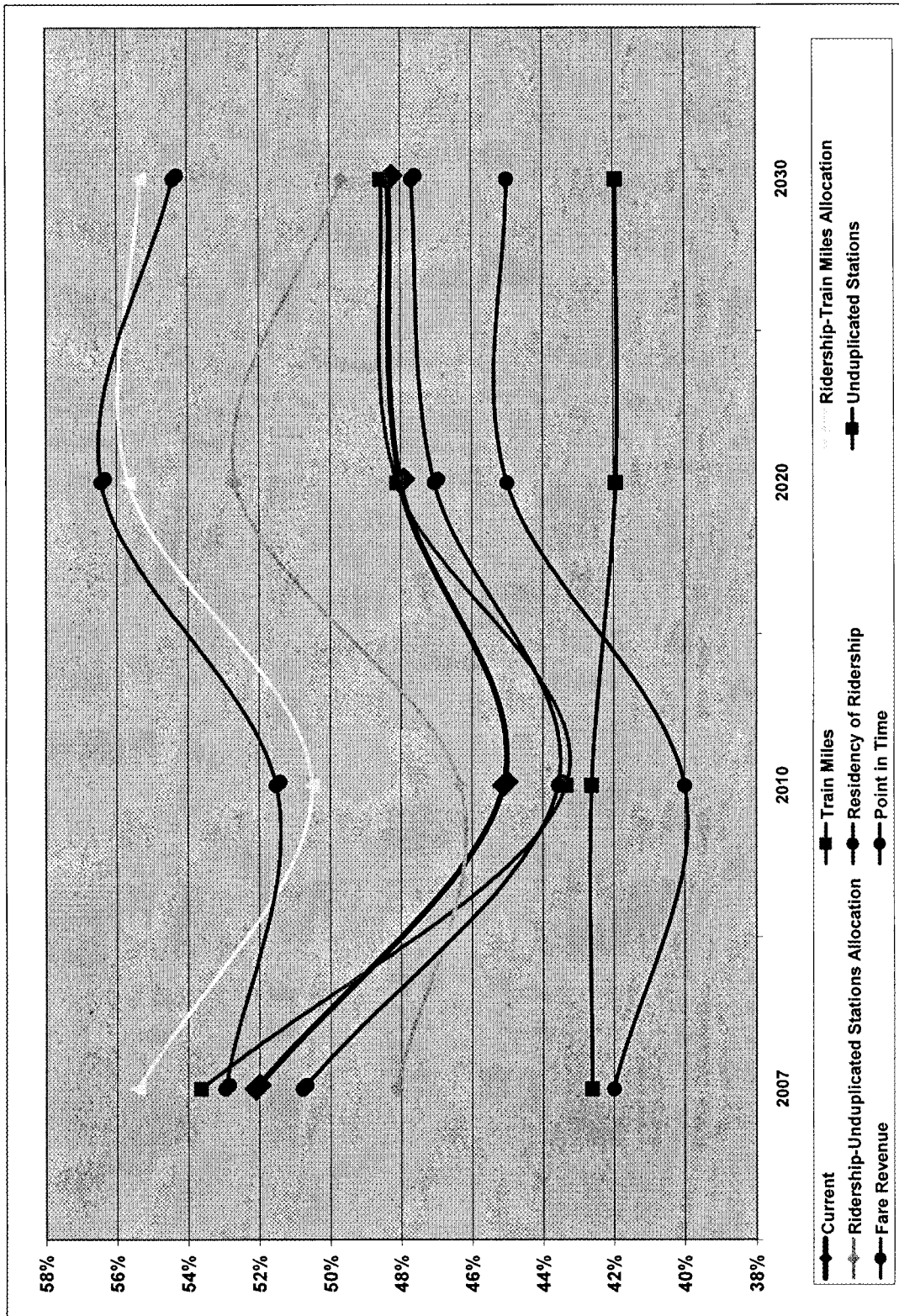


Figure 2: Results of Seven Allocation Variable Tests – Base Costs





## 2.3 Development and Analysis of Three Alternative Cost Allocation Formulas

Based on the results of the seven individual variable tests and working closely with Metro staff, three alternative cost allocation formula scenarios were developed in order to compare the short and long term impacts to Metro's share of Metrolink's operating costs. The three scenarios all include greater emphasis on a Ridership variable (unduplicated stations or residency of ridership). Details regarding how cost components are allocated based on allocation variables for the three alternative scenarios described below are provided in **Tables 3 and 4**.

1. 50 percent Train Miles / 50 percent Unduplicated Station Scenario: Compared to the current allocation formula, this scenario replaces all cost components currently allocated 100 percent based on train miles to 50 percent train miles and 50 percent unduplicated stations.
2. 50 percent Train Miles / 50 percent Residency Scenario: Compared to the current allocation formula, this scenario replaces all cost components currently allocated 100 percent based on train miles to 50 percent train miles and 50 percent of each county's share of ridership (residency of ridership) based on the SCRRRA's 2006 on-board survey.

As stated earlier, the SCRRRA's 2006 survey data was projected for the three future time periods for all counties except for LA County and Orange County. To account for the large increases in service within Orange County in 2010 and LA County in 2030, the 2006 percentage was adjusted based on the variation in train miles within these two counties for the 2010 and 2030 time periods.

3. Point in Time Scenario: Allocates Base cost components based the Point in Time formula (50% train miles, 25% route miles, and 25% unduplicated stations) and allocates Direct costs based a combination of train miles, direct to lines/then members and ridership/revenue distribution.

**Figures 3 through 6 provide the summary results of** spreadsheet models that were developed to compare the three alternative scenarios to the current allocation formula. **Figures 3 and 5** summarize the estimated dollar shares that would be allocated to each of the counties for the Direct and Base costs respectively; while **Figures 4 and 6** illustrate the percent of Direct and Base costs allocated to each of the counties.

As shown on these figures, the three key conclusions from the alternative cost allocation scenarios comparison are:

1. The significant level of cost increases that are anticipated over the 2007-2030 period for the Metrolink program and each member county;
2. Metro's percent share of total costs decreases over time; and
3. The limited variation of the cost allocation formula scenarios impact on Metro's share of Direct and Base costs over the four time periods.

As an example, using the lowest cost alternative scenario, **Tables 3, 4 and 5** show the cost savings of the 50% Train Miles/50% Residency Rider alternative formula, if it were applied in 2007, 2010, 2020 and 2030 for the:

- Base Costs Savings;
- Direct Costs Savings; and
- Total Costs Savings.

Although the official multi-county formula only applies to the Base Costs (primarily equipment and facilities maintenance costs), this analysis also shows that savings are possible if the alternative formula scenarios are also applied to the Direct Costs (primarily train operations and fuel costs).

Table 1: Direct Allocation (Above the Line) Cost Allocation Scenarios (shaded areas = formula change options)

Direct Allocation Cost Components			
Train Mile Allocation			
Current Method	Cost Allocation Formula Scenarios		
	50% Train Miles/ 50% Unduplicated Stations	50% Train Miles/ 50% Residency	Point in Time (50% Train Miles/ 25% Route Miles/ 25% Unduplicated Stations)
Allocation Variable(s)			
Train Ops	100% Train Miles	50% Train Miles/ 50% Unduplicated Stations	50% Train Miles/ 50% Residency
Fuel	100% Train Miles	50% Train Miles/ 50% Unduplicated Stations	50% Train Miles/ 50% Residency
Op Contingency (Amtrak)	100% Train Miles	50% Train Miles/ 50% Unduplicated Stations	50% Train Miles/ 50% Residency
<b>Direct to Line Segments/Territories</b>			
Rail Agreements	Direct To Lines/Then to Members	Direct To Lines/Then to Members	Direct To Lines/Then to Members
MoW - Line Segments	Train Miles of Service on Territory	Train Miles of Service on Territory	Train Miles of Service on Territory
MoW - Extra-Ordinary Maintenance	Train Miles of Service on Territory	Train Miles of Service on Territory	Train Miles of Service on Territory
Holiday Trains	Direct To Lines/Then to Members	Direct To Lines/Then to Members	Direct To Lines/Then to Members
Amtrak Transfers	Direct To Lines/Then to Members	Direct To Lines/Then to Members	Direct To Lines/Then to Members
<b>Route Miles Dispatched</b>			
Dispatching	Route Miles Dispatched	Route Miles Dispatched	100% Train Miles
<b>Ridership/Revenue Distributions</b>			
Transfers to Other Operators	Ridership/Revenue Distribution	Ridership/Revenue Distribution	Ridership/Revenue Distribution
Supplemental Additional Security	Ridership/Revenue Distribution	Ridership/Revenue Distribution	Ridership/Revenue Distribution

**Table 2: Base Allocation (Below the Line) Cost Allocation Scenarios (shaded areas = formula change options)**

	Cost Allocation Formula Scenarios			Point in Time (50% Train Miles/ 25% Route Miles/ 25% Unduplicated Stations)
	Current Method	50% Train Miles/ 50% Unduplicated Stations	50% Train Miles/ 50% Residency	
<b>Base Allocation Cost Components</b>				
<b>Allocation Variable(s)</b>				
Equipment Maintenance	75% Train Miles / 25% Unduplicated Stations	50% Train Miles/ 50% Unduplicated Stations	50% Train Miles/ 50% Residency	100% Train Miles
Op Contingency (Bombardier)	100% Train Miles	50% Train Miles/ 50% Unduplicated Stations	50% Train Miles/ 50% Residency	100% Train Miles
Non-Scheduled Rolling Stock Repairs	100% Train Miles	50% Train Miles/ 50% Unduplicated Stations	50% Train Miles/ 50% Residency	Point-in-Time
Operating Facilities Maintenance	100% Train Miles	50% Train Miles/ 50% Unduplicated Stations	50% Train Miles/ 50% Residency	Point-in-Time
Other Operating Train Services	Unduplicated Route Miles	Unduplicated Route Miles	Unduplicated Route Miles	Point-in-Time
Security – Sheriff	100% Train Miles	50% Train Miles/ 50% Unduplicated Stations	50% Train Miles/ 50% Residency	Point-in-Time
Security – Guards	Unduplicated Route Miles	Unduplicated Route Miles	Unduplicated Route Miles	Even Split to Operating Lines
Public Safety Program	Unduplicated Route Miles	Unduplicated Route Miles	Unduplicated Route Miles	Point-in-Time
Utilities/Leases	Unduplicated Route Miles	Unduplicated Route Miles	Unduplicated Route Miles	Point-in-Time
Passenger Relations - Call Boxes	Unduplicated Stations	Unduplicated Stations	Unduplicated Stations	Point-in-Time
Contingency (Non-Train Ops)	Unduplicated Route Miles	Unduplicated Route Miles	Unduplicated Route Miles	Point-in-Time
TVM Maintenance/Revenue Collection	TVM's	TVM's	TVM's	Point-in-Time
Station Maintenance - Non - Union Station	Unduplicated Stations	Unduplicated Stations	Unduplicated Stations	Point-in-Time
Station Maintenance - Union Station	Revenue Moves thru LAUS	Revenue Moves thru LAUS	Revenue Moves thru LAUS	Revenue Moves thru LAUS
Passenger Service Reps	Unduplicated Route Miles	Unduplicated Route Miles	Unduplicated Route Miles	Point-in-Time
Passenger Relations - Call Center/Other	Ridership Distribution	Ridership Distribution	Ridership Distribution	Point-in-Time
Marketing/Mkt Research	Ridership Distribution	Ridership Distribution	Ridership Distribution	Point-in-Time
Media & External Communications	Unduplicated Route Miles	Unduplicated Route Miles	Unduplicated Route Miles	Point-in-Time
Liability/Property/Auto	100% Train Miles	50% Train Miles/ 50% Unduplicated Stations	50% Train Miles/ 50% Residency	Point-in-Time
Claims	100% Train Miles	50% Train Miles/ 50% Unduplicated Stations	50% Train Miles/ 50% Residency	Point-in-Time
Claims Administration	100% Train Miles	50% Train Miles/ 50% Unduplicated Stations	50% Train Miles/ 50% Residency	Point-in-Time
Salaries & Fringe Benefits	Unduplicated Route Miles	Unduplicated Route Miles	Unduplicated Route Miles	Point-in-Time
Non-Labor Costs	Unduplicated Route Miles	Unduplicated Route Miles	Unduplicated Route Miles	Point-in-Time
Allocated Overhead	Unduplicated Route Miles	Unduplicated Route Miles	Unduplicated Route Miles	Point-in-Time
Services	Unduplicated Route Miles	Unduplicated Route Miles	Unduplicated Route Miles	Point-in-Time

Figure 3: Comparison of LA County's Share – Direct Costs

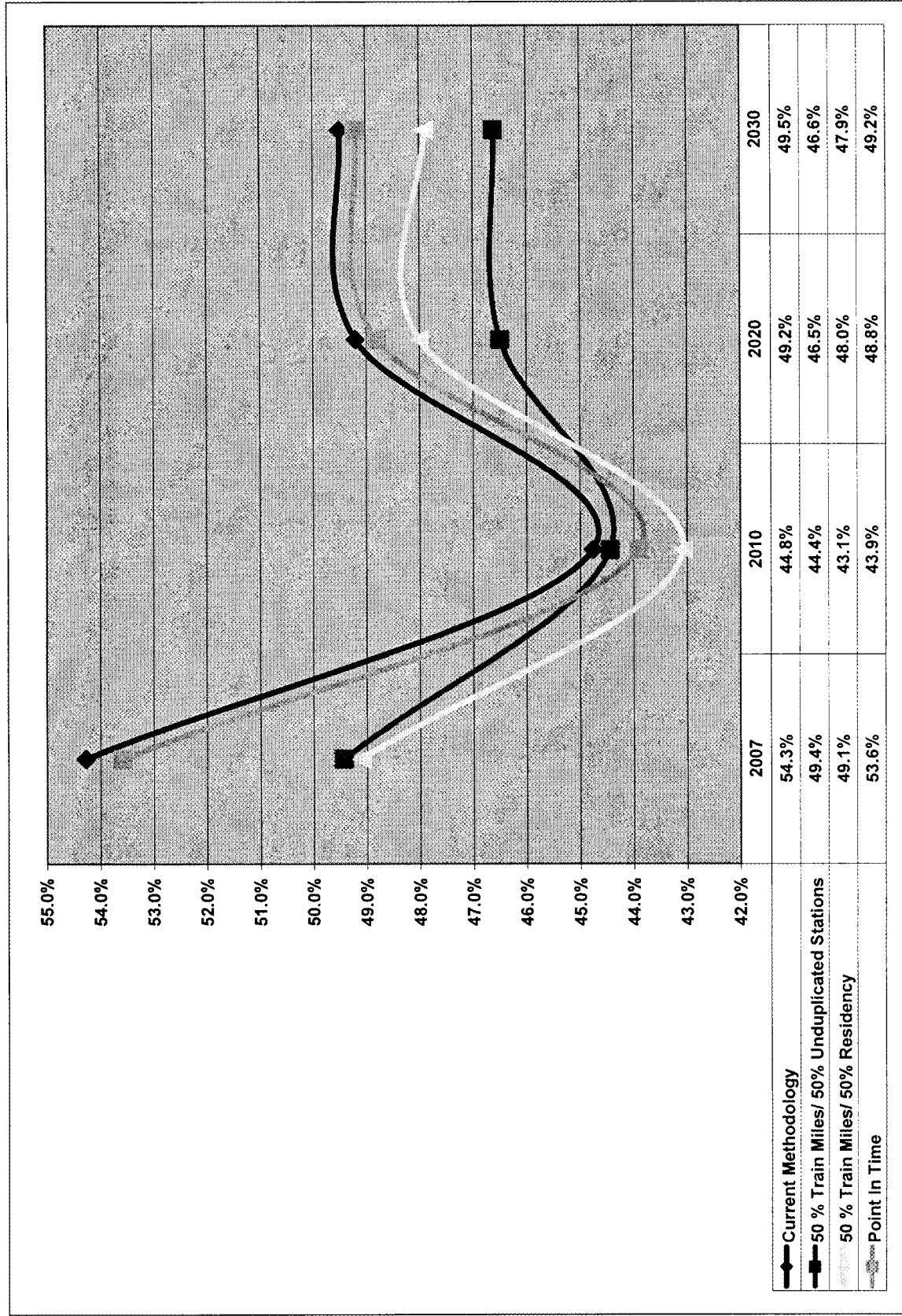


Figure 4: Comparison of LA County's Share – Base Costs

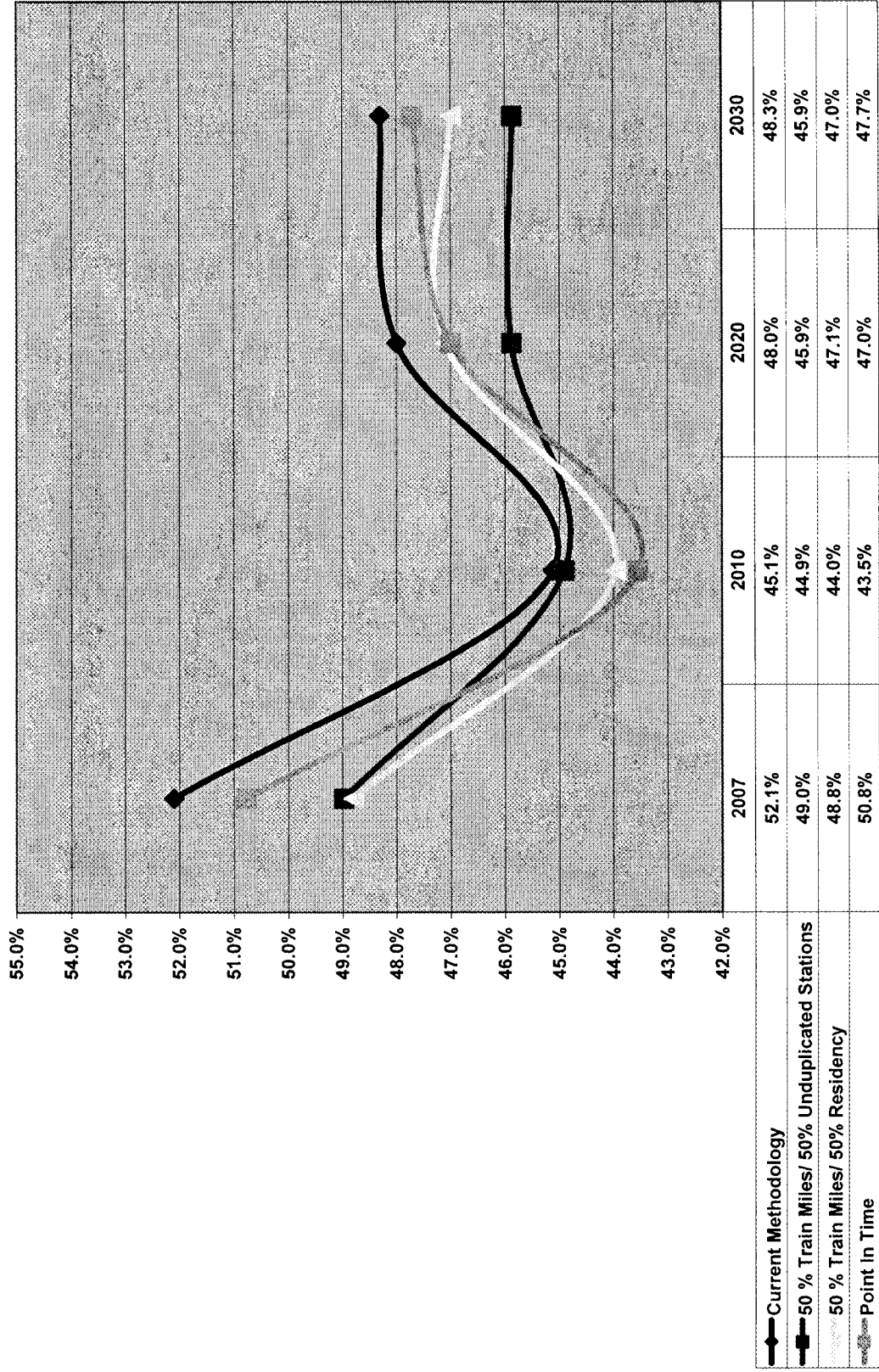
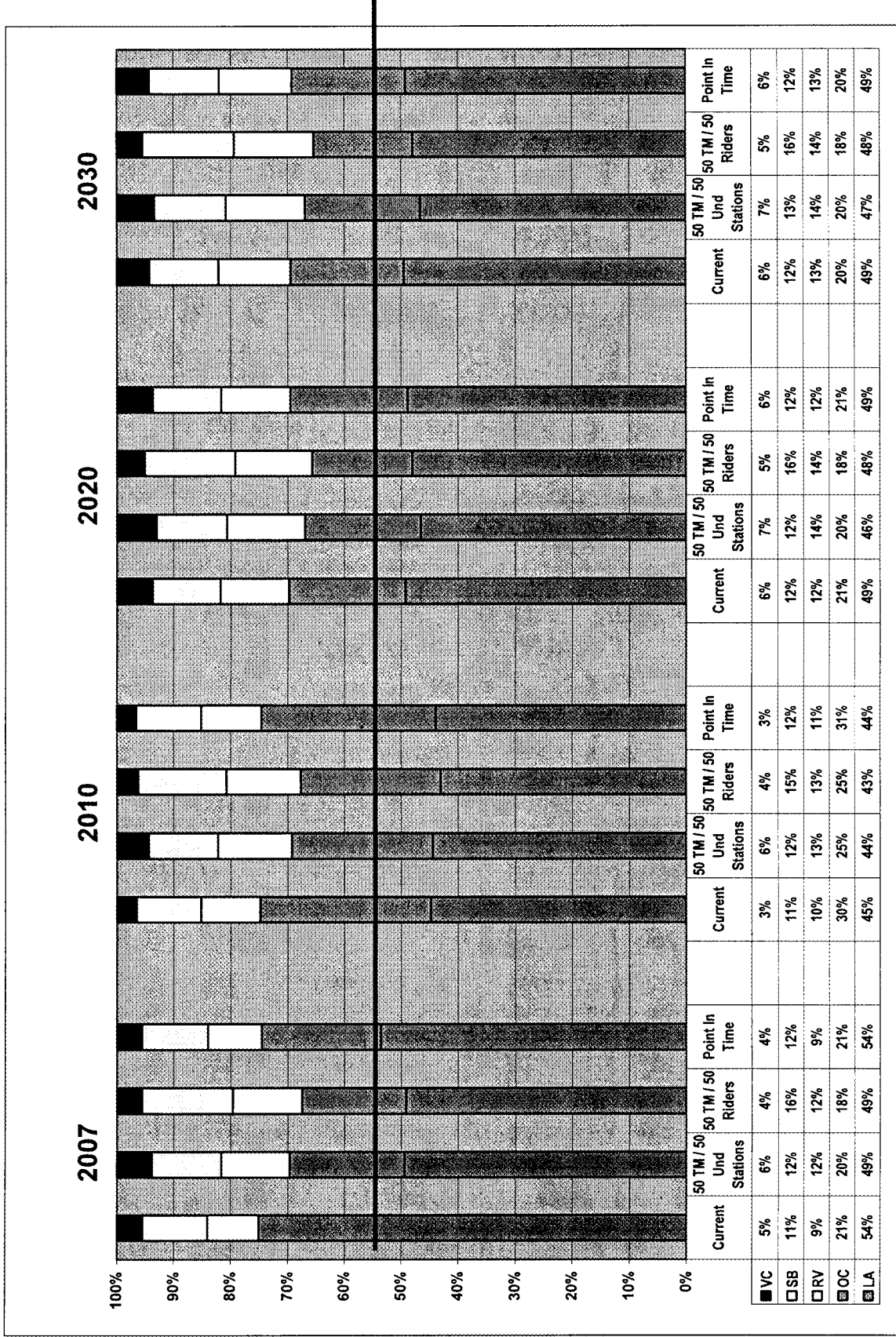




Figure 6: Percent Share of Direct Allocation Costs by Scenario and County

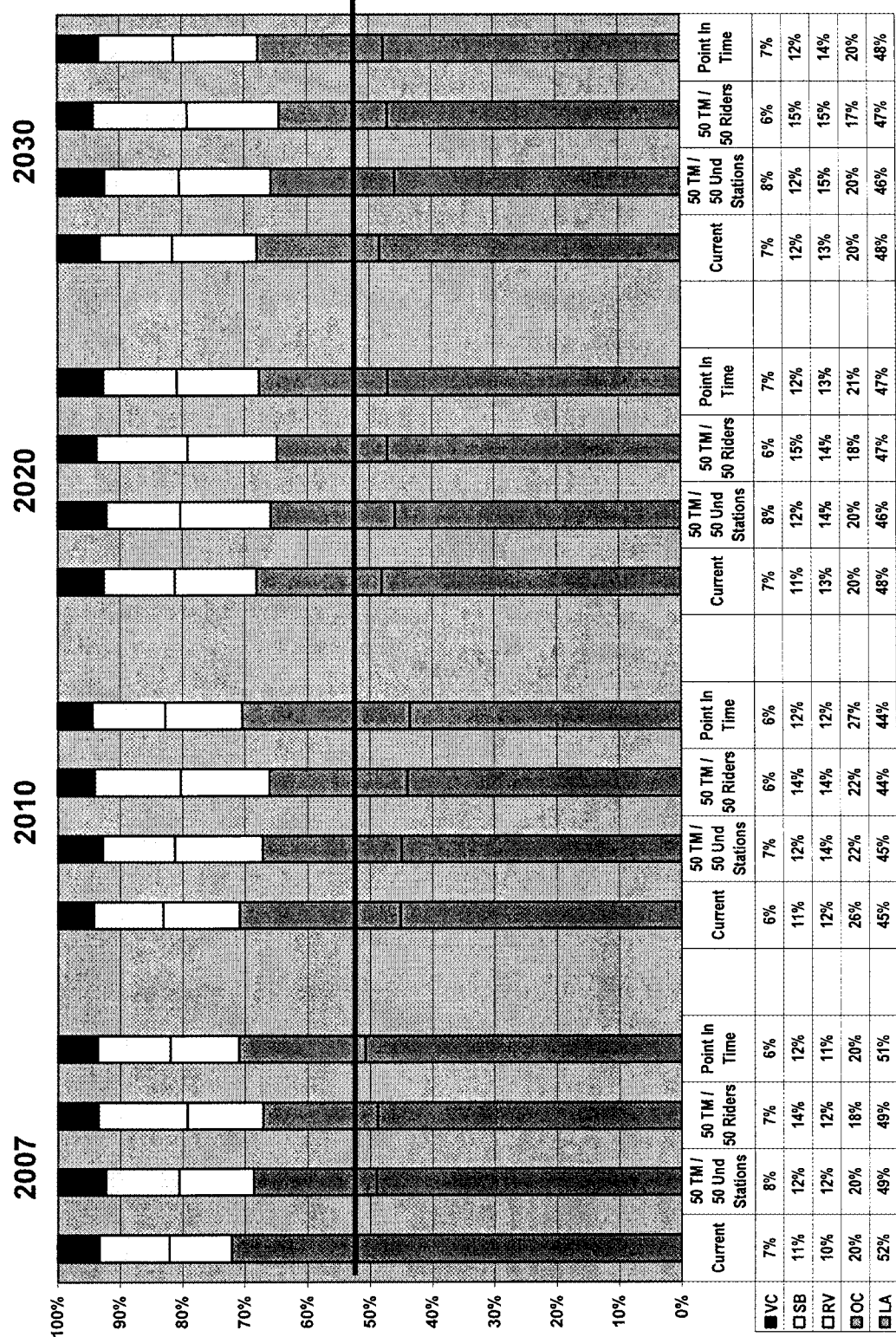


Note: Red line reflects LA County's existing share of Direct Allocation Costs





Figure 8: Percent Share of Base Allocation Costs by Scenario and County



Note: Red line reflects LA County's existing share of Base Allocation Costs

**Table 3: Base Costs Savings<sup>2</sup>**

<b>Los Angeles County</b>	<b>\$</b>	<b>%</b>
<b>FY 2007</b>		
Current Metrolink Formula	\$32.4	
50%/Train Miles/50%Residency	\$3.0	
<b>Savings</b>	<b>\$2.0</b>	<b>6.1%</b>
<b>FY 2010</b>		
Current Metrolink Formula	\$34.1	
50%/Train Miles/50%Residency	\$33.3	
<b>Savings</b>	<b>\$0.8</b>	<b>2.3%</b>
<b>FY 2020</b>		
Current Metrolink Formula	\$77.3	
50%/Train Miles/50%Residency	\$75.9	
<b>Savings</b>	<b>\$1.4</b>	<b>1.8%</b>
<b>FY 2030</b>		
Current Metrolink Formula	\$149.4	
50%/Train Miles/50%Residency	\$145.3	
<b>Savings</b>	<b>\$4.1</b>	<b>2.7%</b>

**Table 4: Direct Costs Savings**

<b>Los Angeles County</b>	<b>\$</b>	<b>%</b>
<b>FY 2007</b>		
Current Metrolink Formula	\$38.8	
50%/Train Miles/50%Residency	\$35.1	
<b>Savings</b>	<b>\$3.7</b>	<b>9.5%</b>
<b>FY 2010</b>		
Current Metrolink Formula	\$40.8	
50%/Train Miles/50%Residency	\$39.3	
<b>Savings</b>	<b>\$1.5</b>	<b>3.7%</b>
<b>FY 2020</b>		
Current Metrolink Formula	\$105.9	
50%/Train Miles/50%Residency	\$103.3	
<b>Savings</b>	<b>\$2.6</b>	<b>2.5%</b>
<b>FY 2030</b>		
Current Metrolink Formula	\$201.7	
50%/Train Miles/50%Residency	\$195.3	
<b>Savings</b>	<b>\$6.4</b>	<b>3.2%</b>

<sup>2</sup> These tables show the gross contribution by Metro to Metrolink. The revenue credits have not been applied.

Table 5: Total Savings<sup>3</sup>

<b>Los Angeles County</b>	<b>\$</b>	<b>&amp;</b>
<b>FY 2007</b>		
Current Metrolink Formula	\$71.2	
50%/Train Miles/50%Residency	\$65.5	
<b>Savings</b>	<b>\$5.7</b>	<b>8.0%</b>
<b>FY 2010</b>		
Current Metrolink Formula	\$74.9	
50%/Train Miles/50%Residency	\$72.6	
<b>Savings</b>	<b>\$2.3</b>	<b>3.1%</b>
<b>FY 2020</b>		
Current Metrolink Formula	\$183.2	
50%/Train Miles/50%Residency	\$179.2	
<b>Savings</b>	<b>\$4.0</b>	<b>2.2%</b>
<b>FY 2030</b>		
Current Metrolink Formula	\$351.1	
50%/Train Miles/50%Residency	\$340.6	
<b>Savings</b>	<b>\$10.5</b>	<b>3.0%</b>

<sup>3</sup> This chart combines the Metro contribution to Metrolink for both the Base Costs and the Direct Costs. It does not reflect the credit for the revenue on the LA County lines.

### 3. Cost Effectiveness of Investing in Los Angeles County vs. Two or More Counties

In order to determine whether it is more cost effective for Metro to invest in Metrolink services that operate solely within Los Angeles County or that operate in two or more counties, an analysis was done on the level of operating subsidy LA County provides for each Metrolink Line.

The purpose of this analysis was to:

1. Compare LA County's percent share of the operating subsidy based on the Current Allocation Methodology relative to its percent share of ridership for each Metrolink Line; and
2. Identify LA's County's operating subsidy per resident passenger compared to the average operating subsidy per total rider based on the Current Allocation Methodology.

This analysis was based on the following data provided by SCRRA staff:

- Operating subsidy by line by county;
- Ridership by line; and
- Percent of ridership by county by line from the 2006 SCRRA on-board survey.

The methodology to determine the operating subsidy per county resident rider included the following steps:

1. Summarize each county's operating subsidy per line based on data provided by SCRRA. (It is important to note that, as stated earlier, the operating subsidy in this analysis was allocated to each county primarily based on train miles within each county based on SCRRA's Current Allocation Methodology);
2. For each county and each line, divide the share of the operating costs by each county's percent of resident ridership (using percentages from the 2006 SCRRA on-board survey) relative to the total ridership for that line (per the 2006-07 SCRRA budget).

**Table 6** compares LA County's percent share of the operating subsidy by line compared to the percent share of ridership by LA County residents for 2006. As shown in the table:

1. For all routes that provide service within LA County, the County's share of the operating subsidy is greater than its percent of total resident ridership for that line. A major reason for this difference is the high level of train miles that occur within LA County and the importance of train miles in the Current Cost Allocation Methodology.
2. The greatest variance between subsidy and resident ridership percentages is for the San Bernardino Line (23 percent higher) followed by the 91 Line (19 percent), Riverside Line (18 percent), Orange County Line (11 percent) and Antelope Valley Line (5 percent).

**Table 6: Operating Subsidy Percentage Compared to Residence Ridership Percentage**

		LA County	Orange County	Riverside County	San Bernardino County	Ventura County
Antelope Valley Line	O&M Subsidy	100%	0%	0%	0%	0%
	Ridership	95%	1%	0%	1%	0%
IEOC Line	O&M Subsidy	0%	56%	39%	5%	0%
	Ridership	1%	5%	74%	16%	0%
Orange County Line	O&M Subsidy	31%	69%	0%	0%	0%
	Ridership	20%	67%	2%	0%	0%
Riverside Line	O&M Subsidy	60%	0%	24%	16%	0%
	Ridership	42%	1%	30%	27%	0%
San Bernardino Line	O&M Subsidy	59%	0%	0%	40%	0%
	Ridership	36%	0%	5%	58%	0%
Ventura Line	O&M Subsidy	62%	0%	0%	0%	38%
	Ridership	49%	4%	1%	1%	45%
91 Line	O&M Subsidy	34%	32%	33%	0%	0%
	Ridership	15%	24%	57%	2%	1%

Notes: On the Ventura County Line there is an agreement between Metro and the Ventura County Transportation Commission (VCTC) where Metro pays a greater share of operating costs and VCTC pays a greater share of capital costs.  
Ridership level may not equal 100% due to riders residing in San Diego County.

Operating Subsidy per Resident Rider: The second operating subsidy analysis that was completed compared LA County's operating subsidy per resident rider (based on the SCRRA on-board survey) to the system-wide subsidy per line. The system-wide subsidy per line reflects the counties' subsidy by line based on the number of train miles operating within each county. Since the Current Allocation Methodology allocates both costs and ridership based primarily on train miles, the system-wide subsidy per line and each county's subsidy per line are the same. However, for this study, the consultant team allocated resident ridership based on the results of the SCRRA on-board survey, which provides a more accurate depiction of ridership allocation on each line. Using this data resulted in operating subsidies by line (for all lines that operate in multiple counties) which were different than the system-wide average. Based on this methodology, **Figure 10** shows the analysis of LA County's operating subsidy per county resident by line for 2006 indicates:

1. The Ventura County Line has the highest subsidy per LA County resident rider at \$12.47 followed by the Riverside County Line (\$8.12), 91 Line (\$7.96), Antelope Valley Line (\$7.30), Orange County Line (\$6.09), and San Bernardino Line (\$5.27).
2. Relative to the operating subsidy for all passengers, LA County's operating subsidy per LA County resident rider is higher than the average subsidy per passenger for all lines. The greatest difference (\$4.49) is for the 91 Line and the smallest difference for the San Bernardino Line (\$2.07).
3. The analysis shows that the most cost effective lines for LA County (subsidy paid compared to LA County resident ridership) are the following three lines:
  - San Bernardino Line - \$5.27
  - Orange County Line - \$6.09

- Antelope Valley Line - \$7.30

Operating Subsidy per Work Trip Rider with a Destination to LA County: A third operating subsidy was done which compared LA County's operating subsidy per work trip rider with a destination to LA County (based on the SCRRA on-board survey) to the system-wide subsidy per line. Based on this methodology, **Figure 11** shows the analysis of LA County's operating subsidy per county resident by line for 2006 indicates that the most cost effective lines are:

- 91 Line - \$1.49
- Orange County Line - \$1.69
- San Bernardino Line - \$1.98

The ridership by Line is shown in table form in **Table 7** and in line chart form in **Figure 9**.

**Table 7: Boardings by Line**

	San Bernardino Line	Ventura County Line	Antelope Valley Line	Riverside Line	Orange County Line	IEOC Line	91 Line	TOTAL
2006	5,780	1,940	3,713	2,283	3,481	2,221	1,128	20,546
2010	6,888	2,321	4,802	2,461	4,792	2,678	1,733	25,673
2020	12,529	3,637	11,504	7,433	6,402	2,977	3,914	48,395
2030	20,773	5,743	16,395	10,918	12,678	5,888	5,857	78,251

Figure 9: Daily Ridership By Line

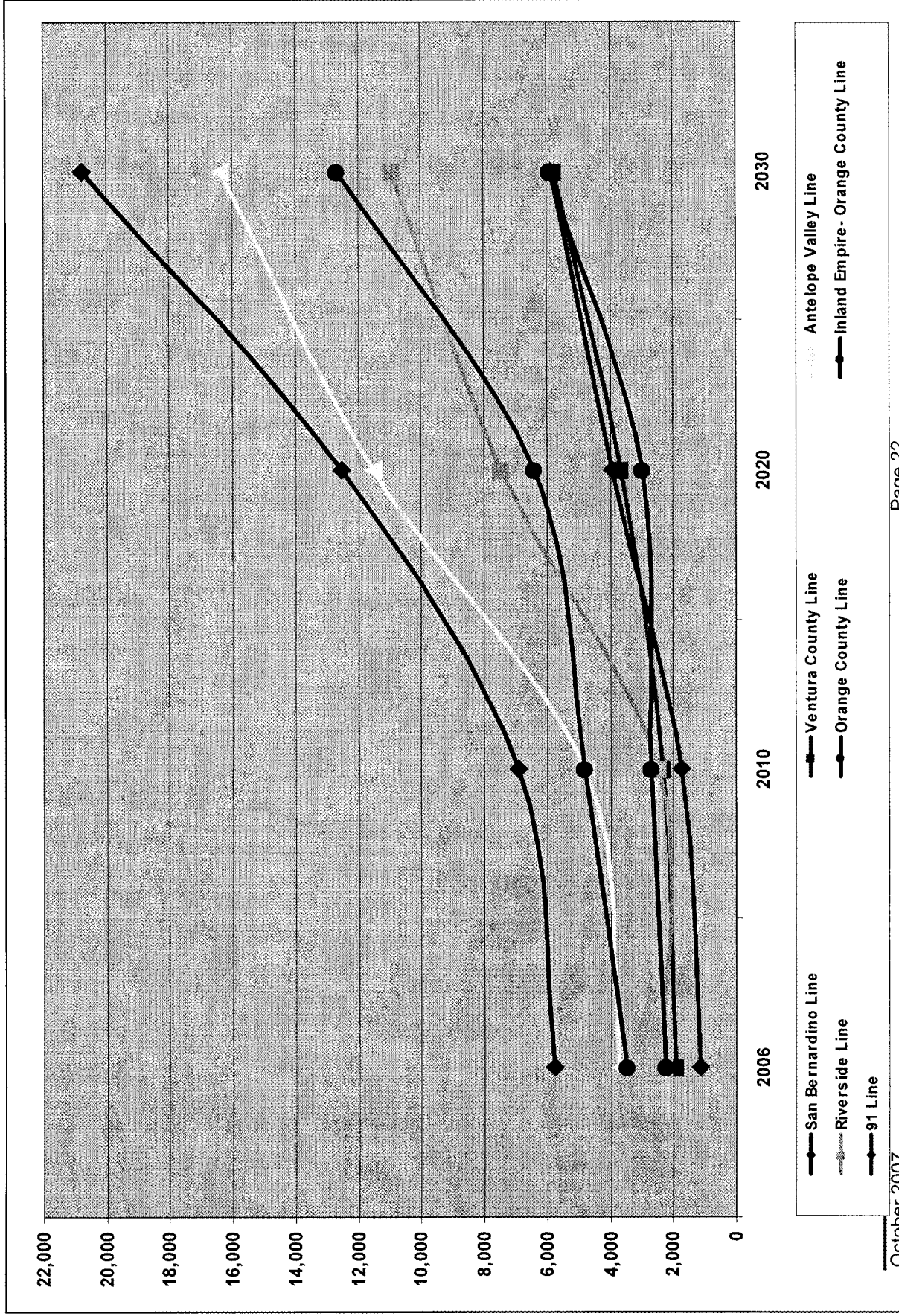




Figure 10: Operating Subsidy Per Resident Rider

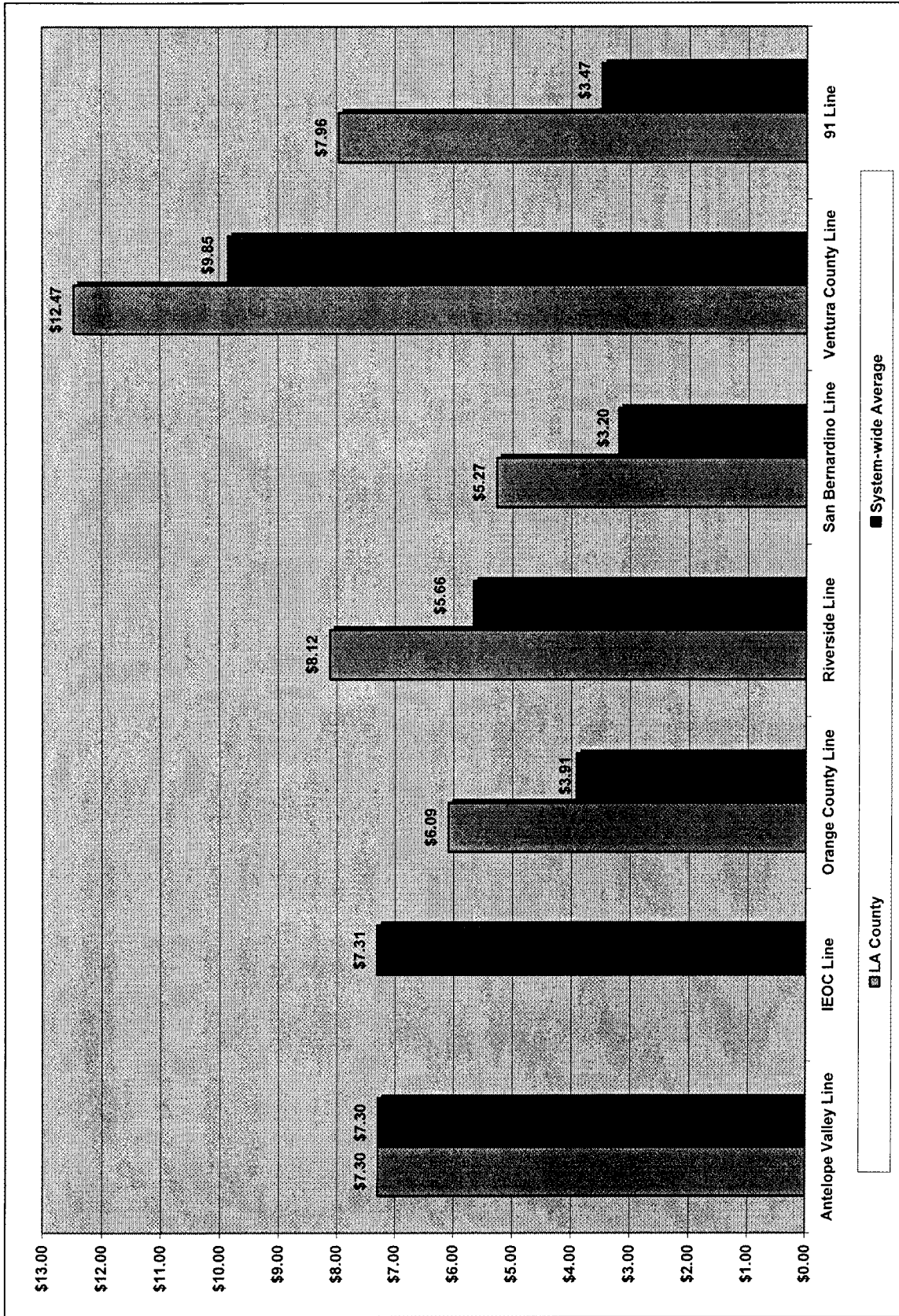
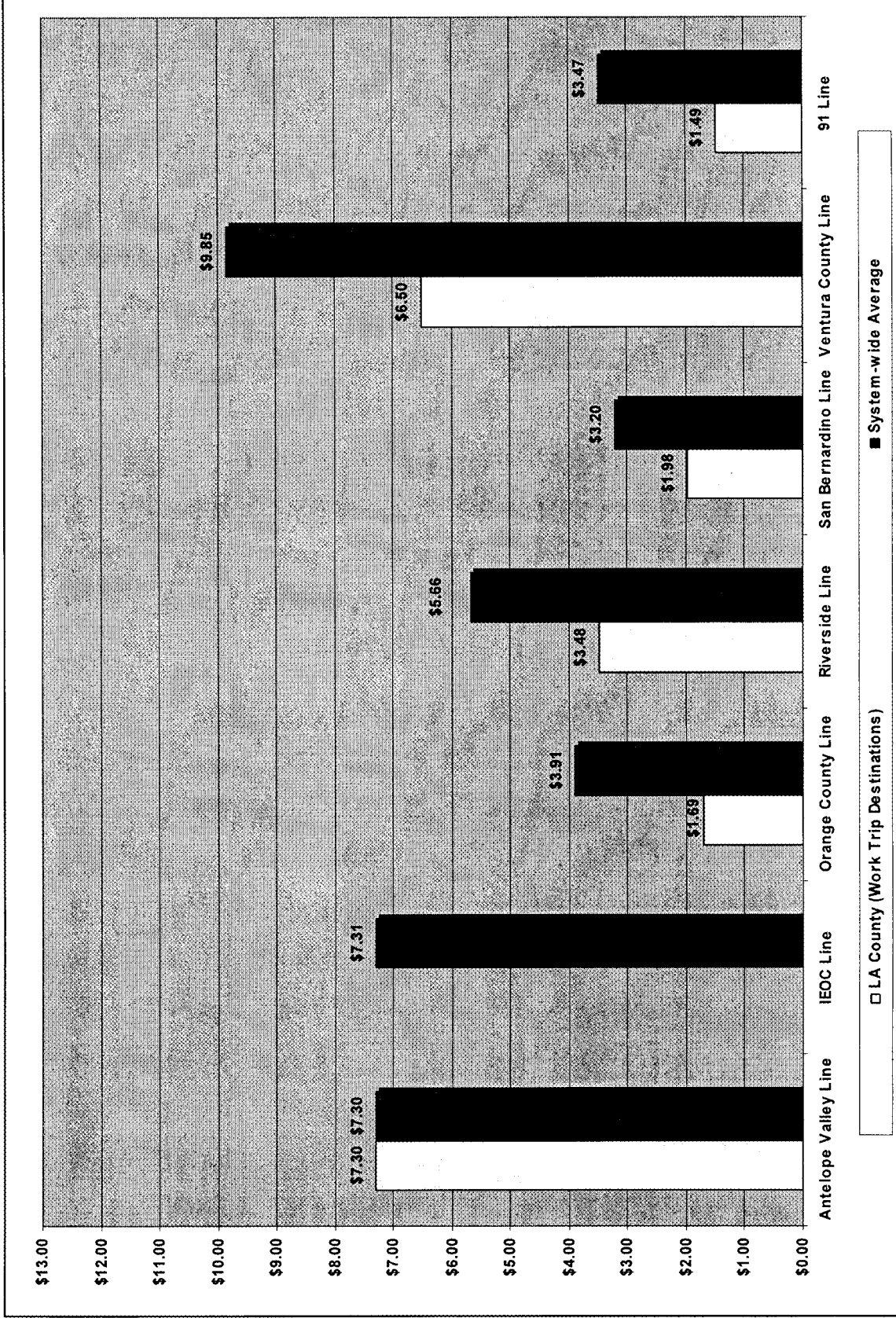


Figure 11: Operating Subsidy Per Work Trip Rider to Los Angeles



## 4. Congestion Reduction and Economic Benefits of Metrolink

Besides the direct benefits of train miles, fares, ridership, and stations, there are indirect benefits to the LA County area with the existence of the Metrolink System. The primary indirect benefits are:

1. Congestion reduction benefits; and
2. Economic benefits.

Metro has an economic model for LA County, called the Regional Economic Models Inc. (REMI) that can estimate economic benefits of a transportation improvement, such as jobs, Gross Regional Product, personal income and regional exports. The REMI model was not available for use on this study since the travel demand data for the 2007 Long Range Transportation Plan is currently being updated. As a result, this information was not available for a 2030 travel demand model run and therefore not available as an input to the REMI model for this study.

The following sections provide the consultant team's alternative approach to quantify congestion reduction and economic benefits without the use of the REMI Model.

### 4.1 Congestion Reduction

In 2003, public transportation in the most congested U.S. cities saved travelers 1.1 billion hours in added travel time and a total of \$18.2 billion in congestion costs. Without public transportation, congestion in these cities would have increased by an estimated 27 percent.<sup>4</sup>

Freeway congestion reduction can be measured by the number of riders that are taken off the freeway in their single occupant autos to ride transit. A "free flow" freeway carries about 2,000 vehicles per hour per lane<sup>5</sup>. It carried less than half of that amount if the freeway is very congested. Assuming the 2,000 vehicles per hour, one lane of freeway is freed up for every 2,000 Metrolink riders, thereby reducing congestion.

The SCRRA performed a freeway equivalency analysis in its Strategic Assessment document and the results are summarized below.<sup>6</sup>

On the San Bernardino Line, which parallels the I-10 freeway, between Baldwin Park and downtown Los Angeles (18.8 miles), on average, Metrolink carries the equivalent of one freeway lane in the peak hour of the morning peak period, and the equivalent of about 1.3 lanes in the peak hour of the afternoon peak.

Going north out of downtown Los Angeles to Burbank (10.8 miles), on average, Metrolink carries the equivalent of about 60% of a freeway lane in the peak hour of the morning peak and about 80% of a freeway lane in the peak hour of the afternoon peak.

On the Riverside Line, which parallels SR 60, between downtown Los Angeles and Industry (26.9 miles), on average, Metrolink carries the equivalent of about 70% of a freeway lane in the peak hour of both the morning and afternoon peak periods.

<sup>4</sup> 2005 "Urban Mobility Report".

<sup>5</sup> Based on Metro statistics

<sup>6</sup> SCRRA Strategic Assessment, Southern California Regional Rail Authority, January 26, 2007

On the Orange County Line, which parallels the I-5 freeway, between downtown Los Angeles and Fullerton (25.8 miles), on average, Metrolink carries the equivalent of about 70% of a freeway lane in the peak hour of the morning peak period and about 80% of a freeway lane in the peak hour of the afternoon peak period.

On the Inland Empire/Orange County (IEOC) Line, which parallels SR 91, between West Corona and Orange (19.3 miles), on average, Metrolink carries the equivalent of about 70% of a freeway lane in the peak hour of the morning peak and almost 80% of a freeway lane in the peak hour of the afternoon peak.

The Antelope Valley Line has about the same peak hour of the afternoon ridership as the Orange County Line and is projected to exceed the Orange County Line ridership in 2010. Although Metrolink did not compare the Antelope Valley Line to a freeway lane, it can be assumed that its equivalent freeway lanes would be about the same as the Orange County Line, which is 80% of a freeway lane in the peak hour of the afternoon peak.

In summary, Metrolink takes cars off the roads during the peak periods, which frees up about one lane of congestion on the parallel freeways in LA County.

**Table 8: Congestion Relief by Metrolink Line Adjacent to Freeways<sup>7</sup>**

Metrolink Line	Afternoon Peak Hour Equivalent Freeway Lanes	Adjacent Freeway
San Bernardino Line	1.3	I-10
Burbank Line	0.8	I-5 No.
Riverside Line	0.7	SR 60
Orange County Line	0.8	I-5 So.
IEOC Line	0.8	SR 91
Antelope Valley Line	0.8	SR 14 & I-5 No.

## 4.2 Economic Benefits

Economic benefits of transit are documented in several recent American Public Transportation Association publications. The reports range from comparing transit to the world economy,<sup>8</sup> the value of a strong economy,<sup>9</sup> the marketplace,<sup>10</sup> and 21<sup>st</sup> Century benefits.<sup>11</sup>

Communities across the country are realizing the economic benefits of public transportation due to:

- Increased value and income for property owners;

<sup>7</sup> SCRRA Strategic Assessment, Southern California Regional Rail Authority, January 26, 2007

<sup>8</sup> "The World Economy is Moving. Can America Keep Up?" American Public Transportation Association (APTA), March 2007

<sup>9</sup> "The Benefits of Public Transportation: Essential Support for a Strong Economy," APTA 2007

<sup>10</sup> "The Benefits of Public Transportation: Building Investment Value in Our Economy and Marketplace," APTA 2007

<sup>11</sup> "Public Transportation Benefits for the 21<sup>st</sup> Century," APTA 2007

- Expanded markets, rising productivity and increased revenues for business and commercial owners/occupants; and
- Enhanced tax revenues for local governments — from rising land values, expanded development and an upsurge in business transactions.

An investment in public transportation provides a broad and sustainable economic stimulus to local communities, metropolitan regions, states and the nation. This investment:

- Boosts business revenues and profits;
- Creates jobs and expands the labor pool;
- Stimulates development and redevelopment;
- Expands local and state tax revenues and reduces expenditures required for other essential public services; and
- Reduces household and business costs and enhances worker and business productivity.

Public transportation contributes to the nation's economic strength in two fundamental ways:

1. Direct dollar investment, multiplied throughout the economy; and
2. Improved transportation options, which create economic benefits for individuals, households, businesses and governments.

Dollars invested in public transportation flow through all sectors of the economy and through a cross section of American communities, large and small, urban and rural. Through increased jobs, income, profit and tax revenue, they provide an economic stimulus far exceeding the original investment—as much as six dollars for every dollar invested.

In addition to directly stimulating the economy, investment in public transportation enhances mobility for businesses and households, thereby:

1. Protecting personal freedom, choice and mobility
2. Enhancing access to opportunity
3. Enabling economic prosperity
4. Protecting communities and the natural environment

Several statistics measure the economic impact of transit. For example:

1. Business Sales: Every \$10 million capital investment in public transportation can return up to \$30 million in business sales alone.<sup>12</sup>
2. Economic Returns: Every tax dollar invested in public transportation generates an average of \$6 in economic returns.<sup>13</sup>
3. Jobs Creation: The U.S. Department of Transportation estimated that every \$1 billion of federal funding invested in transportation infrastructure creates 47,000 jobs.<sup>14</sup>

Metro's investment in Metrolink could be calculated, in part, by comparing LA County's share of Metrolink costs to the economic indicators listed above. **Table 9** below demonstrates how these benefits could be derived.

**Table 9: Economic Benefits of Metrolink for LA County**

<b>Metro Metrolink Costs Share (Gross Base and Direct Costs) (FY 2007)</b>	<b>Business Sales</b>	<b>Economic Returns</b>	<b>Jobs Creation</b>
\$71.2 million	\$214 million	\$427 million	3,384 jobs

#### 4.2.1 Residents versus Work Trips

It has been shown that transit generates economic benefits for a region. Transit creates jobs access, as well. For example, LA County residents and non-residents are using Metrolink for jobs access, creating a benefit for LA County residents and businesses alike.

**Tables 10 and 11** demonstrate the residents of each county that take each Metrolink line and the work trips destinations for the riders on each of the Metrolink lines<sup>15</sup>. The data shows that although only 40% of the system-wide riders live in LA County, over 80% of the system-wide riders have LA County as a work trip destination.

<sup>12</sup> Cambridge Systematics, Inc. with Glen Weisbrod Associates, Inc., "Public Transportation and the Nation's Economy: A Quantitative Analysis of Public Transportation's Economic Impact," Washington, DC, October 1999

<sup>13</sup> Ibid.

<sup>14</sup> "Introduction to JOBMOD, Washington: Federal Highway Administration, 2002.

<sup>15</sup> Metrolink 2006 Onboard Survey data.

Table 10: 2006 Resident by County by Metrolink Line

Line	County					
	Los Angeles	Ventura	San Bernardino	Riverside	Orange	San Diego
Ventura County Line	49%	45%	1%	1%	4%	0%
Antelope Valley Line	95%	0%	1%	0%	1%	0%
San Bernardino Line	36%	0%	58%	5%	0%	0%
Riverside Line	42%	0%	27%	30%	1%	0%
Orange County Line	20%	0%	0%	2%	67%	11%
IEOC Line	1%		16%	74%	5%	3%
91 Line	15%	1%	2%	57%	24%	1%
Burbank	48%		20%	6%	24%	1%
<b>System</b>	<b>40%</b>	<b>5%</b>	<b>22%</b>	<b>17%</b>	<b>14%</b>	<b>2%</b>

Table 11: 2006 Work Trip Destinations by Metrolink Line and County

Work Trip Destinations by Line and County 2006						
Line	County					
	Los Angeles	Ventura	San Bernardino	Riverside	Orange	San Diego
Ventura County Line	94%	2%			4%	
Antelope Valley Line	99%	0%	0%	0%	0%	
San Bernardino Line	96%	0%	4%	0%	0%	0%
Riverside Line	98%		1%	1%	0%	0%
Orange County Line	72%	0%		0%	27%	1%
IEOC Line	2%		0%	2%	95%	0%
91 Line	80%	0%	0%	5%	15%	0%
Burbank	95%			1%	4%	0%
<b>System</b>	<b>81%</b>	<b>0%</b>	<b>1%</b>	<b>1%</b>	<b>16%</b>	<b>0%</b>

In addition to the weekday trips listed above, a Metrolink weekend ridership survey includes a map that shows that the majority of the weekend riders on the Antelope Valley and San Bernardino Metrolink lines reside in LA County.

## 5. Key Conclusions

The following key conclusions can be drawn based on the results of the alternatives cost allocation formula scenario analysis, operating subsidy analysis, and congestion reduction and economic benefits analysis:

### 1. Alternative Cost Allocation Formula Scenario Analysis:

- **LA County Share of Metrolink Costs:** As a result of changes in levels of service (primarily train miles) and ridership projected over the 2007-2030 period in the Metrolink Strategic Assessment, LA County's share of Metrolink costs is projected to follow the same allocation curve in all of the scenarios. In summary by decade:
  - In comparison to 2007, LA County's share of Metrolink costs is projected to decrease in 2010 due to proposed increases in service and ridership within Orange County.
  - In 2020 and 2030, higher levels of service and associated increases in ridership are projected to occur on the lines operating within LA County, in particular on the Antelope Valley line. As a result, LA County's share of Metrolink costs is projected to increase in these time periods.
  - However, in all future years, its share of costs is projected to be lower than in 2007.
- **SCRRA Strategic Plan Assessment Impact:** Over the 2007-2030 period, all of the allocation scenarios are affected by changes in the levels of service (as measured by train miles) and changes in projected ridership on the individual Metrolink lines, based on the SCRRA Strategic Plan Assessment. As a result:
  - The shares of train miles and ridership by county are projected to change over the 2007-2030 period; and
  - As there is only one additional Metrolink station proposed, each county's share of unduplicated stations remains relatively constant.
- **Lowest Cost Scenarios:** All three alternative allocation scenarios that introduce a ridership-related variable are lower in cost to LA County compared to the current formula. The lowest cost alternative is the 50 percent Train Miles / 50 percent by Residency Ridership allocation.
- **Additional Data Required:** Unduplicated Stations provides an available and predictable variable for incorporation into the formula. On the other hand, the other scenarios would require the collection of detailed data for incorporation into the cost allocation approach used by Metrolink. The Ridership by Residency scenarios would require an annual survey, system-wide, of ridership by county of residency.

2. **Operating Subsidy Analysis:** The operating subsidy analysis shows that in 2007, LA County's percent share of operating costs (based on the Current Allocation Methodology) is greater than the percent share of LA County residents using the individual Metrolink lines. In summary:



- Subsidy per Line: The Ventura County Line has the highest subsidy per LA County resident rider at \$12.47 followed by the Riverside County Line (\$8.12), 91 Line (\$7.96), Antelope Valley Line (\$7.30), Orange County Line (\$6.09), and San Bernardino Line (\$5.27).
- LA County's Subsidy Share: Relative to the operating subsidy for all passengers, LA County's operating subsidy per LA County resident rider is higher than the average subsidy per passenger for all lines. The greatest difference (\$4.49) is for the 91 Line and the smallest difference for the San Bernardino Line (\$2.07).
- Most Cost Effective Lines by LA County Resident Rider: The analysis shows that the most cost effective lines for LA County based on subsidy paid compared to LA County resident ridership are the following three lines:
  1. San Bernardino Line - \$5.27
  2. Orange County Line - \$6.09
  3. Antelope Valley Line - \$7.30
- Most Cost Effective Lines by Work Trip Riders with a Destination of LA County: The analysis shows that the most cost effective lines for LA County based on subsidy paid compared to work trip riders with a destination to LA County are the following three lines:
  1. 91 Line - \$1.49
  2. Orange County Line - \$1.69
  3. San Bernardino Line - \$1.98

### 3. Congestion Reduction and Economic Benefits Analysis

- **Congestion Reduction Benefits**: Freeway congestion reduction can be measured by the number of riders that are taken off the freeway in their single occupant auto to ride transit. Metrolink Lines free up 70% to 130% of the adjacent Los Angeles County freeway lane capacity in the afternoon peak hour.
- **Economic Benefits**: The economic benefits of Metro's investment in Metrolink:
  - Boosts business revenues and profits;
  - Creates jobs and expands the labor pool;
  - Stimulates development and redevelopment;
  - Expands local and state tax revenues and reduces expenditures required for other essential public services; and
  - Reduces household and business costs and enhances worker and business productivity.

The economic benefits to LA County based on Metro's \$71.2 million gross annual investment to Metrolink results in increased business sales (\$214 million), economic returns (\$427 million) and jobs creation (3,384 jobs).

**4. Overall Impact of Metro Investment in Metrolink:**

A balanced investment of LA County and regional Metrolink lines brings Los Angeles resident ridership, cost effectiveness, congestion relief and economic benefits to Los Angeles County. Although LA County's share of Metrolink costs will decrease over the 20 year time period, introducing a ridership factor to the formula may result in benefits to Metro.