



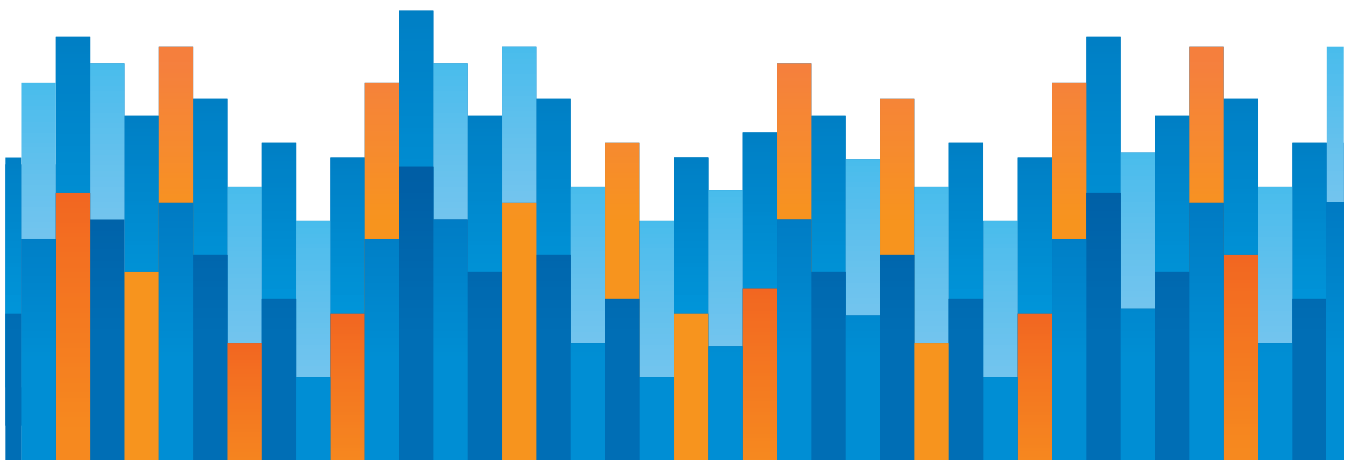
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# METRO'S 28 BY 2028 PLAN: A CRITICAL REVIEW

## I. INTRODUCTION

By Thomas A. Rubin, CPA, CMA, CMC, CIA, CGFM, CFM and  
James E. Moore, II, Ph.D.

March 2019



# I. INTRODUCTION

The Los Angeles County Metropolitan Transportation Authority (Metro) is the surface transportation planning and funding agency for the largest county (by population) in the United States, and is the operator of the nation's third largest public transit system.

Metro has adopted *28 by 2028*, a plan to complete 28 major transportation construction projects prior to the beginning of the 2028 Los Angeles Summer Olympics. This proposal accelerates eight projects for completion by 2028 in addition to the 20 specified in Measure M, the 2016 County transportation half-cent sales tax ballot measure. The plan was presented to the Metro Board of Directors and approved at the Board's February 28, 2019 meeting.

Metro has a history of over-promising and then failing to deliver on such projects, ultimately making conditions worse for Los Angeles transit users. The *28 by 2028* proposal appears to repeat the pattern.

This is the first brief in a series of summaries that examines Metro's record, and those of its predecessor organizations, over the past several decades. This history, additional facts, and economic logic show that *28 by 2028* is unlikely to succeed. Metro's attempt to accomplish too much too fast has a high likelihood of making transit in Los Angeles County worse for transit riders and other users of the local surface transportation system. The implications are worst for the most vulnerable group: the very large number of low-income and otherwise disadvantaged residents who are strongly dependent on public transit in their daily lives.

## SUBJECTS THIS SERIES WILL COVER

Each of the summaries in this series presents information about one or more of the following:

- I. **Introduction, Overview, and the Birth of Transit in Los Angeles**
- II. **The Rise of Los Angeles County Metropolitan Transportation Authority (Metro)**
- III. **Metro's Transit Ridership Is Declining**—MTA Ridership is down 21% from its 1985 peak and has been declining significantly in recent years.
- IV. **Metro's Long-Range Plans Overpromise and Underdeliver**—Each of Metro's four half-cent sales taxes approved by the voters has been accompanied by a long-range plan showing construction of large numbers of new passenger rail lines—most of which get delayed or are never built.
- V. **While Improving Bus Service and Reducing Fares Have Greatly Increased Transit Usage in Los Angeles Three Times, Metro Is Not Interested Pursuing This Goal**
- VI. **The *Only* U.S. Judicial System Decision re Bus vs. Rail**—The question, "Which option produces the larger increase in transit ridership, prioritizing bus (including fare reductions) or prioritizing

rail?" has been asked and answered only once by the U.S. judicial system. This occurred in a federal case in Los Angeles, and the facts and findings strongly favor bus.

- VII. Metro Overestimates Sales Tax Revenues**—Even after optimistic projections of future sales tax revenues have failed to develop, Metro continues to overstate expected revenues. Metro's most recent projections, for Measure M, are among the most optimistic it has ever produced, and are not credible.
- VIII. Metro Understates Transportation Project Costs**—Metro has underestimated the costs of major construction projects, and then used accounting and budgeting gimmicks to conceal these overruns.
- IX. Metro's Congestion Pricing Revenue Estimates Are Not Credible**—The agency is advancing congestion pricing as an important potential funding source, which it is, but Metro is projecting huge revenues that are too large to be credible. Implementing congestion pricing will require more time than Metro is projecting, requiring new legislation, and a focused campaign to promote public acceptance.
- X. Metro's Public-Private Partnership Revenue Estimates Are Not Credible**—It is also advancing Public-Private Partnerships (P3) as a tool to reduce costs, which they can do, but Metro is projecting much larger savings than can be realized, to be delivered in a shorter time period than is feasible
- XI. Metro Will Not Have the Revenue and Legal or Actual Debt Capacity to Undertake All of the Proposed 28 Projects**
- XII. Metro's Plans and Proposals Are Built on Questionable Assumptions and Errors**
- XIII. Metro Has a History of Evading Legal Requirements to Which It Does not Wish to Be Subject, Potentially Ignoring the Law**
- XIV. Metro's Congestion Eradication and Fareless Transit Proposal Are Unrealistic**—The most audacious promises on which Metro bases *28 by 2028*—including "eradication of congestion" and fareless transit—are infeasible and operationally impossible.
- XV. Metro Bus Is Very Productive and Cost-Effective, Rail Is Not, but Metro Favors Rail Over Bus**

## FOUNDATION DOCUMENTS CITED HERE

The following summaries refer to the Metro documents that, collectively, are the foundation for *28 by 2028*:

<i>Plan</i>	PowerPoint™ presentation, <i>28 by 2028 Financial Plan—Laying the Groundwork</i> , December 2018 <sup>1</sup>
<i>White Paper</i>	<i>Twenty-Eight by '28 Program Financing/Funding White Paper</i> , Board Report attachment <sup>2</sup>

<sup>1</sup> <http://metro.legistar1.com/metro/attachments/e48e3ad9-7f42-4011-849c-5666ed4f0cc6.pdf>

<sup>2</sup> <http://metro.legistar1.com/metro/attachments/18984512-fa10-4b43-aa52-524cfd8bb69a.pdf>

<i>Remarks</i>	Metro staff presentation remarks and Board Member and public comments from the December 6, 2018 meeting <sup>3</sup>
<i>FY19 Budget Measure M</i>	Metro, <i>Adopted Budget</i> , July 1, 2018-June 30, 2019 (Fiscal Year 2019, FY19) <sup>4</sup> Proposed Ordinance #16-01, Measure M—Los Angeles County Traffic Improvement Plan <sup>5</sup>
<i>Board Report</i>	The Re-imagining of LA County: Mobility, Equity, and the Environment (Twenty-Eight by '28 Motion Response), Regular Board Meeting, January 24, 2019, Agenda Number 43 <sup>6</sup>
<i>Re-imagining</i>	The Re-imagining of LA County: Mobility, Equity, and the Environment, attachment to <i>Board Report</i> <sup>7</sup>

## A SHORT HISTORY OF PUBLIC TRANSIT IN SOUTHERN CALIFORNIA

A brief history of the important events in Los Angeles transit provides a foundation for the summaries in this series.

Much of the history of transportation and real estate development in Southern California in the first part of the 20th century involved Henry Huntington: the Los Angeles Railway (LARy), the Yellow Car streetcar system that was used for shorter trips, the Pacific Electric Railway (PE, or PERy), and the Red Car electric interurban system that was used for longer trips. These rail networks provided fast and consistent access to the downtowns of the region from suburban residential areas, and were directly responsible for much of the area's distributed real estate development.<sup>8</sup> Southern California did not have a heavy rail, or subway, transit system similar to the lines in New York City, Chicago, Boston, or Philadelphia. Many Angelenos moved from these rail-heavy cities and wanted Los Angeles to build a rail system. Between 1911 and 1978, there were at least 18 different attempts to implement an extensive heavy rail transit system in Los Angeles County, including at least four that failed at the ballot box,<sup>9</sup> one in 1978.

<sup>3</sup> [http://metro.granicus.com/MediaPlayer.php?view\\_id=2&clip\\_id=987](http://metro.granicus.com/MediaPlayer.php?view_id=2&clip_id=987)

The recording for this portion of the meeting is audio only. The *Plan* presentation begins at approximately 37:00. Board Member comments begin at approximately 1:13:00. Public comments begin at approximately 1:44:00. This agenda item concludes at approximately 1:49:30.

<sup>4</sup> [http://media.metro.net/about\\_us/finance/images/fy19\\_adopted\\_budget.pdf](http://media.metro.net/about_us/finance/images/fy19_adopted_budget.pdf)

<sup>5</sup> [http://theplan.metro.net/wp-content/uploads/2016/09/measurment\\_ordinance\\_16-01.pdf](http://theplan.metro.net/wp-content/uploads/2016/09/measurment_ordinance_16-01.pdf)

<sup>6</sup> <https://boardagendas.metro.net/board-report/2019-0011/>

<sup>7</sup> This is available through links at the meeting agenda web page, item 43:  
[http://metro.legistar1.com/metro/meetings/2019/1/1472\\_A\\_Board\\_of\\_Directors\\_-\\_Regular\\_Board\\_Meeting\\_19-01-24\\_Agenda.pdf](http://metro.legistar1.com/metro/meetings/2019/1/1472_A_Board_of_Directors_-_Regular_Board_Meeting_19-01-24_Agenda.pdf)

<sup>8</sup> Wachs, Martin. "Autos, Transit, and the Sprawl of Los Angeles: The 1920s." *Journal of the American Planning Association*, 1984. 50 (3): 297-310, <https://doi.org/10.1080/01944368408976597>

<sup>9</sup> Green, Maria L. "A History of Rail Setbacks." *Mass Transit* magazine. September 1985.

The LARy and PERy systems were among the most extensive urban passenger rail systems in the world. PERy peaked at 1,061 route miles;<sup>10</sup> but, similar to most local and regional passenger rail systems in the U.S. and much of the rest of the world, both were surpassed and replaced by the private automobile and the motor bus. By the mid-1970s, there were only nine metropolitan areas that operated local/regional passenger rail service in the U.S.: Boston, Chicago, Cleveland, New Jersey, New York City, New Orleans, Philadelphia, Pittsburgh, and San Francisco.

While the story of General Motors (GM), National City Lines (NCL), and the “great conspiracy” to destroy the U.S. streetcars industry has become a staple of American conspiracy theorists and folklore,<sup>11</sup> the true story is that widespread local passenger rail networks were a technology for which the time came ... and went. Streetcars later transitioned to light rail in four of the eight U.S. metropolitan areas listed above that had them. Chicago's and New York City's streetcar systems ceased operating earlier in the 20<sup>th</sup> century, and New Orleans streetcar continues to operate today. Streetcars were still viable and useful in a handful of older cities, but for the most part, within a few years after their introduction in the second decade of the 20th century, buses had demonstrated significant advantages in terms of lower capital, capital renewal, replacement, and operating costs, as well as far greater flexibility.

The demise of local passenger rail networks was a natural economic outcome. Streetcar systems were abandoned in more cities where NCL never had a presence than those where it and other consolidators had operated. Streetcars disappeared from cities all over the world, such as London. The famous NCL anti-trust action<sup>12</sup> did produce a verdict against GM and the other NCL owners, but it was based on the legal theory of creating a monopoly on the sales of buses and bus system supplies, **not** on the elimination of streetcars. GM was fined \$5,000 and its treasurer was personally fined \$1.<sup>13</sup> The trial judge remarked in his later Senate testimony, “I am very frank to admit to counsel that after a very exhaustive review of the entire transcript in this case, and of the exhibits that were offered and received in evidence, that I might not have come to the same conclusion as the jury came to were I trying this case without a jury.”<sup>14</sup>

Indeed, a strong case can be made that, if NCL and the other local transit operators that replaced rail with buses had not done so, there would have been major problems in local transportation during

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<sup>10</sup> Pacific Electric Railway: *Comfort, Speed, Safety, American Rails.com*.

<https://www.american-rails.com/pacific-electric-railway.html>

<sup>11</sup> Walt Disney Pictures. “*Who Framed Roger Rabbit?*” 1988.

<sup>12</sup> *United States v National City Lines*. 334 U.S. 573 (1948).

<sup>13</sup> Slater, Cliff. “General Motors and the Demise of Streetcars.” *Transportation Quarterly*. Vol. 51, No. 3. Summer 1997. 45-66.

<sup>14</sup> Senate Subcommittee on Antitrust. “The Industrial Reorganization Act: hearings, Ninety-third Congress, first session, on S. 1167.” *hathitrust.org*. U.S. Government Printing Office.

the industrialization of the U.S. in its role as the World War II Arsenal of Democracy. It would have been difficult to transport workers to locations such as aircraft assembly plants that, by their nature, must be located away from city centers where runways can be constructed and operated.

By 1953 LARy and PERy were taken over by Metropolitan Coach Lines. The Los Angeles Metropolitan Transit Authority (LAMTA, not to be confused with the contemporary agency Metro, the Los Angeles County Metropolitan Transportation Authority) was formed by the State of California in 1951 to study the feasibility of monorail service (it concluded it was not), then later to evaluate and propose a multi-county transit system, and finally, in 1957, to take over the transit services of Metropolitan Coach Lines, which had long since ceased to be profitable and were unable to provide for capital renewal and replacement of vehicles and right-of-way. Under LAMTA, the last remaining SoCal passenger rail lines were taken out of service in 1963.

## CONCLUSIONS

1. Los Angeles has a long standing investment in public transit. Rail transit has a long-history in the region.
2. It is a myth that Los Angeles' original rail transit system was destroyed by GM and NCL. This myth is not supported by evidence.
3. The demise of Los Angeles rail transit in the early 1960s was largely a result of market forces. These same forces operated in cities worldwide. Streetcar systems were abandoned in the vast majority of U.S. cities that had had them.
4. Economic and demographic changes amplified the demand for public transit in Los Angeles during the 1970s and 1980s. These sources of change still operate. The demand for public transit in Los Angeles remains strong. LA's transit system is large and vital to the local economy.

# ABOUT THE AUTHORS

**Thomas A. Rubin**, CPA, CMA, CMC, CIA, CGFM, CFM, has over four decades of experience as a transit industry senior executive, consultant, and auditor. He founded and developed the transit practice of what is now Deloitte & Touche, LLP, growing it to the largest of its type, including working on several consulting and auditing projects for SCRTD and LACTC. He was the last Chief Financial Officer of SCRTD from 1989 to the formation of Metro; he declined the Metro CFO position and left it in 1994. He was later the chief transportation and finance expert/expert witness for the plaintiffs in *Labor/Community Strategy Center v MTA*, which led to the Consent Decree (CD) that produced the 36% increase in Metro transit ridership from FY97 to FY07. Over his career, he has served well over 100 transit operators, metropolitan planning organizations, state and the Federal Departments of Transportation, and various industry suppliers and industry associations, and written and presented well over 100 papers at industry and trade associations.

**James E. Moore, II**, Ph.D., is a Professor of Industrial & Systems Engineering, of Civil & Environmental Engineering, and of Public Policy and Management at the University of Southern California, where he serves as Director of the USC Transportation Engineering program and of the Systems Architecting & Engineering program. He is the Past President of the Institute of Industrial and System Engineers, and a former Vice Dean in the USC Viterbi School of Engineering. His areas of interest include economic impact analysis, engineering economics, transportation engineering, urban transportation, and infrastructure performance. His publications include hundreds of refereed publications, research reports, op-eds, and other pieces.

Mr. Rubin and Prof. Moore have been collaborators and co-authors for well over two decades, and have previously cooperated on over a dozen publications, including several commissioned papers for Reason Foundation, as well as refereed publications.



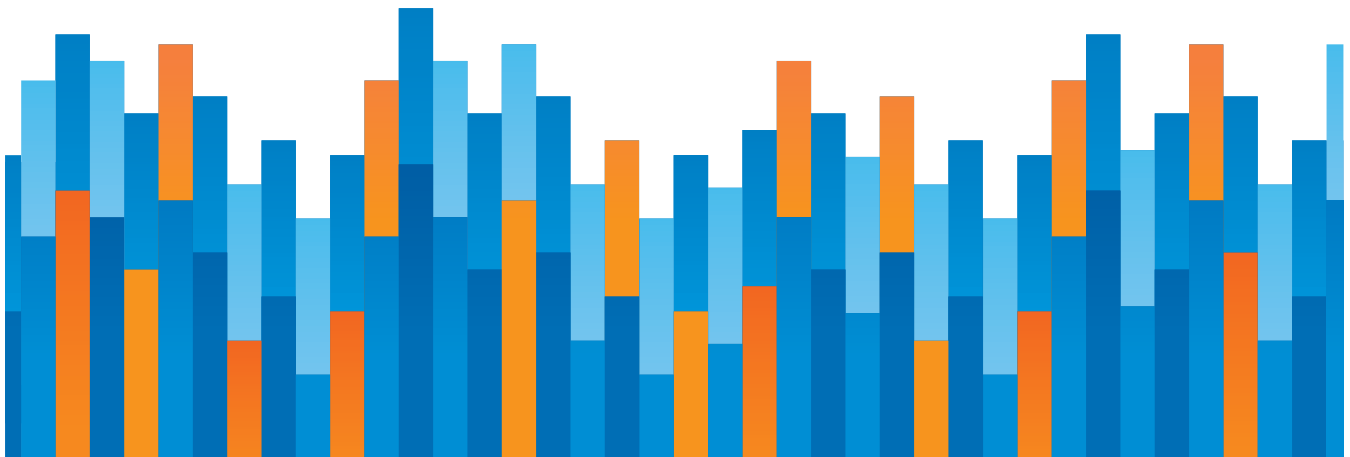
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# **METRO'S 28 BY 2028 PLAN: A CRITICAL REVIEW**

## **II. THE RISE OF LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY (METRO)**

By Thomas A. Rubin, CPA, CMA, CMC, CIA, CGFM, CFM and  
James E. Moore, II, Ph.D.

March 2019





## II. THE RISE OF LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY (METRO)

In 1964, after the Los Angeles Metropolitan Transit Authority ((LAMTA), not the contemporary agency Metro, the Los Angeles County Metropolitan Transportation Authority) failed to make any substantial progress toward a regional rail transit network, the state established the Southern California Rapid Transit District (SCRTD), which took over all of LAMTA's transit operators, plus 11 other failing bus transit operators, serving Los Angeles, Orange, Riverside, San Bernardino, and (to a limited extent) Ventura Counties. The operations in the other counties were almost entirely spun off, leaving SCRTD to operate the Los Angeles County bus transit system, and plan for the desired rail system.

Local changes were influenced by international events and their impact on the national economy. Following the Yom Kippur War of 1973, which pitted Israel against Egypt and Syria, supported by expeditionary forces from other mainly Arab nations, the Arab members of the Organization of Petroleum Exporting Countries (OPEC) imposed a significant reduction of oil sales to the Western world, particularly the United States, and also imposed a major price increase. This led to both widespread oil shortages and major price increases at the pump. From 1972 to 1981, the average inflation-adjusted price of a gallon of gasoline increased 117%.<sup>1</sup> In many locations gasoline was often difficult to find at any price.

During this same period, Los Angeles County demographics changed dramatically.<sup>2</sup> Table 1 shows the shift in the racial and ethnic composition of the county between 1970 and 1990. This massive demographic change has continued, accompanied by population growth. By 2017, the county Hispanic population reached 48.6% of the total population of 10.16 million.<sup>3</sup>

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<sup>1</sup> State of California, Energy Commission. Energy Almanac. "California Gasoline Prices Adjusted for Inflation." [https://listserv.arb.ca.gov/msprog/clean\\_cars/clean\\_cars\\_ab1085/cec%20almanac%20gasoline%20prices.pdf](https://listserv.arb.ca.gov/msprog/clean_cars/clean_cars_ab1085/cec%20almanac%20gasoline%20prices.pdf)

<sup>2</sup> State of California, Department of Finance, Demographic Research Unit. "E-3: Race/Ethnic Population Estimates, Components of Change for California Counties, 1970-1990:" <http://www.dof.ca.gov/Forecasting/Demographics/Estimates/>

<sup>3</sup> U.S. Census Bureau. 2017 American Community Survey (1-year estimates)—Race and Hispanic/Latino—California, Counties and Places with 65,000+ Population. [http://www.dof.ca.gov/Reports/Demographic\\_Reports/American\\_Community\\_Survey/#ACS2017x1](http://www.dof.ca.gov/Reports/Demographic_Reports/American_Community_Survey/#ACS2017x1)

**TABLE 1: Los Angeles County Population by Race and Ethnicity, 1970 and 1990**

Component	1970		1990	
	Count	Percentage	Count	Percentage
Asian/Pacific	231,676	3.3%	914,361	10.3%
Black	752,169	10.7%	933,356	10.6%
Hispanic	1,079,453	15.3%	3,367,875	38.0%
Native American	22,915	.3%	28,997	.3%
White	4,969,587	70.4%	3,615,611	40.8%
Totals	7,055,800	100.0%	8,860,200	100.0%

The combination of very rapid growth (212% over two decades) of a demographic component with relatively low household income, together with the rapid increase in the price of gasoline and other factors, produced the SCRTD<sup>4</sup> ridership changes shown in Table 2. Boardings increased by 101.9% in the decade between 1970 and 1980. This rate of increase is over six times the 16.8% increase for the U.S. transit industry in total, and the 16.0% increase for bus boardings over this same period.<sup>5</sup> Indeed, the SCRTD increase accounted for one-fourth of the national increase in bus ridership, and almost one-sixth of the national increase in total transit ridership.

**TABLE 2: Southern California Rapid Transit District—Boardings by Fiscal Year**

Fiscal Year	Boardings	Change from Prior Year	Change from FY1970
1970	196,621,000	N/A	N/A
1971	190,290,000	(3.2)%	(3.2)%
1972	198,934,000	4.5%	1.2%
1973	204,843,000	3.0%	4.2%
1974	217,700,000	6.3%	10.1%
1975	309,800,000	42.3%	57.6%
1976	282,100,000	(8.9)%	43.5%
1977	315,900,000	12.0%	60.7%
1978	344,700,000	9.1%	75.3%
1979	352,600,000	2.3%	79.3%
1980	397,000,000	12.6%	101.9%

Fortunately, a combination of funding sources made it possible for Los Angeles to expand bus service and keep up with demand. The California Transportation Development Act of 1971 created a state-mandated quarter-cent sales tax, primarily for transit, that was collected in and returned to each

<sup>4</sup> SCRTD, “Total Annual Boardings.”

<sup>5</sup> American Public Transportation (*nee* Transit) Association. *2017 Public Transportation Data Book*. Appendix A. Table 1. “Unlinked Passenger Trips by Mode.”

county. The Urban Mass Transportation Act of 1964 created the first major federal transit grants for capital projects. And, finally, the National Mass Transportation Assistance Act of 1974 provided the first federal funds for transit operating subsidies.

Table 3 shows the pattern of full-adult cash fares by fiscal year during this period, which was one of high inflation. The nominal fare almost doubled in this interval, but after adjusting for inflation the real fares were remarkably constant, with the exception of the two-year period, FY75-FY76, when there was a substantial fare reduction.

**TABLE 3: SCRTD Current-Year and Inflation Adjusted Full Adult Cash Fares, FY74-FY80**

Fiscal Year	Nominal Fare	Consumer Price Index <sup>6</sup>	FY74 Constant-Dollar Fare
FY 74	30.0¢	48.2	30.0¢
FY 75	25.0¢	53.3	22.6¢
FY 76	25.0¢	56.9	21.2¢
FY 77	35.0¢	60.8	27.7¢
FY 78	40.0¢	65.3	29.7¢
FY 79	45.0¢	72.3	30.0¢
FY 80	55.0¢	83.7	31.7¢

However, SCRTD was unsuccessful in securing approval for a rail system. In 1976, California created county transportation commissions for each county, including the Los Angeles County Transportation Commission (LACTC), which was legislated powers that SCRTD did not have. The most important of these was the ability to place a transit sales tax on the ballot for the county electorate to approve funding transit, including rail transit.

The first LACTC ballot issue in 1978 failed by a 2:1 margin, but the second, Proposition A in 1980, received majority approval: 54% to 46%. However, California State Proposition 13 had passed in 1978, and it appeared that a simple majority would not suffice for passage, and a two-thirds majority would be required. LACTC decided not to begin collections until the courts had determined whether a simple majority was sufficient to pass the new tax. The California Supreme Court ruled in May 1982 that, for this specific fact set, a 50% +1 majority was sufficient.<sup>7</sup> Almost every large population county in California quickly placed a similar half-cent sales tax on the ballot in the hope that a 50% +1 majority vote would secure approval. But when this question again reached the California Supreme Court in 1995, the Court effectively reversed itself and declared that a two-thirds majority would be

<sup>6</sup> U.S. Department of Labor, Bureau of Labor Statistics. CPI-All Urban Consumers, Los Angeles-Long Beach-Anaheim, CA. <https://data.bls.gov/pdq/SurveyOutputServlet>

Values shown are for the calendar years.

<sup>7</sup> Cox, Wendell. “Background on the Proposition A Rail Amendment (1980).” <http://www.demographia.com/db-propa.pdf>

required.<sup>8</sup> This ruling affected new votes only, and the taxes previously approved by majorities of at least 50%+1 were allowed to remain in place.

Proposition A was the first of what eventually became four Los Angeles County half-cent transportation sales taxes, on top of the original, state-initiated, quarter-cent transportation sales tax. All are perpetual, they never expire, except as noted otherwise:

- 1971—(State) Transportation Development Act of 1971—quarter cent
- 1980—Proposition A—half cent
- 1990—Proposition C—half cent
- 2008—Measure R—half cent for 30 years
- 2012—Measure J—to extend the 30-year term Measure R another 30 years (failed)
- 2016—Measure M—new half cent and to make Measure R perpetual

Strong conflicts developed between SCRTD and LACTC for many political reasons, despite the fact that the governing boards of the two agencies were appointed, to a large degree, by the same people and governmental units. In many cases, the same people sat on both boards. After the California Supreme Court approval of Proposition A, SCRTD moved heavily into the planning, design, and construction of what was originally known as the Red Line, which now includes the Purple Line, the heavy rail/subway system for Los Angeles. LACTC began planning for regional rail transit, including the planning, design, and construction of light rail lines, beginning with what became the Long Beach-Los Angeles Blue Line. The Green Line followed quickly. Due to state statutory requirements, LACTC was required to fund the Red Line, a circumstance that LACTC used to exercise oversight over SCRTD. At the same time, SCRTD was not allowed much of a role in the design of the light rail lines that, by statute, it would operate when completed.

Additional conflicts between the SCRTD and the LACTC emerged. This was in part because the powerful, conservative county supervisor representing the San Gabriel Valley, Peter Schabarum, was a political opponent of SCRTD, particularly its unions, which he believed (with some justification) to be operating relatively expensive transit service. LACTC implemented a practice of shifting funding away from SCRTD to smaller municipal and included transit operators and penalizing SCRTD (and only SCRTD) for failing to meet service metrics imposed by LACTC. Supervisor Schabarum was also the chief sponsor of the Foothill Transit Zone, which was formed to take over most of the former SCRTD bus lines in his San Gabriel Valley district.

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<sup>8</sup> *Santa Clara County Local Transportation Authority v. Guardino* (no. S036269. Sep. 28, 1995). <https://law.justia.com/cases/california/supreme-court/4th/11/220.html>

Eventually, this conflict became so heated that a political compromise was enacted in the form of a state statute merging SCRTD and LACTC, effective April 1, 1993, into the agency that became Metro. The merger was challenging for political and operational reasons.

## CONCLUSIONS

1. SCRTD was created in 1964 to address the intensifying demand for transit services, a demand the agency met successfully with bus services.
2. LACTC was formed in 1976 with new authority to pursue creation of a Los Angeles rail system, and to finance the system with local sales taxes, something SCRTD could not do.
3. LACTC's fiscal role positioned it to exercise oversight over SCRTD, which SCRTD resisted. The two agencies were merged to form Metro in 1993 to diminish squabbling and improve coordination.
4. Metro is well funded by four local half-cent sales tax measures, and a quarter cent state sales tax measure.

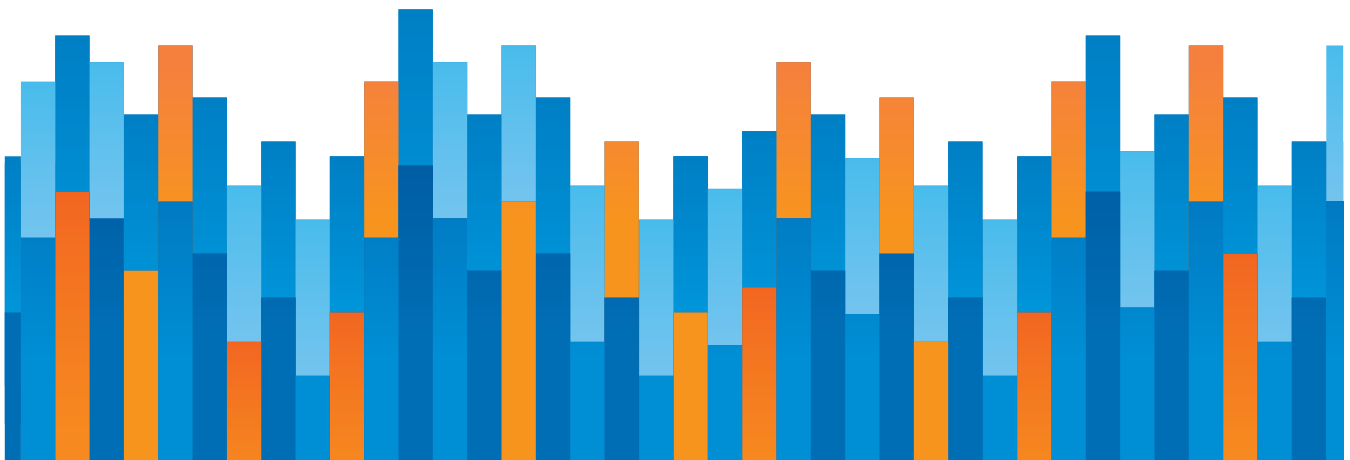


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# III. METRO'S 28 BY 2028 PLAN: A CRITICAL REVIEW METRO'S TRANSIT RIDERSHIP IS DECLINING

By Thomas A. Rubin, CPA, CMA, CMC, CIA, CGFM, CFM and  
James E. Moore, II, Ph.D.

March 2019



# III. METRO'S TRANSIT RIDERSHIP IS DECLINING

Metro has many responsibilities. The largest is providing transit service, which represents over 90% of the agency's expenditures and staffing.<sup>1</sup> While Metro has funding, planning, and coordination roles with respect to highways and roads, it does not construct either. Metro provides the majority of transit services in the county. It plans, designs, and constructs most of the transit capital projects in the county. Metro funds, coordinates, and oversees the transit services it does not operate itself. Metro's non-transit activities are important, but its transit function is central to its mission, and vitally important to Los Angeles County residents.

## RIDERSHIP TRENDS

Understanding transit ridership figures means distinguishing between linked and unlinked passenger trips ("UPT"). For example, if a rider gets on a bus near her home that goes to a rail station, boards a train, and exits the rail station to her job, this creates two **unlinked** passenger trips, one each on bus and rail, and one linked passenger trip. The technology did not exist for most transit agencies to track linked trips until recently. Consequently, unlinked trips have been what transit operators measure and report by default. This summary focuses primarily on unlinked trips, with some discussion of linked trips at the end.

Metro's ridership record, along with that of its predecessor agencies, shows large variations in annual boardings. Most recently, as shown in **Figure 1**, the trend is mainly down.<sup>2</sup> Metro's Fiscal Year 2017-2018 ("FY18") ridership is down 21% from the FY85 all-time peak, and also down from the more recent FY07 peak. Between the peak transit ridership year of FY85 and FY18, rail UPT has grown from zero, when SCRTD was an all-bus system, to 110.2 million per year. However, while rail ridership has grown, bus ridership has fallen during this same period from 497.2 million to 280.8 million. This is a loss of 44%, or 216.4 million, a value over 96% larger than the increase in rail ridership.

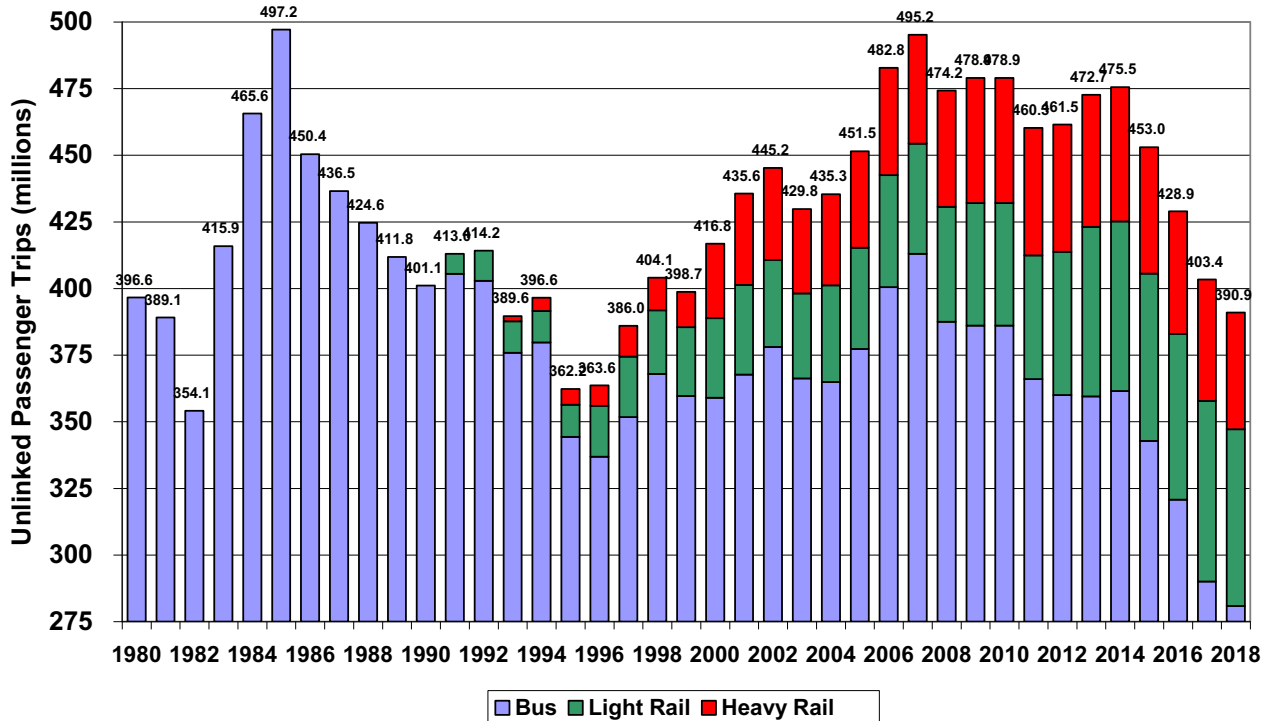
The large increases in Metro transit ridership will be discussed in detail in Summary 5. Metro has a history of major ridership increases when it devotes a small portion of its funds, and attention to improving bus service. When the agency reduces bus spending to build rail projects ridership decreases significantly."

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<sup>1</sup> *FY19 Budget*. Calculations from data on pages 30, 31, and 42 for expenditures and pages 46-47 for staff.

<sup>2</sup> Data through FY17 from U.S. Department of Transportation/Federal Transit Administration National Transit Database ("NTD"). <https://www.transit.dot.gov/ntd> FY18 and later data from Metro, "Interactive Estimated Ridership Statistics," <http://isotp.metro.net/MetroRidership/Index.aspx>

**Figure 1: Los Angeles County Metropolitan Transportation Authority Unlinked Passenger Trips by Mode Fiscal Years 1980–2018**



The ridership trend is starker if population growth is taken into account. **Figure 2** shows that Los Angeles County population increased 25% from FY85 to FY18 while Metro total UPT dropped 21%. Metro UPT *per capita* was thus down 37%.

Metro’s rail ridership has stopped growing. FY18 rail ridership was less than the FY13 ridership of 113.2 million, even though Metro opened two rail extensions during this period, the Expo Line to Santa Monica and Gold Line Foothill Extension to Azuza.



**Figure 2: Los Angeles County Metropolitan Transportation Authority All-Mode Unlinked Passenger Trips by Mode Fiscal Years 1980–2018**

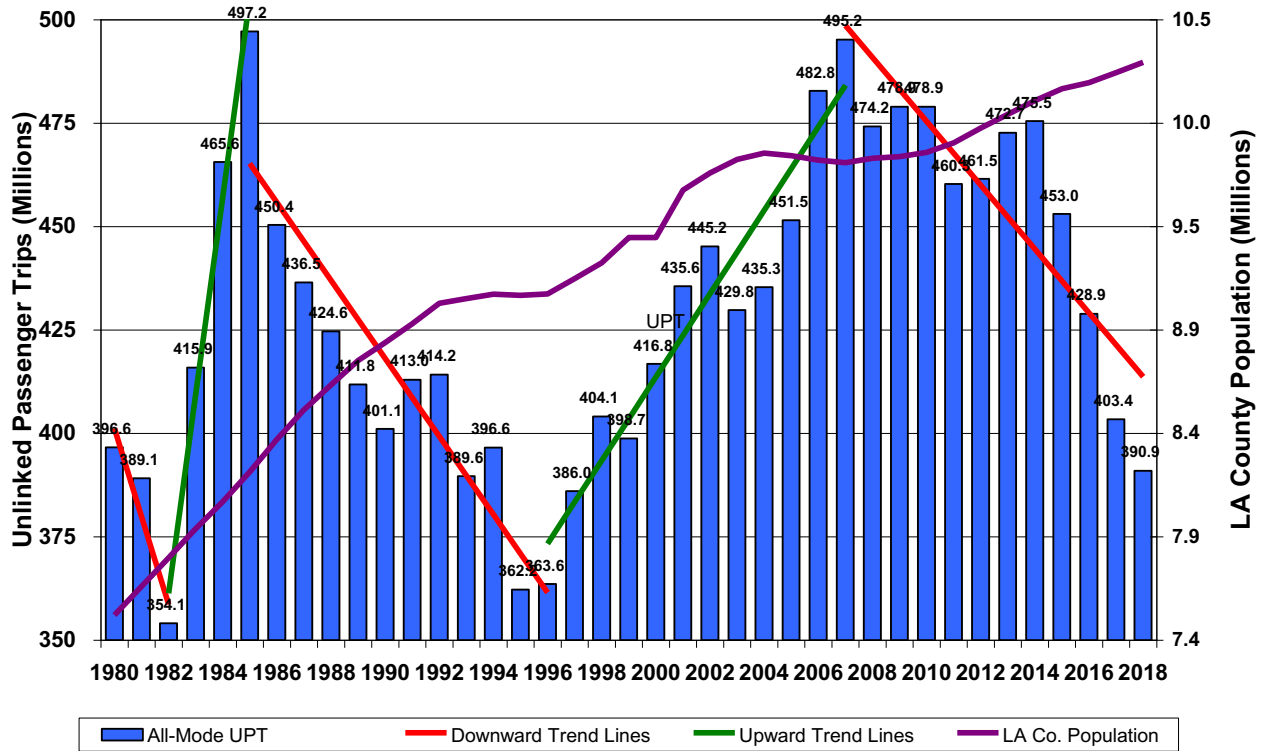
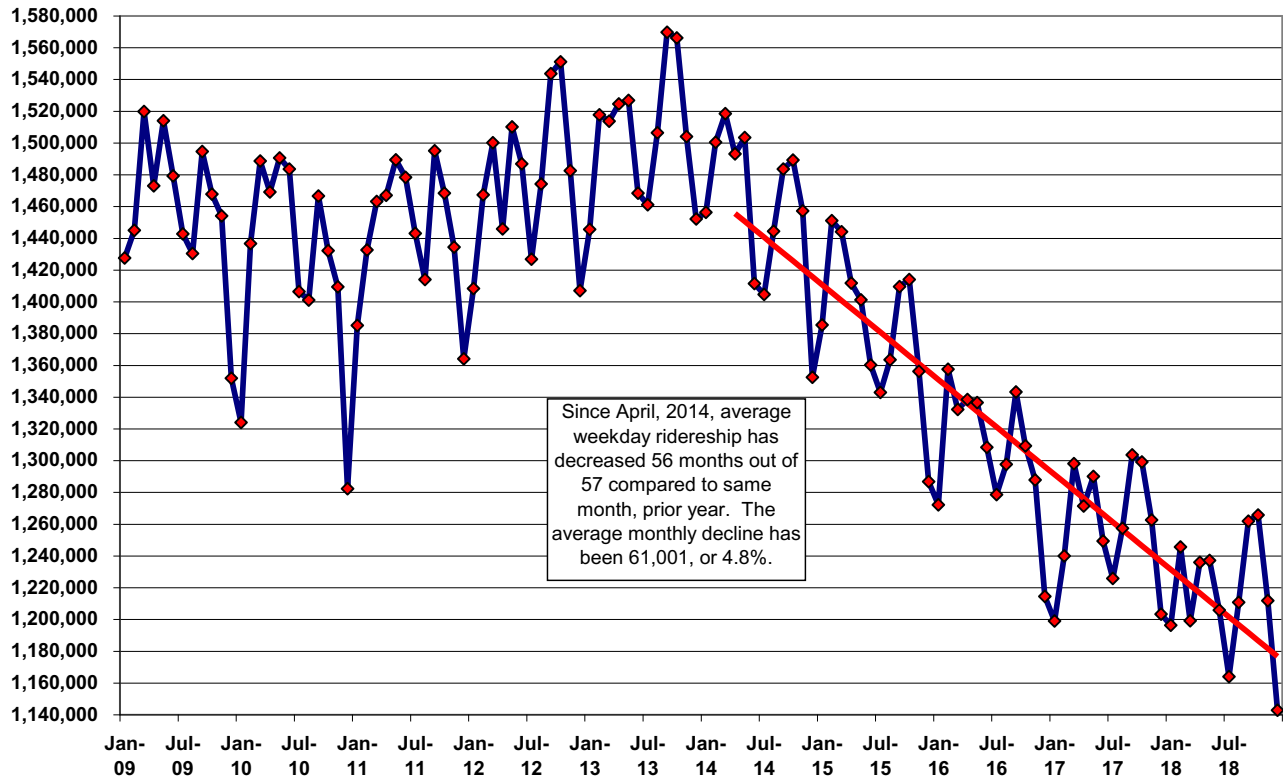


Figure 3<sup>3</sup> shows that the recent detail record is even more disheartening. Metro’s most recent peak average daily UPT is 1.569 million in September 2013. Since then, ridership has fallen, current-month-vs.-same-month-previous-year, almost continuously. The September 2018 UPT was 1.262 million, down 20% from the September 2013 peak, and there appears to be no end in sight for this decline.

<sup>3</sup> Metro. “Interactive Estimated Ridership Statistics.” Data utilized is “Systemwide (Bus and Rail) Estimated Weekday Ridership.” <http://isotp.metro.net/MetroRidership/Index.aspx>

**Figure 3: Los Angeles County Metropolitan Transportation Authority  
Average Weekday System Ridership by Month: January 2009 – December 2018**



## TRANSFERS

It is important to consider the effect of transfers on Metro’s ridership. The agency’s shift from an all-bus system, which began with the opening of the Long Beach Blue Line train in July 1990 (the beginning of FY91), to a multi-modal system changed the ratio of unlinked to linked passenger trips in a way that reduces the quality of service for riders.

Pre-rail, much of the SCRTD bus network operated on arterial streets that were aligned on a grid system of major north-south and east-west streets spaced approximately one mile apart. Many of the riders who could not take a single bus directly from their origin to their destination could complete their linked trip with a single transfer from an east-west route to a north-south route, or vice versa.

The county's rail network increases the number of transfers. There are approximately 26,000 bus stops in Los Angeles County,<sup>4</sup> but only 93 Metro rail stations,<sup>5</sup> and 27 Los Angeles County Metrolink stations.<sup>6</sup> These counts exclude duplicates for stations that serve more than one line. This means that far fewer Los Angeles County transit users are within walking distance of a rail station at either end of their trip than they are proximate to a bus station. As a result, rail riders are far more likely than bus riders to need to make multiple transfers to complete their linked trips.

The SCRTD bus network was subject to only relatively minor changes between FY 1985 and FY 1993, chiefly the transfer of San Gabriel Valley bus lines to the Foothill Transit Zone between 1989 and 1992, and changes to serve as feeder/distributor routes to the Blue Line light rail and Metrolink regional rail services, both of which began service in July 1990. In calendar years 1991-1993, the only SCRTD rail line in operation was the Long Beach-Los Angeles Blue Line. Trains carried less than 3% of the system's total UPT at the end of this period, and the ratio of unlinked to linked trips was 1.65:1.<sup>7</sup> By the early 2000s, the ratio had increased to a weighted value for the system as a whole of approximately 2.30:1.<sup>8</sup> Assuming no further change, this means that each unlinked trip is associated with 28% fewer (1.65/2.30) linked trips. Applying this factor to the 37% reduction in Metro UPT *per capita* from FY85 to FY18, the reduction in Metro linked trips is 51%. Metro is now serving only half the daily riders it was during the FY85 peak.

It seems that Metro no longer queries riders about transfers in its annual passenger surveys. The last record of such data collection was in a 2005 report<sup>9</sup> that produced a 3.13:1 ratio between unlinked

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<sup>4</sup> Hazen, Chip. Metro. "Bus Stop Usability Study," presented to the Los Angeles County Commission on Disabilities. January 18, 2012. Slide 10. <https://www.transit.dot.gov/ntd/data-product/2016-annual-database-service-0>

<sup>5</sup> Authors' analysis of Metro Rail and Busway Map. <https://media.metro.net/documents/8f0fe43e-da3b-4a10-bd8e-4cfd54e30eb3.pdf>

<sup>6</sup> Authors' analysis of Metrolink Map. <https://www.metrolinktrains.com/rider-info/general-info/stations/>

<sup>7</sup> SCRTD, Passenger Survey Results ("FOCUS" Report).

<sup>8</sup> Metro. *FY 2002 On-Board Bus Weekday Survey Report*. Volume I. Table 3. "Number of Buses/Trains Used on One-Way Trip (Weekday), page 8, which reported 2.26:1; *FY 2002 On-Board Bus Weekend Survey Report*, Table 4, "Number of Buses/Trains Used on One-way Trip (Weekend), page 8, which reported 2.27:1; *2004 Rail On-Board Survey Report*, Table 3.2, "Train/Bus Use per Trip," page 14, which reported 2.45:1.

[http://media.metro.net/projects\\_studies/research/images/reports/2002\\_on-board\\_bus\\_weekday\\_report\\_vol\\_1\\_&\\_2.pdf](http://media.metro.net/projects_studies/research/images/reports/2002_on-board_bus_weekday_report_vol_1_&_2.pdf)

[http://media.metro.net/projects\\_studies/research/images/reports/2002\\_on-board\\_\\_bus\\_survey\\_weekend\\_report.pdf](http://media.metro.net/projects_studies/research/images/reports/2002_on-board__bus_survey_weekend_report.pdf)

[http://media.metro.net/projects\\_studies/research/images/reports/metro\\_rail\\_2004\\_on-board\\_survey.pdf](http://media.metro.net/projects_studies/research/images/reports/metro_rail_2004_on-board_survey.pdf)

<sup>9</sup> Metro, "Combined Customer Satisfaction Survey—Spring 05," question 25., "How many buses/trains will you use to complete **THIS** one-way trip?"

[http://media.metro.net/projects\\_studies/research/images/annual\\_survey\\_results/System\\_Results\\_Spring\\_2005.pdf](http://media.metro.net/projects_studies/research/images/annual_survey_results/System_Results_Spring_2005.pdf)

and linked trips. This figure is unreasonably high relative to industry experience and is likely inaccurate.

Due to the deliberate policy changes and decisions made by LACTC and continued under Metro, there has been a significant shift of ridership from SCRTD/Metro to the other Los Angeles County transit operators. For FY85, SCRTD carried 87.9%<sup>10</sup> of all county riders. This estimate excludes 12 million annual boardings on lines shifted from SCRTD to other county transit operators, chiefly the Foothill Transit Zone. By FY16, this share had been reduced to 77.1%, including the 40% of Metrolink regional rail boardings assumed to be made by Los Angeles County residents.<sup>11</sup>

Adjusting for this shift of transit trips away from Metro increases the estimate of current Los Angeles County linked transit trips to approximately 58% of what they were in FY85, when SCRTD ridership was at its peak:  $51\% \times (87.9\% / 77.1\%) = 58\%$ .

By any standard measure, transit use in Los Angeles County has dropped under Metro's watch. In subsequent summaries, we review in more detail how this decline has occurred, including why and how Metro's actions appear to have significantly contributed to this shift.

## CONCLUSIONS

1. Metro is losing ridership, despite population growth in Los Angeles County. Ridership measured in UPT is down 20% from 2013. Metro UPT *per capita* is down 37% from Metro's all-time peak ridership in 1985 and, for all Los Angeles County transit operators, linked trips *per capita* are down 42%.
2. More riders are disappearing from buses than show up on rail. Rail ridership has stopped growing, despite the addition of new lines.
3. Reconfiguring bus lines to feed rail lines increases the number of transfers needed to complete a trip, and diminishes the competitiveness of Los Angeles transit, contributing to reductions in ridership. Metro's estimates of the number of transfers needed to complete a trip are far above the national average, and are so high that they are difficult to believe. In any event, the number of Los Angeles transfers is far above the norm.
4. The more rail service Metro delivers, the fewer riders it can expect.

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<sup>10</sup> Authors' calculation from data obtained from Florida Transit Information System, Integrated National Transit Database Analysis System. <http://www.ftis.org/INTDAS/Reports.aspx>, and based on T. Rubin's research while SCRTD CFO.

<sup>11</sup> Authors' calculation based on data from NTD, 2016 reporting year, "Annual Database Service" spreadsheet. <https://www.transit.dot.gov/ntd/data-product/2016-annual-database-service-0>



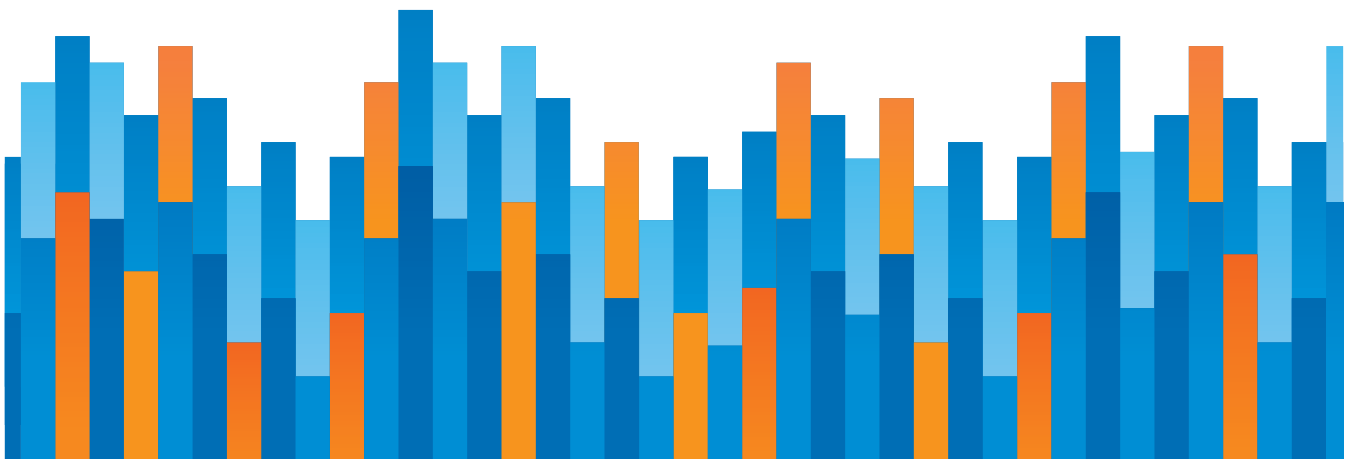
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# **METRO'S 28 BY 2028 PLAN: A CRITICAL REVIEW**

## **IV. METRO'S LONG RANGE PLANS OVERPROMISE AND UNDERDELIVER**

By Thomas A. Rubin, CPA, CMA, CMC, CIA, CGFM, CFM and  
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March 2019



## IV. METRO'S LONG RANGE PLANS OVERPROMISE AND UNDERDELIVER

Long-range plans have been used to justify each of Metro's four successful half-cent transportation sales taxes. Although there have been variations on the theme, these ballot measure campaigns have included a proposed program of projects to be funded. In three cases out of the four, these programs were published prior to the public vote. These plans were updated periodically to reflect necessary changes driven by the imbalance between the financial resources necessary to perform on all of Metro's original promises, and what revenues actually become available. The nature of transportation planning requires that long range plans be continually updated. This segment focuses on the most significant of these plans, and their failures, past and yet to come.

### 1980 PROPOSITION A

**Figure 4** provides the Rapid Rail Transit map from the plan provided with 1980's Proposition A, the first successful county-wide sales tax.<sup>1</sup> Rail advocates have been planning and promoting a "modern" rail transit system—more modern than the Red and Yellow Cars, that is—since 1911, involving at least 18 prior attempts to fund a system.<sup>2</sup>

The key section of the Proposition A Ordinance describing the scope of LACTC's rail plans is:

"D.2.c. The System will be constructed and operated in substantial conformity with the map (hereinafter referred to as "Map") attached hereto as Exhibit "A." The areas proposed to be served are, at least, the following:

- San Fernando Valley
- West Los Angeles
- South Central Los Angeles/Long Beach
- South Bay/Harbor
- Century Freeway Corridor
- Santa Ana Free [sic] Corridor
- San Gabriel Valley"

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<sup>1</sup> Metro. Los Angeles County Transportation Commission. Ordinance 16. [http://media.metro.net/projects\\_studies/taxpayer\\_oversight\\_comm/proposition\\_a\\_ordinance.pdf](http://media.metro.net/projects_studies/taxpayer_oversight_comm/proposition_a_ordinance.pdf)

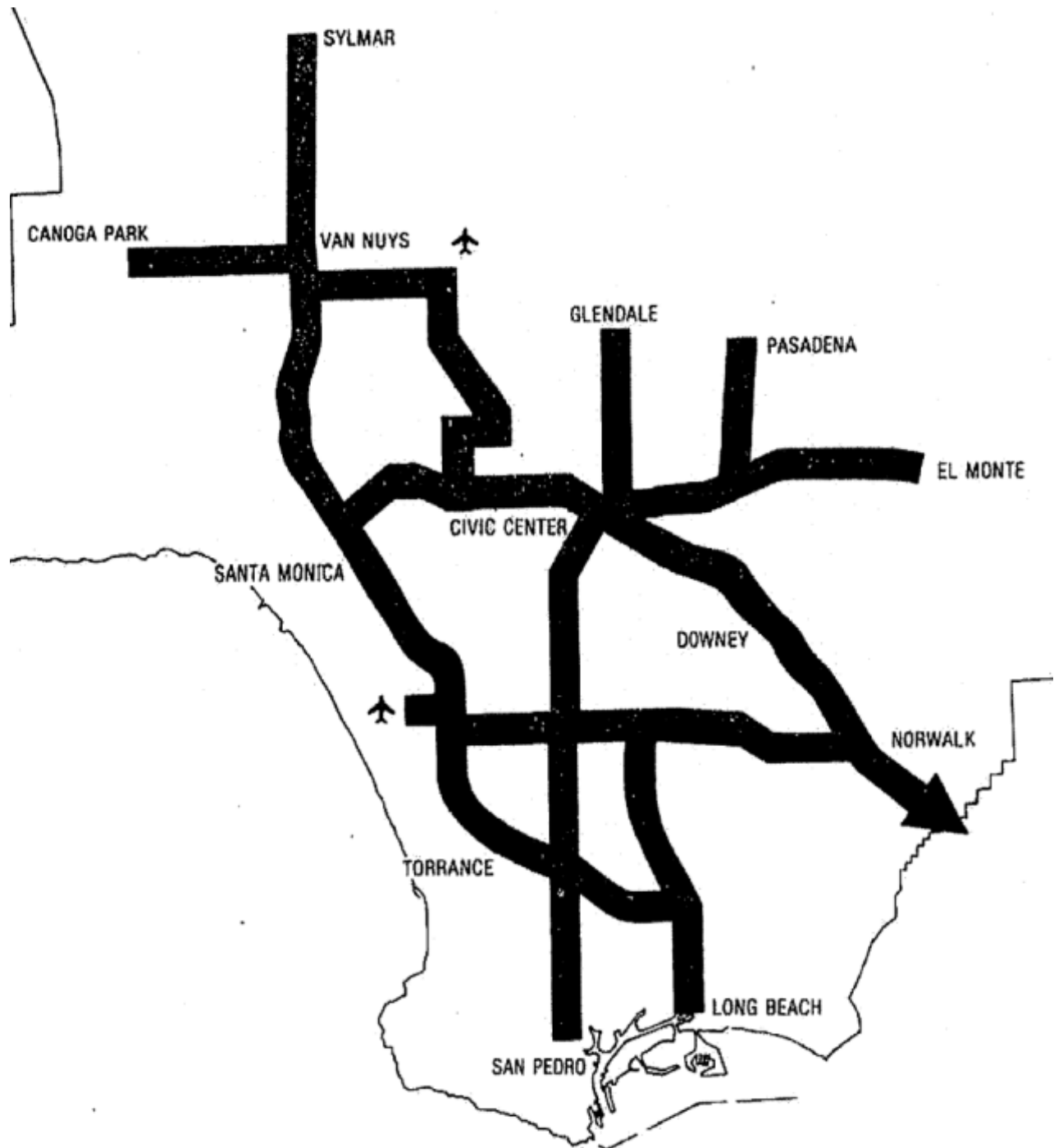
<sup>2</sup> Green, L. "A History of Rail Setbacks." *Mass Transit* magazine. September 1985.

The "Map" referenced in section D.2.c. is **Figure 4**. A notable feature of the map in **Figure 4** is that the lines don't provide exact routings, but rather general service corridors. This lack of specificity combines with lines drawn to appear two miles wide to produce a map implying that more residences, businesses, and other destinations would be closer to the rail lines than could ever actually be the case once the lines are constructed.

Of the 11 rail lines on the map:

- One, the Long Beach Blue Line, was completed with Proposition A funding.
- Two, the Red/Purple Line (MOS-1 and MOS-2) and the Green Line, were started with the intention of full funding from Proposition A, but needed Proposition C funding to be completed. Neither of these lines has been fully completed.
- Three, the El Monte Line, the South Bay/Harbor Line, and the San Fernando Valley Line, were completed as busways. The El Monte Busway was completed prior to the passage of Proposition A. There is a plan to convert the San Fernando Valley Line to light rail decades from now. There are no plans to convert the other two lines.
- One, the Glendale Line, is subject to no current plans for completion.
- Two, the Pasadena Gold Line and the Red Line to the Valley, have been completed with a combination of Proposition A and C funds.
- Two, the Santa Ana Freeway Corridor/West Santa Ana Branch and the I-405 Line, are being planned for construction with a variety of funding sources, including Proposition A, but little to nothing has been constructed to date.

Figure 4: Rail Rapid Transit System



While LACTC had expansive plans for rail construction from Proposition A funding, by 1989 the revenue generated was too limited to fund the entire project list. One line, the Long Beach-Los Angeles Blue Line, was almost completed and would be fully funded by Proposition A. The Red Line and Green Lines were under construction, but there was insufficient funding available to complete even these two lines.



Today, nearly four decades after the passage of Proposition A and the passage of three additional half-cent sales taxes, five of the 11 rail lines in **Figure 4**—El Monte, Glendale, San Fernando Valley, Santa Ana Freeway Corridor, and South Bay/Harbor—do not have a single mile of rail transit on them. A sixth, the I-405 Corridor, has passenger rail on well under 10% of its length. Thus, the Proposition A plan failed to produce the passenger rail lines promised to voters for three reasons: LACTC/Metro overestimated revenue generated by sales taxes, underestimated project costs, and failed to ensure adequate project management.

## 1990 PROPOSITION C

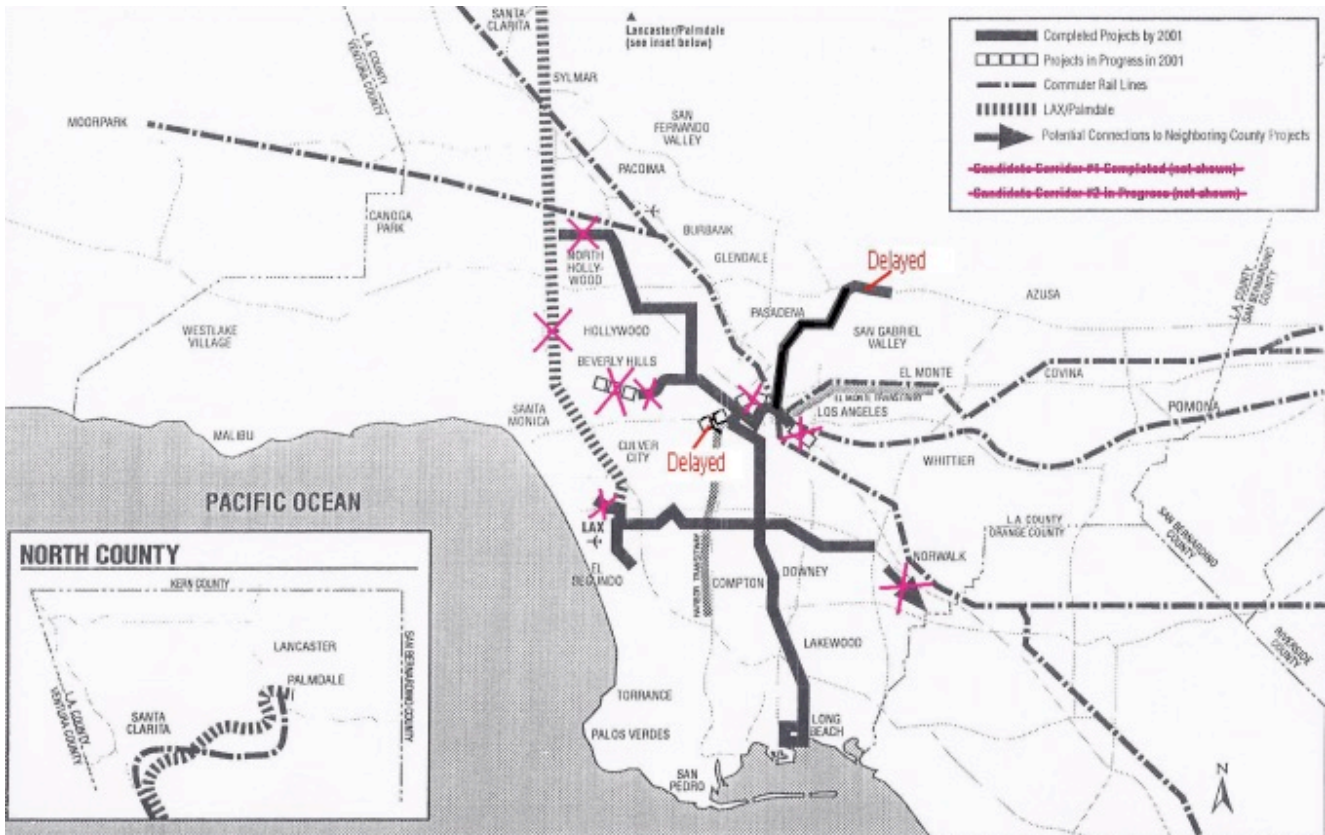
Proposition C, the second half-cent Metro sales tax, was placed on the November 1990 ballot and approved by Los Angeles voters. Unlike the other three LACTC/Metro sales tax measures, there was no detailed program of projects prepared as part of the ballot measure. Following its passage, LACTC began a planning and promotion process that eventually produced the agency's *30-Year Integrated Transportation Plan*, which, after many iterations and meetings, was approved by the LACTC Commission at its April 22, 1992 meeting.

This document included a very long list of projects that were to be completed over its three-decade horizon, more than needs to be fully analyzed here. The highest priority projects identified to be completed within the first 10 years of the plan are detailed in **Figure 5**. This map was developed and first presented during 1991, so the 10-year implementation period to which it corresponded ended in 2001.

In total, there were 12 Metro lines or extensions that were scheduled for completion prior to the end of 2001 that did not meet that schedule. Some of these projects were to have been placed into revenue service earlier than 2001, but the calculations below all assume 2001 as the scheduled revenue service date:

- One (LAX-Palmdale) has been entirely cancelled.
- One (East Santa Ana Branch) has yet to begin construction. If completed as currently scheduled, it will be 27 years late.
- One (San Fernando Valley East-West Subway Segment 1) was completed as the Orange Line Bus Rapid Transit line four years late. Segment 2 was completed at the same time.

**Figure 5: Rail Projects and Candidate Corridors: Fundable Plan—10 Year Implementation Program**



- One (Red Line MOS-3 Eastside) was changed from heavy rail to light rail and was completed two years late.
- One (Pasadena Gold Line) began passenger service in 2003, two years late.
- One (Expo Line to USC) was completed approximately 11 years late, but included eight more stations than what was planned in 1991.
- One (Downtown Light Rail Regional Connector) is scheduled to be completed 21 years late.
- Two (the Purple Line extensions) are under construction on different alignments, and, if completed on the current schedule, will be a combined total of 46 years late.
- Two (Expo Line Phase 2 to Santa Monica, Pasadena Gold Line Foothill Extension), effectively Candidate Corridors 1 & 2, were completed a combined total of 30 years late.
- One (Green Line LAX Connector) has been taken over by Los Angeles International Airport and will be completed at an unknown date. It is 18 years late and counting at this date.

The LACTC's *30-Year Integrated Transportation Plan* failed for a variety of reasons, but chief among these is the agency's optimistic financial projections. When it was adopted, the plan's financial element projected \$100 billion of revenues over the plan period. Two-and-one-half years later, when the MTA Board was presented with the next regularly scheduled revision to the plan, the estimated revenues over the same period were \$64 billion—a reduction of \$36 billion in 30 months—which turned out to be too high.

## 2008 MEASURE R

Over the 18 years between Proposition C and Measure R, few new Metro rail line construction projects were begun, although there were extensions to previously completed lines. Construction for the Bus Rapid Transit Orange Line began and was completed, and the Gold Line Eastside entered construction and was nearing completion by 2008. Several other projects were well into planning and design, but Metro lacked the funding for rail construction. The agency needed more money, and a new tax, to proceed.

In 2008, the economy was booming after the recovery from the burst of the dot.com bubble, and Metro concluded this made it a good time to ask the voters for more funding. Metro placed a new tax proposal, its third, on the November 2008 ballot.

- The plan included:
  - Funding for 11 new, or accelerated, passenger rail and three busway construction projects and bus capital projects;
  - Local return funding, a political goal of elected city officials and county supervisors;
  - Funding for 17 road and highway projects, designed to gain the favor of drivers who had no interest in using transit themselves; and
  - Funding for bus operations, to (try to) quiet the bus service expansion proponents.
- After polling showed that the voters were apprehensive about imposing an eternal tax, Metro stipulated a 30-year term. This added a few key percentage points to the “likely to vote for” response showing up in polls.
- Then-Senator Barak Obama made his initial run for U.S. president in this election. Polling indicated he had strong support among minority voters who would be likely to vote at this election, whom Metro believed to strongly favor such a new tax for transit.
- Measure R was the object of strong campaigns by contractors, equipment suppliers, and professionals who contributed to the formal campaign to sway the voters.

Measure R passed with 67.22% in favor, barely a half percentage point over the two-thirds voter approval required to pass. Regrettably for Metro, the timing of Measure R proved very unfortunate. The economy began to falter in the middle of the campaign. By the time the winning vote was certified, Metro staff understood that their sales tax revenue projections could not be achieved. Metro did not have the revenue for a rainy day fund, instead leveraging the increased revenue projections of the prior years as much as possible. Sales tax collections for Proposition A increased from \$526 million for FY02 to \$686 million for FY07, more than 30% over five years, but then sunk to \$568 million for FY10, down 17% over three years. These are current year values, not inflation-adjusted values. The downturn was larger if expressed in real dollars. The FY07 receipts were not exceeded again until collections of \$687 million in FY13, not inflation-adjusted.<sup>3</sup>

The impact of the Great Recession on Metro's planning and operations was dramatic. The downturn in sales tax revenues not only significantly reduced Metro's ability to finance major transportation construction projects, but it forced major reductions in expenditures for transit operating subsidies.

In 2012, four years after the approval of Measure R, Metro went back to the voters and put Measure J on the ballot to try to extend Measure R for an additional 30 years. However, for the first time, Metro's timeline extended too far into the future, and Measure J was defeated by a narrow margin, with the 64.72% positive vote falling short of the two-thirds majority by less than two percentage points.

Measure R was a failure. Metro's efforts to try to get Measure J passed only four years after Measure R, and then, four years later, orchestrating Measure M's passage, are evidence. Metro itself understood Measure R was a failure.

## 2016 MEASURE M

It is too soon to draw empirical conclusions about the success or failure of Measure M, or of *28 by 2028*, which is an acceleration of the original Measure M implementation schedule, but history, context, and past performance indicate that Metro is unlikely to accomplish its goals.

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<sup>3</sup> Metro, Proposition A & C and Measure R Sales Taxes. <https://www.metro.net/about/financebudget/taxes/>

## CONCLUSIONS

1. Each long-range transportation construction program that Metro has adopted has fallen behind schedule, failing to accomplish what was promised.
2. These failures result from an overestimation of sales tax revenues and underestimation of construction cost projections.
3. In 2019, almost 40 years after the passage of Proposition A, and after the passage of three additional half-cent sales taxes, of the 11 rail lines shown on the 1980 Proposition A Map, fewer than half have been completed anywhere close to as promised and only three (Long Beach-Los Angeles Blue Line, Pasadena Gold Line, and Red Line to San Fernando Valley) have been completed in full as rail lines.