

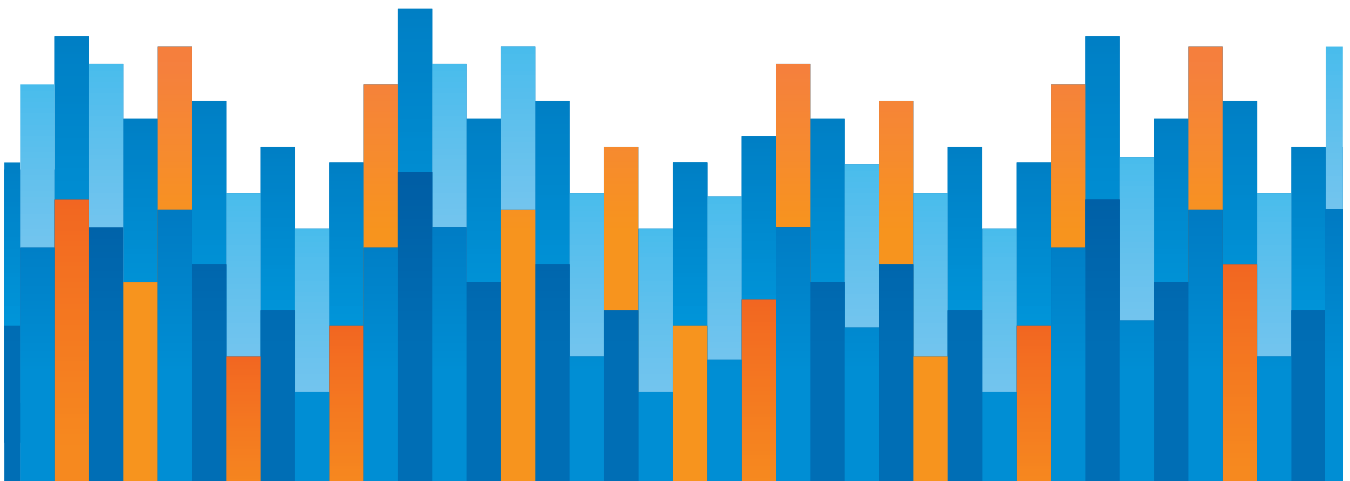


# **METRO'S 28 BY 2028 PLAN: A CRITICAL REVIEW**

## **VII. METRO CONSISTENTLY SIGNIFICANTLY OVERSTATES SALES TAX REVENUES**

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

April 2019



# VII. METRO CONSISTENTLY SIGNIFICANTLY OVERSTATES SALES TAX REVENUES

The original version of this Brief contained an important error in computing future Measure M sales tax revenue growth rates. When the Los Angeles County Measure R sales tax reaches the end of its authorized thirty-year life on July 1, 1939, the Los Angeles County Measure M tax rate doubles from 0.5% to 1.0%. Our analysis in the original version of this Brief failed to account for this change. This revised version corrects this error and makes additional associated changes. We are grateful to James Law for identifying our error.

As noted in **Brief IV** of *Metro's 28 by 2028 Plan*, the majority of Metro's funding comes from four perpetual half-cent and one perpetual quarter-cent sales taxes on all transactions in the county. For fiscal year 2019 (FY19), Metro budgeted \$3,798 million from sales taxes, or 57% of the agency's \$6,611 million in revenues.<sup>1</sup>

In addition to the direct tax revenues it receives, Metro also bonds heavily against most of these sales taxes. As of the beginning of the current fiscal year, Metro had \$4,823 million in "Total Outstanding Debt Principal Balance;"<sup>2</sup> with \$452 million in "Total Funding Demand Debt Service" to be paid out this year to service pre-existing and new debt; and \$1,169 million in "Bond Proceeds, Transportation Infrastructure Finance and Innovation Act (TIFIA) & Prior Year Carryover" budgeted for FY19 capital expenditures.<sup>3</sup> "TIFIA" in Metro's case means previously approved federal loans for the Crenshaw/LAX Regional Connector and the Westside Purple Line Extension Section 1 projects.<sup>4</sup> For Metro, this is effectively another type of long-term debt secured by sales tax revenues.

## A HISTORY OF UNBRIDLED OPTIMISM

Given the importance of Metro's five sales taxes to the success of its financial plans, the agency has a record of consistently overstating the expected sales tax revenues it projects for future years.

---

<sup>1</sup> Metro, *FY19 Adopted Budget ("FY19 Budget")*. 28.  
[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>2</sup> *Ibid.* 42.

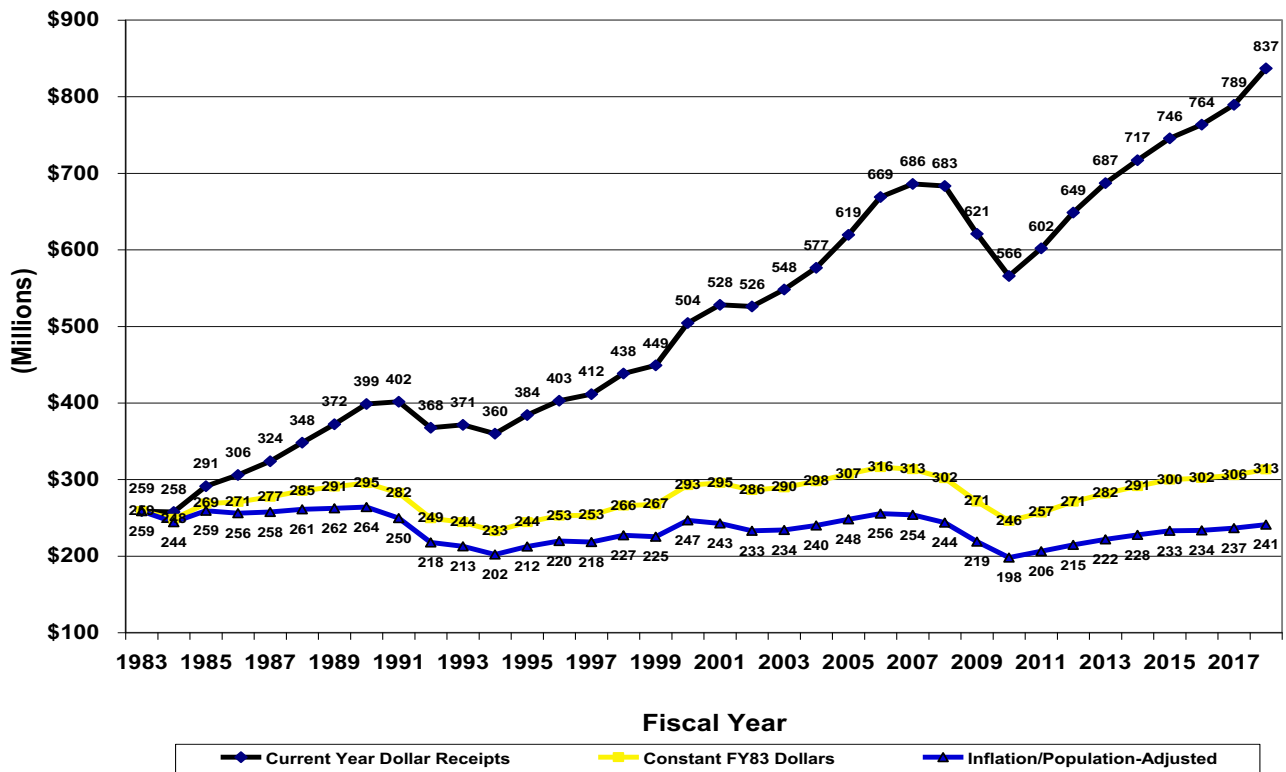
<sup>3</sup> *Ibid.* 28.

<sup>4</sup> Metro, *Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2017*. 27.  
[https://media.metro.net/about\\_us/finance/images/fy17\\_cafr.pdf](https://media.metro.net/about_us/finance/images/fy17_cafr.pdf)

Historical sales tax receipts provide a baseline that Metro should be using for its sales tax projections. Proposition A was the first of the four half-cent taxes passed, and the revenue it provides is a good benchmark. There are revenue variations between these sales taxes in each fiscal year due to technical reasons, but after the first year or two, the values tend to be very close.

As shown in **Figure 1**, Los Angeles County sales taxes have not been a growing source of revenue, and the growth has been slowing in recent years.<sup>5</sup> From FY83, the first full year of Proposition A collections, through FY18, the compound average annual growth was 3.41%, of which 2.85% consisted of inflation, leaving real growth of only 0.55%. If this real growth is adjusted for population change, real revenue growth *per capita* has been negative for decades.

**Figure 1: Los Angeles County Proposition A Sales Tax Revenues**  
**Current-Year Dollar, Inflation-1 Adjusted, and Inflation/Population-Adjusted FY 1983–2018**



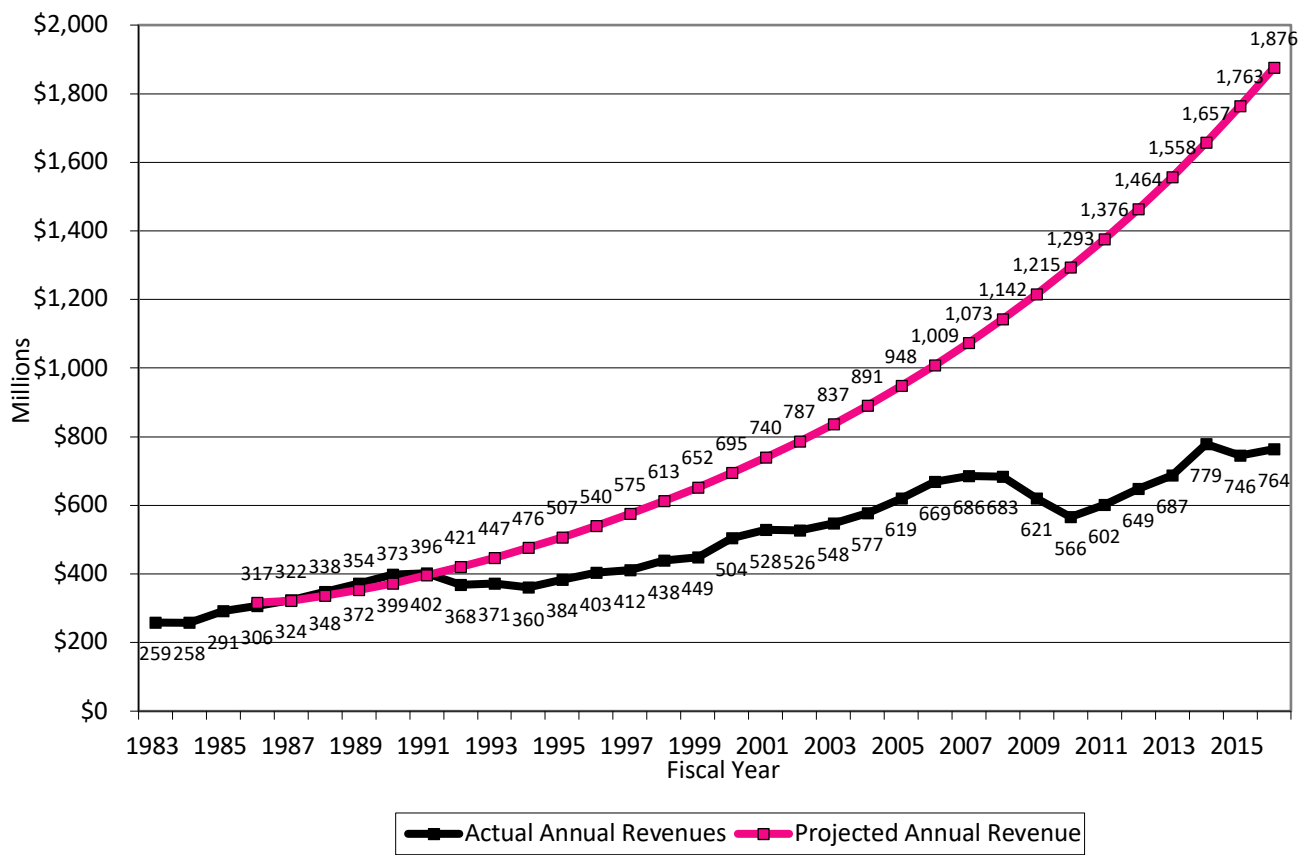
Sources: Metro Bond Official Statements, Measure R Sales Tax Revenues, Demographic Research Unit, Bureau of Labor Statistics

<sup>5</sup> Annual sales tax values have been collected from a variety of sources over the years, including Metro bond Official Statements for the early years and, more recently, “Proposition A and C and Measure R Sales Tax Revenues,” which has data for FY00-FY17. <https://www.metro.net/about/financebudget/taxes/>

The FY18 value was calculated from Metro, “Prop A Sales Tax Receipts (Cash Basis),” [http://media.metro.net/about\\_us/finance/images/prop\\_a\\_sales\\_tax\\_cash\\_receipts\\_012019.pdf](http://media.metro.net/about_us/finance/images/prop_a_sales_tax_cash_receipts_012019.pdf)

**Figure 2** shows the sales tax revenue projection made for Metro’s first bond issue vs. actual sales tax receipts and demonstrates Metro’s practice of assuming continuing high sales tax growth rates. While this over-projection of revenues began shortly after the passage of Proposition A in 1980, **Figure 2** begins with data from Metro’s first formally published forecast for the 1986, \$707 million Proposition A Sales Tax Revenue Bond.<sup>6</sup>

**Figure 2: Los Angeles County Metropolitan Transportation Authority 1986 Bond Issue Sales Tax Revenue Projection FY 1986–2016**



Source: Los Angeles County Metropolitan Transportation Authority. “1986 Bond Issue Sales Tax Revenue Projection, 1986–2016” and Proposition A actual annual revenues as cited in the associated text.

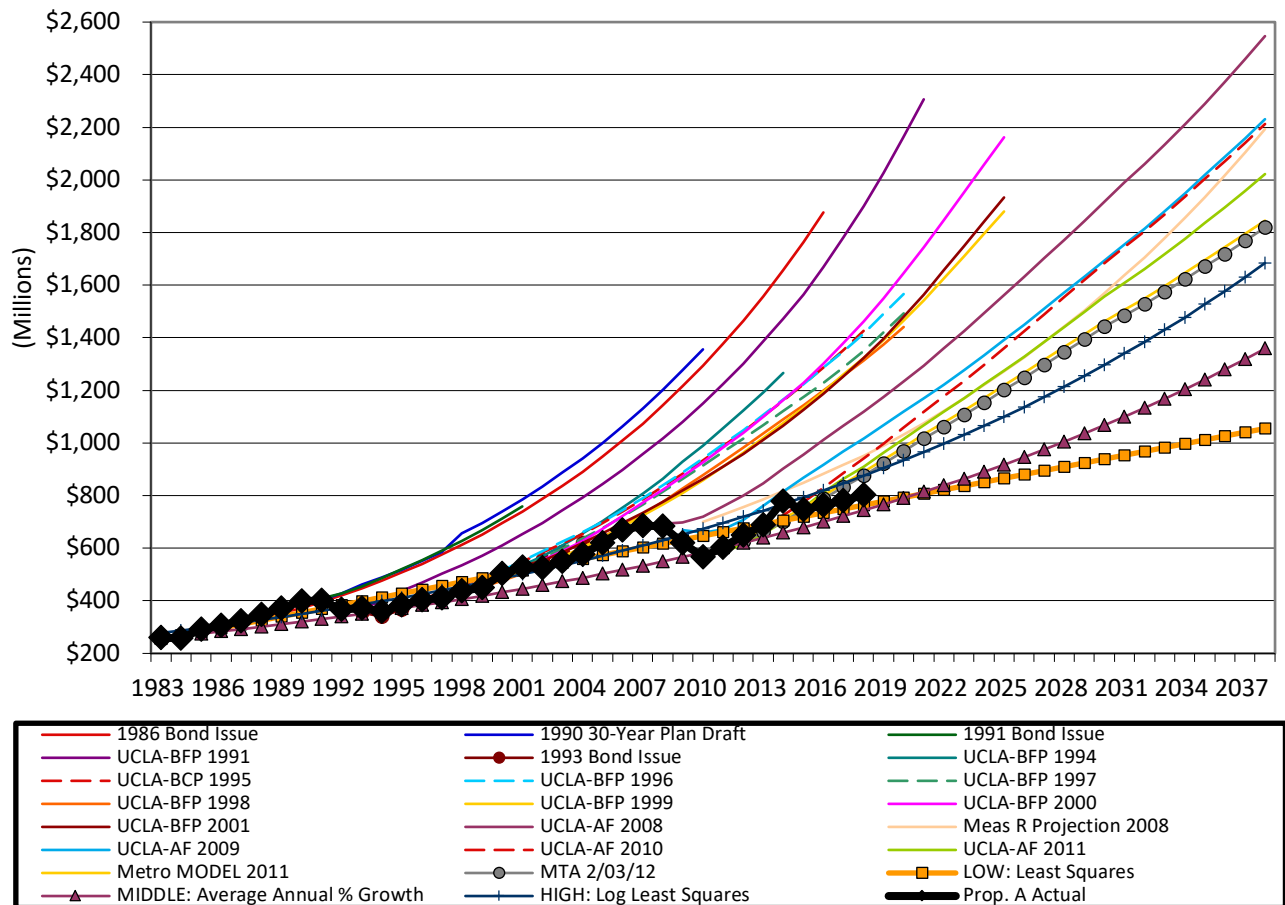
The projected average annual growth rate was 6.11%, however the actual growth rate turned out to be 3.10%. While the projections were reasonably accurate for the first six years, that period coincided with an extended period of economic growth in the county. When the 1991 downturn hit, the projected revenues began to fall further and further behind. By the final year, 2016, the projection

<sup>6</sup> Official Statement, 1986.

was 246% of actual—which turned out to be one of the more accurate projections Metro ever accepted.

As Metro was planning for the construction of the Crenshaw/LAX light rail line, it determined that the use of a U.S. Department of Transportation (DOT) TIFIA loan could be an important component of the financing for rail projects. **Figure 3** combines every Metro sales tax revenue projection onto a single graph, along with three statistical projections for Proposition A revenues, high/medium/low, based on historical data. The thick black solid line at the bottom on the left side of the graph is the historical actual sales tax receipts updated to FY18. The other 20 upward-trending curves are the Metro sales tax projections. All follow the same pattern, though the most recent projections have been reduced to reflect assumptions of lower inflation. The three lowest lines on the right are the high/middle/low projections based on the same methodology as the TIFIA projections prepared for DOT, but updated to include actual data through FY18.

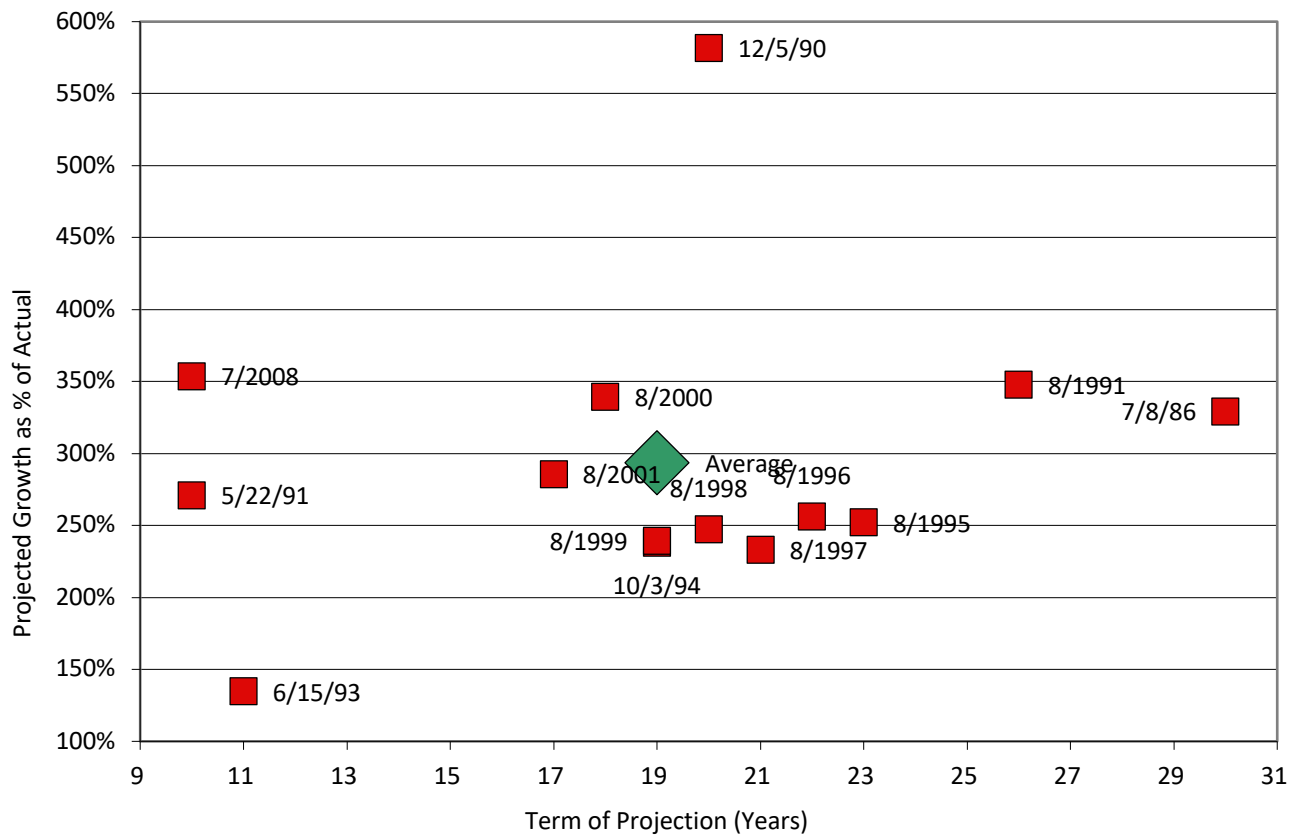
**Figure 3: Los Angeles County Sales Tax Collections and Forecasts**



Source: Projections from Bond Official Statements, Metro 30-Year Plan, UCLA Anderson School, and Metro . Prop. A Actual is as cited in the associated text. LOW, MIDDLE, and HIGH are author forecasts.

**Figure 4** summarizes Metro’s historical record for accuracy with respect to projections of sales tax revenues. As of March 2019, Metro had 13 projections for periods that extended at least 10 years. For continuing projections, the forecast for 2018 is compared with actual data. For those projections applying to periods that concluded prior to 2018, the value for the last year of the projection is compared to the actual revenues received in that year.

**Figure 4: Los Angeles County Metropolitan Transportation Authority Sales Tax Forecasts – Projected Growth as Percentage of Actual Growth**



**Source: Authors’ calculations based on Metro sales tax revenues projections and actual revenues.**

Of these 13, the best projection was 35% over actual revenues 11 years out. The forecast was this good only because it was made for a relatively short interval, and was made at the beginning of a period of relatively high sales tax growth. Actual growth was still far below the projection. The second best projection was 133% higher than actual collections 21 years out. The **average** of the 13 projections was 194% higher than actual collections 19 years out. In other words, Metro’s history is that its long-term projections of annual sales tax revenues are almost three times historical actual revenues.

Despite this poor record, Metro never revised its forecasting methods, and continued producing high sales tax revenue projections. As noted in **Brief IV**, Metro could not build all of its planned projects, in large part because sales tax revenue was insufficient. However, because of protections built into the process, the debt service payments to the holders of previously issued bonds were never at risk, so there was never any danger of an external agency forcing Metro to change its process. The downside was that Metro had to keep going back to the voters for new taxing authority; but, since most sales taxes pass in Los Angeles County, with the exception of the failure of Measure J at the polls in 2012, this was not a real impediment.

## MEASURE M

Measure M of 2016 is Metro’s most recently approved sales tax. The only data that Metro have publically provided for Measure M revenues—the “Sales Tax Revenue” estimates in **Table 1**—are provided by the Measure M Ordinance.<sup>7</sup> These are used to calculate the “Average Annual Growth Rates” shown in the last column. Since Metro has not provided year-by-year Measure M sales tax projections in the Measure M Ordinance, these rates are the basis for calculating the original Measure M expected revenues for FY19 and later years. On July 1, 2039, the Measure M sales tax rate doubles from 0.5% to 1.0% after the Measure R sales tax terminates at the end of its 30-year authorized period. This exogenous doubling is in effect two taxes being combined into one, and sustaining both indefinitely, which is one of the rationales for Measure M. The growth rates appearing in Table 1 exclude this pecuniary effect.

TABLE 1: Measure M Projected Sales Tax Revenues and Corresponding Average Annual Growth Rates, Fiscal Years 2018-2057		
Time Period	Sales Tax Revenue	Average Annual Growth Rate
2018	\$860	Not Applicable
2018-2032	\$17,265	4.04%
2033-2047	\$47,070	3.36%
2048-2057	\$57,030	2.71%
2018-2057	\$121,390	3.62%

Source: Measure M Ordinance; Authors’ calculations of growth rates

Unfortunately, the revenue growth pattern shown in **Table 1** is optimistic for several reasons:

- The data include an arithmetic error. The sum of the three time periods’ dollar amounts is \$121,365 million, which is \$25 million lower than the 40-year total of \$121,390 million shown

<sup>7</sup> Proposed Ordinance #16-01. Measure M – Los Angeles County Traffic Improvement Plan (“Measure M”). [http://theplan.metro.net/wp-content/uploads/2016/09/measurerm\\_ordinance\\_16-01.pdf](http://theplan.metro.net/wp-content/uploads/2016/09/measurerm_ordinance_16-01.pdf)

in the Ordinance. The \$25 million difference is small (0.21%), and might be a rounding error, but its presence in an important document does not inspire confidence in the agency's procedures.

- It is difficult to predict the future. Most economic modelers, including the UCLA Anderson School, which for decades produced Metro's sales tax projections, generally fine-tune projections only a few years out into the future. Beyond this, longer term forecasts generally rely on a single or small number of estimated constant annual growth rate(s).
- The three calculated growth rates for the three fiscal periods in **Table 1** vary considerably. The rate for the first period, 4.04%, is high compared to the historical average of 3.41%. Inflation was considerably higher in the early years of Measure A than it is now, and County population is growing at a slower rate than before. The rate for the second period, 3.36%, is slightly lower than the historical average of 3.41%. Because the highest assumed rate occurs during the first fifteen years of Metro's projection, the lower growth rates for the subsequent periods are applied to a higher base, which has an important effect on the projection. The rate for the third period, 2.71%, is lower than the historical average, but, because it does not come into play until 2048, it has only minor impact on the realism of Metro's projection.
- The constant annual rate of growth necessary to produce Metro's projected 40-year Measure M total is 3.62%, which is higher than the historical average of 3.41%. Even small changes in compound growth rates over long periods are important, particularly in this context. Over the first 15 years, this 0.63% difference between 4.04% and 3.41% produces a cumulative difference of \$745 million in projected revenues, or 4.5%. Over the 40 years being projected, this difference of .21% per year and the fact that the difference is incident to the first 15 years of the projection generates a cumulative difference of almost \$5.6 billion, or 4.6%.
- If there are shortfalls in early years, growth rates in later years must be significantly larger to achieve Metro's projected multi-year totals. Further, shortfalls in the early years, for which Metro is projecting its highest growth rate, mean that the spending in the early years must be reduced, pushing back the schedules for projects that cannot be started and finished as originally projected.



Table 2: Metro Measure M Projections for FY18 and FY19				
Fiscal Year	Measure M Ordinance Attachment A	Metro FY18 Adopted Budget <sup>8</sup>	Metro FY19 Adopted Budget <sup>9</sup>	Metro Most Recent Update
FY18	\$860 <sup>10</sup>	\$761.9	\$775.2	\$827.0 <sup>11</sup> (receipts)
FY19	\$895	Not Applicable	\$844	\$894.5 <sup>12</sup> (FY20)

**Table 2** shows that the Measure M sales tax revenues for its first two years have fallen short, or are anticipated to fall short, of the original Measure M projections. The FY18 Budget value increased to \$775.2 million in the FY19 Budget because Metro has, for many years, employed a practice of revising data from prior years’ budgets when these data appear in more recent budgets, and showing the revised values as Adopted Budget figures for the previous years. It may be that Metro intends this practice to provide decision makers and the public with the most recent data during reviews of budget proposals.

For some reason, in its *FY18 Adopted Budget*, Metro projected Measure M revenues as \$761.9 million, while Metro projected \$802.0 million for each of its other three half-cent sales taxes. Generally, first year sales tax revenues are very similar to the receipts for any existing taxes. The next year, it appears that Metro inserted what was then its then most current projected FY18 receipts into the *FY19 Adopted Budget*, and improperly labeled the result “*FY18 Adopted Budget*.” Whatever the reason, this change was not accounted for when Metro made the projection for FY18 in the Measure M *Ordinance*. Then, the actual FY18 receipts were 827.0, appearing to be only \$33.0 million under the projection in the *Ordinance*.

Metro’s current projection for FY 20, as shown in **Table 2**, is \$894.5 million, which is almost identical to the our reconstruction of the Measure M *Ordinance* projection, but \$29.2 million higher than the simple average of the four other projections in the Board presentation (\$911.6, \$868.1, \$843.5, and \$838.1 million). This analysis does not include the impacts of the recent Supreme Court decision, *South Dakota v Wayfair*, which allows states to require e-commerce vendors who do not have a physical presence in the state to collect sales taxes for that state and local jurisdictions, and which

<sup>8</sup> Metro, *FY18 Adopted Budget*. 36. [https://media.metro.net/about\\_us/finance/images/fy18\\_adopted\\_budget.pdf](https://media.metro.net/about_us/finance/images/fy18_adopted_budget.pdf)

<sup>9</sup> *FY19 Budget*. 28.

<sup>10</sup> *Measure M*.

<sup>11</sup> Metro, *Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2018*, page 132, [https://media.metro.net/about\\_us/finance/images/fy18\\_cafr.pdf](https://media.metro.net/about_us/finance/images/fy18_cafr.pdf)

<sup>12</sup> Metro, Board Report and Presentation to Finance, Budget, and Audit Committee, February 20, 2019, “Fiscal Year Budget Development Update,” item #09, Presentation, page 7, <https://metro.legistar.com/LegislationDetail.aspx?ID=3864536&GUID=95FC883F-DE8C-43F0-9ED7-8F4E8C55598B&Options=ID%7CText%7CAttachments%7COther%7C&Search=&FullText=1>

Metro expects will add \$10 to \$20 million per year in revenues.<sup>13</sup> This 1.1-2.2% increase appears possible, but Metro has decided to wait until there is data from collections before doing an impact projection for FY20. Many major e-commerce retailers have been collecting sales taxes for many states for some time. For example, Amazon has, for years, notified its customers that it “may” collect sales taxes for sales for every state and territory that has a sales tax.<sup>14</sup> In any event, this decision and California legislation implementing it will undoubtedly have a positive impact on Metro revenues.

Even best case, and assuming that the additional *South Dakota* sales taxes are at the top of the \$20 million range, Metro will still be short \$13 million over the first two years of Measure M sales tax collections compared to the Measure M *Ordinance* projections, and would be short \$33 million if not for a U.S. Supreme Court decision that Metro could not have been anticipating when Metro made its Measure M sales tax revenue projections in 2016.

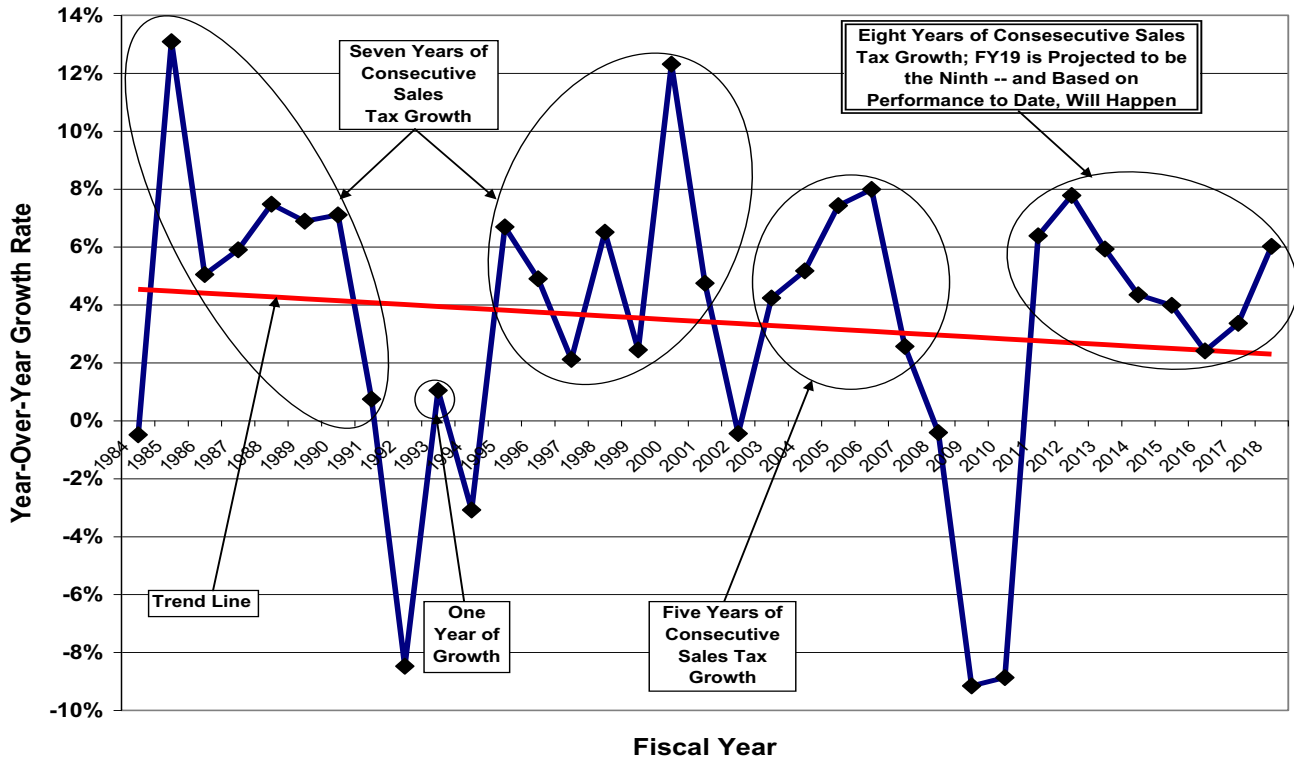
Given the high growth rates implied by the totals in the *Ordinance*, the history of year-over-year revenue growth rates becomes very important (see **Figure 5**). The solid red line shows that the long-term trend in the average annual growth rate in sales tax revenues is downward, although the decline is slight and there is much variation from year to year. More importantly, the historical record shows four periods of extended positive sales tax growth rates, one of five years (FY03-FY09), two of seven years (FY85-FY91 and FY95-FY01), and one, the current one, of eight years (FY11-FY18). Collections for the first six months of FY19 have been positive, so this last period is almost certain to extend to at least nine years. If this upward trend continues for FY20, this would be ten years of positive growth rates in sales taxes, which is three years longer than the next longest period of continuous sales tax growth in Metro's collection history.

---

<sup>13</sup> *Ibid.*, Board Report, page 6.

<sup>14</sup> Amazon, “About Tax,” <https://www.amazon.com/gp/help/customer/display.html?nodeId=468512>

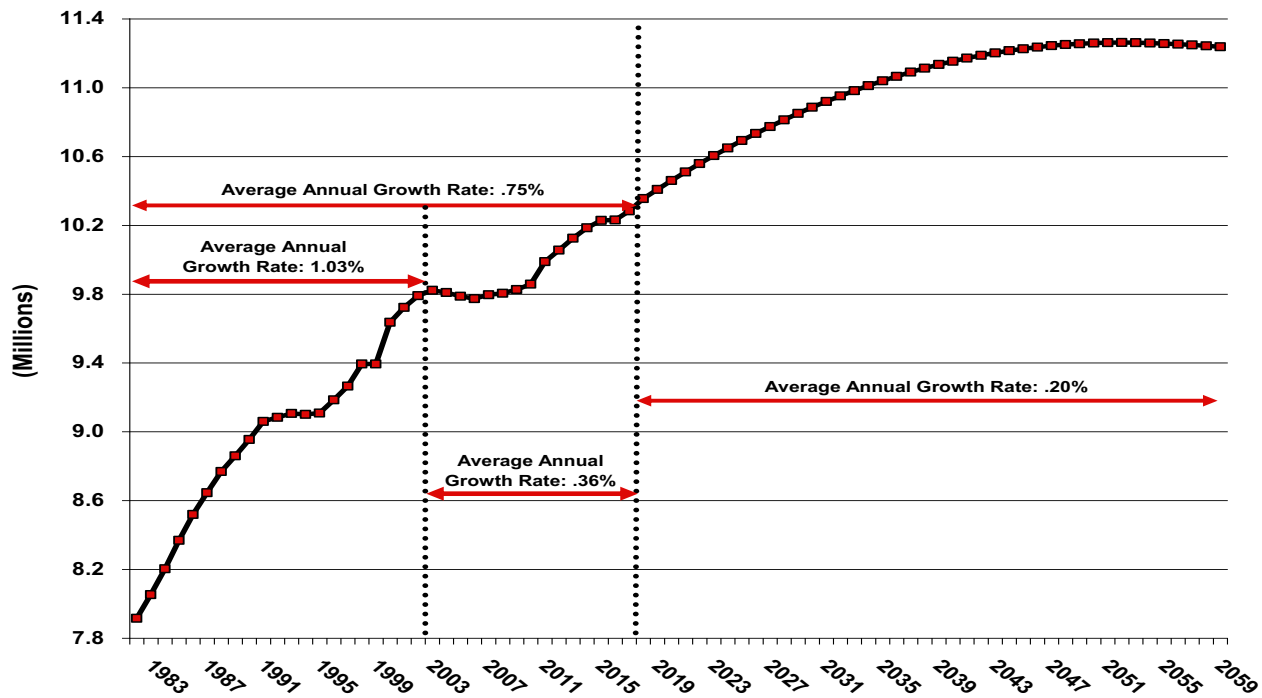
**Figure 5: Los Angeles County Metropolitan Transportation Authority, Year Over Year Measure A Sales Tax Growth Rates, FY 1984–FY 2018**



Source: Authors’ calculations from Metro data cited in the associated text.

How much longer this positive cycle will continue is a primary determinant of what will happen with respect to Measure M sales tax revenues. The current period of positive growth in sales tax revenues can not continue indefinitely.

**Figure 6: Los Angeles County Population 1983-2060**



**Source: California Department of Finance Demographic Research Unit (DMU)**

Another issue with Metro’s Measure M sales tax projections is the importance of population growth as a driving factor in sales tax growth rates. Los Angeles County’s population growth rate has slowed significantly since Metro’s first full year of sales tax collections in FY83, and is projected to slow further in the future. As shown in **Figure 6**,<sup>15</sup> County population grew faster in the earliest years of Metro sales taxes, at an average annual rate of 1.02% per year from 1983 to 2004, and then slowed to an average annual rate of only 0.36% from 2004 to 2019. Overall, this is an average rate of 0.75% per year from 1983 to 2019. The California Department of Finance Demographic Research Unit (DMU) projects a rate of 0.20% per year for 2019-2060, which is less than one-fifth of the rate experienced from 1983 to 2004. This lower rate of population growth means relatively fewer people in Los Angeles County making purchases, and lower sales tax revenues.

In fact, while the DMU projected County population growth of just over half of one percent for 2017-18 and 2018-19, the Census Bureau reported actual declines in County population for these years, -

<sup>15</sup> State of California, Department of Transportation, Demographic Research Unit, E-1 “Cities, Counties, and the State Population Estimates with Annual Percent Change,” P-1, “State Population Projections – Total Population by County, 2010-2060,” <http://www.dof.ca.gov/Forecasting/Demographics/>

.02% and -.13%, respectively.<sup>16</sup> While it would be a mistake to read too much into short time period results, it is important to be aware that population growth, like economic growth, is never guaranteed.

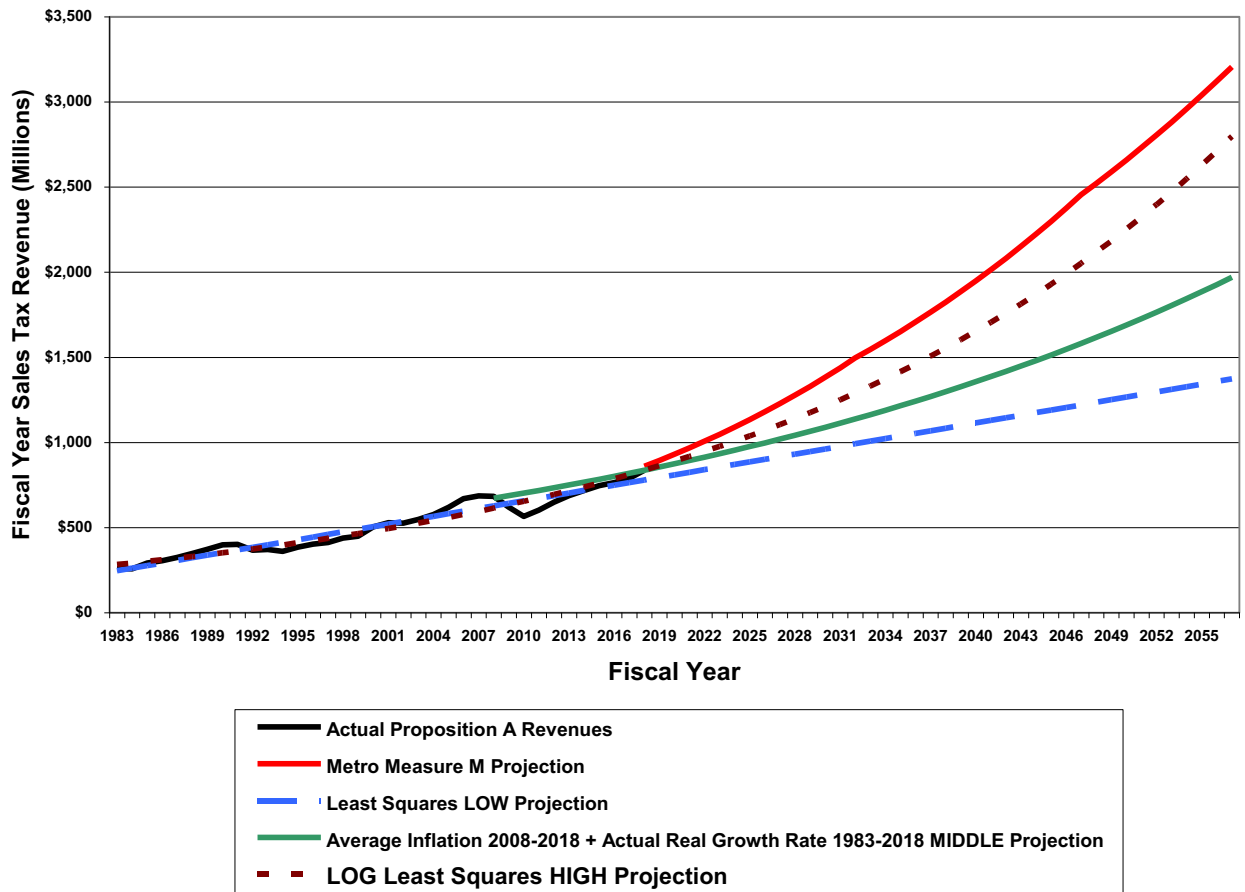
The solid black line at lower left of **Figure 7** is, once again, the historical record for Proposition A sales tax revenues. Actual collections 1983-2018 grew from \$259 million to \$837 million, a total average annual growth rate of 3.41%. Recall that, of this, 2.85% was due to inflation, and 0.55% was real growth. The solid red line is the MTA Measure M 0.50% sales tax revenue projection based on the three periodic growth rates in Table 2 and projects \$3.206 billion in associated sales tax revenues in 2057 per 0.5% sales tax. The other three lines are high/middle/low projections for the same 40-year period. These other three projections are based on the same statistical procedures as in **Figure 3**. The most optimistic of these, a LOG least squares regression estimate, projects revenues of \$2.79 billion in 2057. The middle projection combines the historic real growth rate of 0.55% with the average inflation rate for the last ten years, 1.66%, to project revenues of \$1.97 billion in 2057. Given the history of Metro sales tax projections, Metro's Measure M sales tax projection is not credible. Actual receipts will be considerably below what the agency is forecasting.

Recall that Measure M's sales tax rate doubles to 1.0% in FY40, when the period for the Measure R 0.50% sales tax expires. This reclassification of revenues is not displayed in **Figure 7**, which provides projections only for the revenues collected based on the initial 0.50% tax rate associated with Measure M.

---

<sup>16</sup> Jonathan Lansner, "Los Angeles County loses 13,241 residents, 4<sup>th</sup> biggest drop among largest U.S. counties," *Orange County Register*, April 18, 2019, <https://www.dailynews.com/2019/04/18/los-angeles-county-loses-13241-residents-4th-biggest-drop-among-largest-u-s-counties/>

**Figure 7: Los Angeles County Metropolitan Transportation Authority Actual (FY 1983–FY 2018) Measure A and Projected (FY 2018–FY 2057) Measure M Sales Tax Revenues**



Source: Authors’ estimates of average actual and projected growth based on data from Los Angeles County Metropolitan Transportation Authority, Proposition A & B and Measure R sales tax revenue, and Measure M revenue projections.

The quality of Metro’s sales tax revenue forecasts for Measure M is representative of its projections for all of the agency’s sales tax revenues, the recast Measure R revenues included. Accounting for the July 1, 2039 doubling of the Measure M sales tax rate to 1%, Metro projects full Measure M revenues to top out at approximately \$6.412 billion in 2057. The high range estimation procedure produces a (1.0% sales tax rate) projection of \$5.594 billion for 2057, and the mid-range procedure produces a projection of \$3.940 billion. The low range estimate, based on a least square regression of the actual data, produces a projection of only \$2.7467 billion in 2057.

Even the smallest of these shortfalls is large. The coming Measure M shortfall is the tip of a fiscal iceberg. Metro generally assumes that all five of its sales taxes generate the same or proportionate revenues, so, if Measure M revenues are projected to be \$100 million too high in a future year, after factoring in the impacts on the other three half-cent and one quarter-cent sales tax, the total impact

would be a \$450 million shortfall per year for the period prior to FY40 before the Measure M sales tax rate doubles.

The coming shortfall in Metro sales tax revenues will impact Metro's ability to complete the Measure M and *28 by 2028* projects, which will impact Metro's programs, including its bus transit program and transit dependent riders.

## CONCLUSIONS

1. Sales tax revenues are budgeted to account for 57% of the agency's \$6,611 million FY19 budget, or \$3,798 million for FY19. Sales tax revenues are of central importance to Metro's financial plans.
2. Real, inflation-adjusted growth in Metro's sales tax revenues has been very small. Real revenue growth per capita has been negative for decades.
3. Metro now in the midst of the longest period of continuous year-over-year growth in sales tax revenues since Metro began collecting Proposition A revenues in 1983. This run must end sometime, particularly since Los Angeles County population growth has slowed considerably relative to the period in which Metro sales tax revenues grew most quickly, and is projected to drop further in the future.
4. Metro has consistently over-estimated sales tax revenues almost from their inception, rendering the agency's long-term revenue forecasts not credible.
5. Large revenue shortfalls from all of Metro's total of 2.25% in sales taxes are looming.