



# STUDY SESSION

Joint Study Session of  
Valley Metro RPTA and Valley Metro Rail

Date:  
November 19, 2020

Starting Time  
10:00 a.m.

Location:  
Valley Metro  
VIA Webex  
Phoenix

**If you require assistance accessing the meetings on the 10<sup>th</sup> floor, please go to the 14<sup>th</sup> floor or call 602.262.7433.**



# Study Session Notice & Agenda

November 12, 2020

**Joint Study Session Agenda**  
**Valley Metro RPTA and Valley Metro Rail**  
**Thursday, November 19, 2020**  
**10:00 a.m.**  
**Via Webex**

Study sessions provide a less formal setting for the Boards of Directors to discuss specific topics, at length, with each other and Valley Metro staff members. Work study sessions provide an opportunity for staff to receive direction from the Boards and for the public to observe the discussions.

1. Regional Transportation Plan: Transit Project Submittals by Cities

To provide information about technical analysis completed for the Maricopa Association of Governments (MAG) on the transit projects submitted by cities for the Regional Transportation Plan (RTP) update.

Qualified sign language interpreters are available with 72 hours notice. Materials in alternative formats (large print or flash drive) are available upon request. For further information, please call Valley Metro at 602-262-7433 or TTY at 602-251-2039. To attend this meeting via teleconference, contact the receptionist at 602-262-7433 for the dial-in-information. The supporting information for this agenda can be found on our web site at [www.valleymetro.org](http://www.valleymetro.org).



# Study Session Background

**DATE**

November 12, 2020

**AGENDA ITEM 1****SUBJECT**

Regional Transportation Plan: Transit Project Submittals by Cities

**PURPOSE**

To provide information about technical analysis completed for the Maricopa Association of Governments (MAG) on the transit projects submitted by cities for the Regional Transportation Plan (RTP) update.

**COST AND BUDGET**

N/A

**RECOMMENDATION**

This item is presented for information only.

**BACKGROUND | DISCUSSION | CONSIDERATION**

Proposition 400 was approved by voters in November 2004. It sets up a county-wide 1/2 cent sales tax to support transportation project in the region, as outlined in the MAG RTP. Approximately 1/3 of that half cent tax is dedicated to public transportation projects. The sales tax sunsets in December 2025. Before that time, voters will be asked to extend this tax. As a part of that process, the development of a new RTP is underway at MAG.

In January 2020, MAG opened a portal to which the cities were invited to submit their requests for regional transportation projects. More than 300 of the 1,300 projects submitted were transit projects. MAG asked Valley Metro staff to synthesize the transit projects submitted.

Valley Metro staff categorized the projects into the following five categories and identified potential gaps as a part of the process.

- Improve Transit Performance
- Expand Regional Service Structure
- State of Good Repair
- New Technologies & Service Types
- Expand High-Capacity Transit

Staff will provide a more detailed presentation of findings.



### **STRATEGIC PLAN ALIGNMENT**

This item relates to the following goals and strategies in the Five-Year Strategic Plan FY 2016 – 2020:

- Goal 1: Increase customer focus
- Goal 2: Advance performance-based operations
- Goal 3: Grow transit ridership
- Goal 4: Focus on economic development, regional competitiveness and financial resources

### **COMMITTEE ACTION**

RTAG: October 19, 2020 for information

TMC/RMC: November 4, 2020 for information

Boards of Directors: November 19, 2020 for information

### **CONTACT**

Wulf Grote

Director, Capital and Service Development

602-322-4420

[wgrote@valleymetro.org](mailto:wgrote@valleymetro.org)

### **ATTACHMENT**

Regional Transportation Plan: Project Submission (PowerPoint presentation)

# MEMORANDUM #3



## Transit Funding Policy

The purpose of this memorandum is to review the existing regional transit operating funding policy, analyze transit performance outcomes, and present industry best practices pertaining to transit operating funding distribution policies used by peer agencies.

September 25, 2020



## Executive Summary

As part of the planning efforts for the new Regional Transportation Plan (RTP) and extension of Proposition 400, the region will need to determine the desired vision for the regional transit system. More specifically, a decision on the approach to delivering and funding regional bus service operations must be made. Generally, there are three ways to provide transit operating assistance:

- 1) Long-range, plan-based approach where the region commits to service types, or routes with certain characteristics or that serve specific locations.
- 2) Funding-based, revenue-sharing approach where allocations are fixed long-term and resources are distributed to jurisdictions.
- 3) Formula-based approach where transit operating subsidies are allocated based on actual transit performance data and are responsive to transit demand, and current and future market conditions (e.g., demographic, population and economic trends).

The 2003 RTP and Proposition 400 Program initially took a plan-based approach, with regional funding identified for regional bus operations (bus service and express/commuter), bus capital, ADA, and light rail transit capital investments. Prior to Proposition 400, the performance and quality of bus service varied across different routes and jurisdictions; the RTP sought to remedy this by committing regional funding to enable a consistent level of service for key routes—known as “supergrid routes”—across the region. In response to the fiscal constraints caused by the Great Recession, Transit Life Cycle Program (TLCP) policy moved away from the plan-based program to a funding-based approach maintained through Jurisdictional Equity (JE) funding allocations.

The Maricopa Association of Governments (MAG) *Transit Funding Policy* white paper is intended to outline how implementation of the 2003 RTP/Proposition 400 bus service has occurred. The goal is to inform decisions about the future regional bus network, as well as the role of the region and local communities in funding that network. Key take-aways include:

- The TLCP is the first and only formally approved policy document that codified jurisdiction-level allocations of funding. The JE policy allocations do not tie back to the 2003 RTP nor voter approved Proposition 400 election materials and omit the rail component of the transit plan.
- The JE allocations are static and now disproportionate to both population and the share of transit service outputs by sub-region.
- Local funding plays a very important part in the story of transit in the Valley. The regional sales tax – even if it were to be entirely dedicated to transit – is insufficient to fund a comprehensive regional transit system.
- Of the 60 local bus routes in the Valley Metro system in 2019, only six were funded entirely through Proposition 400, 23 were partially funded through Proposition 400, and 31 were funded entirely through local sources.

Key policy questions related to transit funding policy are detailed on page 30.

## 1. Introduction

As part of the Maricopa Association of Governments (MAG) Regional Transportation Plan (RTP) development process and preparation of an investment strategy as part of the sales tax extension, there is value in documenting the history of Proposition 400 policies, assessing how well policies have been achieving intended outcomes, and identifying where policy shifts merit consideration. The purpose of this memorandum is to review the outcomes and implications of funding policies in the Transit Life Cycle Program (TLCP). A central element of the TLCP is the Jurisdictional Equity (JE) policy, which sets fixed operating funding allocations for regional fixed route, express, and paratransit bus service across multiple MAG member agencies within Maricopa County.

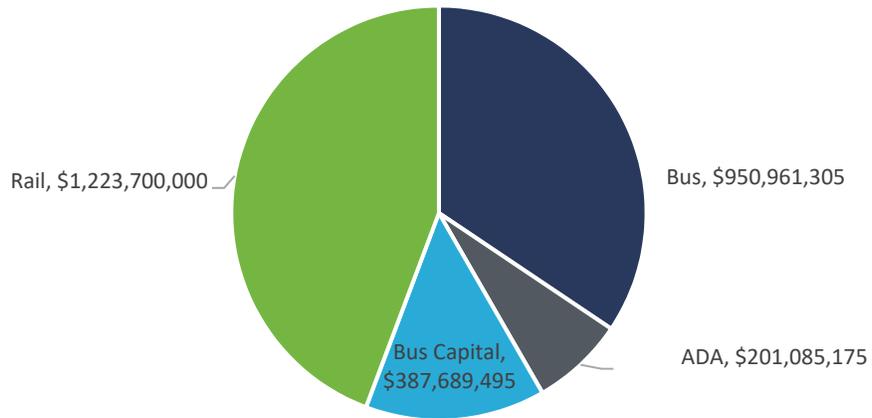
This memorandum presents transit operating funding distribution approaches used in other metropolitan regions and concludes with a discussion of next steps in exploring future regional transit funding options.

## 2. Public Transportation Fund (PTF) Policy Background

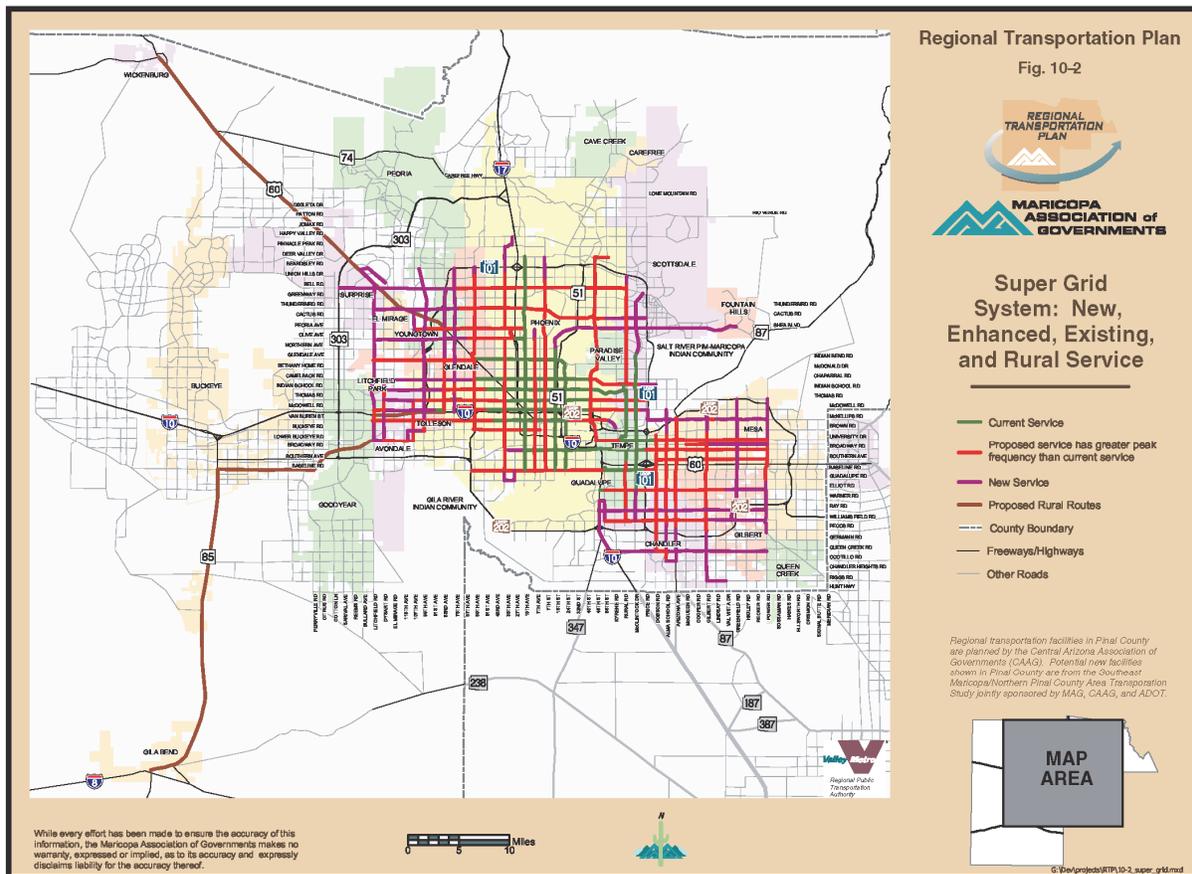
The 2003 RTP, which became the basis for Proposition 400, allocated a fixed percentage (33.3%) of the region's half-cent sales tax to fund the transit element of the plan. This allocation, known as the Public Transportation Fund (PTF), was codified in state statute as part of the enabling legislation for the Proposition 400 ballot initiative. In addition to the half-cent sales tax, the 2003 RTP also allocated the region's Federal Transit Administration (FTA) 5307 funding, FTA 5309 funding, and a portion of the region's Federal Highway Administration (FHWA) Congestion Mitigation and Air Quality (CMAQ) funds to the transit element of the plan.

As depicted in **Figure 1**, the transit element of the 2003 RTP/Proposition 400 program ('2003 RTP') was comprised of multiple components, including funding for regional bus operations. Depicted in **Figure 2**, the 2003 RTP adopted a plan-based approach featuring a system of key regional grid bus routes termed "supergrid routes." Prior to the 2003 RTP, the performance and quality of local bus service varied across different routes and jurisdictions, due in large part to unevenness in local funding from jurisdiction to jurisdiction. The 2003 RTP sought to address this issue by committing regional funding to provide a more consistent level of service on key routes across jurisdictions.

**Figure 1: 2003 RTP/Proposition 400 Transit Program (PTF Only)**



**Figure 2: 2003 RTP "Supergrid" Routes**



A key component of the 2003 RTP was a multi-phased plan featuring supergrid routes to be phased in at different periods within the Proposition 400 funding horizon<sup>1</sup>. In some cases, existing service pre-dating Proposition 400 was funded immediately, while new routes were planned to initiate later in the funding horizon, some as late as Fiscal Years (FY) 2021 - 2025 (Phase IV). In addition to operating assistance, the 2003 RTP also allocated regional funding towards bus capital investments such as bus replacements, bus stop enhancements, and operations/maintenance facilities to support supergrid routes.

The transit element of the 2003 RTP also included express bus and ADA paratransit services. Similar to the supergrid route concept, several express (commuter) bus routes—varying in service frequency and span of service—were identified for implementation. The 2003 RTP also provided funding for ADA paratransit services, which amounted to seven percent of the total PTF fund, as well as funding for the capital construction of the region’s light rail system. It is important to note that the light rail component of the TLCP is not discussed in detail as part of this technical memorandum.

Valley Metro Regional Public Transit Authority (RPTA) was given the primary responsibility of implementing the operating and capital components of the transit element identified in the 2003 RTP. Upon voter approval of the Proposition 400 in November 2004, Valley Metro began development of the TLCP, which functions as the financial management tool for implementation of the transit element of the RTP.

In June 2005, the RPTA Board of Directors adopted the TLCP Funding Plan Model, which provided project-level specifications for the operating and capital components as reflected in the 2003 RTP.<sup>2</sup> In October 2005, the Valley Metro RPTA Board of Directors approved the Transit Life Cycle Policies (TLCP Policies).<sup>3</sup> The TLCP Policies identified the following six guiding principles as the framework for a consistent regional implementation process for the transit element of the RTP:

- Guiding Principal 1: A defined and consistent process will be established to implement the voter-approved plan (Proposition 400 maps and capital improvements).
- Guiding Principal 2: A defined and consistent process for Plan amendments and changes will be established.
- Guiding Principal 3: Funding allocations will be regularly monitored and managed.
- Guiding Principal 4: A defined and consistent process will be established to ensure that legislated compliance audit, reporting, and performance requirements are met.

<sup>1</sup> 2005 Annual Report on the Status of the Implementation of Proposition 400

<sup>2</sup> 2007 RPTA Regional Transportation Plan Evaluation (HDR|S.R. Beard & Texas Transportation Institute)

<sup>3</sup> 2007 RPTA Regional Transportation Plan Evaluation (HDR|S.R. Beard & Texas Transportation Institute)

Guiding Principal 5: Budgeting and accounting systems will be established to manage Public Transportation Funds and monitor and report results.

Guiding Principal 6: Jurisdictional Equity will be monitored annually over 20 years.

### 3. History of Jurisdictional Equity (JE)

The 2003 RTP divided funding among the region’s three modes – arterial streets, freeways/highways, and transit – and included all regional revenue sources. One of the key evaluative criteria adopted in the 2003 RTP development process was geographic balance of investments across the region. Attainment of this was applicable to the balance of regional revenue sources across subregions (east, central, west). It is important to note that the 2003 RTP and corresponding Proposition 400 program did not assess, nor try to achieve, a balance of investments on a jurisdiction-by-jurisdiction basis. The benefits of regional transportation investments cross jurisdictional boundaries and because the inherent value is regional, the investment cannot in turn be valued proportionally to a jurisdiction.

The TLCP is the first and only formally approved policy document that codified jurisdiction-level allocations. The original TLCP JE allocations, which have remained fixed in the current policy, were derived from planning-level spreadsheets completed prior to the approval of the RTP; these JE allocations did not reflect the service or project locations (by jurisdiction) identified in the 2003 RTP, nor the voter-approved Proposition 400 election materials.<sup>4</sup> Further, the calculations for JE focused only on the bus component of the TLCP, not the rail component.

In 2006, Valley Metro RPTA commissioned a detailed RTP evaluation to assist in the program’s implementation. The study, conducted by HDR/S.R. Beard & Associates and Texas A&M Transportation Institute, found that the overall transit component of the RTP was financially balanced, but that adherence to the percent of funding available per community was insufficient to implement service or construct facilities identified in the plan, highlighting a direct conflict between TLCP Policies Guiding Principal 1 and Guiding Principal 6.<sup>5</sup> This tension, which illustrates the limitations of using planning-level cost estimates in developing the implementation plan, has resulted in unintended outcomes that raise questions about the ongoing viability of the current policy approach. In practical terms, jurisdictions with operating and capital costs greater than the planning-level averages would have never been able to fully implement the transit component of the 2003 RTP. Conversely, jurisdictions with actual transit operating and capital costs less than estimated would have been able to fully implement 2003 program with excess funding remaining.

### 4. TLCP Policy Revisions

While there was extensive discussion during the initial TLCP development surrounding Guiding Principle #6 (Jurisdictional Equity) and how it would be applied to the management and implementation of the TLCP, the lack of clarity on the plan-based approach left open the question of how TLCP Policies would be

<sup>4</sup> 2007 RPTA Regional Transportation Plan Evaluation (HDR|S.R. Beard & Texas Transportation Institute)

<sup>5</sup> 2007 RPTA Regional Transportation Plan Evaluation (HDR|S.R. Beard & Texas Transportation Institute)

implemented. In 2008, the Great Recession forced significant service cuts to core transit routes, and shifted the policy emphasis in the 2009-2010 TLCP to a fixed allocation-based funding approach. This change was codified with revisions to the TLCP Policies, changing Guiding Principal 6 from, “Jurisdictional Equity will be monitored over 20 years” to “Jurisdictional Equity will be maintained.” MAG staff opposed the TLCP Policy revisions, as it represented a shift away from a RTP’s plan-based approach.

The shift to a funding-based plan froze each jurisdiction’s PTF share to those specified in **Table A – Jurisdictional Equity Allocation**. This policy revision is contrary to the initial position of regional policymakers (who developed the 2003 RTP and Proposition 400 program) to reject a funding-based, revenue sharing model. The shift to a JE model highlights several policy issues:

- The basis of the revenue-sharing allocation model is incomplete and is not reflective of the 2003 RTP and Proposition 400 ballot initiative.
- The shift to a revenue-sharing allocation model for the transit element occurred after the passage of the 2003 RTP/Proposition 400 program.
- A revenue-sharing allocation model disincentives cross-jurisdictional regional service, like express (commuter) bus, as agencies are focused on utilizing their allocation to deliver supergrid and localized service within their jurisdictional boundaries.

Given the significant changes in population and development growth throughout the region since the establishment of these distributions, it is important to reassess the implementation of JE to better understand the extent to which the respective transit service outputs, both sub-regionally and by jurisdiction, align with these fixed funding allocations.

## 5. Review of Jurisdictional Equity Policy Outcomes

The purpose of this section is to review outcomes and issues pertaining to the JE policy in the TLCP. This is done by comparing the **Table A – Jurisdictional Equity Allocation** shares against recent data on transit service produced in the MAG region. The objective is to assess the relationship between funding and service output levels to better understand how well the JE policy meets its original intent. It is important to reiterate: JE policy applies only to the bus program, not the rail program, of the TLCP.

Since the implementation of Proposition 400 in 2006, there has been substantial population growth in the MAG region, which in turn gives rise to emerging transit markets and changes in demand within the regional transit network. Outcomes are important because the JE policy, which fixes PTF allocations at 2005 levels, has not adjusted over time as the regional transit network has adapted, or needs to adapt, to expanding transit demand.

This section examines the relationship, both by sub-region and jurisdiction, between the Table A shares in the JE policy and transit service output, which are characterized in terms of vehicle revenue miles and annual passenger boardings. These two variables were selected because they are the commonly used in characterizing the basic units of transit output.

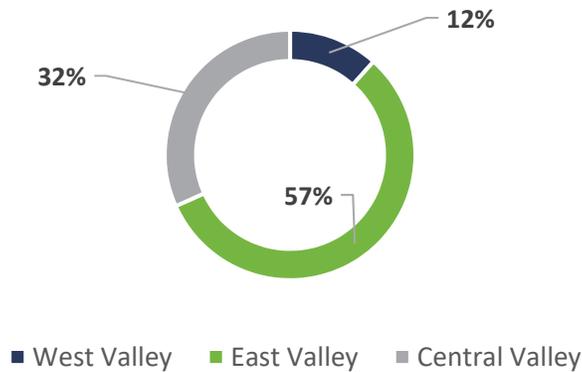
Several key transit performance indicators (service effectiveness, measured by passengers per service mile, and cost effectiveness, measured by operating cost per boarding) were used to assess how the variance between service output levels and fixed funding allocations result in different performance outcomes by sub-region, jurisdiction, and route.

The data presented in Section 5 is further shown in **Appendix A**, which is sourced from Valley Metro and the National Transit Database (NTD) transit data expressed by jurisdiction. Performance metrics for each jurisdiction are calculated to allow for comparisons with the allocated percentages documented in **Table A – Jurisdictional Equity Allocation** and summarized in **Figure 3**. FY 2019 data is used in the service performance evaluation to exclude the impacts of COVID-19. The FY 2019 data for operating costs is not available for this analysis.

**Table A –Jurisdictional Equity Allocation**

Jurisdiction	Bus PTF % Share
Avondale	1.538%
Buckeye	0.073%
Carefree	0.000%
Cave Creek	0.000%
Chandler	9.463%
El Mirage	0.226%
Fountain Hills	0.085%
Gila Bend	0.136%
Gilbert	6.117%
Glendale <sup>(2)</sup>	5.679%
Goodyear	0.259%
Guadalupe	0.007%
Litchfield Park	0.227%
Maricopa County <sup>(1)</sup>	0.652%
Mesa	19.441%
Paradise Valley	0.535%
Peoria	2.217%
Phoenix	31.735%
Queen Creek	0.061%
Scottsdale	10.407%
Surprise	0.232%
Tempe	10.564%
Tolleson	0.308%
Wickenburg	0.022%
Youngtown	0.016%
<b>Total</b>	<b>100.000%</b>
<b>West Valley</b>	<b>11.585%</b>
<b>Central Valley</b>	<b>31.735%</b>
<b>East Valley</b>	<b>56.680%</b>

**Figure 3: Jurisdictional Allocation by Sub-region**

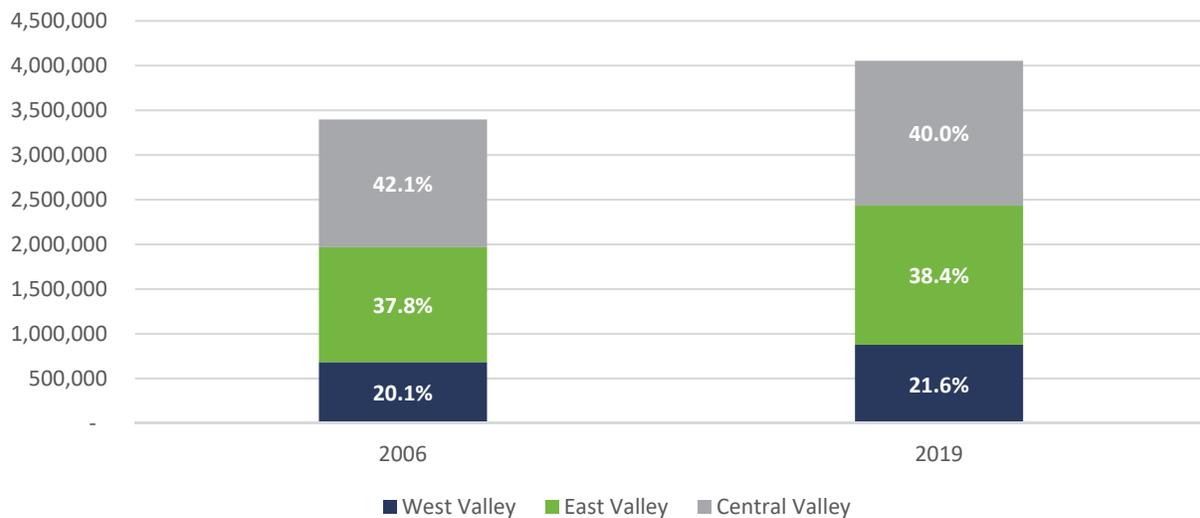


## 5.1 Jurisdictional Equity Policy Outcomes by Sub-region

### 5.1.1 Population

The total population of jurisdictions receiving MAG PTF funding has grown from 3.4 million to 4.1 million between 2006 and 2019, as shown in **Figure 4**.<sup>6</sup> Overall, the East Valley remains the sub-region with the largest share of the region’s population, but a higher proportion of population growth is in the West Valley, as indicated by the increase in population share from approximately 20 to 22 percent.

**Figure 4: Population Growth by Sub-region in Maricopa County**



As shown in **Table 1**, West Valley population growth increased approximately 28 percent between 2006 and 2019. By comparison, the East Valley’s population grew approximately 21 percent and the Central Valley/City of Phoenix population grew approximately 13 percent.

**Table 1: Population Growth of Maricopa County by Sub-region**

	2006	2019	Growth Percentage
<b>West Valley</b>	683,684	876,600	<b>28.22%</b>
<b>East Valley</b>	1,292,354	1,566,500	<b>21.21%</b>
<b>Central Valley</b>	1,428,315	1,620,000	<b>13.42%</b>
<b>Total</b>	3,404,353	4,063,100	<b>19.35%</b>

<sup>6</sup> Population figures and breakdowns are reflected as the populations of jurisdictions currently receiving PTF allocations

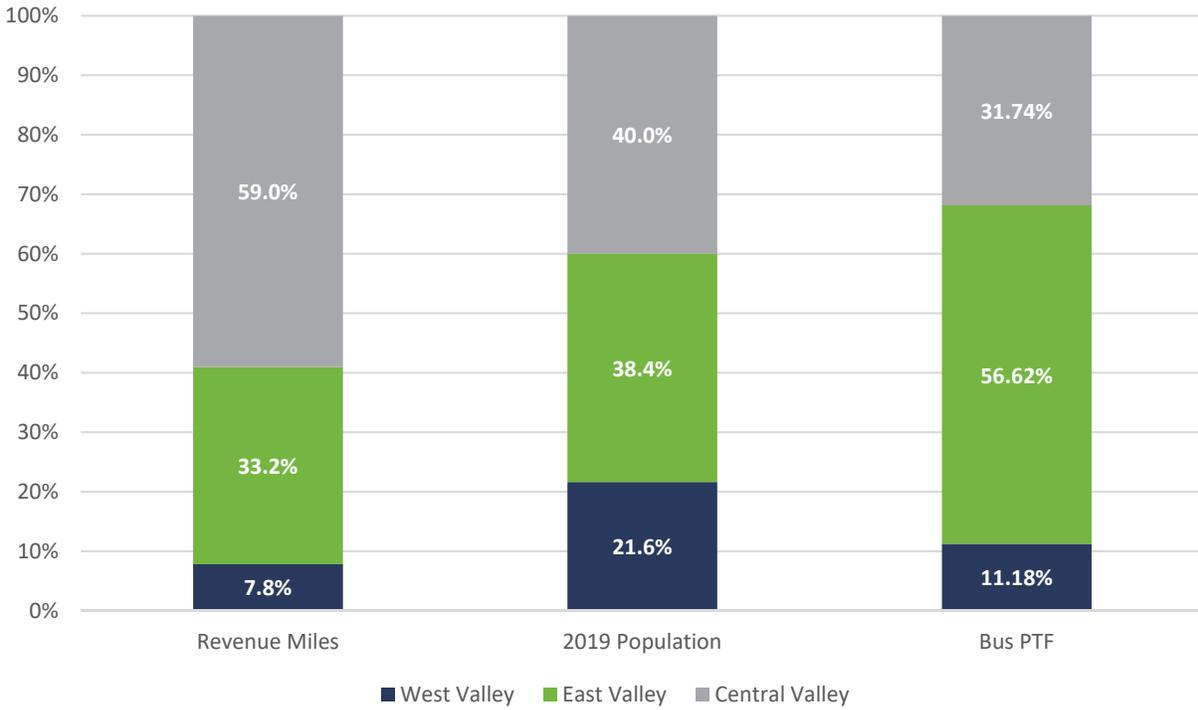
When population growth trends and current population shares are compared to the 2006 sub-regional splits, there are several notable observations. While the proportion of PTF funding allocation for the West Valley remains fixed at 12 percent, the overall population increased approximately 28 percent and the proportional population share has increased from approximately 20 to 22 percent. Additionally, the East Valley's population has grown 21 percent, increasing its regional population share to approximately 38 percent. Lastly, although the Central Valley/City of Phoenix sub-region has experienced growth, there is a slight proportional decline of the regional population share.

### 5.1.2 Service Performance

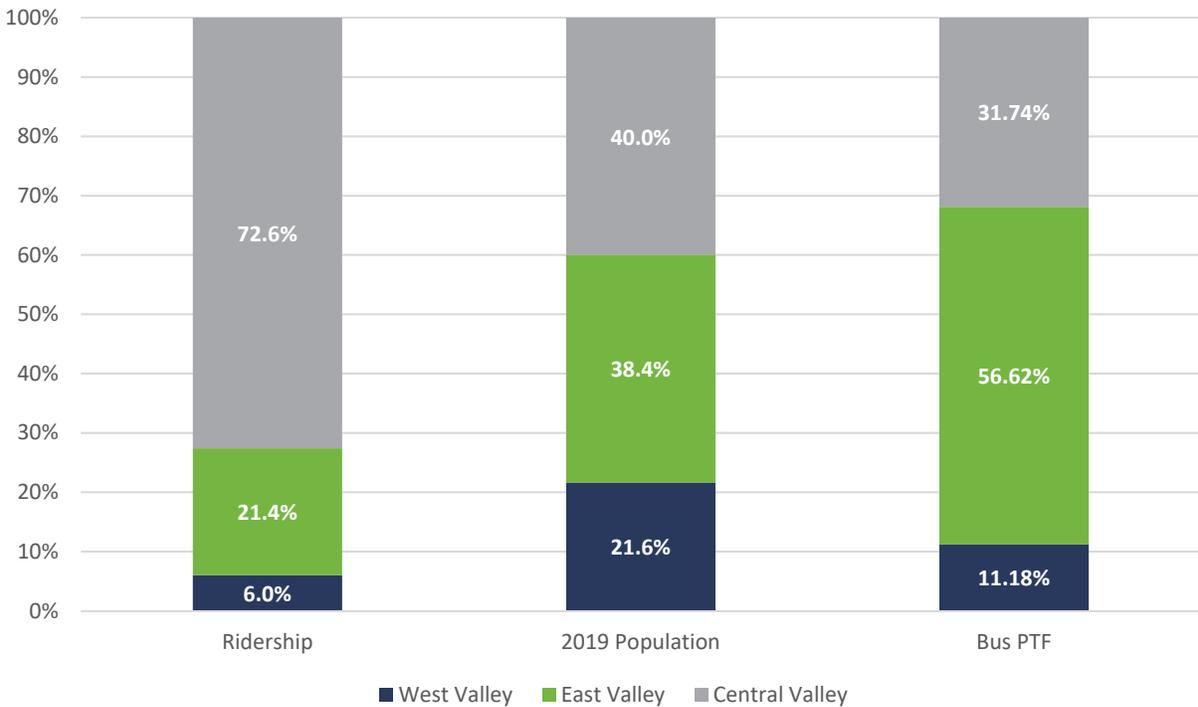
**Figure 5** and **Figure 6** compare two performance metrics: 2018 population distribution and JE allocation by sub-region. Below are general observations about the change in population, vehicle revenue miles and ridership, as they relate to the fixed JE shares in **Table A – Jurisdictional Equity Allocation**:

- The Central Valley/City of Phoenix accounts for 38 percent of the regional population served by transit, operates 59 percent of the regional revenue miles, and generates 72 percent of the region's bus ridership; however, it receives 32 percent of the regional transit fund exclusive of any rail transit funding. Under both transit service performance metrics, the Central Valley/City of Phoenix does not receive proportional PTF. *The service outputs from the City of Phoenix are funded through local funding rather than the PTF, which are used for paratransit and express (commuter) bus services.*
- The East Valley generates 33 percent of regional revenue miles and 21 percent of regional ridership but receives 57 percent of the PTF allocation exclusive of any rail transit funding.
- Both transit service outputs provided by the West Valley are approximately six to eight percent. Its population has grown to 21.6 percent of the regional population. While the West Valley PTF receipt is a near equal share to its service outputs, the trend in population growth suggests that there may be a growing equity disparity from a sub-regional standpoint.

**Figure 5: Revenue Miles, Population, and Jurisdictional Equity Allocation Comparison by Sub-region**



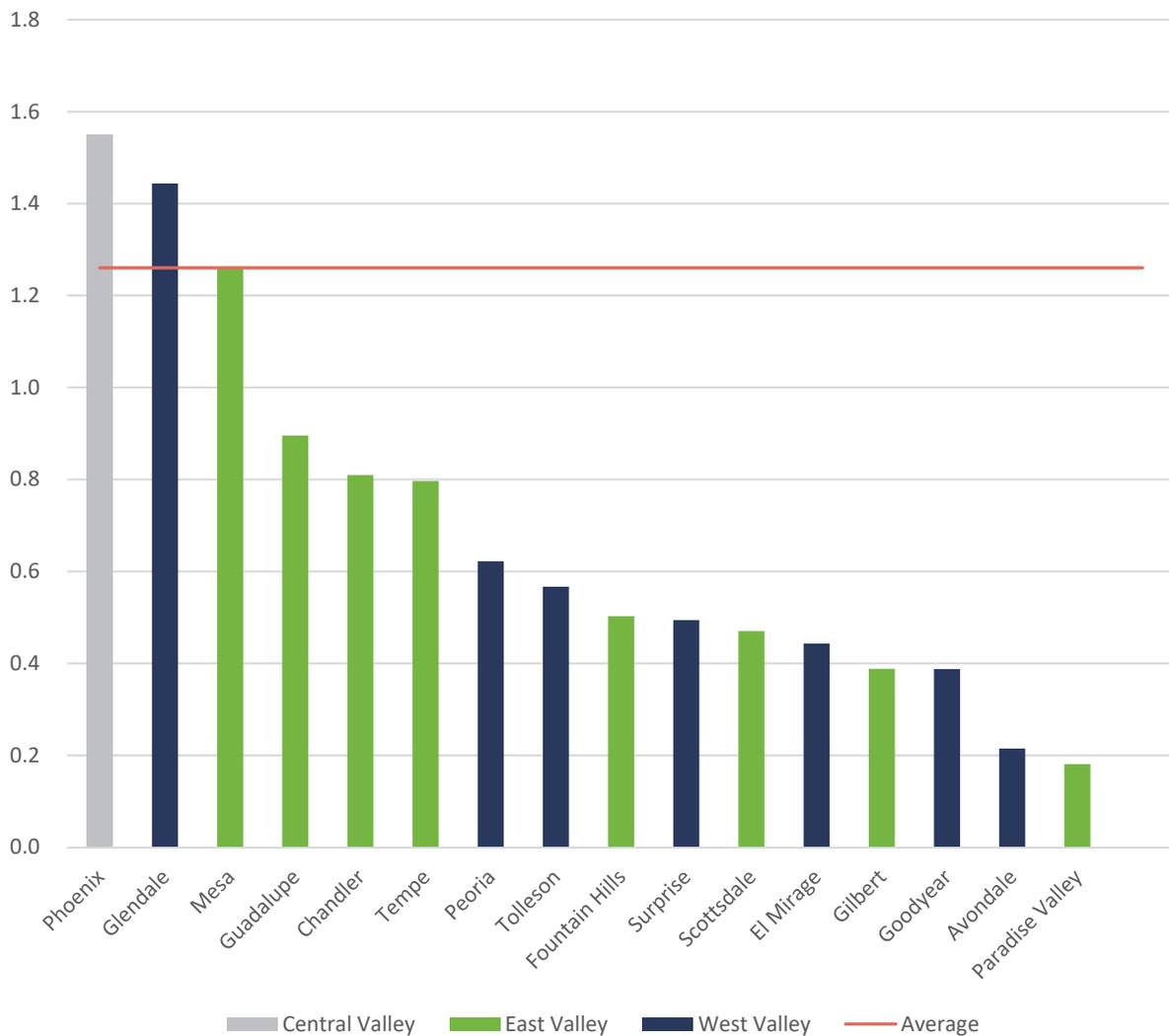
**Figure 6: Ridership, Population, and Jurisdictional Equity Allocation Comparison by Sub-region**



### 5.1.3 Service Productivity

Measuring service productivity (ridership divided by revenue miles) combines the two primary performance outputs into a single measurement. Identifying the level of productive unit of service output directly relates to attracting transit customers. **Figure 7** shows the average service productivity in boardings per vehicle revenue mile for all routes in each jurisdiction. The red line indicates the regional average boardings per revenue mile. The regional average is inflated due to the expansiveness of the City of Phoenix service outputs, accounting for 60 - 70 percent of the regional service outputs. The City of Phoenix is the highest followed by the City of Glendale. All other jurisdictions are performing below the average, due in part to the magnitude of City of Phoenix service. In general, jurisdictions in the East Valley have slightly higher service productivity.

**Figure 7: Service Productivity by Jurisdiction**



Note: The City of Buckeye was excluded from this figure because there is only one express route recorded, therefore it is not comparable to other jurisdictions.

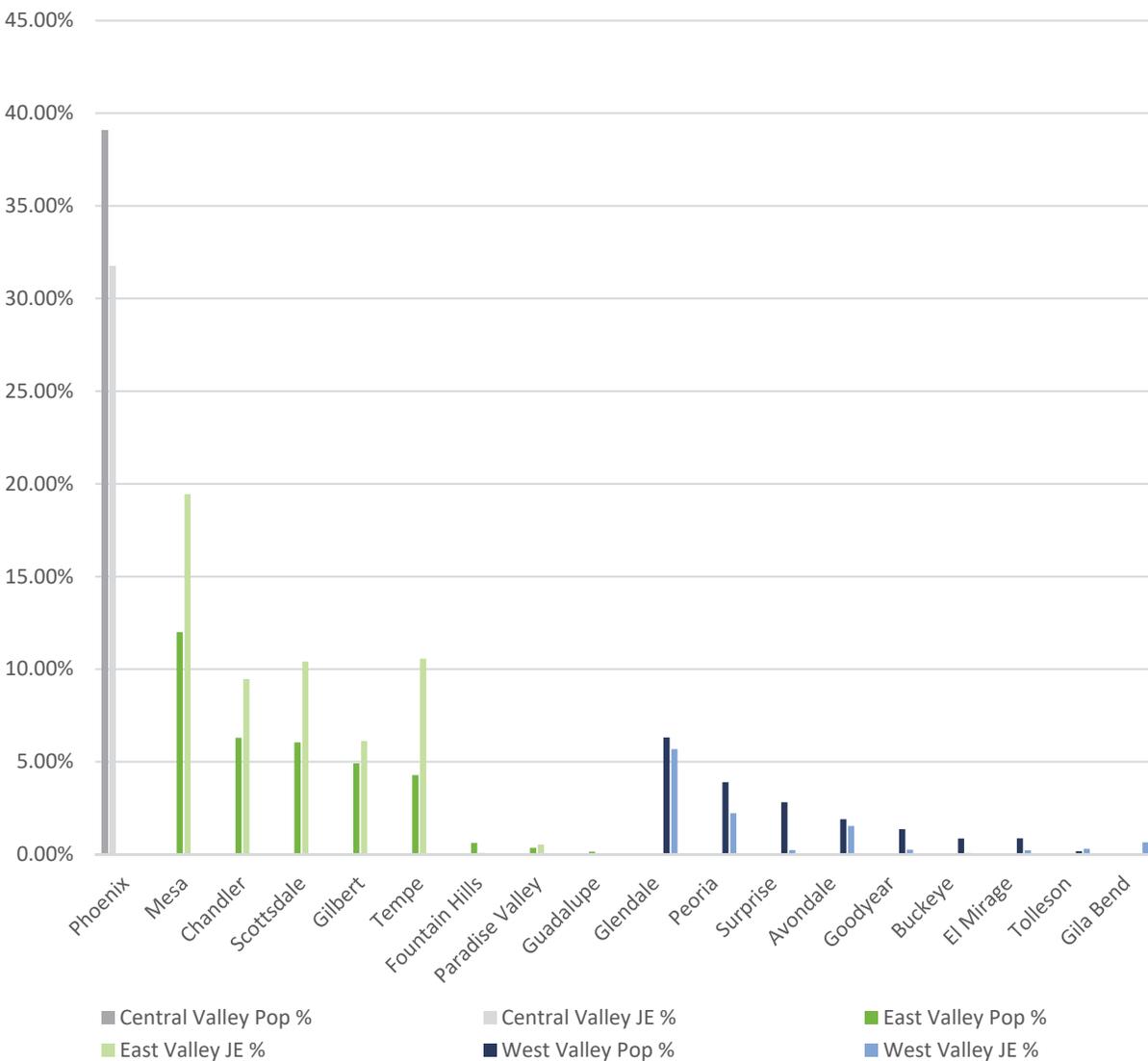
## 5.2 Jurisdictional Equity Policy Outcomes by Jurisdiction

This section will break each sub-region into individual jurisdictions to provide more in-depth analyses of population distribution, service performance outputs, and financial effectiveness with JE allocations.

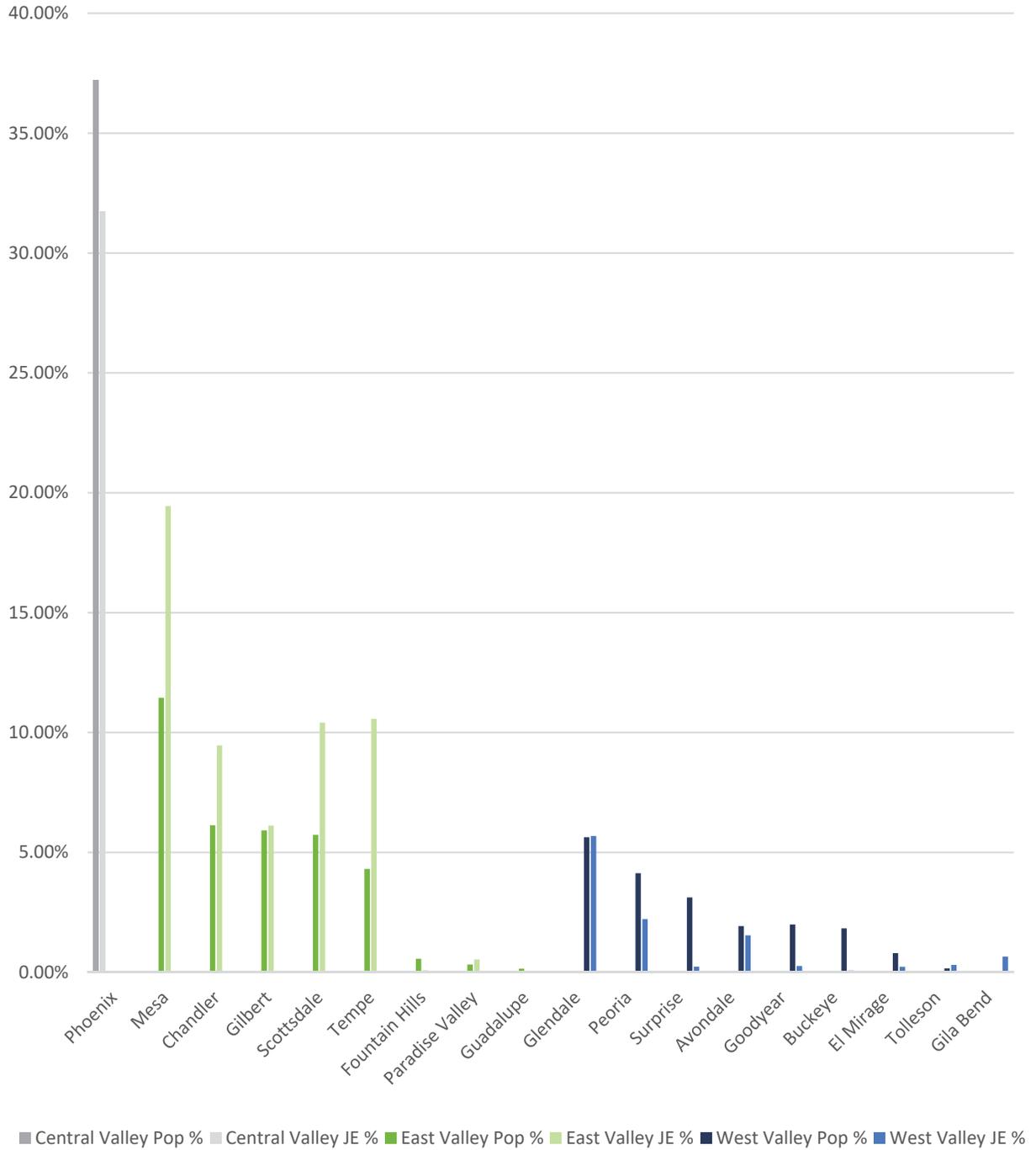
### 5.2.1 Population

Both **Figure 8** and **Figure 9** present commonalities of population distribution patterns for jurisdictions within the three sub-regions. Most of the East Valley jurisdictions have higher JE allocation percentages than their respective population percentage of the region. In contrast, the Central Valley/City of Phoenix and most West Valley jurisdictions have lower JE allocation percentages than their respective regional population percentage.

**Figure 8: 2006 Population Distribution and Jurisdictional Equity Allocation Comparison**



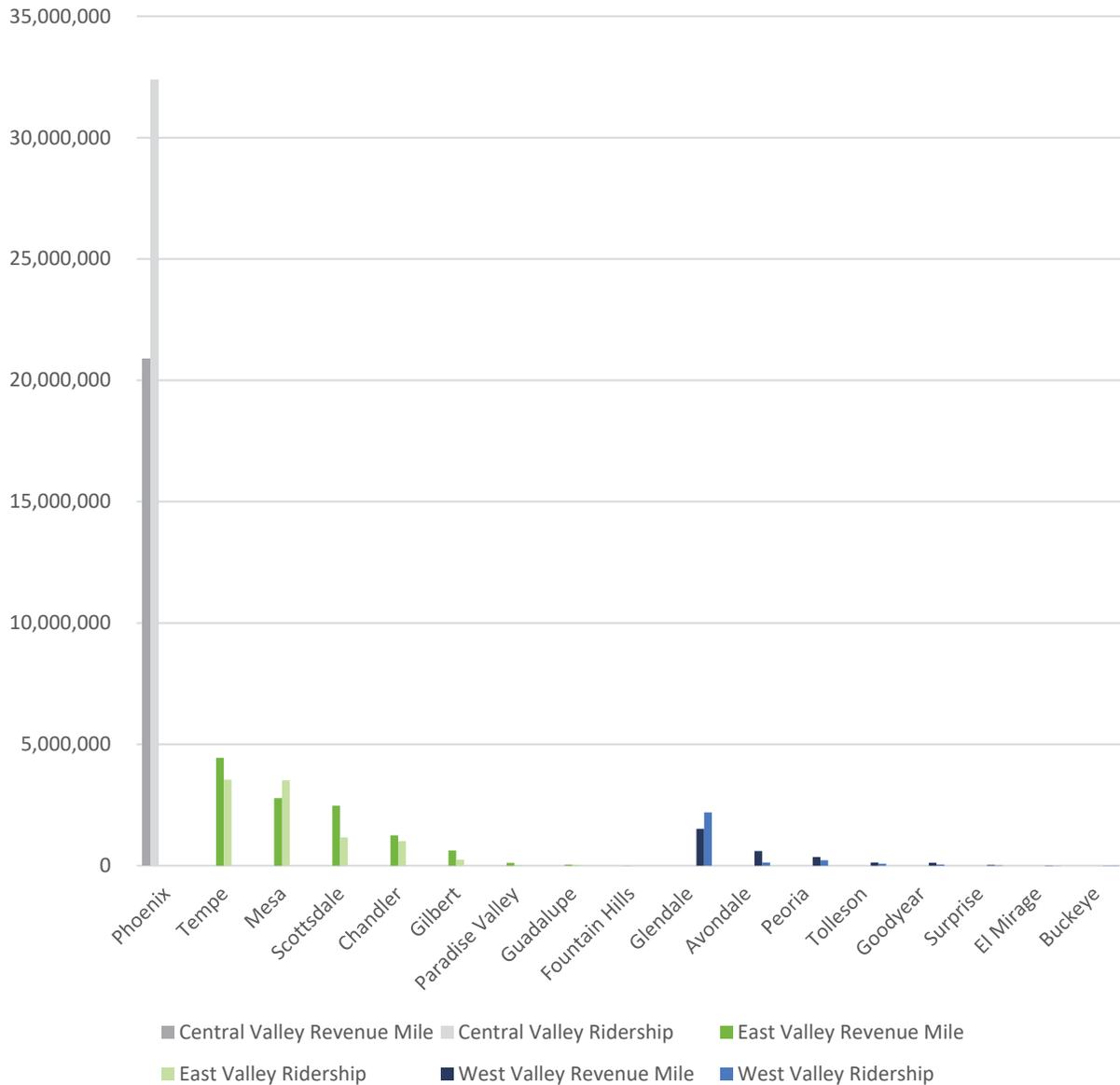
**Figure 9: 2018 Population Distribution and Jurisdictional Equity Allocation Comparison**



### 5.2.2 Service Performance

Figure 10 displays the service outputs (revenue miles of service and ridership) of each jurisdiction. The City of Phoenix is the highest followed by the cities of Tempe and Mesa. In general, the City of Phoenix produces most of the service outputs in the region and jurisdictions in the East Valley have higher service outputs than the West Valley.

Figure 10: Service Outputs by Jurisdiction



**Figure 11** compares the ridership percentage of each jurisdiction with their respective JE allocations. Among all the cities with a regional ridership share of more than 1 percent, the City of Phoenix is the only city that has smaller JE percentages than their regional ridership shares. Phoenix’s ridership share is more than twice the given JE allocation. In addition, for all the cities that receive more JE allocations than their regional ridership shares, the East Valley cities, such as the City of Mesa, City of Scottsdale, City of Chandler, and Town of Gilbert, have significantly higher allocations than their respective ridership shares.

**Figure 11: FY 2019 Ridership Distribution and Jurisdictional Equity Allocation Comparison by Jurisdiction**

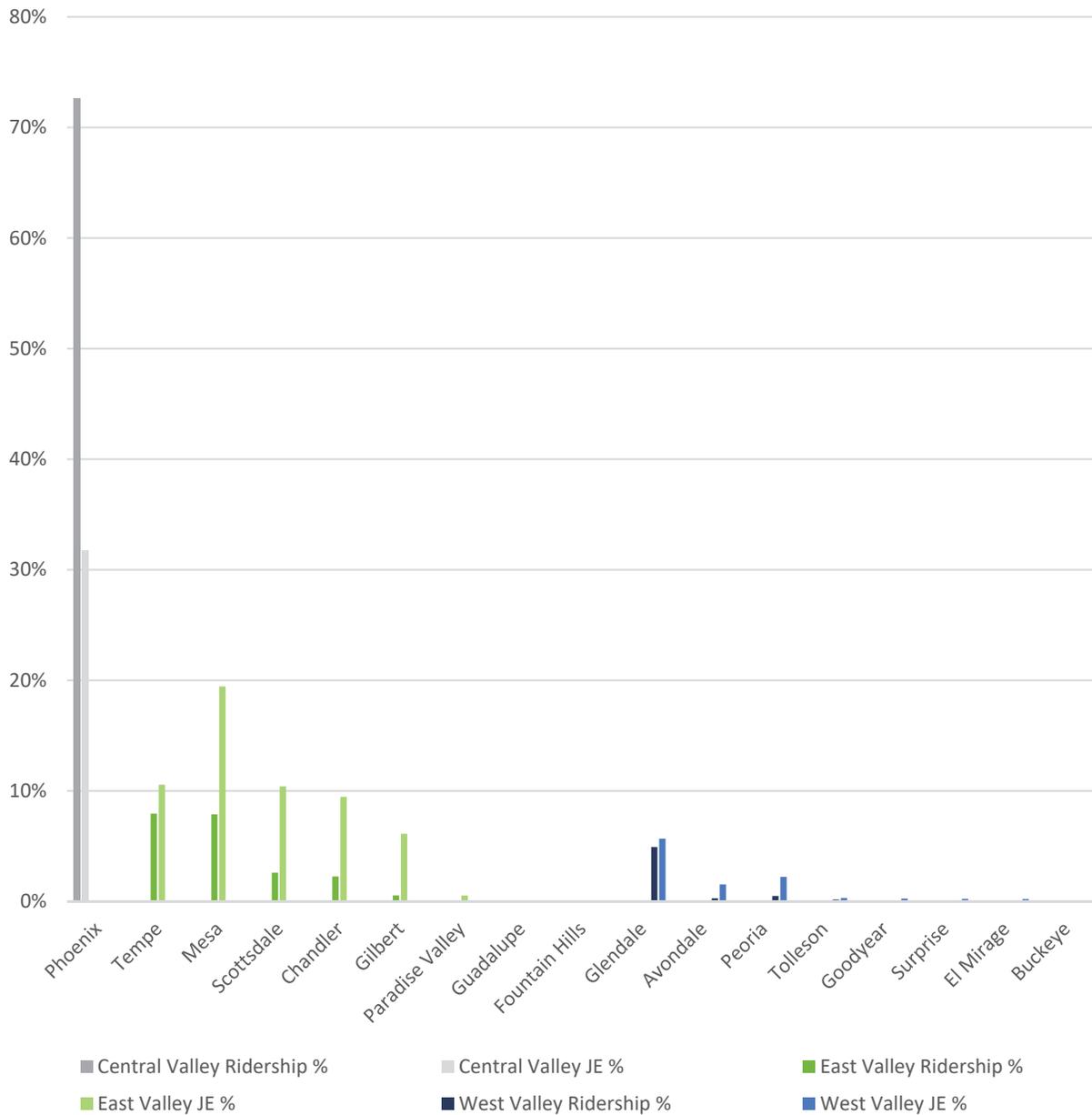
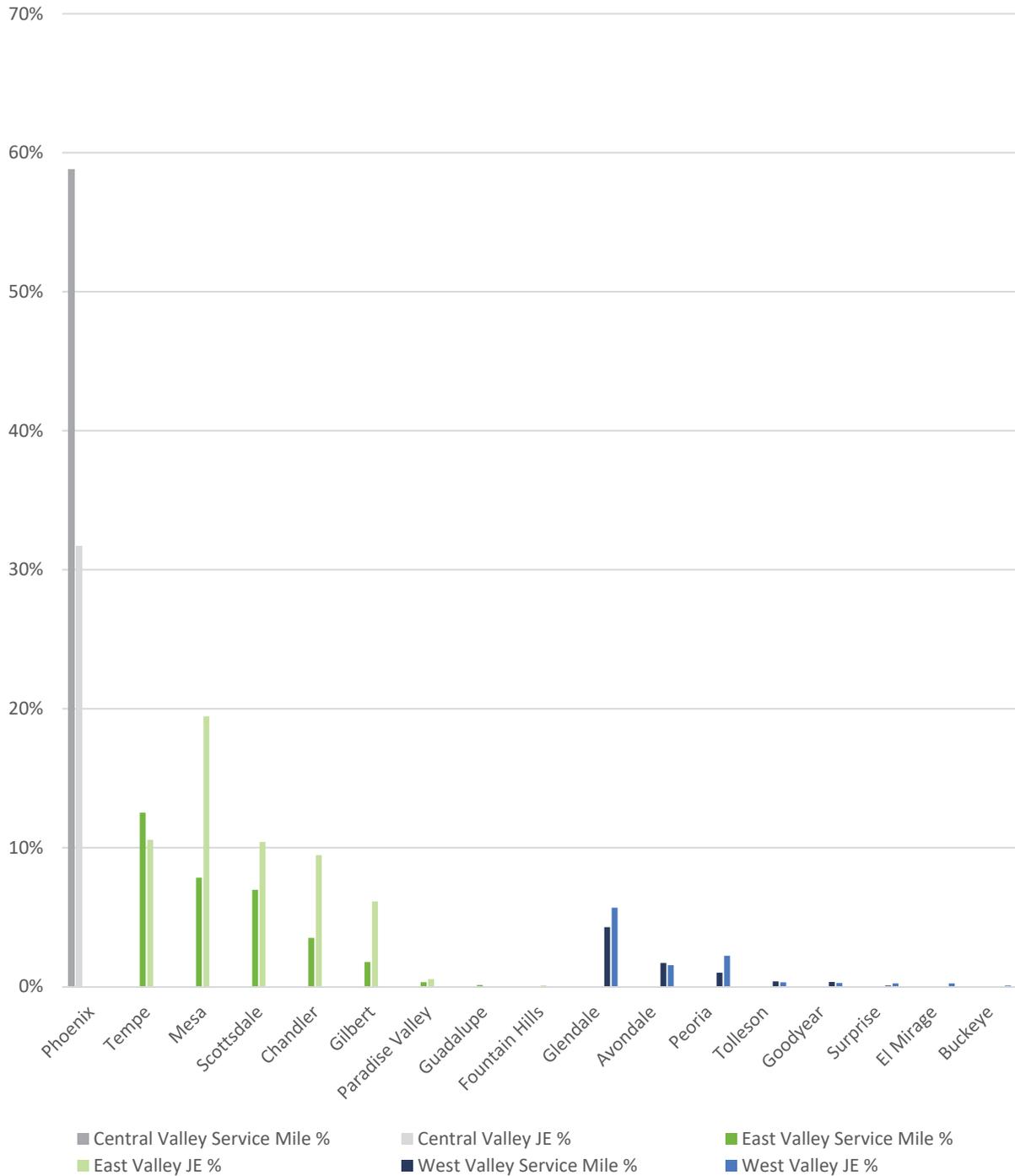


Figure 12 presents a similar pattern of revenue miles, except for the City of Tempe and City of Avondale which have higher revenue mile percentages than their JE allocations.

**Figure 12: FY 2019 Revenue Miles Distribution and Jurisdictional Equity Allocation Comparison by Jurisdiction**



**Table 2** summarizes the route distributions of the East Valley and West Valley jurisdictions in the top 10 and bottom 10 by operating cost per ridership. In the top 10 routes, the distribution between the East Valley and West Valley is proportional to the total routes in the analysis. However, in the bottom 10 routes, 40 percent are West Valley routes despite the West Valley only accounting for 22 percent of all routes included in the analysis.

**Table 2: Total Operating Cost per Ridership by Route**

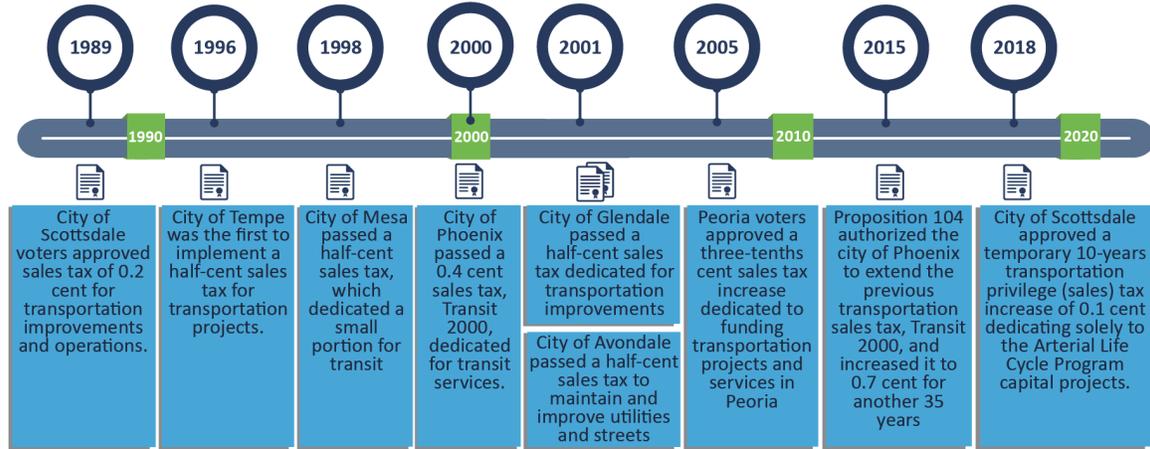
	Total Routes	Total Routes %	Top 10 Routes	Top 10 Routes %	Bottom 10 routes	Bottom 10 Routes %
East Valley	40	78%	8	80%	6	60%
West Valley	11	22%	2	20%	4	40%
Total	51	100%	10	100%	10	100%

**5.2.3 Role of Local Funding**

As has been noted throughout the RTP planning process, there is a significant gap between projected regional funding and identified regional needs. The resulting challenge will be to determine where the region’s scarce resources should be invested. This problem is further exacerbated in transit; the regional sales tax – even if it were to be entirely dedicated to transit – is insufficient to fund a comprehensive regional transit system. As a result, the region has been, and will continue to be, heavily reliant on local funding contributions for transit. This section is intended to give additional detail about the funding composition of the region’s transit operations and discuss potential policy implications that should be considered.

Since the approval of Proposition 300 in 1985, six municipalities in the MAG region have passed local sales taxes to fund transportation: Glendale, Mesa, Peoria, Phoenix, Scottsdale, and Tempe. While the tax rate varies per jurisdiction, in each case at least a portion of the dedicated transportation sales taxes are allocated for transit. **Figure 13** shows a timeline of municipal transportation sales taxes in the MAG region since 1989.

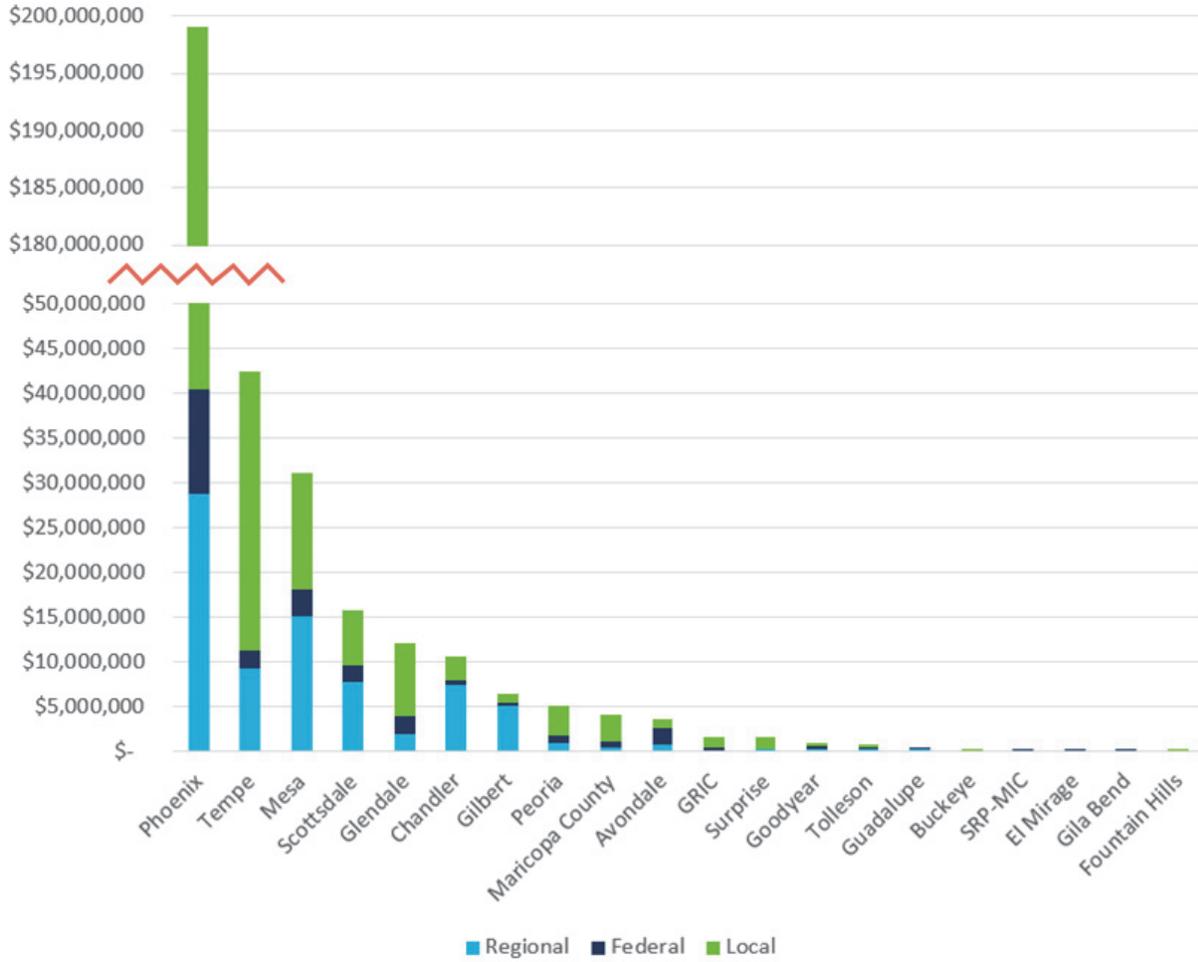
**Figure 13: Timeline of Passage of Municipal Transportation Sales Tax in MAG Region**



Data Source: City of Avondale, City of Glendale, City of Mesa, City of Peoria, City of Phoenix, City of Scottsdale, City of Tempe, and Valley Metro

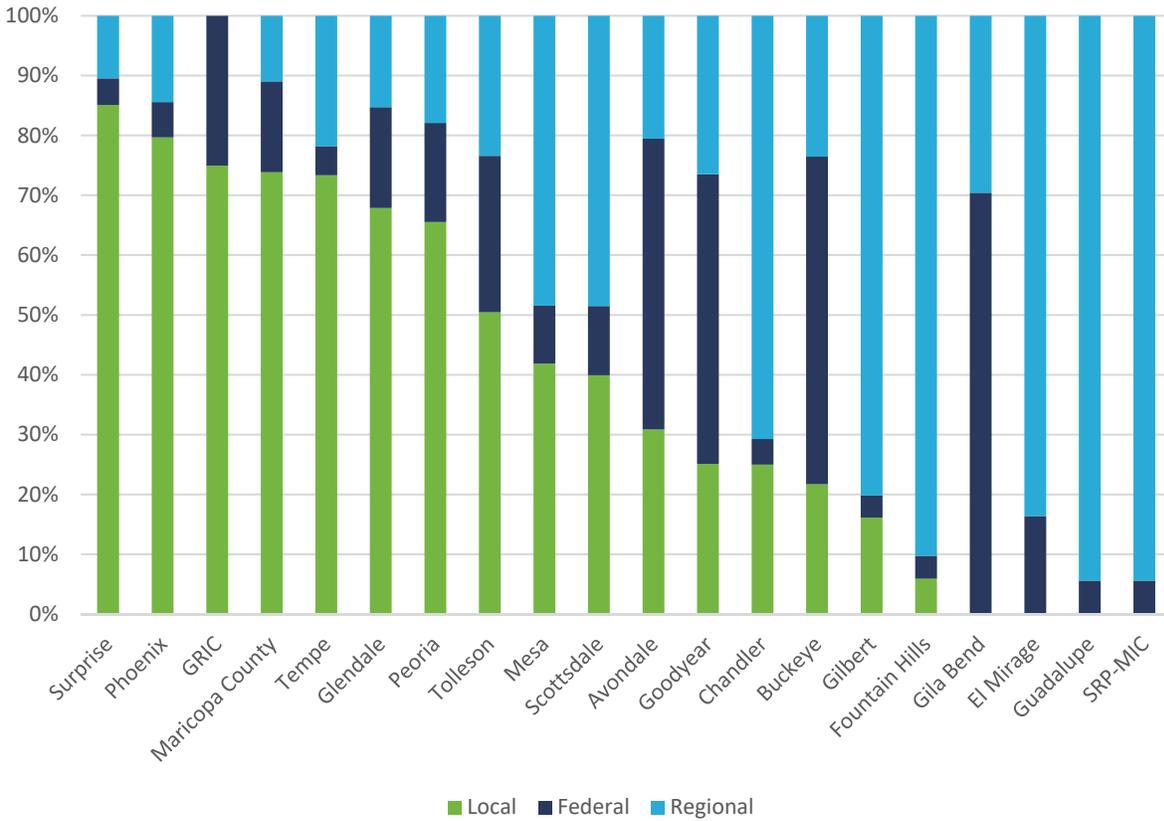
Valley Metro’s Transit Service Inventory report indicates that in FY 2019, 69 percent of transit operations costs in the region were funded through local sources. In fact, only \$78.3 million, or 23.3 percent, of transit operations costs in FY 2019 were funded through Proposition 400. The largest contributor of local transit funding in the region is the City of Phoenix, with local operations expenditures that totaled \$158.5 million in FY 2019, followed by the City of Tempe, City of Mesa, and City of Glendale. **Figure 14** displays amount of funding by source (local, federal, regional) per jurisdiction in FY 2019; **Figure 15** displays the proportionality of funding by agency in FY 2019. Data in table form has also been included as part of **Appendix B**. It is also important to note that the local amounts noted for each jurisdiction are inclusive of funding received through the Lottery Transportation Assistance Fund for Mass Transit (LTAF II) program.

**Figure 14: FY 2019 Transit Operations Funding Expenditures**



Local funding is inclusive of LTAF II funding distributions to jurisdictions  
 Data Source: Valley Metro Transit Service Inventory FY 2019 – FY 2022

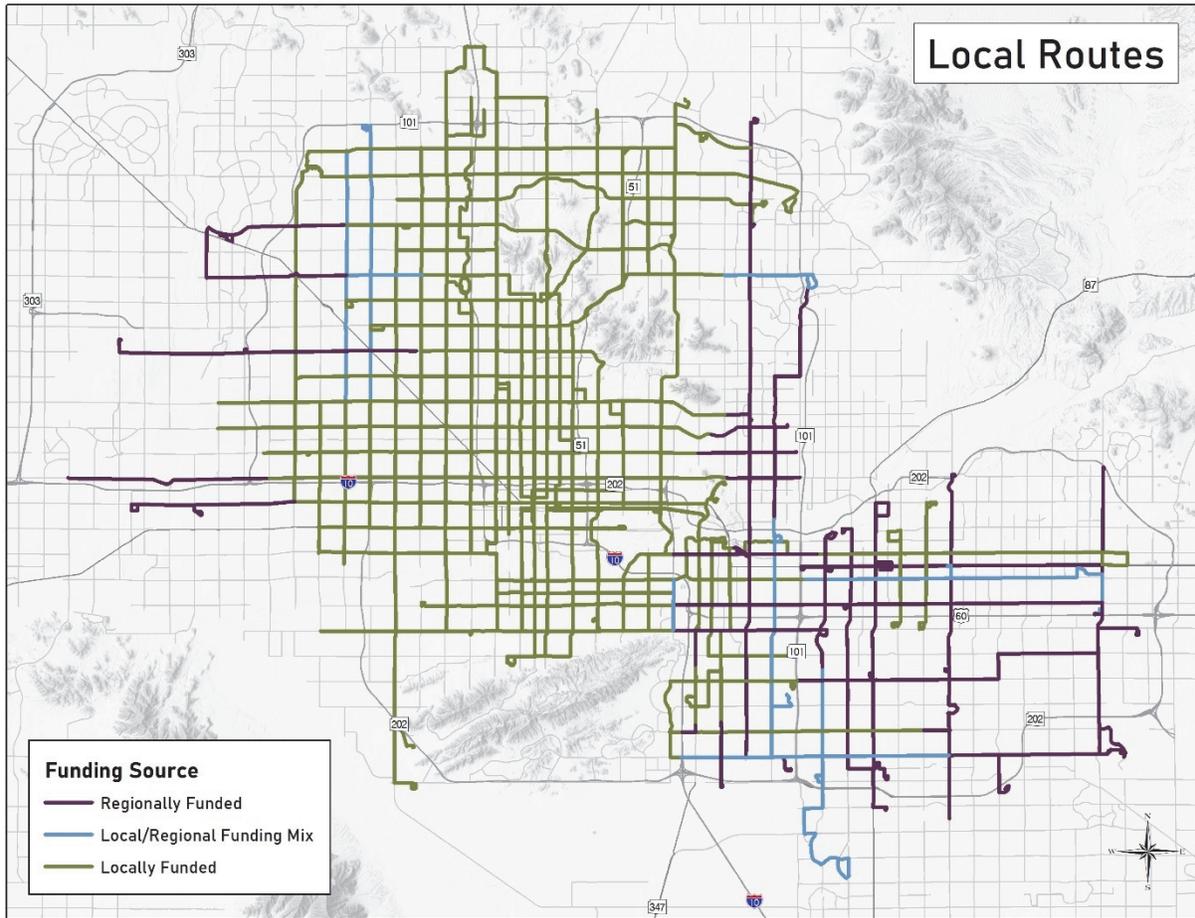
**Figure 15: FY 2019 Funding Composition for Transit Operations**



*Local funding is inclusive of LTAF II funding distributions to jurisdictions*  
 Data Source: Valley Metro Transit Service Inventory FY 2019 – FY 2022

The proportionality of local funding relative to regional funding for local bus operations is even smaller still. Of the 60 local bus routes in the Valley Metro system in 2019, only six were funded entirely through Proposition 400, 23 were partially funded through Proposition 400, and 31 were funded entirely through local sources. This information is reflected in **Figure 16**. The disparity between regional and local funding can be primarily attributed to the distribution of regional transit funds under the current funding-based, revenue sharing model. Some agencies invest regional transit funds towards express (commuter) bus and ADA services rather than in local bus routes. For example, the City of Phoenix only funds one route with regional funding, allocating the remainder to regional express (commuter) bus and ADA service.

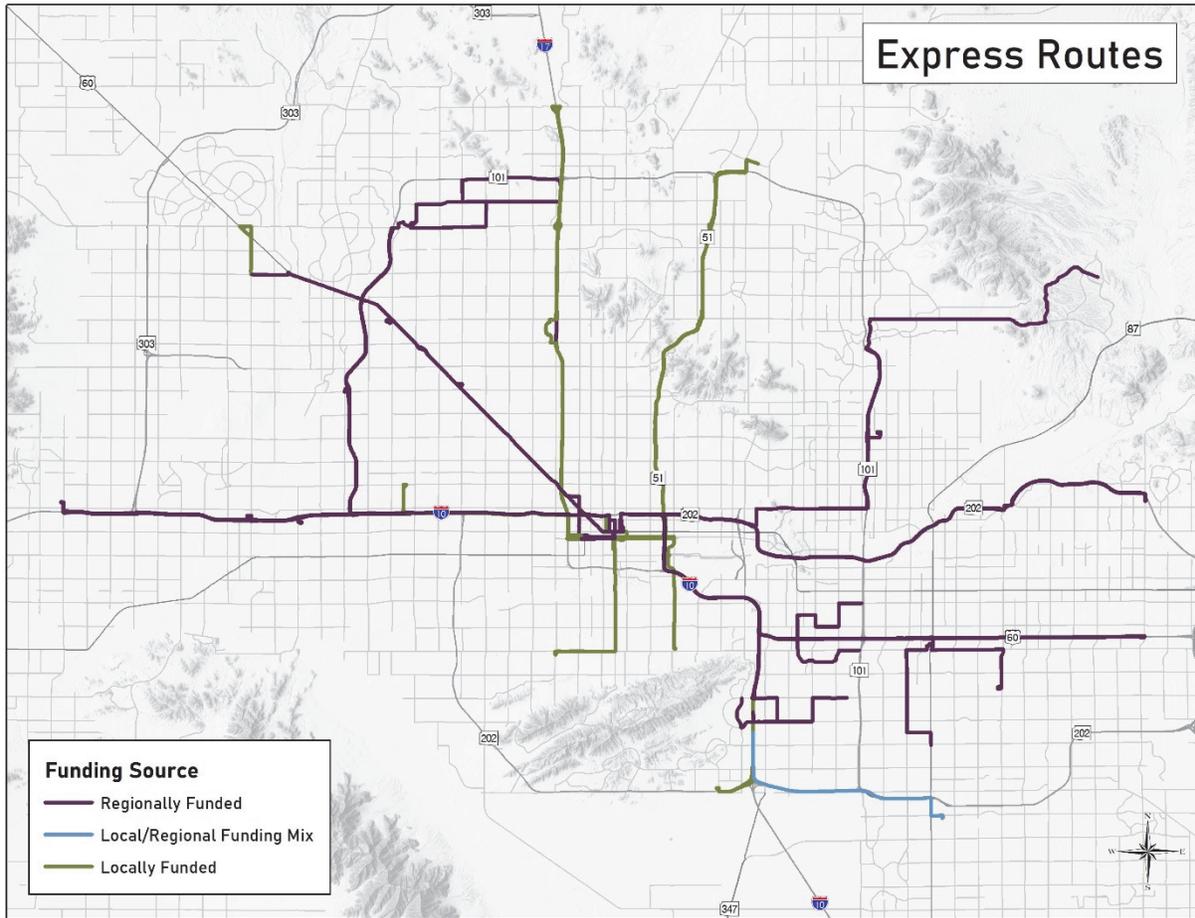
Figure 16: Bus Route Funding (2019)



Data Source: Valley Metro Transit Service Inventory FY 2019 – FY 2022

Nearly all of the region’s express (commuter) bus service is funded through Proposition 400 revenues. **Figure 17** shows the funding composition of the region’s 21 express and RAPID (commuter) bus routes. A total of 13 routes are entirely funded through Proposition 400, two are partially funded, and the City of Phoenix locally funds all six RAPID routes.

Figure 17: Express and RAPID Route Funding (2019)



Data Source: Valley Metro Transit Service Inventory FY 2019 – FY 2022

ADA costs also comprise a large portion of annual operation costs; of the total Proposition 400 bus expenditures in 2019, approximately \$31 million, went towards ADA costs. This amount is not inclusive of the full ADA service costs to the region, and several jurisdictions contribute additional local funding.

### 5.3 Observations & Takeaways

The MAG region has undergone significant changes over the last decade. Shifts in sub-regional population growth has influenced and altered regional demand. The JE policy developed in 2006 has not been calibrated to reflect population changes nor how transit services are being provided and funded in the region. Key observations and findings are summarized below:

- **Population growth in different sub-regions has been uneven for the past 12 years.** The West Valley has experienced the most significant population growth compared to the East Valley and Central Valley/City of Phoenix.
- **The JE allocations are increasingly disproportional to population splits by sub-region.** Most of the East Valley cities have higher JE allocations than their regional population percentages while the

Central Valley/City of Phoenix and majority of West Valley cities have lower JE allocations than their regional population percentages.

- **The JE allocations are disproportionate with the share of transit service outputs by sub-region.** The Central Valley/City of Phoenix is providing significantly more transit service outputs than its regional population percentage and is not receiving JE allocation proportional to its population nor transit service output percentages. The East Valley is providing transit service outputs in proportion to its regional population; however, it is receiving more JE allocation compared to its population and transit service output. The West Valley is providing less transit service output than its regional population percentage. Its JE allocation is proportional to its transit service outputs but not to its regional population.
- **Local funding plays an important part in the story of transit in the Valley.** To supplement PTF, several jurisdictions have gone to their voters to fund improvements to local transit services. These services play a critical role in connecting to the regional transit system and improving transit access throughout the region. Discussions relating to how the region funds transit operations must consider the role and scale local funding plays in sustaining and supplementing the expansion of the region's transit network, and moreover, where regional operating assistance should be focused.

## 6. Transit Funding Policy – Industry Review

A review of recent peer studies and available literature was performed to identify commonalities in how regional transportation planning agencies set and administer policies relating to the distribution of regional transit funding to eligible entities.

Based on the current transit policies in place in several regions (Los Angeles, CA; Puget Sound, WA; Charlotte, NC; Dallas, TX; and Denver, CO) with multimodal regional transit systems comprising multiple complementary regional and local transit services, there are several policy features common to the way regions distribute transit funding for transit operations:

- Formula-based allocations reflect audited transit performance data
- Formula-based funds are calculated and allocated annually based on the most recently available audited transit performance data
- Formula-based allocations positively correlate with productive, demand-driven service output
- Formula-based allocations must consider geographic and modal equity
- Transit operators generally have the flexibility to determine how best to accomplish making public transportation more convenient, affordable, and improve quality of life
- The formula allocation methodology for transit operating assistance is transparent and approved annually by a committee consisting of the eligible operators and the Regional Transportation Planning Entity (RTPE) distributing the funds

The following section details Los Angeles County Metropolitan Transportation Authority's transit funding policies and procedures to present a clearer understanding of how regional funding allocations are calculated and administered.

## 6.1 Case Study: Los Angeles County Metropolitan Transportation Authority (Metro) Formula Allocation Procedure (FAP)

The purpose of this section is to present a case study of how regional transit funding policies are administered in another metropolitan region that consists of multiple local transit service providers and RTPE entrusted with the responsibility of allocating regional transit funding to eligible transit service providers. The use case presented in this report is the Los Angeles County Metropolitan Transportation Authority (Metro) Formula Allocation Procedure (FAP), the methodology for allocating sales tax receipts for public transit each fiscal year in support of public transit throughout the region.

In December 1979, the then Los Angeles County Transportation Commission (LACTC) adopted an allocation formula for state and federal transit subsidies for qualified transit operators, as required by state law. The FAP was established as the policy mechanism for allocating countywide bus transit funds among the bus operators in Los Angeles County, as described in state law—§ 99285 (d) of the Public Utilities Code. Aside from fare revenue generated, the FAP fund is the main source of transit operating assistance to transit operators in Los Angeles.

The formula allocation calculations used in the FAP is intended to establish a nexus between the funding allocation earned by an eligible operator and the quality of transit service the agency produces. Early in the policy formulation process, extensive consideration was given to linking the formula allocations more directly to specific indicators of transportation performance such as annual boardings per vehicle service mile, operating cost per boarding. Ultimately, the decision was made to utilize a simple weighted calculation tied directly to service output levels and ridership. The formula calculation the LACTC adopted in December 1985 simplified the reporting requirements and was modified accordingly:

- 50 percent weight on in-service revenue vehicle mileage
- 50 percent weight on fare units (defined as total fare box revenue divided by the base fare)

In September 1996, three years after the SCRTD/LACTC merger, the California legislature passed SB 1755 (the Calderon bill), which was drafted to ensure that each “eligible” municipal operator received at least the proportional share of funds allocated during FY 95. The revised FAP calculation above remains in place today<sup>7</sup>, and continues to be the basis for allocating regional transit operating subsidies to eligible transit operators, which include:

<sup>7</sup> In November 2008, the Board approved a Funding Stability Policy, where operators who increase their fares will have their fare units frozen at their level prior to the fare increase until such time that fare unit calculation based on the new higher fare becomes greater than the frozen level.

- Metro
- AVTA
- Arcadia
- Claremont
- Commerce
- Culver City
- Foothill Transit
- Gardena
- La Mirada
- LADOT
- Long Beach
- Montebello
- Norwalk
- Redondo Beach – Beach Cities Transit
- Santa Clarita
- Santa Monica – Big Blue Bus
- Torrance

The calculation for the distribution of funds is based on transit performance data for bus operations that covers the most recent year for which audited data is available. The FAP controls the allocation of transit funds two fiscal years later. For example, the statistics of FY 18 determine the percentage of the allocations in FY 20. Those percentages are applied to the revenue estimates for FY 20.

The transit subsidy funds allocated under the FAP consist of regional, state and federal sources:

- State Transportation Assistance (STA) funds
- Transportation Development Act (TDA) Article 4
- Federal Urbanized Area (UZA) Formula Funds Program
- Formula Equivalent Funds (the portion of Proposition A Discretionary funds -- also called "Prop A 40 percent" -- that grow over CPI; if this is less than the CPI, Prop C 40 percent Discretionary money is substituted)
- Prop A Incentive Program funds (5 percent of the Prop A 40 percent)
- Foothill Transit Mitigation (funded from Prop C 40 percent)
- Transit Service Expansion funds (funded from Prop C 40 percent and increased annually by CPI)
- Discretionary Base Restructuring (was originally Prop A 40 percent, is now Prop C 40 percent)
- Bus Service Improvement Program (Prop C 40 percent)
- Municipal Operator Bus Service Improvement Program (funded by Metro, increases by 3 percent each year)

**Figure 18** shows the FY 2020 FAP shares based on audited 2018 Transit Performance Measures (TPM) data submitted by each eligible operator. As discussed previously, the FAP uses 50 percent of operators' vehicle service miles and 50 percent of operators' fare units. (Fare units, which are used as a proxy for ridership, is defined as operators' passenger revenues divided by operators' base cash fare). **Figure 18** also shows the proportional 'TDA/STA Share' is based on the sum of 50 percent VSM and 50 percent fare units (shown in the 8<sup>th</sup> column) and applied to that fiscal year's accumulated FAP funding pool.

FAP funds allow eligible operators receive FAP fund allocations for several types of service, including demand response, fixed route and express bus service. While the output levels and associated fare policies by service type vary, the FAP calculations correlative positively with service levels and performance irrespective of service type and preserve the incentive in place to provide productive, quality service.

**Figure 18: Los Angeles Metro FY 2020 Bus Transit Funding Percentage Shares**

Operators	Vehicle Service Miles (VSM) <sup>(1)</sup>	Passenger Revenue (\$) <sup>(1)</sup>	Base Fare (\$)	Fare Units	Fare Units Prior to Fare Increase/ decrease	Fare Units Used in FAP <sup>(2)</sup>	Sum 50% VSM + 50% Fare Units	Proposition A Base Share	DAR Cap Adjustment <sup>(3)</sup>	TDA/STA Share
<b>Included Operators</b>										
1 Metro Bus Ops.(4)	72,653,000	212,840,000	\$ 1.75	121,622,857	197,161,600	197,161,600	134,907,300	73.6795%	0.0000%	73.6795%
2 Arcadia DR	86,608	5,730	0.50	11,460	72,829	72,829	79,719	0.0435%	0.0000%	0.0435%
3 Arcadia MB	154,997	7,192	0.50	14,384	-	14,384	84,691	0.0463%	0.0000%	0.0463%
4 Claremont	44,600	45,600	2.50	18,240	81,840	81,840	63,220	0.0345%	0.0000%	0.0345%
5 Commerce	426,540	-	-	-	-	-	213,270	0.1165%	0.0000%	0.1165%
6 Culver City	1,553,543	2,844,747	1.00	2,844,747	3,673,208	3,673,208	2,613,376	1.4273%	0.0000%	1.4273%
7 Foothill	10,047,408	13,444,608	1.50	8,963,072	14,221,000	14,221,000	12,134,204	6.6271%	0.0000%	6.6271%
8 Gardena	1,610,823	2,228,499	1.00	2,228,499	3,703,600	3,703,600	2,657,212	1.4512%	0.0000%	1.4512%
9 La Mirada	64,692	33,988	1.00	33,988	-	33,988	49,340	0.0269%	0.0000%	0.0269%
10 Long Beach	6,923,461	13,769,460	1.25	11,015,568	15,972,456	15,972,456	11,447,959	6.2523%	0.0000%	6.2523%
11 Montebello	2,180,904	4,024,999	1.10	3,659,090	5,855,556	5,855,556	4,018,230	2.1946%	0.0000%	2.1946%
12 Norwalk	997,113	1,155,621	1.25	924,497	2,094,068	2,094,068	1,545,591	0.8441%	0.0000%	0.8441%
13 Redondo Beach DR	54,042	10,980	1.00	10,980	-	10,980	32,511	0.0178%	0.0000%	0.0178%
14 Redondo Beach MB	366,851	300,806	1.00	300,806	-	300,806	333,829	0.1823%	0.0000%	0.1823%
15 Santa Monica	4,974,000	11,603,000	1.25	9,282,400	14,661,333	14,661,333	9,817,667	5.3619%	0.0000%	5.3619%
16 Torrance	1,694,300	2,025,800	1.00	2,025,800	4,510,000	4,510,000	3,102,150	1.6942%	0.0000%	1.6942%
17 Sub-Total	103,832,882	264,341,030		162,956,388		262,367,648	183,100,265	100.0000%	0.0000%	100.0000%
<b>Eligible Operators</b>										
18 Antelope Valley	3,166,832	4,849,941	1.50	3,233,294	3,543,241	3,543,241	3,355,037	1.7126%	0.0000%	1.7126%
19 Santa Clarita	2,866,266	3,192,972	1.00	3,192,972	-	3,192,972	3,029,619	1.5465%	0.0000%	1.5465%
20 LADOT Local	1,695,256	3,229,770	0.50	6,459,540	6,727,520	6,727,520	4,211,388	2.1497%	0.0000%	2.1497%
21 LADOT Express	1,258,765	3,220,511	1.50	2,147,007	3,152,832	3,152,832	2,205,799	1.1260%	0.0000%	1.1260%
22 Foothill - BSCP	1,216,905	1,505,991	1.50	1,003,994	1,650,000	1,650,000	1,433,453	0.7264%	0.0000%	0.7264%
23 Sub-Total	10,204,024	15,999,185		16,036,807		18,266,565	14,235,295	7.2612%	0.0000%	7.2612%
24 Total	114,036,906	280,340,215		178,993,195		280,634,213	197,335,560			

**Notes:**

(1) Operators' statistics exclude BSIP, TSE, Base Restructuring and MOSIP services that are funded from PC 40% Discretionary. Also excluded are services funded from other sources (CRD, FTA, etc.)

(2) Fare units used are frozen to the level prior to fare change in accordance with the Funding Stability Policy, adopted by the Board in November 2007.

(3) TDA cap of 0.25% is applied for DAR operators - Arcadia, Claremont, La Mirada and Redondo Beach DR.

(4) MTA Statistics include contracted services with LADOT for Lines 422, 801 and 802 (Consent Decree Lines), Glendale and Palos Verdes Peninsula Transit Authority (PVPTA).

Each year, eligible transit operators submit their annual Transit Performance Measures (TPM) data for the FY 2020 FAP calculations from two years prior. As the RTPE, Metro then validates the performance data and inputs it into the FAP calculation. The draft FAP calculations are then reviewed by the Bus Operations Subcommittee, which consists of Metro and the recipient transit operators. Upon concurrence from the BOS, Metro staff prepares a request to the Metro Board to approve the FAP funding recommendations.

Another key feature of the FAP is the inclusion of state funds from the Transportation Development Act (TDA), which requires recipients of funding to undergo a triennial performance audit every three years. The performance audit function is to review the performance of transit operators against several standard transit performance indicators and identify key initiatives, challenges, and issues facing the transit agency in providing quality transit service. Typically, the audit includes a trend analysis showing changes by year in service output, fare, operating costs and ridership, and FAP allocations, with recommendations to address service delivery issues impacting overall performance.

**Figure 19** below shows the total formula funds by source based on the TDA/STA shares calculated in the FAP model. Combined, these sources add up to an FAP funding level of approximately \$780M, accounting for approximately 58 percent of the total transit subsidy of \$1.35B returned to eligible operators in FY 20.

Figure 19: Los Angeles FY 2020 Metro State and Local Fund Allocations

Operators	Formula Allocation Procedure				Proposition C 5% Security	Proposition C 40% Discretionary	Measure R		Measure M	Senate Bill 1		Total
	TDA Article 4 + Interest	STA+ Interest	Proposition A 95% of 40 % Discretionary	Sub-Total FAP			20% Bus Operations	Clean Fuel & Facilities		STA	State of Good Repair	
<b>Included Operators:</b>												
1 Metro Bus Ops	\$ 296,500,297	\$ 58,542,563	\$ 184,113,208	\$ 539,156,068	\$ 32,634,277	\$ 23,368,663	\$ 122,693,057	\$ 6,596,834	\$ 126,904,826	\$ 38,124,013	\$ 12,666,297	\$ 902,144,036
<b>Municipal Operators:</b>												
2 Arcadia	361,705	71,345	224,375	657,425	6,630	104,793	149,524	17,409	154,657	46,461	15,436	1,152,335
3 Claremont	139,086	27,434	86,279	252,799	2,650	50,124	57,496	5,779	59,470	17,866	5,936	452,120
4 Commerce	469,201	92,548	291,058	852,806	42,323	1,241,555	193,961	33,048	200,619	60,269	20,024	2,644,606
5 Culver City	5,749,508	1,134,065	3,566,575	10,450,148	404,087	2,154,335	2,376,766	141,775	2,458,354	738,525	245,367	18,969,357
6 Foothill Transit	26,695,630	5,265,596	16,560,017	48,521,244	1,042,060	10,010,062	11,035,597	838,277	11,414,423	3,429,055	1,139,267	87,429,985
7 Gardena	5,845,949	1,153,088	3,626,399	10,625,436	256,444	2,589,260	2,416,633	123,656	2,499,590	750,912	249,483	19,511,414
8 La Mirada	108,550	21,411	67,336	197,297	3,523	24,614	44,873	6,427	46,413	13,943	4,632	341,722
9 Long Beach	25,485,868	4,967,803	15,623,472	46,077,142	1,978,899	10,306,518	10,411,483	618,031	10,768,885	3,235,126	1,074,836	84,470,920
10 Montebello	8,840,232	1,743,697	5,483,834	16,067,763	479,886	3,826,638	3,654,427	186,899	3,779,875	1,135,528	377,267	29,508,284
11 Norwalk	3,400,348	670,704	2,109,327	6,180,378	121,378	886,560	1,405,656	67,180	1,453,909	436,775	145,114	10,696,949
12 Redondo Beach	805,958	158,972	499,958	1,464,888	31,052	243,991	333,172	32,682	344,609	103,525	34,395	2,588,314
13 Santa Monica	21,599,175	4,260,343	13,398,549	39,258,067	1,095,506	7,215,446	8,928,794	457,486	9,235,299	2,774,415	921,770	69,886,783
14 Torrance	6,824,827	1,346,167	4,233,624	12,404,619	310,866	3,717,603	2,821,287	140,463	2,918,136	876,649	291,257	23,480,880
15 Sub-Total	106,326,037	20,913,173	65,770,803	193,010,012	5,775,304	42,371,498	43,829,668	2,669,112	45,334,240	13,619,050	4,524,784	351,133,668
<b>Eligible Operators:</b>												
16 Antelope Valley	-	-	5,640,301	5,640,301	202,892	2,109,405	2,851,883	183,390	2,949,781	886,156	294,416	15,118,224
17 LADOT	-	-	23,983,643	23,983,643	1,392,629	7,658,544	5,454,803	362,859	5,642,054	1,694,953	563,130	46,752,615
18 Santa Clarita	-	-	5,093,227	5,093,227	221,849	2,399,593	2,575,268	187,805	2,663,671	800,205	265,859	14,207,477
19 Foothill BSCP	-	-	5,318,480	5,318,480	-	928,624	1,209,627	-	1,251,151	375,863	124,877	9,208,623
20 Sub-Total	-	-	40,035,652	40,035,652	1,817,370	13,096,166	12,091,580	734,054	12,506,657	3,757,177	1,248,282	85,286,939
<b>Tier 2 Operators:</b>												
21 LADOT Community Dash	-	-	4,824,381	4,824,381	-	-	-	-	-	-	-	4,824,381
22 Glendale	-	-	701,316	701,316	-	-	-	-	-	-	-	701,316
23 Pasadena	-	-	348,922	348,922	-	-	-	-	-	-	-	348,922
24 Burbank	-	-	125,382	125,382	-	-	-	-	-	-	-	125,382
25 Sub-Total	-	-	6,000,000	6,000,000	-	-	-	-	-	-	-	6,000,000
26 Lynwood Trolley	-	-	-	-	-	226,796	-	-	-	-	-	226,796
27 Total Excluding Metro	106,326,037	20,913,173	111,806,455	239,045,664	7,592,674	55,694,460	55,921,249	3,403,166	57,840,896	17,376,227	5,773,086	442,647,403
28 County of Los Angeles	-	-	-	-	-	-	-	-	-	254,124	254,124	254,124
29 Grand Total	\$ 402,826,334	\$ 79,455,736	\$ 295,919,663	\$ 778,201,732	\$ 40,226,951	\$ 79,063,124	\$ 178,614,306	\$ 10,000,000	\$ 184,745,722	\$ 55,500,241	\$ 18,693,488	\$ 1,345,045,563

## 6.2 Observations & Takeaways

There are several features of the FAP that are worth highlighting, as they reflect attributes that are consistent with principles associated with regional transit funding.

- **The FAP establishes a nexus between subsidy funding levels and transit performance that places incentives to maintain efficient and productive transit service.** The calculation is based on two equally weighted variables (vehicle service miles and fare units), but the underlying principle is consistent with other peer regions. As an example, the Charlotte Area Transit System in Charlotte, North Carolina has a formula-based allocation that applies an equal weighting factor to three transit output variables: vehicle revenue miles, fleet size, and unlinked passenger trips (sourced from the NTD). The key concept is that the allocation-share an eligible entity receives is based on the amount and quality of transit output produced, rather than transit output being dictated by fixed funding levels.
- **Funding allocation shares change every year based on variances in actual transit performance output.** Another key feature of the FAP is that funds are distributed annually based on actual transit performance data from two years prior, minimizing the risk of variance between funding shares and

actual transit service output levels. This is similar to peer regions that have adopted formula-based methodologies to allocate regional transit funds to eligible operators.

- **TDA requires recipients of TDA funds to undergo a transit performance audit every three years.** In Los Angeles County, this function has proven to be valuable because it provides a regular opportunity to assess the overall performance of the transit operator against commonly held transit performance indicators and delve into root causes affecting adverse and position trends over time. In addition, it allows for a comprehensive review of funding trends as they relate to external factors impacting unit costs, service expansion, and fare restructuring initiatives.
- **There is a formal committee process in place for eligible operators and Metro to discuss, review, and approve annual formula allocations, ensuring transparency and communications in the distribution of formula allocation funds.** The establishment of the Bus Operations Subcommittee, whose membership consists of Metro and the eligible transit operators, is the forum for discussing, reviewing and, ultimately, approving the FAP distributions for a given FY for recommendation to the Metro Board. The function of the Bus Operations Subcommittee is critical because it ensures that there is a forum to raise policy issues, highlight critical service coordination issues and provide oversight that Metro as the RTPE is performing its role consistent with adopted policies and practices.

## 7. Approaches to Subsidizing Regional Transit Operations

Based on historical precedent in the MAG region and how regional transit operating subsidies are distributed in other regions, there are three potential paths forward for providing regional transit operating assistance to eligible entities in the MAG region:

1. **Revisit Long-Range Plan-based Approach.** A plan-based approach represents a commitment to service types, or routes with certain characteristics or that serve specific locations. This approach was taken as part of the 2003 Program, whereby MAG and its transit partners developed a plan-based implementation approach, which was set aside in 2009-2010. In hindsight, the commitment to a plan-based *long-range* bus service plan was, and continues to be, vulnerable to external risk factors outside the control of region's transit operators. Market-driven changes, in terms of both transit service levels and network structure, can deviate significantly from assumptions made in a long-range transit service plan that establishes the basis for allocations of regional operating subsidies. Therefore, transit operators typically adopt short-range transit plans that consider between a 3- and 5-year time horizon, with long-range planning efforts focused primarily on strategic and aspirational objective not bound to financial obligations.

In general, long-range plans are better suited to capital programs, given the comparatively longer time horizon associated with the procurement and construction of capital projects. A lesson learned from the 2003 RTP/Proposition 400 is that the commitment to a long-range plan-based funding policy derived from 2003 average unit cost estimates is highly vulnerable to misalignments in future transit costs, revenues, demographic changes, and performance trends, which is exactly what happened as a result of the Great Recession and subsequently created the funding-based, revenue-sharing approach in place today.

2. **Continue with the Funding-Base (Revenue-Sharing) Approach.** This approach would be a continuation of a fixed allocation JE model currently in place, but it does require establishing an updated basis for revenue allocations. There are open issues central to the question of whether this approach merits continuation:

- **What should the allocations be based on?** Based on the transit performance data discussed in the Section 5, there is a discrepancy between the fixed PTF allocations set in 2006 and amount of actual transit service output both by sub-region and jurisdiction. Continuation of this approach would require recalculating the allocations based on factors reflecting current transit service outputs. Based on industry best practice, there are methodologies currently in use to re-baseline the allocation of PTF funds based on actual transit data. However, long-range forecasts of future transit service output are typically not done, given the range of uncertainties impacting short-term transit service delivery decisions as noted previously.
- **How do you balance geographic equity with demand-driven transit service planning with a 20-year fixed revenue approach?** As discussed in the prior section, transit service output, ridership, and operating costs in the Valley have deviated significantly from assumptions used to establish the **Table A – Jurisdictional Equity Allocation** fixed allocations in 2006. Fixed subsidy allocations are vulnerable to being misaligned with future transit service output and demand, resulting in both geographic and service imbalances. Agencies interested in transit today may not want transit in 20 years. Conversely, jurisdictions that do not need transit today may desire regional transit operating subsidies in the future, should transit demand materialize.

The principle disadvantages of a fixed revenue-sharing approach from a policy standpoint are three-fold: 1) the absence of a mechanism for reallocating scarce regional transit subsidies to where transit service should expand to meet new warranted demand, 2) the disincentive to decline fixed annual regional operating subsidies where transit market conditions do not support the level of service output being produced, 3) the inherent incentivization of locally-focused service rather than regionally-focused service.

3. **Migrate to a Formula-based Approach Correlated to Actual Transit Performance Data.** A formula-based approach that allocates regional transit operating subsidies based on actual transit performance data is the approach most commonly used by peer regions to distribute transit operating subsidies to transit operators. The underlying principles of this approach are discussed in Section 6.1. The main advantage of this approach is that transit operating subsidies can be adjusted or reallocated annually based on actual transit service decisions driven by demand, current and future market conditions, and broader demographic, population, and economic trends. Transit propensity analysis and short-range transit planning tools could further be utilized in this model to determine system expansion decisions.

There are several options within this approach that enable regions to balance coverage with demand-based transit services. For example, it is possible to establish a base allocation and allocate operating assistance based on standard transit performance statistics that capture both output and productivity (e.g., vehicle revenue miles, annual passenger boardings, fleet size, fare revenue). Other options include

separate allocations for regionally-focused service (e.g., express/commuter bus, ADA paratransit). Section 6.1 addressed these issues in greater detail.

## 7.1 Transit Policy Questions

The next steps in the transit policy discussion are to explore the key findings and observations of this preliminary technical memorandum, validate that a continuation of regional funding support for transit operations is desired, and finally, determine the desired approach or combination of approaches that should be pursued when considering the portfolio of transit investments proposed to be funded with the extension of Proposition 400. The following policy questions frame discussion around a regional approach to transit:

- What is the region’s vision for future regional bus transit service?
- What is the region’s role in funding transit, and specifically, bus service operations and maintenance expenses?
- Which approach should be taken for the bus investment of the next Regional Transportation Plan/Proposition 400 extension?
- Are there certain types of transit service, such as express (commuter) bus or ADA service, for which the region should fund entirely?
- If a plan-based approach is desired:
  - How does the region identify which routes and service types receive regional funding and which routes and service types do not?
  - How do we account for potential increase or decrease in revenues and costs over a 20-year or more period?
  - How do we respond to areas that have new or increased transit demand? How do you respond to areas that have decreased transit demand?
  - How do we project transit needs for a period of 20-years or more?
  - How should local match be calculated?
  - How do we incentivize “good” transit investments and provide disincentives for “bad” transit investments?
  - How do you provide flexibility to respond to new or changing services or innovations?
- If a revenue-sharing approach is desired:
  - What is purpose or desired outcome of revenue sharing?
  - How are investments distributed across the region, understanding that they alone are inadequate for a comprehensive regional system and need to be balanced?
  - What should the revenue allocations be based on?
  - How do we account for market changes over time? What if future transit demand develops but an agency doesn’t have a revenue allocation to fund service? What if future transit demand decreases reducing the need for an agency’s revenue allocation?
  - How do we incentive “good” transit investments and provide disincentives for “bad” transit investments?
  - How do we incentive regional outcomes versus localized outcomes?
  - How is a commitment to a consistent level or type of service delivered across jurisdictions?

- How do we allocate a portion of the funds to a revenue sharing model when the balance of the investment portfolio or plan isn't based in jurisdiction-based allocations?
- How do we address cost increases in the future? How do you protect regional investments from sweeps for local need?
- If an operating assistance-based approach is desired:
  - How do we transition from the current regional funding commitment?
  - How do we balance operating assistance across the region?
  - What transit performance statistics should be included?
  - Should the formula include a base allocation to each agency?
  - How do we balance transit coverage with demand?

## Appendix A

Data Source:	MAG	MAG	MAG	MAG	Valley Metro	Valley Metro	Valley Metro	Service Performance Evaluation				Jurisdictional Share Comparison				Geographic Division					
	2006	2019	2020	2020	2019	2019	2019	Operating Expense Per Boarding	Sum Route Boarding	Total Funding Expense	Regional Funding Expense	Vehicle Revenue Miles	Annual Boarding	Service Effectiveness	Bus PTF		Ridership Share	Vehicle Revenue Miles Share			
Data Year:	Population Growth		Financial Effectiveness Evaluation											Service Performance Evaluation				Jurisdictional Share Comparison			
Jurisdiction	2006 Pop	2019 Pop	Regional Funding Expense	Total Funding Expense	Sum Route Boarding	Operating Expense Per Boarding	Vehicle Revenue Miles	Annual Boarding	Service Effectiveness	Bus PTF	Ridership Share	Vehicle Revenue Miles Share	Geographic Division								
Avondale	69382	83900	\$1,075,021,700	\$1,075,021,700	71,141	15.1	602,867	129,436	0.2	1.54%	0.29%	1.70%	West Valley								
Buckeye	31290	79600	#N/A	#N/A	#N/A	#N/A	2,116	7,195	3.4	0.07%	0.02%	0.01%	West Valley								
Chandler	230029	266900	\$5,469,843,099	\$5,782,298,254	640,256	8.5	1,245,516	1,008,023	0.8	9.46%	2.26%	3.52%	East Valley								
El Mirage	31629	34700	#N/A	#N/A	#N/A	#N/A	7,751	3,434	0.4	0.23%	0.01%	0.02%	West Valley								
Fountain Hills	22547	24400	#N/A	#N/A	#N/A	#N/A	5,228	2,626	0.5	0.09%	0.01%	0.01%	East Valley								
Gila Bend	1826	2100	#N/A	#N/A	#N/A	#N/A				0.14%			West Valley								
Gilbert	179602	257700	\$3,822,846,080	\$3,822,846,080	158,010	24.2	628,024	243,675	0.4	6.12%	0.55%	1.78%	East Valley								
Glendale	230455	245100	\$3,063,707,464	\$3,063,707,464	692,183	4.4	1,519,851	2,194,256	1.4	5.68%	4.92%	4.30%	West Valley								
Goodyear	49894	86800	\$362,389,264	\$362,389,264	21,602	16.8	117,962	45,705	0.4	0.26%	0.10%	0.33%	West Valley								
Guadalupe	5316	6400	\$260,885,638	\$260,885,638	30,463	8.6	38,598	34,555	0.9	0.01%	0.08%	0.11%	East Valley								
Litchfield Park	5102	7000	#N/A	#N/A	#N/A	#N/A				0.23%			West Valley								
Mesa	438232	498500	\$11,323,826,640	\$12,879,689,868	2,430,302	4.7	2,783,968	3,513,223	1.3	19.44%	7.88%	7.87%	East Valley								
Paradise Valley	12830	14100	#N/A	#N/A	#N/A	#N/A	111,243	20,129	0.2	0.54%	0.05%	0.31%	East Valley								
Peoria	142495	179800	\$1,415,079,562	\$1,415,079,562	121,517	11.6	355,366	221,016	0.6	2.22%	0.50%	1.00%	West Valley								
Phoenix	1428315	1620000	\$132,847,707	\$132,847,707	9,845	13.5	20,878,695	32,372,056	1.6	31.74%	72.61%	59.03%	Central Valley								
Queen Creek	18459	51600	#N/A	#N/A	#N/A	#N/A				0.06%			East Valley								
Scottsdale	220907	249600	\$6,856,483,401	\$6,841,797,524	748,833	9.2	2,471,107	1,161,347	0.5	10.41%	2.60%	6.99%	East Valley								
Surprise	102901	135900	#N/A	#N/A	#N/A	#N/A	25,170	12,434	0.5	0.23%	0.03%	0.07%	West Valley								
Tempe	156271	187700	\$6,185,979,912	\$8,864,273,901	1,870,923	3.3	4,445,343	3,559,891	0.8	10.56%	7.94%	12.57%	East Valley								
Tolleson	6325	7100	\$362,602,227	\$362,602,227	60,198	6.0	131,832	74,676	0.6	0.31%	0.17%	0.37%	West Valley								
Wickenburg	6243	7900	#N/A	#N/A	#N/A	#N/A				0.02%			West Valley								
Youngtown*	6142	6700	#N/A	#N/A	#N/A	#N/A				0.02%			West Valley								

\*Youngtown's expense includes County's share; the split has not been confirmed yet

## Appendix B

Fiscal Year 2019 – Transit Operations and Maintenance Expenditures				
Jurisdiction	Federal	Regional	Local	Total
Avondale	\$1,769,248	\$748,698	\$1,123,241	\$3,641,187
Buckeye	95,905	41,237	38,000	175,142
Chandler	453,426	7,467,829	2,635,020	10,556,275
El Mirage	13,621	69,556	--	83,177
Fountain Hills	1,749	41,144	2,690	45,583
Gila Bend	50,018	21,026	--	71,044
Gilbert	238,032	5,124,416	1,029,991	6,392,439
Glendale	2,032,724	1,841,390	8,177,750	12,051,864
Goodyear	406,266	222,506	210,679	839,451
GRIC	412,120	--	1,232,470	1,644,590
Guadalupe	12,848	217,324	--	230,172
Maricopa County	616,479	445,305	2,996,635	4,058,419
Mesa	3,011,610	15,086,077	13,026,261	31,123,948
Peoria	843,628	911,564	3,333,624	5,088,816
Phoenix	11,754,313	28,741,313	158,513,854	199,009,480
Scottsdale	1,827,298	7,667,179	6,304,485	15,798,962
SRP-MIC	5,217	88,379	--	93,596
Surprise	72,966	172,150	1,397,253	1,642,369
Tempe	2,069,150	9,242,304	31,097,505	42,408,959
Tolleson	186,503	167,245	360,099	713,847
<b>Total</b>	<b>\$25,873,121</b>	<b>\$78,316,642</b>	<b>\$231,479,557</b>	<b>\$335,669,320</b>

Data Source: Valley Metro Transit Service Inventory FY 2019 – FY 2022

# Regional Transportation Plan Proposition 400 Extension Transit Planning

November 19, 2020  
Joint Board Study Session



1

## Overview & Considerations

*In coordination with MAG...*

- **What is a Regional Transit system?**
- **How should we allocate Regional resources?**
- **Limited Resources: Maintain current levels of services vs. expand services**
- **Reach vs. Frequency**



2

2

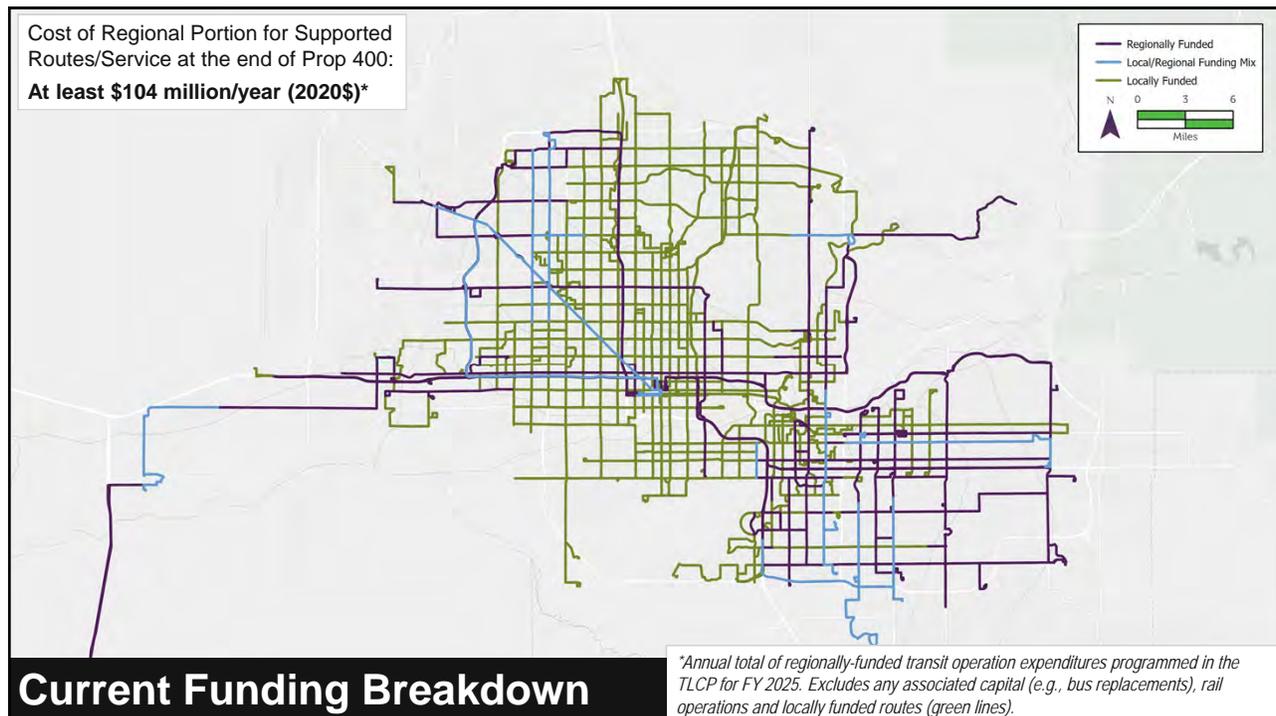
## Valley Metro's Task



1. Map and analyze submitted projects and programmatic requests
2. Identify gaps and potential opportunities
3. Assess / estimate overall costs (including costs to fill gaps)

3

3



4

# Call for Projects Overview



## 304

individual transit projects submitted

*Approx. 24% of the 1,300 transportation projects submitted to MAG*

**24**

submissions for transit programs (set asides)

**Projects could be generally broken out into five categories**

*categories determined by VM planning*

5

5

# Call for Projects Overview



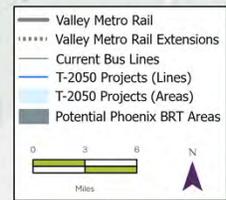
Improve Transit Performance 	New Transit Service 	State of Good Repair 	New Technologies & Services Types 	Expand High-capacity Transit 
Investments to improve the performance of <u>existing</u> transit services	Expansion of the existing regional transit system via <u>new</u> routes, service, operations, etc.	Projects to maintain state of good repair of transit assets	Projects to introduce new transit modes, innovative technologies or services to the region	Expansion of the regional high-capacity system with BRT, LRT or Streetcar
118	110	28	19	27
projects	projects	projects	projects	projects

*Two projects identified for deferral to arterial program*

6

6

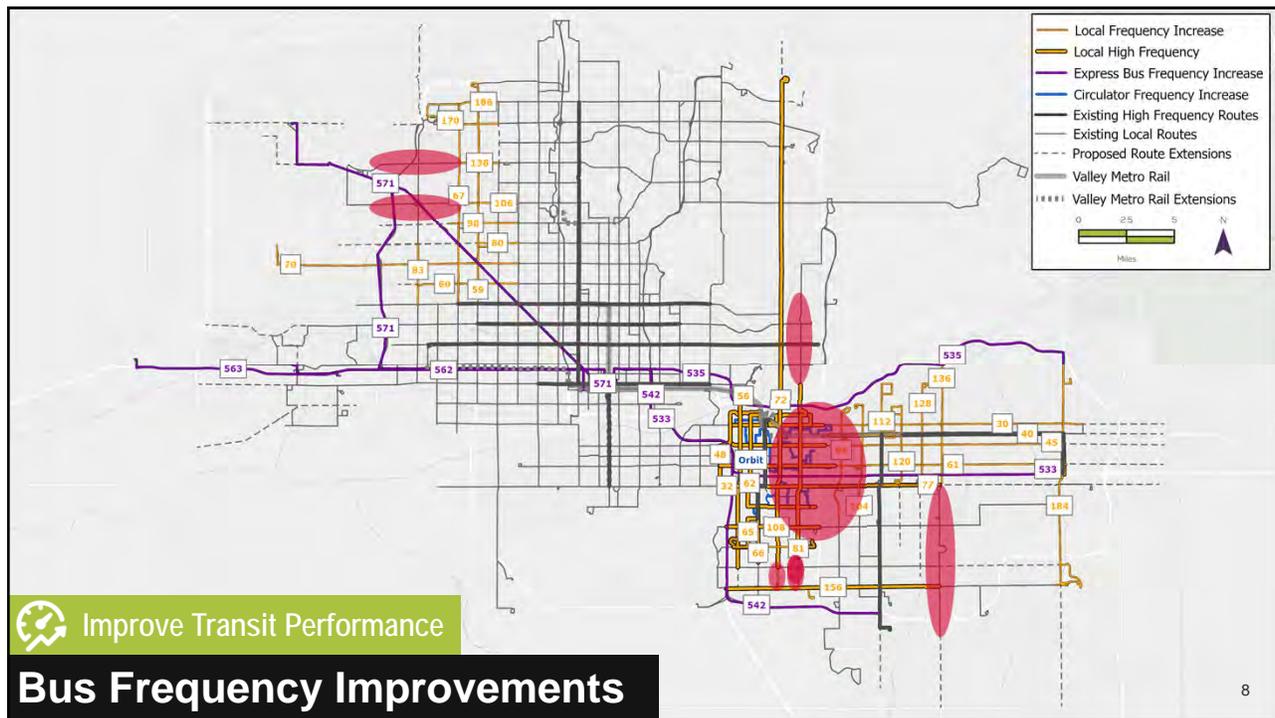
- **Locally funded transit improvements**
- **However, these will be shown in subsequent maps for the goal of painting a regional transit picture**



## Locally Funded Improvements

7

7

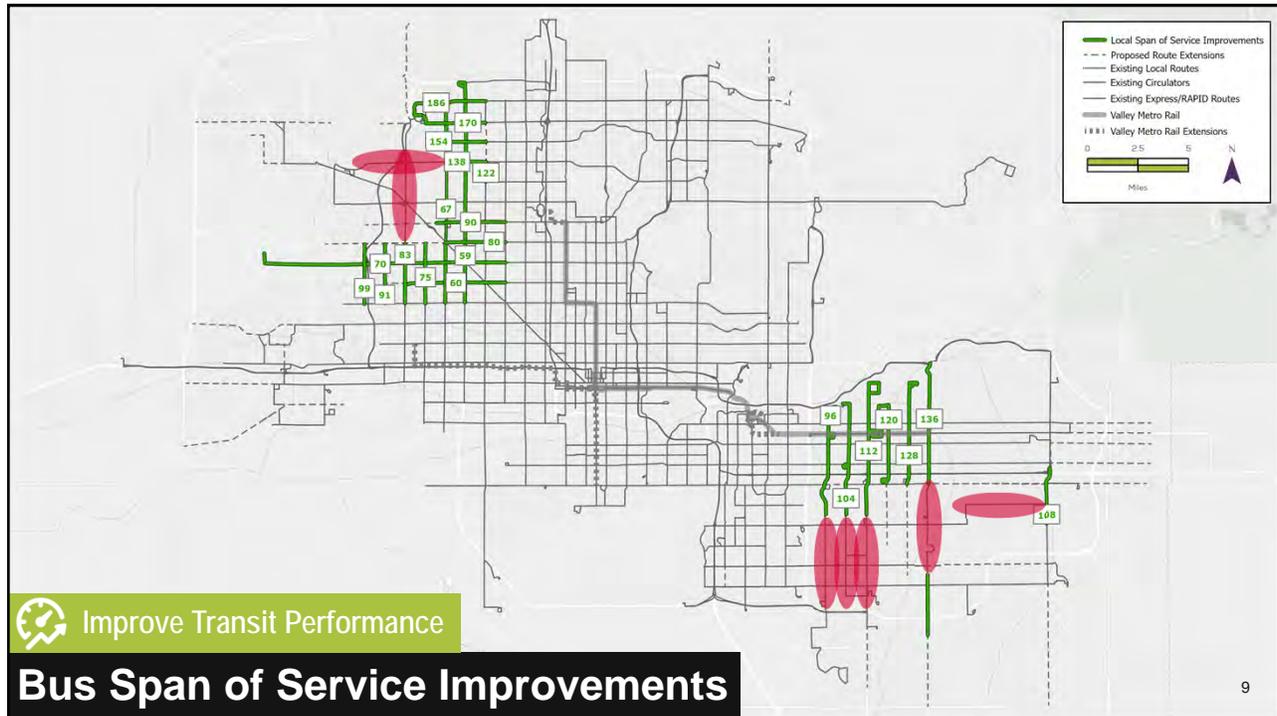


 Improve Transit Performance

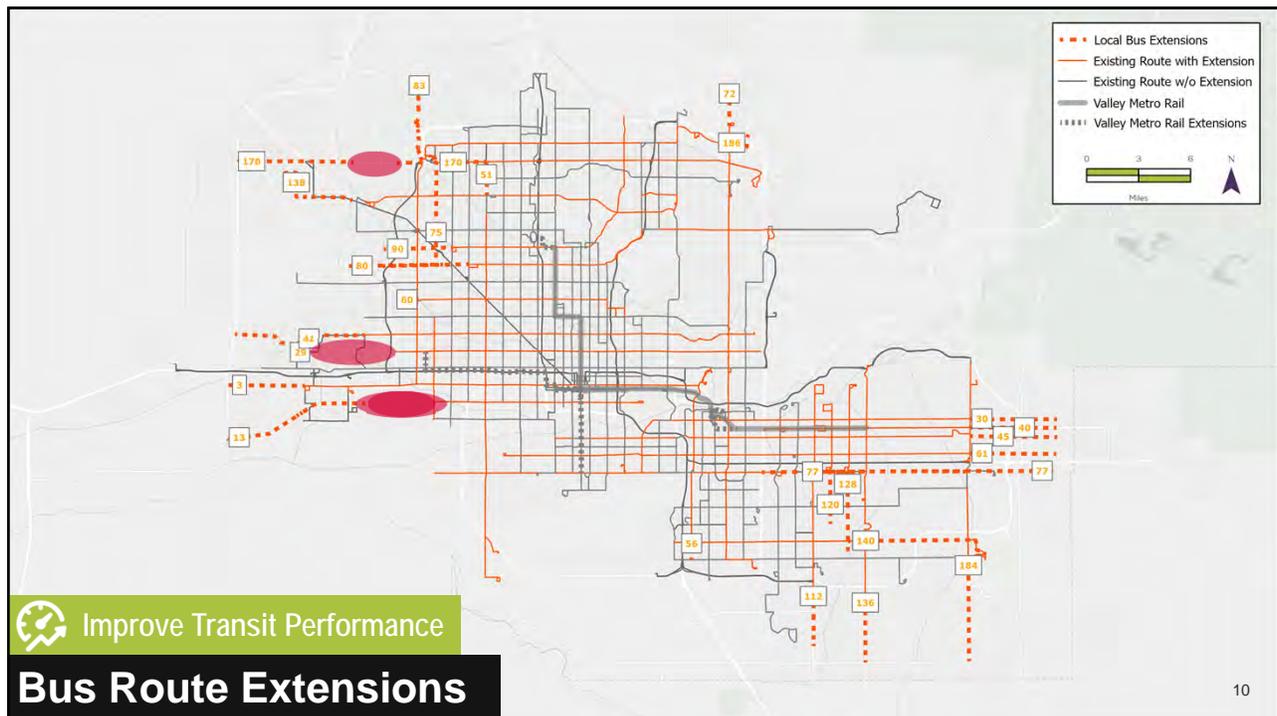
## Bus Frequency Improvements

8

8

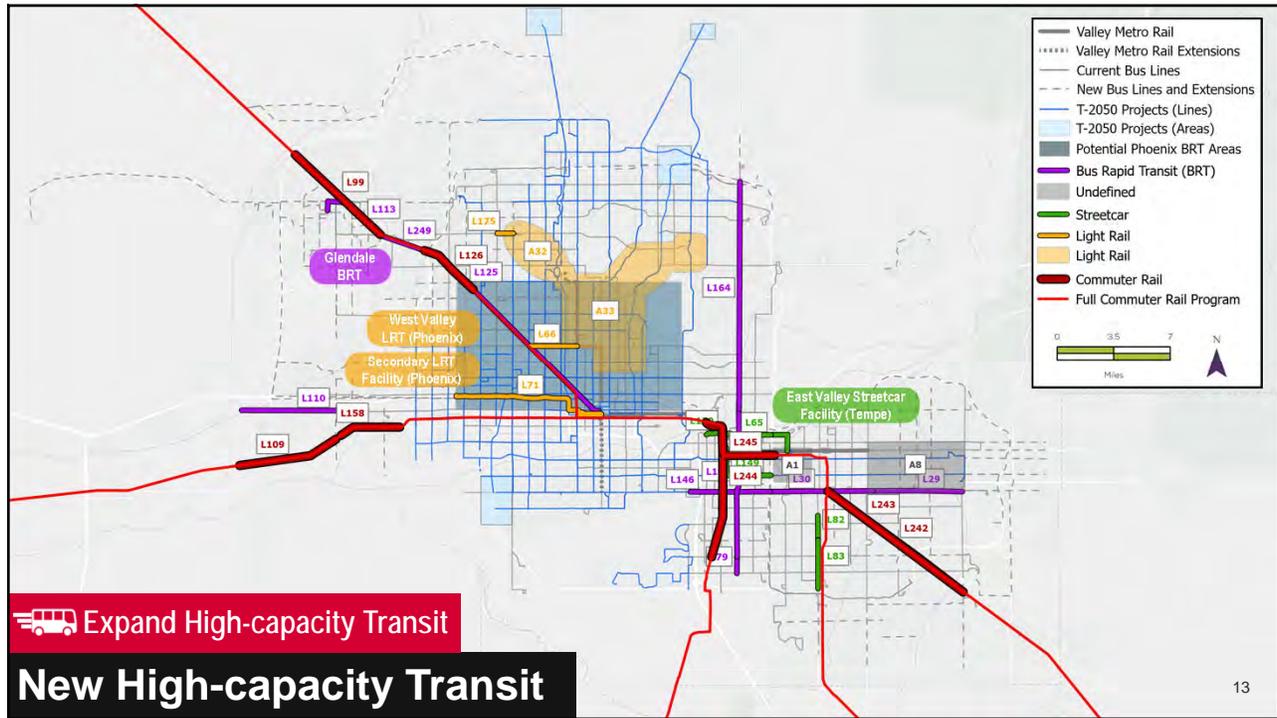


9

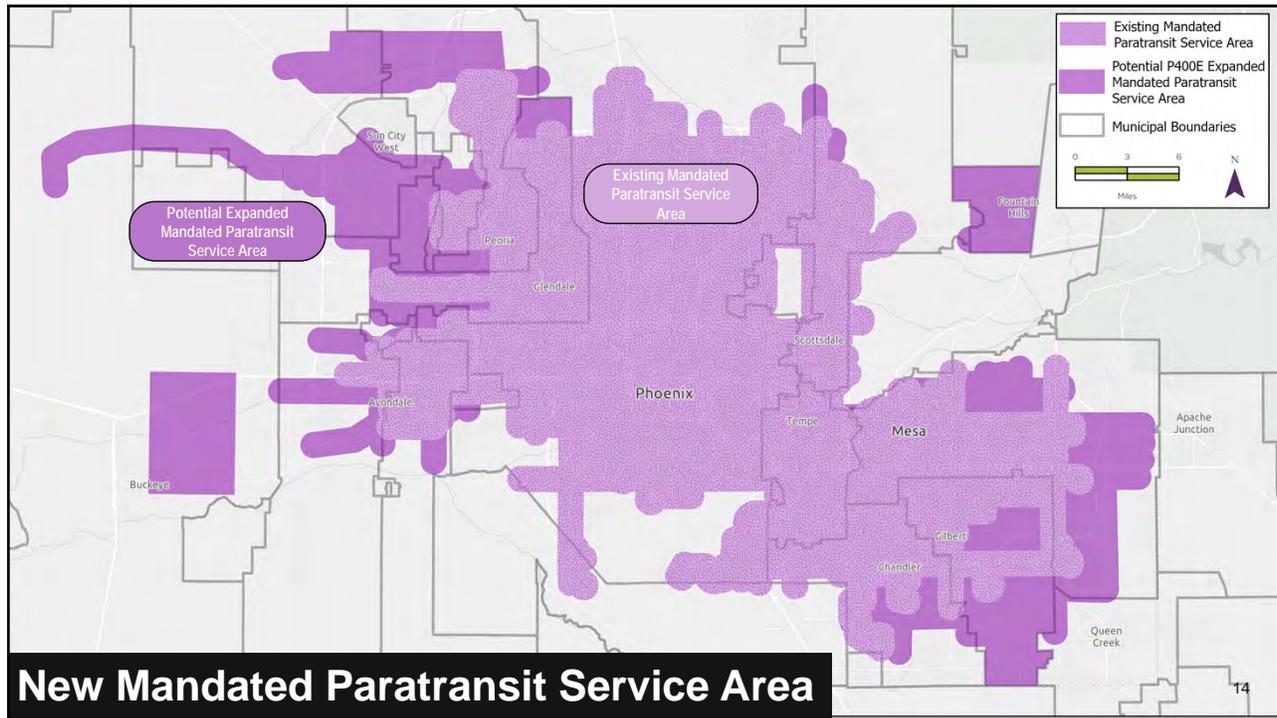


10





13



14

## Other Key Projects / Items



### List of Other Key Projects (unmapped)

1. Grade-separating LRT at University/Rural (Tempe)
2. Dedicated bus lanes on Loop 202 and US 60 (Gilbert)
3. Light Rail Platform Railing (Phoenix)
4. Light Rail Overlay Service (Phoenix)
5. Safety & Security
6. State of Good Repair
7. Light Rail Vehicle Refurbishments/Replacement
8. New and Refurbishing Transit Operation Facilities

15

15

## Observations & Takeaways



- **Gaps in regional system**
- **High-cost to implement**  
(at least \$26 billion to \$37 billion)<sup>1</sup>
- **Ongoing Annual Transit Operations**  
(at least \$104 million/year for regional portion)<sup>2</sup>
- **Requests exceed regional resources**

<sup>1</sup> Sketch Transit System Cost – costs expected to be higher (MAG, May 2020). Will be refined in next steps

<sup>2</sup> Annual total of regionally-funded transit operation expenditures programmed in the TLCP for FY 2025. Excludes any associated capital (e.g., bus replacements), rail operations and locally funded routes (green lines).

16

16

# Update on the development of the Regional Transportation Plan

Valley Metro Boards of Directors  
November 19, 2020



17

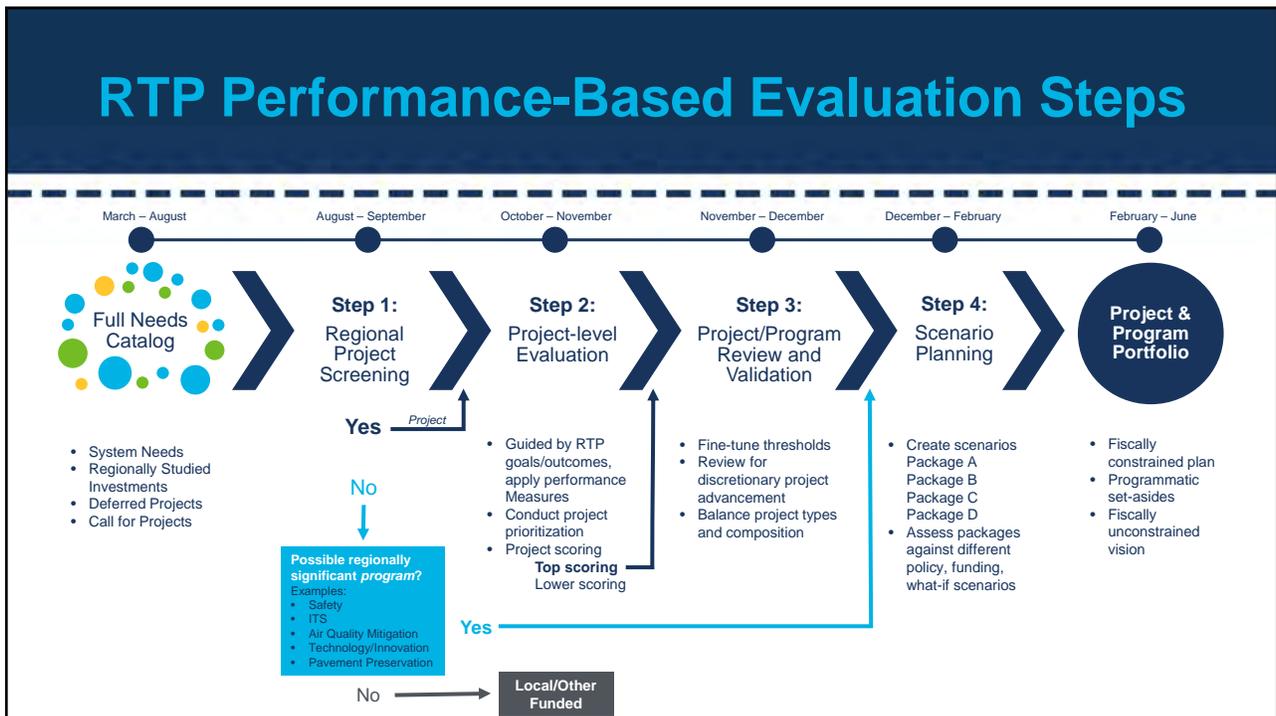
## Presentation Overview

- RTP Development Process
- Peer Region Analysis
- Regional Transit Funding History and Overview
- Role of Local Funding
- Looking Forward
- Questions to Policymakers

18

# RTP Development Process

19



20

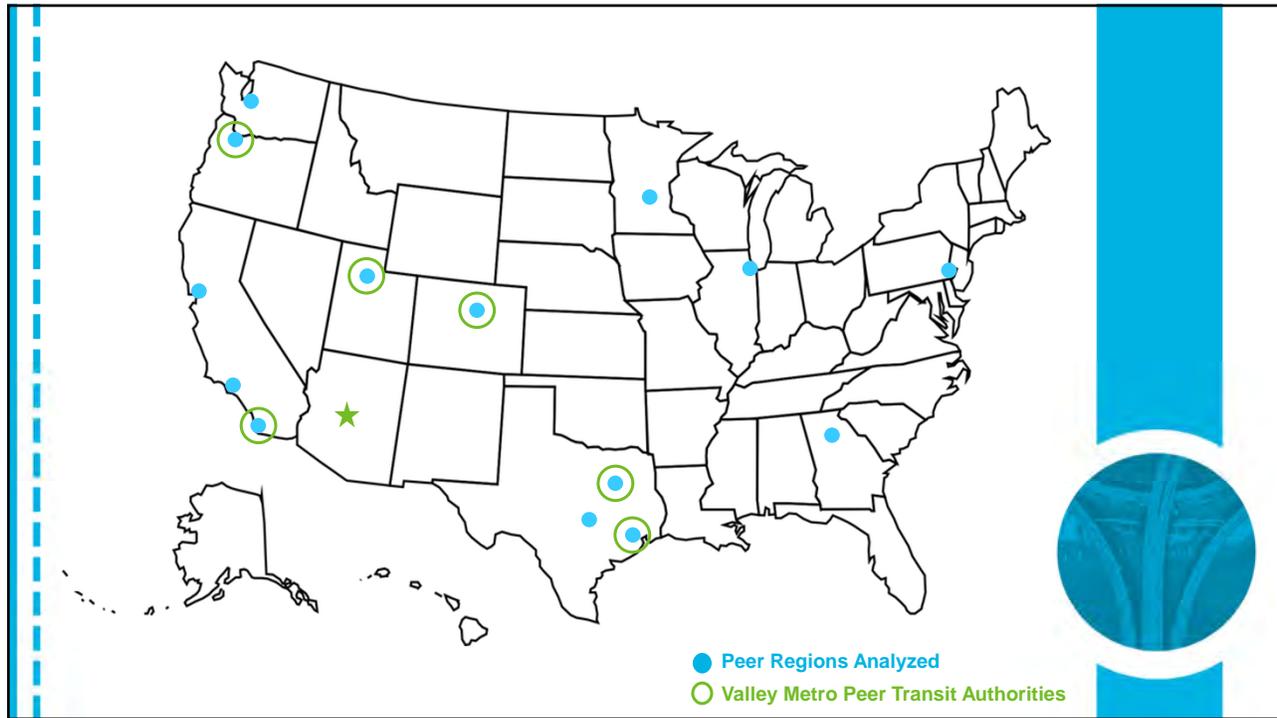
## “Buckets” of RTP Call Submissions

1. Freeway, Highway and Parkway (capital)
2. Arterial Roadway (capital)
3. Arterial Intersection (capital)
4. Other Roadway (capital)
5. Pavement Preservation
6. Commuter Rail (capital, operations)
7. High Capacity Transit (capital, operations)
8. Regional Bus (capital, operations)
9. Other Transit (capital, operations)
10. Active Transportation (capital, design)
11. Safety
12. Intelligent Transportation Systems (capital, operations)
13. Transportation Demand Management (capital, operations)
14. Planning, Support
15. Other Infrastructure

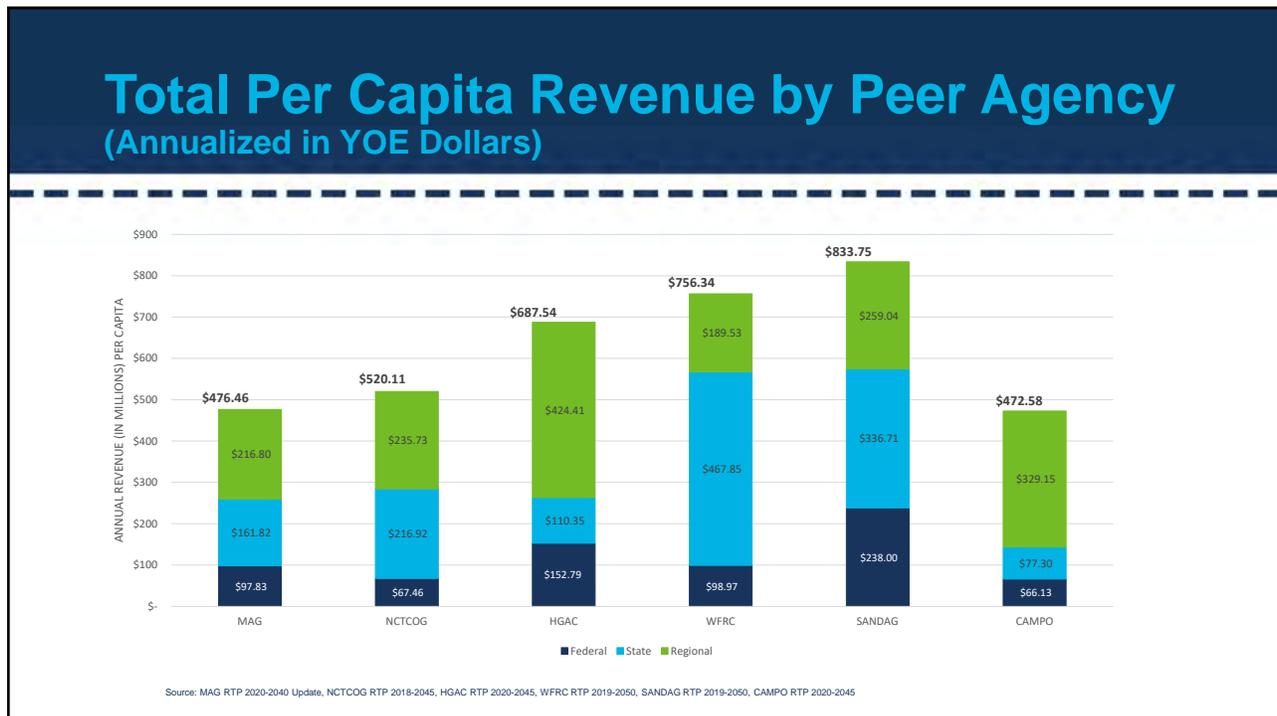
21

## Peer Region Analysis: Transit Funding Highlights

22



23



24

## Peer Agency Transit Sales Tax

Does not include other taxes (property, income, etc.)

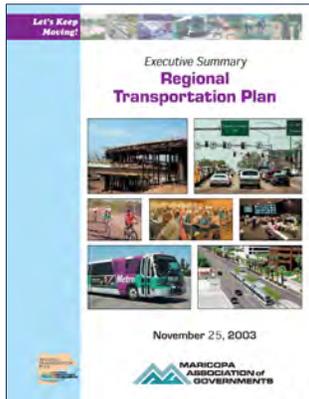
	MAG	PSRC	MTC	DRCOG	WFRC
Sales Tax Amount	0.17% sales tax	1.4% sales tax	0.5% sales tax	1.0% sales tax	Salt Lake County 2.5% sales tax
Agency that Controls Funds	Valley Metro	Sound Transit	BART and MTC	RTD	UTA
Applicability	Maricopa County	Sound Transit District	Alameda, Contra Costa, and San Francisco counties	Regional Transportation District	Salt Lake City County
	ARC	CAMPO	HGAC	NCTCOG	CMAP
Sales Tax Amount	1.0% sales tax	1.0% sales tax	1.0% sales tax	1.0% sales tax	1.25% tax in Cook County and 0.75% in DuPage, Kane, Lake, McHenry, and Will counties
Agency that Controls Funds	MARTA	Capital Metro	Capital Metro 8.75% property tax PASSED November 3, 2020	DART	Regional Transportation Authority
Applicability	Fulton, Clayton and DeKalb counties	Jurisdictions of all member agencies		Jurisdictions of all member agencies	Cook, DuPage, Kane, Lake, McHenry, and Will counties

25



26

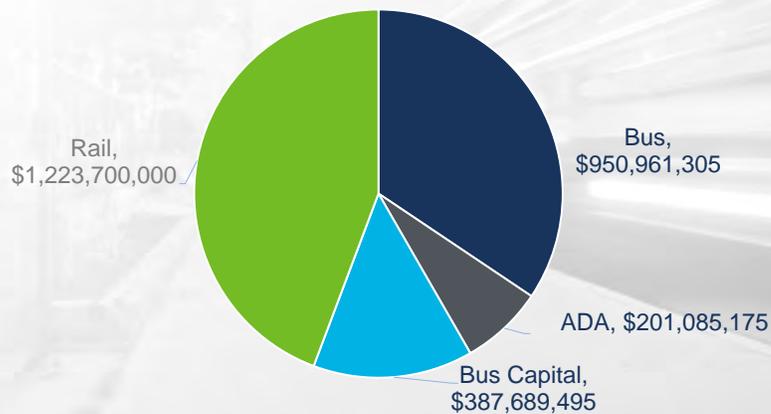
## TLCP Overview



- 2003 RTP was basis for Proposition 400 ballot initiative.
  - Allocated 33.3 percent of sales tax revenues to transit (Public Transportation Fund or PTF).
  - Also allocated MAG FTA formula funds and a portion of MAG FHWA CMAQ funds.
- Transit component managed by Valley Metro through the Transit Life Cycle Program (TLCP).

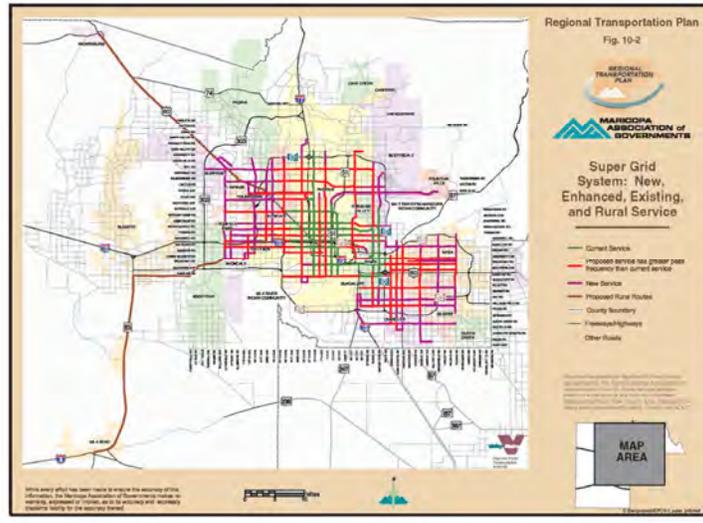
27

## TLCP: 2003 RTP Allocations



28

# 2003 RTP: Supergrid Routes



29

# TLCP: Jurisdictional Allocations

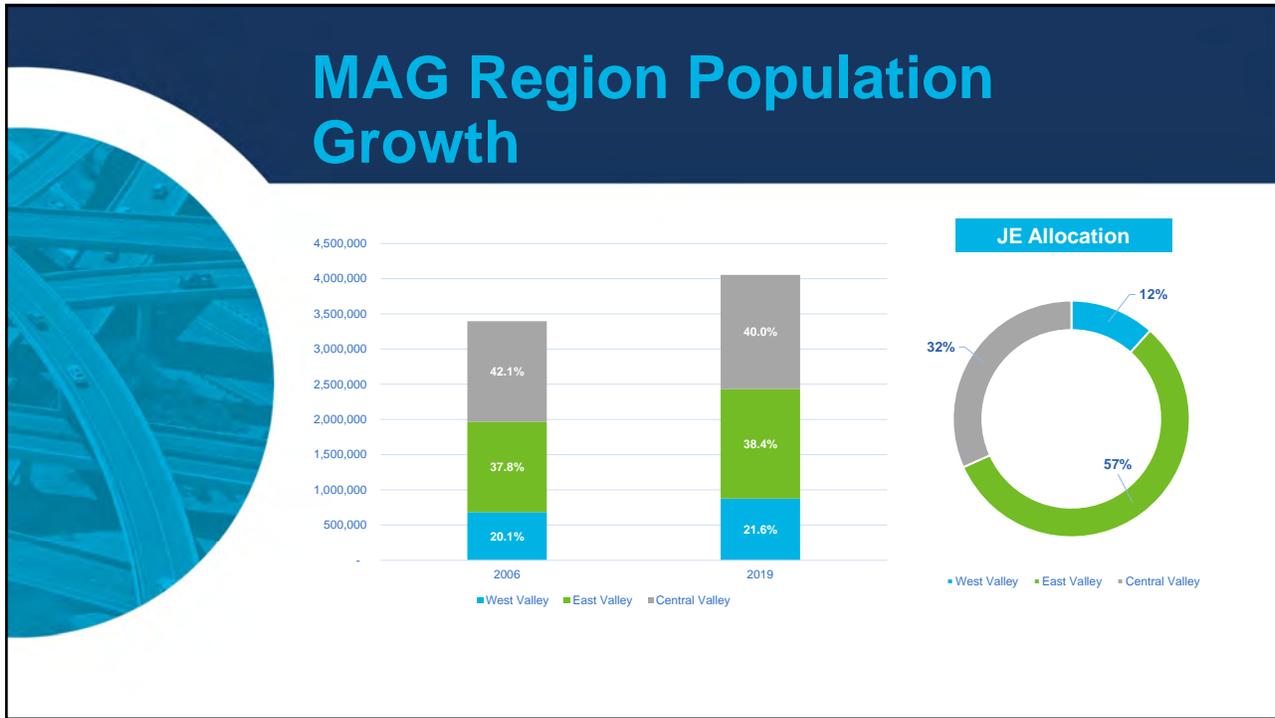
Jurisdiction	Bus PTF <sup>1</sup>	ADA PTF <sup>1</sup>	Bus Capital PTF <sup>1</sup>	High Capacity PTF <sup>3</sup>	Total
Avondale	\$17,182,368	\$3,788,445	\$2,701,500	\$0	\$23,700,688
Buckeye	\$940,271	\$144,761	\$31,015	\$0	\$1,120,089
Carefree	\$0	\$0	\$0	\$0	\$0
Cave Creek	\$0	\$0	\$0	\$0	\$0
Chandler	\$107,535,476	\$24,087,993	\$13,963,300	\$0	\$146,149,676
El Mirage	\$2,605,944	\$571,082	\$298,270	\$0	\$3,487,914
Fountain Hills	\$1,089,225	\$164,890	\$50,400	\$0	\$1,309,537
Gila Bend	\$2,048,115	\$38,206	\$7,754	\$0	\$2,094,075
Gilbert	\$70,194,682	\$16,020,456	\$7,878,100	\$0	\$94,467,482
Glendale	\$66,996,938	\$16,398,496	\$3,959,100	\$25,000,000	\$108,009,538
Goodyear	\$3,491,105	\$468,528	\$23,261	\$0	\$3,992,949
Guadalupe	\$83,787	\$20,109	\$6,203	\$0	\$110,099
Litchfield Park	\$3,025,624	\$438,366	\$38,769	\$0	\$3,512,813
Maricopa County	\$5,264,886	\$3,052,473	\$1,683,100	\$0	\$10,073,686
Mesa	\$221,237,629	\$52,710,457	\$25,073,700	\$65,000,000	\$365,252,929
Paradise Valley	\$7,182,391	\$953,144	\$103,478	\$0	\$8,260,309
Peoria	\$25,585,316	\$5,600,222	\$2,928,975	\$0	\$34,244,991
Phoenix	\$204,913,565	\$0	\$295,217,500	\$1,005,000,000	\$1,495,131,065
Queen Creek	\$609,936	\$112,608	\$15,508	\$0	\$942,073
Scottsdale	\$116,256,364	\$30,299,514	\$13,462,800	\$0	\$160,727,464
Surprise	\$3,090,792	\$426,301	\$50,400	\$0	\$3,577,547
Tempe	\$86,811,277	\$45,169,763	\$30,122,700	\$128,700,000	\$291,860,477
Tolleson	\$4,161,397	\$530,865	\$54,277	\$0	\$4,758,604
Wickenburg	\$279,288	\$50,271	\$7,754	\$0	\$339,324
Youngtown	\$204,811	\$38,206	\$11,631	\$0	\$254,648
<b>TOTAL</b>	<b>\$950,981,305</b>	<b>\$201,085,175</b>	<b>\$397,689,495</b>	<b>\$1,223,700,000</b>	<b>\$2,763,435,975</b>

Table A - Jurisdictional Equity Allocation

Jurisdiction	Bus PTF % Share
Avondale	1.53%
Buckeye	0.073%
Carefree	0.000%
Cave Creek	0.000%
Chandler	9.463%
El Mirage	0.226%
Fountain Hills	0.085%
Gila Bend	0.136%
Gilbert	6.117%
Glendale (a)	5.679%
Goodyear	0.259%
Guadalupe	0.007%
Litchfield Park	0.227%
Maricopa County (b)	0.652%
Mesa	19.441%
Paradise Valley	0.535%
Peoria	2.217%
Phoenix	31.735%
Queen Creek	0.061%
Scottsdale	10.407%
Surprise	0.232%
Tempe	10.564%
Tolleson	0.308%
Wickenburg	0.022%
Youngtown	0.016%
<b>Total</b>	<b>100.000%</b>
<b>West Valley</b>	<b>11.589%</b>
<b>Central Valley</b>	<b>31.735%</b>
<b>East Valley</b>	<b>56.680%</b>



30



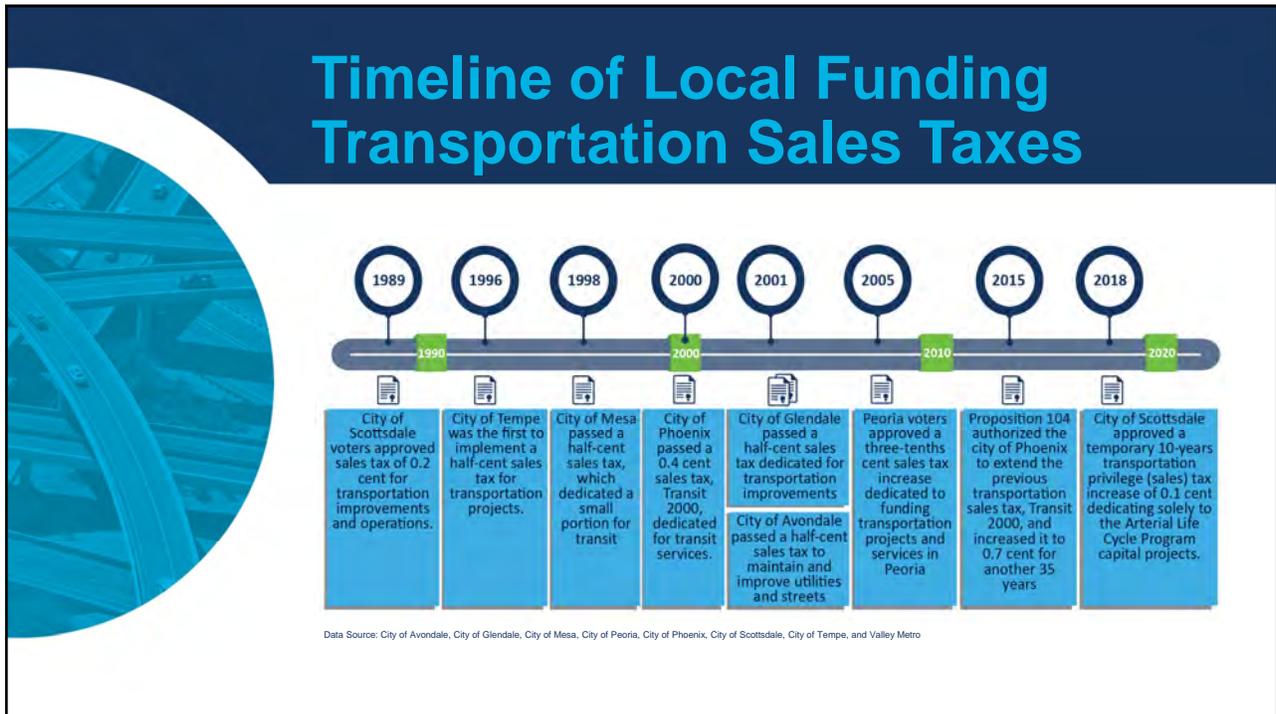
31



32

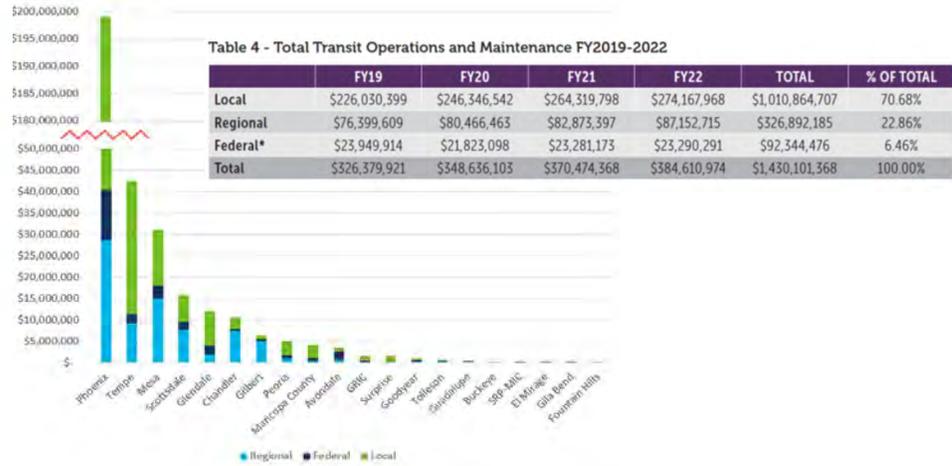
# Role of Local Funding

33



34

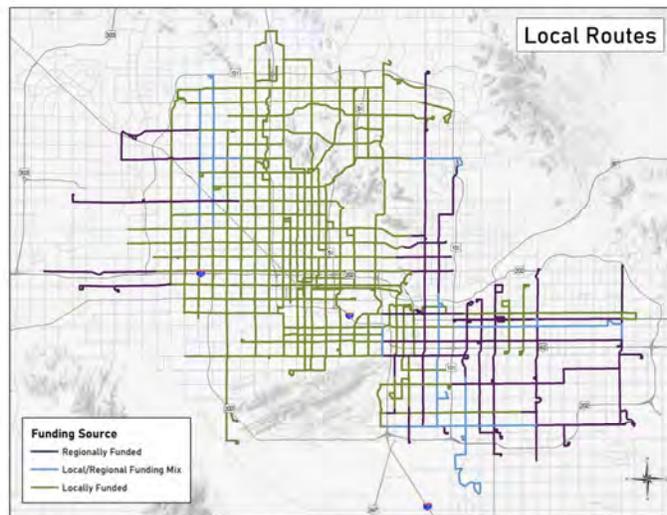
# Total Transit Operating Costs by Funding Source, FY19-FY22



Local funding is inclusive of LTAF II funding distributions to jurisdictions  
 Data Source: Valley Metro Transit Service Inventory FY 2019 – FY 2022

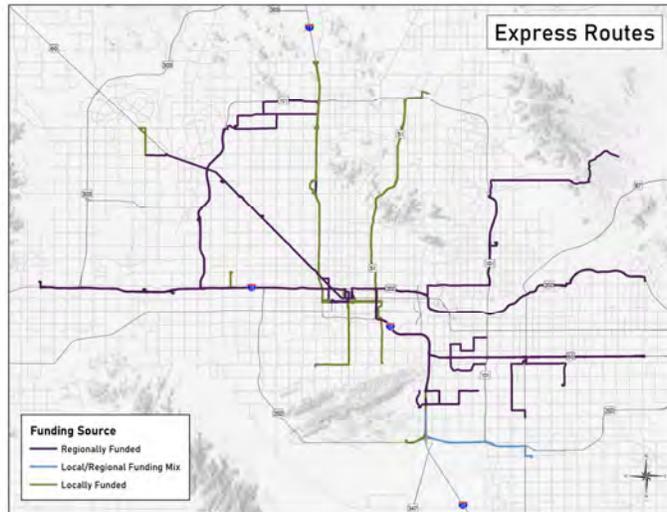
35

# Routes by Funding Source: Bus Service (2019)



36

## Routes by Funding Source: Express Service (2019)

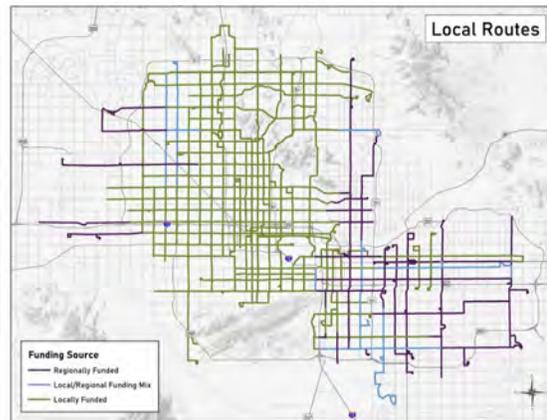


37

Looking Forward

38

## Ongoing Annual Operations



Cost of Regional Portion  
for Supported  
Routes/Service at the  
end of Proposition 400:  
**\$104 m/year (2020\$)\***

\*Annual total of regionally-funded transit operation expenditures programmed in the TLCP for FY 2025. Excludes any associated capital (e.g., bus replacements)

39

## What is the Path Forward?

1. Revisit Long-Range Plan-Based Approach
2. Continue with Fixed Allocation Revenue Approach
3. Migrate to a Formula-Based Approach Tied to Transit Performance

40

## Review of Industry Best Practice

### Five Principles Common to Regional Transit Funding Allocation Policies

1. Allocations based on audited, actual transit performance data
2. Allocations are calculated annually based on the most recently available audited data
3. Allocations positively correlate with service productivity
4. Operators incentivized to adapt transit service to meet transit demand
5. Allocation procedures are transparent

41

## What is the Path Forward? Three Approaches Revisited

Potential Approaches	Advantages	Limitations
Revisit Long-Range, Plan-Based Approach	Reverts to pre-recession regional planning approach	Is not adaptive to account for short-term changes
	Establishes a clear <i>regionally focused</i> vision for bus service	May not promote highest performing services
Continue with Fixed Allocation Revenue Approach	Provides continuity with existing policy	Does not promote quality or regionally focused transit service
		Fixed rates do not account for changes over time
Migrate to a Formula-Based Approach Tied to Transit Performance	Performance-driven approach promotes higher quality <i>regionally focused</i> transit	Implementation of a new policy requires initial procedural adjustments
	Highly adaptive to changes over time	
	Consistent with industry best-practice	

42

## Questions for MAG Policymakers

1. **What are core elements of a regional transit system?**
2. **What is the role of the region in funding a regional transit system?**
  - What pathway for supporting regional bus operations should MAG consider moving forward?
  - What is the role of local communities in forwarding transit?
  - What information would you like to see from MAG moving forward?

43

## Discussions and Questions



44

## Valley Metro's Next Steps



- **Continue coordination with MAG**
- **Develop preliminary high-level cost estimates**
- **Discussion and decision on the realities**