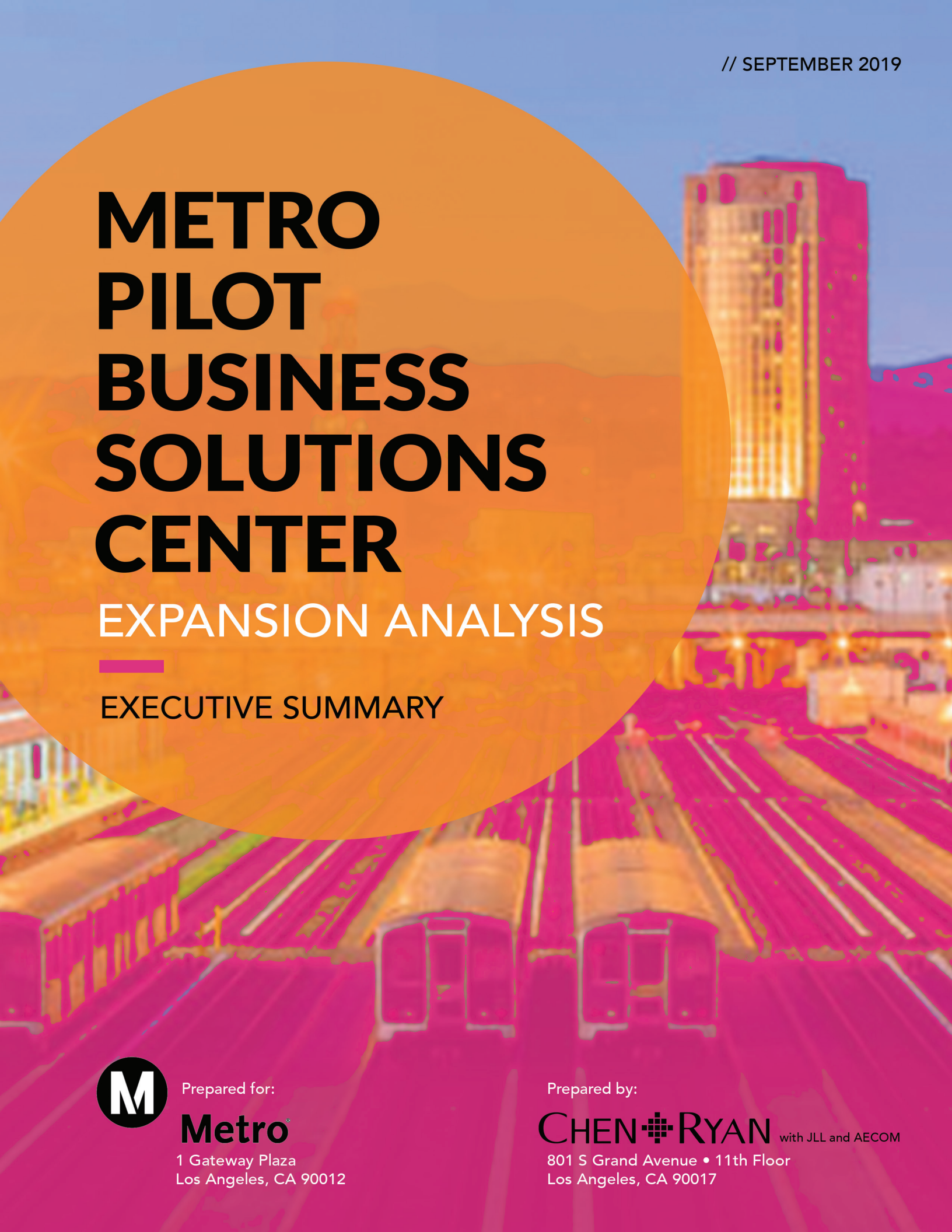
// SEPTEMBER 2019

METRO PILOT BUSINESS SOLUTIONS CENTER

EXPANSION ANALYSIS

EXECUTIVE SUMMARY



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Executive Summary

This report establishes a quantification of the cost to expand Metro's Pilot Business Solution Center Program (BSC) based on the number of small businesses in each corridor. As such, this analysis provides an examination of the business mix along Measure M light rail corridors to identify potentially impacted small business (defined as having 25 or fewer employees), estimates the revenue of those businesses, and the number of those businesses in disadvantaged communities (based on Priority Populations as defined by California Environmental Protection Agency) and Equity Focus Areas, as defined by Metro's Equity Platform Framework.

In summary, between 4,015 and 6,025 small businesses were found to exist within a potential impact buffer of all Measure M light rail projects. A range is provided to account for variable alignments that currently exist for Measure M projects. Between 2,758 and 4,359 small businesses were found to be within disadvantaged community Priority Population areas, with a subset of between 1,294 and 1,718 of these businesses being within Equity Focus Areas.

A summary cumulative range of costs for implementing an expanded BSC is estimated to fall between $28,500,978 and $39,632,138 (2019 dollars) between 2020 and 2058. While this high-level estimate provides an order-of-magnitude for expanding the program to all Measure M corridors, a more detailed cost estimate of each corridor could include expanding and or targeting programs and services, and adjusting costs specific to the market conditions of each corridor.

BACKGROUND

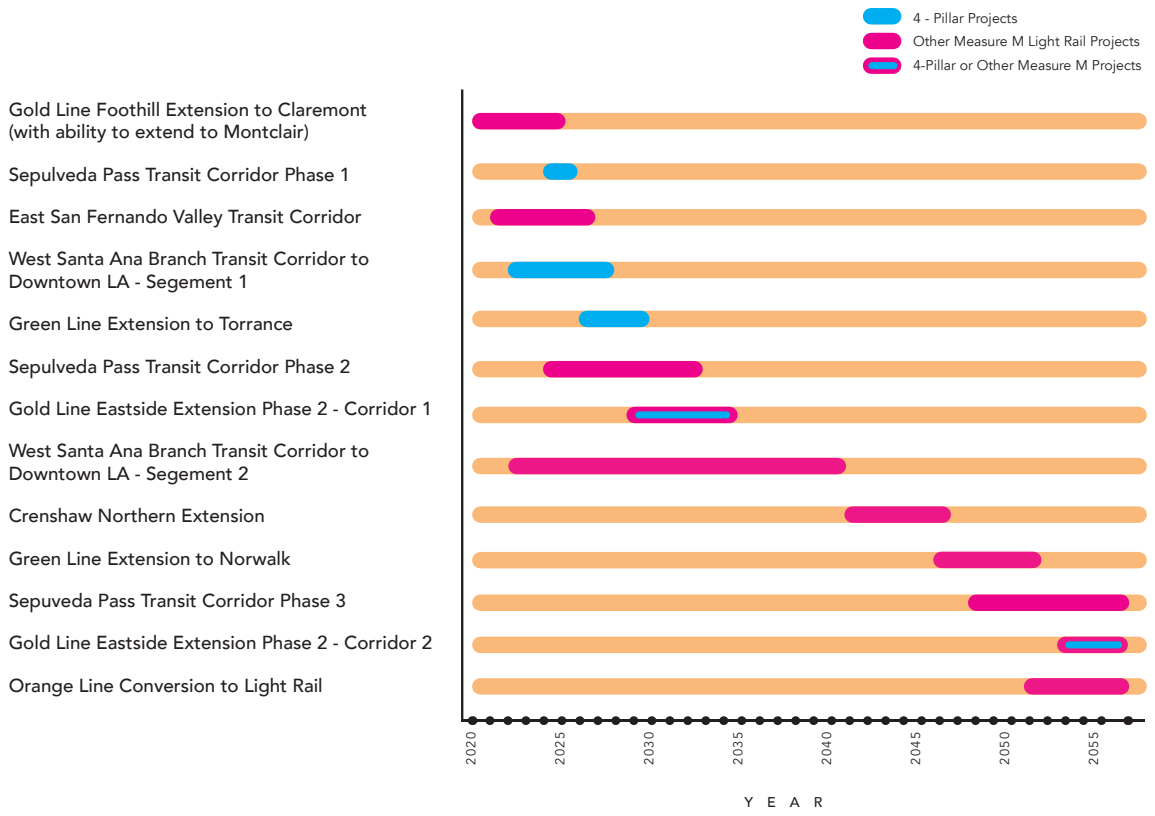
Metro's Pilot Business Solution Center (BSC) was established in 2014 following a motion from Metro's Board of Directors (Motion 79) to provide business assistance and support services to small businesses (defined as having 25 or fewer employees) along the Crenshaw/LAX corridor during the construction of the Crenshaw/LAX Transit Project. Metro's BSC provides an array of support services to businesses, which include, but are not limited to: hands-on business development, expert business advice, coaching and technical assistance including referrals to expert professionals in the areas of accounting management and access to financial capital; branding, marketing, and social media. The current average annual operating cost of the BSC is approximately $310,000 per year, servicing approximately 450 small businesses. Of the 450 businesses, approximately 18% of the small businesses utilize the BSC on an annual basis.

Based upon the success of the current BSC, in June 2019, Metro's Board of Directors issued Motion 38.1, that authorized the CEO to transition the pilot BSC to permanent status, and expand the program along all upcoming Measure M light rail projects. As in the pilot program, the expanded program would assist and support small "mom and pop" businesses during light rail construction.

The analysis documented in this report was conducted to establish an up-front disclosure of the number of businesses that would potentially be included in an expanded BSC Program, as well as the projected costs of the expanded Program.

MEASURE M PROJECT SCHEDULE

Figure ES-1 **Measure M Light Rail Projects Schedule**



Source: LA Metro, Chen Ryan Associates

The construction schedule for the 4-Pillar and other Measure M Projects will span from the year 2020 to 2057, as demonstrated per **Figure ES-1**. The construction timeline of 4-Pillar Projects is expected, based upon Metro projections, to span the years of 2022 and 2035, while other Measure M projects are anticipated to be constructed between the years of 2020 and 2057. For analyses described in later sections, one year of pre-construction and one year of post-construction activities are included for cost estimation.

Note that multiple alignment alternatives currently exist for many Measure M Projects. This analysis considered each alignment alternative where this was the case. Therefore, estimated impacted businesses, projected BSC operating costs, and estimated business revenue profiles are reported as a range of costs (low to high) when it is necessary to encompass a combination of the highest and lowest alternatives along each corridor.

Detailed information pertaining to the alignment alternatives being considered at the time of this analysis is provided in Section 2.0.

POTENTIALLY IMPACTED SMALL BUSINESSES

The number of potentially impacted small businesses along all Measure M project corridors is estimated to range between 4,015 and 6,025 based upon the chosen combination of alignment alternatives, as presented in **Table ES-1**.

PRIORITY POPULATION AND EQUITY FOCUS AREAS

Between 2,758 and 4,359 impacted small businesses were found to exist in disadvantaged community areas (defined as Priority Population areas), and between 1,294 and 1,718 impacted small businesses were found to exist in areas defined as Equity Focus Areas. Detailed methodology pertaining to the identification of businesses in Priority Population and Equity Focus Areas are presented in Section 4.0.

Table ES-1 Impacted Small Businesses along Measure M LRT Corridors

Measure M Projects	Potentially Impacted Small Businesses[2]
4-Pillar Projects	
Low	844
High	2,414
Other Measure M LRT Projects	
Low	3,171
High	3,611
Total Measure M LRT Projects	
Low	4,015
High	6,025

Source: JLL

Note:

1. Low or high figures based on combination of lowest or highest Alternatives within each corridor (based on number of small businesses).

PROJECTED BSC OPERATING COSTS

Table ES-2 summarizes anticipated yearly costs for operating the BSC for the first five-year period of 2020-2024. As shown, annual operating costs are estimated to be $1,185,087 for the year 2020. Five-year operating costs are estimated to range between $8,309,821 and $10,303,031.

Table ES-2 Estimated 5-Year BSC Operating Costs (2019 Dollars)

Cost for All Lines by Year (2020-2024)[1]	2020	2021	2022	2023	2024	Summary (2020-2024)
4 Pillar Projects						
Low	-	$417,867	$408,332	$610,097	$605,594	$2,041,891
High	-	$620,365	$606,210	$1,413,269	$1,395,257	$4,035,101
Other Measure M LRT Projects[2]						
Low	$1,185,087	$1,157,462	$1,157,462	$1,157,462	$1,610,457	$6,267,930
High	$1,185,087	$1,157,462	$1,157,462	$1,157,462	$1,610,457	$6,267,930
Total Measure M LRT Projects						
Low	$1,185,087	$1,575,329	$1,565,795	$1,767,559	$2,216,051	$8,309,821
High	$1,185,087	$1,777,827	$1,763,672	$2,570,731	$3,005,714	$10,303,031

Source: Chen Ryan Associates

Note:

1. Low or high figures based on combination of lowest or highest Alternatives within each corridor (based on number of small businesses).
2. During the 5-year period of 2020-2024, only one alternative exists.

Table ES-3 presents a summary of projected total costs of an expanded BSC along all Measure M light rail corridors between 2020-2058. Note that an additional year, representing pre-construction, was added to the construction schedule presented in Figure ES-1 for the purposes of projecting BSC operating costs. Likewise, one-year of post-construction was appended to each project. One notable exception lies with the Metro Gold Line Foothill Extension, which is scheduled to begin construction in 2020 and has already experienced pre-construction activities without a BSC program in place. This results in a timeline of 2020-2058 for BSC operation, composed of 4-Pillar Projects ranging spanning the years of 2021-2036, and other Measure M projects spanning the time period of 2020-2058.

A range of costs is also provided due to the presence of multiple alignment alternatives for many projects. As shown, costs are anticipated to range between $28,500,978 as a low

estimate, to $39,632,138 as a high estimate along all Measure M light rail corridors. These estimates are comprised of an estimated range of between $5,286,530 and $13,871,481 to operate the BSC for 4-Pillar Projects, in addition to an estimated range of between $23,214,448 and $25,760,657 to operate the BSC for other Measure M light rail Projects. Detailed BSC Operating Cost information is presented in Section 6.0.

Table ES-3 Yearly Summary BSC Operating Costs for All Mesure M Light Rail Corridors (2019 Dollars)

Project[1]	Small Businesses	Total Cost[1]
4-Pillar Projects (2021-2036)		
Low	844	$5,286,530
High	2,414	$13,871,481
Other Measure M LRT Projects (2020-2058)		
Low	3,171	$23,214,448
High	3,611	$25,760,657
Summary of Costs (Low)	**4,015**	**$28,500,978**
Summary of Costs (High)	**6,025**	**$39,632,138**

Source: Chen Ryan Associates

Note:

1. Low or high figures based on combination of lowest or highest Alternatives within each corridor (based on number of small businesses).

REVENUE PROFILES

Annual revenue of impacted small businesses is estimated to range between approximately $5.3B and $8.0B. Annual revenue of impacted small businesses in Priority Population Areas is estimated to range between approximately $4.0B and $6.1B, while annual revenue of impacted small businesses in Equity Focus Areas is estimated to range between approximately $2.0B and $2.6B.

Table ES-4 presents a summary of business along Measure M light rail corridors by their position within a Priority Population and/or Equity focus area, as well as their anticipated revenue profiles. Small business revenue profiles are presented in greater detail in Section 5.0.

Table ES-4 Revenue Profile of all Small Businesses along Measure M LRT Corridors (2019 Dollars in Thousands)

Revenue Summary[1]	Small Businesses[2]	Annual Revenue of Small Businesses[2,]	Small Businesses in Priority Population Areas[3]	Annual Revenue of Small Businesses in Priority Population Areas[3]	Small Businesses in Equity Focus Areas[4]	Annual Revenue of Small Businesses in Equity Focus Areas[4]
4-Pillar Projects						
Low	844	$1,505,809	635	$1,286,622	321	$757,043
High	2,414	$3,580,181	1,791	$2,810,368	556	$1,133,134
Other Measure M LRT Projects						
Low	3,171	$3,814,009	2,123	$2,682,404	973	$1,214,560
High	3,611	$4,435,142	2,568	$3,309,965	1,162	$1,463,507
Total Measure M LRT Projects						
Low	4,015	$5,319,818	2,758	$3,969,026	1,294	$1,971,603
High	6,025	$8,010,045	4,359	$6,120,333	1,718	$2,596,641

Source: JLL

Note:

1. Low or high figures based on combination of lowest or highest Alternatives within each corridor (based on number of small businesses).
2. Small businesses are defined as 25 or fewer employees.
3. Priority Populations include CalEPA defined disadvantaged communities, low-income communities, and low-income households.
4. Equity Focus areas are based on Metro defined race/ethnicity, low-income and low vehicle ownership area. All small businesses in Equity Focus Areas also exist within Priority Populations.

ADDITIONAL BSC SERVICES

Metro's BSC provides an array of support services to small businesses, which often include, but are not limited to: hands-on business development, expert business advice, coaching and technical assistance including referrals to expert professionals in the areas of accounting management and access to financial capital; branding, marketing, and social media. The current annual operating cost of the BSC is approximately $310,000 serving approximately 18% of the 450 small businesses in the corridor. Several additional opportunities for services are discussed below, based upon best-practices research of other construction mitigation or business improvement programs from sister agencies, including:

- Business Shuttles
- Business Operations Support
- Dissemination of Public Information
- Customer Incentives
- Parking Lot Alterations or Sharing
- Forgivable Loans
- Workshops and Social Media

Based upon an interview held with Metro's Business Solution Center staff on August 27, 2019, the following were also identified as considerations held by the BSC as potential future services, based upon observations of business need while executing the Pilot BSC:

- Providing services, including those services that are currently provided, for a longer timeframe following the end of construction,
- Façade and/or signage improvements, and
- Access to capital

// SEPTEMBER 2019

METRO PILOT BUSINESS SOLUTIONS CENTER

EXPANSION ANALYSIS

FINAL REPORT

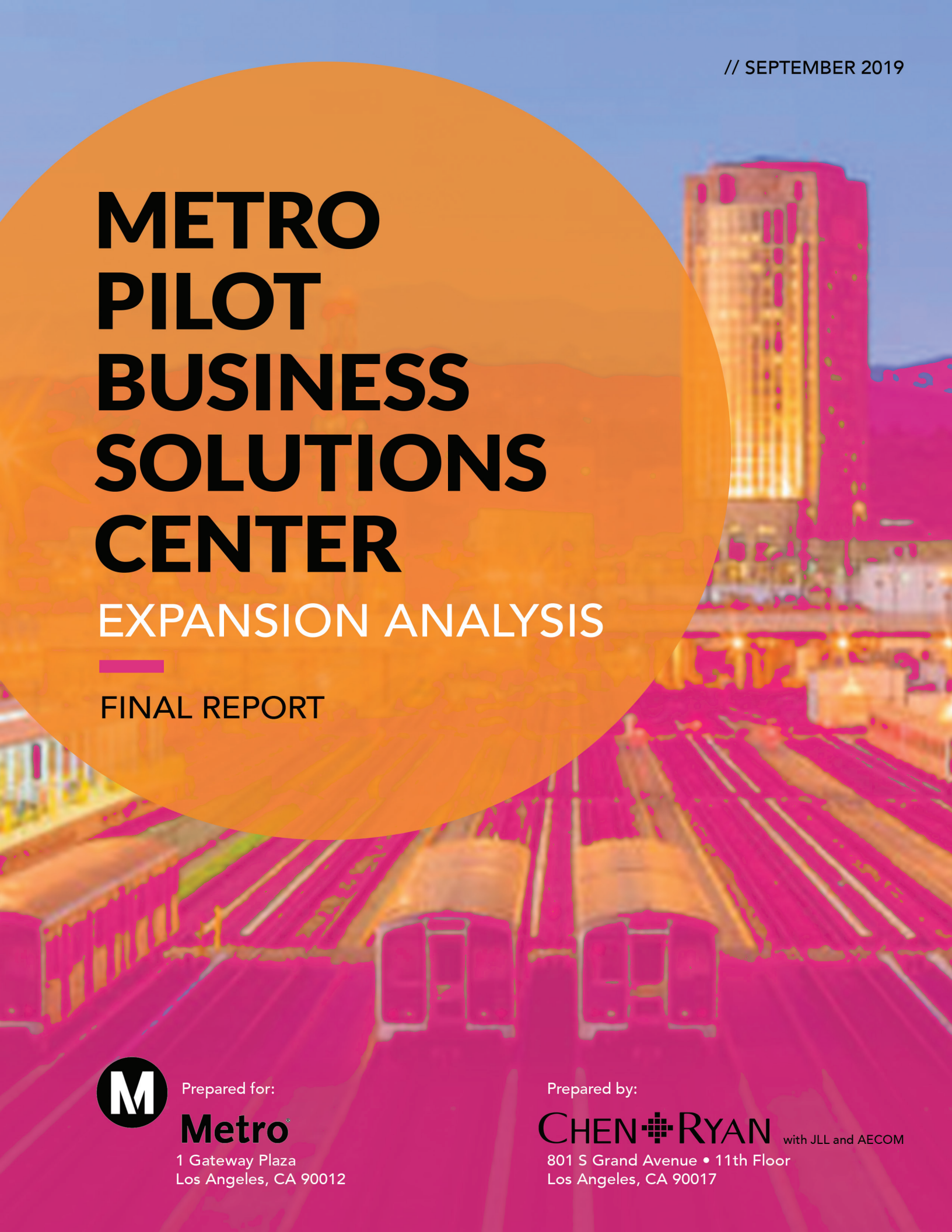


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Table of Contents

List of Figures & Tables

1.0 Introduction

This report establishes a quantification of the cost to expand Metro's Pilot Business Solution Center Program (BSC) based on the number of small businesses in each corridor. As such, this analysis provides an examination of the business mix along Measure M light rail corridors to identify potentially impacted small business (defined as having 25 or fewer employees), estimates the revenue of those businesses, and the number of those businesses in disadvantaged communities (based on Priority Populations as defined by California Environmental Protection Agency) and Equity Focus Areas, as defined by Metro's Equity Platform Framework.

In summary, between 4,015 and 6,025 small businesses were found to exist within a potential impact buffer of all Measure M light rail projects. A range is provided to account for variable alignments that currently exist for Measure M projects. Between 2,758 and 4,359 small businesses were found to be within disadvantaged community Priority Population areas, with a subset of between 1,294 and 1,718 of these businesses being within Equity Focus Areas.

A summary cumulative range of costs for implementing an expanded BSC is estimated to fall between $28,500,978 and $39,632,138 (2019 dollars) between 2020 and 2058. While this high-level estimate provides an order-of-magnitude for expanding the program to all Measure M corridors, a more detailed cost estimate of each corridor could include expanding and or targeting programs and services, and adjusting costs specific to the market conditions of each corridor.

1.1 CURRENT BUSINESS SOLUTION CENTER PROGRAM

Metro's Pilot Business Solution Center (BSC) was established in 2014 following a motion from Metro's Board of Directors (Motion 79) to provide business assistance and support services to small businesses along the Crenshaw/LAX corridor during the four-year construction of the Crenshaw/LAX Transit Project. Small businesses along the corridor have access to the BSC for business and technical assistance, including business development services and referrals to partnering business resource providers. The BSC operates to deliver Metro's goal to help small businesses continue to thrive throughout construction and post construction.

Metro's BSC provides an array of support services to small businesses, which often include, but are not limited to: hands-on business development, expert business advice, coaching and technical assistance including referrals to expert professionals in the areas of accounting management and access to financial capital; branding, marketing, and social media. The current annual operating cost of the BSC is approximately $310,000 serving approximately 18% of the 450 small businesses annually in the corridor.

1.2 BUSINESS SOLUTION CENTER EXPANSION

Based upon the success of the current BSC, in June 2019, Metro's Board of Directors issued Motion 38.1, that authorized the CEO to transition the pilot BSC to permanent status, and expand the program along all upcoming Measure M light rail Projects. As in the pilot program, the expanded program would assist and support small businesses during light rail construction.

The analysis documented in this report was conducted to establish an up-front disclosure of the number and annual revenue of small "mom and pop" businesses that would potentially be included in an expanded BSC Program.as well as the projected costs of the expanded Program. This analysis also includes an assessment of the number of affected small businesses in disadvantaged (Priority Population) areas and also Equity Focus Areas.

1.3 REPORT ORGANIZATION

Following this introduction, the report is organized as follows:

Chapter 2 presents an overview of the study area that is to be analyzed for this analysis.
Chapter 3 details the schedule of Measure M Projects, differentiating between accelerated "4-Pillar" Projects and other Measure M light rail Projects.
Chapter 4 documents the methodology utilized for this analysis.
Chapter 5 presents corridor revenue profiles for all small businesses impacted by Measure M light rail construction, also organized by "4-Pillar" and other Measure M Projects.
Chapter 6 documents the projected costs for operating the expanded BSC.
Chapter 7 discusses potential future services that an expanded BSC could provide to impacted businesses.

2.0 Study Area

The study area is comprised of construction corridors located across Los Angeles County where construction of Measure M-funded light rail Projects is anticipated. These corridors are illustrated in **Figure 1**. As shown, corridors include:

1. Crenshaw Line Northern Extension to West Hollywood
2. East San Fernando Valley Transit Corridor
3. Gold Line Eastside Rail Extension (SR-60 alignment)
4. Gold Line Eastside Rail Extension (Washington Boulevard Alignment)
5. Gold Line Foothill Rail Extension to Claremont
6. Green Line Rail Extension to Norwalk Metrolink Station
7. Green Line Rail Extension from Redondo Beach to Torrance Transit Center
8. Sepulveda Pass Transit Corridor – San Fernando Valley to Westside
9. Sepulveda Pass Transit Corridor – Westside to LAX
10. Orange Line Bus Rapid Transit Conversion to Light Rail
11. West Santa Ana Branch Light Rail Corridor: Union Station to City of Artesia

The eleven total corridors are subdivided into two priority-based classifications: 4-Pillar Projects, which carry the highest priority of implementation due to offering key gap closure at the regional level, and all other Measure M-funded Projects.

Further, certain corridors currently carry multiple potential alignments. For the purposes of this

analysis, 4-Pillar Projects with several alignment alternatives were analyzed for each potential alignment. This includes the following corridors:

- Sepulveda Pass Transit Corridor – San Fernando Valley to Westside (4 potential alignments)
- Green Line Rail Extension from Redondo Beach to Torrance Transit Center (3 potential alignments)
- West Santa Ana Branch Light Rail Corridor: Union Station to City of Artesia (two potential alignments within Downtown Los Angeles)

As previously mentioned, the Gold Line Eastside Rail Extension carries two potential alignments, along SR-60 and Washington Boulevard. It is anticipated that one of these two alignments will be forwarded as a 4-Pillar Project, at which time the second alignment will join the remaining list of Measure M Projects.

Other Measure M Projects were analyzed with a single alignment.

Metro's website carries detailed overviews of each of these Projects, served by the links below. The contents of these links are included as Appendix A to this report.

PROJECT WEBSITES

Crenshaw Line Northern Extension to West Hollywood:
- https://www.metro.net/projects/crenshaw-northern-extension/

East San Fernando Valley Transit Corridor:
- https://www.metro.net/projects/east-sfv/

Gold Line Eastside Rail Extension (both alignments):
- https://www.metro.net/projects/eastside_phase2/

Gold Line Foothill Extension to Claremont:
- https://www.metro.net/projects/foothill-extension/

Green Line Rail Extension to Norwalk Metrolink Station:
- http://www.scag.ca.gov/programs/Pages/NorwalkGreenlineStudy.aspx

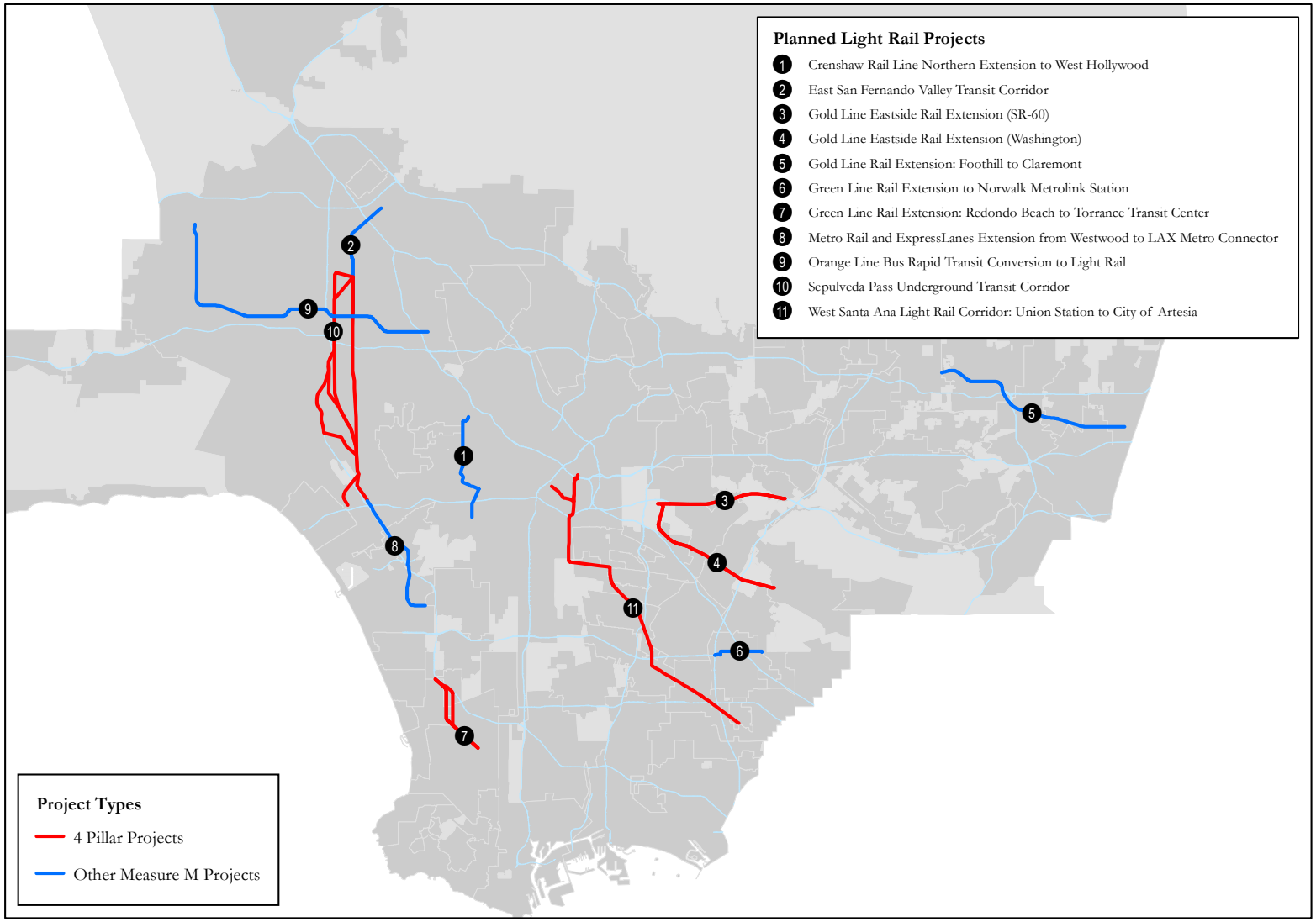
Green Line Rail Extension from Redondo Beach to Torrance Transit Center:
- https://www.metro.net/projects/green-line-extension/

Sepulveda Pass Transit Corridor (San Fernando Valley to Westside, and Westside to LAX):
- https://www.metro.net/projects/sepulvedacorridor/

Orange Line Bus Rapid Transit Conversion to Light Rail:
- (no project webpage)

West Santa Ana Branch Light Rail Corridor: Union Station to City of Artesia:
- https://www.metro.net/projects/west-santa-ana/

Figure 1 Study Area



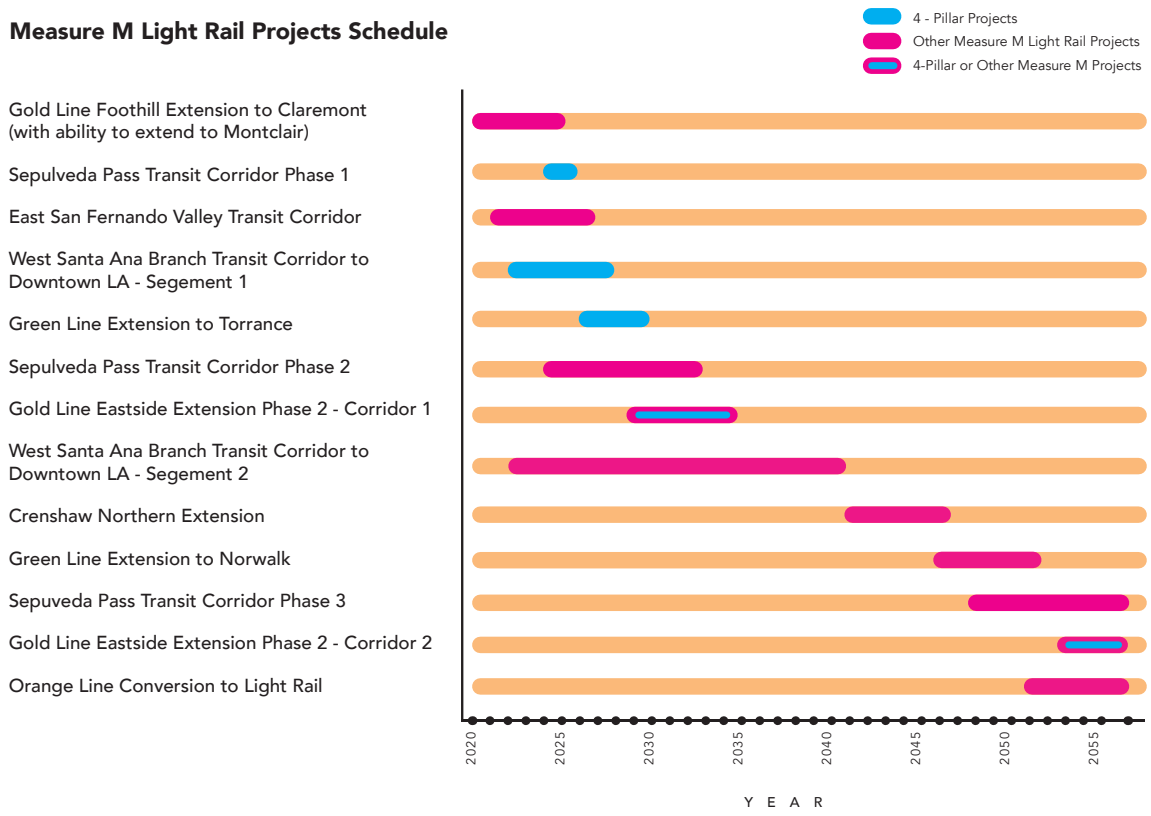
Metro Business Solution Center Analyses

Source: Chen Ryan Associates

3.0 Schedule of 4-Pillar and Measure M Projects

The construction schedule for the 4-Pillar and Measure M Projects presented in Chapter 2 will span from the year 2020 to 2057, as demonstrated on a per-Project timeline in **Figure 2**. This timeline is based upon current (2019) Metro estimates of construction timelines. As shown, 4-Pillar Projects in particular are scheduled to span a timeline from 2022-2035.

Figure 2 **Measure M Light Rail Projects Construction Schedule**



Source: Chen Ryan Associates

4.0 Methodology

4.1 TEAM AND EXPERTISE

The analysis was prepared by a team composed of Chen Ryan Associates, Inc., and their subconsultants Jones Lang LaSalle, and AECOM, providing Metro with a set of planning, demography, impact assessment, economic, and real estate experience.

Chen Ryan Associates provided the project management and backbone analyses for this project combining transit, demographic, and spatial analysis in a GIS-based environment.

Jones Lang LaSalle (JLL) JLL provided the real estate data and economic analysis that underlies this report.

AECOM provided an in-depth parcel analysis along each study corridor to determine an optimal buffer for identifying impacted businesses.

4.2 DATA SOURCES

The data utilized in the development of Metro's Business Solution Center prioritization criteria and their sources are described in **Table 4-1**.

Table 4-1 Metro Business Solution Center Datasets

Datasets	Source
Various Metro Rail Alignments (proposed)	Digitized by interpreting information materials from Metro's rail project websites
Various Metro Rail Stations (proposed)	Digitized by interpreting information materials from Metro's rail project websites
Disadvantaged Communities coverage area	Retrieved from California Air Resources Board Priority Population Investments criteria webpage https://ww3.arb.ca.gov/cc/capandtrade/auctionproceeds/communityinvestments.htm
Various American Community Survey 2016 and 2017 datasets at Census Block Group geography, including: • Population • Vehicles Available • Age • Poverty Status • Hispanic or Latino Origin by Race	Retrieved from American Fact Finder Download Center https://factfinder.census.gov/faces/nav/jsf/pages/download_center.xhtml
Business locations and revenue	Provided by JLL research of ESRI's 2018 US Business Locations and Business Summary Database for locations within 200' of Metro Rail Alignments (proposed) at-grade or elevated segments and within 400' of Metro Rail Stations (proposed)

Source: LA Metro, US Census Bureau, JLL, Chen Ryan Associates

4.3 IDENTIFYING EXTENT OF IMPACTS

In order to identify the extent of impacts that a transit Project would have on commercial sites along a corridor, the alternative alignments and their profiles need to be known and reviewed. GIS shapefiles that were provided by Metro for all Measure M Projects that are part of this study were converted to a KMZ format. Using Google Earth, as well as understanding of the Projects as described in the Metro.net website, each alignment for each Project was reviewed, making the following assumptions:

- Where the alignment appeared to be in the center of the street or on the side of it, it was assumed that the alignment was at-grade (worst-case scenario).
- Where the alignment appeared to be within an existing railroad right-of-way, it was assumed that the proposed alignment would fit within the existing railroad right-of-way.
- Where the alignment appeared to go across neighborhoods and large developments outside the public right-of-way, it was assumed that the alignment was underground.

A graphical example of these generated buffer areas is presented on the following page in **Figure 3**.

Figure 3 Example Buffers

Metro Business Solution Center Analysis

Source: Chen Ryan Associates

4.3.1 ASSUMPTIONS FOR AT-GRADE ALIGNMENTS (PUBLIC RIGHT-OF-WAY)

For those Projects that had alignments that were determined to be at-grade and within the public right-of-way, the distance that was determined as the impacted distance for surrounding properties was approximately 200 feet from the centerline. This is the equivalent to approximately one parcel from the centerline. Exceptions were made where the alignment went through primarily residential neighborhoods. For the stations along these alignments, the impacted distance for surrounding properties extended to 400 feet, which is approximately the distance of one block from the intersection.

4.3.2 ASSUMPTIONS FOR AT-GRADE ALIGNMENTS (RAILROAD RIGHT-OF-WAY)

For those Projects that had alignments that were determined to be at-grade and within existing railroad rights-of-way no impacted distance was determined except at stations. This is because it was assumed that the construction of the alignment and its components would fit within the existing right-of-way and not intrude into the adjacent properties. In addition, the entrances or store fronts of commercial properties next to railroad rights-of-way do not typically face the railroad rights-of-way. For the stations along these alignments, the impacted distance for surrounding properties extended to 400 feet, which is approximately the distance of one block from the intersection.

4.3.3 ASSUMPTIONS FOR UNDERGROUND ALIGNMENTS

For those Projects that had alignments that were determined to be underground, no impacted distance was determined except at stations. For the stations along these alignments, the impacted distance for surrounding properties extended to 400 feet, which is approximately the distance of one block from the intersection. These assumptions are detailed in **Table 4-2**.

Table 4-2 Impacted Distance by Alignment Type

Alignment Assumption	Impacted Distance	
	From Alignment	From Intersection (Station)
At-grade, Public ROW	200 feet from centerline	400 feet from intersection
At-grade, Railroad ROW	None	
Underground	None	

Source: AECOM

For information showing how alignments were described and the impacted distances used, refer to the table in **Appendix B**.

4.3.4 ORANGE LINE

The existing Orange Line Busway has been identified through Measure M for upgrade to light rail. It was not anticipated that significant construction-related burdens would be felt by small businesses along the existing, relatively wide right-of-way except at stations. For the stations along the alignment, the impacted distance for surrounding properties extended from 400 feet, which is approximately the distance of one block from the intersection.

4.3.5 4-PILLAR PROJECTS COMPARED TO OTHER MEASURE M PROJECTS

For the 4-Pillar Projects, additional alignments were evaluated using the methodology described above. For the Sepulveda Pass Project, four alignment alternatives were evaluated. For the Eastside Extension Phase 2 Project, two alignment alternatives were evaluated. For the Green Line Extension to Torrance Project, two alignment alternatives were evaluated. Finally, for the West Santa Ana Branch Project, two alignment alternatives were evaluated. For all other Measure M Projects, one alignment alternative, as provided by Metro, was evaluated using the methodology above.

4.4 IDENTIFYING REVENUE OF IMPACTED SMALL BUSINESSES

For the business locations, revenues and employment, JLL relied on ESRI's 2018 US Business Locations and Business Summary Data base. ESRI extracts its business data from a comprehensive list of businesses licensed from Infogroup. This business list contains data on more than 12.5 million US businesses including the business name, location, franchise code, industry classification code, number of employees, and sales volume that is current as of January 2018. Infogroup methodology includes web search, phone surveys, and crowdsourcing. For small businesses, the information is typically much harder to retrieve and verify so the data for revenues may be crowdsourced and estimated.

The range of potential number of small businesses per ESRI range from a low of 844 to a high of 2,414 with a range of potential revenues from $1.5B to $3.6B for the Four Pillar Alternatives. For the other Measure M Projects, the estimated number of small businesses is 3,171 to 3,611 with potential revenue of $3.8B to $4.4B. Detailed small business revenue profiles are presented in Section 5.0.

4.5 DETERMINING COSTS OF CURRENT PROGRAM

A review of the existing operational costs of the BSC for the Crenshaw/LAX Transit project was conducted in order to provide an Order-of-Magnitude estimate for the potential costs of additional BSC's for the 4-Pillars Project line alternatives and the other Measure M project lines. JLL reviewed the operational costs of, and the following data was projected:

- Average operating cost of a BSC per small business served during the initial pre-construction year;
- Average annual operating cost of a BSC per small business served per year during the actual construction period; and
- Average operating cost of a BSC per small business served during the post-construction period (one year following construction).

Currently, the BSC operations are outsourced to the consulting firm Del Richardson & Associates, Inc. (DRA) to provide professional services to support the initialization and ongoing implementation of the Metro Pilot Crenshaw/LAX Transit Project Business Solution Center. The original contract period and extension is from November 2014 to July 2021 with a total budget of $2,177,587. This budget includes the following:

- Direct Labor and Overhead
- Equipment and Materials
- Subcontractors
- General Administrative Costs
- Fees

This total operations budget is estimated to cover all costs through the completion of all construction and one year of post construction services. It was reported that there were an estimated 650 total businesses along the Crenshaw/Lax Transit project area and approximately 450 were small businesses with 25 or fewer employees.

JLL reviewed the BSC's Quarterly Status Report for the period from December 1, 2014 through the latest reported quarter ending on March 31, 2019. Over this 52-month time period, 351 small businesses have completed an intake form for assistance. This equates to approximately 81 small businesses assisted per year or 18% of the total number of small businesses.

Current BSC Program, December 1, 2014 – March 31, 2019 Time Period:

- 52 Months
- 650 Total Businesses
- 450 Small Businesses
- 351 Small Businesses assisted
- 81 of 450 (18%) Estimated Average Number of Small Businesses assisted annually

The following methodology was prepared to estimate average operating costs for each of the 4-Pillar Alternatives and other Measure M Projects. This methodology and process is a high-level, regional analysis. An actual cost estimate and study for each line should be conducted to estimate costs for each corridor to provide a refined estimate of targeted program and adjust for different markets and demographics.

Step 1 – Project potential operating costs per year from the existing BSC budget from November 2014 through end of contract estimated for July 2021. To estimate the operating costs, JLL made the following adjustments to the actual annual operating costs:

- Adjusted the prior year's operating costs for inflation to 2019 costs
- Prorated costs per month to adjust for different reporting years
  Removed actual rent costs of approximately $12,000 per year due to the working relationship with a local non-profit that provided DRA with office space. This business arrangement is not assumed for future BSC costs.

- Estimated potential new office lease costs based on market rents for Class B office space in the market area for the proposed 4-Pillars and other Measure M lines, as shown in Tables 4-3, 4-4 and 4-5. JLL projected FTE's for the 4-Pillars and other Measure M Projects utilizing the current ratio of small businesses per 1 FTE for every 173 small businesses. For office space requirements, JLL assumed 300 square feet of office space per FTE.

Table 4-3 Class B Office Lease Costs by Submarket (2019 Dollars)

Submarket	Corresponding Measure M Line	Class B Rent ($/SF)
Mid-Wilshire	Crenshaw Northern Extension	$3.32
LA North	East San Fernando Valley	$2.41
Western San Gabriel Valley	Gold Line East Side Corridor 1 – SR-60	$2.39
Western San Gabriel Valley	Gold Line East Side Corridor 1 – Washington Blvd	$2.39
Eastern San Gabriel Valley	Gold Line Foothill Extension	$2.33
LA Metro[1]	Green Line Extension to Norwalk	$3.08[2]
South Bay	Green Line Extension to Torrance	$2.57
Westside	Sepulveda Pass Phase 2/3	$4.26
LA North	Orange Line LRT Conversion	$2.41
Westside	Sepulveda Pass Phase 1	$4.26
Central Business District[3]	West Santa Ana Branch Segment 1	$3.23

Source: JLL

Note:

1. Line 6 is not in a known office market, thus the LA Metro average was applied.
2. Average Class B for Los Angeles Metro is $3.08.
3. The area south of the Downtown LA CBD (south of the 10 freeway) is not in a known office market, therefore the Central Business District average was applied.

Table 4-4 Projected Rental Costs – 4-Pillar Projects (2019 Dollars)

4-Pillar Projects	Alternative	FTE's[1]	Lease SF Required[2]	$/SF Rent	Estimated Rent Cost	# of Small Businesses	Avg Annual # of Small Businesses	Cost/Small Business
Sepulveda Pass Phase 1 Alternatives	HRT 1	1.33	399	$51	$20,000	230	41	$483
	HRT 2	2.31	692	$51	$35,000	399	72	$487
	HRT 3	5.32	1.595	$51	$82,000	919	166	$496
	MRT 1	5.32	1,595	$51	$82,000	919	166	$496
West Santa Ana Branch Segment 1 Alternatives	Alt E	2.81	844	$39	$33,000	487	88	$376
	Alt G	4.18	1.253	$39	$49,000	723	130	$377
Gold Line East Side Corridor 1 Alternatives	SR-60	0.54	163	$29	$5,000	94	17	$296
	Washington	3.09	926	$29	$27,000	534	96	$281
Green Line Extension to Torrance Alternatives	ROW Overcrossing	.019	57	$31	$2,000	33	6	$337
	Hawthorne to 190th Street	1.38	413	$31	$13,000	238	43	$303

Source: JLL

Note:
1. Full Time Equivalents
2. Assumes 300 square feet per 1 FTE

Table 4-5 Projected Rental Costs – Other Measure M Projects (2019 Dollars)

Measure M Project	FTE's[1]	Lease SF Required[2]	$/SF Rent	Estimated Rent Cost	# of Small Businesses	Avg Annual # of Small Businesses	Cost/Small Business
Gold Line Foothill Extension	1.34	402	$27.96	$11,000	232	42	$263
East San Fernando Valley	6.81	2,044	$28.92	$59,000	1,179	212	$278
Sepulveda Pass Phase 2/3	2.98	893	$51.12	$46,000	515	93	$496
Crenshaw Northern Extension	3.43	1,028	$39.84	$41,000	593	107	$384
Green Line Extension to Norwalk	1.12	336	$36.96	$12,000	194	35	$344
Gold Line East Side Corridor 2							
SR-60	0.54	163	$28.68	$5,000	94	17	$296
Washington Blvd	3.09	926	$28.68	$27,000	534	96	$281
Orange Line LRT Conversion	2.10	631	$28.92	$18,000	364	66	$275

Source: JLL

Note:
1. Full Time Equivalents
2. Assumes 300 square feet per 1 FTE

Step 2 – Estimate average cost per small business assisted for Pre-Construction year. JLL used the adjusted operations costs from November 2014 to November 2015 as the estimate for pre-construction. Although, construction for the Crenshaw/LAX had already started before the BSC opening, it is reasonable to assume that costs would be similar. This resulted in an average cost of $4,390 per small business assisted for pre-construction. In addition, JLL estimated potential rental costs of new office space based on the location of the future lines. The additional rental costs ranged from $263 to $496 per small business depending on the line's office market area.

Step 3 – Estimate average cost per small business assisted during construction period. JLL reviewed the adjusted budget for years 2015 through 2020 as the construction period. Total adjusted costs during operations totaled $1,734,000 or $346,000 per year. Per small business, this resulted in an average annual cost of $347,000 before additional rent costs. JLL estimated an average annual cost of $4,281 per small business assisted annually during the construction period. The additional office rental costs resulted in additional costs ranging from $263 to $496 annually per small business depending on the line market area.

Step 4 – Estimate average cost per business for a post-construction year. JLL used the adjusted budgeted operations costs of $212,000 for the period July 2020 through July 2021 as the estimate for an annual post-construction budget. This resulted in an annual cost of $2,616 per small business assisted for post-construction. The additional rental costs ranged from $263 to $496 per small business depending on the line's office market area.

These annual costs per small business were applied to our estimated percentage of annual small business clients served at the BSC at 18%. The costs per year was based upon the implementation schedule for the 4-Pillar and Measure M projects. The construction schedule is estimated to span from the year 2020 to 2057. One year of pre-construction costs and one year of post-construction costs was estimated for each line before and after the construction period, respectively. Note that the Gold Line Foothill Extension is one exception, since pre-construction activities have occurred by the time of this analysis. Therefore, the first year of costs modeled for this analysis begin in the year 2020, in order to capture a whole-year period.

Detailed BSC Operating Cost information is presented in Section 6.0.

4.6 IDENTIFYING DISADVANTAGED COMMUNITIES (PRIORITY POPULATIONS)

To identify Disadvantaged Communities, this analysis applied the California Environmental Protection Agency's (CalEPA) criteria for identifying Priority Population investment areas, due to the inclusion of disadvantaged and low-income considerations in its criteria. The Priority Population areas provide a method to identify the region's most vulnerable communities as described below.

The criteria of Priority Populations:

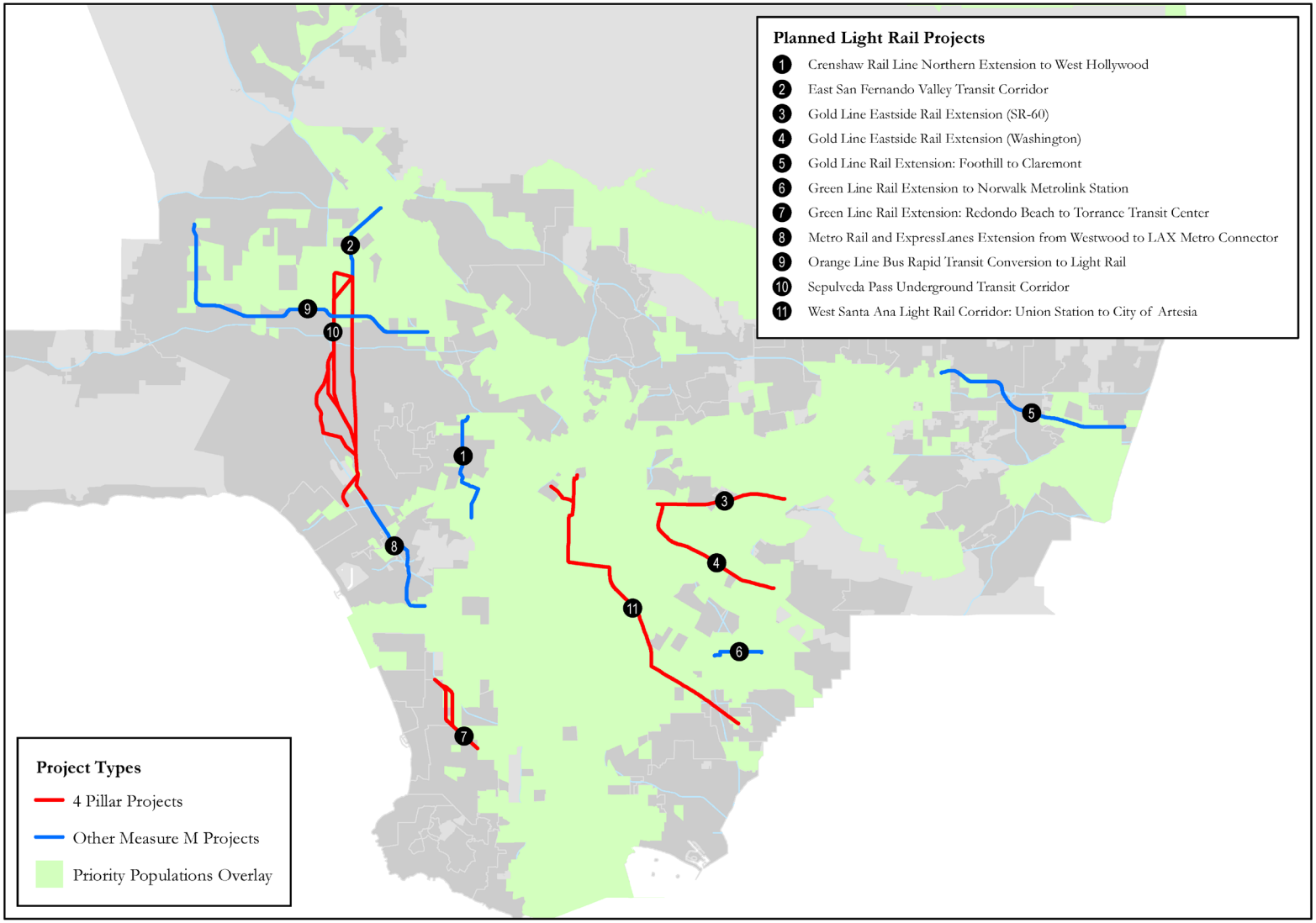
- Disadvantaged communities are identified by the California Environmental Protection Agency (CalEPA) as the top 25% most impacted census tracts in CalEnviroScreen 3.0 - a screening tool used to help identify communities disproportionally burdened by multiple sources of pollution and with population characteristics that make them more sensitive to pollution.

- Low-income communities and households are defined as the census tracts and households, respectively, that are either at or below 80 percent of the statewide median income, or at or below the threshold designated as low-income by the California Department of Housing and Community Development's (HCD) 2016 State Income Limits.

The defined criteria and census tracts are provided on the California Air Resources Board web page https://ww3.arb.ca.gov/cc/capandtrade/auctionproceeds/communityinvestments.htm.

Figure 4 presents a map of the Metro rail projects within the Los Angeles region with the CalEPA-defined Priority Populations. As shown, much of the Los Angeles region, including the central basin, San Fernando Valley and San Gabriel Valley meets the CalEPA definition of Disadvantaged Community.

Figure 4 Metro Measure M Light Rail Projects and Priority Populations



Metro Business Solution Center Analyses

Source: Chen Ryan Associates

4.7 IDENTIFYING EQUITY FOCUS AREAS

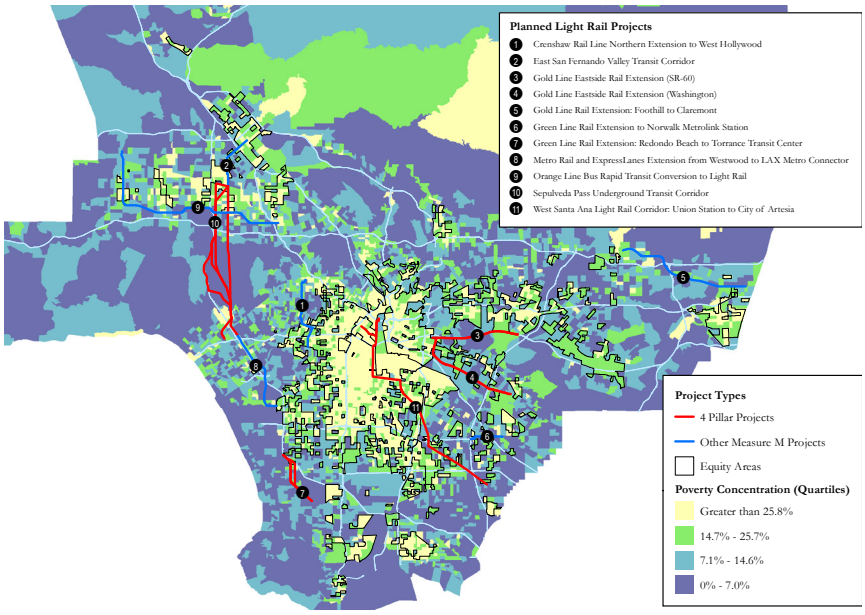
To determine Equity Focus areas, the factors set forth in Metro board Motion 18.1 at the June 27, 2019 meeting were applied. These factors include two demographic factors that have historically been determinants of disinvestment and disenfranchisement: household income and race/ethnicity. A third factor, households with low vehicle ownership was included in the measure.

The Equity Focus Areas measure was developed using US Census American Community Survey (ACS) income and demographic indicators. This measure uses criteria based on ranking indicators within Los Angeles County.

Figure 5 presents a map of the Metro rail projects within the Los Angeles region with the Equity Focus Areas. As shown, the Equity Focus Areas exist within many of the same county sub-regions as the Priority Populations. It was found that all small businesses located in Equity Focus Areas are also located in the Priority Populations coverage area.

The Equity Focus Areas are comprised of three components, all of which utilize recent American Community Survey data at the Census Block Group (CBG) level of geography. They include: Vehicles per Driving-Age (16 years or older) Population, Concentration of Non-White/ Hispanic Population, and Concentration of Poverty. Each of the indicators were divided into quartiles (four categories of equal population) based on their ranking of the indicator. All CBGs which ranked for all three indicators (weighting by population). CBGs in the highest two quartiles (above the median) for all three indicators were assigned to the Equity Focus Area. Criteria Include:

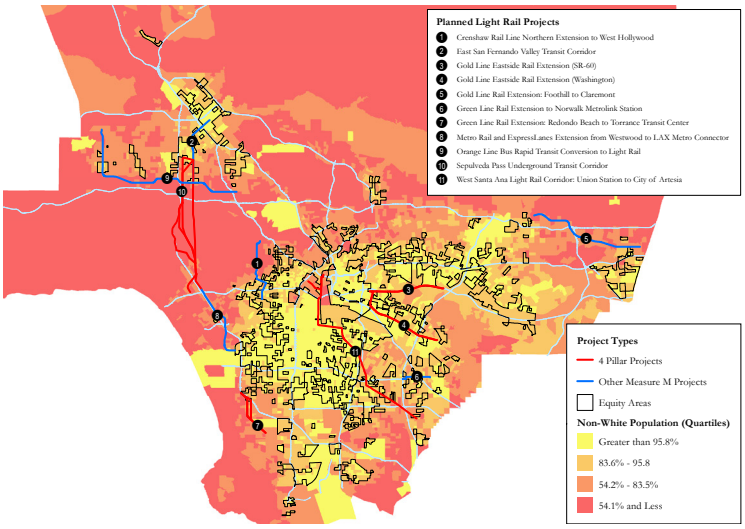
- **HOUSEHOLD INCOME CRITERIA**
  To determine this criterion, a Concentration of Poverty metric was developed by using the ACS's Poverty Status in the Past 12 months data (numerous disseminations of this data type are available) in order to estimate percentage of population in poverty within each CBG. Unlike other indicators of low-income populations such as annual median household income, poverty status controls for size of household. The above median capture for this indicator occurred within CBGs with 14.7% of the population in poverty or greater.



Household Income Criteria

- **RACE/ETHNICITY CRITERIA**

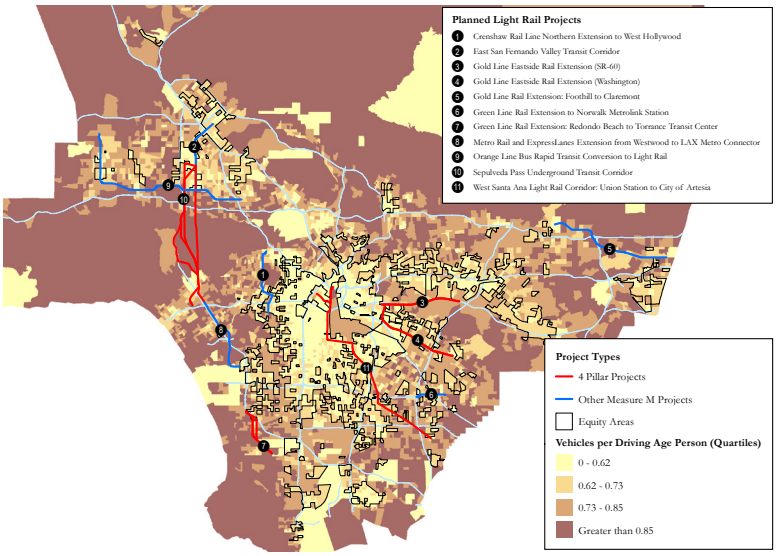
To determine this criterion, a concentration of Non-White/Non-Hispanic Population metric was developed by using the ACS's Hispanic or Latino Origin by Race dataset. White alone/not Hispanic was subtracted from the total population and the remainder was divided into the total population to determine the concentration percentage. The above median capture at the CBG level for this indicator was found to be 83.6% or greater Non-White/Hispanic.



Race/Ethnicity Criteria

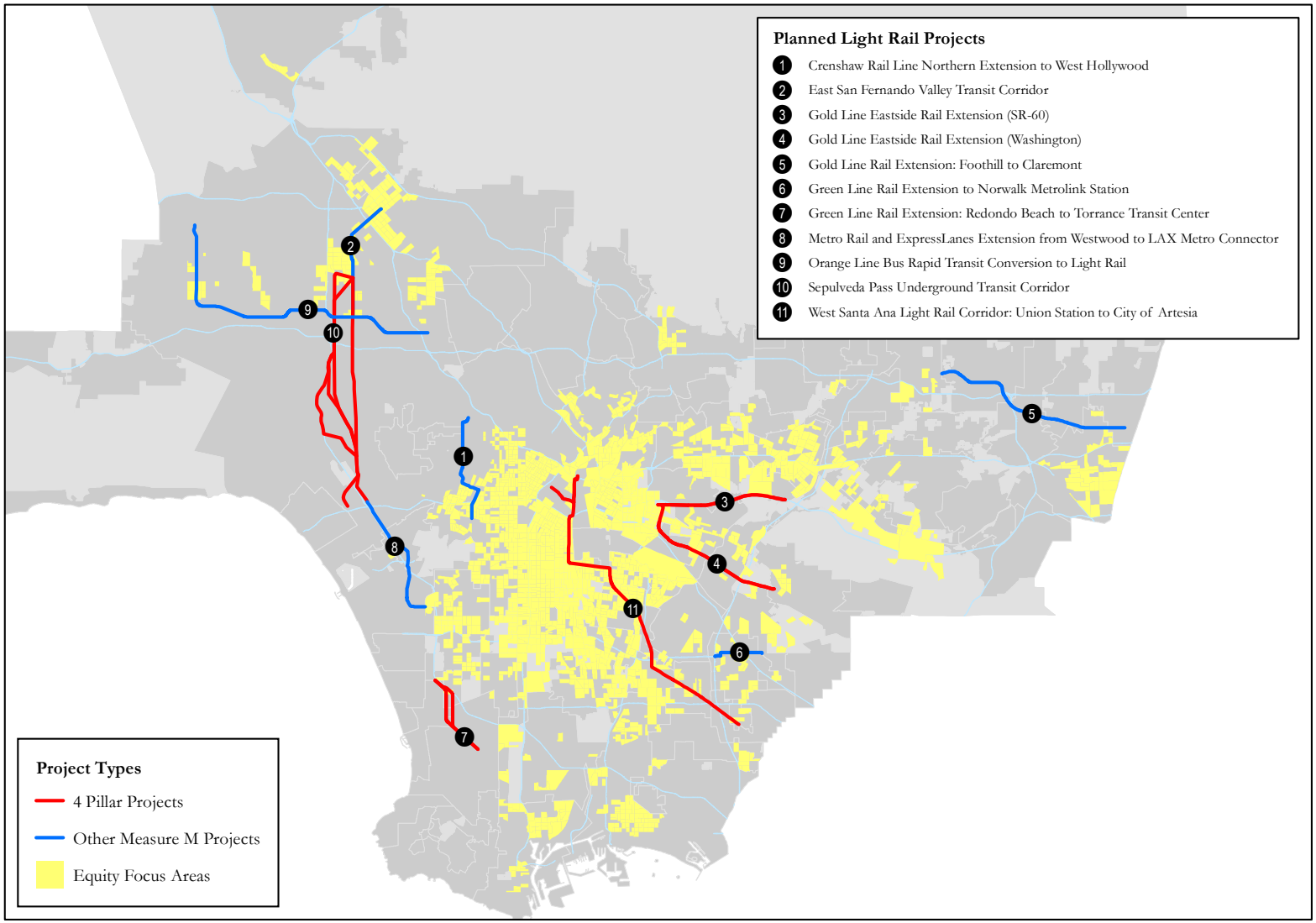
- **LOW-VEHICLE CRITERIA**

To determine this criterion, a Vehicles per Driving-Age (16 years or older) Population metric was developed by using the ACS's Vehicles Available data (multiple disseminations of this data type are available) to estimate total vehicles within each CBG. Age data from the ACS was used to estimate the driving age population of each CBG. The total vehicles were divided into driving age population to come up with the indicator. The above median capture by CBG for this indicator was found to be 0.62 or fewer vehicles per adult population.



Low-Vehicle Criteria

Figure 5 Metro Measure M Light Rail Projects and Equity Focus Areas



Metro Business Solution Center Analysis

Source: Chen Ryan Associates

5.0 Small Business Revenue Profiles

This section presents revenue profiles of small businesses that are expected to be impacted by Measure M light rail construction, which include small businesses along Measure M light rail construction corridors, those located along 4-Pillar Project corridors, and those along other Measure M Project corridors.

5.1 ALL SMALL BUSINESSES

Table 5-1 presents revenue profiles of all small business located along Measure M light rail construction corridors. Note that since several alignment alternatives exist for some Projects, a range of costs is provided. As shown, across all corridors, total annual revenue of small businesses ranges between approximately $5.3B and $8.0B. Revenue of businesses in Priority Populations ranged between approximately $3.9B and $6.1B. Revenue of businesses in Equity Focus Areas ranged between approximately $2B and $2.6B.

Note: This analysis found all affected small businesses in Equity Focus Areas exist within defined Priority Population areas.

Table 5-1 Revenue Profile of all Small Businesses along Measure M LRT Corridors (2019 Dollars in Thousands)

Revenue Summary[1]	Total Impacted Small Businesses[2]	Annual Revenue of Small Businesses	Small Businesses in Priority Populations[3]	Annual Revenue of Small Businesses Priority Populations[3]	Small Businesses in Equity Focus Areas[4]	Annual Revenue of Small Businesses in Equity Focus Areas[4]
4-Pillar Projects						
Low	844	$1,505,809	635	$1,286,622	321	$757,043
High	2,415	$3,580,181	1,791	$2,810,368	556	$1,113,134
Other Measure M LRT Projects						
Low	3,171	$3,814,009	2,123	$2,682,404	973	$1,214,560
High	3,611	$4,435,142	2,568	$3,309,965	1,162	$1,463,507
Total Measure M LRT Projects						
Low	**4,015**	**$5,319,818**	**2,758**	**$3,969,026**	**1,294**	**$1,971,603**
High	**6,025**	**$8,010,045**	**4,359**	**$6,120,333**	**1,718**	**$2,596,641**

Source: Chen Ryan Associates

Note:

1. Low or high figures based on combination of lowest or highest Alternatives within each corridor (based on number of small businesses).
2. Small businesses are defined as 25 or fewer employees.
3. Priority Populations include CalEPA defined disadvantaged communities, low-income communities, and low-income households.
4. 4. Equity Focus areas are based on Metro defined race/ethnicity, low-income and low vehicle ownership. All small businesses in Equity Focus Areas also exist within Priority Populations.

5.2 4-PILLAR PROJECTS

Table 5-2 presents revenue profiles of all small business located along 4-Pillar Measure M light rail construction corridors. A more detailed presentation of the number of impacted small businesses, annual revenue, and number and revenue of small businesses in Priority Population and Equity Focus Areas, is provided for each alignment alternative of each 4-Pillar Project.

Table 5-2 Revenue Profile of 4-Pillar Projects (2019 Dollars in Thousands)

4-Pillar Projects	Total Impacted Small Businesses[1]	Annual Revenue of Small Businesses[1]	Small Businesses in Priority Populations[2]	Annual Revenue of Small Businesses in Priority Populations[2]	Small Businesses in Equity Focus Areas[3]	Annual Revenue of Small Businesses in Equity Focus Areas[3]
Sepulveda Pass Phase 1 Alternatives						
HRT 1	230	$219,942	73	$58,269	12	$21,326
HRT 2	399	$427,658	78	$61,346	6	$11,861
HRT 3	919	$1,147,963	494	$634,611	48	$120,811
MRT 1	919	$1,147,963	494	$634,611	48	$120,811
West Santa Ana Branch Segment 1 Alternatives						
Alternative E – Union Station Underground	487	$1,118,845	459	$1,094,084	280	$720,368
Alternative G – Down-town Core Underground	723	$1,366,304	547	$1,158,951	278	$718,997
Gold Line East Side Corridor 1 Alternatives						
SR-60	94	$106,870	88	$99,314	28	$14,630
Washington Blvd	534	$728,003	533	$726,875	217	$263,577
Green Line Extension to Torrance Alternatives						
ROW Overcrossing	33	$60,152	15	$34,955	11	$28,378
Hawthorne to 190th Street	238	$332,633	217	$289,931	9	$11,555

Source: Chen Ryan Associates

Note:

1. Small businesses are defined as 25 or fewer employees.
2. Priority Populations include CalEPA defined disadvantaged communities, low-income communities, and low-income households.
3. Equity Focus areas are based on Metro defined race/ethnicity, low-income and low vehicle ownership. All small businesses in Equity Focus Areas also exist within Priority Populations.

5.3 OTHER MEASURE M LIGHT RAIL PROJECTS

Table 5-3 presents revenue profiles of all small business located along other Measure M light rail construction corridors. A more detailed presentation of the number of impacted small businesses, annual revenue, and number and revenue of small businesses in Priority Population and Equity Focus Areas, is provided for each other Measure M Project.

As in previous sections of this report, note that since it is unknown at this time which Gold Line East Side Extension Phase 2 alignment will represent a 4-Pillar Project, both alignments have been presented in this table, in addition to **Table 5-2**.

Table 5-3 Revenue Profile of Other Measure M LRT Projects (2019 Dollars in Thousands)

Other Measure M LRT Projects	Total Impacted Small Businesses[1]	Annual Revenue of Small Businesses[1]	Small Businesses in Priority Populations[2]	Annual Revenue of Small Businesses in Priority Populations[2]	Small Businesses in Equity Focus Areas[3]	Annual Revenue of Small Businesses in Equity Focus Areas[3]
Gold Line Foothill Extension	232	$221,263	111	$124,910	17	$18,775
East San Fernando Valley	1,179	$1,439,975	1,179	$1,439,975	728	$953,261
Sepulveda Pass Phase 2/3	515	$611,731	39	$47,956	1	$237
Crenshaw Northern Extension	593	$728,084	236	$347,745	78	$98,779
Green Line Extension to Norwalk	194	$230,365	194	$230,365	47	$35,622
Gold Line East Side Corridor 2						
SR-60	94	$106,870	88	$99,314	28	$14,630
Washington Blvd	534	$728,003	533	$726,875	217	$263,577
Orange Line LRT Conversion	364	$475,721	276	$392,139	74	$93,256

Source: Chen Ryan Associates

Note:

1. Small businesses are defined as 25 or fewer employees.
2. Priority Populations include CalEPA defined disadvantaged communities, low-income communities, and low-income households.
3. Equity Focus areas are based on Metro defined race/ethnicity, low-income and low vehicle ownership. All small businesses in Equity Focus Areas also exist within Priority Populations.

6.0 Projected Costs of Business Solution Center Program

This chapter presents a summary of the projected annual costs to expand Metro's BSC program. Costs are provided for all corridors in Chapter 6.1, followed by a more detailed breakdown of BSC operating costs pertaining to 4-Pillar Projects in Chapter 6.2, and BSC operating costs pertaining to other Measure M light rail Projects in Chapter 6.3.

6.1 ESTIMATED FIVE-YEAR OPERATING COSTS

Table 6-1 summarizes anticipated yearly costs for operating the BSC for the first five-year period of 2020-2024. As shown, annual operating costs are estimated to be $1,185,087 for the year 2020. Five-year operating costs are estimated to range between $8,309,821 and $10,303,031.

Table 6-1 Estimated 5-Year BSC Operating Costs (2020-2024) (2019 Dollars)

Cost for All Lines by Year (2020-2024)[1]	2020	2021	2022	2023	2024	Summary (2020-2024)
4 Pillar Projects						
Low	-	$417,567	$408,332	$610,097	$605,594	$2,041,891
High	-	$620,365	$606,210	$1,413,269	$1,395,257	$4,035,101
Other Measure M LRT Projects[2]						
Low	$1,185,087	$1,157,462	$1,157,462	$1,157,462	$1,610,457	$6,267,930
High	$1,185,087	$1,157,462	$1,157,462	$1,157,462	$1,610,457	$6,267,930
Total Measure M LRT Projects						
Low	$1,185,087	$1,575,329	$1,565,795	$1,767,559	$2,216,051	$8,309,821
High	$1,185,087	$1,777,827	$1,763,672	$2,570,731	$3,005,714	$10,303,031

Source: Chen Ryan Associates

Note:

1. Low or high figures based on combination of lowest or highest Alternatives within each corridor (based on number of small businesses).
2. 2. During the 5-year period of 2020-2024, only one alternative exists.

6.2 BSC OPERATING COSTS FOR ALL MEASURE M LIGHT RAIL CORRIDORS

Table 6-2 presents an overview of the projected costs for operating the BSC for all Measure M light rail Projects, grouped by 5-year construction periods. These periods begin in in 2020, when the earliest Measure M light rail Project is anticipated to begin construction, and ends in 2059, one year after the final Measure M light rail Project is anticipated to be built. The additional year was given to capture post-construction costs for Projects that extend through 2058, while residual pre-construction costs for Projects beginning construction in the year 2020 are included in the 2020-2024 cost summary due to the timing of this analysis.

Note that many projects currently carry multiple alternative alignments, as presented in greater detail in in Chapter 2.0. This yields a high and low range in terms of BSC operating costs due to differences in small businesses potentially impacted. As shown, projected BSC cumulative operating costs range between $28,500,978 and $39,621,138 (in 2019 dollars) for all Measure M Projects between 2020 and 2058.

Table 6-2 Summary BSC Operating Costs for All Measure M Projects (2019 Dollars)

Cost for All Lines by Year[1]	2020-2024	2025-2029	2030-2034	2035-2039	2040-2044	2045-2049	2050-2054	2055-2058	Summary Costs – All Years
4-Pillar Projects (2021-2036)									
Low	$2,041,891	$2,685,707	$421,208	$126,724	-	-	-	-	$5,286,530
High	$4,035,101	$6,592,297	$2,524,182	$719,901	-	-	-	-	$13,871,481
Other Measure M LRT Projects (2020-2058)									
Low	$6,267,930	$6,041,981	$2,060,235	-	$2,501,745	$2,625,789	$2,321,916	$1,394,852	$23,214,448
High	$6,267,930	$6,041,981	$2,060,235	-	$2,501,745	$2,625,789	$3,418,071	$2,844,906	$25,760,657
Total Measure M LRT Projects (2020-2058)									
Low	**$8,309,821**	**$8,727,688**	**$2,492,443**	**$126,724**	**$2,501,745**	**$2,625,789**	**$2,321,916**	**$1,394,852**	**$28,500,978**
High	**$10,303,031**	**$12,634,278**	**$4,584,418**	**$719,901**	**$2,501,745**	**$2,625,789**	**$3,418,071**	**$2,844,906**	**$39,621,138**
Average Cost Per Year									
Low	**$1,661,964**	**$1,745,537**	**$498,488**	**$25,344**	**$500,349**	**$525,157**	**$464,383**	**$278,970**	
High	**$2,060,606**	**$2,526,855**	**$916,883**	**$143,980**	**$500,349**	**$525,157**	**$683,614**	**$568,981**	

Source: Chen Ryan Associates

Note:

1. Low or high figures based on combination of lowest or highest Alternatives within each corridor (based on number of small businesses).

6.3 BSC OPERATING COSTS FOR 4-PILLAR PROJECTS

Projected annual costs for running the BSC for 4-Pillar Measure M Projects are presented in **Table 6-3**, grouped by 5-year construction periods from 2021 and 2036, at which time each Project is scheduled to have completed its post-construction phase. Note that each of the 4-Pillar Projects carry multiple alignment alternatives at this time. Therefore, each was analyzed providing a high and low estimate for operating the BSC among 4-Pillar Projects.

As shown, projected BSC operating costs are between $5,286,530 and $13,871,481 to operate across all years of construction for 4-Pillar Projects.

Table 6-4 presents the per-line costs of operating the BSC among 4-Pillar projects for the years spanning 2020-2024.

Table 6-3 Summary of BSC Operating Costs for 4-Pillar Projects (2019 Dollars)

Cost for Each Line[1]	2020-2024	2025-2029	2030-2034	2035-2039	Summary Costs – All Years
Sepulveda Pass Phase 1					
HRT 1	$399,026	$522,863	-	-	$921,890
HRT 2	$692,224	$907,054	-	-	$1,599,278
HRT 3	$1,596,106	$2,091,453	-	-	$3,687,558
MRT 1	$1,596,106	$2,091,453	-	-	$3,687,558
West Santa Ana Branch Segment 1 Alternatives					
Alternative E – Union Station Underground	$1,642,864	$1,895,733	-	-	$3,538,597
Alternative G – Downtown Core Underground	$2,438,996	$2,814,404	-	-	$5,253,400
Gold Line East Side Corridor 1 Alternatives					
SR-60	-	$156,733	$387,230	$126,724	$678,687
Washington Blvd	-	$890,374	$2,199,799	$719,901	$3,810,073
Green Line Extension to Torrance Alternatives					
ROW Overcrossing	-	$110,379	$44,978	-	$155,356
Hawthorne to 190th Street	-	$796,066	$324,384	-	$1,120,450
Summary of Costs					
Low	**$2,041,891**	**$2,685,707**	**$432,208**	**$126,724**	**$5,286,530**
High	**$4,035,101**	**$6,592,297**	**$2,524,182**	**$719,901**	**$13,871,481**
Average Cost Per Year					
Low	**$408,378**	**$537,141**	**$86,441**	**$25,344**	
High	**$807,020**	**$1,318,459**	**$504,836**	**$143,980**	

Source: Chen Ryan Associates

Note:

1. Low or high figures based on combination of lowest or highest Alternatives within each corridor (based on number of small businesses).

Table 6-4 Estimated 5- Year BSC Operating Costs for 4-Pillar Projects (2020-2024) (2019 Dollars)

Cost for Each Line[1]	Construction Start (FY)	Completion/ Opening (FY)	2020	2021	2022	2023	2024	Summary Costs
Sepulveda Pass Phase 1								
HRT 1	2024	2026	-	-	-	$201,765	$197,262	$399,026
HRT 2	2024	2026	-	-	-	$350,018	$342,206	$692,224
HRT 3	2024	2026	-	-	-	$807,059	$789,047	$1,596,106
MRT 1	2024	2026	-	-	-	$807,059	$789,047	$1,596,106
West Santa Ana Branch Segment 1 Alternatives								
Alternative E – Union Station Underground	2022	2028	-	$417,867	$408,332	$408,332	$408,332	$1,642,864
Alternative G – Downtown Core Underground	2022	2028	-	$620,365	$606,210	$606,210	$606,210	$2,438,996
Gold Line East Side Corridor 1 Alternatives								
SR-60	2029	2035	-	-	-	-	-	-
Washington Blvd	2029	2035	-	-	-	-	-	-
Green Line Extension to Torrance Alternatives								
ROW Overcrossing	2026	2030	-	-	-	-	-	-
Hawthorne to 190th Street	2026	2030	-	-	-	-	-	-
Summary of Costs								
Low			**-**	**$417,867**	**$408,332**	**$610,097**	**$605,549**	**$2,041,891**
High			**-**	**$620,365**	**$606,210**	**$1,413,269**	**$1,395,269**	**$4,035,101**

Source: Chen Ryan Associates

Note:

1. Low or high figures based on combination of lowest or highest Alternatives within each corridor (based on number of small businesses).

6.4 BSC OPERATING COSTS FOR OTHER MEASURE M LIGHT RAIL PROJECTS

Projected annual costs for running the BSC in other Measure M Projects are presented in Table 6-5, grouped by 5-year construction periods from 2020-2059, at which point all other Measure M light rail Projects are scheduled to have cleared their post-construction phase. Note that the Gold Line East Side Corridor may include either the SR-60 or Washington Boulevard alignment as a 4-Pillar Project. Thus, the unchosen corridor, when the selection occurs, will be counted among other Measure M light rail Projects. In anticipation of this, both alignments were included, resulting in a high and low estimate for other Measure M Project BSC operating costs.

As shown, projected BSC operating costs are between $23,214,448 and $25,760,657 to operate across all years of construction for other Measure M Projects.

Table 6-6 presents the per-line costs of operating the BSC among other Measure M projects for the years spanning 2020-2024.

Table 6-5 Summary BSC Operating Costs for Other Measure M Projects (2019 Dollars)

Cost for Each Line[1]	2020-2024	2025-2029	2030-2034	2035-2039	2040-2044	2045-2049	2050-2054	2055-2058	Summary Costs – All Years
Gold Line Foothill Extension	$953,558	$310,085	-	-	-	-	-	-	$1,263,643
East San Fernando Valley	$4,861,377	$3,517,336	-	-	-	-	-	-	$8,378,713
Sepulveda Pass Phase 2/3	$452,995	$2,214,561	$2,060,235	-	-	-	-	-	$4,727,791
Crenshaw Northern Extension	-	-	-	-	$2,501,745	$1,814,409	-	-	$4,316,153
Green Line Extension to Norwalk	-	-	-	-	-	$811,380	$587,931	-	$1,399,312
Gold Line East Side Corridor 2									
SR-60	-	-	-	-	-	-	$234,179	$309,784	$543,963
Washington Blvd	-	-	-	-	-	-	$1,330,334	$1,759,838	$3,090,173
Orange Line LRT Conversion	-	-	-	-	-	-	$1,499,806	$1,085,067	$2,584,873
Summary of Costs									
Low	**$6,267,930**	**$6,041,981**	**$2,060,235**	**-**	**$2,501,745**	**$2,625,789**	**$2,321,916**	**$1,394,852**	**$23,214,448**
High	**$6,267,930**	**$6,041,981**	**$2,060,235**	**-**	**$2,501,745**	**$2,625,789**	**$3,418,071**	**$2,844,906**	**$25,760,657**
Average Cost Per Year									
Low	**$1,253,586.00**	**$1,208,396.20**	**$412,047.00**	**-**	**$500,349.00**	**$525,157.80**	**$464,383.20**	**$278,970.40**	
High	**$1,253,586.00**	**$1,208,396.20**	**$412,047.00**	**-**	**$500,349.00**	**$525,157.80**	**$683,614.20**	**$568,981.20**	

Source: Chen Ryan Associates

Note:

1. Low or high figures based on combination of lowest or highest Alternatives within each corridor (based on number of small businesses).

Table 6-6 Estimated 5- Year BSC Operating Costs for Other Measure M Projects (2020-2024) (2019 Dollars)

Cost for Each Line[1]	Construction Start (FY)	Completion/ Opening (FY)	2020	2021	2022	2023	2024	Summary Costs
Gold Line Foothill Extension	2020	2025	$194,345	$189,803	$189,803	$189,803	$189,803	$953,558
East San Fernando Valley	2021	2027	$990,742	$967,659	$967,659	$967,659	$967,659	$4,861,377
Sepulveda Pass Phase 2/3	2024	2057	-	-	-	-	$452,995	$452,995
Crenshaw Northern Extension	2041	2047	-	-	-	-	-	-
Green Line Extension to Norwalk	2046	2052	-	-	-	-	-	-
Gold Line East Side Corridor 2								
SR-60	2053	2057	-	-	-	-	-	-
Washington Blvd	2053	2057	-	-	-	-	-	-
Orange Line LRT Conversion	2051	2057	-	-	-	-	-	-
Summary of Costs								
Low			**$1,185,087**	**$1,157,462**	**$1,157,462**	**$1,157,462**	**$1,610,457**	**$6,267,930**
High			**$1,185,087**	**$1,157,462**	**$1,157,462**	**$1,157,462**	**$1,610,457**	**$6,267,930**

Source: Chen Ryan Associates

Note:

1. Low or high figures based on combination of lowest or highest Alternatives within each corridor (based on number of small businesses).

7.0 Potential Business Solution Center Services

The BSC was established in accordance with a thorough review of the potential services that would be best utilized for addressing potential impacts of construction of the Crenshaw/LAX light rail Project, with a particular focus paid to small businesses located between 48th and 60th Streets along Crenshaw Boulevard. While the chosen services reflect a well-researched implementation based upon the best ability to benefit along the corridor, an expansion of the BSC to all Measure M light rail corridors may also carry an expansion of services in which it may offer impacted businesses.

A particular consideration for transit builders is a project's tendency to displace local businesses. A 2017 study published in the Journal of Transportation and Land Use (Open for Business? Effects of Los Angeles Metro Rail Construction on Adjacent Businesses), "…station construction appears to increase the risk of business failure by 46% for businesses within 400 meters of a station, though station location always appears to be somewhat riskier than loca¬tion away from a station."

Several additional opportunities for services are discussed below, based upon best-practices research of other construction mitigation or business improvement programs from sister agencies.

7.1 BUSINESS SHUTTLES

The Hillcrest Lunch Loop in San Diego, CA is operated as a free community service, fully financed by the Uptown Community Parking District, in order to encourage patronization of local businesses that some may find otherwise difficult to access due to limited parking opportunities. In Portland, Oregon, TriMet sponsored special media and social events along light rail construction corridors to encourage people to visit the local businesses. TriMet also sponsored a "lunch bus" program to ferry city officials and transportation workers to Interstate Avenue restaurants that were affected by the construction.

7.2 BUSINESS OPERATIONS SUPPORT

Particularly within the pre-construction phase of a light rail line, helping businesses improve their day-to-day efficiency better positions them to weather an anticipated slowdown in customer traffic. Helping businesses identify ways to strengthen their operations by cutting unnecessary inventory, expanding sales channels, developing customer-oriented communications strategies, sharing costs, or maintaining more accurate books, proved to be a key success during construction of the Minneapolis Green Line.

7.3 DISSEMINATION OF PUBLIC INFORMATION

A future BSC may be able to extend the communications services of such as through the regular dissemination of information regarding the status of construction and access along affected areas. Such considerations may include notification of the local community through media and signage as to which sidewalks may be closed, which driveways may be obstructed, parking impacts, or temporary transit stop relocations.

7.4 CUSTOMER INCENTIVES

During construction of Minneapolis' Green Line, the Midway Area Chamber of Commerce, an organization representing commercial districts, issued a coupon booklet that offered discounts to many of its member businesses. It also organized a monthly Lunch on the Avenue event held at restaurants that had active construction in front of them. These events brought dozens of new customers to businesses that were susceptible to revenue loss.

In Salt Lake City, Utah, Trax light rail construction coincided with the allocation of $300,000 to implement business impact mitigation programs, using the funds in four ways:

1. 4th South Bucks. The 4th South Bucks Program, named after the alignment along 400 South, distributed over $75,000 in coupons (each worth $1) that could be redeemed at businesses along 400 South. The program was believed to be an acceptable way to randomly disseminate the coupons through a radio station campaign. It was anticipated that business patrons would spend additional money beyond the 4th South Bucks.

2. "Go Fourth" Radio Advertisement Campaign. The "Go Fourth" radio advertising campaign was chosen because it was determined to be an effective means of reaching the intended customer demographics of the businesses along the project alignment. The contractor's public information specialist assisted a subcommittee in developing a radio campaign. A set of criteria was used to evaluate all of the businesses along the corridor (preference was given to independent businesses) to create a priority list for radio spots. Each month, six businesses were featured on the radio. In addition, a remote broadcast featured the six chosen businesses on the 4th of each month. The radio remote broadcasts would feature prizes including 4th South Bucks.

3. Catalyst Advertisements. Sixteen businesses were given advertisement space on the back cover of Catalyst Magazine each month. Catalyst Magazine, a local publication, was chosen because its reader demographic closely matched the radio station's demographics.

4. It was recognized that media coverage is often perceived as more credible than advertisements. In coordination with the contractor's public information staff, media events distributed the message that businesses were accessible during construction. Accessibility was emphasized in several media campaigns, including the "First Rail Weld" and the "Half-time Celebration."

7.5 PARKING LOT ALTERATIONS OR SHARING

While encouraging mode shift to transit remains Metro's goal, vehicular access impacts business patronage, particularly during construction when transit may be unavailable or temporarily relocated. It may be desirable to explore working with businesses with large private parking lots to temporarily allow shared use for patrons of neighboring businesses, or allow, where able, accommodation of parking on unused or vacant parcels, to partially mitigate

for parking loss during construction, or in the immediate aftermath as new travel patterns are solidified.

7.6 FORGIVABLE LOANS

In the twin cities of Minneapolis and St. Paul, Minnesota, the central corridor is home to a diverse number of businesses and local residents. The Green Line, also called the Central Corridor, is 11 miles long and opened in 2014. One of the largest programs created to support businesses was the $4 million Ready for Rail Business Support Fund. It was established in January 2011 through a Joint Powers Agreement between the Met Council and the Housing and Redevelopment Authority of the City of St. Paul (HRA).

The $4 million fund was originally envisioned as a low-interest loan program, but quickly became a forgivable loan once it became clear that a repayable loan would not meet the needs of businesses that were facing significant revenue losses. Up to $20,000 was available for businesses along the corridor that had gross sales of no more than $2 million and could show a loss in sales due to the light rail construction. The loan was forgiven at a rate of 20 percent each year over a five-year period.

7.7 WORKSHOPS AND SOCIAL MEDIA

In Portland, Oregon, TriMet staff used a wide range of strategies to distribute construction information to stakeholders along light rail construction corridors. Business owners were invited to attend workshops teaching business management skills and were paired with personal mentors who were skilled in giving business strategy advice to help businesses throughout the construction process. Staff attended meetings and gave presentations at a wide range of meetings including the Interstate MAX Advisory Committee, Interstate Corridor Urban Renewal Area Committee, various business associations, N/NE Portland Coalition meetings, and local neighborhood association meetings. TriMet's Community Affairs department also distributed 12 seasonal newsletters to a mailing list of 7,500 residents throughout North Portland. TriMet's web site included an extensive section pertaining to Interstate MAX construction and community outreach, including an information section in Spanish.

TriMet sponsored special media and social events along the corridor to encourage people to visit the local businesses. Additionally, there was a 24-hour construction hotline with a live operator at all times. The operator had the ability to page community relations staff for after-hours issues, and over two dozen construction staff were available on a 24-hour basis.

7.8 FAÇADE OR SIGNAGE IMPROVEMENTS

Based upon an interview held with Metro's Business Solution Center staff on August 27, 2019, the BSC stated a desire to offer potential façade or business signage-related improvements. Prior precedent was found to exist during construction of the Central Corridor in the Minneapolis area, whereby $150,000 was spent contributing to façade upgrades of local businesses along the right-of-way. Funding was contributed to the program through the University Avenue Business Preparation Collaborative (U7).

7.9 ADDITIONAL SERVICES

Based upon an interview held with Metro's Business Solution Center staff on August 27, 2019, the following were also identified as considerations held by the BSC as potential future services, based upon observations of business need while executing the Pilot BSC:

- Providing services, including those services that are currently provided, for a longer timeframe following the end of construction and introduction of revenue service to ensure lingering impacts to businesses are also addressed,
- Grant funding allowing businesses to acquire software and/or hardware that complements existing training services provided by the BSC, such as business management, bookkeeping, or budgeting software.

Access to capital, which would provide businesses assistance to purchase their property in advance of the opening of the transit in order to prevent being priced out with an increase in rent. The BSC currently helps with grant applications, but it was expressed that access to capital could provide greater help. Metro's own research into impacts along the Metro Red Line identified a desire to track rent vs. own ratios, indicating "…the first step for community advocates and transit agencies concerned with business displacement would be to begin tracking not only revenue loss, as the Metropolitan Council did in Minneapolis-St. Paul, but also whether the businesses rent and own. Much like with residential gentrification, benefits may accrue to those who own, while those who rent are displaced."

The full documents referenced in this chapter are provided as **Appendix C**.

8.0 Conclusions & Next Steps

This high-level analysis provides an overall cost to expand the Pilot BSC program to Measure M light rail corridors. Cost estimates, and thus service assumptions were based upon the current program. Thus, a more detailed cost estimate for each corridor, that includes potentially expanded services targeted to each corridor, would be a worthwhile analysis to undertake prior to project procurement and implementation.