



# CONSTRUCTION IMPACT OF LOS ANGELES COUNTY TRAFFIC IMPROVEMENT PLAN

*Proposed Ballot Measure M*



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This report was commissioned by the Los Angeles County Metropolitan Transportation Authority.

The LAEDC Institute for Applied Economics offers objective economic and policy research for public agencies and private firms. The group focuses on economic impact studies, regional industry analyses, economic forecasts and issue studies, particularly in water, transportation, infrastructure and environmental policy.

Every reasonable effort has been made to ensure that the data contained herein reflect the most accurate and timely information possible and they are believed to be reliable.

The report is provided solely for informational purposes and is not to be construed as providing advice, recommendations, endorsements, representations or warranties of any kind whatsoever.

## Executive Summary

The Los Angeles County Metropolitan Transportation Authority (Metro) voted to approve placing a tax increase proposal on the November ballot to implement Los Angeles County's Traffic Improvement Plan ("the Plan") to fund an expansion of the rail and highway system in Southern California. The new Plan will authorize a new one-half cent sales tax starting in 2017, extend Measure R when it expires in 2039 and continue indefinitely until, and only if, voters decide to rescind it.

The Institute for Applied Economics of the Los Angeles Economic Development Corporation (LAEDC) has estimated the economic impact of these construction projects from the proposed ballot measure. The total economic impacts consist of the one-time increases in total output, employment and labor income in Southern California associated with construction activities, net of Measure R spending. All of the projects and most of the employment and economic activity will be in Los Angeles County; however, impacts are estimated at the regional level defined by the counties of Los Angeles, Orange, Riverside, San Bernardino and Ventura.

The exhibit below summarizes our findings.

Economic and Fiscal Impact of Metro Construction Projects			
	Highway	Transit	Total *
Total Project Spending (\$ millions) **	\$ 14,720	\$ 27,982	\$ 42,701
<i>Less Right of Way and Vehicle Purchases</i>	736	1,399	2,135
Net budgeted spending (\$ millions) **	13,984	26,583	40,566
Total Economic Impact			
Output (\$ millions)	\$ 28,215	\$ 51,116	\$ 79,331
Employment (jobs)	149,390	316,300	465,690
<i>Direct</i>	73,580	169,860	243,440
<i>Indirect</i>	37,830	68,850	106,680
<i>Induced</i>	37,980	77,590	115,570
Labor income (\$ millions)	\$ 8,583	\$ 17,542	\$ 26,125
Total Fiscal Impact (\$ millions)			
Federal taxes	\$ 2,029	\$ 4,114	\$ 6,143
State and local taxes	1,088	2,225	3,313
Total Fiscal Impact	\$ 3,117	\$ 6,339	\$ 9,457

\* May not sum due to rounding

\*\* All values expressed in 2015 dollars

Sources: Metro; LAEDC

Total spending, budgeted to exceed \$42.7 billion, will generate \$79.3 billion in economic output in the five-county Southern California region, adding 465,690 jobs with labor income of \$26.1 billion.

Total tax revenues collected will be almost \$9.5 billion on activity occurring in Southern California, including \$6.1 billion in federal taxes and \$3.3 billion in state and local taxes.

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## Budgeted Spending

The Los Angeles County Metropolitan Transportation Authority (Metro) voted to approve placing a tax increase proposal on the November ballot to implement Los Angeles County’s Traffic Improvement Plan (“the Plan”). The new Plan will authorize a new one-half cent sales tax starting in 2017, extend Measure R when it expires in 2039 and continue indefinitely until, and only if, voters decide to rescind it.

This ballot measure will fund various projects in Los Angeles County including: new highway projects, transit projects, bus operations and maintenance, rail operations and maintenance, local city transportation projects, demographic improvements (such as ADA paratransit), affordable senior, student and disabled fares, improved bike and pedestrian connections, safety improvements and regional rail link with Metrolink.

These projects are broadly categorized into two groups: highway and freeway projects and transit projects. The overall budget for the projects included here is \$42.7 billion.

The amounts by budget category are shown in the exhibit below.

Exhibit 1 Metro Transportation Improvement Construction Projects Program Budget by Category		
	\$ millions	% of total
Highway and freeway improvements, including grade separation and sound wall construction	\$14,720	34.5%
<i>Of which: Right-of-way acquisition and vehicle purchases</i>	736	
Transit corridor construction	27,982	65.5%
<i>Of which: Right-of-way acquisition and vehicle purchases</i>	1,399	
<b>Total Budget</b>	<b>\$42,701</b>	<b>100.0%</b>

Source: Metro

Over 65 percent of the total budget consists of transit corridor extensions and improvements and almost 35 percent for highway and freeway improvements.

Right-of-way acquisition is excluded from economic impact analysis since this is an exchange of assets and does not generate economic activity. Similarly, since the purchase of vehicles is expected to occur outside of the five-county Southern California region, this spending is also excluded. Our methodology is fully described below.

## Southern California Impacts

The exhibit below summarizes the economic impact in the five-county Southern California region due to the construction activity.

Exhibit 2 Metro Transportation Improvement Construction Projects Economic and Fiscal Impact of Metro Construction Projects			
	Highway	Transit	Total *
<b>Project Spending</b>			
Total Project Spending (\$ millions) **	\$ 14,720	\$ 27,982	\$ 42,701
<i>Less Right of Way and Vehicle Purchases</i>	736	1,399	2,135
Net budgeted spending (\$ millions) **	13,984	26,583	40,566
<b>Total Economic Impact in Southern California</b>			
Output (\$ millions)	\$ 28,215	\$ 51,116	\$ 79,331
Employment (jobs)	149,390	316,300	465,690
<i>Direct</i>	73,580	169,860	243,440
<i>Indirect</i>	37,830	68,850	106,680
<i>Induced</i>	37,980	77,590	115,570
Compensation (\$ millions)	\$ 8,583	\$ 17,542	\$ 26,125

\* May not sum due to rounding

\*\* All values expressed in 2015 dollars

Sources: Metro; LAEDC

During the construction period, the budgeted spending, net of Measure R, related to the completion of Metro’s proposed transportation projects, after deducting spending on right-of-way acquisition and vehicle purchases, is \$40.6 billion. Together, this spending will generate economic output of \$79.3 billion in the five-county region of Southern California (in 2015 dollars). The projects will create 465,690 part-time and full-time jobs with total labor income of \$26.1 billion.

The total (direct, indirect and induced) economic output associated with highway and freeway projects is estimated to be \$28.2 billion. These projects include building new freeways or highways as well as expanding capacity on freeways and interchanges, a bike master plan, a high desert multi-purpose corridor, a bike path along the Los Angeles River and other projects. The total number of number of jobs related to these projects will be 149,390 with almost \$8.6 billion in labor income.

Transit projects, including the construction of light and heavy rail lines, subway extensions, and the construction of bus rapid transit lines, will generate \$51.1 billion in total (direct, indirect and induced) output for the Southern California regional economy. Work on these projects will create 316,300 total jobs with over \$17.5 billion in labor income.

## Industry Breakdown

Total output, employment and compensation impacts are disaggregated by industry sector in the exhibit below. This allows an estimation and industry identification of “follow-on” jobs and business revenues. The values in the exhibit should be interpreted as illustrative of the industry effects rather than precise given model and data limitations.

Exhibit 3 Metro Transportation Improvement Construction Projects Economic Impact in Southern California by Industry			
Industry	Employment	Labor Income (\$ millions)	Output (\$ millions)
Agriculture	390	\$ 22.6	\$ 45.6
Mining	1,830	182.0	842.1
Utilities	350	49.9	349.4
Construction	245,570	13,759.4	40,939.8
Manufacturing	15,600	1,171.0	7,613.5
Wholesale trade	14,540	1,174.6	3,610.0
Retail trade	40,990	1,448.6	3,766.6
Transportation and warehousing	12,630	764.0	2,103.6
Information	3,310	410.3	1,908.5
Finance and insurance	12,120	929.5	2,688.2
Real estate	12,630	647.3	4,909.5
Professional, scientific and technical services	18,530	1,597.8	2,811.5
Management of companies	2,450	289.7	568.4
Administrative and waste management	17,770	640.9	1,170.4
Education services	4,580	221.7	369.0
Health care and social assistance	23,910	1,355.1	2,357.4
Arts, entertainment and recreation	4,160	157.9	383.0
Accommodations and food services	16,940	435.3	1,058.0
Other services	15,160	627.0	1,256.3
Government and non-NAICS	2,300	240.5	580.2
<b>Total *</b>	<b>465,690</b>	<b>\$ 26,125</b>	<b>\$ 79,331</b>

\* May not sum due to rounding

All values expressed in 2015 dollars

Source: Estimates by LAEDC

Much of the impact will occur in the construction industry, with over half of the total (direct, indirect and induced) output earned by firms in the industry and over half of the jobs generated. However, other industries are also significantly impacted, including: retail trade, health care and social assistance, professional and scientific services and accommodations and food services. Each of these industries will see an increase in business revenues and in the number of jobs as the effects of the increase in construction activity due to the Metro’s projects ripple through the regional economy.

## Fiscal Impacts

The economic activity in Southern California generated by the transportation projects over the 50-year construction period will generate significant state, local and federal tax revenues. Income taxes will be collected on the earnings of workers, both direct and indirect, as are unemployment insurance and disability insurance taxes. Sales taxes will be generated on the purchases of materials by the construction contractors and of goods and services by all the workers whose earnings are sustained by the transportation projects.

The estimated tax revenues by level of government are detailed in the exhibit below.

Exhibit 4 Fiscal Impact of Transportation Improvement Projects			
	Highway	Transit	Total *
<b>State and Local Taxes (\$ millions)</b>			
Income taxes	\$ 309	\$ 628	\$ 937
Sales taxes	336	689	1,025
Property tax	291	596	887
Social insurance	23	47	71
Fees and fines	74	151	225
Other taxes	55	113	168
<b>Total state and local taxes</b>	<b>\$ 1,088</b>	<b>\$ 2,225</b>	<b>\$ 3,313</b>
<b>Federal Taxes (\$ millions)</b>			
Incomes taxes	\$ 736	\$ 1,505	\$ 2,241
Social insurance	901	1,832	2,733
Corporate income taxes	277	542	819
Other taxes	115	236	351
<b>Total federal taxes</b>	<b>\$ 2,029</b>	<b>\$ 4,114</b>	<b>\$ 6,143</b>
<b>Total *</b>	<b>\$ 3,117</b>	<b>\$ 6,339</b>	<b>\$ 9,457</b>

\* May not sum due to rounding

All values expressed in 2015 dollars

Sources: Metro; Estimates by LAEDC

It is estimated that direct, indirect and induced workers will pay over \$2.2 billion in federal income taxes, \$937 million in state income taxes and just over \$1.0 billion in sales taxes in California.

Altogether, almost \$9.5 billion in tax revenues will be collected in relation to the transportation construction projects, of which 65 percent this will be collected at the federal level and 35 percent at the state and local level.



## Impacts by Project

The total economic impacts for each project are detailed in the exhibit below.

Exhibit 5 Economic Impact in Southern California by Project					
	Net Spending (\$ millions)	Output (\$ millions)	Jobs	Labor Income (\$ millions)	Tax Revenue (\$ millions)
<b>Highway Projects</b>					
Active Transportation 1st/Last Mile Connections Prog.	\$ 343	\$ 692	3,660	\$ 211	\$ 76
Active Transportation Program	251	506	2,680	154	56
Active Transportation Program (Including Greenway Proj.)	219	443	2,340	135	49
Active Transportation Projects	130	262	1,390	80	29
Active Transportation, 1st/Last Mile, & Mobility Hubs	204	412	2,180	125	46
Arroyo Verdugo Projects to be Determined	105	212	1,120	64	23
Arterial Program	690	1,392	7,370	423	154
City of San Fernando Bike Master Plan	5	10	50	3	1
Complete LA River Bikepath	57	115	610	35	13
First/Last Mile and Complete Streets	188	380	2,010	115	42
Freeway Interchange and Operational Improvements	185	374	1,980	114	41
High Desert Multi-Purpose Corridor - LA County Segment	1,785	3,601	19,070	1096	398
Highway Demand Based Prog. (HOV Ext. & Connect.)	219	443	2,340	135	49
Highway Efficiency Program	122	247	1,310	75	27
Highway Efficiency Program	507	1,024	5,420	311	113
Highway Efficiency Program	126	255	1,350	78	28
Highway Efficiency, Noise Mitig. and Arterial Projects	573	1,155	6,120	352	128
I-105 Express Lane from I-405 to I-605	166	335	1,780	102	37
I-110 Express Lane Ext South to I-405/I-110 Interchange	266	537	2,840	163	59
I-405 South Bay Curve Improvements	381	768	4,070	234	85
I-5 Corridor Improvements (I-605 to I-710)	1,050	2,118	11,220	644	234
I-605/I-10 Interchange	568	1,147	6,070	349	127
ITS/Technology Program (Advanced Signal Tech.)	63	127	670	38	14
LA River Waterway & System Bikepath	347	700	3,700	213	77
LA Streetscape Enhance. & Great Streets Program	428	863	4,570	262	95
Los Angeles Safe Routes to School Initiative	238	479	2,540	146	53
Metro Active Transport, Transit 1st/Last Mile Program	815	1,644	8,700	500	182
Modal Connectivity and Complete Streets Projects	192	387	2,050	118	43
Modal Connectivity Program	65	130	690	40	14
Multimodal Connectivity Program	227	458	2,430	139	51
Sepulveda Pass Transit Corridor (Ph 1) @	124	249	1,320	76	28
Sepulveda Pass Transit Corridor (Ph 1) @	124	249	1,320	76	28
South Bay Highway Operational Improvements	1,045	2,109	11,160	641	233
SR 60/I-605 Interchange HOV Direct Connectors	466	940	4,980	286	104
SR-57/SR-60 Interchange Improvements	732	1,476	7,810	449	163
SR-71 Gap from I-10 to Rio Rancho Rd.	261	527	2,790	160	58
Traffic Congestion Relief and Improvement Program	60	121	640	37	13
Traffic Congestion Relief/Signal Synchronization	48	96	510	29	11
Transportation System and Mobility Improve. Program	279	563	2,980	171	62
Transportation System and Mobility Improve. Program	333	671	3,550	204	74
<b>Total Highway *</b>	<b>\$ 13,984</b>	<b>\$ 28,215</b>	<b>149,390</b>	<b>\$ 8,583</b>	<b>\$ 3,117</b>

	Net Spending (\$ millions)	Output (\$ millions)	Jobs	Labor Income (\$ millions)	Tax Revenue (\$ millions)
<b>Transit Projects</b>					
Active Transportation, Transit, and Tech. Program	\$ 30	\$ 58	360	\$ 20	\$ 7
Airport Metro Connect 96th St. Station/Green Line Ext LAX	420	807	5,000	277	100
BRT and 1st/Last Mile Solutions e.g. DASH	238	457	2,830	157	57
BRT Connector Orange/Red Line to Gold Line	228	439	2,720	151	54
BRT Connector Orange/Red Line to Gold Line	25	49	300	17	6
Bus System Improvement Program	52	100	620	34	12
Countywide BRT Projects Ph 1 (All Subregions)	48	91	560	31	11
Countywide BRT Projects Ph 2 (All Subregions)	48	91	560	31	11
Countywide BRT Projects Ph 3 (All Subregions)	48	91	560	31	11
Countywide BRT Projects Ph 4 (All Subregions)	95	183	1,130	63	23
Countywide BRT Projects Ph 5 (All Subregions)	95	183	1,130	63	23
Crenshaw Northern Extension	1,596	3,069	18,990	1,053	381
Crenshaw Northern Extension	532	1,023	6,330	351	127
Crenshaw/LAX Track Enhancement Project	47	91	560	31	11
East SF Valley Transit Corridor Project ®	1,116	2,146	13,280	737	266
Gold Line Eastside Ext. Second Alignment	2,850	5,480	33,910	1,881	680
Gold Line Eastside Extension (One Alignment) ®	1,425	2,740	16,960	940	340
Gold Line Foothill Extension to Claremont ®	1,042	2,004	12,400	688	249
Goods Movement (Improvements & RR Xing Elim.)	31	60	370	21	7
Goods Movement Program	99	190	1,180	65	24
Goods Movement Projects	78	149	930	51	19
Green Line Eastern Extension (Norwalk)	732	1,407	8,700	483	174
Green Line Extension to Crenshaw Blvd in Torrance ®	489	941	5,820	323	117
Historic Downtown Streetcar	190	365	2,250	125	45
Lincoln Blvd BRT	97	186	1,150	64	23
North San Fernando Valley Bus Rapid Transit	171	329	2,030	113	41
Orange Line BRT Improvements	272	522	3,230	179	65
Orange Line Conversion to Light Rail	1,358	2,610	16,150	896	324
Public Transit State of Good Repair Program	382	734	4,540	252	91
Sepulveda Pass Transit Corridor (Ph 2) ®	1,162	2,234	13,820	767	277
Sepulveda Pass Transit Corridor (Ph 2) ®	2,695	5,183	32,070	1,779	643
Sepulveda Pass Westwood to LAX (Ph 3)	3,672	7,060	43,690	2,423	876
SF Valley Transportation Improvements	101	195	1,210	67	24
Street Car and Circulator Projects	33	64	400	22	8
Transit Program	559	1,074	6,650	369	133
Transit Projects	244	470	2,900	161	58
Vermont Transit Corridor	404	776	4,810	266	96
Visionary Project Seed Funding	19	37	230	13	5
West Santa Ana Transit Corridor LRT ®	983	1,891	11,700	649	234
West Santa Ana Transit Corridor LRT ®	970	1,866	11,550	640	231
West Santa Ana Transit Corridor LRT ®	1,408	2,708	16,760	929	336
Westside Purple Line Extension Section 3 ®	499	960	5,940	329	119
<b>Total Transit*</b>	<b>\$ 26,583</b>	<b>\$ 51,116</b>	<b>316,300</b>	<b>\$ 17,542</b>	<b>\$ 6,339</b>
<b>Total *</b>	<b>\$ 40,566</b>	<b>\$ 79,331</b>	<b>465,690</b>	<b>\$ 26,125</b>	<b>\$ 9,457</b>

\* May not sum due to rounding

All values expressed in 2015 dollars

Sources: Metro; Estimates by LAEDC

Please note that some projects in the Plan are not listed here since they were included in the February 2016 Measure R Report

## Project Employment Impacts by Type

The decomposition of employment impacts by type by project is shown in Exhibit 6 below.

Exhibit 6 Employment Impact of All Projects by Type				
	Direct	Indirect	Induced	Total
<b>Highway Projects</b>				
Active Transportation 1st/Last Mile Connections Prog.	1,800	930	930	3,660
Active Transportation Program	1,320	680	680	2,680
Active Transportation Program (Including Greenway Proj.)	1,150	590	600	2,340
Active Transportation Projects	680	360	350	1,390
Active Transportation, 1st/Last Mile, & Mobility Hubs	1,070	560	550	2,180
Arroyo Verdugo Projects to be Determined	550	280	290	1,120
Arterial Program	3,630	1,870	1,870	7,370
City of San Fernando Bike Master Plan	30	10	10	50
Complete LA River Bikepath	300	160	150	610
First/Last Mile and Complete Streets	990	510	510	2,010
Freeway Interchange and Operational Improvements	970	510	500	1,980
High Desert Multi-Purpose Corridor - LA County Segment	9,390	4,830	4,850	19,070
Highway Demand Based Prog. (HOV Ext. & Connect.)	1,150	590	600	2,340
Highway Efficiency Program	640	340	330	1,310
Highway Efficiency Program	2,670	1,370	1,380	5,420
Highway Efficiency Program	660	350	340	1,350
Highway Efficiency, Noise Mitig. and Arterial Projects	3,010	1,550	1,560	6,120
I-105 Express Lane from I-405 to I-605	870	460	450	1,780
I-110 Express Lane Ext South to I-405/I-110 Interchange	1,400	720	720	2,840
I-405 South Bay Curve Improvements	2,000	1,040	1,030	4,070
I-5 Corridor Improvements (I-605 to I-710)	5,520	2,850	2,850	11,220
I-605/I-10 Interchange	2,990	1,540	1,540	6,070
ITS/Technology Program (Advanced Signal Tech.)	330	170	170	670
LA River Waterway & System Bikepath	1,820	940	940	3,700
LA Streetscape Enhance. & Great Streets Program	2,250	1,160	1,160	4,570
Los Angeles Safe Routes to School Initiative	1,250	640	650	2,540
Metro Active Transport, Transit 1st/Last Mile Program	4,290	2,200	2,210	8,700
Modal Connectivity and Complete Streets Projects	1,010	520	520	2,050
Modal Connectivity Program	340	170	180	690
Multimodal Connectivity Program	1,190	620	620	2,430
Sepulveda Pass Transit Corridor (Ph 1) @	650	330	340	1,320
Sepulveda Pass Transit Corridor (Ph 1) @	650	330	340	1,320
South Bay Highway Operational Improvements	5,500	2,830	2,830	11,160
SR 60/I-605 Interchange HOV Direct Connectors	2,450	1,260	1,270	4,980
SR-57/SR-60 Interchange Improvements	3,850	1,980	1,980	7,810
SR-71 Gap from I-10 to Rio Rancho Rd.	1,370	710	710	2,790
Traffic Congestion Relief and Improvement Program	310	170	160	640
Traffic Congestion Relief/Signal Synchronization	250	130	130	510
Transportation System and Mobility Improve. Program	1,470	750	760	2,980
Transportation System and Mobility Improve. Program	1,750	900	900	3,550
<b>Total Highway *</b>	<b>73,580</b>	<b>37,830</b>	<b>37,980</b>	<b>149,390</b>

	Direct	Indirect	Induced	Total
<b>Transit Projects</b>				
Active Transportation, Transit, and Tech. Program	190	80	90	360
Airport Metro Connect 96th St. Station/Green Line Ext LAX ®	2,680	1,090	1,230	5,000
BRT and 1st/Last Mile Solutions e.g. DASH	1,520	620	690	2,830
BRT Connector Orange/Red Line to Gold Line	1,460	590	670	2,720
BRT Connector Orange/Red Line to Gold Line	160	70	70	300
Bus System Improvement Program	330	140	150	620
Countywide BRT Projects Ph 1 (All Subregions)	300	120	140	560
Countywide BRT Projects Ph 2 (All Subregions)	300	120	140	560
Countywide BRT Projects Ph 3 (All Subregions)	300	120	140	560
Countywide BRT Projects Ph 4 (All Subregions)	610	250	270	1,130
Countywide BRT Projects Ph 5 (All Subregions)	610	250	270	1,130
Crenshaw Northern Extension	10,200	4,130	4,660	18,990
Crenshaw Northern Extension	3,400	1,380	1,550	6,330
Crenshaw/LAX Track Enhancement Project	300	120	140	560
East SF Valley Transit Corridor Project ®	7,130	2,890	3,260	13,280
Gold Line Eastside Ext. Second Alignment	18,210	7,380	8,320	33,910
Gold Line Eastside Extension (One Alignment) ®	9,110	3,690	4,160	16,960
Gold Line Foothill Extension to Claremont ®	6,660	2,700	3,040	12,400
Goods Movement (Improvements & RR Xing Elim.)	200	80	90	370
Goods Movement Program	630	260	290	1,180
Goods Movement Projects	500	200	230	930
Green Line Eastern Extension (Norwalk)	4,670	1,890	2,140	8,700
Green Line Extension to Crenshaw Blvd in Torrance ®	3,130	1,270	1,420	5,820
Historic Downtown Streetcar	1,210	490	550	2,250
Lincoln Blvd BRT	620	250	280	1,150
North San Fernando Valley Bus Rapid Transit Improvements	1,090	440	500	2,030
Orange Line BRT Improvements	1,740	700	790	3,230
Orange Line Conversion to Light Rail	8,670	3,520	3,960	16,150
Public Transit State of Good Repair Program	2,440	990	1,110	4,540
Sepulveda Pass Transit Corridor (Ph 2) ®	7,420	3,010	3,390	13,820
Sepulveda Pass Transit Corridor (Ph 2) ®	17,220	6,980	7,870	32,070
Sepulveda Pass Westwood to LAX (Ph 3)	23,460	9,510	10,720	43,690
SF Valley Transportation Improvements	650	260	300	1,210
Street Car and Circulator Projects	210	90	100	400
Transit Program	3,570	1,450	1,630	6,650
Transit Projects	1,560	630	710	2,900
Vermont Transit Corridor	2,580	1,050	1,180	4,810
Visionary Project Seed Funding	120	50	60	230
West Santa Ana Transit Corridor LRT ®	6,280	2,550	2,870	11,700
West Santa Ana Transit Corridor LRT ®	6,200	2,520	2,830	11,550
West Santa Ana Transit Corridor LRT ®	9,000	3,650	4,110	16,760
Westside Purple Line Extension Section 3 ®	3,190	1,290	1,460	5,940
<b>Total Transit *</b>	<b>169,860</b>	<b>68,850</b>	<b>77,590</b>	<b>316,300</b>
<b>Total *</b>	<b>243,440</b>	<b>106,680</b>	<b>115,570</b>	<b>465,690</b>

\* May not sum due to rounding

Sources: Metro; Estimates by LAEDC

## Methodology

**E**conomic impact analysis is used to estimate the overall economic activity, including spill-over and multiplier impacts, which occurs as a result of a particular business, event or investment. The initial economic activity related to Metro's transportation projects is the purchase of goods and services from local vendors and the wages and benefits paid to local workers.

The total estimated economic impact includes direct, indirect and induced effects. The injection of new funds into the region circulates from Metro to its contractors. This is the *direct effect* of the spending. The contractor in turn purchases goods and services from local establishments that in turn hire workers and buy goods and services to facilitate their business. These are called *indirect effects*. In addition, workers employed on site, as well as employees of all suppliers, spend a portion of their incomes on groceries, rent, vehicle expenses, healthcare, entertainment, and so on. These are called *induced effects*.

The recirculation of the original expenditures multiplies their impact through such indirect and induced effects. The extent to which the initial expenditures multiply is estimated using economic models that depict the economic relationships between industries (such as road construction and its suppliers) and among different economic agents (such as a cement supplier and its employees). The models used in this analysis were developed using software and data from the IMPLAN Group, LLC. The economic region of interest is the five-county Southern California region consisting of Los Angeles, Orange, Riverside, San Bernardino and Ventura counties. This region forms the Los Angeles Combined Statistical Area defined by the Bureau of Labor Statistics.

The metrics used to determine the value of the economic impact include employment, labor income and the value of output. *Employment* includes full-time, part-time, permanent and seasonal employees and the self-employed, and is measured on a job-count basis regardless of the number of hours worked during the year. *Labor income* includes all income received by both payroll employees and the self-employed, including wages and benefits such as health insurance and pension plan contributions. *Output* is the value of the goods and services produced. For most industries, this is simply the revenues generated through sales; for others, in particular retail industries, output is the value of the services supplied.

Expenditures are modeled as nominal expenditures in year of spending, and inflation-adjusted to reflect 2015 dollars. All dollar figures are quoted in 2015 dollars.

Spending in the budget category denoted as right-of-way and land acquisition is excluded from economic impact analysis since this is an exchange of assets and does not generate economic activity on its own. Additionally, spending on vehicle purchases and on finance charges, if any, are excluded because they are not expected to occur within the economic region. It is assumed that five percent of the projected spending will be for right-of-way acquisition and vehicle purchases.

Job creation estimates are measured on a job-count basis for both wage-and-salary workers and proprietors regardless of the number of hours worked.



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