



ECONOMIC IMPACT ANALYSIS

CONSTRUCTION IMPACT OF METRO'S MEASURE R TRANSPORTATION PROJECTS

UPDATE 2012

Los Angeles County Economic Development Corporation



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

The LAEDC Economic and Policy Analysis Group 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) has proposed a series of transportation improvement projects in Los Angeles County to be funded through tax revenues generated from the voter-approved Measure R increase in sales taxes.

The Economic and Policy Analysis Group of the Los Angeles Economic Development Corporation (LAEDC) has estimated the economic impact of \$35.3 billion of these construction projects. The total economic impacts consist of the one-time increases in total output, employment and labor income in Southern California and across the nation associated with the proposed construction activities over the next 30 years. 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. National impacts are also estimated using multi-regional analysis, which captures the impacts of regional spending in other areas of the nation.

The exhibit below summarizes our findings.

Economic and Fiscal Impact of Metro Construction Projects		
	Southern California	National
Project spending (\$ millions)	\$ 35,327	\$ 35,327
Net budgeted spending (\$ millions)	30,828	30,828
Total Economic Impact		
Output (\$ millions)	\$ 67,260	\$ 83,920
Employment (jobs)	409,080	494,020
Compensation (\$ millions)	\$ 24,910	\$ 30,650
Total Fiscal Impact (\$ millions)		
Federal taxes	\$ 5,184	\$ 5,806
State and local taxes	2,799	3,424
Total Fiscal Impact	7,982	9,230

Sources: Metro; LAEDC
2010 dollars

Total spending, budgeted to exceed \$35.3 billion, will generate \$67.3 billion in economic output in the five-county Southern California region, adding 409,080 jobs with labor income of \$24.9 billion over the thirty year period. An additional \$16.6 billion in economic output and 85,000 jobs will be generated in other areas of the nation.

Total tax revenues collected will reach \$8.0 billion on activity occurring in Southern California. The additional economic activity generated throughout the nation will yield an additional \$1.2 billion in fiscal revenues over the thirty year period.

Budgeted Spending

The Los Angeles County Metropolitan Transportation Authority (Metro) has proposed a series of transportation improvement projects in Los Angeles County to be funded through tax revenues generated from the voter-approved Measure R increase in sales taxes. These projects are broadly categorized into two groups: highway and freeway projects, which also include grade separations and sound wall construction; and transit corridor construction. The overall budget for the projects included here is \$35.3 billion over thirty years.

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	\$ 22,448	63.5
<i>Of which: Right-of-way acquisition</i>	2,379	
Transit corridor construction	12,879	36.5
<i>Of which: Right-of-way acquisition</i>	1,372	
<i>Vehicle purchases</i>	753	
Total Budget	\$ 35,327	100.0

Source: Metro
2010 dollars

Approximately 64 percent of the total budget consists of highway and freeway improvements, and 36 percent for transit corridor extensions and improvements.

Excluded Spending

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. Dollar values are expressed in 2010 dollars throughout this report.

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 Impact by Category			
	Highway	Transit	Total *
Project Spending			
Budgeted spending (\$ millions)	\$ 22,448	\$ 12,879	\$ 35,327
<i>Less: Excluded spending</i>	2,379	2,125	4,505
Net budgeted spending (\$ millions)	20,079	10,748	30,828
Economic Impact in Southern California			
Output (\$ millions)	\$ 43,600	\$ 23,660	\$ 67,260
Employment (jobs)	256,260	152,820	409,080
Compensation (\$ millions)	\$ 16,070	\$ 8,840	\$ 24,910

* May not sum due to rounding
Sources: Metro; Estimates by LAEDC

During the 30-year construction period, the net budgeted spending related to the completion of Metro's proposed transportation projects, after deducting spending on right-of-way acquisition and vehicle purchases, is \$30.8 billion. Together, this spending will generate economic output of \$67.3 billion in the five-county region of Southern California (in 2010 dollars). The projects will create 409,080 part-time and full-time jobs with total labor income of \$24.9 billion.

The total economic output associated with highway and freeway projects is estimated to be \$43.6 billion. These projects include building new freeways or highways, expanding capacity on freeways and interchanges, and the construction of grade separations along major goods movement corridors and sound wall barriers. Over the 30-year period, the total number of jobs related to these projects will be 256,260 with \$16.1 billion in compensation.

Transit projects, including the construction of light and heavy rail lines, subway extensions, and the construction of bus rapid transit lines, will generate \$23.7 billion in total (direct, indirect and induced) output for the Southern California regional economy over the course of 30 years. Work on these projects will create 152,820 total jobs with over \$8.8 billion in compensation.

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	Output (\$ millions)	Jobs	Labor income (\$ millions)
Agriculture	\$ 126	1,000	\$ 41
Mining	388	920	112
Utilities	491	470	89
Construction	31,040	190,380	12,893
Manufacturing	7,349	15,950	1,125
Wholesale trade	1,858	9,760	736
Retail trade	2,389	29,330	1,052
Transportation and warehousing	1,159	8,380	504
Information	1,853	3,900	393
Finance and insurance	3,360	14,340	1,086
Real estate	4,789	11,680	442
Professional, scientific and technical services	4,844	32,690	2,735
Management of companies	398	1,940	191
Administrative and waste management	1,138	18,340	612
Education services	337	5,050	193
Health care and social assistance	2,282	22,920	1,288
Arts, entertainment and recreation	432	4,800	154
Accommodations and food services	1,038	16,540	386
Other services	1,467	17,820	647
Government and non-NAICS	522	2,550	231
Total *	\$ 67,260	409,080	\$ 24,910

* May not sum due to rounding
Source: Estimates by LAEDC

Much of the impact will occur in the construction industry, with more than half of the total (direct, indirect and induced) output earned by firms in the industry and over 45 percent of the jobs generated. However, other industries are also significantly impacted, including: manufacturing; real estate; retail trade; accommodation and food services; professional and scientific services; finance and insurance; and health care. 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 Impact

The proposed transportation projects will generate significant state, local and federal tax revenues over the 30-year construction period based on the economic activity generated in the five-county Southern California region. 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 summarized in the exhibit below.

Exhibit 5			
Fiscal Impact of Transportation Improvement Projects			
	Highway	Transit	Total *
State and Local Taxes (\$ millions)			
Income taxes	\$ 581	\$ 306	\$ 886
Sales taxes	483	243	727
Property tax	391	270	662
Social insurance	58	31	88
Fees and fines	181	107	288
Other taxes	100	48	148
Total state and local taxes	\$ 1,795	\$ 1,004	\$ 2,799
Federal Taxes (\$ millions)			
Incomes taxes	\$ 1,569	\$ 835	\$ 2,404
Social insurance	1,614	898	2,512
Other taxes	170	98	268
Total federal taxes	\$ 3,352	\$ 1,831	\$ 5,184
Total *	\$ 5,147	\$ 2,836	\$ 7,982

* May not sum due to rounding

Sources: Metro; Estimates by LAEDC

It is estimated that direct, indirect and induced workers will pay \$2.4 billion in federal income taxes, \$2.5 billion in social security taxes and \$890 million in California state income taxes. Sales taxes generated on all purchases will reach \$727 million.

All together, almost \$8.0 billion in tax revenues will be generated in relation to the transportation construction projects. Approximately 65 percent of this will be earned at the federal level and 35 percent at the state and local level.

Impacts by Project

Economic impacts for each project are shown in the exhibit below.

Exhibit 6					
Economic Impact in Southern California by Project					
Industry	Spending (\$ millions)	Output (\$ millions)	Jobs	Compensation (\$ millions)	Tax Revenue (\$ millions)
Highway Projects					
Alameda Corridor East (ACE)	\$ 1,010	\$ 2,191	12,800	\$ 803	\$ 90
Arroyo Verdugo Oper. Improvements	171	356	2,440	155	17
BNSF Grade Separations	230	499	2,920	183	21
High Desert Road Interchange	2,070	4,500	26,400	1,650	185
I-5 Carmenita Road Interchange	122	266	1,550	97	11
I-5 HOV from SR-14 to Kern County	2,380	5,177	30,240	1,897	212
I-5 HOV from SR-134 to SR-170	234	508	2,970	186	21
I-5 Widening and HOV	237	494	3,400	215	23
I-5 SR-14 HOV Direct Connector	78	161	1,100	70	8
I-605 Corridor Hot Spot Interchanges	2,178	4,738	27,700	1,736	194
I-710 Corridor Project EIR/EIS	4,630	10,060	58,800	3,690	413
Las Virgenes. Malibu Oper. Impvts	175	365	2,500	158	17
Soundwall Program	2,400	5,220	30,500	1,910	214
South Bay Ramp & Oper. Impvts	770	1,680	9,800	614	69
SR-138 Capacity Enhancements	224	487	2,840	178	20
SR-710 Gap Project	3,170	6,900	40,300	2,530	283
Total Highway *	\$ 20,079	\$ 43,600	256,260	\$ 16,070	\$ 1,795
Transit Projects					
Crenshaw-LAX Transit Corridor	\$ 1,273	\$ 2,880	18,100	\$ 1,050	\$ 119
East SF Valley North-South Corridor	132	291	1,880	109	12
Eastside Transit Corridor Phase 2	1,085	2,390	15,400	892	101
Exposition Transit Corridor Phase 2	1,024	2,250	14,520	841	96
Gold Line Foothill Extension	714	1,570	10,130	587	67
Green Line LAX Extension	151	333	2,150	124	14
Green Line South Bay Extension	252	544	3,580	207	24
Orange Line Extension	170	373	2,410	139	16
Regional Connector Transit Corridor	1,082	2,380	15,400	890	101
Sepulveda Pass Transit Corridor	986	2,170	14,000	810	92
West Santa Ana Transit Corridor	194	426	2,750	159	18
Westside Subway Ext. Segment 1	1,584	3,480	22,500	1,300	148
Westside Subway Ext. Segment 2	1,085	2,390	15,400	892	101
Westside Subway Ext. Segment 3	1,028	2,260	14,600	845	96
Total Transit *	\$ 10,758	\$ 23,660	152,820	\$ 8,840	\$ 1,004
Total *	\$ 30,828	\$ 67,260	409,080	\$ 24,910	\$ 2,799

* May not sum due to rounding

Sources: Metro; Estimates by LAEDC

National Impacts

In addition to the economic activity generated in the Southern California region, indirect and induced impacts occur across the nation. The exhibit below summarizes the economic impact in the United States due to the construction activity associated with Metro's Measure R spending.

Exhibit 7			
Metro Transportation Improvement Construction Projects			
Economic Impact by Category			
	Highway	Transit	Total *
Project Spending			
Net budgeted spending (\$ millions)	\$ 20,079	\$ 10,748	\$ 30,828
Economic Impact in United States			
Output (\$ millions)	\$ 54,660	\$ 29,260	\$ 83,920
Employment (jobs)	321,770	172,250	494,020
Compensation (\$ millions)	\$ 19,960	\$ 10,690	\$ 30,650

* May not sum due to rounding
Sources: Metro; Estimates by LAEDC

The net budgeted spending related to the completion of Metro's proposed transportation projects, after deducting spending on right-of-way acquisition and vehicle purchases, is \$30.8 billion, as above. This spending will generate economic output of \$83.9 billion across the nation, almost \$20 billion in areas outside of Southern California. The projects will create 494,020 part-time and full-time jobs, of which almost 85,000 are due to activity occurring outside the region.

Industry Breakdown

Total output, employment and compensation impacts at the national level are disaggregated by industry sector in the exhibit below. The values in the exhibit should be interpreted as illustrative of the industry effects rather than precise given model and data limitations.

Exhibit 8			
Metro Transportation Improvement Construction Projects			
National Economic Impact by Industry			
Industry	Output (\$ millions)	Jobs	Earnings (\$ millions)
Agriculture	\$ 507	4,280	\$ 143
Mining	1,907	5,440	492
Utilities	1,067	1,110	161
Construction	31,154	200,250	14,179
Manufacturing	14,654	33,040	2,315
Wholesale trade	2,637	13,080	1,047
Retail trade	2,367	34,190	1,246
Transportation and warehousing	1,839	12,890	693
Information	2,141	5,710	593
Finance and insurance	4,294	16,840	1,306
Real estate	5,746	15,190	424
Professional, scientific and technical services	5,354	37,890	2,917
Management of companies	832	3,810	431
Administrative and waste management	1,531	21,900	780
Education services	414	6,140	234
Health care and social assistance	3,078	28,820	1,710
Arts, entertainment and recreation	492	6,730	214
Accommodations and food services	1,485	21,610	556
Other services	1,701	21,400	902
Government and non-NAICS	723	3,610	304
Total *	\$ 83,921	494,020	\$ 30,647

* May not sum due to rounding
Source: Estimates by LAEDC

Much of the impact will occur in the construction industry, with about 46 percent of the total (direct, indirect and induced) output earned by firms in the industry. However, other industries also benefit through indirect and induced impacts, including: manufacturing; real estate; retail trade; accommodation and food services; professional and scientific services; finance and insurance; and health care. 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 national economy.

Fiscal Impact

By adding economic activity occurring across the nation, the fiscal impact of this activity is much larger than what was estimated at the regional level. The estimated tax revenues by level of government are summarized in the exhibit below.

Exhibit 9			
National Fiscal Impact of Transportation Improvement Projects			
	Highway	Transit	Total *
State and Local Taxes (\$ millions)			
Income taxes	\$ 548	\$ 293	\$ 842
Sales taxes	597	320	917
Property tax	653	350	1,003
Social insurance	72	39	111
Fees and fines	240	128	368
Other taxes	120	64	184
Total state and local taxes	\$ 2,230	\$ 1,194	\$ 3,424
Federal Taxes (\$ millions)			
Incomes taxes	\$ 1,582	\$ 847	\$ 2,428
Social insurance	1,960	1,049	3,009
Other taxes	241	129	369
Total federal taxes	\$ 3,782	\$ 2,024	\$ 5,806
Total *	\$ 6,012	\$ 3,218	\$ 9,230

* May not sum due to rounding
Sources: Metro; Estimates by LAEDC

It is estimated that direct, indirect and induced workers will pay \$2.4 billion in federal income taxes, \$3.0 billion in social security taxes and \$840 million in state income taxes. Sales taxes generated on all purchases will reach \$917 million.

All together, more than \$9.2 billion in tax revenues will be generated in relation to the transportation construction projects. Approximately 63 percent of this will be earned at the federal level and 37 percent at the state and local level.

Impacts by Project

National economic impacts for each project are shown in the exhibit below.

Exhibit 10 National Economic Impact by Project					
Industry	Spending (\$ millions)	Output (\$ millions)	Jobs	Compensation (\$ millions)	Tax Revenue (\$ millions)
Highway Projects					
Alameda Corridor East (ACE)	\$ 1,010	\$ 2,740	16,140	\$ 1,000	\$ 302
Arroyo Verdugo Oper. Improvements	171	465	2,740	170	51
BNSF Grade Separations	230	625	3,680	228	69
High Desert Road Interchange	2,070	5,640	33,180	2,060	620
I-5 Carmenita Road Interchange	122	333	1,960	121	37
I-5 HOV from SR-14 to Kern County	2,380	6,480	38,150	2,370	713
I-5 HOV from SR-134 to SR-170	234	636	3,740	232	70
I-5 Widening and HOV	237	646	3,800	236	71
I-5 SR-14 HOV Direct Connector	78	211	1,240	77	23
I-605 Corridor Hot Spot Interchanges	2,178	5,930	34,900	2,170	652
I-710 Corridor Project EIR/EIS	4,630	12,610	74,200	4,600	1,387
Las Virgenes. Malibu Oper. Impvts	175	477	2,810	174	52
Soundwall Program	2,400	6,530	38,500	2,390	719
South Bay Ramp & Oper. Impvts	770	2,097	12,340	766	231
SR-138 Capacity Enhancements	224	609	3,590	222	67
SR-710 Gap Project	3,170	8,63	50,810	3,150	949
Total *	\$ 20,079	\$ 54,660	321,770	\$ 19,960	\$ 6,012
Transit Projects					
Crenshaw-LAX Transit Corridor	\$ 1,273	\$ 3,470	20,400	\$ 1,270	\$ 382
East SF Valley North-South Corridor	132	360	2,120	132	40
Eastside Transit Corridor Phase 2	1,085	2,950	17,300	1,080	324
Exposition Transit Corridor Phase 2	1,024	2,780	16,400	1,020	306
Gold Line Foothill Extension	714	1,944	11,440	710	214
Green Line LAX Extension	151	412	2,430	150	45
Green Line South Bay Extension	252	686	4,040	251	75
Orange Line Extension	170	462	2,720	169	51
Regional Connector Transit Corridor	1,082	2,950	17,300	1,080	324
Sepulveda Pass Transit Corridor	986	2,684	15,800	980	295
West Santa Ana Transit Corridor	194	527	3,100	193	58
Westside Subway Ext. Segment 1	1,584	4,300	25,330	1,570	473
Westside Subway Ext. Segment 2	1,085	2,950	17,300	1,080	324
Westside Subway Ext. Segment 3	1,028	2,790	16,400	1,020	307
Total *	\$ 10,758	\$ 29,260	172,250	\$ 10,690	\$ 3,218
Total *	\$ 30,828	\$ 83,920	494,020	\$ 30,650	\$ 9,230

* May not sum due to rounding

Sources: Metro; Estimates by LAEDC

Methodology

The total estimated economic impact includes direct, indirect and induced effects. **Direct activity** includes the materials purchased and the employees hired by the Los Angeles County Metropolitan Transportation Authority (Metro) and its contractors during the project construction period. Here we account for construction workers which have been added due to the project and the materials purchased for the project. **Indirect effects** are those which stem from the employment and business revenues motivated by the purchases made by the Metro and its contractors. For example, indirect jobs are sustained by the suppliers of the office supplies and insurance purchased by contractors hired for the construction. **Induced effects** are those generated by the spending of employees whose wages are sustained by both direct and indirect spending.

We used data supplied by the Metro for initial spending, and estimated the direct, indirect and induced effects using models developed with the IMPLAN system (V3 software and 2010 data) from MIG, Inc. In all cases, we have proceeded as if the spending will take place within a single year, as is customary in this type of impact analysis. For long-term projects such as multi-year transportation improvement projects, the reader is cautioned to note that the modeling system does not account for changes in prices and wages over time. All dollar figures are quoted in 2010 dollars.

The estimated economic impacts are based on spending within the five-county Southern California region, which includes the counties of Los Angeles, Orange, Riverside, San Bernardino and Ventura. These counties are chosen as representative of the region most affected by the Metro's projects. Although most of the employment and economic activity will be in Los Angeles County, we expect that the workforce, the materials purchased, and the businesses that will be impacted by the Metro's spending are located throughout the five-county Southern California region. National economic impact estimates are produced using multi-regional analysis, which captures the impacts of regional spending in other areas of the nation.

Data limitations prevent us from estimating how much of the overall construction spending will take place outside of the region; for example, construction materials might be *purchased* locally but be manufactured elsewhere. In some instances, spending related to a project may occur in neighboring counties such as Santa Barbara or Imperial and thus generate *additional* economic impact that spills over from those neighboring counties. This spillover is not captured by our five-county analysis.

Any spending in the budget category denoted as right-of-way acquisition is excluded from economic impact analysis since this is an exchange of assets.

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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