



ECONOMIC AND FISCAL BENEFITS OF THE LA METRO K LINE NORTHERN EXTENSION —A MEASURE M PROJECT



LOS ANGELES COUNTY ECONOMIC DEVELOPMENT CORPORATION

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—A MEASURE M PROJECT

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This report was prepared by the Institute for Applied Economics of the Los Angeles County Economic Development Corporation (LAEDC).

As the Southern California region's premier economic development organization, LAEDC drives action in support of a reimagined Los Angeles regional economy that is growing, equitable, sustainable, and resilient, and provides a healthy and high standard of living for all. A public-benefit nonprofit celebrating its 43rd year of working collaboratively to improve the lives of people through economic inclusion, LAEDC is a trusted leader working on behalf of the Los Angeles County region.

The LAEDC Institute for Applied Economics specializes in objective and unbiased economic and policy research in order to foster informed decision-making and guide strategic planning. In addition to commissioned research and analysis, the Institute conducts foundational research to ensure LAEDC's many programs for economic development are on target. The Institute focuses on economic impact studies, regional industry analyses, economic forecasts, and issue studies, particularly in workforce development, transportation, infrastructure, and environmental policy.

This study is commissioned by the Office of Supervisor Horvath. 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

INTRODUCTION

In Los Angeles County, Supervisorial District 3, and the cities of West Hollywood and Los Angeles are working with LA Metro to accelerate the voter-approved (Measure M) K Line Northern Extension. This extension will travel north from the current Expo/Crenshaw terminus, connecting South Bay communities to the Los Angeles International Airport (LAX) area, South Los Angeles, Inglewood, the Crenshaw corridor, Mid-City, Miracle Mile, West Hollywood, and Hollywood. The K Line Northern Extension is anticipated to significantly improve mobility by linking four Metro rail lines and six high-ridership bus lines in Los Angeles County. It is expected that after the completion of the northern extension project, the entire K Line will attract about 98,000 daily riders. The population within a half mile of the K Line North stations along the proposed San Vicente/Fairfax route is approximately 98,000, with nearly 40 percent identifying as minorities and around 13,200 living below the poverty line. Out of the 53,200 households in this area, more than 7,400 have zero to one car. Additionally, the total employment in this area is nearly 110,000.¹ This project represents a significant investment in rail infrastructure in Los Angeles County.

LA Metro will choose between three separate alternatives to extend the K-Line north of Wilshire Boulevard: San Vicente-Fairfax, Fairfax, or La Brea. The LAEDC Institute for Applied Economics is commissioned to conduct an economic study to estimate the economic activity (i.e., the economic and fiscal impact) that will be associated with the San Vicente-Fairfax route of the K Line North project in the City of West Hollywood, the City of Los Angeles, and in Los Angeles County. The economic benefits from increased one-time construction spending, long-term operational expenses, and visitor spending will be distributed across multiple jurisdictions, benefiting communities near this transit development project.

ONE-TIME ECONOMIC AND FISCAL IMPACTS OF K LINE NORTH CAPITAL INVESTMENT

The construction associated with the K Line North project will generate considerable economic activity in the two cities and county as expenditures are made for goods and services to develop the new light rail line and stations. For direct expenditure inputs, the approach in this study utilizes the most recent estimates of capital cost from Metro for the San Vicente – Fairfax route. Indirect and induced impacts are estimated using models developed with software and data from IMPLAN. The economic impact of the construction phase on the city and county economy comes from the expenditure of billions of dollars towards goods and services produced by local and regional vendors and for the wages and benefits received by local and regional construction workers.

The estimated total project construction cost is \$14.8 billion (in \$2023) over the three sections. This estimate does not include escalation and the optional Hollywood Bowl Station/Terminus. Construction costs, which include the costs of materials, labor, equipment, real estate, professional services, will account for about 70 percent of the total capital costs across the sections. Contingency adds about 40

¹ Metro. 2024. KNE Draft Environmental Impact Report.

https://www.dropbox.com/sh/jm1vocpqqjgjev/AACzL8fZDBmNYeKuRiouuDo1a/Reports/Draft%20EIR/KNE_Draft_EIR?e=1&preview=KNE_DEIR_3.05_Communities.pdf&subfolder_nav_tracking=1&dl=0.

percent to the estimated total capital costs, which will be reduced as Metro progresses through the project development process.

To estimate the economic and fiscal impacts associated with the construction activities taking place in the City of West Hollywood and City of Los Angeles separately, the total costs are split between the two cities based on the total mileage of the alignment in each of the jurisdictions, factoring in the number of stations in each jurisdiction. The total economic and

fiscal impacts of the capital expenditures for K Line North construction in the two cities and the rest of Los Angeles County are presented in **Exhibit ES-1**. Construction impacts are one-time impacts.

The estimated construction expenditure of \$14.8 billion for the K Line North project will result in a total economic output in Los Angeles County of around \$22.5 billion. The construction project is estimated to support over 123,000 jobs over all construction phases and will generate labor income in the county totaling about \$9.7 billion.

Exhibit ES-1
Economic and Fiscal Impact of K Line North Construction

	City of LA	City of West Hollywood	Rest of LA County	Total
Direct Construction Expenditures (\$ millions)	\$9,100	\$5,700	\$0	\$14,800
Total Economic Impact:				
Output (\$ millions)	\$13,973.6	\$5,720.0	\$2,811.9	\$22,505.5
Employment (jobs)	75,560	34,940	12,780	123,280
<i>Direct</i>	55,330	34,500	0	89,830
<i>Indirect and induced</i>	20,240	430	12,780	33,450
Labor income (\$ millions)	\$5,945.2	\$2,760.0	\$959.5	\$9,664.7
Value added (\$ millions)	\$7,481.5	\$2,961.8	\$1,689.0	\$12,132.4
Total Fiscal Impact (\$ millions):				
Federal, state, and local tax revenues	\$1,671.9	\$536.4	\$442.3	\$2,650.5

Source: Estimates by LAEDC

K Line North Construction in the City of Los Angeles will:

- ▶ Generate \$14.0 billion in total economic output.
- ▶ Create 55,330 direct jobs along with an additional 22,240 jobs through indirect and induced effects in the City of Los Angeles, for a combined total of 75,560 jobs.
- ▶ Generate \$5.9 billion in labor income.
- ▶ Generate \$1.67 billion in federal, state, and local taxes.

K Line North Construction in the City of West Hollywood will:

- ▶ Generate \$5.7 billion in total economic output.
- ▶ Create 34,500 direct jobs with an additional 430 jobs through indirect and induced effects in the City of West Hollywood, for a combined total of 34,940 jobs.
- ▶ Generate \$2.8 billion in labor income.
- ▶ Generate \$536.4 million in federal, state, and local taxes.

K Line North Construction in Los Angeles County will:

- ▶ Generate \$22.5 billion in total economic output.
- ▶ Create 89,830 direct jobs along with an additional 33,450 jobs through indirect and induced effects in Los Angeles County, for a combined total of 123,280 jobs.
- ▶ Generate \$9.7 billion in labor income.
- ▶ Generate \$2.65 billion in federal, state, and local taxes.

ECONOMIC AND FISCAL IMPACTS OF ONGOING ACTIVITY OF THE K LINE NORTH

Annual Ongoing Operations

Once the Project is constructed, the operation of the extended transit line system, and the ridership and visitor spending would generate additional economic activity and support more employment in the cities of Los Angeles and West Hollywood, and spill over to the rest of the county. **Exhibit ES-2** displays the estimated annual economic impacts of the K Line North’s direct operational activities in 2045. Approximately 240 jobs would be directly and indirectly supported by the K Line North annual operations, among which 190 jobs and 30 jobs will be tied to the City of Los Angeles and the City of West Hollywood, respectively. Additionally, \$24.9 million in annual economic output would be generated county-wide. Fiscally, the K Line North would generate an estimated \$4.7 million in annual tax revenue for federal, state, and local governments.

Exhibit ES-2
Economic and Fiscal Impact of KNE Annual Ongoing Operation in 2045

	City of LA	City of West Hollywood	Rest of LA County	Total
Direct Operation Expenditures (\$ millions)	\$24.4	\$6.6	\$0.0	\$31.0
Total Economic Impact:				
Output (\$ millions)	\$20.5	\$0.5	\$3.9	\$24.9
Employment (jobs)	190	30	20	240
Labor income (\$ millions)	\$20.7	\$2.7	\$1.1	\$24.6
Total Fiscal Impact (\$ millions):				
Federal, state, and local tax revenues	\$3.7	\$0.1	\$0.9	\$4.7

Source: Estimates by LAEDC, estimates may not sum due to rounding.

Annual Visitor Spending

Once the K Line Northern Extension is operational, the system will bring in visitors from outside the service area, boosting the local economy through spending at restaurants, stores, and entertainment venues, which supports local businesses. **Exhibit ES-3** summarizes the annual ridership impact for 2045. The spending from K Line North ridership is projected to generate an annual economic output of about \$333.4 million in the City of Los Angeles and \$94.7 million in the City of West Hollywood in 2045. The total output impact on Los Angeles County is estimated at \$483 million. Ridership is expected to support about 2,600 jobs in the City of Los Angeles and nearly 900 jobs in the City of West Hollywood. The total employment impact in the county will reach 3,770 jobs in 2045, with total labor income impact estimated at \$187.6 million. Because of the increased ridership, Federal, state, and local governments would see a fiscal impact of \$50.6 million and \$14.3 million in 2045 for the increased economic activities in the City of Los Angeles and the City of West Hollywood, respectively. The fiscal impacts for the county as a whole are estimated at \$72.3 million in 2045.

Exhibit ES-3
Economic and Fiscal Impact of KNE Annual Ridership in 2045

	City of LA	City of West Hollywood	Rest of LA County	Total
Direct Visitor Spending (\$ millions)	\$202.9	\$84.48	\$0.0	\$287.3
Total Economic Impact:				
Output (\$ millions)	\$333.4	\$94.7	\$55.1	\$483.1
Employment (jobs)	2,610	890	270	3,770
Labor income (\$ millions)	\$129.5	\$38.5	\$19.6	\$187.6
Total Fiscal Impact (\$ millions):				
Federal, state, and local tax revenues	\$50.6	\$14.3	\$7.4	\$72.3

Source: Estimates by LAEDC, estimates may not sum due to rounding.

LONG-TERM ECONOMIC AND FISCAL IMPACT PROJECTIONS OF K LINE NORTH

Although the economic impacts associated with ongoing operations and ridership are smaller than the major one-time construction impacts, their effects are in perpetuity, meaning their effect on the economy will be felt each year the extended light rail line remains in operation. Therefore, this study also applies a dynamic economic forecast and impact analysis model (the REMI model) to analyze the economic and fiscal impacts associated with the operation and ridership of K Line North in the long run (for a study period of 2046-2060) in Los Angeles County.

Long-term Annual Operational Impacts

Exhibit ES-4 shows that the average annual economic output generated by K Line North operations is projected to increase from \$25.4 million between 2046 and 2050 to \$26.6 million between 2056 and 2060. The 15-year average annual output impact is around \$25.8 million. The total jobs, including direct, indirect, and induced jobs, in Los Angeles County supported by the operations of K Line North will stay at the level of about 230 jobs each year. The

estimated annual personal income generated is about \$38 million over the 15-year period. The average annual tax revenues generated at the different levels of government are estimated to increase slightly from \$5.5 million between 2046 and 2050 to approximately \$5.9 million between 2056 and 2060. The average annual tax revenue generated over the entire 15-year period is about \$5.7 million per year.

Exhibit ES-4
Long-Term Economic Impacts of K Line North Operation in Los Angeles County (2046-2060)

Variable	Units	2046-2050 Avg	2051-2055 Avg	2056-2060 Avg	2046-2060 Average
Employment	Job-year	240	230	230	230
Output	M 2023\$	\$25.4	\$25.4	\$26.6	\$25.8
Personal Income	M 2023\$	\$32.4	\$38.1	\$42.8	\$37.8
Federal, state & local tax revenues	M 2023\$	\$5.5	\$5.6	\$5.9	\$5.7

Source: Estimates by LAEDC

Long-term Annual Ridership Impacts

Exhibit ES-5 presents the average annual economic impacts of spending by K Line North riders in Los Angeles County from 2045 to 2060. The average annual economic output from visitor spending is approximately \$494 million, supporting about 3,400 jobs annually in the County. Additionally, the average annual contribution to the County's gross product (GCP) is nearly \$300 million, while the

estimated annual personal income generated is approximately \$309 million over the 15 years. Tourism-related industries, such as accommodation and food services, retail trade, and arts, entertainment, and recreation account for the largest share of the total impacts. The average annual tax revenues from visitor spending are estimated at about \$74.8 million from 2046 to 2060, with the federal government collecting around 50 percent, the state government 30 percent, and county and city governments the remaining 20 percent.

Exhibit ES-5
Long-Term Economic Impacts of K Line North Ridership in Los Angeles County (2046-2060)

Variable	Units	2046-2050 Avg	2051-2055 Avg	2056-2060 Avg	2046-2060 Average
Employment	Job-year	3,670	3,360	3,180	3,400
Output	M 2023\$	\$496.7	\$486.7	\$498.3	\$493.9
Personal Income	M 2023\$	\$264.1	\$315.8	\$346.6	\$308.8
Federal, state & local tax revenues	M 2023\$	\$74.7	\$74.0	\$75.8	\$74.8

Source: Estimates by LAEDC

Transit Oriented Development and Impact on Property Values

Transportation, connectivity, and economic prosperity enhance the desirability of living in a region. As cities aim to create more accessible and sustainable urban environments, transit-oriented communities have gained traction. Residents near public transportation benefit from enhanced mobility, convenient access to employment, smoother commutes, and better access to retail, recreational venues, and amenities. Proximity to public transit not only facilitates daily commutes but can also positively impact property values in both residential and commercial real estate markets, reflecting the value of transit-oriented living and working environments.

A literature review of studies on the effect of proximity to public transit on property values shows generally positive associations. A Redfin study discovered that a one-point increase in Transit Score correlated with an average home price increase of \$2,040 across 14 major U.S. metropolitan areas. A 2019 study by the American Public Transportation Association (APTA) and the National Association of Realtors (NAR) showed residential properties near transit stations in seven U.S. cities experienced median sales price increases of 4 to 24 percentage points more than those farther away. Additionally, commercial properties saw price increases of 5 to 42 percentage points. Furthermore, transit-oriented development, such as the Foothill Gold Line project, is expected to attract significant private investment, generate substantial new housing and commercial space, create jobs, and increase tax revenues. While this study does not formally quantify the impact, it is anticipated that the K Line North expansion project will boost property values and induce transit-oriented development, leading to increased economic activities and employment opportunities in the local region. These benefits will be in addition to the economic stimulus from the construction and long-term operation of the light rail system analyzed in this study.



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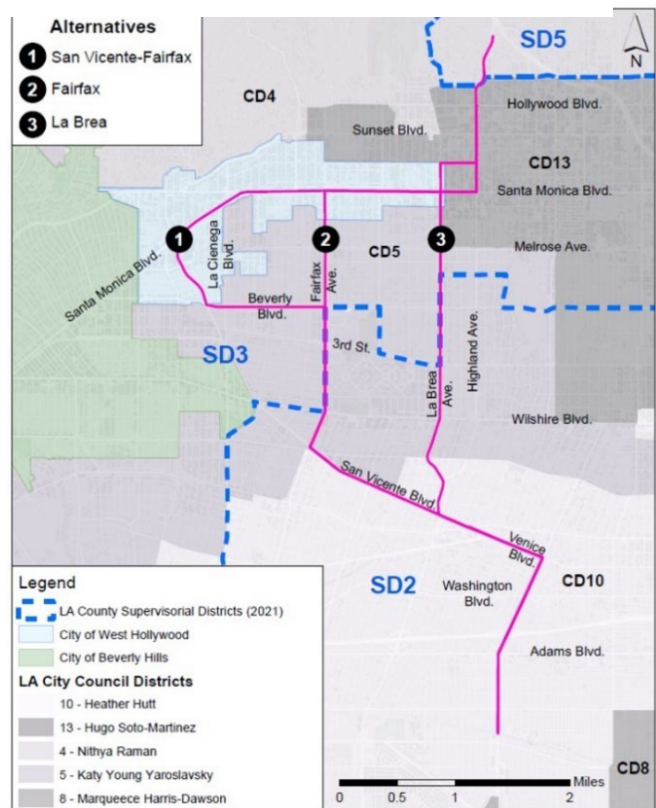
K Line Northern Extension Project

In Los Angeles County, Supervisorial District 3 (SD3), and the cities of West Hollywood and Los Angeles are working with LA Metro to accelerate the voter-approved (Measure M) K Line Northern Extension, which would travel north from the current Expo/Crenshaw terminus, linking communities in the South Bay to the Los Angeles International Airport (LAX) area, South Los Angeles, Inglewood, the Crenshaw corridor, Mid-City, Miracle Mile, West Hollywood, and Hollywood. The K Line Northern Extension (K Line North) is anticipated to significantly enhance mobility, connecting four Metro rail lines (Metro C, E, D, and B Lines) and six bus lines with highest ridership in the Los Angeles County with this extension. Once fully operational, the entire K Line is projected to attract about 98,000 riders daily. The population within a half mile of the K Line North stations along the proposed San Vicente/Fairfax route is approximately 98,000, with nearly 40 percent identifying as minorities and around 13,200 living below the poverty line. Out of the 53,200 households in this area, more than 7,400 have zero to one car. Additionally, the total employment in this area is nearly 110,000.² This project represents a significant investment in rail infrastructure in Los Angeles County.

There is a long history of interurban rail lines in Los Angeles, Hollywood and West Hollywood dating back to the Los Angeles Pacific Railroad and the Pacific Electric Railway system. Across the Mid-City neighborhood of the City of Los Angeles, the City of West Hollywood, and Hollywood exist a number of destinations including: Museum Row; world-class healthcare facilities; recreational facilities; the Hollywood Walk of Fame; The Grove, a popular destination for shopping, dining, and lifestyle and home to The Original Farmers Market; the “Rainbow District” which has become one of the world’s top destinations for LGBTQ travelers offering them myriad of music, entertainment, architecture, fashion, and culture-making activities; and the Sunset Strip, which has attracted visitors from outside of Los Angeles County for over a century.

The communities that would be served by the the proposed K Line Northern Extension are some of the most congested parts of Los Angeles County, and the proximity to cultural and arts amenities

Exhibit 1. Proposed K Line Northern Expansion Alternatives



² Metro. 2024. KNE Draft Environmental Impact Report.

https://www.dropbox.com/sh/jm1vocpcpqjgjev/AACzL8fZDBmNYeKuRiouDo1a/Reports/Draft%20EIR/KNE_Draft_EIR?e=1&preview=KNE_DEIR_3.05_Communities.pdf&subfolder_nav_tracking=1&dl=0.

like the Hollywood Bowl, combined with the ongoing influx of visitors, necessitates additional transit options including modern day light rail.

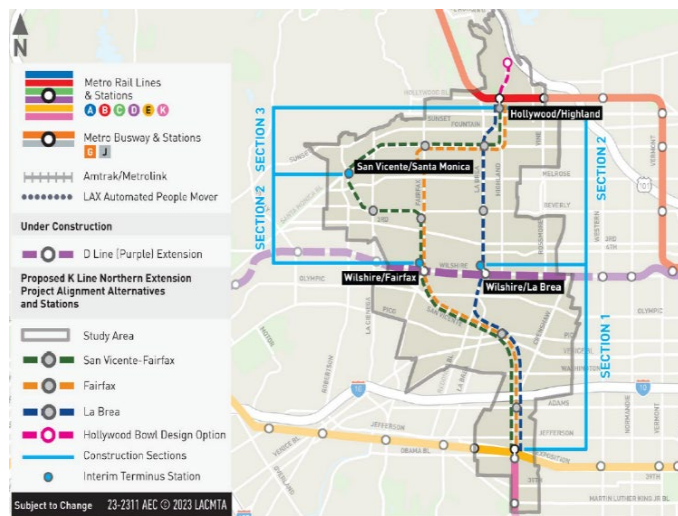
LA Metro will choose between three separate alternatives to extend the K Line north of Wilshire Boulevard: San Vicente-Fairfax, Fairfax, or La Brea. **Exhibit 1** shows the governmental boundaries of LA City Council Districts and County Supervisorial Districts of the project route. The economic benefits from increased one-time construction spending, long-term operational expenses, and visitor spending will be distributed across multiple jurisdictions, benefiting communities near this transit development project.

In this report, the LAEDC Institute for Applied Economics conducts an economic analysis to estimate the economic activity (i.e., the economic and fiscal impact) that will be associated with the San Vicente-Fairfax route of the K Line North project in the City of West Hollywood, the City of Los Angeles and in Los Angeles County.

Direct Construction Capital Costs of K Line North Project

The construction of the K Line North is proposed to take place in phases (or sections). **Exhibit 2** shows the plan for the three sections for the phased construction. For the San Vicente – Fairfax route alternative, the total project length is about 10 miles, the longest among the three alternatives. For this alternative route, Section 1 would connect the E line to the D line at Wilshire/Fairfax with three new stations (Crenshaw/Adams, Pico/San Vicente, and Wilshire/Fairfax). For Section 2, the construction will first continue following Fairfax Ave. to Beverly Blvd., and then it will veer west to San Vicente (passing by Cedars Sinai and the Beverly Center). Three stations (Fairfax/Beverly, La Cienega/Beverly, and San Vicente/Santa Monica) will be constructed in this section. For Section 3, the project will head east along Santa Monica Blvd. and then continue north to Hollywood. The three stations that will be constructed in this section include Fairfax/Santa Monica, La Brea/Santa Monica, and Hollywood/Highland.

Exhibit 2. Construction Sections of K Line North Construction



For purposes of this analysis, a conceptual schedule for accelerated groundbreaking of the project was developed with construction for Section 1 estimated to take place in 2033. A typical section will take 10 to 12 years to construct. Similar to the construction of the Purple Line, this study assumes that construction of the individual sections would take place in overlapping fashion, with a 2045-2047 goal for passenger service.

The estimated total project construction cost for the San Vicente – Fairfax route is \$14.8 billion (in \$2023) over the three sections.³ This estimate includes contingency but not escalation and the optional Hollywood Bowl Station/Terminus. Construction costs, which include the costs of materials, labor, equipment, real estate, professional services, will account for about 70 percent of the total capital costs across the sections. Contingency adds about 40 percent to the estimated total capital costs, which will be reduced as Metro progresses through the project development process.

To estimate the economic and fiscal impacts associated with the construction activities taking place in City of West Hollywood and City of Los Angeles separately, the total costs are split between the two cities based on the total mileage of the alignment in each of the jurisdictions, factoring in the number of stations in each jurisdiction. When we estimate the breakdown of the construction costs, a higher weight (67%)⁴ is assigned to the number of stations in each jurisdiction because this represents the more costly piece of construction. Appendix A1 presents the details on the approach used to split the capital costs between the two jurisdictions. Based on the approach we adopt; it is estimated that \$9.1 billion of the construction activities will take place in the City of Los Angeles and the other \$5.7 billion will take place in the City of West Hollywood.

Economic and Fiscal Impacts of K Line North Construction

Once the initial direct expenditures were determined, indirect and induced economic impacts were estimated using models developed with software and data from IMPLAN. The methodology for calculating economic impacts can be found in Appendix A2.

Exhibit 3 summarizes the estimated economic impacts of the K Line North construction for the City of Los Angeles, the City of West Hollywood, and Los Angeles County. Construction impacts represent one-time impacts.

Exhibit 3

Economic and Fiscal Impact of K Line North Construction

	City of LA	City of West Hollywood	Rest of LA County	Total
Direct Construction Expenditures (\$ millions)	\$9,100	\$5,700	\$0	\$14,800
Total Economic Impact:				
Output (\$ millions)	\$13,973.6	\$5,720.0	\$2,811.9	\$22,505.5
<i>Direct</i>	\$9,164.2	\$5,635.8	\$0.0	\$14,800.0
<i>Indirect and induced</i>	\$4,809.5	\$84.1	\$2,811.9	\$7,705.5
Employment (jobs)	75,560	34,940	12,780	123,280
<i>Direct</i>	55,330	34,500	0	89,830
<i>Indirect and induced</i>	20,240	430	12,780	33,450
Labor income (\$ millions)	\$5,945.2	\$2,760.0	\$959.5	\$9,664.7
<i>Direct</i>	\$4,370.9	\$2,726.2	\$0.0	\$7,097.1
<i>Indirect and induced</i>	\$1,574.3	\$33.8	\$959.5	\$2,567.6
Value added (\$ millions)	\$7,481.5	\$2,961.8	\$1,689.0	\$12,132.4
<i>Direct</i>	\$4,680.6	\$2,911.2	\$0.0	\$7,591.8
<i>Indirect and induced</i>	\$2,801.0	\$50.6	\$1,689.0	\$4,540.6
Total Fiscal Impact (\$ millions):				
Federal tax revenues	\$1,114.9	\$428.4	\$197.0	\$1,740.3
State and local tax revenues	\$557.0	\$108.0	\$245.3	\$910.2

Source: Estimates by LAEDC, estimates may not sum due to rounding.

³ Metro. August 2024. KNE Capital Cost Estimate Summary.

https://www.dropbox.com/sh/jm1vocpcpqjgje/AAA2e7OuFuRPaIKXNgk_DzDH/Reports/Draft%20EIR/KNE_Non-CEQA_ReportsAndInformation?dl=0&preview=KNE_CostSummary_August2024.pdf&subfolder_nav_tracking=1.

⁴ We also perform a sensitivity analysis on this assumption by varying the weight assigned to the number of stations from 50 percent to 80 percent, and found that the estimated cost split is not very sensitive to this assumption. Overall, slightly over 60 percent of the construction cost is estimated to be incurred in the City of Los Angeles, with the remainder in the City of West Hollywood.

EMPLOYMENT

It is estimated that the K Line North construction would support about 132,280 total jobs (direct, indirect, and induced) throughout the County. The construction project would support nearly 90,000 direct jobs over the entire construction phases, of which we assume 100 percent would be in the two cities, with over 55,300 jobs in the City of Los Angeles and about 34,500 jobs in the City of West Hollywood. This logically follows as the construction of K Line North is contained within these two cities. The economic impact of the K Line North construction extends beyond the activities generated within the two cities. In addition to the direct jobs, approximately 22,140 jobs (about 12,860 jobs in the two cities and 9,280 jobs in rest of Los Angeles County) would be indirectly supported by the project’s purchases of goods and services while 11,310 jobs (about 7,800 jobs in the two cities and 3,510 jobs in rest of Los Angeles County) would be supported by induced impacts. Induced jobs are supported by the spending of workers involved in the K Line North construction, as well as the employees in the supply chain to the construction project in Los Angeles County. This can be thought of as money recirculating throughout the economy.

DISAGGREGATED EMPLOYMENT IMPACTS

The total annual economic impact is spilled across industries through indirect and induced effects. A complete list of estimated employment impacts by industry sector is shown in **Exhibit 4**. The industries represented are equivalent to the two-digit North American Industry Classification System (NAICS) code sectors. Descriptions of NAICS sectors can be found in Appendix A3. Of the 123,280 jobs generated in the county resulting from the K Line North construction, 75,720 will be in the construction sector, accounting for more than 60 percent of the total. Virtually all industry sectors will experience a positive economic impact from the construction expenditures. The top impacted sectors, in terms of absolute impacts, include professional and technical services, administrative and support services, real estate, retail trade, and transportation and warehousing, all with an employment impact of over 3,000 jobs. When examining how employment impacts are distributed across industries in different regions, we find that the most affected sectors in the City of Los Angeles and the City of West Hollywood are those directly linked to the construction expenditures, including construction itself and professional and technical services. In contrast, in the rest of the county, the sectors most impacted

Exhibit 4

Distribution of Employment Impacts of KNE Construction by Industry (jobs)

	City of LA	City of West Hollywood	Rest of LA County	Total
Ag, Forestry, Fish & Hunting	0	0	0	0
Mining	0	0	0	0
Utilities	30	0	30	60
Construction	46,340	29,320	60	75,720
Manufacturing	720	0	280	1,000
Wholesale trade	1,040	10	1,150	2,200
Retail trade	1,960	30	1,720	3,710
Transportation and warehousing	1,650	0	1,390	3,040
Information	510	0	100	610
Finance and insurance	1,050	0	410	1,460
Real estate and rental	3,790	1,240	930	5,960
Professional, scientific technical	9,430	4,120	1,420	14,970
Management of companies	390	0	210	600
Administrative & waste services	2,780	110	1,910	4,800
Educational services	360	0	160	520
Health and social services	1,900	0	900	2,800
Arts, entertainment & recreation	350	0	140	490
Accommodation and food services	1,490	30	860	2,380
Other services	1,590	20	980	2,590
Government	210	0	120	330
Total	75,560	34,940	12,780	123,280

Source: Estimates by LAEDC, estimates may not sum due to rounding.

are those influenced by the indirect impacts stemming from inter-industry linkages and the induced effects of consumer spending, such as administrative and support services, retail trade, and transportation.

OUTPUT

Los Angeles County’s total output will rise by about \$22.5 billion as a result of the K Line North construction. Approximately \$19.7 billion of this output would be tied to the City of Los Angeles and the City of West Hollywood. Direct output resulting from the construction would be about 52 percent of total output impacts. This direct output would be created by activities such as expenditures on construction materials, engineering and architectural costs, and professional services. The remaining 48 percent of output would be created by indirect and induced economic activities. Among these, the real estate and rental industry would see the largest impacts, representing over \$1.8 billion in total output. The real estate industry would see increased property values and utilization during and after the construction of the expanded transit system. Other

Exhibit 5

Distribution of Output Impacts of KNE Construction by Industry (millions of 2023\$)

	City of LA	City of West Hollywood	Rest of LA County	Total
Ag, Forestry, Fish & Hunting	\$0.1	\$0.0	\$0.1	\$0.1
Mining	\$2.5	\$0.0	\$10.5	\$13.0
Utilities	\$23.2	\$0.6	\$27.6	\$51.5
Construction	\$7,096.1	\$4,482.4	\$17.8	\$11,596.3
Manufacturing	\$669.0	\$0.1	\$133.1	\$802.2
Wholesale trade	\$463.8	\$5.4	\$503.3	\$972.6
Retail trade	\$330.2	\$4.5	\$294.2	\$628.9
Transportation & warehousing	\$260.6	\$2.1	\$232.5	\$495.1
Information	\$378.8	\$3.7	\$82.4	\$464.9
Finance and insurance	\$353.4	\$1.9	\$164.4	\$519.7
Real estate and rental	\$1,180.7	\$306.4	\$360.1	\$1,847.2
Professional, scientific technical	\$2,105.0	\$890.0	\$320.4	\$3,315.4
Management of companies	\$96.2	\$1.3	\$52.0	\$149.5
Administrative & waste services	\$315.6	\$12.2	\$229.1	\$557.0
Educational services	\$31.8	\$0.1	\$15.8	\$47.7
Health and social services	\$230.0	\$1.0	\$113.8	\$344.7
Arts, entertainment & recreation	\$52.0	\$1.5	\$18.1	\$71.7
Accommodation and food services	\$159.2	\$3.6	\$93.1	\$255.9
Other services	\$158.1	\$1.6	\$103.5	\$263.2
Government	\$67.4	\$1.5	\$40.0	\$108.8
Total	\$13,973.6	\$5,720.0	\$2,811.9	\$22,505.5

Source: Estimates by LAEDC

sectors that are most impacted in terms of gross output increase, primarily through indirect and induced effects, include wholesale trade, manufacturing, retail trade, administrative and support services, and finance and insurance, all with a total output impact of over \$500 million. **Exhibit 5** disaggregates total output by industry sector defined by two-digit NAICS code.

LABOR INCOME

For the purposes of economic impact analysis, labor income includes wages as well as any benefits earned, such as overtime and health insurance. The direct, indirect, and induced labor income for Los Angeles County is estimated to be about \$9.7 billion, while about \$8.7 billion of this labor income would reside

within the City of Los Angeles and the City of West Hollywood. The remaining would be paid to jobs supported by indirect and induced effects in the other areas of the county. The disaggregation of total labor income by industry is similar to the distribution exhibited in Exhibits 4 and 5, wherein nearly 60

percent would be paid to the construction industry. A disaggregation of labor income impacts by industry can be found in **Exhibit 6**.

Value-added is an economic impact metric derived by subtracting values of intermediate inputs from total gross output. Total value-added resulting from the K Line North construction is estimated to be about \$12.1 billion. This represents the total contribution of the entire construction project, supply chain purchases, and the spending of construction and other employees in the organizations of the supply chain to Los Angeles County's gross regional product (GRP). Of this \$12.1 billion of value-added, over \$10.4 billion would be contributed by the City of Los Angeles and the City of West Hollywood. Value-added stemming directly from the K Line North construction is estimated to equal \$7.6 billion. Indirect and induced value-added would be the residual, approximately \$4.5 billion.

Exhibit 6

Distribution of Labor Income Impacts of KNE Construction by Industry (millions of 2023\$)

	City of LA	City of West Hollywood	Rest of LA County	Total
Ag, Forestry, Fish & Hunting	\$0.1	\$0.0	\$0.0	\$0.1
Mining	\$0.1	\$0.0	\$1.0	\$1.1
Utilities	\$3.8	\$0.1	\$4.5	\$8.4
Construction	\$3,475.3	\$2,199.0	\$4.8	\$5,679.1
Manufacturing	\$55.1	\$0.0	\$26.2	\$81.2
Wholesale trade	\$115.6	\$1.6	\$129.1	\$246.3
Retail trade	\$106.8	\$1.4	\$95.1	\$203.3
Transportation & warehousing	\$97.2	\$0.7	\$84.7	\$182.7
Information	\$95.9	\$0.8	\$14.9	\$111.6
Finance and insurance	\$110.2	\$0.6	\$45.1	\$155.9
Real estate and rental	\$228.7	\$70.4	\$60.0	\$359.2
Professional, scientific technical	\$1,089.4	\$473.8	\$163.5	\$1,726.7
Management of companies	\$50.4	\$0.7	\$27.2	\$78.3
Administrative and waste services	\$156.6	\$6.7	\$106.4	\$269.7
Educational services	\$22.5	\$0.1	\$10.2	\$32.8
Health and social services	\$133.9	\$0.6	\$65.4	\$199.9
Arts, entertainment & recreation	\$27.2	\$0.7	\$9.1	\$37.0
Accommodation and food services	\$61.2	\$1.5	\$35.2	\$97.9
Other services	\$85.9	\$0.8	\$59.7	\$146.5
Government	\$29.2	\$0.6	\$17.1	\$47.0
Total	\$5,945.2	\$2,760.0	\$959.5	\$9,664.7

Source: Estimates by LAEDC

FISCAL IMPACT

As a result of the K Line North construction, about \$2.65 billion in fiscal impact would be created. A summarization of the fiscal impact broken down by level of government and type of tax is highlighted in **Exhibit 7**.

For the tax revenues generated by the economic activities in Los Angeles County stimulated by the K Line North construction, the federal government would collect over \$1.7 billion, or about 66 percent of all estimated tax receipts. The remaining 34 percent of tax receipts are estimated to go to state and local governments. This amount is estimated to total \$910.2 million. Approximately \$284 million of these fiscal gains would be tied to sub-county districts

Exhibit 7

Detailed Fiscal Impact of KNE Construction

	City of LA	City of West Hollywood	Rest of LA County	Total
By Type of Tax (\$ millions):				
Personal income taxes	\$624.5	\$158.8	\$81.7	\$865.1
Social insurance	614.9	311.3	106.9	1,033.2
Sales and excise taxes	197.1	29.7	120.0	346.8
Property taxes	93.6	14.2	56.1	163.9
Corporate profits taxes	92.8	14.8	49.6	157.2
Other fees and taxes	48.9	7.5	27.9	84.3
Total	\$1,671.9	\$536.4	\$442.3	\$2,650.5
By Type of Government (\$ millions):				
Federal	\$1,114.9	\$428.4	\$197.0	\$1,740.3
State	386.8	82.2	142.5	611.5
County	8.7	1.3	5.3	15.2
Cities	161.5	24.4	97.5	283.5
Total	\$1,671.9	\$536.4	\$442.3	\$2,650.5

Source: Estimates by LAEDC

and regions such as the City of West Hollywood and the City of Los Angeles. The County of Los Angeles itself would see another \$15 million in fiscal impact.

With respect to different types of tax, personal income taxes, which account for the largest single source of fiscal revenues to the federal and state governments, are estimated to amount to \$865 million. Of this total, approximately 75 percent will be collected by the federal government, while 25 percent will go to the state government. Social insurance payments, which are distributed to both state and federal governments (with the majority going to the federal government), are expected to reach over \$1 billion due to the increased economic activity in the county. Property taxes, mainly collected by county and city governments, are estimated to reach \$164 million. Sales and excise taxes will contribute \$347 million. Additional sources of tax revenues include taxes on corporate profits, motor vehicle license fees, and other taxes and fees paid by businesses and households, which collectively generate close to \$242 million in government revenues.

The economic and fiscal impacts associated with the construction of each section of the K Line Northern Extension project are presented in Appendix A4.

Economic and Fiscal Impacts of Ongoing Activity of the K Line North

ANNUAL ONGOING OPERATIONS

Direct Expenditures

The K Line North project is planned to start passenger services between 2045 and 2047. The estimation of the economic impact of the ongoing operation is derived from the estimated annual direct expenditures on operation and maintenance (O&M) provided by Metro.

Using current budget ratios as a reference, it is estimated that once the northern extension of K Line is open to service, the yearly operation costs are expected to be around \$31 million, among which \$17.3 million will be labor cost to support 154 new job positions.⁵ LAEDC further split the operational expenses between the two cities based on the number of proposed stations in each city and the projected ridership for each station. These annual operational costs are input into models developed with software and data from the IMPLAN Group, LLC to estimate indirect and induced effects.

⁵ This does not account for the conversion of ambassadors to an in-house program or future changes to the security team.

Economic Impact

Unlike the preceding economic construction impact, the following impacts centered around ongoing operations and ridership are annual impacts, meaning their effect on the economy will be felt each year the extended light rail line remains in operation. While these impacts are smaller than the major one-time construction impacts, their effects are felt in perpetuity. In the next section, we will estimate the long-term economic and fiscal impacts associated with the annual operation and ridership of K Line North using a dynamic economic impact simulation model. In this section, we present a snapshot of the operational impacts for one single year after the opening of the K Line North service.

Exhibit 8 displays the estimated annual economic impacts of the K Line North's direct operational activities in the cities of Los Angeles and West Hollywood, and in Los Angeles County.

Approximately 240 jobs would be directly and indirectly supported by the K Line North annual operations, among which 190 jobs and 30 jobs will be tied to the City of Los Angeles and the City of West Hollywood, respectively. The direct employment supported by the operation is estimated to be 180 jobs. In addition to the direct jobs, approximately 60 jobs (about 40 jobs in the cities of Los Angeles and West Hollywood and 20 jobs in the rest of the County) would be indirectly supported by the annual operation of K Line North. Indirect workers would be supported by purchasing activities such as purchasing maintenance materials for the system.

Induced workers would be supported by the spending of K Line North employees as well as the employees in K Line North's supply chain in Los Angeles County.

Exhibit 8

Economic and Fiscal Impact of KNE Annual Ongoing Operation

	City of LA	City of West Hollywood	Rest of LA County	Total
Direct Operation Expenditures (\$ millions)	\$24.4	\$6.6	\$0.0	\$31.0
Total Economic Impact:				
Output (\$ millions)	\$20.5	\$0.5	\$3.9	\$24.9
<i>Direct</i>	\$6.8	\$0.4	\$0.0	\$7.2
<i>Indirect and induced</i>	\$13.7	\$0.1	\$3.9	\$17.7
Employment (jobs)	190	30	20	240
<i>Direct</i>	150	30	0	180
<i>Indirect and induced</i>	40	0	20	60
Labor income (\$ millions)	\$20.7	\$2.7	\$1.1	\$24.6
<i>Direct</i>	\$17.5	\$2.7	\$0.0	\$20.2
<i>Indirect and induced</i>	\$3.3	\$0.1	\$1.1	\$4.5
Value added (\$ millions)	\$5.7	-\$0.7	\$2.5	\$7.4
<i>Direct</i>	-\$1.1	-\$0.8	\$0.0	-\$1.9
<i>Indirect and induced</i>	\$6.8	\$0.1	\$2.5	\$9.4
Total Fiscal Impact (\$ millions):				
Federal tax revenues	\$3.0	\$0.2	\$0.3	\$3.4
State and local tax revenues	\$0.7	-\$0.1	\$0.6	\$1.2

Source: Estimates by LAEDC, estimates may not sum due to rounding.

Exhibit 9

Distribution of Output Impacts of KNE Annual Ongoing Operation by Industry (millions of 2023\$)

	City of LA	City of West Hollywood	Rest of LA County	Total
Ag, Forestry, Fish & Hunting	\$0.01	\$0.00	\$0.00	\$0.01
Mining	\$0.04	\$0.00	\$0.12	\$0.16
Utilities	\$0.09	\$0.00	\$0.07	\$0.16
Construction	\$0.26	\$0.01	\$0.04	\$0.31
Manufacturing	\$6.76	\$0.00	\$0.12	\$6.88
Wholesale trade	\$0.89	\$0.00	\$0.69	\$1.58
Retail trade	\$0.37	\$0.00	\$0.33	\$0.70
Transportation and warehousing	\$0.49	\$0.00	\$0.29	\$0.78
Information	\$1.00	\$0.01	\$0.12	\$1.12
Finance and insurance	\$0.61	\$0.00	\$0.24	\$0.85
Real estate and rental	\$1.30	\$0.02	\$0.53	\$1.86
Professional, scientific technical	\$0.96	\$0.03	\$0.24	\$1.23
Management of companies	\$0.09	\$0.00	\$0.05	\$0.14
Administrative and waste services	\$0.58	\$0.01	\$0.17	\$0.76
Educational services	\$0.12	\$0.00	\$0.05	\$0.17
Health and social services	\$0.58	\$0.00	\$0.36	\$0.94
Arts, entertainment, and recreation	\$0.12	\$0.00	\$0.05	\$0.17
Accommodation and food services	\$0.35	\$0.00	\$0.20	\$0.55
Other services	\$0.37	\$0.00	\$0.15	\$0.52
Government	\$5.55	\$0.42	\$0.08	\$6.04
Total	\$20.54	\$0.52	\$3.88	\$24.94

Source: Estimates by LAEDC

Total labor income from all sources would amount to approximately \$24.6 million annually. Roughly 82 percent, or \$20.2 million, would be direct labor income. The largest component of which is the government sector, which would earn nearly 85 percent of the total labor income.

The total value-added associated with the operation of K Line North, which is equivalent to Project output minus intermediate inputs, would be about \$7.4 million annually. This represents the total contribution of the operational activities, including the supply chain purchases and the spending of employees, to Los Angeles County’s gross county product (GCP). The value-added impact appears much smaller compared to the labor income impact due to its inclusion of elements beyond labor income. Value-added incorporates not only labor income but also property income and taxes on production. In the case of operating the public transit system, government subsidies play a significant role. These subsidies effectively result in a negative tax component within the value-added calculation, resulting in relatively smaller (or even negative in some cases) value added impacts than labor income impacts.

Los Angeles County’s total output will rise by about \$24.9 million annually as a result of the K Line North operation. About 30 percent of output resulting from the annual operations would be direct output. This direct output would be created by activities such as staffing stations, maintenance facilities, as well as operations of the K Line North itself. The accessory indirect and induced impacts would represent 70 percent of total output. **Exhibit 9** disaggregates total output by 2-digit North American Industry Classification System (NAICS) code.

Fiscally, the K Line North would generate an estimated \$4.7 million in annual tax revenue for federal, state, and local governments. Of this fiscal impact, social insurance taxes would represent the largest tax block contributor of the tax impacts. Personal income taxes follow for an annual total of \$1.8 million. The disaggregation of taxes between federal and state and local governments is shown in **Exhibit 10**.

The federal government would collect approximately 74 percent of all estimated tax receipts. Tax revenues collected by the federal government are estimated to reach about \$3.4 million annually as a result of the ongoing K Line North operations. The remaining 26 percent of tax receipts are estimated to go to state and local governments. This amount may reach a total of \$1.2 million each year.

Exhibit 10

Detailed Fiscal Impact of K Line North Annual Ongoing Operation

	City of LA	City of West Hollywood	Rest of LA County	Total
By Type of Tax (\$ millions):				
Personal income taxes	\$1.7	\$0.0	\$0.1	\$1.8
Social insurance	2.5	0.4	0.1	3.0
Sales and excise taxes	0.5	0.0	0.4	0.8
Property taxes	0.2	0.0	0.2	0.4
Corporate profits taxes	-1.3	-0.3	0.1	-1.6
Other fees and taxes	0.1	0.0	0.1	0.2
Total	\$3.7	\$0.1	\$0.9	\$4.7
By Type of Government (\$ millions):				
Federal	\$3.0	\$0.2	\$0.3	\$3.4
State	0.3	-0.1	0.3	0.5
County	0.0	0.0	0.0	0.0
Cities	0.4	0.0	0.3	0.7
Total	\$3.7	\$0.1	\$0.9	\$4.7

Source: Estimates by LAEDC

ANNUAL VISITOR SPENDING

Ridership

Once the K Line Northern Extension is operational, the system will bring in spending and economic impact from visitors located outside of the direct service area. These riders will stimulate the local economy by

shopping at restaurants, stores, and entertainment venues that, in turn, directly and indirectly support local businesses. A breakdown of projected daily boardings by station in 2045 is provided by Metro.⁶ A further breakdown of ridership by origin (residents vs. visitors) is estimated based on an examination of residential density (residents per square miles) in relation to employment density (employees per square miles) in the surrounding area of each of the 9 proposed stations. A detailed summary of the method is provided in Appendix A5. The breakdown of the ridership between residents and visitors is provided in **Exhibit 11**.

The expenditure of these riders was estimated using several assumptions. Firstly, for tourism impact analysis, spending by local visitors (local residents) is usually excluded because their expenses on entertainment, recreational activities, food services, and drinking places are likely funds they would have spent on other leisure options within the region if they had not made the visit. Thus, spending by local visitors may simply displace expenditure within the area. Secondly, it is assumed that leisure visitors from outside the region spend an average of \$50 per visit per person. Out-of-region commuters working in the area are estimated to spend \$20 per day for full-time employees and \$15 per day for part-time employees. Lastly, tourist spending is allocated among tourist-related industries based on the baseline revenues of these industries in the local region. The estimated visitor expenditures were then used as direct inputs into an IMPLAN model to estimate the indirect and induced economic impacts of the non-resident ridership in the cities of Los Angeles and West Hollywood.

Exhibit 12 shows how the annual total expenditures of \$287.3 million (\$202.9 million in the City of Los Angeles and \$84.4 million in the City of West Hollywood) are distributed across various spending categories. The largest portion of the spending is allocated to food services and drinking places, amounting to \$141 million,

Exhibit 11

Projected Annual Ridership of K Line North (Thousands of Trips)

	Resident Ridership	Visitor Ridership	Total
Crenshaw/Adams Station	590	197	786
Pico/San Vicente Station	569	484	1,053
Wilshire/Fairfax Station	1,884	3,308	5,193
Fairfax/Beverly Station	292	647	940
La Cienega/Beverly Station	389	1,167	1,556
San Vicente/Santa Monica Station	371	808	1,179
Fairfax/Santa Monica Station	576	711	1,287
La Brea/Santa Monica Station	556	612	1,168
Hollywood/Highland Station	671	1,308	1,979
Total	5,899	9,243	15,141

Source: Estimates by LAEDC

Exhibit 12

Estimation of Annual Visitor Spending in 2045 (Thousands of dollars)

	City of Los Angeles	City of West Hollywood	Total
Furniture & Home Furnishings Stores	2,999	1,670	4,669
Food & Beverage Stores	18,857	8,026	26,882
Health & Personal Care Stores	8,121	3,084	11,205
Clothing, Clothing Accessories, Shoe, and Jewelry Stores	9,529	4,398	13,928
Sporting Goods, Hobby, Book, & Music Stores	7,507	2,707	10,214
General Merchandise Stores	7,215	3,243	10,458
Arts, Entertainment & Recreation	37,491	14,230	51,721
Accommodation	10,347	6,937	17,283
Food Services & Drinking Places	100,861	40,106	140,967
Total	202,928	84,400	287,328

Source: Estimates by LAEDC

⁶ Metro. July 2024. KNE Ridership Summary Memorandum.

https://www.dropbox.com/sh/jm1vocpcpqjgjev/AAA2e70uFuRPaIKXNgk_DzDHa/Reports/Draft%20EIR/KNE_Non-CEQA_ReportsAndInformation?e=1&preview=KNE_RidershipSummary_July2024.pdf&subfolder_nav_tracking=1&dl=0.

or 49% of the total. Spending in arts, entertainment & recreation (\$51.7 million) accounts for 18% of the total. Spending in various types of retail stores (such as food & beverage stores, clothing, shoe and jewelry stores, health & personal care stores, etc.) collectively contributes 27% to the overall spending, with a combined value of about \$77.4 million.

Economic Impact

A summary of the annual ridership impact is provided in **Exhibit 13** for 2045. Although the results are only presented for one point in time, visitor spending impacts would occur throughout the years of K Line North operations on an annual basis, which will be further analyzed in the next Section.

The consistent spending resulting from K Line North ridership would have an estimated annual output impact of about \$333.4 million on the City of Los Angeles and \$94.7 million on the City of West Hollywood in 2045. Moreover, there will be spillover impacts to other regions in the county through indirect and induced impacts of the direct spending. The estimated total output impact on Los Angeles County is about \$483 million in 2045. One-third of all output impacts will be seen by the accommodation and food services industries. This is followed by the retail trade and arts, entertainment, and recreation industries, which make up 17 percent and 13 percent of the total output impacts, respectively. A breakdown of these annual output impacts is provided in **Exhibit 14**.

Value-added, a derivative of output by deducting intermediate inputs from total output, would see an annual increase of \$205.3 million in the City of Los Angeles and \$60.6 million in the City of West Hollywood in 2045. Adding

Exhibit 13

Economic and Fiscal Impact of KNE Annual Ridership (2045)

	City of LA	City of West Hollywood	Rest of LA County	Total
Direct Visitor Spending (\$ millions)	\$202.9	\$84.4	\$0.0	\$ 287.3
Total Economic Impact:				
Output (\$ millions)	\$333.4	\$94.7	\$55.1	\$483.1
<i>Direct</i>	\$221.7	\$92.1	\$0.0	\$313.8
<i>Indirect and induced</i>	\$111.7	\$2.6	\$55.1	\$169.3
Employment (jobs)	2,610	890	270	3,770
<i>Direct</i>	2,130	880	0	3,010
<i>Indirect and induced</i>	490	10	270	770
Labor income (\$ millions)	\$129.5	\$38.5	\$19.6	\$187.6
<i>Direct</i>	\$91.0	\$37.6	\$0.0	\$128.6
<i>Indirect and induced</i>	\$38.5	\$0.9	\$19.6	\$59.0
Value added (\$ millions)	\$205.3	\$60.6	\$32.5	\$298.4
<i>Direct</i>	\$140.1	\$59.1	\$0.0	\$199.3
<i>Indirect and induced</i>	\$65.1	\$1.5	\$32.5	\$99.2
Total Fiscal Impact (\$ millions):				
Federal tax revenues	\$25.7	\$6.6	\$3.9	\$36.2
State and local tax revenues	\$24.9	\$7.7	\$3.5	\$36.0

Source: Estimates by LAEDC, estimates may not sum due to rounding.

Exhibit 14

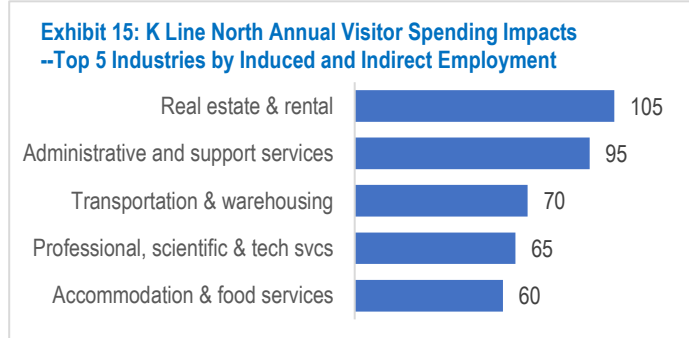
Distribution of Output Impacts of KNE Annual Ridership by Industry (millions of 2023\$)

	City of LA	City of West Hollywood	Rest of LA County	Total
Ag, Forestry, Fish & Hunting	\$0.0	\$0.0	\$0.0	\$0.0
Mining	\$0.0	\$0.0	\$0.1	\$0.1
Utilities	\$0.7	\$0.0	\$0.9	\$1.6
Construction	\$0.7	\$0.0	\$0.5	\$1.2
Manufacturing	\$4.5	\$0.0	\$1.2	\$5.7
Wholesale trade	\$3.8	\$0.0	\$3.4	\$7.2
Retail trade	\$58.0	\$23.2	\$3.1	\$84.2
Transportation and warehousing	\$23.0	\$7.7	\$3.4	\$34.1
Information	\$14.5	\$0.2	\$2.4	\$17.1
Finance and insurance	\$10.2	\$0.1	\$5.2	\$15.4
Real estate and rental	\$20.9	\$0.6	\$11.3	\$32.9
Professional, scientific technical	\$11.4	\$0.6	\$4.3	\$16.3
Management of companies	\$6.8	\$0.1	\$3.9	\$10.8
Administrative and waste services	\$6.3	\$0.2	\$4.8	\$11.3
Educational services	\$1.0	\$0.0	\$0.6	\$1.7
Health and social services	\$4.5	\$0.0	\$2.3	\$6.9
Arts, entertainment, and recreation	\$45.6	\$14.7	\$1.1	\$61.5
Accommodation and food services	\$114.9	\$47.1	\$2.2	\$164.3
Other services	\$3.5	\$0.0	\$2.4	\$6.0
Government	\$2.9	\$0.1	\$1.9	\$4.8
Total	\$333.4	\$94.7	\$55.1	\$483.1

Source: Estimates by LAEDC

the spillover impacts to the rest of the county, the total county level value-added impacts are estimated to be nearly \$300 million. The ongoing ridership value-added impact distribution by industry is similar to that seen in Exhibit 14.

Employment supported by ridership would reach over 2,600 jobs in the City of Los Angeles, nearly 900 jobs in the City of West Hollywood, and 270 jobs in the rest of Los Angeles County. The total employment impact in the county will reach 3,770 jobs in 2045. These jobs would be supported by local spending by visitor riders (for work or leisure purposes). This estimate does not count jobs supported by the operation of K Line North itself (i.e., jobs where the system facilitates the necessary commute, which are counted as annual ongoing operational impacts in the previous section), only spending by riders. In the county, about 79 percent of these jobs would be directly supported while about 6 percent would be indirectly supported, and 14 percent would be supported by induced activities. A breakdown of the most impacted industries by induced and indirect effects is provided in **Exhibit 15**.



Nearly every NAICS sector is represented by the ongoing employment impacts. Approximately 40 percent of all employment impacts will be seen by the accommodation and food services industries. The retail trade and arts, entertainment and recreation industries will make up another nearly 40 percent of the total employment impacts.

These jobs supported would earn a total of \$130 million of labor income in the City of Los Angeles and \$38.5 million in the City of West Hollywood in 2045. The total labor income impacts in Los Angeles County are estimated to be about \$187.6 million. These jobs on average would earn about \$50,000 in labor income. As with other dollar denominations shown in this report, these dollar amounts are expressed in 2023 dollars. This surpasses the Los Angeles County average of \$41,800.⁷

Federal, state, and local governments would see a fiscal impact of \$50.6 million and \$14.3 million in 2045 for the increased economic activities in the City of Los Angeles and the City of West Hollywood, respectively, stemming from K Line North annual ridership (**Exhibit 16**). The fiscal impacts for the county are estimated to be \$72.3 million in 2045.

Exhibit 16
Detailed Fiscal Impact of KNE Annual Ridership

	City of LA	City of West Hollywood	Rest of LA County	Total
By Type of Tax (\$ millions):				
Personal income taxes	\$12.8	\$1.6	\$1.7	\$16.0
Social insurance	\$13.7	\$4.6	\$2.2	\$20.5
Sales taxes	\$11.2	\$3.8	\$1.4	\$16.4
County	\$0.2	\$0.1	\$0.0	\$0.4
Cities	\$3.4	\$1.1	\$0.4	\$5.0
Excise taxes	\$0.4	\$0.1	\$0.1	\$0.6
Property taxes	\$5.4	\$1.8	\$0.7	\$8.0
Corporate profits taxes	\$4.3	\$1.5	\$1.0	\$6.8
Other fees and taxes	\$2.7	\$0.9	\$0.4	\$4.0
Total	\$50.6	\$14.3	\$7.4	\$72.3
By Type of Government (\$ millions):				
Federal	\$25.7	\$6.6	\$3.9	\$36.2
State	15.0	\$4.3	\$2.2	21.4
County	0.5	\$0.2	\$0.1	0.7
Cities	9.4	\$3.2	\$1.2	13.8
Total	\$50.6	\$14.3	\$7.4	\$72.3

Source: Estimates by LAEDC

⁷ Census. 2024. Quick Facts of Los Angeles County, California. <https://www.census.gov/quickfacts/fact/table/losangelescountycalifornia/PST045222>.

Over 50 percent of the fiscal impacts would be seen by the federal government, with the largest contributor, social insurance taxes, seeing \$13.7 million from the City of Los Angeles, \$4.6 million from the City of West Hollywood, and \$2.2 million from the rest of Los Angeles County. The increase in annual personal income taxes from the county will reach \$16 million in 2045.

State and local governments would see approximately \$24.9 million in taxes from the City of Los Angeles, \$7.7 million from the City of West Hollywood, and \$3.5 million from rest of the county in 2045, totaling \$36 million in state, county, and sub-county tax revenues. Sales and excise taxes would be another large fiscal contributor, representing \$17 million from the two cities and rest of the county in 2045. About 40 percent of the state and local taxes would be seen by sub-county districts such as the cities of Los Angeles and West Hollywood.

Long-Term Economic and Fiscal Impact Projections of K Line North

The analysis in the previous section focuses on assessing the economic and fiscal impacts of the activities associated with K Line North operation and service for a single year – Year 2045, after the completion of the extension project. In this section, our analysis extends to evaluating the long-term economic and fiscal impacts of K Line North operations on Los Angeles County, including the impacts stemming from both the annual operations of the light rail system and the incremental visitor spending associated with the ridership.

ECONOMIC IMPACT MODELING

We apply the REMI (Regional Economic Models, Inc.) PI+ (Policy Insight Plus) model, a dynamic economic forecast and impact analysis model, to analyze the economic and fiscal impacts associated with the operation of K Line North in the long run. The REMI Model is the most widely used macroeconomic model to simulate comprehensive economic and demographic effects for a wide range of topics in the U.S., such as infrastructure investment; policies and programs for economic development, environment, energy, and natural resources; and state and local tax changes.

REMI allows for a dynamic intertemporal assessment of deviations from the model's estimated regional baseline economic forecast and its associated impacts on employment, labor participation, population, gross regional product, income, and prices, among other factors on a yearly basis throughout the entire study period up to 2060. The model has the capability to estimate substitutions between primary production factors (such as labor, capital, and energy) within each economic sector, as well as changes in economic flows between sectors, in response to price signals and changes in other market and regulatory conditions.

The econometric feature of the REMI Model refers to the fact that the model is based on inferential statistical estimation of key parameters based on pooled time series and cross-regional (panel) data. This gives the Model the capability of being able to extrapolate the future course of the economy, a capability that most other types of economic impact models usually lack. A more detailed description of the REMI Model is presented in Appendix A6.

The version of the REMI PI+ Model used in this analysis is constructed for Los Angeles County. The model divides the whole economy into 70 sectors and is established based on historical economic and demographic data through 2021.

While the REMI PI+ model is superior in analyzing the long-term dynamic economic impacts of capital investment and operation of new and expanded facilities in terms of impacts on employment, output, income, prices, and other macroeconomic indicators, its capability for fiscal impact analysis is relatively limited. To address this limitation, we use an approach that combines both the REMI PI+ model and the IMPLAN model for the fiscal impact analysis. The IMPLAN model provides a detailed assessment of the tax impacts resulting from changes in the underlying economic activity in the study region, categorized by tax type and various levels of government (federal, state, local). After simulating the long-term annual economic impacts of the operation of K Line North and the associated visitor spending, the estimates of output impact by industry sector from the REMI PI+ model are fed into the IMPLAN model to estimate the corresponding tax impacts associated with these increased economic activities in Los Angeles County.

LONG-TERM ECONOMIC AND FISCAL IMPACTS OF K LINE NORTH ANNUAL OPERATION THROUGH 2060

The average annual economic impacts of the operation of K Line North in Los Angeles County are presented in **Exhibit 17** for the three 5-year time periods between 2046 and 2060 for the following indicators: employment, gross county product (GCP), output (gross sales revenues), and personal income. The year-by-year simulation results are presented in Appendix A7. The average annual impacts over the entire 15-year study period are computed in the last column. The first partition of Exhibit 17 presents the impacts in levels and the second partition presents the impacts in terms of percentage share with respect to the county projected baseline levels.

Exhibit 17

Long-Term Economic Impacts of K Line North Operation in Los Angeles County (2046-2060)

Variable	Units	2046-2050 Avg	2051-2055 Avg	2056-2060 Avg	2046-2060 Average
Impact Levels					
Employment	Job-year	240	230	230	230
GCP	M 2023\$	7.5	7.3	7.5	7.4
Output	M 2023\$	25.4	25.4	26.6	25.8
Personal Income	M 2023\$	32.4	38.1	42.8	37.8
Percentage Share with respect to County Total					
Employment		0.008%	0.007%	0.007%	
GCP		0.007%	0.006%	0.006%	
Output		0.008%	0.007%	0.007%	
Personal Income		0.005%	0.005%	0.005%	

Source: Estimates by LAEDC

The average annual economic output generated by K Line North operations is projected to increase from \$25.4 million between 2046 and 2050 to \$26.6 million between 2056 and 2060. The 15-year average annual output impact is around \$25.8 million. The total jobs, including direct, indirect, and induced jobs, in Los Angeles County supported by the operations of K Line North will stay at the level of about 230 jobs each year. Additionally, the average annual contribution to the County's gross product is approximately \$7.4 million, while the estimated annual personal income generated is nearly \$37.8 million over the 15-year period. Once again, the lower gross county product impacts compared to labor income impacts are primarily due to the need of substantial government subsidies in operating the public transit system. These subsidies are considered a negative tax component in the value-added calculation, resulting in lower gross county product impacts.

The total economic impact spreads across industries through the interactions between sectors (ordinary multiplier effects), as well as substitution effects and other price-quantity interactions that are captured in the REMI Model. A complete list of estimated economic impacts by industry sector is shown in **Exhibits 18 and 19** for employment and output impacts, respectively. The impact results are again presented for the three 5-year averages over the time period between 2046 and 2060. The average annual impacts over the entire 15-year period are computed in the last column. The industries represented are equivalent to the two-digit North American Industry Classification System (NAICS) code sectors as described in Appendix A3. The manufacturing industry accounts for the largest share of the total impacts in terms of output impact, while the government sector will see the largest employment impacts.

Exhibit 18

Long-Term Employment Impacts by Industry of K Line North Ongoing Operation in Los Angeles County (jobs)

Sector	2046-2050 Avg	2051-2055 Avg	2056-2060 Avg	2046-2060 15-Year Average
Agriculture	0	0	0	0
Mining	0	0	0	0
Utilities	0	0	0	0
Construction	0	0	0	0
Manufacturing	0	0	0	0
Wholesale trade	0	0	0	0
Retail trade	0	0	0	0
Transportation and warehousing	10	0	0	10
Information	0	0	0	0
Finance and insurance	0	0	0	0
Real estate and rental	0	10	10	10
Professional, scientific & technical	10	0	0	0
Management of companies	0	0	0	0
Administrative and waste mgmt	10	10	0	10
Educational services	0	0	0	0
Healthcare and social assistance	10	10	10	10
Arts, entertainment & recreation	0	0	0	0
Accommodation and food services	10	10	10	10
Other services	10	10	10	10
Government	180	170	180	180
Total	230	220	230	230

Source: Estimates by LAEDC, estimates may not sum due to rounding.

Exhibit 19

Long-Term Output Impacts by Industry of K Line North Ongoing Operation in Los Angeles County (in millions of 2023\$)

Sector	2046-2050 Avg	2051-2055 Avg	2056-2060 Avg	2046-2060 15-Year Average
Agriculture	0.01	0.01	0.00	0.01
Mining	0.16	0.15	0.15	0.15
Utilities	0.16	0.15	0.15	0.15
Construction	0.30	0.20	0.17	0.23
Manufacturing	6.87	6.47	6.46	6.64
Wholesale trade	1.62	1.65	1.71	1.66
Retail trade	0.73	0.81	0.91	0.81
Transportation and warehousing	0.78	0.76	0.78	0.78
Information	1.04	0.78	0.77	0.88
Finance and insurance	0.81	0.68	0.68	0.73
Real estate and rental	1.96	2.13	2.29	2.12
Professional, scientific & technical	1.26	1.28	1.34	1.29
Management of companies	0.12	0.08	0.07	0.09
Administrative and waste mgmt	0.78	0.80	0.85	0.81
Educational services	0.18	0.20	0.21	0.20
Healthcare and social assistance	1.00	1.24	1.57	1.25
Arts, entertainment & recreation	0.16	0.13	0.14	0.14
Accommodation and food services	0.61	0.76	0.88	0.74
Other services	0.55	0.59	0.61	0.58
Government	6.25	6.51	6.84	6.52
Total	25.36	25.37	26.58	25.77

Source: Estimates by LAEDC

Exhibit 20 presents the long-term average annual fiscal impacts of the operation of K Line North. The fiscal impacts are categorized by tax type and government level. Similar to the economic impacts presented above, the average annual fiscal impacts are presented for the three 5-year periods, as well as for the entire 15-year period from 2046 to 2060.

The average annual tax revenues generated at the different levels of government are estimated to increase slightly from \$5.5 million between 2046 and 2050 to approximately \$5.9 million between 2056 and 2060. The average annual tax revenue generated over the entire 15-year period is about \$5.7 million per year. Of these tax revenues generated, the federal government is expected to collect about 76 percent of all estimated tax receipts. Another 6 percent of the tax revenue is expected to be received by the state government. The remaining 18 percent of tax receipts are projected to be collected by the county and city governments.

Exhibit 20

Long-Term Fiscal Impact of K Line North Operation in Los Angeles County

	2046-2050 Avg	2051-2055 Avg	2056-2060 Avg	2046-2060 15-Year Average
By Type of Tax (\$ millions):				
Personal income taxes	\$2.3	\$2.3	\$2.4	\$2.3
Social insurance	\$4.0	\$4.1	\$4.3	\$4.1
Sales and excise taxes	\$1.2	\$1.2	\$1.2	\$1.2
Property taxes	\$0.5	\$0.6	\$0.6	\$0.6
Corporate profits taxes	-\$2.7	-\$2.7	-\$2.8	-\$2.7
Other fees and taxes	\$0.3	\$0.3	\$0.3	\$0.3
Total	\$5.5	\$5.6	\$5.9	\$5.7
By Type of Government (\$ millions):				
Federal	\$4.2	\$4.3	\$4.5	\$4.3
State	\$0.3	\$0.3	\$0.3	\$0.3
County	\$0.1	\$0.1	\$0.1	\$0.1
Cities	\$0.9	\$1.0	\$1.0	\$1.0
Total	\$5.5	\$5.6	\$5.9	\$5.7

Source: Estimates by LAEDC

LONG-TERM ECONOMIC AND FISCAL IMPACTS OF K LINE NORTH RIDERSHIP THROUGH 2060

In this section, we estimate the economic and fiscal impacts resulting from spending by riders of K Line North. It is important to note that the projected annual ridership shown in Exhibit 11 is used for the long-term simulation, meaning we assume the annual ridership remains consistent with the 2045 projections throughout the entire study period (2046-2060). If future ridership exceeds Metro’s 2045 estimates, the associated economic and fiscal impacts will be greater than the results presented here.

The average annual economic impacts of spending by K Line North riders in Los Angeles County are presented in **Exhibit 21** for the same time period in 5-year intervals, with the average annual impacts over the entire 15-year study period shown in the last column. The yearly simulation results are also presented in Appendix A7.

The average annual economic output generated from visitor spending related to K Line North ridership is expected to range between \$485 million and \$500 million each year from 2046 to 2060. Over this 15-year period, the average annual output impact is approximately \$494 million. The total jobs, including direct, indirect, and induced jobs, in Los Angeles County supported by visitor spending will decrease slightly from 3,670 jobs between 2046 and 2050 to 3,180 jobs between 2056 and 2060, with an average annual employment impact of 3,400 jobs over the entire period. Additionally, the average annual contribution to the County’s

Exhibit 21

Long-Term Economic Impacts of K Line North Ridership in Los Angeles County (2046-2060)

Variable	Units	2046-2050 Avg	2051-2055 Avg	2056-2060 Avg	2046-2060 Average
Impact Levels					
Employment	Job-year	3,670	3,360	3,180	3,400
GCP	M 2023\$	305.2	294.8	296.1	298.7
Output	M 2023\$	496.7	486.7	498.3	493.9
Personal Income	M 2023\$	264.1	315.8	346.6	308.8
Percentage Share with respect to County Total					
Employment		0.042%	0.037%	0.033%	
GCP		0.029%	0.026%	0.023%	
Output		0.029%	0.025%	0.023%	
Personal Income		0.029%	0.031%	0.031%	

Source: Estimates by LAEDC

gross product is nearly \$300 million, while the estimated annual personal income generated is approximately \$309 million throughout the 15 years.

The estimated employment and output impacts by industry sector are shown in **Exhibits 22 and 23**, respectively. The impact results are again presented for 5-year intervals, with the average annual impacts over the entire 15-year period presented in the last column. Not surprisingly, tourism related industries, such as accommodation and food services, retail trade, and arts, entertainment, and recreation account for the largest share of the total impacts. In terms of output impacts, they represent 35 percent, 18 percent, and 13 percent of the total impacts, respectively. Other sectors that are estimated to be affected most include transportation and real estate and rental services.

Exhibit 22

Long-Term Employment Impacts by Industry of K Line North Annual Ridership in Los Angeles County (jobs)

Sector	2046-2050 Avg	2051-2055 Avg	2056-2060 Avg	2046-2060 15-Year Average
Agriculture	0	0	0	0
Mining	0	0	0	0
Utilities	0	0	0	0
Construction	0	0	0	0
Manufacturing	10	0	0	0
Wholesale trade	20	10	10	20
Retail trade	630	540	470	550
Transportation and warehousing	720	690	690	700
Information	10	0	0	0
Finance and insurance	40	20	20	30
Real estate and rental	120	130	140	130
Professional, scientific & technical	70	60	60	60
Management of companies	40	30	30	30
Administrative and waste mgmt	90	80	80	80
Educational services	20	20	20	20
Healthcare and social assistance	60	60	70	60
Arts, entertainment & recreation	320	290	270	300
Accommodation and food services	1,460	1,350	1,260	1,360
Other services	70	80	80	80
Government	10	10	10	10
Total	3,670	3,370	3,200	3,430

Source: Estimates by LAEDC, estimates may not sum due to rounding.

Exhibit 23

Long-Term Output Impacts by Industry of K Line North Annual Ridership in Los Angeles County (in millions of 2023\$)

Sector	2046-2050 Avg	2051-2055 Avg	2056-2060 Avg	2046-2060 15-Year Average
Agriculture	0.0	0.0	0.0	0.0
Mining	0.1	0.0	0.0	0.0
Utilities	1.6	1.5	1.4	1.5
Construction	1.1	0.8	0.6	0.8
Manufacturing	5.1	3.2	3.0	3.9
Wholesale trade	7.2	6.5	6.8	6.9
Retail trade	88.0	89.6	91.7	89.5
Transportation and warehousing	33.8	30.3	31.5	32.0
Information	15.3	10.1	10.3	12.2
Finance and insurance	14.4	11.0	11.6	12.5
Real estate and rental	35.0	36.7	37.9	36.3
Professional, scientific & technical	17.0	17.5	18.9	17.7
Management of companies	10.6	9.2	9.1	9.7
Administrative and waste mgmt	11.6	11.5	12.2	11.8
Educational services	1.8	2.0	2.2	2.0
Healthcare and social assistance	7.1	8.1	10.2	8.4
Arts, entertainment & recreation	63.4	62.7	63.5	63.1
Accommodation and food services	171.9	174.2	175.3	173.2
Other services	6.5	6.9	7.0	6.7
Government	5.0	4.9	5.0	4.9
Total	496.7	486.7	498.3	493.9

Source: Estimates by LAEDC

Exhibit 24 presents the long-term average annual fiscal impacts (in 5-year intervals and overall annual average) from K Line North visitor spending. These fiscal impacts are broken down by tax type and government level. The average annual tax revenues generated from visitor spending activities are estimated to be about \$74.8 million from 2046 to 2060. Of these tax revenues generated, the federal government is expected to collect about 50 percent of the total. Another 30 percent of the tax revenue is expected to be received by the state government. The remaining 20 percent of tax receipts are projected to be collected by the county and city governments.

From 2046 to 2060, it is estimated that an average of \$16.4 million in personal income taxes will be generated annually because of the direct and indirect economic activities stimulated by the visitor spending of K Line North riders in Los Angeles County. The average yearly social insurance payments, collected by both the state and federal governments, are estimated to total approximately \$21.1 million. Sales and excise taxes will contribute an average of \$18.1 million annually. Property taxes, primarily

collected by the county and city governments, are estimated to reach close to \$8.5 million. Additional sources of tax revenue include taxes on corporate profits, motor vehicle license fees and other taxes and fees paid by businesses and households, which collectively generate close to \$11.8 million in government revenue on average each year between 2046 and 2060.

Finally, we note that the fiscal impacts analyzed in this study only pertains to the annual operations of K-Line North and incremental visitor spending associated with the ridership. It does not take into account economic benefits stemming from potentially induced development/redevelopment and increase in property values because of the enhanced access to public transit stations.

Exhibit 24

Long-Term Fiscal Impact of K Line North Annual Ridership in Los Angeles County

	2046-2050 Avg	2051-2055 Avg	2056-2060 Avg	2046-2060 15-Year Average
By Type of Tax (\$ millions):				
Personal income taxes	\$16.5	\$16.2	\$16.6	\$16.4
Social insurance	\$21.1	\$20.8	\$21.3	\$21.1
Sales and excise taxes	\$17.8	\$18.0	\$18.4	\$18.1
Property taxes	\$8.3	\$8.4	\$8.6	\$8.5
Corporate profits taxes	\$7.0	\$6.9	\$7.1	\$7.0
Other fees and taxes	\$4.4	\$4.9	\$5.0	\$4.8
Total	\$74.7	\$74.0	\$75.8	\$74.8
By Type of Government (\$ millions):				
Federal	\$37.3	\$36.6	\$37.6	\$37.2
State	\$22.2	\$22.1	\$22.6	\$22.3
County	\$0.8	\$0.8	\$0.8	\$0.8
Cities	\$14.5	\$14.6	\$15.0	\$14.7
Total	\$74.7	\$74.0	\$75.8	\$74.8

Source: Estimates by LAEDC

TRANSIT ORIENTED DEVELOPMENT AND IMPACT ON PROPERTY VALUES

Transportation and connectivity, alongside economic prosperity contribute to the desirability of living in a region. As cities strive to create more accessible and sustainable urban environments, the development of transit-oriented communities has gained significant traction. Residents living close to public transportation often enjoy enhanced mobility, including convenient access to employment centers, smoother commuting experiences, better access to retail centers, recreational venues, and other amenities. In addition to facilitating daily commutes, proximity to public transit has the potential to positively impact property values, in both residential and commercial real estate markets, reflecting the perceived value associated with transit-oriented living and working environments.

A literature review of studies on the effect of proximity to public transit on property values shows generally positive associations. Hess and Almeida (2007)⁸ examined the impact of light rail transit stations on residential property values in Buffalo, New York, over 20 years. Using hedonic models, they analyzed the relationship between assessed property values and factors such as proximity to transit stations, property characteristics, and neighborhood attributes. They found that homes within half a mile of a light rail station earned a premium of \$1,300 to \$3,000, or about 2-5% of the city's median home value.

Finn (2017)⁹, published by Redfin, examined the relationship between Transit Score ratings and home sale prices across 14 major U.S. metropolitan areas. Analyzing data from over one million home sales from 2014 to 2016, the study found that, on average, a one-point increase in Transit Score was associated with a \$2,040 increase in home prices. This price premium varied by metro area: in congested cities like Atlanta

⁸ Hess, D. B., & Almeida, T. M. 2007. Impact of Proximity to Light Rail Rapid Transit on Station-area Property Values in Buffalo, New York. *Urban Studies*, 44(5-6), 1041-1068. <https://doi.org/10.1080/00420980701256005>.

⁹ Finn, A. 2017. How Much is One Point of Transit Score Worth? Redfin Study. <https://www.redfin.com/news/how-much-is-one-point-of-transit-score-worth/>.

and Boston, a one-point increase in Transit Score led to home price gains of 1.13% (\$1,901) and 1.10% (\$3,585), respectively. In Los Angeles, there was a 0.65% increase (\$3,095) per point.

A 2019 joint study conducted by the American Public Transportation Association (APTA) and the National Association of Realtors (NAR)¹⁰ evaluated how public transportation access affects real estate values in seven U.S. cities: Boston, Eugene, Hartford, Los Angeles, Minneapolis-St. Paul, Phoenix, and Seattle. It compared residential and commercial properties near fixed-guideway transit stations to those without access from 2012 to 2016. The findings show that residential properties located within a half-mile radius of transit stations experienced median sales price increase by 4 to 24 percentage points more than those farther away. Additionally, commercial properties saw median sales price per square foot increase by 5 to 42 percentage points more in transit-proximate areas.

The economic benefits of transit-oriented development, which fosters mixed-use residential and commercial areas to leverage proximity to public transit, have been well-documented. According to a study commissioned by the Foothill Gold Line Construction Authority, the entire Foothill Gold Line project across various phases could attract over \$16 billion in private investment. This investment might lead to the development of nearly 30,000 new housing units, 13.6 million square feet of commercial space, and over 1,600 hotel rooms near the stations. Additionally, it could generate more than 110,000 construction jobs and nearly 100,000 ongoing jobs due to new residents, office workers, shoppers, and visitors. The increased tax revenues from property, sales, and transient occupancy taxes are projected to total \$150 million for LA County.¹¹

While this study does not provide formal quantifications, the above review of the literature indicates that the potential transit-oriented development and expected increase in property values from the K Line North extension project will substantially boost economic activities and employment opportunities in the local region. This growth will also enhance tax revenues for the cities, providing additional funds for essential public services. Increased revenues can support infrastructure development, education, healthcare, and other social welfare programs, thereby improving the overall quality of life for the residents.

¹⁰ ABTA and NAR. 2019. The Real Estate Mantra – Locate Near Public Transportation. <https://www.apta.com/wp-content/uploads/The-Real-Estate-Mantra-Locate-Near-Public-Transportation.pdf>.

¹¹ The Maxima Group LLC. 2016. Foothill Gold Line Transit Oriented Development Update. https://foothillgoldline.org/wp-content/uploads/converted-images/uploads/Maxima_Group_-_Foothill_Gold_Line_TOD_web.pdf.

Appendices

A1: ESTIMATING COST BREAKDOWN BETWEEN CITY OF LOS ANGELES AND CITY OF WEST HOLLYWOOD

The split of the total capital cost of the K Line North construction project between the City of Los Angeles and the City of West Hollywood is estimated based on the total mileage of the alignment and the number of proposed stations in each of the jurisdictions, which is presented in **Exhibit A1-1**. The estimate indicates that 6.7 miles of the rail lines will be in the City of Los Angeles, while 3.2 miles will be in the City of West Hollywood. Three stations are fully in the City of West Hollywood and five are in the City of Los Angeles. Since the La Cienega/Beverly station is shared between the two jurisdictions, we assign 0.5 of this station to both jurisdictions in the calculation.

Exhibit A1-1. K Line North Rail Line Mileage and Number of Stations in City of Los Angeles and City of West Hollywood

	Section 1	Section 2	Section 3	Total
Mileage of Rail Lines^a				
City of Los Angeles	3.8 miles	1.9 miles	1.0 miles	6.7 miles
City of West Hollywood	0 miles	0.7 miles	2.5 miles	3.2 miles
Stations^b				
City of Los Angeles	3 Crenshaw/Adams Pico/San Vicente Wilshire/Fairfax	1.5 Fairfax/Beverly 0.5 La Cienega/Beverly	1 Hollywood / Highland	5.5
City of West Hollywood	0	San Vicente/Santa Monica 0.5 La Cienega/Beverly	2 Fairfax/Santa Monica La Brea/Santa Monica	3.5

Source: ^a LAEDC estimate; ^b Metro¹²

Since the construction of the stations would be the more costly components of the project, we assign two thirds (67%) of the weights to the number of stations constructed in each jurisdiction when we split the capital costs in each phase between the two cities.

It is estimated that \$9.1 billion (or 61.5%) of the construction activities will take place in the City of Los Angeles and the other \$5.7 billion (or 38.5%) will take place in the City of West Hollywood. We also perform a sensitivity analysis on the assumption on the weight assigned to the number of stations in the cost split estimation, by varying it from 50 percent to 80 percent. The analysis indicates that the estimated cost split is not very sensitive to this assumption. Overall, slightly over 60 percent of the construction cost is estimated to be incurred in the City of Los Angeles, with the remainder in the City of West Hollywood.

¹² Metro. July 2024. KNE Construction Approach Report.
https://www.dropbox.com/scl/fo/rbg138dij0icz9xky6opr/AMk6P7Xd9hoEXwOqiK6gNug/KNE_DraftEIR/KNE_DraftEIR_Appendices?preview=KNE_DEIR_APPX2-C_ConstructionApproachReport.pdf&rlkey=4i6eunvvzyu8z5zled7laixaz&subfolder_nav_tracking=1&dl=0.

A2: APPROACH AND METHODOLOGY OF ECONOMIC IMPACT ANALYSIS

The approach and methodology of economic impact analysis typically begins with a look at the increase in the final demand for an industry's output, such as a purchase of construction services. We began by estimating the impact of capital expenditures for the K Line North construction in the City of Los Angeles, the City of West Hollywood, and Los Angeles County based on data provided by Metro. Our approach used the expected K Line North capital cost estimate by category and by construction section.

The magnitude of the multiplier effect differs from one region to another depending on the extent to which the local region can fill the demand for all rounds of supplying needs. For example, the automobile manufacturing industry has high multipliers in Detroit and Indiana since these regions have deep and wide supplier networks, while the same industry multiplier in Phoenix is quite small. In another example, the employment multiplier for the construction industry is higher in say, Arkansas, than in California because the same amount of spending will purchase fewer workers in Los Angeles than in Little Rock.

Multipliers can also differ from year to year as relative material and labor costs change all while the production "recipe" of industries changes as well. For example, the IT revolution significantly reduced the job multiplier of many industries (such as manufacturing, accounting, architecture, and publishing) as computers replaced administrative and production workers.

Once the initial direct activity was determined, we estimated the indirect and induced impacts using models developed with data and software from the IMPLAN system, which is a robust, widely used set of modeling tools that provide economic resolution from the national level down to the ZIP code level. For the purposes of this study, the regions of interest are the City of Los Angeles, the City of West Hollywood, and Los Angeles County.

The metrics used to determine the value of the economic impact include employment, labor income, value-added, and the value of output. *Employment* numbers include full-time, part-time, permanent, and seasonal employees, and the self-employed, and are measured on a job-count basis regardless of the number of hours worked. *Labor income* is a measure of 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 revenue generated through sales; for others, in particular retail industries, output is the value of the services supplied. *Value-added* is calculated by subtracting values of intermediate inputs from total gross output.

Direct employment refers to workers hired by the contractors for the construction activity related to the K Line North project. *Direct* output is the value of the services provided by each business firm or entity. *Indirect* effects are those that stem from the employment and output motivated by the purchases made by each direct company. For example, indirect jobs are sustained by the suppliers of construction equipment and building materials purchased by the construction sector. *Induced* effects are those generated by the household spending of employees whose wages are sustained by both direct and indirect stimulated economic activities.

Unless otherwise noted, labor income, expenditures and output are expressed in 2023 dollars to ensure consistency with the dollar values used in the direct capital cost estimation provided to LAEDC and to provide a current value of the entire construction project. Employment estimates are reported on an annual basis, i.e., the number of full- and part-time jobs supported in one year.

A3: DESCRIPTION OF INDUSTRY SECTORS

The industry sectors used in this report are established by the North American Industry Classification System (NAICS). NAICS divides the economy into twenty sectors, and groups industries within these sectors according to production criteria. Listed below is a short description of each sector as taken from the sourcebook, *North American Industry Classification System*, published by the U.S. Office of Management and Budget (2017).

Agriculture, Forestry, Fishing and Hunting: Activities of this sector are growing crops, raising animals, harvesting timber, and harvesting fish and other animals from farms, ranches, or the animals' natural habitats.

Mining: Activities of this sector are extracting naturally occurring mineral solids, such as coal and ore; liquid minerals, such as crude petroleum; and gases, such as natural gas; and beneficiating (e.g., crushing, screening, washing and flotation) and other preparation at the mine site, or as part of mining activity.

Utilities: Activities of this sector are generating, transmitting, and/or distributing electricity, gas, steam, and water and removing sewage through a permanent infrastructure of lines, mains, and pipes.

Construction: Activities of this sector are erecting buildings and other structures (including additions); heavy construction other than buildings; and alterations, reconstruction, installation, and maintenance and repairs.

Manufacturing: Activities of this sector are the mechanical, physical, or chemical transformation of material, substances, or components into new products.

Wholesale Trade: Activities of this sector are selling or arranging for the purchase or sale of goods for resale; capital or durable non-consumer goods; and raw and intermediate materials and supplies used in production and providing services incidental to the sale of the merchandise.

Retail Trade: Activities of this sector are retailing merchandise generally in small quantities to the general public and providing services incidental to the sale of the merchandise.

Transportation and Warehousing: Activities of this sector are providing transportation of passengers and cargo, warehousing and storing goods, scenic and sightseeing transportation, and supporting these activities.

Information: Activities of this sector are distributing information and cultural products, providing the means to transmit or distribute these products as data or communications, and processing data.

Finance and Insurance: Activities of this sector involve the creation, liquidation, or change of ownership of financial assets (financial transactions) and/or facilitating financial transactions.

Real Estate and Rental and Leasing: Activities of this sector are renting, leasing, or otherwise allowing the use of tangible or intangible assets (except copyrighted works) and providing related services.

Professional, Scientific, and Technical Services: Activities of this sector are performing professional, scientific, and technical services for the operations of other organizations.

Management of Companies and Enterprises: Activities of this sector are the holding of securities of companies and enterprises, for the purpose of owning controlling interest or influencing their management decision, or administering, overseeing, and managing other establishments of the same company or enterprise and normally undertaking the strategic or organizational planning and decision-making of the company or enterprise.

Administrative and Support and Waste Management and Remediation Services: Activities of this sector are performing routine support activities for the day-to-day operations of other organizations, such as: office administration, hiring and placing of personnel, document preparation and similar clerical services, solicitation, collection, security and surveillance services, cleaning, and waste disposal services.

Educational Services: Activities of this sector are providing instruction and training in a wide variety of subjects. Educational services are usually delivered by teachers or instructors that explain, tell, demonstrate, supervise, and direct learning. Instruction is imparted in diverse settings, such as educational institutions, the workplace, or the home through correspondence, television, or other means.

Healthcare and Social Assistance: Activities of this sector are operating or providing healthcare and social assistance for individuals.

Arts, Entertainment and Recreation: Activities of this sector are operating facilities or providing services to meet varied cultural, entertainment, and recreational interests of their patrons, such as: (1) producing, promoting, or participating in live performances, events, or exhibits intended for public viewing; (2) preserving and exhibiting objects and sites of historical, cultural, or educational interest; and (3) operating facilities or providing services that enable patrons to participate in recreational activities or pursue amusement, hobby, and leisure-time interests.

Accommodation and Food Services: Activities of this sector are providing customers with lodging and/or preparing meals, snacks, and beverages for immediate consumption.

Other Services (except Public Administration): Activities of this sector are providing services not specifically provided for elsewhere in the classification system. Establishments in this sector are primarily engaged in activities, such as equipment and machinery repairing, promoting, or administering religious activities, grant-making, advocacy, and providing dry-cleaning and laundry services, personal care services, death care services, pet care services, photofinishing services, temporary parking services, and dating services.

A4: IMPACT RESULTS TABLES FOR K LINE NORTH CONSTRUCTION SECTIONS (PHASES)

Economic and Fiscal Impacts of K Line North Section 1 Construction

Exhibit A4-1
Economic and Fiscal Impact of KNE Section 1 Construction

	City of LA	City of West Hollywood	Rest of LA County	Total
Direct Construction Expenditures (\$ millions)	\$4,660	\$0	\$0	\$4,660
Total Economic Impact:				
Output (\$ millions)	\$6,247.3	\$25.4	\$888.2	\$7,160.8
<i>Direct</i>	\$4,660.0	\$0.0	\$0.0	\$4,660.0
<i>Indirect and induced</i>	\$1,587.3	\$25.4	\$888.2	\$2,500.8
Employment (jobs)	34,940	130	4,050	39,120
<i>Direct</i>	28,190	0	0	28,190
<i>Indirect and induced</i>	6,750	130	4,050	10,930
Labor income (\$ millions)	\$2,757.6	\$10.2	\$303.6	\$3,071.4
<i>Direct</i>	\$2,235.9	\$0.0	\$0.0	\$2,235.9
<i>Indirect and induced</i>	\$521.6	\$10.2	\$303.6	\$835.5
Value added (\$ millions)	\$3,322.6	\$15.2	\$533.6	\$3,871.3
<i>Direct</i>	\$2,394.4	\$0.0	\$0.0	\$2,394.4
<i>Indirect and induced</i>	\$928.2	\$15.2	\$533.6	\$1,476.9
Total Fiscal Impact (\$ millions):				
Federal tax revenues	\$512.0	\$1.7	\$62.3	\$576.0
State and local tax revenues	\$224.6	\$1.2	\$77.1	\$302.8

Source: Estimates by LAEDC

Exhibit A4-2
Distribution of Employment Impacts of KNE Section 1 Construction by Industry (jobs)

	City of LA	City of West Hollywood	Rest of LA County	Total
Ag, Forestry, Fish & Hunting	0	0	0	0
Mining	0	0	0	0
Utilities	10	0	10	20
Construction	23,520	0	20	23,540
Manufacturing	240	0	90	330
Wholesale trade	330	0	360	690
Retail trade	650	10	540	1,200
Transportation and warehousing	530	0	440	970
Information	170	0	30	200
Finance and insurance	360	0	130	490
Real estate and rental	1,560	20	290	1,870
Professional, scientific technical	4,460	40	450	4,950
Management of companies	130	0	70	200
Administrative and waste services	900	30	610	1,540
Educational services	130	0	50	180
Health and social services	690	0	290	980



Exhibit A4-2

Distribution of Employment Impacts of KNE Section 1 Construction by Industry (jobs)

	City of LA	City of West Hollywood	Rest of LA County	Total
Arts, entertainment, and recreation	120	0	40	160
Accommodation and food services	520	10	270	800
Other services	550	0	310	860
Government	70	0	40	110
Total	34,940	130	4,050	39,120

Source: Estimates by LAEDC

Exhibit A4-3

Distribution of Output Impacts of KNE Section 1 Construction by Industry (millions of 2023\$)

	City of LA	City of West Hollywood	Rest of LA County	Total
Ag, Forestry, Fish & Hunting	\$0.0	\$0.0	\$0.0	\$0.0
Mining	\$0.8	\$0.0	\$3.3	\$4.1
Utilities	\$7.6	\$0.2	\$8.7	\$16.4
Construction	\$3,599.0	\$0.2	\$5.6	\$3,604.8
Manufacturing	\$217.1	\$0.0	\$41.8	\$258.9
Wholesale trade	\$147.9	\$1.7	\$157.7	\$307.3
Retail trade	\$109.5	\$1.2	\$92.2	\$202.9
Transportation and warehousing	\$84.7	\$0.7	\$72.8	\$158.2
Information	\$125.6	\$1.1	\$26.3	\$153.0
Finance and insurance	\$119.7	\$0.5	\$52.1	\$172.2
Real estate and rental	\$472.0	\$4.9	\$113.9	\$590.8
Professional, scientific technical	\$985.6	\$8.3	\$101.9	\$1,095.8
Management of companies	\$31.1	\$0.4	\$16.6	\$48.1
Administrative and waste services	\$102.5	\$3.9	\$73.3	\$179.7
Educational services	\$11.5	\$0.0	\$5.0	\$16.6
Health and social services	\$82.8	\$0.1	\$36.2	\$119.1
Arts, entertainment, and recreation	\$17.9	\$0.4	\$5.8	\$24.1
Accommodation and food services	\$55.5	\$1.0	\$29.8	\$86.3
Other services	\$54.3	\$0.4	\$32.7	\$87.3
Government	\$22.3	\$0.4	\$12.6	\$35.3
Total	\$6,247.3	\$25.4	\$888.2	\$7,160.8

Source: Estimates by LAEDC



Exhibit A4-4

Distribution of Labor Income Impacts of KNE Section 1 Construction by Industry (millions of 2023\$)

	City of LA	City of West Hollywood	Rest of LA County	Total
Ag, Forestry, Fish & Hunting	\$0.0	\$0.0	\$0.0	\$0.0
Mining	\$0.0	\$0.0	\$0.3	\$0.3
Utilities	\$1.2	\$0.0	\$1.4	\$2.7
Construction	\$1,763.7	\$0.1	\$1.5	\$1,765.3
Manufacturing	\$18.2	\$0.0	\$8.2	\$26.4
Wholesale trade	\$36.8	\$0.5	\$40.5	\$77.8
Retail trade	\$35.5	\$0.4	\$29.8	\$65.7
Transportation and warehousing	\$31.5	\$0.2	\$26.5	\$58.3
Information	\$31.8	\$0.2	\$4.8	\$36.8
Finance and insurance	\$37.5	\$0.2	\$14.3	\$52.0
Real estate and rental	\$92.7	\$1.2	\$18.9	\$112.8
Professional, scientific technical	\$514.9	\$4.1	\$52.0	\$571.0
Management of companies	\$16.3	\$0.2	\$8.7	\$25.2
Administrative and waste services	\$50.9	\$2.2	\$34.1	\$87.1
Educational services	\$8.2	\$0.0	\$3.3	\$11.5
Health and social services	\$48.2	\$0.0	\$20.8	\$69.1
Arts, entertainment, and recreation	\$9.4	\$0.2	\$2.9	\$12.5
Accommodation and food services	\$21.3	\$0.4	\$11.3	\$33.0
Other services	\$29.6	\$0.2	\$18.9	\$48.6
Government	\$9.7	\$0.2	\$5.4	\$15.3
Total	\$2,757.6	\$10.2	\$303.6	\$3,071.4

Source: Estimates by LAEDC

Exhibit A4-5

Detailed Fiscal Impact of KNE Section 1 Construction

	City of LA	City of West Hollywood	Rest of LA County	Total
By Type of Tax (\$ millions):				
Personal income taxes	\$291.9	\$0.5	\$25.8	\$318.2
Social insurance	284.3	1.2	33.8	319.3
Sales and excise taxes	73.0	0.5	37.7	111.1
Property taxes	34.8	0.2	17.6	52.7
Corporate profits taxes	34.1	0.4	15.7	50.2
Other fees and taxes	18.5	0.1	8.8	27.4
Total	\$736.6	\$2.9	\$139.4	\$878.9
By Type of Government (\$ millions):				
Federal	\$512.0	\$1.7	\$62.3	\$576.0
State	161.4	0.7	44.8	207.0
County	3.2	0.0	1.7	4.9
Cities	60.0	0.4	30.6	91.0
Total	\$736.6	\$2.9	\$139.4	\$878.9

Source: Estimates by LAEDC

Economic and Fiscal Impacts of K Line North Section 2 Construction

Exhibit A4-6

Economic and Fiscal Impact of KNE Section 2 Construction

	City of LA	City of West Hollywood	Rest of LA County	Total
Direct Construction Expenditures (\$ millions)	\$2,792	\$2,148	\$0	\$4,940
Total Economic Impact:				
Output (\$ millions)	\$4,415.5	\$2,152.7	\$940.4	\$7,508.6
<i>Direct</i>	\$2,815.7	\$2,124.3	\$0.0	\$4,940.0
<i>Indirect and induced</i>	\$1,599.9	\$28.3	\$940.4	\$2,568.6
Employment (jobs)	23,710	13,110	4,270	41,090
<i>Direct</i>	16,990	12,960	0	29,950
<i>Indirect and induced</i>	6,720	140	4,270	11,130
Labor income (\$ millions)	\$1,858.0	\$1,032.4	\$320.3	\$3,210.7
<i>Direct</i>	\$1,335.3	\$1,021.1	\$0.0	\$2,356.4
<i>Indirect and induced</i>	\$522.7	\$11.3	\$320.3	\$854.3
Value added (\$ millions)	\$2,364.7	\$1,113.1	\$564.4	\$4,042.2
<i>Direct</i>	\$1,434.1	\$1,096.1	\$0.0	\$2,530.3
<i>Indirect and induced</i>	\$930.6	\$17.0	\$564.4	\$1,512.0
Total Fiscal Impact (\$ millions):				
Federal tax revenues	\$349.5	\$160.7	\$65.8	\$575.9
State and local tax revenues	\$179.6	\$41.1	\$81.9	\$302.6

Source: Estimates by LAEDC

Exhibit A4-7

Distribution of Employment Impacts of KNE Section 2 Construction by Industry (jobs)

	City of LA	City of West Hollywood	Rest of LA County	Total
Ag, Forestry, Fish & Hunting	0	0	0	0
Mining	0	0	0	0
Utilities	10	0	10	20
Construction	14,270	10,950	20	25,240
Manufacturing	230	0	90	320
Wholesale trade	350	0	380	730
Retail trade	650	10	570	1,230
Transportation and warehousing	550	0	460	1,010
Information	170	0	30	200
Finance and insurance	350	0	140	490
Real estate and rental	1,320	560	320	2,200
Professional, scientific technical	2,830	1,510	470	4,810



Exhibit A4-7

Distribution of Employment Impacts of KNE Section 2 Construction by Industry (jobs)

	City of LA	City of West Hollywood	Rest of LA County	Total
Management of companies	130	0	70	200
Administrative and waste services	930	40	640	1,610
Educational services	120	0	50	170
Health and social services	620	0	300	920
Arts, entertainment, and recreation	120	0	50	170
Accommodation and food services	490	10	290	790
Other services	520	10	330	860
Government	70	0	40	110
Total	23,710	13,110	4,270	41,090

Source: Estimates by LAEDC

Exhibit A4-8

Distribution of Output Impacts of KNE Section 2 Construction by Industry (millions of 2023\$)

	City of LA	City of West Hollywood	Rest of LA County	Total
Ag, Forestry, Fish & Hunting	\$0.0	\$0.0	\$0.0	\$0.0
Mining	\$0.8	\$0.0	\$3.5	\$4.3
Utilities	\$8.1	\$0.2	\$9.7	\$18.0
Construction	\$2,186.1	\$1,674.2	\$6.5	\$3,866.7
Manufacturing	\$218.7	\$0.0	\$44.2	\$263.0
Wholesale trade	\$153.9	\$1.8	\$167.3	\$323.1
Retail trade	\$109.2	\$1.5	\$98.0	\$208.7
Transportation and warehousing	\$86.5	\$0.7	\$77.4	\$164.6
Information	\$125.7	\$1.2	\$27.4	\$154.3
Finance and insurance	\$118.6	\$0.6	\$56.0	\$175.3
Real estate and rental	\$405.8	\$138.6	\$121.5	\$665.9
Professional, scientific technical	\$634.7	\$326.0	\$106.4	\$1,067.1
Management of companies	\$31.8	\$0.4	\$17.2	\$49.4
Administrative and waste services	\$105.3	\$4.0	\$76.9	\$186.3
Educational services	\$10.4	\$0.0	\$5.2	\$15.7
Health and social services	\$75.1	\$0.4	\$37.7	\$113.2
Arts, entertainment, and recreation	\$17.3	\$0.5	\$6.0	\$23.9
Accommodation and food services	\$52.6	\$1.3	\$31.1	\$85.0
Other services	\$52.1	\$0.6	\$34.5	\$87.2
Government	\$22.8	\$0.5	\$13.7	\$37.0
Total	\$4,415.5	\$2,152.7	\$940.4	\$7,508.6

Source: Estimates by LAEDC

Exhibit A4-9

Distribution of Labor Income Impacts of KNE Section 2 Construction by Industry (millions of 2023\$)

	City of LA	City of West Hollywood	Rest of LA County	Total
Ag, Forestry, Fish & Hunting	\$0.0	\$0.0	\$0.0	\$0.0
Mining	\$0.0	\$0.0	\$0.3	\$0.4
Utilities	\$1.3	\$0.0	\$1.6	\$2.9
Construction	\$1,070.3	\$821.3	\$1.7	\$1,893.4
Manufacturing	\$17.7	\$0.0	\$8.7	\$26.4
Wholesale trade	\$38.3	\$0.5	\$42.9	\$81.8
Retail trade	\$35.3	\$0.5	\$31.7	\$67.5
Transportation and warehousing	\$32.3	\$0.2	\$28.2	\$60.7
Information	\$31.8	\$0.3	\$5.0	\$37.1
Finance and insurance	\$36.8	\$0.2	\$15.3	\$52.4
Real estate and rental	\$79.4	\$31.8	\$20.4	\$131.6
Professional, scientific technical	\$327.4	\$173.6	\$54.2	\$555.2
Management of companies	\$16.6	\$0.2	\$9.0	\$25.9
Administrative and waste services	\$52.1	\$2.2	\$35.6	\$89.9
Educational services	\$7.3	\$0.0	\$3.4	\$10.8
Health and social services	\$43.7	\$0.2	\$21.7	\$65.6
Arts, entertainment, and recreation	\$9.0	\$0.2	\$3.0	\$12.3
Accommodation and food services	\$20.2	\$0.5	\$11.8	\$32.5
Other services	\$28.3	\$0.3	\$19.9	\$48.5
Government	\$9.8	\$0.2	\$5.8	\$15.8
Total	\$1,858.0	\$1,032.4	\$320.3	\$3,210.7

Source: Estimates by LAEDC

Exhibit A4-10

Detailed Fiscal Impact of KNE Section 2 Construction

	City of LA	City of West Hollywood	Rest of LA County	Total
By Type of Tax (\$ millions):				
Personal income taxes	\$195.2	\$59.9	\$27.3	\$282.4
Social insurance	192.1	116.2	35.7	344.0
Sales and excise taxes	64.5	11.4	40.0	115.9
Property taxes	30.6	5.4	18.7	54.8
Corporate profits taxes	30.7	6.0	16.6	53.3
Other fees and taxes	16.0	2.9	9.3	28.1
Total	\$529.1	\$201.8	\$147.7	\$878.5
By Type of Government (\$ millions):				
Federal	\$349.5	\$160.7	\$65.8	\$575.9
State	123.9	31.3	47.6	202.8
County	2.8	0.5	1.8	5.1
Cities	52.8	9.3	32.5	94.7
Total	\$529.1	\$201.8	\$147.7	\$878.5

Source: Estimates by LAEDC

Economic and Fiscal Impacts of K Line North Section 3 Construction

Exhibit A4-11

Economic and Fiscal Impact of KNE Section 3 Construction

	City of LA	City of West Hollywood	Rest of LA County	Total
Direct Construction Expenditures (\$ millions)	\$1,648	\$3,552	\$0	\$5,200
Total Economic Impact:				
Output (\$ millions)	\$3,310.8	\$3,541.9	\$983.3	\$7,836.1
<i>Direct</i>	\$1,688.5	\$3,511.5	\$0.0	\$5,200.0
<i>Indirect and induced</i>	\$1,622.3	\$30.4	\$983.3	\$2,636.1
Employment (jobs)	16,910	21,700	4,460	43,070
<i>Direct</i>	10,150	21,540	0	31,690
<i>Indirect and induced</i>	6,770	160	4,460	11,390
Labor income (\$ millions)	\$1,329.6	\$1,717.4	\$335.6	\$3,382.6
<i>Direct</i>	\$799.6	\$1,705.2	\$0.0	\$2,504.8
<i>Indirect and induced</i>	\$530.0	\$12.2	\$335.6	\$877.9
Value added (\$ millions)	\$1,794.3	\$1,833.5	\$591.1	\$4,218.8
<i>Direct</i>	\$852.0	\$1,815.1	\$0.0	\$2,667.1
<i>Indirect and induced</i>	\$942.2	\$18.4	\$591.1	\$1,551.7
Total Fiscal Impact (\$ millions):				
Federal tax revenues	\$253.4	\$266.0	\$68.9	\$588.3
State and local tax revenues	\$152.8	\$65.7	\$86.3	\$304.8

Source: Estimates by LAEDC

Exhibit A4-12

Distribution of Employment Impacts of KNE Section 3 Construction by Industry (jobs)

	City of LA	City of West Hollywood	Rest of LA County	Total
Ag, Forestry, Fish & Hunting	0	0	0	0
Mining	0	0	0	0
Utilities	10	0	10	20
Construction	8,550	18,370	20	26,940
Manufacturing	250	0	100	350
Wholesale trade	360	10	410	780
Retail trade	660	10	610	1,280
Transportation and warehousing	570	0	490	1,060
Information	170	0	40	210
Finance and insurance	340	0	140	480
Real estate and rental	910	660	320	1,890
Professional, scientific technical	2,140	2,570	500	5,210



Exhibit A4-12

Distribution of Employment Impacts of KNE Section 3 Construction by Industry (jobs)

	City of LA	City of West Hollywood	Rest of LA County	Total
Management of companies	130	0	70	200
Administrative and waste services	950	40	660	1,650
Educational services	110	0	60	170
Health and social services	590	0	310	900
Arts, entertainment, and recreation	110	0	50	160
Accommodation and food services	480	10	300	790
Other services	520	10	340	870
Government	70	0	40	110
Total	16,910	21,700	4,460	43,070

Source: Estimates by LAEDC

Exhibit A4-13

Distribution of Output Impacts of KNE Section 3 Construction by Industry (millions of 2023\$)

	City of LA	City of West Hollywood	Rest of LA County	Total
Ag, Forestry, Fish & Hunting	\$0.0	\$0.0	\$0.0	\$0.0
Mining	\$0.9	\$0.0	\$3.7	\$4.6
Utilities	\$7.5	\$0.2	\$9.3	\$17.0
Construction	\$1,311.1	\$2,808.0	\$5.8	\$4,124.9
Manufacturing	\$233.2	\$0.0	\$47.1	\$280.3
Wholesale trade	\$162.0	\$1.9	\$178.3	\$342.2
Retail trade	\$111.5	\$1.8	\$104.0	\$217.2
Transportation and warehousing	\$89.4	\$0.8	\$82.2	\$172.4
Information	\$127.5	\$1.3	\$28.8	\$157.6
Finance and insurance	\$115.1	\$0.7	\$56.3	\$172.1
Real estate and rental	\$302.9	\$162.9	\$124.7	\$590.5
Professional, scientific technical	\$484.8	\$555.7	\$112.1	\$1,152.6
Management of companies	\$33.3	\$0.5	\$18.2	\$52.0
Administrative and waste services	\$107.8	\$4.3	\$78.9	\$191.0
Educational services	\$9.9	\$0.1	\$5.5	\$15.5
Health and social services	\$72.1	\$0.6	\$39.8	\$112.5
Arts, entertainment, and recreation	\$16.8	\$0.6	\$6.3	\$23.7
Accommodation and food services	\$51.1	\$1.4	\$32.1	\$84.6
Other services	\$51.7	\$0.7	\$36.4	\$88.7
Government	\$22.3	\$0.5	\$13.7	\$36.5
Total	\$3,310.8	\$3,541.9	\$983.3	\$7,836.1

Source: Estimates by LAEDC



Exhibit A4-14

Distribution of Labor Income Impacts of KNE Section 3 Construction by Industry (millions of 2023\$)

	City of LA	City of West Hollywood	Rest of LA County	Total
Ag, Forestry, Fish & Hunting	\$0.0	\$0.0	\$0.0	\$0.0
Mining	\$0.0	\$0.0	\$0.4	\$0.4
Utilities	\$1.2	\$0.0	\$1.5	\$2.8
Construction	\$641.3	\$1,377.6	\$1.6	\$2,020.4
Manufacturing	\$19.1	\$0.0	\$9.2	\$28.4
Wholesale trade	\$40.4	\$0.6	\$45.7	\$86.7
Retail trade	\$36.0	\$0.6	\$33.6	\$70.1
Transportation and warehousing	\$33.5	\$0.3	\$30.0	\$63.7
Information	\$32.2	\$0.3	\$5.2	\$37.7
Finance and insurance	\$35.8	\$0.2	\$15.5	\$51.6
Real estate and rental	\$56.6	\$37.4	\$20.7	\$114.7
Professional, scientific technical	\$247.1	\$296.1	\$57.3	\$600.5
Management of companies	\$17.5	\$0.2	\$9.6	\$27.3
Administrative and waste services	\$53.6	\$2.3	\$36.7	\$92.6
Educational services	\$7.0	\$0.1	\$3.6	\$10.6
Health and social services	\$42.0	\$0.3	\$22.9	\$65.2
Arts, entertainment, and recreation	\$8.8	\$0.2	\$3.2	\$12.2
Accommodation and food services	\$19.7	\$0.6	\$12.1	\$32.4
Other services	\$28.0	\$0.4	\$21.0	\$49.4
Government	\$9.7	\$0.2	\$5.9	\$15.9
Total	\$1,329.6	\$1,717.4	\$335.6	\$3,382.6

Source: Estimates by LAEDC

Exhibit A4-15

Detailed Fiscal Impact of KNE Section 3 Construction

	City of LA	City of West Hollywood	Rest of LA County	Total
By Type of Tax (\$ millions):				
Personal income taxes	\$137.4	\$98.5	\$28.6	\$264.4
Social insurance	138.6	193.9	37.4	369.8
Sales and excise taxes	59.6	17.9	42.3	119.8
Property taxes	28.2	8.6	19.8	56.5
Corporate profits taxes	28.0	8.4	17.3	53.7
Other fees and taxes	14.5	4.5	9.8	28.8
Total	\$406.2	\$331.7	\$155.2	\$893.1
By Type of Government (\$ millions):				
Federal	\$253.4	\$266.0	\$68.9	\$588.3
State	101.5	50.2	50.1	201.7
County	2.6	0.8	1.9	5.3
Cities	48.7	14.7	34.4	97.8
Total	\$406.2	\$331.7	\$155.2	\$893.1

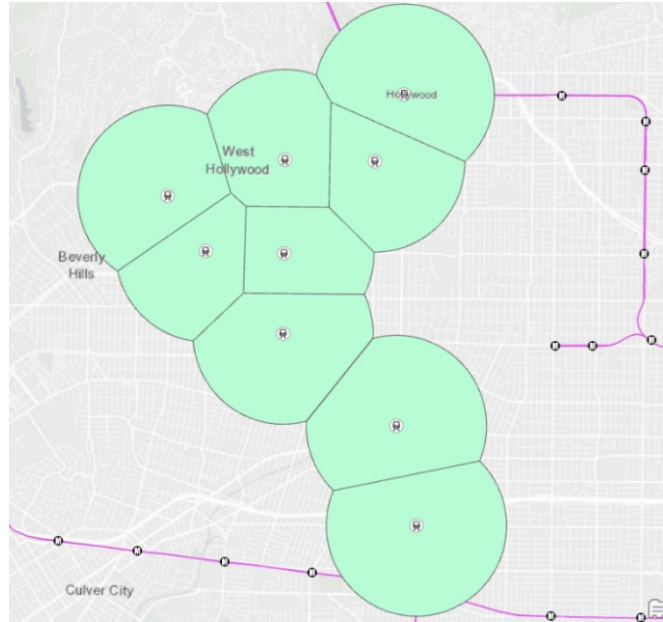
Source: Estimates by LAEDC

A5 RIDERSHIP AND VISITOR SPENDING ANALYSIS

The projected ridership in 2045 for each proposed station of the K Line North San Vicente-Fairfax route is provided by Metro. We further estimate the split of ridership by origin (residents vs. visitors) based on an examination of the business profile and density of residential properties in the surrounding area of each of the nine stations.

Study Area Definition

To assess the impact on tourism businesses and residential units around proposed transit sites, we employed ArcGIS Pro to delineate the study area. This involved creating 1-mile radius buffers around each of the nine proposed station locations. In cases where these buffers overlapped, they were divided according to the proximity to the nearest station, ensuring distinct analysis zones for each station.



Business Summary

For each defined station buffer, we used ArcGIS Business Analyst Online to compile a Business Summary. This analysis included the quantity of businesses and employees within each buffer, categorized by their respective NAICS industry codes. Businesses with tourism-related NAICS codes were isolated for analysis. We then calculated the density of businesses and employees per square mile within each buffer to standardize the data for comparative analysis across different areas.

Housing Profile

Similarly, a Housing Profile Report was generated for each buffer zone using ArcGIS Business Analyst Online. This report quantified the total housing units within the buffer, categorizing them by occupancy status (occupied vs. vacant and owner-occupied vs. renter-occupied). The data was normalized to the density of housing units per square mile, facilitating an equitable comparison across varying buffer sizes.

The following assumptions were adopted in our analysis to estimate the breakdown between resident ridership and visitor ridership, as well as their respective average spending:

- First, for tourism impact analysis, spending by local visitors (residents) is usually excluded because their expenses on entertainment, recreational activities, food services, and drinking places are likely funds they would have spent on other leisure options within the region if they had not made the visit. Therefore, spending by local resident riders is excluded from the impact analysis.
- We calculate the ratio of housing units per square mile to employment per square mile within each 1-mile radius buffer area around the proposed stations. The area around the proposed W.

Adams / Crenshaw station has the highest ratio of 6.3, while the area surrounding the Beverly / La Cienega station has the lowest ratio of 0.7. These two stations serve as the lower and upper bounds. For the W. Adams / Crenshaw station, we assume 25 percent of the ridership is visitor ridership, while for the Beverly / La Cienega station, this percentage is assumed to be 75 percent. For the other stations, we calculated the percentage of visitor ridership using an interpolation approach based on the housing units / employment ratio, compared to the ratios for the two stations used as bounds.

- Next, we split the total visitor ridership between commuter ridership and leisure ridership. During weekdays, the split of work commuters and leisure riders is assumed to be 80% and 20%. During weekends, it is assumed that all riders are leisure visitors.
- We then divided the commuter ridership between full-time and part-time workers. According to the Census Bureau’s American Community Survey data, in the City of Los Angeles, three-quarters of the workers are full-time employees, usually working 35 or more hours per week. We further assumed that full-time workers commute 5 days a week, while part-time workers on average commute 2 days each week. Therefore, the estimated split of commuter ridership is about 88% for full-time workers and 12% for part-time workers.
- It is assumed that leisure visitors from outside the region spend an average of \$50 per day per person. Out-of-region commuters working in the area are estimated to spend \$20 per day for full-time employees and \$15 per day for part-time employees. The assumption of \$50 expenditures per day per person for leisure visitors is based on average expenditures of day visitors to Los Angeles. The major data source we use is the Los Angeles Tourism & Convention Board’s 2020 Marketing and Planning Resource report. According to the report, the average trip spending by domestic day leisure visitor to LA is estimated to be \$56 excluding spending on transportation (see the table on the right). In our analysis, Metro light rail fare is included as a separate spending category in our visitor spending impact analysis. Our use of \$50 (in 2023 dollars) per visitor per day is on the conservative side of the estimate. We have applied this estimate consistently throughout the study period from 2045 to 2060, converting the 2023-dollar amount to current dollar values (adjusting for inflation) for each year in the simulation.
- Finally, tourist spending is allocated among tourist-related industries based on the baseline revenues of these industries in the local region.

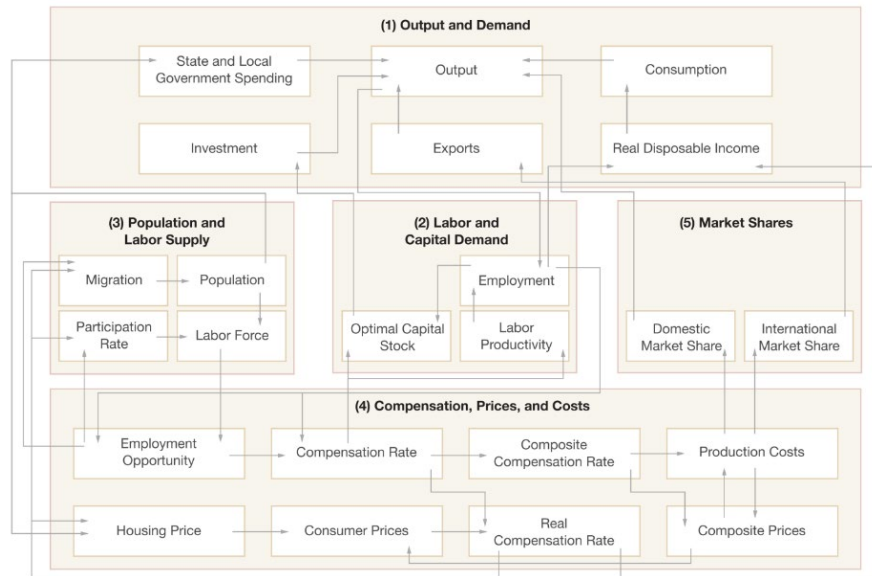
Food & Beverage	\$20
Entertainment	\$15
Shopping/Gifts	\$15
Other	\$6
Total Spending Per Visitor	\$56

A6: REMI PI+ MODEL

REMI PI+ is a structural economic forecasting and policy analysis model. It integrates input-output, computable general equilibrium, econometric, and economic geography methodologies. The model is dynamic, with forecasts and simulations generated on an annual basis and behavioral responses to wage, price, and other economic factors.

Exhibit A6-1.
REMI Model Linkages

The REMI model consists of thousands of simultaneous equations with a structure that is relatively straightforward. The exact number of equations used varies depending on the extent of industry, demographic, demand, and other detail in the model. The overall structure of the model can be summarized in five major blocks: (1) Output and Demand, (2) Labor and Capital Demand, (3) Population and Labor Supply, (4) Compensation, Prices, and Costs, and (5) Market Shares. The blocks and their key interactions are shown in **Exhibit A6-1**.



Source: REMI (2023)

The *Output and Demand* block includes output, demand, consumption, investment, government spending, import, product access, and export concepts. Output for each industry is determined by industry demand in a given region and its trade with the US and international market. For each industry, demand is determined by the amount of output, consumption, investment, and capital demand of that industry. Consumption depends on real disposable income per capita, relative prices, differential income elasticities and population. In the capital stock adjustment process, investment occurs to fill the difference between optimal and actual capital stock for residential, non-residential, and equipment investment. Government spending changes are determined by changes in the population.

The *Labor and Capital Demand* block includes the determination of labor productivity, labor intensity and the optimal capital stocks. Industry-specific labor productivity depends on the availability of workers with differentiated skills for the occupations used in each industry. The occupational labor supply and commuting costs determine firms' access to a specialized labor force. Labor intensity is determined by the cost of labor relative to the other factor inputs, capital, and fuel. Demand for capital is driven by the optimal capital stock, which in turn depends on the relative cost of labor and capital, and the employment weighted by capital use for each industry. Employment in private industries is determined by the value added and employment per unit of value added in each industry.

The *Population and Labor Supply block* includes detailed demographic information about the region. Population data is given for age and gender, with birth and survival rates for each group. The size and labor force participation rate of each group determines the labor supply. These participation rates respond to changes in employment relative to the potential labor force and to changes in the real after-tax compensation rate. Migration includes retirement, military, international and economic migration. Economic migration is determined by the relative real after-tax compensation rate, relative employment opportunity and consumer access to variety.

The *Compensation, Prices, and Costs block* includes delivered prices, production costs, equipment cost, the consumption deflator, consumer prices, the price of housing, and the wage equation. The prices measure the value of the industry output, taking into account access to production locations. Composite prices for each industry are calculated based on the production costs of supplying regions, the effective distance to these regions, and the index of access to the variety of output in the industry relative to the access by other uses of the product. The cost of production for each industry is determined by cost of labor, capital, fuel, and intermediate inputs. The consumption deflator converts industry prices to prices for consumption commodities. For potential migrants, the consumer price is additionally calculated to include housing prices. Housing price changes from their initial level depend on changes in income and population density. Regional employee compensation changes are due to changes in labor demand and supply conditions, and changes in the national compensation rate.

The *Market Shares* equations measure the proportion of local and export markets that are captured by each industry. These depend on relative production costs, the estimated price elasticity of demand, and effective distance between the home region and each of the other regions. The change in share of a specific area in any region depends on changes in its delivered price and the quantity it produces compared with the same factors for competitors in that market. The share of local and external markets then drives the exports from and imports to the home economy.

A7: LONG-TERM ANNUAL ECONOMIC IMPACTS

Long-Term Year-Over-Year Economic Impacts of K Line North Annual Operation (2046-2060)

Exhibit A7-1

Long-Term Economic Impacts of K Line North Operation in Los Angeles County (2046-2060)

Variable	Units	2046	2047	2048	2049	2050	2051	2052	2053
<u>Impact Levels</u>									
Total Employment	Job-year	242	243	240	237	234	232	231	230
GCP	M 2023\$	7.5	7.6	7.5	7.4	7.3	7.3	7.3	7.3
Output	M 2023\$	25.3	25.6	25.4	25.3	25.2	25.2	25.2	25.3
Personal Income	M 2023\$	27.9	31.6	32.9	34.1	35.2	36.2	37.2	38.1
<u>Percentage Share with respect to County Total</u>									
Total Employment	Job-year	0.008%	0.008%	0.008%	0.008%	0.008%	0.008%	0.008%	0.007%
GCP	M 2023\$	0.007%	0.007%	0.007%	0.007%	0.007%	0.007%	0.007%	0.006%
Output	M 2023\$	0.009%	0.009%	0.008%	0.008%	0.008%	0.008%	0.008%	0.008%
Personal Income	M 2023\$	0.005%	0.005%	0.005%	0.005%	0.005%	0.005%	0.005%	0.005%

Exhibit A7-1 (cont'd)

Long-Term Economic Impacts of K Line North Operation in Los Angeles County (2046-2060)

Variable	Units	2054	2055	2056	2057	2058	2059	2060
<u>Impact Levels</u>								
Total Employment	Job-year	230	231	232	233	234	236	237
GCP	M 2023\$	7.3	7.3	7.3	7.4	7.5	7.5	7.6
Output	M 2023\$	25.5	25.7	26.0	26.2	26.6	26.9	27.3
Personal Income	M 2023\$	39.1	40.0	40.9	41.9	42.8	43.8	44.7
<u>Percentage Share with respect to County Total</u>								
Total Employment	Job-year	0.007%	0.007%	0.007%	0.007%	0.007%	0.007%	0.007%
GCP	M 2023\$	0.006%	0.006%	0.006%	0.006%	0.006%	0.006%	0.006%
Output	M 2023\$	0.007%	0.007%	0.007%	0.007%	0.007%	0.007%	0.007%
Personal Income	M 2023\$	0.005%	0.005%	0.005%	0.005%	0.005%	0.005%	0.005%

Long-Term Year-Over-Year Economic Impacts of K Line North Ridership (2046-2060)

Exhibit A7-2

Long-Term Economic Impacts of K Line North Ridership in Los Angeles County (2046-2060)

Variable	Units	2046	2047	2048	2049	2050	2051	2052	2053
<u>Impact Levels</u>									
Total Employment	Job-year	3,766	3,762	3,681	3,604	3,528	3,460	3,402	3,351
GCP	M 2023\$	304.4	310.4	307.1	303.7	300.3	297.4	295.4	294.1
Output	M 2023\$	493.4	503.9	499.7	495.4	491.0	487.8	485.9	485.5
Personal Income	M 2023\$	219.4	256.5	269.7	282.4	292.5	301.2	309.1	316.3
<u>Percentage Share with respect to County Total</u>									
Total Employment	Job-year	0.043%	0.043%	0.042%	0.041%	0.039%	0.038%	0.037%	0.037%
GCP	M 2023\$	0.030%	0.030%	0.029%	0.028%	0.028%	0.027%	0.026%	0.025%
Output	M 2023\$	0.030%	0.030%	0.029%	0.028%	0.028%	0.027%	0.026%	0.025%
Personal Income	M 2023\$	0.026%	0.029%	0.030%	0.031%	0.031%	0.031%	0.032%	0.032%

Exhibit A7-2 (cont'd)

Long-Term Economic Impacts of K Line North Ridership in Los Angeles County (2046-2060)

Variable	Units	2054	2055	2056	2057	2058	2059	2060
<u>Impact Levels</u>								
Total Employment	Job-year	3,308	3,270	3,237	3,207	3,180	3,153	3,125
GCP	M 2023\$	293.5	293.5	294.0	294.9	296.0	297.1	298.2
Output	M 2023\$	486.3	488.1	490.8	494.2	498.1	502.1	506.0
Personal Income	M 2023\$	323.1	329.4	335.4	341.3	347.0	352.2	357.1
<u>Percentage Share with respect to County Total</u>								
Total Employment	Job-year	0.036%	0.035%	0.035%	0.034%	0.033%	0.033%	0.032%
GCP	M 2023\$	0.025%	0.024%	0.024%	0.024%	0.023%	0.023%	0.023%
Output	M 2023\$	0.025%	0.024%	0.024%	0.023%	0.023%	0.023%	0.022%
Personal Income	M 2023\$	0.032%	0.031%	0.031%	0.031%	0.031%	0.031%	0.030%