



Cherry Logistics Center
City of Long Beach, California
Economic and Fiscal Impact Analysis

January 3, 2024



ANDREW CHANG & Co

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ABOUT ANDREW CHANG & COMPANY

Andrew Chang & Company works with clients to achieve tangible results by combining best-in-class research and analyses with unique insights into business operations, public policy, and government operations to help frame and solve business and public policy problems. Using advanced economic, statistical, and business techniques, we provide strategy and operations consulting to Fortune 1000 firms to improve their top and bottom lines. Also, consultants at Andrew Chang & Company have significant experience providing policy, economic, fiscal, and operations consulting for public sector agencies and non-profit organizations to shape policies and government operations at the federal, state, and local levels. Their experience covers a host of clients and industries including:

- General business & infrastructure;
- Health and human services;
- Federal, state and local government;
- Military & aerospace;
- Energy & natural resources; and
- Education.

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1. KEY FINDINGS

- The proposed project is expected to inject approximately \$370 million cumulatively into the local economy by 2027 as a result of construction and ongoing operations of the tenants within the project facilities.
- As a result of the direct infusion of monies, approximately 500 semi-permanent jobs are expected to be created within the local economy. both directly and indirectly as a result of tenant operations.
- The proposed project is expected to generate approximately \$450 million in cumulative economic output by 2027.
- The proposed project is expected to generate approximately \$23 million in city residents' personal earnings on an ongoing basis, cumulatively totaling approximately \$100 million by 2027.
- The City is projected to increase property and sales tax collections by approximately \$6 million cumulatively by 2027 as a result of the proposed project.

2. INTRODUCTION

The City of Long Beach is located in the southern portion of Los Angeles County, California. Link Logistics, an industrial real estate agency with 25 offices in key markets across the United States, submitted its application to the City to develop one warehouse complex, the Cherry Logistics Center (CLC), totaling 303,972 square feet (sq. ft.) on approximately 14 acres of land at the intersection of Cherry Avenue and E South Street, as shown in Figure 2.1.

Figure 2.1
Cherry Logistics Center Site Map

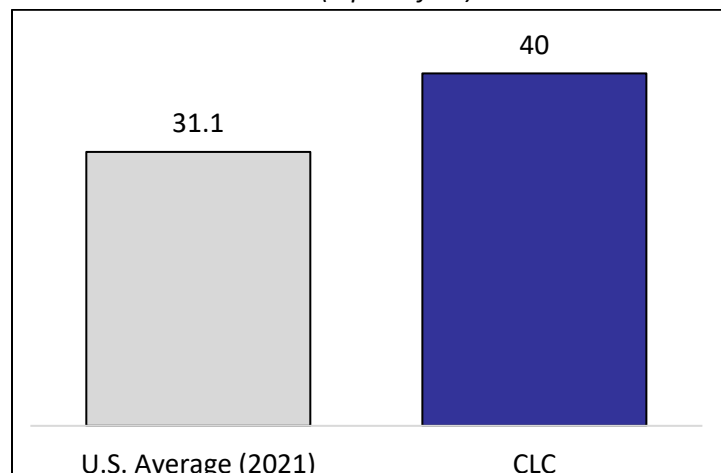


Link proposes to redevelop the 14-acre site, including demolition of eight existing building structures, and construct a Class A industrial facility that meets contemporary industry standards, accommodates a wide variety of users, and is economically competitive with similar warehouse buildings in the local area and region. CLC totals 303,972 sq. ft.

The current site is occupied by Pacific Pipeline Systems LLC and currently operates as a corporate office building and maintenance operations hub for their South California pipelines at the southern portion of the West Hynes facility. The site acts as an ancillary monitoring for the northern tank farm and is composed of their main office building, laboratory, carport, garage, change building, storehouse, pump shop, wash rack, and tool building. They are scheduled to occupy the site through January 2023.

For CLC, ceiling clearances are upwards of 40 feet high. As indicated in Figure 2.2, CLC's ceiling clearance is more optimal for vertical building, relative to the 2021 average building height of distribution center networks in the U.S.¹ Large, sophisticated, high-volume tenants who distribute across larger geographic areas tend to gravitate towards buildings with more clear height because increased cubic space allows for increased warehouse efficiency. Moreover, because vacancy rates in the area are reportedly below two percent², the new modernized warehouse development should be in high demand.

Figure 2.2
Comparative Average Building Height of Distribution Center Networks
(Square feet)



¹ Placek, Martin. "Logistics industry: average height of distribution center networks U.S. 2016-2021." *Statista*, <https://www.statista.com/statistics/947267/logistics-distribution-center-network-average-height-united-states/>. Accessed 28 July 2022.

² Allen Matkins/UCLA Anderson. "Optimistic Outlook Predicted across All Commercial Real Estate Sectors, Says Allen Matkins/UCLA Anderson Forecast California CRE Survey." <https://www.anderson.ucla.edu/news-and-events/press-releases/optimistic-outlook-predicted-across-all-commercial-real-estate-sectors>. Accessed 28 July 2022. Accessed 6 September 2022

Figure 2.3 illustrates what the facility is intended to look like after construction completion.

Figure 2.3
Cherry Logistics Center



To better inform interested parties, Link retained Andrew Chang & Company, Inc. to conduct an economic and fiscal impact analysis of the proposed development on the City of Long Beach. The purpose of this study is to analyze the fiscal impact to the City resulting from the development and construction of the proposed project and the ongoing fiscal impact on the City's General Fund revenues resulting from the operations of the proposed project. In addition, this study estimates the economic impacts on the City, including the employment, economic output and personal earnings. This report relies on site plans and supporting documents to assess the economic and fiscal impact of the project. Key questions addressed in this study include:

- What is the fiscal impact to the City's General Fund revenues on a one-time and ongoing basis?
- What are the total (direct and indirect) impacts of the initiative on employment in the region on a one-time and ongoing basis?
- What are the total (direct and indirect) impacts of the initiative on economic output on a one-time and ongoing basis?
- What are the total (direct and indirect) impacts to the personal earnings of City residents on a one-time and ongoing basis?

3. STUDY APPROACH

This study relies on generally accepted principles of public policy analysis, public finance, economics, and mathematics to construct cash flow/direct spend and economic models specific to the proposed projects. The models are constructed using publicly available information and current market data. For data gaps or requirements that were not readily available, assumptions were made according to industry practices and standards. All assumptions are documented in this report.

To assess the economic impact of the proposed project, regional input-output multipliers were utilized to quantify the direct and indirect effects of new monies put into the local economy from construction of the facilities and their on-going operations. The economic multiplier approach is a common and generally accepted means of assessing the full economic impact (both direct and indirect) of new development scenarios. This approach assesses the full effects of injecting new monies into the local economy as the new monies ripple through the economy. The extra spending from new business operations generally leads to more income, which leads to more consumption and monies being circulated throughout the economy. The multiplier effect refers to the increase in final economic activity arising from the new injection of spending within an economic region. The multipliers used in this study were obtained from the United State (U.S.) Bureau of Economic Analysis for Los Angeles County and were adjusted to isolate the impacts to the City of Long Beach.

4. CONSTRUCTION COSTS

Table 4.1 exhibits the square footage breakdown for the proposed project by facility type. Construction is assumed to begin in 2023 and the building will be completed in one year.

Table 4.1
Square Footage Breakdown
(Sq. ft.)

FACILITY TYPE	TOTAL
Warehouse	235,978
Office	9,000
Retail/Point of Sales	58,994
Total	303,972

Table 4.2 exhibits the construction budget for the proposed facility provided by Link. Link's estimated construction costs for the project is \$102.85 per sq. ft. Based on a survey of the current construction costs of similar facilities in the western U.S., Link's estimated costs are fair and reasonable, and likely conservative (See Appendix A – Direct Spend Methodology).

Table 4.2
Estimated Site Development Costs

DESCRIPTION	Q3 BUDGET UPDATE
Demolition	\$503,360.00
Land Permits & Fees	\$1,820,543.00
Soft Costs	\$206,175.00
Land Civil Engineer	\$0.00
Site Work	\$3,600,286.80
Offsite Improvements	\$423,240.00
Environmental Costs	\$540,800.00
Shell Construction	\$19,713,286.00
Design Costs (Civil & Arch)	\$676,000.00
Legal	\$21,632.00
Soft Cost Contingency	\$437,848.00
Hard Cost Contingency	\$2,248,567.00
Tenant Improvements	\$1,072,754.10
Grand Total	\$31,264,491.90

Please note that these estimates of development costs are likely conservative because developer fees are not included in the estimates of capital improvements to the site. If developer fees for site improvements are included, costs, as well as economic and fiscal impacts for development, would be increased by a proportionate amount.

Figure 4.1
Site Developer Fees to the City of Long Beach

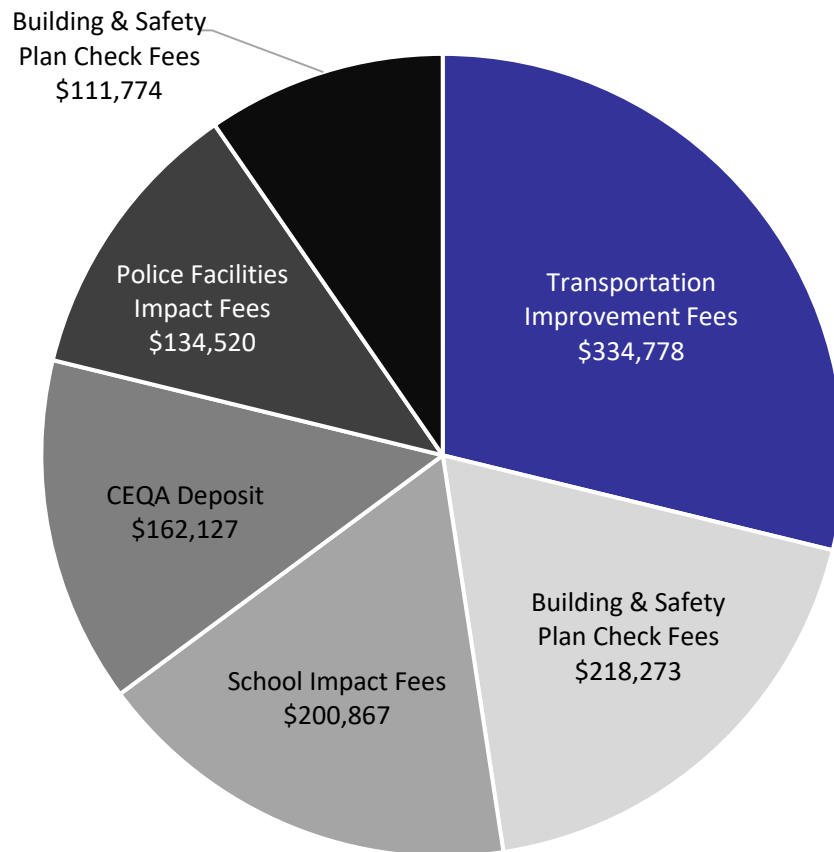


Figure 4.1 shows Link's total payments and anticipated payments to the City of Long Beach for major developer fees, amounting to \$1,336,974. The chart illustrates approximately 87% of the overall developer fees, totaling \$1,162,338, including Transportation Improvement Fees, Building & Safety Plan Check Fees, School Impact Fees, CEQA Deposit, Police Facilities Impact Fees, and Building & Safety Plan Check Fees.³

³ The remaining 13% (\$174,635) of the total developer fees comprise categories including CEQA Deposit Amendment #1, Fire Facilities Fees, Site Plan Review (PLNE53229) submitted to LB Planning, Peer Review of Technical Studies, Conceptual Site Plan Review (CSPR) also submitted to LB Planning, Planning Permit Fees, and Existing Building Gas Shut-off Fees.

5. REVENUE FROM OPERATIONS

Based on its experience with other industrial warehouse clients, Andrew Chang & Company assumes that 20% of warehouse space will be used for taxable retail sales purposes through traditional e-commerce taxes or as an e-commerce marketplace facilitator. This study further assumes that construction will begin in 2023 and that the developed facility would be fully occupied and operational by tenant occupants beginning 2024.

To calculate the operating revenues of the project, Andrew Chang & Company surveyed per sq. ft. revenue estimates from 10-K forms of top value-added retailers in the U.S. (See Appendix A – Direct Spend Methodology). Actual revenues per sq. ft. are highly dependent on the specific nature and operations of the specific tenants; factors influencing revenues include, but are not limited to, the type and value of products that are being warehoused or retailed, whether the tenant maintains point of sales operations, whether the tenant maintains operations that could deem the site an e-commerce facilitator, number of shifts per operation, and product throughput.

Inasmuch, the analysis represented in this case reflects the impact from typical tenants within the warehousing and retail industries and economic conditions, but actual impact may vary. The revenue estimates shown in Table 5.1 are representative of the general warehousing and retailing industries and assumes that the proposed project would operate and financially perform in a manner similar to others in those industries. Additional details regarding how the revenues per sq. ft. were calculated are detailed in Appendix A – Direct Spend Methodology.

Table 5.1
Estimated Revenues from Operations
(\$ Millions)

2023	2024	2025	2026	2027	TOTAL
\$ --	\$85	\$85	\$85	\$85	\$340

As shown in Table 5.1, revenues from operations are expected to remain consistent after the completion of construction in 2023. Cumulative revenues from operations during that time period are expected to total \$340 million.

6. TOTAL DIRECT SPEND

The direct spend is the total influx of new cash as a result of the construction and ongoing operations of the proposed project. The estimates for total direct spend through 2027 are shown in Table 6.1.

Table 6.1
Estimated Total Direct Spend
(\$ Millions)

2023	2024	2025	2026	2027	TOTAL
\$31	\$85	\$85	\$85	\$85	\$371

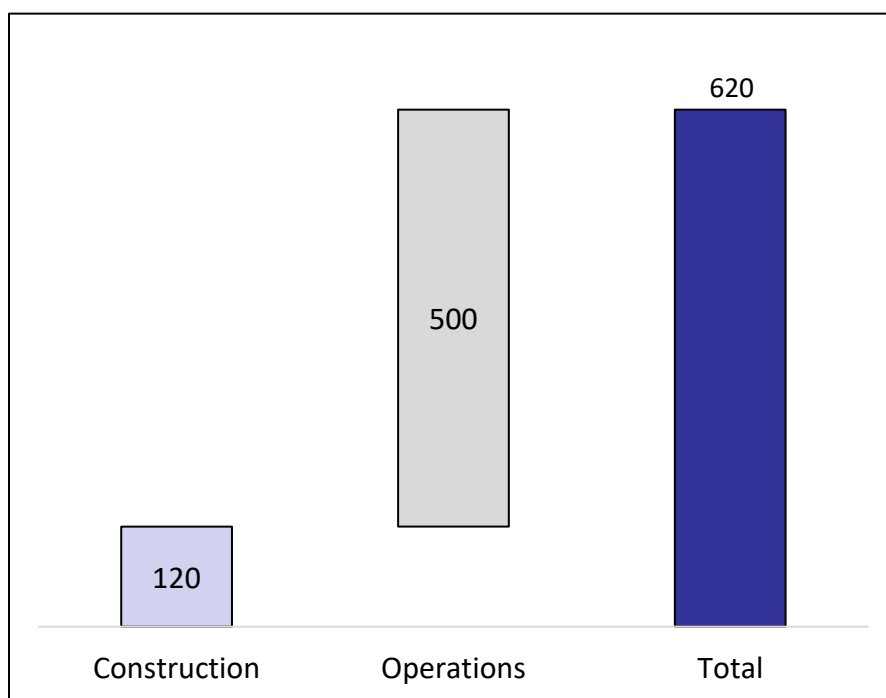
The local economy will benefit from approximately \$370 million in direct spend by 2027. Direct spend within the community will be driven by operations of the new facility beginning in 2024. Additional direct spend will come from constructing the facility. Details regarding the direct spend analysis are cited in Appendix A – Direct Spend Methodology.

As these new monies from construction and ongoing operations ripple through the economy, it creates new jobs both directly on the project site as well as indirectly in the surrounding community. Moreover, these economic activities will generate additional tax revenues for the City. The next sections will provide estimated economic and fiscal benefits to the City.

7. EMPLOYMENT IMPACT

The proposed project is expected to support more than 100 jobs during development. As the project facility is activated, the site is estimated to support approximately 500 jobs. In total the project will support approximately 620 jobs in the City through construction and operations of the facilities, as shown in Figure 7.1.

Figure 7.1
Job Supported by Project Construction and Operations
(Jobs)

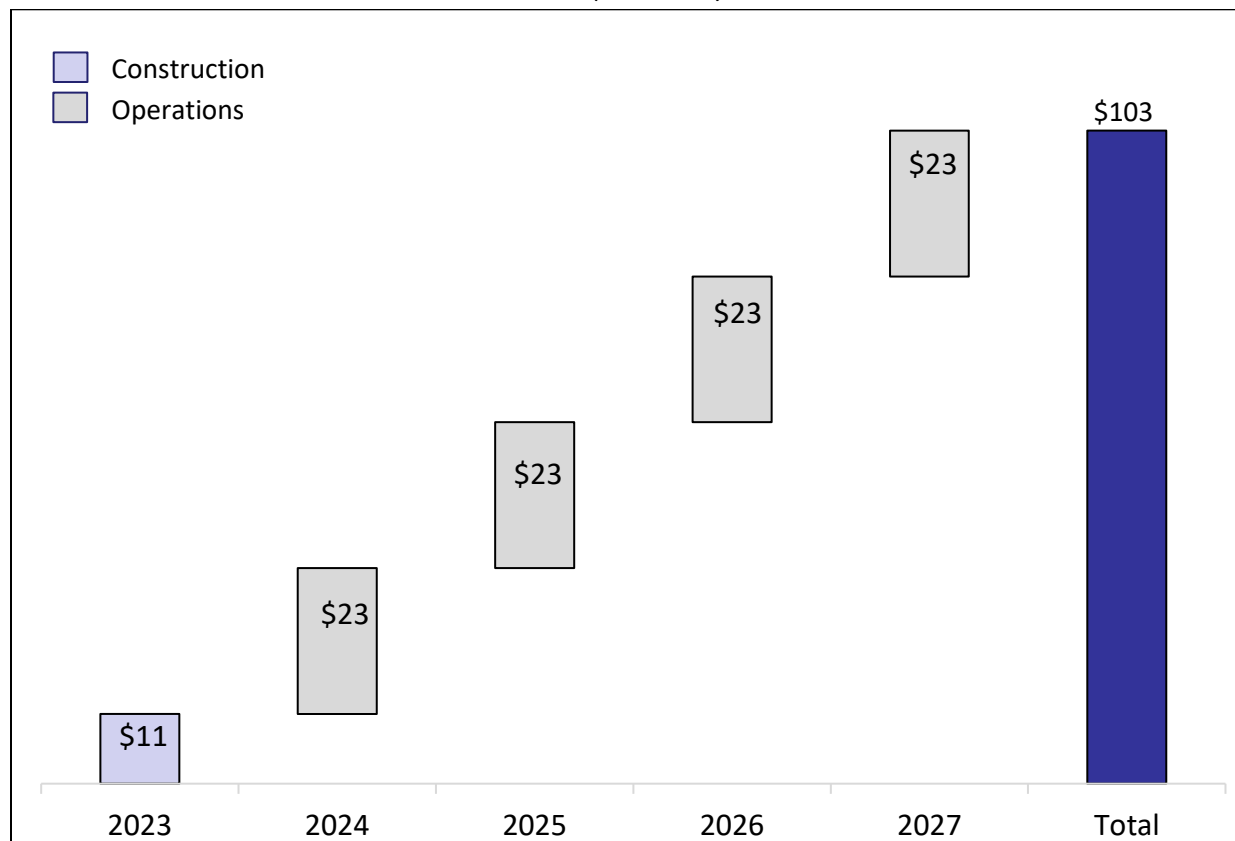


Appendix B – Employment, Personal Earnings, & Output Methodology details the methodology used to calculate additional jobs within the City.

8. PERSONAL EARNINGS IMPACT

The economic activity generated by construction and ongoing operations of the tenants will increase the personal earnings of City residents as the monies generated from the activities circulates through the local economy. The proposed project is projected to increase the earnings of local residents by \$11 million as a result of the construction activities. The business activities of the facility are expected to increase earnings of City residents by \$23 million on a sustained basis beginning in 2024.

Figure 8.1
Personal Earnings Supported by Project Construction and Operations
(\$ Millions)

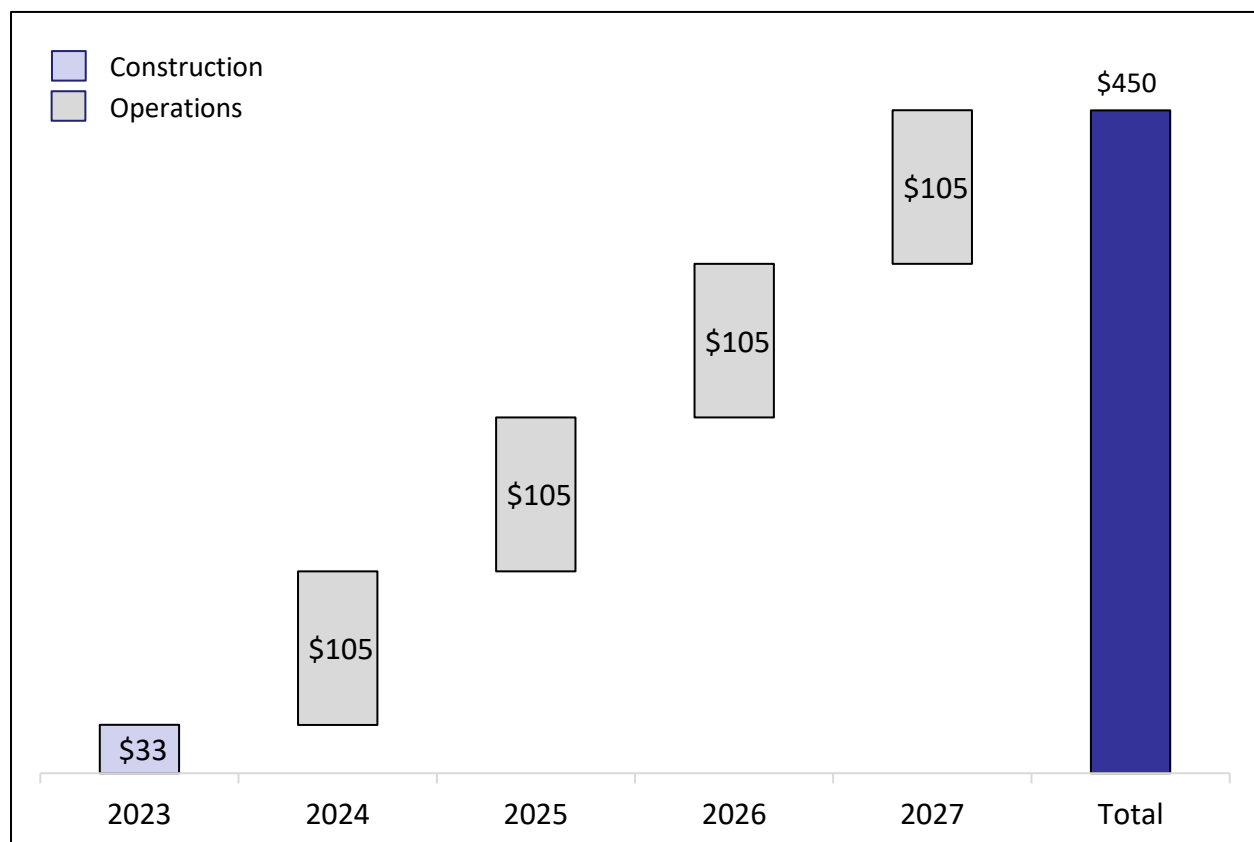


Appendix B – Employment, Personal Earnings, & Output Methodology details the methodology used to calculate earnings in this study.

9. OUTPUT IMPACT

The new monies introduced into the City as a result of the new construction and new business activity taking place will also increase the economic output of the region. Economic output is a measurement of value created through the commercial activity and is akin to Gross State Product (GSP) and Gross Domestic Product (GDP) at the local level. The construction and ongoing business activity of the proposed project is projected to increase the City's economic output by \$450 million cumulatively by 2027. Construction activities will result in approximately \$33 million of economic output. Operations of the tenant are expected to start in 2024 and is expected to increase the economic output within the City by more than \$105 million on an ongoing basis by 2027, as shown in Figure 7.1.

Figure 9.1
Economic Output Supported by Project Construction and Operations
(\$Millions)



Appendix B – Employment, Personal Earnings, & Output Methodology details the methodology used to calculate additional economic activity within the City.

10. TAX REVENUE TO THE CITY

This study reviewed the most recent budget for the City and identified four tax categories that will be impacted by the proposed project. The following tax categories will provide General Fund revenue to the City:

- Property tax;
- One-time sales tax from construction of the Project;
- Ongoing sales tax from project operations; and
- Ongoing sales tax from increased City resident earnings.

The proposed project will produce approximately \$6 million in property and sales tax revenues cumulatively for the City between 2023 and 2027, as shown in Table 10.1. The City can obtain sales tax as a result of materials purchased during construction, point of sales activities of tenant operations, and additional spending as a result of increased earnings.

Table 10.1
City Tax Revenue
(\$ Thousands)

TYPE OF TAX	2023	2024	2025	2026	2027	TOTAL
Property Tax	\$819	\$836	\$853	\$870	\$887	\$4,265
Sales Tax						
Construction	\$124	\$ --	\$ --	\$ --	\$ --	\$124
Point of Sales	\$ --	\$319	\$319	\$319	\$319	\$1,276
Earnings	\$50	\$105	\$105	\$105	\$105	\$470
Subtotal	\$174	\$423	\$423	\$423	\$423	\$1,866
Total	\$993	\$1,259	\$1,276	\$1,293	\$1,310	\$6,131

Appendix C – Tax Revenue Scope & Methodology details the methodology used for calculating each tax category total.

11. CONCLUSION

The proposed project stands to provide meaningful benefits to the City of Long Beach community. The proposed project is expected to inject approximately \$370 million into the community cumulative by 2027. This additional direct spend is expected to stimulate economic activity and support 500 jobs annually directly and indirectly in the City. The proposed project is also expected to support approximately \$103 million in personal earnings produced within the City by 2027. Additionally, the proposed project is projected to support \$6 million in property and sales tax collections cumulatively by 2027.

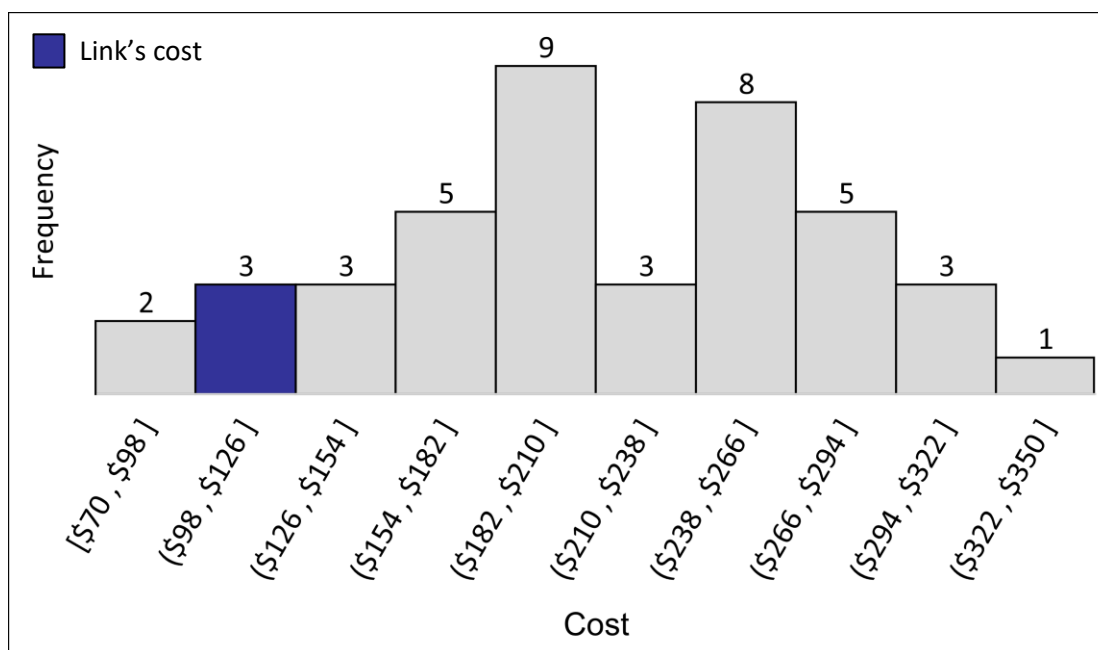
Appendix A – Direct Spend Methodology

The direct spend analysis for the project is comprised of two components:

- Dollars spent in the construction of the facilities; and
- Revenue through on-going operations of the proposed project.

Andrew Chang and Company surveyed current market estimates^{4,5,6} to validate the per sq. ft. construction cost estimate provided by Link Logistics (See Table A.1). Per sq. ft. cost estimates for ongoing operations revenues are based on a survey of top retailers in the U.S. (See Table A.2). The construction cost and revenue per sq. ft. estimates were factored by the project's total active sq. ft. (i.e., sq. ft. currently being utilized/occupied by a tenant). Additional details regarding the methodology used to derive each revenue estimate are listed in Flowchart A.1.

Table A.1
Warehouse Construction Cost Per Square Foot in Western United States



⁴ Shetty, Anush. "U.S. Construction Costs Per Square Foot." *Cumming Insights*, 24 March 2022, <https://ccorpinsights.com/costs-per-square-foot/>. Accessed 28 April 2022.

⁵ Sewell, Cathy. "RLB Construction Cost Report North Americas Q1 2022." *RLB*, 31 March 2022, <https://www.rlb.com/americas/in>

⁶ "U.S.: warehouse construction cost 2022, by city." *Statista*, 6 May 2022, <https://www.statista.com/statistics/830417/construction-costs-of-industrial-warehouses-in-us-cities/>. Accessed 28 April 2022.

Table A.2
Retailer Revenue per Sq. Ft. from U.S. Operations

RETAILER	TOTAL SQ. FT.	TOTAL REVENUE FROM U.S. OPERATIONS	RETAIL REVENUE PER SQ. FT.	WAREHOUSE REVENUE PER SQ. FT.
CVS ⁷	90,500,000	\$303,510,196,809	\$3,354	\$838
Costco Wholesale ⁸	83,200,000	\$146,915,846,402	\$1,766	\$441
Walgreens ⁹	121,027,500	\$116,375,828,345	\$962	\$240
Kroger ¹⁰	179,000,000	\$143,268,873,879	\$800	\$200
Median			\$720.50	\$180
Albertsons ¹¹	113,000,000	\$72,409,964,088	\$641	\$160
Home Depot ¹²	329,000,000	\$144,341,146,142	\$439	\$110
Lowe's ¹³	250,128,000	\$100,006,012,929	\$400	\$100
Target ¹⁴	300,284,000	\$110,141,687,279	\$367	\$92

⁷ "CVS Health Corporation, Form 10-K", SEC.gov, <https://www.sec.gov/Archives/edgar/data/0000064803/000006480322000008/cvs-20211231.htm>. Accessed 28 April 2022.

⁸ "Costco Wholesale Corporation, Form 10-K", SEC.gov, <https://www.sec.gov/Archives/edgar/data/0000909832/000090983221000014/cost-20210829.htm>. Accessed 28 April 2022.

⁹ "Walgreens Boots Alliance, Inc., Form 10-K", SEC.gov, <https://www.sec.gov/Archives/edgar/data/0001618921/000161892121000085/wba-20210831.htm>. Accessed 28 April 2022.

¹⁰ "The Kroger Co., Form 10-K", SEC.gov, <https://www.sec.gov/Archives/edgar/data/0000056873/000155837022004595/kr-20220129x10k.htm>. Accessed 28 April 2022.

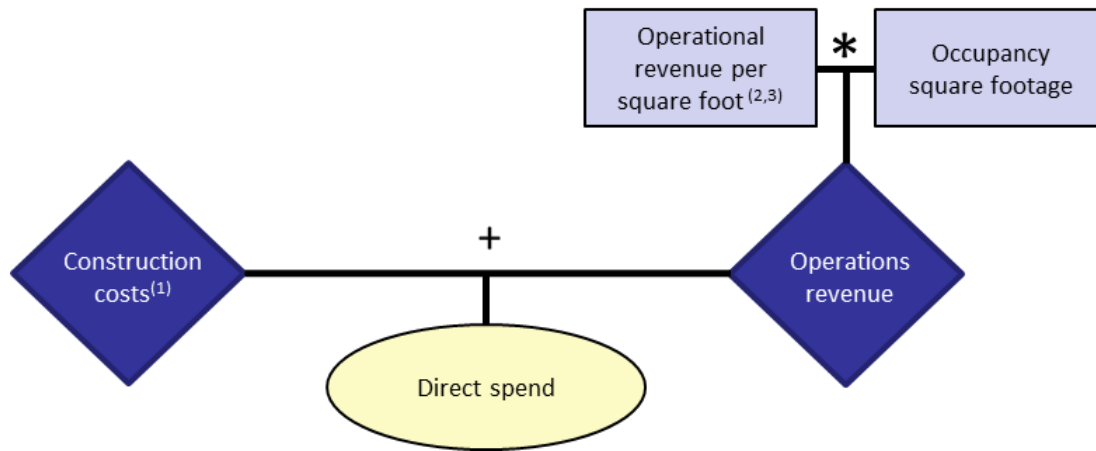
¹¹ "Albertsons Companies, Inc., Form 10-K", SEC.gov, <https://www.sec.gov/Archives/edgar/data/0000056873/000155837022004595/kr-20220129x10k.htm>. Accessed 28 April 2022.

¹² "Home Depot, Inc., Form 10-K", SEC.gov, <https://www.sec.gov/Archives/edgar/data/0000354950/000035495022000070/hd-20220130.htm>. Accessed 28 April 2022.

¹³ "Lowe's Companies, Inc., Form 10-K", SEC.gov, <https://www.sec.gov/Archives/edgar/data/0000060667/000006066722000038/low-20220128.htm>. Accessed 28 April 2022.

¹⁴ "Target Corporation, Form 10-K", SEC.gov, <https://www.sec.gov/Archives/edgar/data/0000027419/000002741922000007/tgt-20220129.htm>. Accessed 28 April 2022.

Flowchart A.1
Direct Spend Methodology



Notes

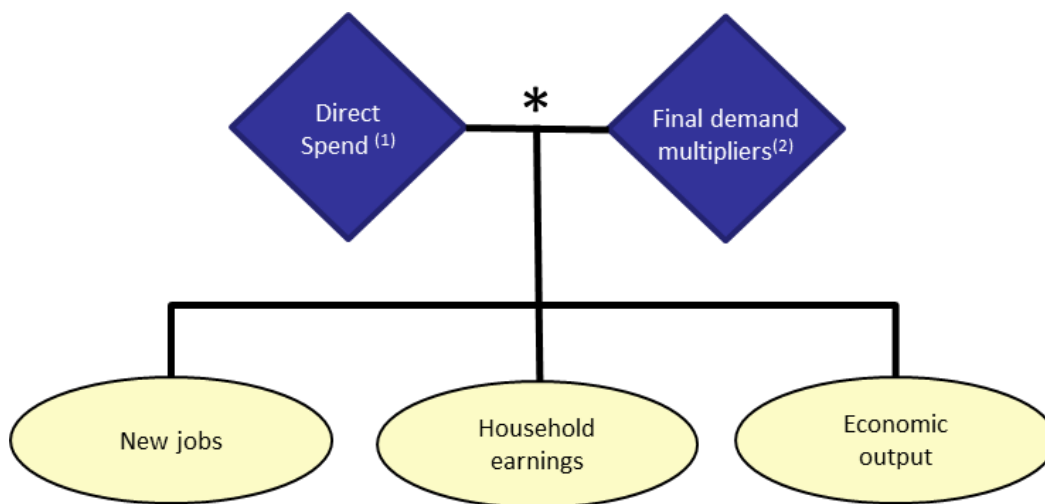
- (1) Construction cost per sq. ft. provided by Link.
- (2) Median revenue per sq. ft. estimates similar to those of top retailers in the U.S. (Table A.2).
- (3) The U.S. consumer price index (CPI)¹⁵ is used to convert the 2015 revenue estimates to a projected 2024 value.

¹⁵ "Inflation | Department of Finance." *Department of Finance*, <https://dof.ca.gov/forecasting/economics/economic-indicators/inflation/>. Accessed 26 July 2022.

Appendix B – Employment, Personal Earnings, & Output Methodology

The economic and fiscal impact analysis includes the total impact in increased employment, personal earnings, and economic output to the City. The approach factored the direct spend of the project with the correlating final demand multiplier (i.e., industry specific multipliers for construction, warehousing, commercial office, and retail) for employment, earnings, and output to calculate the economic and fiscal impact.

*Flowchart B.1
Employment, Earnings, & Output Methodology*



Notes

- (1) Direct spend as calculated in Appendix A – Direct Spend Methodology.
- (2) The final demand regional multipliers (RIMS II) for Los Angeles County, produced by the U.S. Bureau of Economic Analysis, as adjusted for the City of Long Beach (See Appendix D – Multipliers).

Appendix C – Tax Revenue Scope & Methodology

The 2021-22 City of Long Beach Annual Budget was analyzed to determine potential revenue to the City from the proposed project through taxes and fees. Based on the analysis of the City's revenues, it was concluded that the following recurring taxes should be positively impacted by the proposed project:

- Sales tax; and
- Property taxes.

An overview of the calculation for each tax impact is outlined below.

One-Time Sales Tax

One-time sales tax revenue is composed of two components:

- Sales tax revenues from the cost of materials during construction; and
- Sales tax revenue from the increase in personal earnings.

Sales tax revenues from the cost of materials are found by factoring the cost of materials estimated at 50% of the total construction cost, per industry standards,^{16,17} by the statutory city tax rate. Sales tax revenue on earnings is found by first factoring the total construction costs as provided by Link with the earnings multiplier produced by the U.S. Bureau of Economic Analysis (BEA)¹⁸ in order to find the increase in personal earnings resulting from construction of the proposed project. Those earnings are then factored by the effective sales tax rate¹⁹ to find the one-time sales tax revenue. See Flowchart C.1 below for a graphical representation for this approach.

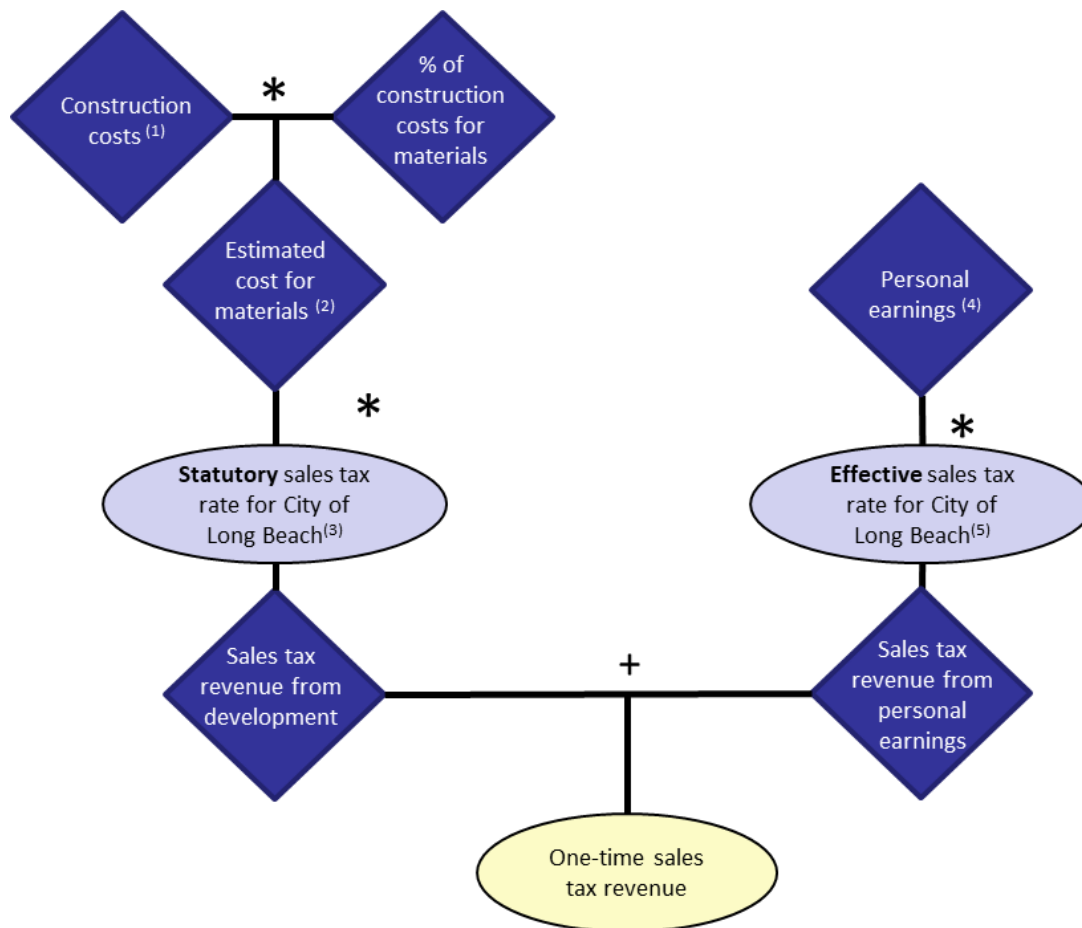
¹⁶ "CLMA Project Labor Cost Allocation," *Construction Labor Market Analyzer*, 2016, <http://myclma.com/wp-content/uploads/2015/02/CLMA-Allocation-of-Project-Cost-2014Oct27.pdf>.

¹⁷ Hedley, George, "Construction Labor Costs – 5 Percent Factor," *Construction Business Owner*, Accessed May 11, 2016, <http://www.constructionbusinessowner.com/topics/accounting/accounting-finance/construction-labor-costs-5-percent-factor>.

¹⁸ "Regional Multipliers," *U.S. Bureau of Economic Analysis*, Series: 2012 U.S. Annual I-O Data and 2020 Regional Data. Region: Los Angeles County, CA.

¹⁹ See "Effective Sales Tax Calculation" at the end of this Appendix (Appendix C – Tax Revenue Scope & Methodology).

Flowchart C.1
One-Time Sales Tax Methodology



Notes

- (1) Construction costs as calculated in Appendix A – Direct Spend Methodology.
- (2) Cost of materials estimated at 50% of total construction costs as provided by the applicant per industry standards.^{20, 21}
- (3) City’s statutory sales tax rate taken from City’s adopted budget FY 2021-23.
- (4) Personal earnings as calculated in Appendix B – Employment, Personal Earnings, & Output Methodology.
- (5) See “Effective Sales Tax Calculation” at the end of Appendix C – Tax Revenue Scope & Methodology for methodology.

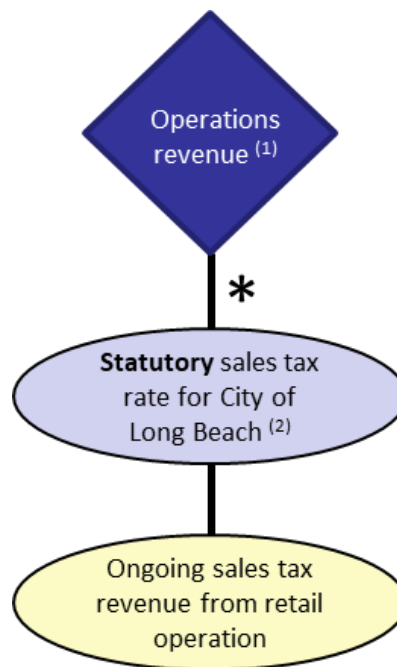
²⁰ “CLMA Project Labor Cost Allocation,” *Construction Labor Market Analyzer*, 2016, <http://myclma.com/wp-content/uploads/2015/02/CLMA-Allocation-of-Project-Cost-2014Oct27.pdf>.

²¹ Hedley, George, “Construction Labor Costs – 5 Percent Factor,” *Construction Business Owner*, Accessed May 11, 2016, <http://www.constructionbusinessowner.com/topics/accounting/accounting-finance/construction-labor-costs-5-percent-factor>.

On-Going Sales Tax from Operations

On-going sales tax revenue is composed of local sales tax revenue from ongoing retail operations. See Flowchart C.2 below for a graphical representation for this approach.

Flowchart C.2
On-Going Sales Tax Methodology



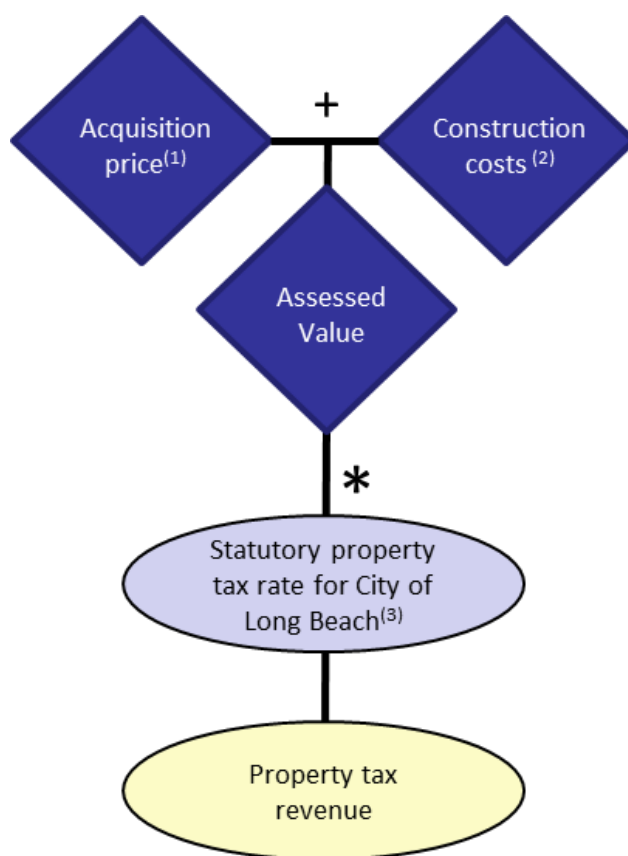
Notes

- (1) Operations revenue as calculated in Appendix A – Direct Spend Methodology.
- (2) City’s statutory sales tax rate taken from City’s adopted budget FY 2021-23.

Property Tax

According to City of Long Beach, California Annual Comprehensive Financial Report, the City retains roughly 1% of a property's assessed value as property tax revenue. Property tax revenue for the proposed project is found by factoring the assessed property value as provided by the applicant, taking into account the 2% growth in value per year, by the 1% tax rate. See Flowchart C.3 below for a graphical representation of this approach.

*Flowchart C.3
Property Tax Methodology*



Notes

(1) Acquisition prices provided by Link.

(2) Construction costs provided by Link.

(3) City's statutory property tax rate obtained from City of Long Beach Annual Comprehensive Financial Report²²

²² <https://www.longbeach.gov/globalassets/finance/media-library/documents/city-budget-and-finance/accounting/comprehensive-annual-financial-report/fiscal-year-2021-annual-report>

Effective Sales Tax Calculation

The effective tax rate is the ratio of sales tax revenues over personal earnings for the City. In order to produce an effective sales tax rate for this study, Andrew Chang & Company determined the total income of City residents by factoring the estimated population and the estimated per capita income for the City for 2020²³. The 2020 City sales tax revenue, as provided by the Adopted Fiscal Year 2022 Budget²⁴, is divided by the total income of City residents to produce an effective sales tax rate. See the equation below.

$$\frac{\text{2020 City Sales Tax Revenue Actuals}}{(\text{Est. 2020 City Population}) \times (\text{Est. 2020 per Capita Income})} = \frac{\$71,600,000}{(466,302) \times (\$33,607)} = 0.46\%$$

²³ <https://www.census.gov/quickfacts/fact/table/longbeachcitycalifornia,US/PST045221>
²⁴ https://www.longbeach.gov/globalassets/finance/media-library/documents/city-budget-and-finance/budget/budget-documents/fy-22-adopted-budget/full-book-print_updated-5-4-22

Appendix D – Multipliers

This study uses the most recent regional RIMS II multipliers produced by the U.S. Bureau of Economic Analysis for Los Angeles County, adjusted to reflect the City of Long Beach, in order to determine the direct and indirect changes in output, earnings, and employment as a result of the proposed project. The industry-specific multipliers used for this study are listed below in Tables D.1, D.2, and D.3.

Table D.1
RIMS II Final Demand Multipliers

	LOS ANGELES COUNTY BASE YEAR FINAL DEMAND MULTIPLIERS	LOS ANGELES COUNTY CURRENT YEAR FINAL DEMAND MULTIPLIERS	CITY OF LONG BEACH ESTIMATED DIRECT EFFECT	CITY OF LONG BEACH ESTIMATED INDIRECT EFFECT	CITY OF LONG BEACH ESTIMATED TOTAL FINAL DEMAND MULTIPLIER
Jobs					
Construction	8.7131	6.7242	3.6440	0.1424	3.7864
Warehousing and storage	9.4711	7.3092	3.9518	0.1553	4.1070
Lessors of nonresidential buildings	4.2869	3.3084	1.2497	0.0952	1.3449
General merchandise stores	13.8726	10.7060	7.7833	0.1351	7.9185
Earnings					
Construction	0.5590	0.5590	0.3401	0.0101	0.3502
Warehousing and storage	0.4576	0.4576	0.2252	0.0107	0.2360
Lessors of nonresidential buildings	3.6959	3.6959	1.6187	0.0961	1.7147
General merchandise stores	0.5080	0.5080	0.2930	0.0099	0.3029
Output					
Construction	1.8788	1.8788	1.0182	0.0398	1.0580
Warehousing and storage	2.0023	2.0023	1.0826	0.0425	1.1251
Lessors of nonresidential buildings	1.6767	1.6767	0.6334	0.0482	0.6816
General merchandise stores	1.8175	1.8175	1.3213	0.0229	1.3443

Table D.2
RIMS II Direct Effect Jobs Multipliers

Construction	1.8453
Warehousing and storage	1.8496
Lessors of nonresidential buildings	2.6473
General merchandise stores	1.3755

Table D.2
RIMS II Direct Effect Jobs Multipliers

Construction	1.6435
Warehousing and storage	2.0317
Lessors of nonresidential buildings	2.2833
General merchandise stores	1.7340