



Airports



Airport Master Plan

Brown Field
Municipal Airport

Draft

Working Paper 6—
Financial Feasibility
Analysis and Capital
Financing Plan

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6.1 Economic Impact Analysis

Introduction

The Financial Feasibility Analysis and Capital Financing Plan Working Paper (Working Paper 6) summarizes the findings from the economic impact analysis for Brown Field Municipal Airport (SDM or Airport). The analysis presented herein focuses on the existing conditions. Potential impacts from future development scenarios will follow subsequently, as alternatives from the Master Plan are developed. The economic effects include a combination of the Airport's facility operations, and tenant business operations.

An economic multiplier analysis looks at how impacts resulting from a business operation or a site location (such as an airport) do not limit themselves to the activity that occurs on-site. In order for an airport to operate, the airport and all of its business tenants need to initiate supplier relationships with other businesses.

These suppliers support airport activities by addressing a wide range of needs such as capital equipment, utilities, commodities, business support, and other services. In addition, the employed workers will create economic activity through household spending. A comprehensive documentation of how an economic engine, such as an airport, impacts a geographic area accounts for these supplier relationships and household spending by estimating their economic multipliers.

Using an input-output model and other data sources, this section identifies not only the direct effects from these activities, but the indirect and induced multiplier effects as well. These multipliers result from the aforementioned ancillary economic activity generated by airport operations.

Economic Multiplier Effect Definitions

The analysis calculated the multiplier impacts based on three economic measures – employment, industry output, and labor income. These measures are defined as follows:

- **Employment indicates** the number of jobs supported by airport operations and tenants on an ongoing basis. Employment includes both direct on-site airport jobs, and off-site jobs generated through multiplier effects.
- **Industry output** represents the sum of all economic activity generated by airport and ancillary activities. This activity includes all commodity inputs, labor income, property income, and other value added components.
- **Labor income** represents the income generated through both self-employment, and wage- and-salary employee compensation.

The multiplier impacts for these measures come from the Type Social Accounting Matrix (Type SAM) multipliers. These multipliers include the direct, indirect, and induced impacts. These multiplier descriptions are as summarized below.

- **Direct impacts** represent the jobs and other economic impacts that are directly generated on airport property on an annual basis. These impacts include jobs that are created at the airport site.
- **Indirect impacts** represent the jobs and other economic effects that will potentially be generated elsewhere in San Diego County (County) as a result of the activities on Airport property. These indirect impacts result from supplier purchases.
- **Induced impacts** represent the economic effects that will be generated through household purchases made the County as a result of employee spending. These induced impacts most typically occur in retail and other local-serving industry categories such as personal services, education, and health care.

Regional Context

The air transportation sector in the County was directly responsible for 1,926 jobs in 2015. This includes a combination of scheduled air transportation, nonscheduled air transportation, and both freight and passenger transport. In addition, transportation support services and sightseeing transportation added another 5,714 jobs. These services include airport administration; support services for ground, rail, water, and air transportation; and scenic and sightseeing transportation for ground, rail, water, and air.¹

It should be noted that this total does not account for other jobs that are supported and facilitated by transportation. This would include both suppliers and business-to-business vendors, and hospitality and other industries that rely on air transportation to bring customers and products into the San Diego regional market.

Countywide, air transportation and transportation support services generate total direct economic activity valued at nearly \$1.7 billion in industry output. In addition, air transportation and transportation support services directly account for over \$493.7 million in labor income (both employee compensation and proprietor income). **Table 6.1** provides a summary of economic activity for the industry.

Table 6.1 – Summary of Economic Activity for Air Transportation and Transportation Support Services

Transportation Indicators	Air Transportation	Transportation Support and Sightseeing Services	Total
Employment	1,926.4	5,714.1	7,640.4
Output	\$742,598,848	\$916,970,240	\$1,659,569,088
Labor Income	\$130,796,898	\$362,948,616	\$493,745,514

Source: ADE, Inc.; data from IMPLAN Pro input-output model.

Notes: Economic effects only include direct airport operations and administration. The data does not include tenant activities. Air transportation includes sectors defined as part of NAICS code 481. Transportation support and sightseeing services include all sectors defined as part of NAICS codes 487 and 488.

¹ The data from the IMPLAN model uses a sectoring system that differs from the more commonly used North American Industry Classification System (NAICS). Because of this, the transportation support services sectors (NAICS code 488) were combined with scenic and sightseeing transportation (NAICS code 487). This aggregation also results in different modes of transportation services being combined.

Economic Multiplier Findings

The economic impacts summarized in this section include both the Airport operations and impacts from tenant businesses on Airport property. Due to the overlap of administrative functions for Montgomery–Gibbs Executive Airport (MYF) and SDM, the impacts from administrative functions were proportionally allocated based on the number of employees based at each airport.

The operational findings utilize information provided by the City of San Diego Airports Division (City), while the calculated impacts from airport tenant activities utilize a combination of the City’s information, site visits, phone calls, and business database information from InfoUSA/Salesgenie. The data from the City covers the year 2016.

In order to calculate the multiplier effects for the operations, the categorical expenditures, revenues, and labor income were entered into an input–output model. The model uses a dataset that estimates the multiplier impacts across the County, and the model was customized to account for operational characteristics unique to both airports.

For the tenant businesses, the impacts are based on the job counts for each establishment. The number of jobs were entered into the model, which calculated the multipliers and the other economic effects.

Multiplier Effects: Airport Operations

As shown in **Table 6.2**, the operations and administrative functions for SDM directly supports 25 jobs (six jobs from the City and 19 jobs with the Federal Aviation Administration [FAA]). These jobs have a multiplier effect that creates 1.40 additional off-site jobs in the County for every job supported at the Airport. The supplier relationships needed to keep and operate the Airport are represented through indirect effects, while the induced effects are created by employee and institutional spending. Together, these secondary (indirect and induced) effects create an additional 35.1 jobs for a combined 60.1 jobs. This is a significant amount of ancillary activity and does not account for the other economic activities that depend on air transportation as an infrastructure asset.

Table 6.2 – Economic Multiplier Effects
Brown Field Municipal Airport Operations, 2016

Impact Category	Direct Effects	Indirect Effects	Induced Effects	Total Effects	Multiplier Value
Employment	25.0	16.6	18.5	60.1	2.40
Labor Income	\$1,510,670	\$1,005,385	\$1,037,843	\$3,553,898	2.35
Industry Output	\$4,341,192	\$2,320,040	\$2,694,152	\$9,355,384	2.16

Source: ADE, Inc.; data from IMPLAN Pro input–output model and City of San Diego Airports Division.

Notes: Economic effects only include airport operations and administration, including Airports Division and Federal Aviation Administration personnel. The impact totals do not include tenant activities.

The economic value of airport activities is expressed as industry output, and the direct output for SDM totals \$4.3 million. The multiplier effect for industry output creates an economic impact of \$9.4 million. This means that every dollar of economic activity generated at the Airport will generate an additional \$1.16 across the rest of the County’s economy. In addition, the labor income directly generated by Airport activity totals about \$1.5 million. In turn, this supports another \$3.6 million in income multiplier effects. For every dollar in labor income generated at the Airport, an additional \$1.35 is supported elsewhere in the County. The more detailed secondary (indirect and induced) multiplier effects by sector are shown in Appendix Table A.1.

Multiplier Effects: Airport Tenants

Tenant businesses located on the Airport property account for about 35 jobs. This total only includes those jobs that were verified, by direct contact with either the business or using a database listing with InfoUSA (see **Table 6.3**). The Airport property includes the buildings inside and adjacent to the secured areas, as well as additional auto-related businesses located along Pogo Way. The tenant businesses are largely concentrated in aviation support, and automotive services. It should be noted that ADE has not been able to make contact with some of the businesses identified in the InfoUSA database, and those unverified businesses were not included in the analysis.

The distribution of the tenant businesses shows much of the economic activity and nearly half of the jobs coming from transportation support services. Other tenant activities on the Airport property include motor vehicle and parts dealers, non-store retailers, repair services, and food service.

Table 6.3 – SDM Tenants and Direct Economic Effects by NAICS Code

NAICS Code	Description	Direct Employment	Direct Industry Output	Direct Labor Income
	Total	35.0	\$4,812,731	\$1,911,817
441	Motor Vehicle and Parts Dealers	5.0	\$663,178	\$319,110
454	Nonstore Retailers	4.0	\$516,591	\$101,387
487-488	Transportation Support Services and Sightseeing Transportation	17.0	\$2,753,194	\$1,086,574
712	Museums, Historical Sites, and Similar Institutions	1.0	\$87,728	\$46,524
722	Food Services and Drinking Places	3.0	\$265,056	\$67,679
811	Repair and Maintenance	5.0	\$526,984	\$290,543

Source: ADE, Inc.; data from IMPLAN Pro input-output model, InfoUSA/Salesgenie, and City of San Diego Airports Division.

Notes: Economic effects only include tenant activities.

As shown in **Table 6.4**, the tenant businesses create a collective multiplier effect that increases the total job impact to 74.2 jobs. With the existing tenant mix, every tenant job at the Airport creates an additional 1.12 jobs elsewhere in the County. The industry output from tenant businesses directly accounts for \$4.8 million in economic activity, with a total value of \$10.5 million after accounting for the multiplier effects. The estimated labor income from tenant businesses totals \$1.9 million, with a total of \$4.2 million after accounting for the multiplier effects. The more detailed secondary (indirect and induced) multiplier effects by sector are shown in Appendix Table A.2.

**Table 6.4 – Economic Multiplier Effects
SDM Tenants, 2016**

Impact Category	Direct Effects	Indirect Effects	Induced Effects	Total Effects	Multiplier Value
Employment	35.0	12.2	27.0	74.2	2.12
Labor Income	\$1,911,817	\$703,838	\$1,553,697	\$4,169,352	2.18
Industry Output	\$4,812,731	\$1,799,793	\$3,881,258	\$10,493,782	2.18

Source: ADE, Inc.; data from IMPLAN Pro input-output model, InfoUSA/Salesgenie, and City of San Diego Airports Division.

Notes: Economic effects only include tenant activities.

Multiplier Effects: Aggregate Total

Altogether, the combined direct job impact of SDM totals 60 jobs. As shown in **Table 6.5**, the Airport operations and tenant activities create a collective multiplier effect that increases the total job impact to 134 jobs. As currently situated, every job on the Airport property creates an additional 1.24 jobs elsewhere in the County. The industry output from tenant businesses directly accounts for \$9.2 million in economic activity, with a total value of \$19.4 million after accounting for the multiplier effects. The estimated labor income from tenant businesses totals \$3.4 million, with a total of \$7.7 million after accounting for the multiplier effects.

Table 6.5 – Economic Multiplier Effects

SDM Combined Operations (Administration and Tenants), 2016

Impact Category	Direct Effects	Indirect Effects	Induced Effects	Total Effects	Multiplier Value
Employment	60.0	28.8	45.5	134.3	2.24
Labor Income	\$3,422,486	\$1,709,223	\$2,591,541	\$7,723,250	2.26
Industry Output	\$9,153,923	\$4,119,833	\$6,575,410	\$19,849,166	2.17

Source: ADE, Inc.; data from IMPLAN Pro input-output model, InfoUSA/Salesgenie, and City of San Diego Airports Division.

Multiplier Effects: Benefits to Off-Site Businesses

When combining the indirect and induced multiplier effects from the Airport and tenant business operations, these secondary impacts generate 74 jobs throughout the County. All of these jobs and other economic effects occur in a combination of business-to-business supplier industries and local-serving sectors.

As shown in **Table 6.6**, the combined secondary economic effects support a wide range of industries, with the largest secondary employment effects occurring in transportation, retail trade, administrative services, health care, and the public sector. Included in the Appendix are more detailed tables showing economic effects at the three-digit North American Industry Classification System (NAICS) code equivalent level of detail.

**Table 6.6 – Summary of Secondary (Indirect and Induced) Economic Effects by Industry Sector
SDM Combined Operations (Administration and Tenants), 2016**

NAICS Code	Description	Secondary Jobs	Secondary Output	Secondary Income
	Total	74.3	\$10,695,243	\$4,300,764
11	Crop and Animal Production	0.1	\$9,045	\$4,062
21	Mining, Quarrying, and Oil and Gas Extraction	0.3	\$31,473	\$8,751
22	Utilities	0.1	\$67,187	\$13,519
23	Construction	2.2	\$384,993	\$135,359
31	Manufacturing	0.5	\$202,929	\$37,932
42	Wholesale Trade	1.7	\$434,452	\$145,563
44	Retail Trade	6.4	\$576,288	\$238,329
48	Transportation and Warehousing	8.3	\$1,097,110	\$402,703
51	Information	1.0	\$521,485	\$100,392
52	Finance and Insurance	3.7	\$816,614	\$241,183
53	Real Estate and Rental and Leasing	3.3	\$1,482,763	\$152,725
54	Professional, Scientific, and Technical Services	5.4	\$793,050	\$417,467
55	Management of Companies and Enterprises	0.8	\$191,685	\$99,023
	Administrative and Support and Waste Management and Remediation Services			
56	Administrative and Support and Waste Management and Remediation Services	7.7	\$549,531	\$291,589
61	Educational Services	1.5	\$107,281	\$63,408
62	Health Care and Social Assistance	6.9	\$650,256	\$394,790
71	Arts, Entertainment, and Recreation	1.6	\$124,567	\$48,276
72	Accommodation and Food Services	5.4	\$345,089	\$141,558
81	Other Services (except Public Administration)	5.3	\$454,307	\$223,433
92	Government and Other	12.2	\$1,855,140	\$1,140,701

Source: ADE, Inc.; data from IMPLAN Pro input-output model, InfoUSA/Salesgenie, and City of San Diego Airports Division.

6.2 Methodology

Economic Impact Analysis

The economic impact analysis in this report focused on identifying the broad range of potential effects from the Airport operations and tenant activities by tracing how those activities and the resultant expenditures and worker income would interact with the County's economy and stimulate additional activity. This is broadly known as a "multiplier effect" and one of the most common methods of calculating this effect entails using an input-output model.

Input-output models are well-established analytical tools used by private companies and government agencies to help identify how economic effects in one part of the economy create additional impacts through the economy. Input-output models can interpret effects for a wide range of different economic sectors, and differentiate between how economic measures and trade patterns vary between different regions.

IMPLAN Pro Input-Output Model

The computational application used to interpret the data and generate the impact calculations is the IMPLAN Pro input-output model. This application is developed and maintained by the IMPLAN Group, LLC, and has been refined and updated since it originated as a US Forest Service project in the mid-1970s. Since that time, the IMPLAN model has become one of the leading input-output modeling applications available, with citations found in numerous economic impact analyses and other similar studies.

The IMPLAN Pro model calculates impacts and buyer-supplier relationships for 536 individual industry and commodity categories. The industry classification system used in the IMPLAN model roughly approximates, but still differs significantly from the commonly used Standard Industry Classification (SIC) and NAICS.

The economic impacts estimated by the model fall into one of three categories -- direct, indirect, and induced. These impacts are calculated based on annual impacts. In this analysis, direct impacts represent the estimated jobs, labor income, and industry output that result directly from the Airport and tenant activities. Indirect impacts represent the estimated effects that result from demand for commodity and service inputs. Examples of supplier industries include business services, capital equipment, and other services. Induced impacts represent the potential effects resulting from household spending at local businesses by employed workers. These impacts generally affect retail businesses, health services, public services, and personal services providers.

Model Customization

One of the more powerful functions of the IMPLAN pro model is the ability to customize the model data. This customization allows the analysis to better approximate the actual operational characteristics for a business operation or industry sector being analyzed. For this analysis, the model was customized for analyzing the Airport operations managed by the City. Other parts of the analysis utilized the default model datasets.

The input-output matrices that form the main database come from the 2015 Bureau of Labor Statistics dataset, and the analysis used an individual county-specific dataset for the County. These matrices contain the assumptions regarding economic output per employee, the amount of commodity input that is purchased locally, and the production functions, which define the inputs and supplier services for each industry category.

The input-output model data file for the County contains default assumptions regarding the economic relationships between different industries. In particular, the default data contains worker productivity measures and industry purchase pattern data for each individual sector. In addition, the model has default data about the proportion for each individual commodity/service category that is purchased locally rather than imported from outside of the County.

Airport Operational Impacts

In order to calculate the Airport's operational impacts, the analysis was divided into two separate parts – the Airport operations directly managed by the City, and the operations that fall under the FAA. The analysis used the IMPLAN Pro input-output model to make the calculations.

For the operations managed by the City, ADE acquired detailed expenditure and payroll information from the City itself. This information was used to compile an expenditure profile of the Airport operations, which tracks the extent to which the Airport operations create supplier relationships with other businesses.

Because many of the operational data for the City covers all administrative activities for both SDM and MYF, the analysis made the calculations for all operations. The allocation of economic impacts by individual airport proportionally divided the operational impacts based on the number of workers based at each airport – 16 workers at MYF and six workers at SDM.

ADE used this information as the basis for customizing the IMPLAN Pro model, and ensuring that the results will be more specific to the City's operations. Once the profile was done, the expenditure categories from the City were matched up with industry categories from the IMPLAN Pro model, which uses a sectoring scheme consisting of 536 different categories. For those expenditures categories that had a broader description, ADE assigned the expenditures to multiple IMPLAN categories. These expenditures were proportionally assigned based on the default purchase pattern data from the IMPLAN model for the transportation support services and sightseeing transportation sector.

The expenditure pattern used in the analysis is shown in **Table 6.7** below. The coefficients represent the overall percentage of operational revenues corresponding to an expense category. The IMPLAN model also geographically assigns the percentage of these expenditures that occur within the County using data on regional purchase percentages. It should be noted that the expenditures are categorized using the IMPLAN coding system.

Because no detailed staffing or payroll information was available for personnel employed by the FAA, the analysis was based on an assumption of 19 FAA workers based at the Airport. The employment served as the primary data input into the IMPLAN model for those workers. The impacts and labor income are based on the benchmark averages for the IMPLAN sector that aggregates transportation support services (NAICS code 488) and sightseeing transportation (NAICS code 487).

The overall operational impacts for the Airport combined the results from the City's operations and the estimated impacts from the assumed FAA employment. It should be noted that the analysis does not include city police and fire services, and excludes the U.S. Border Patrol workers stationed on the north side of the Airport perimeter.

Table 6.7 – Expenditure Pattern for Airport Operations Used for IMPLAN Model

IMPLAN Code	Industry Description	Coefficient
49	Electric power transmission and distribution	0.027155
50	Natural gas distribution	0.000066
51	Water, sewage and other systems	0.009979
58	Construction of other new nonresidential structures	0.008548
64	Maintenance and repair construction of highways, streets, bridges, and tunnels	0.008740
106	Bottled and canned soft drinks & water	0.000055
114	Narrow fabric mills and schiffli machine embroidery	0.000010
129	Other cut and sew apparel manufacturing	0.001507
154	Printing	0.002267
157	Asphalt paving mixture and block manufacturing	0.000200
159	Petroleum lubricating oil and grease manufacturing	0.000002
164	Other basic inorganic chemical manufacturing	0.000966
205	Cement manufacturing	0.000000
236	Handtool manufacturing	0.000626
255	Plumbing fixture fitting and trim manufacturing	0.000392
277	Air conditioning, refrigeration, and warm air heating equipment manufacturing	0.000457
287	Pump and pumping equipment manufacturing	0.000083
301	Electronic computer manufacturing	0.000141
307	Audio and video equipment manufacturing	0.000000
326	Lighting fixture manufacturing	0.004681
336	Storage battery manufacturing	0.000056
387	Office supplies (except paper) manufacturing	0.001551
388	Sign manufacturing	0.001748
391	Fasteners, buttons, needles, and pins manufacturing	0.000009
395	Wholesale trade	0.013671
402	Retail - Gasoline stores	0.002418
412	Transit and ground passenger transportation	0.000547
415	Couriers and messengers	0.001301
418	Periodical publishers	0.000067
419	Book publishers	0.000042
422	Software publishers	0.000932
426	Cable and other subscription programming	0.000100
427	Wired telecommunications carriers	0.007493
428	Wireless telecommunications carriers (except satellite)	0.001573
430	Data processing, hosting, and related services	0.000823
437	Insurance carriers	0.009210
442	Automotive equipment rental and leasing	0.000000
445	Commercial and industrial machinery and equipment rental and leasing	0.018318
447	Legal services	-0.000007
448	Accounting, tax preparation, bookkeeping, and payroll services	0.000581

IMPLAN Code	Industry Description	Coefficient
449	Architectural, engineering, and related services	0.090308
451	Custom computer programming services	0.006928
453	Other computer related services, including facilities management	0.039346
457	Advertising, public relations, and related services	0.000101
463	Facilities support services	0.000005
465	Business support services	0.006474
466	Travel arrangement and reservation services	0.003624
467	Investigation and security services	0.025557
468	Services to buildings	0.006112
469	Landscape and horticultural services	0.011546
471	Waste management and remediation services	0.010913
474	Other educational services	0.001226
502	Limited-service restaurants	0.000252
507	Commercial and industrial machinery and equipment repair and maintenance	0.013429
512	Other personal services	0.000477
515	Business and professional associations	0.001440
518	Postal service	0.000082
526	Other local government enterprises	0.041565
533	Local government	0.067740

Airport Tenant Impacts

In addition to the impacts from Airport operations, the analysis also looked at the existing tenants for SDM. The tenant impacts only include those business operations located within the Airport property. The calculations do not include any of the other businesses located directly adjacent to the Airport boundary.

As a first step, the project team compiled a list of the businesses located at the Airport. This list was assembled from a combination of sources. For SDM, the City provided a list of tenants. Subsequent field visits to the Airport property found additional businesses that were not included in the original tenant list.

For third party verification of the business tenants, their contact information, and the number of employees, ADE purchased business database listings for the physical addresses located at the Airport from Salesgenie/InfoUSA. This database utilizes information from credit reports and other sources.

Verification of the tenant listings was done by either directly contacting businesses from the tenant list, the Salesgenie/InfoUSA listings, and/or looking up any available websites. The analysis excluded disconnected phone numbers, and businesses that have their primary base of operations located off-site. The analysis also did not include businesses whose presence at the Airport could not be verified by phone contact or site visit.

In order to calculate the tenant impacts, the analysis relied on entering the job counts for each type of tenant business. The job counts came from either direct contact with the businesses, or using the information from the Salesgenie/InfoUSA database. The categorical assignments by industry sector

came from the six-digit NAICS code found in the Salesgenie/InfoUSA database and any other information gained through direct contact with the businesses. For data entry into the IMPLAN model, the industry sectors for each tenant business were assigned to the IMPLAN sector that provided the match for the NAICS codes.

The IMPLAN model calculations utilized the benchmark productivity defaults for each business category. The dataruns combined the impacts for all of the tenant businesses.

Appendix A – Tables

Table A.1 – Detailed Secondary (Indirect and Induced) Multiplier Effects for Airport Operations

NAICS Code	Description	Secondary Jobs	Secondary Output	Secondary Income
	Total	35.1	\$5,014,192	\$2,043,229
111	Crop Production	0.0	\$2,751	\$1,262
112	Animal Production and Aquaculture	0.0	\$650	\$154
113	Forestry and Logging	0.0	\$2	\$0
114	Fishing, Hunting and Trapping	0.0	\$55	\$27
115	Support Activities for Agriculture and Forestry	0.0	\$425	\$293
211	Oil and Gas Extraction	0.0	\$3,493	\$516
212	Mining (except Oil and Gas)	0.0	\$1,529	\$240
213	Support Activities for Mining	0.1	\$11,206	\$3,795
221	Utilities	0.0	\$32,953	\$6,657
23	Construction	1.1	\$182,598	\$64,472
311	Food Manufacturing	0.0	\$5,759	\$940
312	Beverage and Tobacco Product Manufacturing	0.0	\$11,689	\$1,495
313	Textile Mills	0.0	\$17	\$2
314	Textile Product Mills	0.0	\$117	\$29
315	Apparel Manufacturing	0.0	\$494	\$187
316	Leather and Allied Product Manufacturing	0.0	\$4	\$1
321	Wood Product Manufacturing	0.0	\$856	\$251
322	Paper Manufacturing	0.0	\$1,672	\$310
323	Printing and Related Support Activities	0.0	\$4,882	\$1,361
324	Petroleum and Coal Products Manufacturing	0.0	\$4,965	\$238
325	Chemical Manufacturing	0.0	\$26,324	\$3,227
326	Plastics and Rubber Products Manufacturing	0.0	\$1,495	\$306
327	Nonmetallic Mineral Product Manufacturing	0.0	\$3,771	\$802
331	Primary Metal Manufacturing	0.0	\$175	\$22
332	Fabricated Metal Product Manufacturing	0.0	\$3,496	\$1,047
333	Machinery Manufacturing	0.0	\$5,090	\$918
334	Computer and Electronic Product Manufacturing	0.0	\$5,357	\$1,408
335	Electrical Equipment, Appliance, and Component Manufacturing	0.0	\$1,274	\$188
336	Transportation Equipment Manufacturing	0.0	\$11,114	\$3,283
337	Furniture and Related Product Manufacturing	0.0	\$344	\$97
339	Miscellaneous Manufacturing	0.0	\$3,096	\$950
42	Wholesale Trade	0.8	\$199,618	\$66,882
441	Motor Vehicle and Parts Dealers	0.2	\$30,398	\$14,627
442	Furniture and Home Furnishings Stores	0.1	\$9,832	\$3,842
443	Electronics and Appliance Stores	0.1	\$6,000	\$5,624
444	Building Material and Garden Equipment and Supplies Dealers	0.2	\$20,044	\$8,004
445	Food and Beverage Stores	0.5	\$37,965	\$17,498
446	Health and Personal Care Stores	0.2	\$17,949	\$8,804
447	Gasoline Stations	0.1	\$10,104	\$6,445
448	Clothing and Clothing Accessories Stores	0.3	\$23,223	\$7,135
451	Sporting Goods, Hobby, Musical Instrument, and Book Stores	0.1	\$7,600	\$3,409
452	General Merchandise Stores	0.5	\$41,346	\$15,948
453	Miscellaneous Store Retailers	0.3	\$11,406	\$6,105
454	Nonstore Retailers	0.3	\$38,097	\$7,477

NAICS Code	Description	Secondary Jobs	Secondary Output	Secondary Income
481	Air Transportation	0.0	\$15,483	\$2,716
482	Rail Transportation	0.0	\$855	\$318
483	Water Transportation	0.0	\$267	\$26
484	Truck Transportation	0.2	\$34,823	\$10,872
485	Transit and Ground Passenger Transportation	0.1	\$8,580	\$4,229
486	Pipeline Transportation	0.0	\$228	\$111
487-488	Transportation Support Services and Sightseeing	1.5	\$244,793	\$96,610
492	Couriers and Messengers	2.0	\$225,162	\$78,297
493	Warehousing and Storage	0.3	\$28,335	\$12,015
511	Publishing Industries (except Internet)	0.1	\$33,358	\$9,892
512	Motion Picture and Sound Recording Industries	0.0	\$7,069	\$1,151
515	Broadcasting (except Internet)	0.0	\$22,433	\$8,527
517	Telecommunications	0.2	\$133,706	\$14,818
518	Data Processing, Hosting, and Related Services	0.0	\$12,916	\$4,457
519	Other Information Services	0.0	\$14,161	\$2,719
521	Monetary Authorities-Central Bank	0.2	\$70,414	\$17,301
522	Credit Intermediation and Related Activities	0.2	\$34,444	\$16,337
523	Securities, Commodity Contracts, and Other Financial Investments and Related Activities	0.6	\$87,844	\$27,622
524	Insurance Carriers and Related Activities	0.5	\$143,960	\$40,636
525	Funds, Trusts, and Other Financial Vehicles	0.1	\$35,335	\$7,465
531	Real Estate	1.1	\$571,561	\$44,895
532	Rental and Leasing Services	0.2	\$50,463	\$19,850
533	Lessors of Nonfinancial Intangible Assets	0.0	\$11,277	\$382
541	Professional, Scientific, and Technical Services	2.8	\$415,222	\$222,486
551	Management of Companies and Enterprises	0.4	\$84,501	\$43,653
561	Administrative and Support Services	3.9	\$237,249	\$137,889
562	Waste Management and Remediation Services	0.2	\$51,023	\$15,797
611	Educational Services	0.7	\$48,403	\$28,646
621	Ambulatory Health Care Services	1.4	\$167,328	\$107,406
622	Hospitals	0.4	\$64,206	\$34,518
623	Nursing and Residential Care Facilities	0.5	\$29,219	\$17,893
624	Social Assistance	0.8	\$33,020	\$18,565
711	Performing Arts, Spectator Sports, and Related Industries	0.3	\$25,162	\$10,383
712	Museums, Historical Sites, and Similar Institutions	0.0	\$2,617	\$1,388
713	Amusement, Gambling, and Recreation Industries	0.3	\$27,414	\$9,500
721	Accommodation	0.0	\$2,728	\$990
722	Food Services and Drinking Places	2.4	\$152,571	\$62,841
811	Repair and Maintenance	0.7	\$77,335	\$41,785
812	Personal and Laundry Services	0.9	\$39,678	\$28,753
813	Religious, Grantmaking, Civic, Professional, and Similar Organizations	0.6	\$90,860	\$29,419
814	Private Households	0.3	\$4,392	\$4,391
92	Government and Other	5.7	\$892,563	\$539,403

Source: ADE, Inc.; data from IMPLAN Pro input-output model, InfoUSA/Salesgenie, and City of San Diego Airports Division.

Table A.2 – Detailed Secondary (Indirect and Induced) Multiplier Effects for Airport Tenants

NAICS Code	Description	Secondary Jobs	Secondary Output	Secondary Income
	Total	39.2	\$5,681,051	\$2,257,535
111	Crop Production	0.1	\$3,696	\$1,694
112	Animal Production and Aquaculture	0.0	\$791	\$183
113	Forestry and Logging	0.0	\$3	\$0
114	Fishing, Hunting and Trapping	0.0	\$78	\$39
115	Support Activities for Agriculture and Forestry	0.0	\$594	\$410
211	Oil and Gas Extraction	0.0	\$3,521	\$520
212	Mining (except Oil and Gas)	0.0	\$1,657	\$273
213	Support Activities for Mining	0.1	\$10,067	\$3,409
221	Utilities	0.0	\$34,233	\$6,862
23	Construction	1.2	\$202,395	\$70,887
311	Food Manufacturing	0.0	\$8,049	\$1,331
312	Beverage and Tobacco Product Manufacturing	0.0	\$15,787	\$2,016
313	Textile Mills	0.0	\$25	\$3
314	Textile Product Mills	0.0	\$150	\$38
315	Apparel Manufacturing	0.0	\$117	\$42
316	Leather and Allied Product Manufacturing	0.0	\$4	\$1
321	Wood Product Manufacturing	0.0	\$1,135	\$341
322	Paper Manufacturing	0.0	\$2,024	\$377
323	Printing and Related Support Activities	0.1	\$7,930	\$2,210
324	Petroleum and Coal Products Manufacturing	0.0	\$5,489	\$263
325	Chemical Manufacturing	0.0	\$27,919	\$3,432
326	Plastics and Rubber Products Manufacturing	0.0	\$2,473	\$522
327	Nonmetallic Mineral Product Manufacturing	0.0	\$4,698	\$1,007
331	Primary Metal Manufacturing	0.0	\$175	\$22
332	Fabricated Metal Product Manufacturing	0.0	\$3,699	\$1,094
333	Machinery Manufacturing	0.0	\$4,712	\$851
334	Computer and Electronic Product Manufacturing	0.0	\$6,739	\$1,786
335	Electrical Equipment, Appliance, and Component Manufacturing	0.0	\$1,632	\$242
336	Transportation Equipment Manufacturing	0.0	\$13,694	\$3,889
337	Furniture and Related Product Manufacturing	0.0	\$431	\$122
339	Miscellaneous Manufacturing	0.0	\$4,061	\$1,279
42	Wholesale Trade	0.9	\$234,834	\$78,681
441	Motor Vehicle and Parts Dealers	0.3	\$46,189	\$22,225
442	Furniture and Home Furnishings Stores	0.1	\$12,460	\$4,869
443	Electronics and Appliance Stores	0.1	\$7,793	\$7,305
444	Building Material and Garden Equipment and Supplies Dealers	0.2	\$25,308	\$10,107
445	Food and Beverage Stores	0.6	\$46,253	\$21,318
446	Health and Personal Care Stores	0.2	\$22,758	\$11,163
447	Gasoline Stations	0.1	\$10,012	\$6,386
448	Clothing and Clothing Accessories Stores	0.3	\$29,249	\$8,986
451	Sporting Goods, Hobby, Musical Instrument, and Book Stores	0.2	\$9,582	\$4,298
452	General Merchandise Stores	0.6	\$51,248	\$19,768
453	Miscellaneous Store Retailers	0.3	\$14,522	\$7,773
454	Nonstore Retailers	0.4	\$46,950	\$9,214

NAICS Code	Description	Secondary Jobs	Secondary Output	Secondary Income
481	Air Transportation	0.0	\$16,677	\$2,925
482	Rail Transportation	0.0	\$1,024	\$381
483	Water Transportation	0.0	\$318	\$31
484	Truck Transportation	0.3	\$42,033	\$13,123
485	Transit and Ground Passenger Transportation	0.1	\$10,347	\$5,100
486	Pipeline Transportation	0.0	\$229	\$111
487-488	Transportation Support Services and Sightseeing	1.4	\$227,491	\$89,782
492	Couriers and Messengers	1.9	\$208,502	\$72,504
493	Warehousing and Storage	0.3	\$31,963	\$13,553
511	Publishing Industries (except Internet)	0.1	\$45,164	\$13,331
512	Motion Picture and Sound Recording Industries	0.0	\$9,590	\$1,541
515	Broadcasting (except Internet)	0.1	\$39,106	\$15,519
517	Telecommunications	0.2	\$163,652	\$17,994
518	Data Processing, Hosting, and Related Services	0.1	\$17,203	\$5,937
519	Other Information Services	0.0	\$23,127	\$4,505
521	Monetary Authorities-Central Bank	0.2	\$85,301	\$20,959
522	Credit Intermediation and Related Activities	0.3	\$46,767	\$22,181
523	Securities, Commodity Contracts, and Other Financial Investments and Related Activities	0.7	\$104,176	\$32,739
524	Insurance Carriers and Related Activities	0.6	\$165,790	\$46,947
525	Funds, Trusts, and Other Financial Vehicles	0.2	\$42,582	\$8,996
531	Real Estate	1.8	\$794,646	\$71,679
532	Rental and Leasing Services	0.2	\$38,655	\$15,372
533	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	0.0	\$16,161	\$548
541	Professional, Scientific, and Technical Services	2.6	\$377,827	\$194,982
551	Management of Companies and Enterprises	0.4	\$107,184	\$55,370
561	Administrative and Support Services	3.4	\$215,777	\$123,821
562	Waste Management and Remediation Services	0.2	\$45,482	\$14,082
611	Educational Services	0.8	\$58,878	\$34,762
621	Ambulatory Health Care Services	1.7	\$202,225	\$129,780
622	Hospitals	0.5	\$77,768	\$41,810
623	Nursing and Residential Care Facilities	0.6	\$36,434	\$22,292
624	Social Assistance	1.0	\$40,057	\$22,526
711	Performing Arts, Spectator Sports, and Related Industries	0.4	\$32,851	\$13,752
712	Museums, Historical Sites, and Similar Institutions	0.0	\$3,168	\$1,680
713	Amusement, Gambling, and Recreation Industries	0.4	\$33,355	\$11,573
721	Accommodation	0.0	\$3,915	\$1,419
722	Food Services and Drinking Places	2.9	\$185,876	\$76,309
811	Repair and Maintenance	0.7	\$81,991	\$45,086
812	Personal and Laundry Services	1.1	\$45,281	\$33,239
813	Religious, Grantmaking, Civic, Professional, and Similar Organizations	0.7	\$109,462	\$35,454
814	Private Households	0.3	\$5,308	\$5,306
92	Government and Other	6.5	\$962,577	\$601,298

Source: ADE, Inc.; data from IMPLAN Pro input-output model, InfoUSA/Salesgenie, and City of San Diego Airports Division.

Table A.3 – Combined Detailed Secondary (Indirect and Induced) Multiplier Effects for Airport Operations and Tenants

NAICS Code	Description	Secondary Jobs	Secondary Output	Secondary Income
	Total	74.3	\$10,695,243	\$4,300,764
111	Crop Production	0.1	\$6,447	\$2,956
112	Animal Production and Aquaculture	0.0	\$1,441	\$337
113	Forestry and Logging	0.0	\$5	\$0
114	Fishing, Hunting and Trapping	0.0	\$133	\$66
115	Support Activities for Agriculture and Forestry	0.0	\$1,020	\$703
211	Oil and Gas Extraction	0.0	\$7,014	\$1,036
212	Mining (except Oil and Gas)	0.0	\$3,186	\$512
213	Support Activities for Mining	0.2	\$21,273	\$7,204
221	Utilities	0.1	\$67,187	\$13,519
23	Construction	2.2	\$384,993	\$135,359
311	Food Manufacturing	0.1	\$13,808	\$2,271
312	Beverage and Tobacco Product Manufacturing	0.0	\$27,476	\$3,512
313	Textile Mills	0.0	\$41	\$5
314	Textile Product Mills	0.0	\$267	\$67
315	Apparel Manufacturing	0.0	\$611	\$230
316	Leather and Allied Product Manufacturing	0.0	\$8	\$2
321	Wood Product Manufacturing	0.0	\$1,990	\$592
322	Paper Manufacturing	0.0	\$3,696	\$687
323	Printing and Related Support Activities	0.1	\$12,812	\$3,572
324	Petroleum and Coal Products Manufacturing	0.0	\$10,453	\$501
325	Chemical Manufacturing	0.0	\$54,243	\$6,659
326	Plastics and Rubber Products Manufacturing	0.0	\$3,968	\$828
327	Nonmetallic Mineral Product Manufacturing	0.0	\$8,469	\$1,809
331	Primary Metal Manufacturing	0.0	\$350	\$44
332	Fabricated Metal Product Manufacturing	0.0	\$7,195	\$2,141
333	Machinery Manufacturing	0.0	\$9,802	\$1,769
334	Computer and Electronic Product Manufacturing	0.0	\$12,096	\$3,195
335	Electrical Equipment, Appliance, and Component Manufacturing	0.0	\$2,906	\$430
336	Transportation Equipment Manufacturing	0.1	\$24,807	\$7,172
337	Furniture and Related Product Manufacturing	0.0	\$775	\$218
339	Miscellaneous Manufacturing	0.0	\$7,157	\$2,229
42	Wholesale Trade	1.7	\$434,452	\$145,563
441	Motor Vehicle and Parts Dealers	0.6	\$76,587	\$36,852
442	Furniture and Home Furnishings Stores	0.2	\$22,292	\$8,711
443	Electronics and Appliance Stores	0.2	\$13,793	\$12,929
444	Building Material and Garden Equipment and Supplies Dealers	0.4	\$45,352	\$18,111
445	Food and Beverage Stores	1.1	\$84,218	\$38,816
446	Health and Personal Care Stores	0.4	\$40,707	\$19,966
447	Gasoline Stations	0.2	\$20,115	\$12,831
448	Clothing and Clothing Accessories Stores	0.6	\$52,473	\$16,121
451	Sporting Goods, Hobby, Musical Instrument, and Book Stores	0.3	\$17,181	\$7,707
452	General Merchandise Stores	1.1	\$92,595	\$35,716

NAICS Code	Description	Secondary Jobs	Secondary Output	Secondary Income
453	Miscellaneous Store Retailers	0.6	\$25,928	\$13,877
454	Nonstore Retailers	0.7	\$85,047	\$16,691
481	Air Transportation	0.1	\$32,159	\$5,641
482	Rail Transportation	0.0	\$1,878	\$698
483	Water Transportation	0.0	\$585	\$58
484	Truck Transportation	0.5	\$76,856	\$23,995
485	Transit and Ground Passenger Transportation	0.2	\$18,927	\$9,329
486	Pipeline Transportation	0.0	\$457	\$222
487-488	Transportation Support Services and Sightseeing	2.9	\$472,285	\$186,391
492	Couriers and Messengers	3.9	\$433,664	\$150,801
493	Warehousing and Storage	0.6	\$60,298	\$25,568
511	Publishing Industries (except Internet)	0.2	\$78,522	\$23,223
512	Motion Picture and Sound Recording Industries	0.1	\$16,659	\$2,692
515	Broadcasting (except Internet)	0.1	\$61,539	\$24,046
517	Telecommunications	0.4	\$297,358	\$32,812
518	Data Processing, Hosting, and Related Services	0.1	\$30,118	\$10,394
519	Other Information Services	0.1	\$37,288	\$7,224
521	Monetary Authorities—Central Bank	0.4	\$155,715	\$38,261
522	Credit Intermediation and Related Activities	0.5	\$81,211	\$38,518
523	Securities, Commodity Contracts, and Other Financial Investments and Related Activities	1.3	\$192,020	\$60,360
524	Insurance Carriers and Related Activities	1.2	\$309,751	\$87,583
525	Funds, Trusts, and Other Financial Vehicles	0.3	\$77,917	\$16,461
531	Real Estate	2.9	\$1,366,207	\$116,573
532	Rental and Leasing Services	0.4	\$89,118	\$35,221
533	Lessors of Nonfinancial Intangible Assets	0.0	\$27,439	\$930
541	Professional, Scientific, and Technical Services	5.4	\$793,050	\$417,467
551	Management of Companies and Enterprises	0.8	\$191,685	\$99,023
561	Administrative and Support Services	7.3	\$453,026	\$261,710
562	Waste Management and Remediation Services	0.4	\$96,505	\$29,879
611	Educational Services	1.5	\$107,281	\$63,408
621	Ambulatory Health Care Services	3.1	\$369,552	\$237,186
622	Hospitals	0.8	\$141,974	\$76,328
623	Nursing and Residential Care Facilities	1.0	\$65,653	\$40,184
624	Social Assistance	1.8	\$73,077	\$41,091
711	Performing Arts, Spectator Sports, and Related Industries	0.7	\$58,013	\$24,135
712	Museums, Historical Sites, and Similar Institutions	0.1	\$5,785	\$3,068
713	Amusement, Gambling, and Recreation Industries	0.8	\$60,769	\$21,073
721	Accommodation	0.1	\$6,642	\$2,408
722	Food Services and Drinking Places	5.4	\$338,446	\$139,150
811	Repair and Maintenance	1.4	\$159,327	\$86,872
812	Personal and Laundry Services	2.0	\$84,959	\$61,992
813	Religious, Grantmaking, Civic, Professional, and Similar Organizations	1.3	\$200,322	\$64,873
814	Private Households	0.6	\$9,699	\$9,697
92	Government and Other	12.2	\$1,855,140	\$1,140,701

Source: ADE, Inc.; data from IMPLAN Pro input-output model, InfoUSA/Salesgenie,
and City of San Diego Airports Division