



Airports



Airport Master Plan

Montgomery-Gibbs
Executive 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 Montgomery-Gibbs Executive Airport (MYF 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 the Airport property. These indirect impacts result from supplier purchases.
- **Induced impacts** represent the economic effects that will be generated through household purchases made in the County due to 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 Transportation	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 the Airport property. Due to the overlap of administrative functions for MYF and Brown Field Municipal Airport (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 MYF directly supports 46 jobs (16 jobs from the City and 30 jobs with the Federal Aviation Administration [FAA]). These jobs have a multiplier effect that creates 1.41 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 the indirect effects, while the induced effects are created by employee and institutional spending. Together, these secondary (indirect and induced) effects create an additional 65.0 jobs for 111.0 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
Montgomery-Gibbs Executive Airport Operations, 2016

Impact Category	Direct Effects	Indirect Effects	Induced Effects	Total Effects	Multiplier Value
Employment	46.0	33.0	32.0	111.0	2.41
Labor Income	\$2,707,520	\$2,036,997	\$1,788,914	\$6,533,431	2.41
Industry Output	\$8,229,491	\$4,629,487	\$4,650,202	\$17,509,180	2.13

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 MYF totals \$8.2 million. The multiplier effect for industry output creates an economic impact of \$17.5 million. This means that every dollar of economic activity generated at the Airport will generate an additional \$1.13 across the rest of the County's economy. In addition, the labor income directly generated by airport activity totals about \$2.7 million. In turn, this supports another \$3.8 million in income multiplier effects. For every dollar in labor income generated at the Airport, an additional \$1.41 is supported elsewhere in the County. The more detailed secondary (indirect and induced) multiplier effects by sector are shown in Appendix A Table A.1.

Multiplier Effects: Airport Tenants

Tenant businesses located on the Airport property account for about 694 jobs. This total includes those jobs that have been verified to date, by direct contact with either the business or database listing with InfoUSA (see **Table 6.3**).² The Airport property includes the buildings inside and adjacent to the secured areas, as well as retail, office, and hotel buildings located along Aero Drive. The tenant businesses are largely concentrated in aviation support, business administrative services, accommodation, and food service.

Table 6.3 – MYF Airport Tenants and Direct Economic Effects by NAICS Code

NAICS Code	Description	Direct Employment	Direct Output	Direct Income
	Total	694.0	\$75,715,822	\$35,778,908
	Transportation Equipment			
336	Manufacturing	7.0	\$5,715,616	\$834,499
441	Motor Vehicle and Parts Dealers	23.0	\$3,068,053	\$1,477,094
445	Food and Beverage Stores	2.0	\$151,177	\$70,002
453	Miscellaneous Store Retailers	9.0	\$381,878	\$205,079
487-488	Transportation Support Services and Sightseeing	99.0	\$16,180,846	\$6,367,308
517	Telecommunications	3.0	\$1,343,536	\$273,847
	Credit Intermediation and Related Activities			
522	Activities	21.0	\$3,664,195	\$1,743,992
531	Real Estate	4.0	\$992,181	\$163,315
532	Rental and Leasing Services	2.0	\$567,744	\$209,999
	Professional, Scientific, and Technical Services			
541	Services	45.0	\$8,080,362	\$3,584,834
561	Administrative and Support Services	221.0	\$15,828,973	\$11,616,738
611	Educational Services	54.0	\$2,799,300	\$1,777,175
621	Ambulatory Health Care Services	10.0	\$1,268,495	\$880,263
721	Accommodation	100.0	\$11,157,845	\$4,005,041
722	Food Services and Drinking Places	73.0	\$3,715,408	\$1,977,592
812	Personal and Laundry Services	21.0	\$800,212	\$592,130

Source: ADE, Inc.; data from IMPLAN Pro input-output model, Cornerstone Property Management, 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 1,279 jobs. With the existing tenant mix, every tenant job at the Airport creates an additional 0.84 jobs elsewhere in the County. The industry output from tenant businesses directly accounts for \$75.7 million in economic activity, with a total value of \$161.8 million after accounting for the multiplier effects. The estimated labor income from tenant businesses totals \$35.8 million, with a total of \$69.2 million after accounting for the multiplier effects. The more detailed secondary (indirect and induced) multiplier effects by sector are shown in Appendix A Table A.2.

² For businesses listed with InfoUSA and not verified by other available information, the listings were confirmed by calling the businesses directly.

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

Impact Category	Direct Effects	Indirect Effects	Induced Effects	Total Effects	Multiplier Value
Employment	694.0	169.3	415.9	1,279.1	1.84
Labor Income	\$35,778,908	\$9,798,677	\$23,600,273	\$69,177,859	1.93
Industry Output	\$75,715,822	\$25,465,052	\$60,639,898	\$161,820,772	2.14

Source: ADE, Inc.; data from IMPLAN Pro input-output model, Cornerstone Property Management, 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 the Airport totals 740 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 1,390 jobs. As currently situated, every job on the Airport property creates an additional 0.88 jobs elsewhere in the County. The industry output from tenant businesses directly accounts for \$75.7 million in economic activity, with a total value of \$161.8 million after accounting for the multiplier effects. The estimated labor income from tenant businesses totals \$35.8 million, with a total of \$69.2 million after accounting for the multiplier effects.

Table 6.5 – Economic Multiplier Effects**MYF Combined Operations (Administration and Tenants), 2016**

Impact Category	Direct Effects	Indirect Effects	Induced Effects	Total Effects	Multiplier Value
Employment	740.0	202.3	447.8	1,390.2	1.88
Labor Income	\$38,486,428	\$11,835,675	\$25,389,187	\$75,711,290	1.97
Industry Output	\$83,945,313	\$30,094,539	\$65,290,100	\$179,329,952	2.14

Source: ADE, Inc.; data from IMPLAN Pro input-output model, Cornerstone Property Management, 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 MYF and tenant operations, these secondary impacts generate over 650 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 professional services, food service, public sector, administrative services, health care, retail trade, and wholesale trade. Included in Appendix A, are more detailed tables showing economic effects at the three-digit NAICS code equivalent level of detail.

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

NAICS Code	Description	Secondary Jobs	Secondary Output	Secondary Income
	Total	650.2	\$95,384,639	\$37,224,862
11	Crop and Animal Production	1.2	\$86,366	\$38,802
21	Mining, Quarrying, and Oil and Gas Extraction	1.2	\$150,276	\$37,479
22	Utilities	0.6	\$474,680	\$94,675
23	Construction	16.1	\$2,800,108	\$978,554
31	Manufacturing	5.1	\$1,985,253	\$402,004
42	Wholesale Trade	14.7	\$3,866,892	\$1,298,155
44	Retail Trade	61.0	\$5,451,576	\$2,250,393
48	Transportation and Warehousing	36.7	\$4,933,183	\$1,784,358
51	Information	12.3	\$6,365,881	\$1,278,354
52	Finance and Insurance	40.6	\$8,774,642	\$2,661,748
53	Real Estate and Rental and Leasing	32.7	\$14,652,614	\$1,481,964
54	Professional, Scientific, and Technical Services	56.4	\$8,007,300	\$4,144,344
55	Management of Companies and Enterprises	9.9	\$2,373,498	\$1,225,353
56	Administrative and Support and Waste Management and Remediation Services	64.5	\$4,686,119	\$2,538,713
61	Educational Services	14.8	\$1,050,824	\$620,141
62	Health Care and Social Assistance	66.2	\$6,307,124	\$3,841,779
71	Arts, Entertainment, and Recreation	18.9	\$1,424,217	\$572,022
72	Accommodation and Food Services	59.2	\$3,708,792	\$1,567,343
81	Other Services (except Public Administration)	49.5	\$4,251,571	\$2,092,385
92	Government and Other	88.6	\$14,033,723	\$8,316,297

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's 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 North American Industry Classification System (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's 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 those 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 for 2016. This information was used to compile an expenditure profile of the Airport's operations, which tracks the extent to which the Airport's operations create supplier relationships with other businesses.

Because much of the operational data for the City covers all administrative activities for both SDM and MYF, the analysis made the calculations for all combined 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 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. The analysis proportionally assigned these expenditures 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 assumes 30 FAA workers based at the Airport.³ 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 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.

³ The FAA worker total comes from a survey of airport tenants done by Cornerstone Property Management.

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

IMPLAN

Code	Industry Description	Coefficient
448	Accounting, tax preparation, bookkeeping, and payroll services	0.000581
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 the Airport operations, the analysis also looked at the existing tenants for MYF. The tenant impacts only include those business operations located within the Airport property. The calculations do not include any of the other businesses located around the Airport vicinity.

As a first step, the project team compiled a list of the businesses located at the Airport. This list comes from a combination of sources. For MYF, the City provided a list of tenants occupying the administration building and other buildings dedicated for aviation uses.

In addition, Cornerstone Property Management provided tenant information for the office and commercial buildings located within the Airport property along Aero Drive. The information from Cornerstone Property Management included the business name and the number of employees. Subsequent field visits to the Airport property found additional businesses that were not included in the original tenant lists.

For additional 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 occurred through directly contacting businesses from the tenant list, the Salesgenie/InfoUSA listings, and/or looking up any available websites. The direct contacts provided clarification of the data provided by Cornerstone Property Management, and resolved some

duplicate business listings. 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 Cornerstone Property Management tenant list and 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	65.0	\$9,279,689	\$3,825,911
111	Crop Production	0.1	\$5,099	\$2,339
112	Animal Production and Aquaculture	0.0	\$1,149	\$269
113	Forestry and Logging	0.0	\$4	\$0
114	Fishing, Hunting and Trapping	0.0	\$101	\$50
115	Support Activities for Agriculture and Forestry	0.0	\$780	\$538
211	Oil and Gas Extraction	0.0	\$6,176	\$912
212	Mining (except Oil and Gas)	0.0	\$2,735	\$439
213	Support Activities for Mining	0.2	\$17,722	\$6,001
221	Utilities	0.1	\$56,892	\$11,520
23	Construction	2.0	\$338,552	\$119,858
311	Food Manufacturing	0.0	\$10,577	\$1,727
	Beverage and Tobacco Product Manufacturing			
312	Manufacturing	0.0	\$21,450	\$2,743
313	Textile Mills	0.0	\$31	\$4
314	Textile Product Mills	0.0	\$209	\$53
315	Apparel Manufacturing	0.0	\$1,237	\$471
316	Leather and Allied Product Manufacturing	0.0	\$7	\$2
321	Wood Product Manufacturing	0.0	\$1,555	\$455
322	Paper Manufacturing	0.0	\$2,808	\$522
323	Printing and Related Support Activities	0.1	\$9,423	\$2,627
	Petroleum and Coal Products Manufacturing			
324	Manufacturing	0.0	\$8,530	\$410
325	Chemical Manufacturing	0.0	\$45,936	\$5,673
	Plastics and Rubber Products Manufacturing			
326	Manufacturing	0.0	\$2,652	\$543
	Nonmetallic Mineral Product Manufacturing			
327	Manufacturing	0.0	\$7,083	\$1,508
331	Primary Metal Manufacturing	0.0	\$318	\$39
332	Fabricated Metal Product Manufacturing	0.0	\$6,040	\$1,788
333	Machinery Manufacturing	0.0	\$8,181	\$1,477
	Computer and Electronic Product Manufacturing			
334	Manufacturing	0.0	\$9,955	\$2,608
	Electrical Equipment, Appliance, and Component Manufacturing			
335	Manufacturing	0.0	\$2,366	\$347
336	Transportation Equipment Manufacturing	0.1	\$19,779	\$5,831
	Furniture and Related Product Manufacturing			
337	Manufacturing	0.0	\$618	\$175
339	Miscellaneous Manufacturing	0.0	\$5,795	\$1,780
42	Wholesale Trade	1.4	\$372,644	\$124,854
441	Motor Vehicle and Parts Dealers	0.4	\$55,582	\$26,745
442	Furniture and Home Furnishings Stores	0.2	\$18,033	\$7,046
443	Electronics and Appliance Stores	0.1	\$10,962	\$10,276
444	Building Material and Garden Equipment and Supplies Dealers	0.4	\$36,846	\$14,714

NAICS Code	Description	Secondary Jobs	Secondary Output	Secondary Income
445	Food and Beverage Stores	0.9	\$69,762	\$32,153
446	Health and Personal Care Stores	0.3	\$32,837	\$16,106
447	Gasoline Stations	0.2	\$20,348	\$12,980
448	Clothing and Clothing Accessories Stores	0.5	\$42,552	\$13,073
451	Sporting Goods, Hobby, Musical Instrument, and Book Stores	0.2	\$13,917	\$6,242
452	General Merchandise Stores	0.9	\$75,955	\$29,298
453	Miscellaneous Store Retailers	0.5	\$20,913	\$11,193
454	Nonstore Retailers	0.5	\$69,920	\$13,723
481	Air Transportation	0.1	\$26,944	\$4,726
482	Rail Transportation	0.0	\$1,504	\$559
483	Water Transportation	0.0	\$482	\$48
484	Truck Transportation	0.4	\$59,684	\$18,633
485	Transit and Ground Passenger Transportation	0.2	\$16,236	\$8,003
486	Pipeline Transportation	0.0	\$404	\$196
487-488	Transportation Support Services and Sightseeing	2.4	\$389,758	\$153,822
492	Couriers and Messengers	3.3	\$359,251	\$124,925
493	Warehousing and Storage	0.5	\$45,745	\$19,397
511	Publishing Industries (except Internet)	0.2	\$61,454	\$18,261
512	Motion Picture and Sound Recording Industries	0.1	\$13,031	\$2,122
515	Broadcasting (except Internet)	0.1	\$41,261	\$15,617
517	Telecommunications	0.3	\$248,968	\$27,698
518	Data Processing, Hosting, and Related Services	0.1	\$23,872	\$8,239
519	Other Information Services	0.0	\$26,135	\$5,019
521	Monetary Authorities-Central Bank	0.3	\$128,529	\$31,581
522	Credit Intermediation and Related Activities	0.4	\$62,799	\$29,785
523	Securities, Commodity Contracts, and Other Financial Investments and Related Activities	1.1	\$160,687	\$50,126
524	Insurance Carriers and Related Activities	1.0	\$266,299	\$75,017
525	Funds, Trusts, and Other Financial Vehicles	0.2	\$65,024	\$13,738
531	Real Estate	2.0	\$1,039,618	\$80,770
532	Rental and Leasing Services	0.5	\$105,710	\$41,078
533	Lessors of Nonfinancial Intangible Assets	0.0	\$20,292	\$688
541	Professional, Scientific, and Technical Services	5.7	\$863,216	\$464,496
551	Management of Companies and Enterprises	0.6	\$146,311	\$75,583
561	Administrative and Support Services	7.7	\$463,518	\$270,801
562	Waste Management and Remediation Services	0.4	\$93,771	\$29,032
611	Educational Services	1.3	\$89,714	\$53,172

NAICS Code	Description	Secondary Jobs	Secondary Output	Secondary Income
621	Ambulatory Health Care Services	2.6	\$307,577	\$197,422
622	Hospitals	0.7	\$118,108	\$63,497
623	Nursing and Residential Care Facilities	0.8	\$53,691	\$32,878
624	Social Assistance	1.5	\$60,637	\$34,091
711	Performing Arts, Spectator Sports, and Related Industries	0.6	\$45,618	\$18,905
712	Museums, Historical Sites, and Similar Institutions	0.1	\$4,811	\$2,551
713	Amusement, Gambling, and Recreation Industries	0.6	\$50,472	\$17,490
721	Accommodation	0.0	\$4,940	\$1,792
722	Food Services and Drinking Places	4.5	\$281,620	\$115,991
811	Repair and Maintenance	1.3	\$149,164	\$79,829
812	Personal and Laundry Services	1.7	\$70,363	\$51,804
813	Religious, Grantmaking, Civic, Professional, and Similar Organizations	1.1	\$167,638	\$54,268
814	Private Households	0.5	\$8,065	\$8,063
92	Government and Other	10.8	\$1,702,743	\$1,033,087

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	585.1	\$86,104,950	\$33,398,951
111	Crop Production	0.8	\$55,769	\$25,564
112	Animal Production and Aquaculture	0.1	\$11,550	\$2,476
113	Forestry and Logging	0.0	\$41	\$1
114	Fishing, Hunting and Trapping	0.1	\$3,177	\$1,577
115	Support Activities for Agriculture and Forestry	0.1	\$8,696	\$5,989
211	Oil and Gas Extraction	0.3	\$43,132	\$6,290
212	Mining (except Oil and Gas)	0.1	\$19,636	\$3,513
213	Support Activities for Mining	0.5	\$60,876	\$20,325
221	Utilities	0.5	\$417,789	\$83,156
23	Construction	14.1	\$2,461,557	\$858,695
311	Food Manufacturing	0.5	\$137,652	\$22,968
312	Beverage and Tobacco Product Manufacturing	0.3	\$260,399	\$33,280
313	Textile Mills	0.0	\$352	\$44
314	Textile Product Mills	0.0	\$2,296	\$559
315	Apparel Manufacturing	0.0	\$1,869	\$674
316	Leather and Allied Product Manufacturing	0.0	\$64	\$16
321	Wood Product Manufacturing	0.1	\$16,746	\$5,007
322	Paper Manufacturing	0.1	\$33,402	\$6,369
323	Printing and Related Support Activities	1.1	\$168,138	\$46,828
324	Petroleum and Coal Products Manufacturing	0.0	\$66,756	\$3,191
325	Chemical Manufacturing	0.2	\$358,653	\$44,900
326	Plastics and Rubber Products Manufacturing	0.1	\$26,522	\$5,512
327	Nonmetallic Mineral Product Manufacturing	0.2	\$63,030	\$13,420
331	Primary Metal Manufacturing	0.0	\$8,078	\$1,002
332	Fabricated Metal Product Manufacturing	0.2	\$45,461	\$12,571
333	Machinery Manufacturing	0.1	\$34,633	\$6,656
334	Computer and Electronic Product Manufacturing	0.3	\$163,670	\$45,089
335	Electrical Equipment, Appliance, and Component Manufacturing	0.1	\$30,639	\$4,726
336	Transportation Equipment Manufacturing	0.9	\$327,293	\$94,037
337	Furniture and Related Product Manufacturing	0.0	\$6,267	\$1,809
339	Miscellaneous Manufacturing	0.4	\$68,783	\$22,566
42	Wholesale Trade	13.3	\$3,494,248	\$1,173,301
441	Motor Vehicle and Parts Dealers	4.4	\$588,670	\$283,411
442	Furniture and Home Furnishings Stores	1.7	\$196,879	\$77,190
443	Electronics and Appliance Stores	1.4	\$119,297	\$112,201

NAICS Code	Description	Secondary Jobs	Secondary Output	Secondary Income
444	Building Material and Garden Equipment and Supplies Dealers	3.8	\$398,014	\$159,481
445	Food and Beverage Stores	9.9	\$746,993	\$345,894
446	Health and Personal Care Stores	3.7	\$355,415	\$174,914
447	Gasoline Stations	1.8	\$157,696	\$100,931
448	Clothing and Clothing Accessories Stores	5.4	\$463,334	\$142,826
451	Sporting Goods, Hobby, Musical Instrument, and Book Stores	2.4	\$150,806	\$67,874
452	General Merchandise Stores	10.1	\$827,269	\$321,480
453	Miscellaneous Store Retailers	5.4	\$228,571	\$122,749
454	Nonstore Retailers	5.8	\$751,007	\$147,890
481	Air Transportation	0.6	\$244,708	\$42,740
482	Rail Transportation	0.0	\$15,531	\$5,757
483	Water Transportation	0.0	\$4,808	\$473
484	Truck Transportation	3.2	\$499,746	\$156,034
485	Transit and Ground Passenger Transportation	2.3	\$201,955	\$99,407
486	Pipeline Transportation	0.0	\$2,742	\$1,325
487-488	Transportation Support Services and Sightseeing	9.0	\$1,474,506	\$580,231
492	Couriers and Messengers	12.2	\$1,358,772	\$470,878
493	Warehousing and Storage	2.4	\$230,407	\$97,204
511	Publishing Industries (except Internet)	2.5	\$836,740	\$247,670
512	Motion Picture and Sound Recording Industries	1.3	\$261,953	\$41,738
515	Broadcasting (except Internet)	1.9	\$951,470	\$352,604
517	Telecommunications	3.8	\$3,049,402	\$342,572
518	Data Processing, Hosting, and Related Services	1.1	\$325,231	\$112,380
519	Other Information Services	1.0	\$526,362	\$104,432
521	Monetary Authorities-Central Bank	4.2	\$1,548,290	\$381,768
522	Credit Intermediation and Related Activities	5.2	\$905,623	\$431,036
523	Securities, Commodity Contracts, and Other Financial Investments and Related Activities	12.9	\$1,848,683	\$593,155
524	Insurance Carriers and Related Activities	12.6	\$3,086,411	\$907,250
525	Funds, Trusts, and Other Financial Vehicles	2.6	\$702,297	\$148,292
531	Real Estate	26.9	\$12,527,509	\$1,096,663
532	Rental and Leasing Services	3.1	\$657,231	\$252,530
533	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	0.3	\$302,254	\$10,234
541	Professional, Scientific, and Technical Services	50.7	\$7,144,085	\$3,679,848
551	Management of Companies and Enterprises	9.3	\$2,227,188	\$1,149,771

NAICS Code	Description	Secondary Jobs	Secondary Output	Secondary Income
561	Administrative and Support Services	54.1	\$3,612,705	\$2,079,173
562	Waste Management and Remediation Services	2.3	\$516,125	\$159,707
611	Educational Services	13.6	\$961,110	\$566,969
621	Ambulatory Health Care Services	27.8	\$3,289,146	\$2,115,767
622	Hospitals	7.4	\$1,258,092	\$679,247
623	Nursing and Residential Care Facilities	9.0	\$577,075	\$354,502
624	Social Assistance	16.2	\$642,798	\$364,375
711	Performing Arts, Spectator Sports, and Related Industries	9.5	\$688,775	\$299,578
712	Museums, Historical Sites, and Similar Institutions	0.6	\$50,752	\$27,266
713	Amusement, Gambling, and Recreation Industries	7.6	\$583,790	\$206,231
721	Accommodation	0.6	\$63,373	\$22,957
722	Food Services and Drinking Places	54.1	\$3,358,860	\$1,426,603
811	Repair and Maintenance	11.7	\$1,302,888	\$712,179
812	Personal and Laundry Services	16.8	\$673,894	\$519,586
813	Religious, Grantmaking, Civic, Professional, and Similar Organizations	11.5	\$1,793,430	\$580,575
814	Private Households	5.0	\$86,128	\$86,081
92	Government and Other	77.8	\$12,330,980	\$7,283,210

Source: ADE, Inc.; data from IMPLAN Pro input-output model, Cornerstone Property Management, 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	650.2	\$95,384,639	\$37,224,862
111	Crop Production	0.9	\$60,868	\$27,903
112	Animal Production and Aquaculture	0.1	\$12,699	\$2,745
113	Forestry and Logging	0.0	\$45	\$1
114	Fishing, Hunting and Trapping	0.1	\$3,279	\$1,627
115	Support Activities for Agriculture and Forestry	0.1	\$9,475	\$6,526
211	Oil and Gas Extraction	0.3	\$49,307	\$7,201
212	Mining (except Oil and Gas)	0.1	\$22,371	\$3,952
213	Support Activities for Mining	0.7	\$78,597	\$26,326
221	Utilities	0.6	\$474,680	\$94,675
23	Construction	16.1	\$2,800,108	\$978,554
311	Food Manufacturing	0.5	\$148,229	\$24,694
	Beverage and Tobacco Product Manufacturing			
312	Manufacturing	0.3	\$281,849	\$36,023
313	Textile Mills	0.0	\$382	\$48
314	Textile Product Mills	0.0	\$2,504	\$612
315	Apparel Manufacturing	0.0	\$3,106	\$1,145
	Leather and Allied Product Manufacturing			
316	Manufacturing	0.0	\$72	\$17
321	Wood Product Manufacturing	0.1	\$18,301	\$5,462
322	Paper Manufacturing	0.1	\$36,210	\$6,891
323	Printing and Related Support Activities	1.2	\$177,561	\$49,455
	Petroleum and Coal Products Manufacturing			
324	Manufacturing	0.0	\$75,286	\$3,601
325	Chemical Manufacturing	0.3	\$404,588	\$50,573
	Plastics and Rubber Products Manufacturing			
326	Manufacturing	0.1	\$29,174	\$6,055
	Nonmetallic Mineral Product Manufacturing			
327	Manufacturing	0.2	\$70,114	\$14,928
331	Primary Metal Manufacturing	0.0	\$8,396	\$1,042
332	Fabricated Metal Product Manufacturing	0.2	\$51,501	\$14,358
333	Machinery Manufacturing	0.1	\$42,813	\$8,133
	Computer and Electronic Product Manufacturing			
334	Manufacturing	0.3	\$173,625	\$47,697
	Electrical Equipment, Appliance, and Component Manufacturing			
335	Manufacturing	0.1	\$33,006	\$5,073
	Transportation Equipment Manufacturing			
336	Manufacturing	1.0	\$347,072	\$99,868
	Furniture and Related Product Manufacturing			
337	Manufacturing	0.0	\$6,886	\$1,984
339	Miscellaneous Manufacturing	0.4	\$74,578	\$24,346
42	Wholesale Trade	14.7	\$3,866,892	\$1,298,155
441	Motor Vehicle and Parts Dealers	4.8	\$644,252	\$310,156

NAICS Code	Description	Secondary Jobs	Secondary Output	Secondary Income
442	Furniture and Home Furnishings Stores	1.9	\$214,911	\$84,237
443	Electronics and Appliance Stores	1.5	\$130,259	\$122,477
444	Building Material and Garden Equipment and Supplies Dealers	4.1	\$434,859	\$174,196
445	Food and Beverage Stores	10.8	\$816,755	\$378,048
446	Health and Personal Care Stores	4.0	\$388,252	\$191,021
447	Gasoline Stations	2.0	\$178,043	\$113,911
448	Clothing and Clothing Accessories Stores	5.9	\$505,885	\$155,899
451	Sporting Goods, Hobby, Musical Instrument, and Book Stores	2.6	\$164,722	\$74,116
452	General Merchandise Stores	11.0	\$903,224	\$350,778
453	Miscellaneous Store Retailers	5.9	\$249,484	\$133,942
454	Nonstore Retailers	6.3	\$820,927	\$161,613
481	Air Transportation	0.7	\$271,652	\$47,465
482	Rail Transportation	0.0	\$17,035	\$6,316
483	Water Transportation	0.0	\$5,290	\$521
484	Truck Transportation	3.6	\$559,430	\$174,668
485	Transit and Ground Passenger Transportation	2.5	\$218,191	\$107,410
486	Pipeline Transportation	0.0	\$3,146	\$1,521
487-488	Transportation Support Services and Sightseeing	11.4	\$1,864,264	\$734,053
492	Couriers and Messengers	15.5	\$1,718,023	\$595,802
493	Warehousing and Storage	2.9	\$276,152	\$116,602
511	Publishing Industries (except Internet)	2.6	\$898,194	\$265,932
512	Motion Picture and Sound Recording Industries	1.3	\$274,985	\$43,860
515	Broadcasting (except Internet)	2.0	\$992,731	\$368,221
517	Telecommunications	4.1	\$3,298,370	\$370,271
518	Data Processing, Hosting, and Related Services	1.2	\$349,104	\$120,619
519	Other Information Services	1.1	\$552,498	\$109,451
521	Monetary Authorities-Central Bank	4.6	\$1,676,818	\$413,349
522	Credit Intermediation and Related Activities	5.6	\$968,422	\$460,821
523	Securities, Commodity Contracts, and Other Financial Investments and Related Activities	14.0	\$2,009,370	\$643,282
524	Insurance Carriers and Related Activities	13.6	\$3,352,710	\$982,266
525	Funds, Trusts, and Other Financial Vehicles	2.9	\$767,321	\$162,030
531	Real Estate	28.9	\$13,567,128	\$1,177,433
532	Rental and Leasing Services	3.6	\$762,941	\$293,609
533	Lessors of Nonfinancial Intangible Assets	0.3	\$322,546	\$10,922
541	Professional, Scientific, and Technical Services	56.4	\$8,007,300	\$4,144,344

NAICS Code	Description	Secondary Jobs	Secondary Output	Secondary Income
551	Management of Companies and Enterprises	9.9	\$2,373,498	\$1,225,353
561	Administrative and Support Services	61.8	\$4,076,223	\$2,349,974
562	Waste Management and Remediation Services	2.8	\$609,896	\$188,739
611	Educational Services	14.8	\$1,050,824	\$620,141
621	Ambulatory Health Care Services	30.5	\$3,596,724	\$2,313,189
622	Hospitals	8.1	\$1,376,200	\$742,744
623	Nursing and Residential Care Facilities	9.9	\$630,765	\$387,380
624	Social Assistance	17.7	\$703,435	\$398,466
711	Performing Arts, Spectator Sports, and Related Industries	10.1	\$734,393	\$318,483
712	Museums, Historical Sites, and Similar Institutions	0.6	\$55,562	\$29,817
713	Amusement, Gambling, and Recreation Industries	8.2	\$634,262	\$223,721
721	Accommodation	0.6	\$68,313	\$24,749
722	Food Services and Drinking Places	58.6	\$3,640,480	\$1,542,594
811	Repair and Maintenance	13.0	\$1,452,053	\$792,008
812	Personal and Laundry Services	18.5	\$744,257	\$571,390
813	Religious, Grantmaking, Civic, Professional, and Similar Organizations	12.6	\$1,961,068	\$634,842
814	Private Households	5.4	\$94,193	\$94,144
92	Government and Other	88.6	\$14,033,723	\$8,316,297

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