

Economic Impact: Attracting a Large Scale Distribution Center to Glynn County

**Prepared for: The Brunswick and Glynn County Development
Authority**

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Economic Impact: Attracting a Large Scale Distribution Center to Glynn County

This study analyzes the economic impact, benefit, and costs associated with a distribution center locating in Glynn County, Georgia.¹ It was prepared for the Brunswick and Glynn County Development Authority, their board of directors, and all other affiliated parties. The intention of the study is to provide a quantitative assessment to support decisions relative to the acquisition of a site or sites sufficiently large to accommodate a large-scale distribution center.

Per request, two scenarios were created for this study to determine the economic benefit of a large distribution center: Scenario one examines the local economic impact of a 500,000 square foot facility; and, scenario two examines the economic impact of a 1.0 million square foot facility. For the purposes of this study the economic impact is measured in terms of employment (number of new jobs) and output (earnings in dollars). In addition, this study also looks at several other economic variables that affect a local economy, like changes in real disposable income, labor force, and population.

What this study does not look at is the feasibility of the proposed project.² Rather, it looks only at the net new economic activity related to a warehouse and distribution center locating in the area.

The following is a summary of the findings:

Economic Impact on the Regional Economy: 500,000 Square Feet

- Employment will increase by 269 jobs in 2006 and 305 jobs by 2020.
- Output will increase by \$21.8 million in 2006 and \$37.0 million by 2020.
- Residential actual capital stock is expected to increase by \$18.6 million and business actual capital stock is expected to increase by \$15.0 million by 2020.
- Other noteworthy impacts includes personal income increasing by \$23.3 million, real disposable income increasing by \$11.8 million, and population increasing by about 351 people in 2020.

¹ The Wholesale Trade sector is employed in this study to simulate the impact of a large-scale warehouse and distribution center. This is the sector in which the Wal-Mart and Target distribution centers are classified.

² This study does not include any additional government related expenditures that might be incurred to subsidize the location of the facility. Such a cost would be considered a transfer of payment and would not have a net new impact within Glynn County.

Economic Impact on the Regional Economy: 1,000,000 Square Feet

- Employment will increase by 538 jobs in 2006 and 610 jobs by 2020.
- Output will increase by \$43.5 million in 2006 and \$74.0 million by 2020.
- Residential actual capital stock is expected to increase by \$37.2 million and business actual capital stock is expected to increase by \$57.4 million by 2020.
- Other noteworthy impacts includes personal income increasing by \$46.6 million, real disposable income increasing by \$23.7 million, and population increasing by about 703 people in 2020.

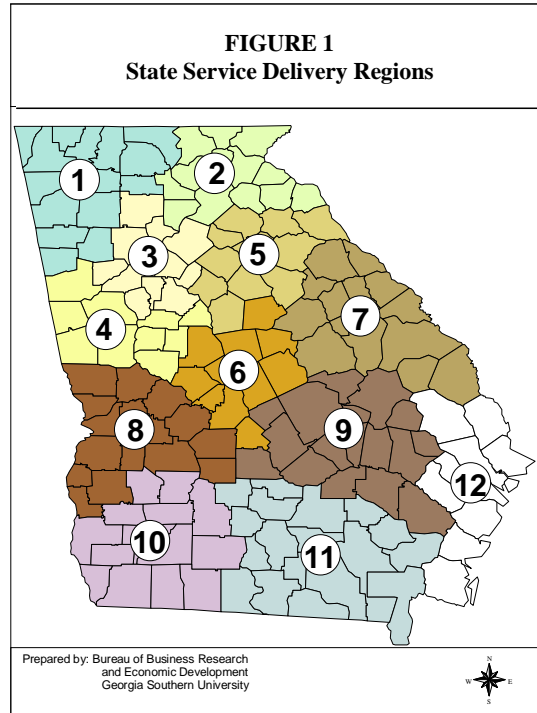
Economic Impact on the Local Economy

- A 500,000 square foot facility will increase local employment by 224 jobs and output by \$24.7.
- A 1,000,000 square foot facility will increase local employment by 448 jobs and output by \$9.5.

Data and Region

Since a distribution center locating in Glynn County will likely impact neighboring counties, this study analyzes the effects at a regional level using a dynamic regional modeling system, REMI (Regional Economic Modeling, Inc).³ The region used is States Service Delivery Region 12, shown in Figure 1.⁴ In addition to the regional impact, this study also looks at the economic impact on Glynn County alone, which was analyzed with IMPLAN (Impact Analysis for Planning).

This study develops two scenarios to look at the economic implications of attracting warehouse and distribution center to Glynn County. Scenario one looks at a 500,000 square foot facility and scenario two looks at a 1.0 million square foot facility. Estimates for investment and employment for both scenarios are shown below in Tables 1 and 2.⁵



For a 500,000 square foot center, the total initial investment is estimated at about \$26.5 million over a three-year period. The employment associated with this scale distribution center is expected to be 147 jobs, as shown in Table 1.

TABLE 1
Initial Investment, Machinery & Equipment, and Employment Schedule
500,000 Sq Ft Distribution Center

	2006	2007	2008	2009	2010	2015	2020
Investment	\$ 8,823,529	\$ 8,823,529	\$ 8,823,529	0	0	0	0
Employment	147	147	147	147	147	147	147

For scenario two the estimated employment for the 1.0 million square foot facility is 294 jobs. The total initial investment is estimated at about \$52.9 million, as shown in Table 2.

³ The region includes the following counties: Bulloch, Effingham, Bryan, Chatham, Liberty, Long, McIntosh, Glynn, and Camden.

⁴ The twelve State Service Delivery Regions were created by the Governor and General Assembly in 1998 for the Department of Community Affairs and the Department of Economic Development for these agencies to assist in community development and for research purposes. For more information about the State Service Delivery Regions, please visit www.georgiaregions.org.

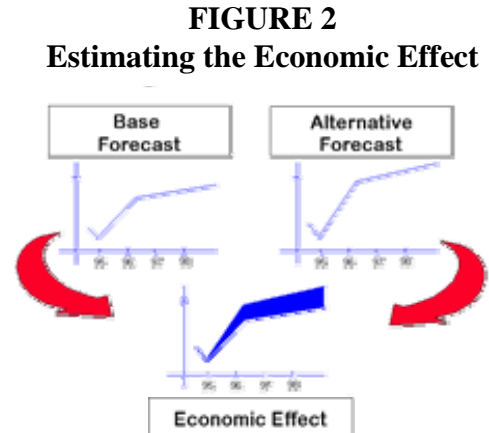
⁵ The initial investment and employment estimates were derived from a the investment and employment of three large distributions centers in Southeast Georgia: Wal-Mart Distribution Center located in Statesboro, the Target Distribution Center in Hinesville, and the Best Buy Distribution Center in Dublin. (Sources: Statesboro Bulloch County Chamber, Dublin Laurens County Chamber of Commerce, and Liberty County Chamber of Commerce.)

TABLE 2
Initial Investment, Machinery & Equipment, and Employment Schedule
1,000,000 Sq Ft Distribution Center

	2006	2007	2008	2009	2010	2015	2020
Investment	\$ 17,647,059	\$ 17,647,059	\$ 17,647,059	0	0	0	0
Employment	294	294	294	294	294	294	294

The Models- Economic Impacts

The first model used to show the economic impact of attracting a large scale warehouse and distribution center to Glynn County was Regional Economic Modeling Inc. (REMI).⁶ This model is a dynamic economic impact model that can analyze multiple impacts geographically and overtime. Additionally, this model incorporates these impacts with the preexisting growth expectations of each region. The concept of how REMI isolates the economic impact is shown in Figure 2. In this figure there is a base forecast (the preexisting growth of the economy absent of the proposed impact), an alternative forecast (the new forecast with the proposed project), and the economic effect (an isolation of the economic impact or the difference between the base forecast and the alternative forecast). For the purpose of this study, the following tables and numbers only refer to the economic effect.



The second model used to show the economic impact of attracting a warehouse and distribution center to Glynn County was IMPLAN.⁷ This model is called an input-output model and is considered as a static economic impact model. It only looks at impacts at one point in time and does not include other economic variables the effect the economy like income, available labor, and relative costs. The concept of how IMPLAN isolates an economic effect, however, is similar to that of REMI, as shown in Figure 2.

Economic Impact: REMI

Table 3 shows the total economic impact of the distribution center on employment over time for State Service Delivery Region 12 for the 500,000 square foot facility. The total increase in employment in 2006 is estimated to be 269 jobs and by 2020 the increase is expected to be 305 jobs. The sector with the largest impact is the Wholesale Trade sector with approximately 150 jobs, which was the sector directly impacted to simulate the distribution center. The services sector shows the second largest increase in employment. Finally, it should be noted that the growth in government employment in REMI is

⁶ For more information about REMI and documentation supporting it, please visit www.remi.com.

⁷ For more information about IMPLAN and documentation supporting it, please visit www.implan.com.

directly tied to the growth in population. This is discussed below. The Brunswick MSA is a diversified economy and it should be expected that a significant percentage of the total jobs created are likely to be kept within the local economy.

TABLE 3
Employment Impact (in units) for State Service Delivery Region 12

	500,000 Square Foot Facility						
	2006	2007	2008	2009	2010	2015	2020
Manufacturing	5	4	4	1	1	1	1
Non-Manufacturing	0	0	0	0	0	0	0
Natural Resources, Mining, Utilities	1	1	1	1	1	1	1
Construction	12	18	21	22	22	19	18
Wholesale Trade	151	151	151	150	150	150	150
Retail Trade	20	21	21	21	21	21	21
Information, Finance, and Real Estate	11	11	11	11	11	11	11
Transportation and Warehousing	2	2	2	2	2	2	2
Services	64	65	66	65	66	70	79
Government	0	0	0	0	0	0	0
State & Local	3	6	9	11	13	19	23
Total Employment*	269	279	285	284	286	294	305

*Numbers may not add up due to rounding.

Table 4 shows the impact in terms of total output for the 500,000 square foot facility. That is, for each person employed in the economy, there is an associated amount of goods and services produced. The table shows that the total Gross Regional Product (GRP) is expected to increase by \$21.8 million in 2006 and increase to approximately \$37 million by the year 2020.

TABLE 4
Gross Regional Product (Output Fixed 2000\$) for State Service Delivery 12

	500,000 Square Foot Facility				
	2006	2008	2010	2015	2020
Manufacturing	\$ 424,600	\$ 419,900	\$ 208,100	\$ 195,700	\$ 275,600
Non-Manufacturing					
Natural Resources, Mining, Utilities	\$ 129,369	\$ 146,938	\$ 154,023	\$ 168,499	\$ 185,588
Construction	\$ 398,800	\$ 702,300	\$ 770,300	\$ 721,300	\$ 669,700
Wholesale Trade	\$ 16,330,000	\$ 18,080,000	\$ 19,810,000	\$ 24,000,000	\$ 28,500,000
Retail Trade	\$ 670,300	\$ 789,300	\$ 849,700	\$ 959,800	\$ 1,050,000
Information, Finance, and Real Estate	\$ 1,329,100	\$ 1,542,300	\$ 1,647,600	\$ 1,866,500	\$ 2,123,000
Transportation and Warehousing	\$ 107,300	\$ 118,900	\$ 126,500	\$ 150,400	\$ 180,700
Services	\$ 2,368,060	\$ 2,616,150	\$ 2,781,730	\$ 3,313,880	\$ 4,001,690
Total Employment*	\$ 21,757,529	\$ 24,415,788	\$ 26,347,953	\$ 31,376,079	\$ 36,986,278

*Numbers may not add up due to rounding.

Table 5 shows the impact of attracting a distribution center on total personal income, total real disposable income, population, and on labor force for a 500,000 square foot facility. As such, it is estimated that total personal income will increase by approximately \$23.3 million and total real disposable income will increase by \$11.8 million by 2020. In addition to both total and real incomes increasing in the region, there will also be increases in the population and labor force. The creation of high quality jobs creates an incentive for people to migrate to the region resulting in both population and labor force growth. The growth in population induces additional employment in government services as noted above.

TABLE 5
Other Impacts for State Service Delivery Region 12
500,000 Square Foot Facility

	2006	2008	2010	2015	2020
Total Personal Income (Nom \$)	9,295,000	11,980,000	13,880,000	18,370,000	23,290,000
Total Disposable Income (Fixed 2000\$)	6,822,000	8,160,000	8,983,000	10,540,000	11,840,000
Population	53	135	196	296	351
Labor Force	54	119	155	198	216

Another way to look at the economic contributions of this project is to look at how it affects residential and business capital stock.⁸ Table 6 shows both the optimal and actual capital stock. Optimal capital stock represents the demand for either the residential or business capital stock, and actual capital stock represents the real value in the increase of the capital stock. As such, the total increase in residential actual capital stock is expected to increase by \$18.6 million by 2020. Business actual capital stock is expected to increase by \$15.0 million by 2020.

TABLE 6
Capital Stock (2000\$) for State Service Delivery Region 12
500,000 Square Foot Facility

	2006	2008	2010	2015	2020
Residential					
Actual Capital Stock	\$ 738,100	\$ 3,222,000	\$ 6,132,000	\$ 13,010,000	\$ 18,590,000
Optimal Capital Stock	\$ 15,200,000	\$ 18,400,000	\$ 20,740,000	\$ 25,610,000	\$ 29,670,000
Non-Residential					
Actual Capital Stock	\$ 755,300	\$ 3,123,000	\$ 5,680,000	\$ 11,030,000	\$ 14,990,000
Optimal Capital Stock	\$ 21,600,000	\$ 22,980,000	\$ 23,880,000	\$ 25,860,000	\$ 28,700,000

Table 7 shows the total economic impact of a distribution center on employment, over time, for State Service Delivery Region 12, for the 1.0 million square foot facility. The total increase in employment in 2006 is estimated to be 538 jobs and by 2020 the increase is expected to be 610 jobs. The sector with the largest impact is the Wholesale Trade sector with approximately 300 jobs, which was the sector directly impacted to simulate the distribution center. The economic impact on other sectors is symmetric with the above results for the smaller facility.

⁸ Residential and Business Actual Capital Stock is the amount of capital accumulated over time net of depreciation. Residential and Business Optimal Capital Stock is the amount of capital required to satisfy the current demand in a region. Optimal capital stock minus actual capital stock equals the future investment needed to satisfy current demand.

TABLE 7
Employment Impact (in units) for State Service Delivery Region 12
1,000,000 Square Foot Facility

	2006	2007	2008	2009	2010	2015	2020
Manufacturing	9	9	8	3	3	2	2
Non-Manufacturing	0	0	0	0	0	0	0
Natural Resources, Mining, Utilities	1	1	1	1	1	1	1
Construction	25	36	41	43	44	39	35
Wholesale Trade	303	302	301	301	301	300	301
Retail Trade	39	41	42	42	42	42	41
Information, Finance, and Real Estate	22	22	22	22	22	22	23
Transportation and Warehousing	4	3	3	3	3	3	4
Services	129	130	132	131	132	141	158
Government	0	0	0	0	0	0	0
State & Local	7	13	18	22	26	39	45
Total Employment*	538	558	570	569	573	588	610

*Numbers may not add up due to rounding.

Table 8 shows the impact in terms of total output for the 1.0 million square foot facility. The table shows the total Gross Regional Product (GRP) is expected to increase by \$43.5 million in 2006 and increase to approximately \$74.0 million by the year 2020.

TABLE 8
Gross Regional Product (Output Fixed 2000\$) for State Service Delivery 12
1,000,000 Square Foot Facility

	2006	2008	2010	2015	2020
Manufacturing	\$ 850,000	\$ 839,700	\$ 416,500	\$ 391,700	\$ 551,900
Non-Manufacturing					
Natural Resources, Mining, Utilities	\$ 258,742	\$ 293,848	\$ 307,916	\$ 337,054	\$ 371,574
Construction	\$ 797,900	\$ 1,405,000	\$ 1,540,000	\$ 1,443,000	\$ 1,341,000
Wholesale Trade	\$ 32,650,000	\$ 36,180,000	\$ 39,640,000	\$ 48,020,000	\$ 57,010,000
Retail Trade	\$ 1,341,000	\$ 1,577,000	\$ 1,699,000	\$ 1,920,000	\$ 2,100,000
Information, Finance, and Real Estate	\$ 2,659,500	\$ 3,083,400	\$ 3,296,000	\$ 3,734,800	\$ 4,250,100
Transportation and Warehousing	\$ 214,600	\$ 237,900	\$ 253,000	\$ 301,200	\$ 361,600
Services	\$ 4,735,040	\$ 5,232,810	\$ 5,564,780	\$ 6,629,630	\$ 8,006,800
Total Employment*	\$ 43,506,782	\$ 48,849,658	\$ 52,717,196	\$ 62,777,384	\$ 73,992,974

*Numbers may not add up due to rounding.

Table 9 shows the impact of the proposed distribution center on total personal income, total real disposable income, population, and on labor force for a 1.0 million square foot facility. As such, it is estimated that total personal income will increase by approximately \$46.6 million and total real disposable income will increase by \$23.7 million by 2020. In addition to both total and real incomes increasing in the region, there will also be increases in population and labor force.

TABLE 9
Other Impacts for State Service Delivery Region 12
1,000,000 Square Foot Facility

	2006	2008	2010	2015	2020
Total Personal Income (Nom \$)	18,590,000	23,960,000	27,770,000	36,740,000	46,590,000
Total Disposable Income (Fixed 2000\$)	13,650,000	16,300,000	17,950,000	21,070,000	23,690,000
Population	105	270	393	592	703
Labor Force	108	238	310	395	433

Again, another way to look at the economic contributions of this project is to look at how it affects residential and business capital stock. Table 10 shows both the optimal and actual capital stock. Optimal capital stock represents the demand for either the residential or business capital stock, and actual capital stock represents the real value in the increase

of the capital stock. As such, the total increase in residential actual capital stock is expected to increase by \$37.2 million by 2020. Business actual capital stock is expected to increase by \$57.4 million by 2020.

TABLE 10
Capital Stock (2000\$) for State Service Delivery Region 12
1,000,000 Square Foot Facility

Residential	2006	2008	2010	2015	2020
Actual Capital Stock	\$ 1,476,000	\$ 6,445,000	\$ 12,260,000	\$ 26,010,000	\$ 37,170,000
Optimal Capital Stock	\$ 30,410,000	\$ 36,780,000	\$ 41,450,000	\$ 51,200,000	\$ 59,410,000

Non-Residential	2006	2008	2010	2015	2020
Actual Capital Stock	\$ 1,512,000	\$ 6,248,000	\$ 11,360,000	\$ 22,070,000	\$ 29,980,000
Optimal Capital Stock	\$ 43,200,000	\$ 45,980,000	\$ 47,780,000	\$ 51,720,000	\$ 57,420,000

Economic Impact: IMPLAN

The county level economic impact was created with a regional input-output model, IMPLAN (Impact Analysis for Planning). The following section only looks at the impact on Glynn County as measured by employment and output.

Table 11 shows the direct, indirect, and induced effects of the economy for each industry based on number of jobs.⁹ The employment multiplier for the 500,000 square foot facility is 1.7.¹⁰ Therefore, for every 100 employees in one of these sectors, 70 additional jobs are generated elsewhere in the economy.

TABLE 11
Employment Impact (in units) for Glynn County
500,000 Square Foot Facility

	Direct	Indirect	Induced	Total
Manufacturing				
Durables	3	0	0	3
Non-Durables	0	1	0	1
Non-Manufacturing				
Agriculture	0	0	0	0
Mining	0	0	0	0
Construction	0	2	1	2
Transportation/Utilities	128	19	2	148
Finance, Insurance & Real Estate	0	6	19	25
Retail/Wholesale Trade	0	5	3	7
Services	0	19	16	34
Government	0	1	1	2
Farm	0	0	0	0
Total Employment*	131	51	42	224

*Numbers may not add up due to rounding.

⁹ Indirect effects include the inter-industry purchases necessary to produce the product or service. Induced effects include the changes associated with the household income generated by the direct and indirect effects. The total impact is the summation of direct, indirect, and induced effects.

¹⁰ A multiplier is a concept of how goods and services move through an economy and is calculated by dividing the total economic impact by the direct impact.

This table also shows that 131 people will be directly employed and as a result a total of 93 new jobs will be produced from the direct and induced effects. Therefore, the total number of jobs in the economy will increase by 224. The largest growth in jobs will be within the Wholesale/Retail Trade sector with 148 new employees. The second largest growth in employment will be within the Service sector with 34 jobs. The REMI model was for the larger region, hence some of the differences in impact can be attributable to projects, but those additional jobs spill over the rest of the region.

In addition to the increase in total number of employees in the county, IMPLAN calculates an estimated value of output. Table 12 shows the direct, indirect, and induced effects of the economy for each industry. One can see that the total direct increase in dollars for the 500,000 square foot distribution center will be about \$16.7 million and the total increase in output in the area would be approximately \$24.7 million. This total includes the indirect and induced amount of \$8.0 million. Thus, the output multiplier for scenario one is 1.48. Therefore, for every \$100 spent in one of these sectors, \$48 are generated somewhere else in the economy.

TABLE 12
Output Impact (2006\$) for Glynn County
500,000 Square Foot Facility

	Direct	Indirect	Induced	Total
Manufacturing				
Durables	1,283,693	54,446	8,155	1,346,294
Non-Durables	652	68,794	48,420	117,866
Non-Manufacturing				
Agriculture	0	3,162	9,411	12,573
Mining	0	537	266	804
Construction	0	88,519	44,122	132,641
Transportation/Utilities	15,416,879	2,332,661	277,036	18,026,574
Finance, Insurance & Real Estate	0	440,829	828,687	1,269,516
Retail/Wholesale Trade	0	663,775	932,262	1,596,038
Services	0	1,107,523	975,345	2,082,867
Government	0	77,278	71,588	148,866
Farm	0	25	1,672	1,697
Total Output*	\$ 16,701,224	\$ 4,837,549	\$ 3,196,964	\$ 24,735,736

*Numbers may not add up due to rounding.

Table 13 shows the direct, indirect, and induced effects of the economy for each industry based on number of jobs. The employment multiplier for the 1.0 million square foot facility is 1.71. Therefore, for every 100 employees in one of these sectors, 71 are generated somewhere else in the economy.

TABLE 13
Employment Impact (in units) for Glynn County
1,000,000 Square Foot Facility

	Direct	Indirect	Induced	Total
Manufacturing				
Durables	6	1	0	7
Non-Durables	0	1	1	2
Non-Manufacturing				
Agriculture	0	0	1	1
Mining	0	0	0	0
Construction	0	3	1	4
Transportation/Utilities	256	38	3	297
Finance, Insurance & Real Estate	0	12	39	51
Retail/Wholesale Trade	0	9	6	15
Services	0	37	31	68
Government	0	1	3	4
Farm	0	0	0	0
Total Employment*	262	102	84	448

*Numbers may not add up due to rounding.

Table 13 also shows that 262 people will be directly employed and as a result, a total of 186 new jobs will be produced from the direct and induced effects. Therefore, the total number of jobs in the economy will increase by 448. The largest growth in jobs will be within the Wholesale/Retail Trade sector with 297 new employees. The second largest growth in employment will be within the Service sector with 68 jobs.

In addition to the increase in total number of employees in the county, IMPLAN calculates an estimated value of output. Table 14 shows the direct, indirect, and induced effects of the economy for each industry. One can see that the total direct increase in dollars for the 1,000,000 square foot distribution center will be about \$33.4 million and the total increase in output in the area would be approximately \$49.5 million. This total includes the indirect and induced amount of \$16.0 million. Thus, the output multiplier for the Low Scenario is 1.48. Therefore, for every \$100 spent in one of these sectors, \$48 are generated somewhere else in the economy.

TABLE 14
Output Impact (2006\$) for Glynn County
1,000,000 Square Foot Facility

	Direct	Indirect	Induced	Total
Manufacturing				
Durables	2,567,386	108,892	16,310	2,692,588
Non-Durables	1,304	137,588	96,840	235,731
Non-Manufacturing				
Agriculture	0	6,324	18,822	25,146
Mining	0	1,075	532	1,607
Construction	0	177,038	88,244	265,282
Transportation/Utilities	30,833,758	4,665,322	554,072	36,053,148
Finance, Insurance & Real Estate	0	881,658	1,657,375	2,539,033
Retail/Wholesale Trade	0	1,327,550	1,864,525	3,192,075
Services	0	2,215,045	1,950,690	4,165,735
Government	0	154,557	143,176	297,732
Farm	0	51	3,344	3,394
Total Output*	\$ 33,402,448	\$ 9,675,100	\$ 6,393,930	\$ 49,471,471

*Numbers may not add up due to rounding.

Based on the results discussed above, adding a distribution center in Glynn County will have a tremendous economic impact on the local economy. One of the strongest components of the REMI model is its ability to analyze current and future economic impacts. By 2020, the model estimates that the proposed distribution center would generate about 305 new jobs and \$37.0 million worth of Gross Regional Product for a 500,000 square foot facility. In addition, the model also estimated that a 1,000,000 square foot facility would increase employment by 610 jobs and output by \$74.0 million.