



RETURN ON INVESTMENT REPORT

Methodology

Jobs Impact Model

The model uses Type SAM, RIMS (Regional Input-Output Modeling System) multipliers supplied by IMPLAN, formerly available from the Bureau of Economic Analysis, U.S. Department of Commerce, using 2013 (the most recent available) regional economic accounts for the region defined as Saratoga County, New York. Inputs of job numbers, industry sectors, and wage estimates were supplied by the client organization.

The five industries used in the analysis, as supplied by the client, are presented in the table below:

- 1 Semiconductor/Advanced Materials Manufacturing
- 2 Semiconductor/Advanced Materials Supply Chain
- 3 Warehousing/Distribution
- 4 Light manufacturing
- 5 Corporate Headquarters

It is common in this type of analysis for the types of industries targeted by the client organization to not fit precisely into available multiplier categories for the area. When necessary, multipliers from job categories that are the most appropriate surrogates are utilized to develop a more accurate weighted average multiplier.

Dramatic Expansion for the Saratoga Economy

Using employment multipliers for each of these industries, a weighted average *employment* multiplier, based on numbers of jobs targeted, of 2.6279 was calculated. Using specific earnings multipliers for the target industries, a weighted average *earnings* multiplier of 1.6290 was calculated. These calculations, as well as the targeted job numbers and relative weights for each category, are shown in the following table:

Industry	# jobs	Weight	Earnings multiplier	Weighted Earnings multiplier	Employment multiplier	Weighted Employment multiplier
1 Semiconductor/Advanced Materials Manufacturing	1,750	48.6%	1.7238	0.8380	3.2913	1.5999
2 Semiconductor/Advanced Materials Supply Chain	500	13.9%	1.6909	0.2348	2.9599	0.4111
3 Warehousing/Distribution	750	20.8%	1.4016	0.2920	1.5289	0.3185
4 Light manufacturing	300	8.3%	1.5975	0.1331	1.6445	0.1370
5 Corporate Headquarters	300	8.3%	1.5727	0.1311	1.9356	0.1613
Total	3,600	100%		1.6290		2.6279

A weighted average hourly wage rate of \$30.05 was derived using client-supplied data:

	Weight	Average Annual Wage	Weighted Annual Wage	Weighted Hourly Equivalent
1 Semiconductor/Advanced Materials Manufacturing	48.6%	\$ 85,000	\$41,319	\$19.87
2 Semiconductor/Advanced Materials Supply Chain	13.9%	\$ 55,000	\$7,639	\$3.67
3 Warehousing/Distribution	20.8%	\$ 35,000	\$7,292	\$3.51
4 Light manufacturing	8.3%	\$ 35,000	\$2,917	\$1.40
5 Corporate Headquarters	8.3%	\$ 40,000	\$3,333	\$1.60
Total	100%		\$ 62,500	\$30.05

In order to make the analysis as realistic as possible, the model is back-tested to see if indirect wages are realistic. In this case, a wage rate of \$30.05 and the earnings multiplier of 1.6290 provided a realistic indirect wage rate of \$11.16, so the earnings multiplier was not adjusted.

Job Impact Model

The Job Impact Model is the base model on which overall impact, consumer expenditures, and banking impacts can be derived. This model uses the 3,600 jobs in the **Significant Expansion** scenario. Multipliers representing the jobs included in this scenario were aggregated to arrive at the employment and earnings multipliers used in the model.

Utilizing the inputs of 3,600 jobs, the \$62,500 average annual salary (\$30.05 per hour), and aggregated employment and earnings multipliers specific to the area, the gross impact of those jobs materializing were calculated. This total impact, in terms of jobs and payroll, is presented in the summary on the following page.

In addition, in order to translate these total impacts into a more useful number for fundraising purposes, these total impacts were translated into Net Personal Consumption Expenditures, or the actual amount of money that would be spent in the local economy once these 3,600 jobs materialize. A deposit potential for area banks was also derived from these total impact numbers, to be used in the Bank Impact Model.

Number of New Primary Jobs		3,600
Primary Wage Rate Paid (hourly)		\$30.05
Total Direct Payroll	\$216,346,154	
Total Payroll	\$352,425,481	
Total Jobs	9,460	
Calculated Indirect Jobs Created	5,860	
Calculated Indirect Wage Rate Paid (hourly)	\$11.16	
<u>Area Values</u>		
Personal Income	\$	246,697,837
Disposable Personal Income	\$	208,484,342
Net Personal Consumption Expenditures	\$	194,807,769
Deposit Potential for Area Financial Institutions	\$	30,452,613

Personal Income: Total Payroll less Estimated Leakage
 Disposable Personal Income: Personal Income less Personal Tax and Non-tax Payments
 Net Personal Consumption Expenditures: Disposable Personal Income less Personal Savings, Interest, and Personal Transfer Payments
 Deposit Potential: Personal Savings Rate less Deposit Leakage Estimate with area turnover (Reserve Req. Ratio)

Information Summary

This is the information from above that typically appears in the campaign brochure.

<p>The program is targeting an additional The primary jobs are expected to pay This economic activity is expected to generate \$ and and could result in</p>	<p>3,600 5,860 \$30.05 \$ 352,425,481 \$194,807,769 \$30,452,613</p>	<p>primary jobs which will create secondary jobs. an hour. in annual total earnings in annual area consumer expenditures in annual deposits for area banks.</p>
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Consumer Spending Model

The Consumer Spending model further breaks down the Net Personal Consumer Expenditures from the Jobs Impact Model into various spending categories. The spending patterns on the following pages reflect how people would typically spend the earnings from these jobs. The model is based on income level, which has been shown to be a better predictor of spending than geographic area or ethnicity.

The categories presented encompass all areas of spending, even though a narrow or overly specific minor category may not be listed, resulting in over \$194 million in consumer expenditures *per year*. Minor categories may not add up to a major category total because extraneous detail was excluded.

Industry impact at the consumer level can be estimated using the numbers presented. In other words, the 1,150 jobs in the targeted industries will likely result in over \$12.6 million in vehicle purchases in the area. This information can then be customized in a presentation targeted towards those in the new and used car business.

How the money will likely be spent based on **earnings level** of target jobs Saratoga Springs

Projected Consumer Expenditures	\$194,807,769
Expected Income Range of Primary Jobs	\$50,000 to \$69,999
Weighted Average Annual Wage	\$62,500
Estimated Total Sales Tax Generated	\$8,768,298

Area Expenditures

Food	\$25,909,433
Food at home	\$15,584,622
Cereals and bakery products	\$2,142,885
Cereals and cereal products	\$779,231
Bakery products	\$1,363,654
Meats, poultry, fish, eggs	\$3,311,732
Beef	\$974,039
Pork	\$584,423
Other meats	\$584,423
Poultry	\$584,423
Fish and seafood	\$389,616
Eggs	\$194,808
Dairy products	\$1,558,462
Fresh milk and cream	\$584,423
Other dairy products	\$974,039
Fruits and vegetables	\$2,922,117
Fresh fruits	\$974,039
Fresh vegetables	\$974,039
Processed fruits	\$389,616
Processed vegetables	\$584,423
Other food at home	\$5,454,618
Sugar and other sweets	\$584,423
Fats and oils	\$389,616
Miscellaneous foods	\$2,727,309
Nonalcoholic beverages	\$1,558,462
Food prepared by consumer unit on out-of-town trips	\$194,808
Food away from home	\$10,324,812
Alcoholic beverages	\$1,753,270

Housing	\$65,260,603
Shelter	\$37,403,092
Owned Dwellings	\$21,623,662
Mortgage interest and charges	\$11,104,043
Property taxes	\$6,623,464
Maintenance, repairs, insurance, other expenses	\$4,090,963
Rented dwellings	\$14,026,159
Other lodging	\$1,948,078
Utilities, fuels, and public service	\$15,584,622
Natural gas	\$1,558,462
Electricity	\$5,649,425
Fuel oil and other fuels	\$584,423
Telephone services	\$5,649,425
Water and other public services	\$1,948,078
Household operations	\$38,961,554
Personal services	\$974,039
Other household expenses	\$2,922,117
Housekeeping supplies	\$2,532,501
Laundry and cleaning supplies	\$584,423
Other household products	\$1,363,654
Postage and stationery	\$389,616
Household furnishings and equipment	\$5,844,233
Household textiles	\$389,616
Furniture	\$1,363,654
Floor coverings	\$194,808
Major appliances	\$974,039
Small appliances, miscellaneous house wares	\$389,616
Miscellaneous household equipment	\$2,922,117
Apparel and services	\$6,039,041
Men and Boys	\$1,363,654
Men, 16 and over	\$1,168,847
Boys, 2 to 15	\$194,808
Women and Girls	\$2,532,501
Women, 16 and over	\$1,948,078
Girls, 2 to 15	\$389,616
Children under 2	\$389,616
Footwear	\$1,168,847
Other apparel products and services	\$779,231

Transportation	\$37,208,284
Vehicle purchases	\$12,662,505
Cars and trucks, new	\$6,039,041
Cars and trucks, used	\$6,428,656
Other vehicles	\$194,808
Gasoline and motor oil	\$11,688,466
Other vehicle expenses	\$11,298,851
Vehicles finance charges	\$974,039
Maintenance and repairs	\$3,311,732
Vehicle insurance	\$5,065,002
Vehicles rental, leases, licenses, other charges	\$1,948,078
Public transportation	\$1,753,270
Health care	\$15,389,814
Health insurance	\$9,545,581
Medical services	\$3,506,540
Drugs	\$1,948,078
Medical supplies	\$584,423
Entertainment	\$9,350,773
Fees and admissions	\$1,753,270
Television, radios, sound equipment	\$3,896,155
Pets, toys, and playground equipment	\$2,337,693
Other entertainment supplies, equipment, and services	\$1,168,847
Personal care products and services	\$2,337,693
Reading	\$389,616
Education	\$3,116,924
Tobacco products	\$1,363,654
Miscellaneous	\$2,337,693
Cash contributions	\$6,039,041
Personal insurance and pensions	\$18,701,546
Life and personal insurance	\$974,039
Pensions and social security	\$17,532,699
Total*	\$195,197,384

*May differ slightly from above due to rounding.

Some categories not reported due to statistical insignificance and are estimated using other earnings levels as benchmarks.

Major categories in green will not always total the minor categories below it, since some irrelevant categories may be omitted.

Banking Impact Model

The Banking Impact Model can be more specific than the Consumer Expenditure Model, simply because information on the banking industry is more accessible than information in other industries. It is based on 2013 FDIC market share information, and assumes that the banks in the region maintain their respective share. Five percent of the market is allotted to credit unions, which will slightly lower a bank's FDIC-based market share.

This model uses the deposits estimate provided by the Jobs Impact Model, and projects the "gross profit" banks would normally realize on these deposits 10 years into the future past the five initial years of the program of work. These 15 years are brought back to present day (T_0) at a discount rate of 6.5%. This "gross profit" is defined as the yield spread banks pay on deposits versus what they charge on loans, which in this case is estimated at a conservative two percent.

The last column of the banking model output provides some very powerful information on:

- ✓ Structuring the "ask."
- ✓ The level of investment justified.
- ✓ The relative "ask" amount between banks.
- ✓ Demonstrating not just the expected impact on the industry, as in the Consumer Expenditure Model, but an expected return for a specific bank, based on market share, and a rough idea of how much they will realize in bottom line earnings, not just top line revenue.

Saratoga Springs

Relative Market Share Basis	2014 Deposits (as of 6/30/14) (in 000's)	Current Market Share (inc. non-FDIC)	Deposits Expected Annually By End of Program	Present Value of 15 Yrs. of Cash Flow Realistic Earnings on Expected Deposits
Total Institutions	18			
Total Offices	85			
Offices Represented	85			
Institution Name				
1 The Adirondack Trust Company	\$ 819,189	21.09%	\$6,421,286	\$1,024,445
2 TrustCo Bank	\$ 425,569	10.95%	\$3,335,860	\$532,200
3 First Niagara Bank, National Association	\$ 381,229	9.81%	\$2,988,297	\$476,750
4 Ballston Spa National Bank	\$ 322,672	8.31%	\$2,529,293	\$403,521
5 Bank of America, National Association	\$ 309,599	7.97%	\$2,426,819	\$387,172
6 Saratoga National Bank and Trust	\$ 279,646	7.20%	\$2,192,030	\$349,714
7 Citizens Bank, National Association	\$ 256,418	6.60%	\$2,009,955	\$320,666
8 KeyBank National Association	\$ 219,622	5.65%	\$1,721,527	\$274,651
9 TD Bank, National Association	\$ 165,999	4.27%	\$1,301,198	\$207,592
10 NBT Bank, National Association	\$ 126,928	3.27%	\$994,936	\$158,731
11 Glens Falls National Bank and Trust Company	\$ 122,276	3.15%	\$958,471	\$152,914
12 Pioneer Savings Bank	\$ 84,343	2.17%	\$661,130	\$105,476
13 Berkshire Bank	\$ 80,331	2.07%	\$629,682	\$100,459
14 First National Bank of Scotia	\$ 37,524	0.97%	\$294,135	\$46,926
15 Manufacturers and Traders Trust Company	\$ 30,373	0.78%	\$238,081	\$37,983
16 Chemung Canal Trust Company	\$ 19,597	0.50%	\$153,613	\$24,507
17 Community Bank, National Association	\$ 7,256	0.19%	\$56,877	\$9,074
18 Catskill Hudson Bank	\$ 2,142	0.06%	\$16,790	\$2,679
TOTAL	\$ 3,690,713	95%	\$28,929,982	\$4,615,460
Total Area FDIC Deposits	3,690,713			
Share of total FDIC market represented	100%			
NON-FDIC market allowance (CU)	5%			
Total Market estimate	\$3,884,961			

Primary Jobs Worksheet Deposit Estimate	\$ 30,452,613
Length of Time for Initial Job Creation Goal	5
Model Time Period	15
Program Primary Job Goal	3,600
New deposits created over model time period*	\$ 395,883,967

*This figure would not include deposits transferred in because of employees relocating into the area, and does NOT include commercial accounts, which would magnify this estimate.

Assumptions for NPV Methodology

Deposit Spread	2.0%
Discount Rate	6.5%
Time Period After Program	10

Impacts in General

A Semiconductor/Advanced Materials facility in Saratoga County will generally have the following impacts:

- 1. Every job will stimulate the creation of another 2.29 jobs.*
- 2. Every dollar paid in earnings will stimulate the creation of another \$.72 in earnings.*
- 3. Every million dollars of output delivered to final demand will stimulate another \$.39 in output across all industries.*