

Economic Impact Analyses of Proposed Entertainment District in Roanoke Rapids, NC and Advanced Vehicle Research Center in Northampton County, NC

by

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Across the United States, regional economies are attempting to recover from the deep structural changes caused by the 2001 recession. In Northeast North Carolina, the impacts of industry restructuring and economic downturn have been severe. This sixteen county region encompasses Beaufort, Bertie, Camden, Chowan, Currituck, Dare, Gates, Halifax, Hertford, Hyde, Martin, Northampton, Pasquotank, Perquimans, Tyrrell and Washington Counties. In comparison to the rest of North Carolina, regional economic recovery has lagged. Some indicators of the economic challenges faced by this region include:

- Slower regional population growth (0.9%) compared to the rest of the State (3.4%) between 2000 and 2002;¹
- Declining Labor Force Participation Rates between 2000 and 2002, a possible indicator of the institutionalization of unemployment;²
- Workers are forced to seek jobs outside the region. Net commuting for the region totaled -14,281 in 2000;³
- Nine of the Partnership counties collected \$10 million or less in property taxes in 2003. Five of those gathered less than \$5 million;⁴
- And, according to the *North Carolina Economic Review: 2002*, North Carolina's Northeastern Region had the smallest share of statewide employment, at 3.1 percent, in 2000.⁵

North Carolina's Northeast Partnership (Partnership) is working to address regional economic challenges with progressive and proactive economic development planning. The Partnership has commissioned UNC's Carolina Center for Competitive Economies

¹ U.S. Census Bureau.

² Author's calculations using U.S. Census Bureau population data and U.S. Bureau of Labor Statistics Labor Force data.

³ NC State Data Center. NC Commuting to Work, 2000 Census. County Summary

⁴ NC Department of State Treasurer.

⁵ NC Department of Commerce, Policy, Research and Strategic Planning Division. September 2002.

(C3E) to provide separate economic impact analyses of two projects proposed to be located in the region; an entertainment district to be located in Roanoke Rapids and a vehicle research, development and testing facility in Northampton County. This report first describes the overall methodology used to ascertain the impacts of the proposed projects on the Northeast region. Two separate sections describing the impacts of each project follow this portion. Finally, the report contains detailed appendices of the data used in the impact estimations as well as the modeling results.

SECTION 1:

ECONOMIC IMPACT ANALYSIS METHODOLOGY

In Sections 2 and 3 we report the estimated direct, indirect, and induced impacts of the first few years of each project's implementation,⁶ using IMPLAN Professional software. IMPLAN is an input-output modeling program that permits researchers to estimate the projected effects of an exogenous increase in demand, such as an infusion of federal funds, in a specified geographic region such as the sixteen counties in Northeast North Carolina. In the following analyses, the change in demand is caused by the infusion of new private-sector investments in the region corresponding to the proposed entertainment district and vehicle testing facility. The implicit assumption in our model is that the direct, indirect, and induced spending attributable to the projects would not have otherwise occurred in their absence.

Using IMPLAN Type II multipliers and 2002 county-level data, we report the *direct*, *indirect* and *induced* effects on the Partnership region's employment, labor income and industry output resulting from direct industry investment in the two separate projects. Partnership representatives provided specific investment information for each of the projects analyzed. "Direct" effects represent the changes for a given industry resulting from the increase in final demand for that same industry on, for example, payroll. In our studies, the increase in final demand is the direct investment from new or existing regional firms making new investments in the proposed projects. "Indirect" effects include the impacts on all local industries resulting from industries purchasing from industries in multiple iterations as a consequence of this increase in final demand.

"Induced" effects are the increases in spending by households resulting from the increases in income and population that were caused by both the direct and indirect effects. The total effect of the new investments from the proposed projects is represented by the sum of all three effects - direct, indirect and induced.

⁶ IMPLAN models are static models that cannot adjust for future structural changes in a study area's economy. Therefore, it is best to limit study periods to around three years.

SECTION 2: ECONOMIC IMPACTS OF THE PROPOSED FAMILY ENTERTAINMENT DISTRICT

The city of Roanoke Rapids, located in Halifax County, has proposed the development of a family entertainment district to be anchored by the Randy Parton Theater. The first phase of the development would include restaurants, hotels, shopping venues and a variety of family-oriented amusement and entertainment opportunities. The second phase would expand the number of music theaters and includes the construction of an outlet shopping mall.

Based on available information, the model assumes construction for phase one structures will begin in 2005. Moreover, all venues in this stage, with the exception of the Randy Parton Theater, are presumed to begin operations in the beginning of 2006. The Theater is scheduled to begin hosting performances in the second quarter of calendar year 2006; operating at 50 percent capacity for 2006 and 2007 and at 70 percent for 2008. Construction for phase two structures occurs in 2007 and they are in full-service for 2008. The data used for building the IMPLAN model consists of construction costs and expected sales. Therefore, all events imputed into the model were determined to have 100 percent local initial spending. A detailed table of the investment events for each year may be found in Appendix A.

Model Results

Between 2005 and 2008, construction costs and venue sales from the entertainment district amount to over \$412 million. Exhibit one summarizes the direct, indirect, induced and total impacts of investments over the four years on North Carolina's Northeast's economy.

Exhibit 1: IMPLAN Estimates of Economic Impacts, Entertainment District

Type of Impact	Direct	Indirect	Induced	Total***	Multiplier (Total/Direct)
Increased Industry Output*	\$395.6	\$85.6	\$107.5	\$588.8	1.5
Increased Employment**	10,740	1,189	1,515	13,444	1.3
Increased Labor Income*	\$165.0	\$26.9	\$34.7	\$226.6	1.4

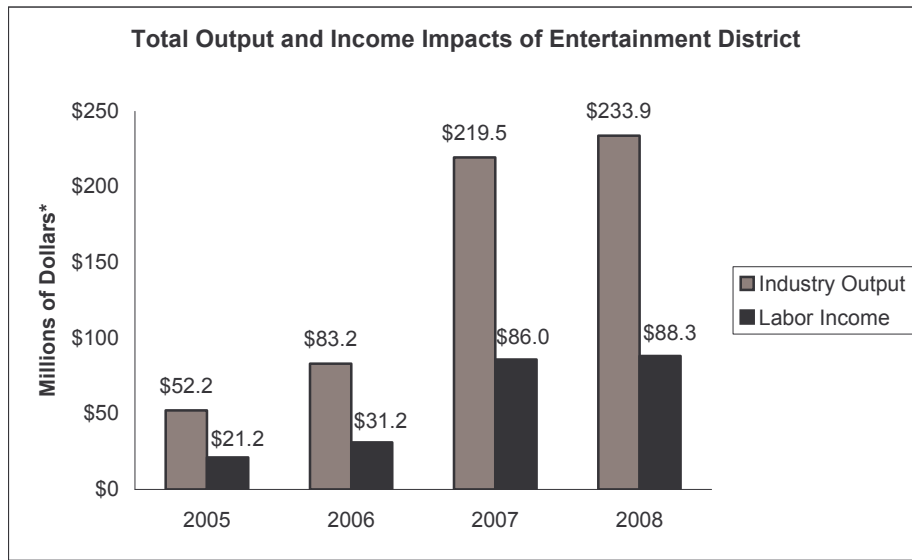
* In millions of 2005 dollars

** In Job-years, as reported by Implan

*** Sum of components may not add up to totals due to rounding

The proposed investment in the entertainment district, while positive, has a much stronger effect on industry output than employment and labor income, as indicated by the multipliers in Exhibit 1. Furthermore, Exhibit 2 illustrates how industry output continues to rise towards the end of the analysis period while labor income levels-off.

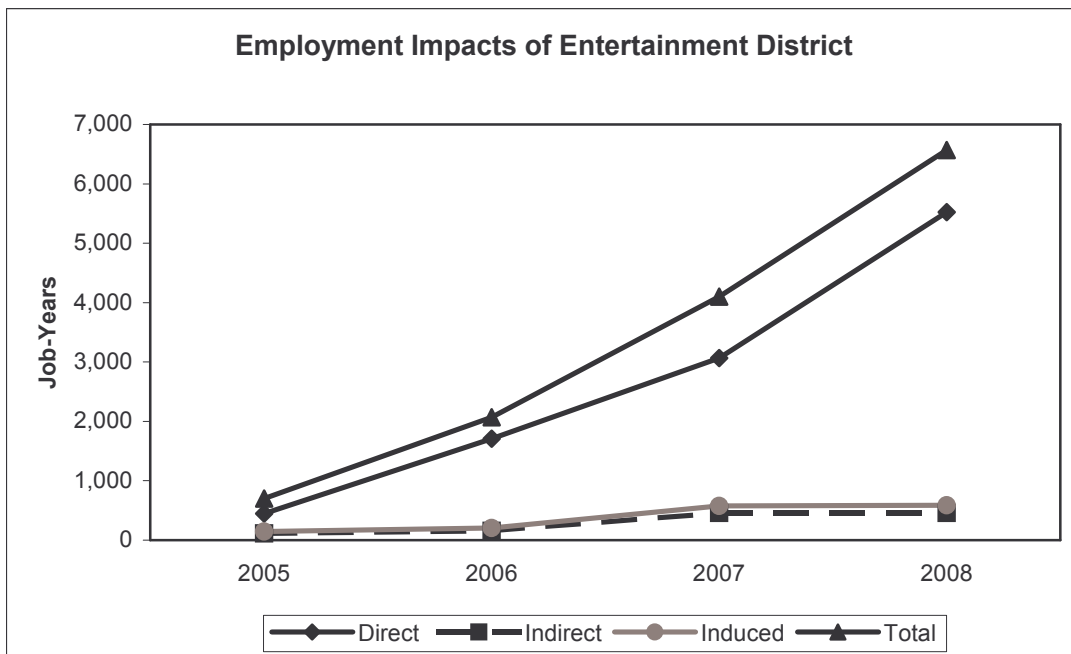
Exhibit 2: Total Industry Output and Labor Income Impacts



*Deflated to 2005 dollars.

Employment trends, as seen in Exhibit 3, also suggest that the proposed investment, while having significant direct impacts, may not have considerable indirect and induced employment effects. This may be attributable the high level of construction employment in the direct impacts. Appendix B contains tables depicting the annual impacts of the entertainment district on regional employment, income and output.

Exhibit 3: Annual Employment Impacts



Employment figures are reported in job-years, as the model does not presume that the jobs created are long-term positions. This is especially true of construction jobs. A conversion to average annual full-time employment is provided in Exhibit 4. This table also places the labor impacts within the context of the regional economy.

	Total in NCNE, 2003 ^[3]	Amount Induced by Investment ^[1]	Percent
Wages^[2]	3,029	227	7.5%
Employment	121,016	3495 ^[4]	2.9%

[1] Data provided from Implan Pro 2.0 Regional Analysis Data, Model Constructed by C3E

[2] In millions of dollars

[3] North Carolina Employment Security Commission. www.ncesc.com

[4] Full-Time Equivalents were derived by converting the total employment estimate reported by IMPLAN in job-years. Job-years were multiplied by 2080 hours to convert to hours of employment. Full-time jobs were then calculated by dividing the hours by 2000, our estimate of annual hours worked by a full-time employee. This number was finally divided by four, to account for the four-year modeling period since all jobs are assumed to be permanent positions created.

As revealed in Exhibit 4, the local impact of the investment associated with the entertainment district project would be highly significant. Moreover, it is reasonable to assume that over time, the regional industry mix would adjust in order reap the full economic benefits associated with the project; thus increasing long-term indirect and induced effects.

SECTION 3: ECONOMIC IMPACTS OF THE PROPOSED ADVANCED VEHICLE RESEARCH CENTER

The proposed Advanced Vehicle Research Center (Center) will provide automotive and transportation research facilities for conventional and alternative fuel vehicles, including “hybrid and multi-fuel systems, hydrogen, fuel cell, and other non-fossil fuel technologies.”⁷ The Center will be owned by a not-for profit corporation and will collaborate with North Carolina State University and other educational institutions to develop technologies that will impact the “automotive, transportation, energy and defense industries.”⁸ The 630-acre Center is proposed to be located in Northampton County, off Interstate 95.

The IMPLAN model constructed covers three years of operation, beginning in 2006. Investment data inserted into the model consist primarily of expected facility costs. Therefore, the model was set to use Regional Purchase Coefficients to determine the percent of Center costs that would be spent locally. University programs, constructions and rent, however, were set to 100 percent local spending. Appendix C contains a detailed listing of events entered into the model.

Model Results

The period from 2006 through 2008 generally encompasses the establishment of the Center. In that period of time, total investments are estimated at just over \$43.5 million. The estimated direct, indirect and induced impacts generated by the model are reported in Exhibit 5.

Exhibit 5: IMPLAN Estimates of Economic Impacts, Advanced Vehicle research Center

Type of Impact	Direct	Indirect	Induced	Total ^[3]	Multiplier (Total/Direct)
Increased Industry Output ^[1]	\$36.8	\$3.2	\$5.3	\$45.3	1.2
Increased Employment ^[2]	245	37	75	357	1.5
Increased Labor Income ^[1]	\$8.2	\$1.1	\$1.7	\$11.0	1.3

[1] In millions of 2005 dollars

[2] In Job-years, as reported by Implan

[3] Sum of components may not add up to totals due to rounding

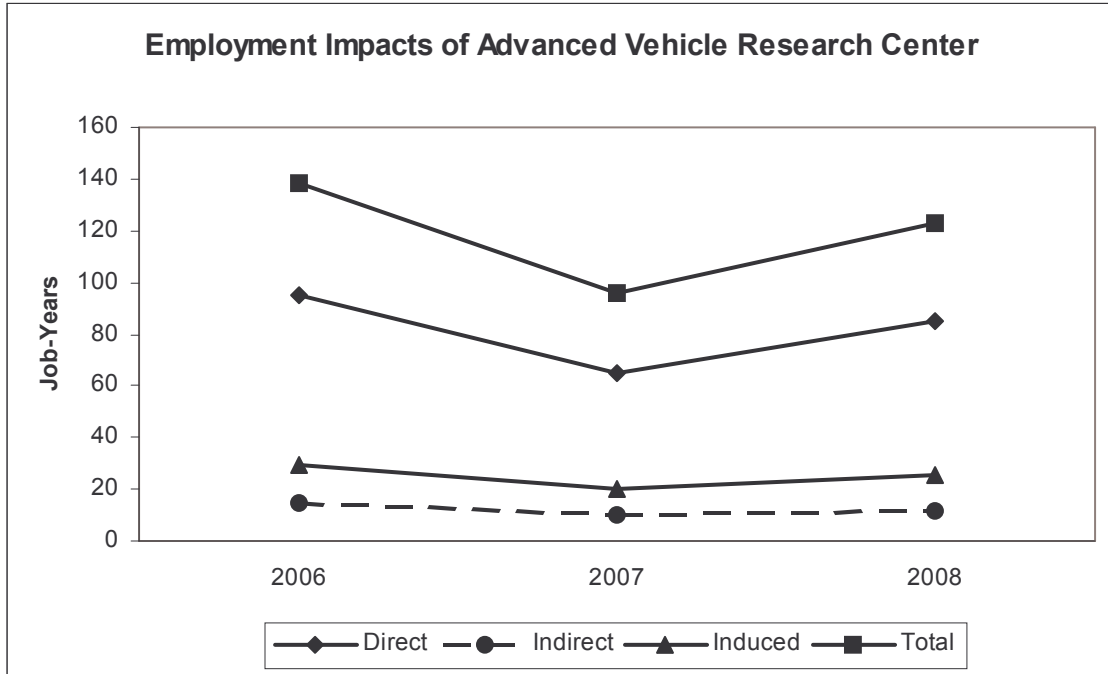
The expected expenditures by the Center favor a larger impact on employment compared to output and income. This is likely due to construction expenditures. The trends revealed in Exhibit 6 indicate that employment impacts positively correlate to construction expenditures, with the highest level of construction spending occurring in

⁷ *North Carolina's Advanced Vehicle Research Center*; Advanced Vehicle Research Center.

⁸ *Ibid.*

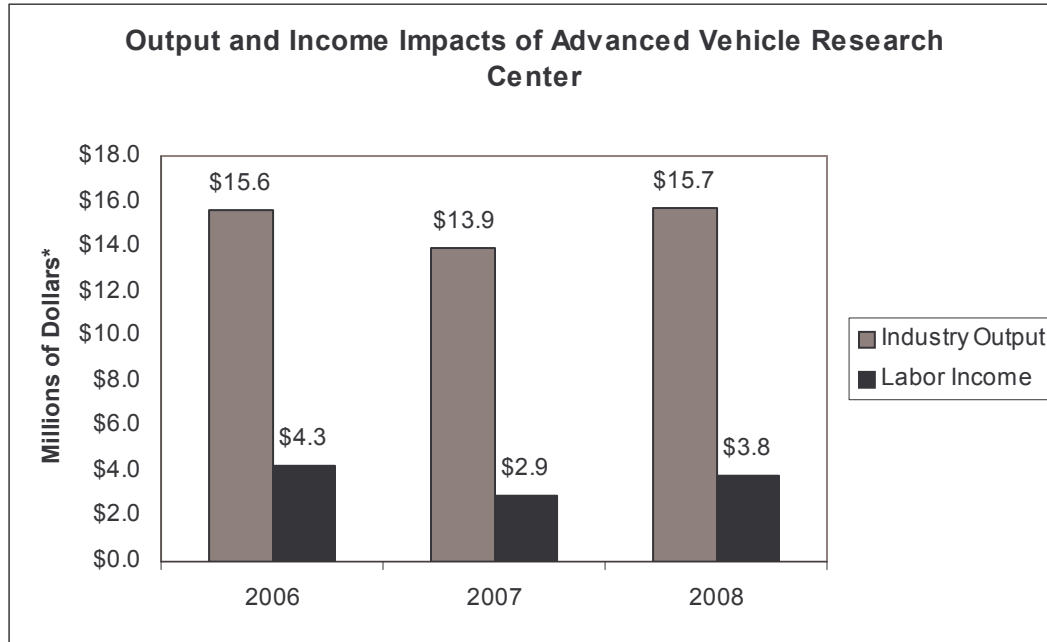
2006. Appendix D contains tables depicting the annual impacts of the Advanced Vehicle Research Center district on regional employment, income and output.

Exhibit 6: Annual Employment Impacts



Industry output and labor income also dip in 2007 in conjunction with reduced Center spending. Mirroring employment trends, income effects peak in 2006.

Exhibit 6: Total Industry Output and Labor Income Impacts



*Deflated to 2005 dollars.

Exhibit 7 underscores that the Center’s expenditures for its first three years of operation do not represent a significant economic impact for the regional geography. However, an IMPLAN model is not capable of capturing the full effects of a research facility geared towards influencing future industry developments.

Exhibit 7: NCNE Partnership Industry Impact Comparison with Total Area Income & Employment

	Total in NCNE, 2003	Amount Induced by Investment ^[1]	Percent
Personal Income ^[2]	\$3,028.9 ^[3]	\$11	0.4%
Employment	121,016 ^[3]	124 ^[4]	0.1%

[1] Data provided from Implan Pro 2.0 Regional Analysis Data, Model Constructed by C3E

[2] In millions of dollars

[3] North Carolina Employment Security Commission. www.ncesc.com

[4] Full-Time Equivalents were derived by converting the total employment estimate reported by IMPLAN in job-years. Job-years were multiplied by 2080 hours to convert to hours of employment. Full-time jobs were then calculated by dividing the hours by 2000, our estimate of annual hours worked by a full-time employee. This number was finally divided by three, to account for the three-year ramp-up since all jobs are assumed to be permanent positions created.

Appendix A: Entertainment District, Industry Investments Inputted into IMPLAN Model

Industry IMPLAN Categories and Investments (and IMPLAN codes) ^[1]	Corresponding NAICS Codes	Direct Investment 2005	Direct Investment 2006	Direct Investment 2007	Direct Investment 2008	Direct Investment Total
Construction: New Commercial Buildings ^[2]						
Randy Parton Theater (sector 38)	23	\$3,937,500	\$1,312,500			\$5,250,000
Randy Parton Theater Site Improvements (sector 41)	23		\$2,250,000			\$2,250,000
Other Theaters (sector 38)	23			\$22,000,000		\$22,000,000
Hotels (sector 38)	23	\$8,250,000		\$17,500,000		\$25,750,000
Full-Service Restaurants (sector 38)	23	\$6,000,000		\$9,000,000		\$15,000,000
Fast-Food Restaurants (sector 38)	23	\$3,000,000		\$3,000,000		\$6,000,000
Gas/Convenience Facilities (sector 38)	23	\$4,000,000		\$2,000,000		\$6,000,000
Family Entertainment Venues (sector 38)	23	\$3,500,000		\$5,000,000		\$8,500,000
Shopping Venues (sector 38)	23	\$5,000,000		\$30,000,000		\$35,000,000
Randy Parton Theater Tickets Sales						
Performing Arts Companies (sector 471) ^[3]	7111		\$7,593,750	\$10,125,000	\$14,175,000	\$31,893,750
Other Theater Tickets Sales						
Performing Arts Companies (sector 471)	7111				\$21,465,000	\$21,465,000
Theater Merchandise and Concessions						
Promoters of Performing Arts (sector 474) ^[3]	7113, 7114		\$2,531,250	\$3,375,000	\$4,725,000	\$10,631,250
Food Services and Drinking Places (sector 481) ^[3]	722		\$2,531,250	\$3,375,000	\$4,725,000	\$10,631,250
Hotel Sales						
Hotels and Motels (sector 479)	72111, 72112		\$3,723,000	\$3,723,000	\$11,169,000	\$18,615,000
Full-Service Restaurant Sales						
Food Services and Drinking Places (sector 481)	722		\$5,200,000	\$5,200,000	\$13,000,000	\$23,400,000
Fast-Food Restaurants						
Food Services and Drinking Places (sector 481)	722		\$2,600,000	\$2,600,000	\$5,200,000	\$10,400,000
Gas and Convenience Facilities Sales						
Gasoline Stations (sector 407)	447		\$7,800,000	\$7,800,000	\$11,700,000	\$27,300,000
Family Entertainment Venues						
Other Amusement, Gambling and Recreation Industries (sector 478)	7131, 7132, 71391, 71392, 71393, 71399		\$3,000,000	\$3,000,000	\$6,000,000	\$12,000,000
Shopping and Outlet Shopping Venues Sales						
Clothing & Accessories Stores (sector 408)	448		\$5,000,000	\$5,000,000	\$20,000,000	\$30,000,000
Sporting Goods, Hobby, Book and Music Stores (sector 409)	451		\$5,000,000	\$5,000,000	\$20,000,000	\$30,000,000
General Merchandise Stores (sector 410)	452		\$5,000,000	\$5,000,000	\$20,000,000	\$30,000,000
Miscellaneous Store Retailers (sector 411)	453		\$5,000,000	\$5,000,000	\$20,000,000	\$30,000,000
TOTAL INVESTMENT		\$33,687,500	\$58,541,750	\$147,698,000	\$172,159,000	\$412,086,250

[1] 2001 Implan Sectoring Scheme

[2] Land costs have only been excluded in the construction costs for the Randy Parton Theater. The inclusion of these costs in other structures' construction costs results in a slight overestimation of economic impacts.

[3] Operating three-quarters of calendar-year 2006.

Appendix B: Entertainment District, IMPLAN Model Results

Employment*				
Year	Direct	Indirect	Induced	Total
2005	445	113	144	701
2006	1707	157	207	2070
2007	3064	460	578	4102
2008	5524	459	586	6569
Total	10740	1189	1515	13444

*In job-years as reported by Implan

Note: sum of components may not add up to totals due to rounding

Industry Output*				
Year	Direct	Indirect	Induced	Total
2005	\$33.7	\$8.4	\$10.2	\$52.2
2006	\$57.1	\$11.4	\$14.7	\$83.2
2007	\$144.9	\$33.6	\$41.0	\$219.5
2008	\$159.9	\$32.3	\$41.6	\$233.9
Total	\$395.6	\$85.6	\$107.5	\$588.8

*In millions of dollars deflated to the year 2005

Note: sum of components may not add up to totals due to rounding

Labor Income*				
Year	Direct	Indirect	Induced	Total
2005	\$14.7	\$3.2	\$3.3	\$21.2
2006	\$23.2	\$3.2	\$4.7	\$31.2
2007	\$61.2	\$11.5	\$13.2	\$86.0
2008	\$65.9	\$8.9	\$13.4	\$88.3
Total	\$165.0	\$26.9	\$34.7	\$226.6

*In millions of dollars deflated to the year 2005

Note: sum of components may not add up to totals due to rounding

Appendix C: Advanced Vehicle research Center, Industry Investments Inputted into IMPLAN Model

Industry IMPLAN Categories and Investments (and IMPLAN codes) ¹	Corresponding NAICS Codes	Direct Investment 2006	Direct Investment 2007	Direct Investment 2008	Direct Investment Total
University Programs					
Colleges, Universities, Junior Colleges (sector 462)	6112,6113	50,000	50,000	50,000	\$150,000
Other Payroll Expenses					
Insurance Agencies, Brokerages, and Related Activities (sector 428)	5242	270,000	\$900,000	\$1,500,000	\$2,670,000
Travel and Show					
Travel Arrangement and Transportation Services (sector 456)	5615	\$120,000	\$180,000	\$100,000	\$400,000
Sales and Marketing					
Advertising and Related Services (sector 447)	5418	\$96,000	\$96,000	\$96,000	\$288,000
Web Site					
Custom Computer Programming Services (sector 441)	541511	24,000	12,000	12,000	\$48,000
Accounting and Legal					
Accounting and Bookkeeping Services (sector 438)	5412	\$17,500	\$20,000	\$20,000	\$57,500
Legal Services (sector 437)	5411	\$17,500	\$20,000	\$20,000	\$57,500
Telephone, Utilities and Internet					
Power Generation and Supply (sector 30)	2211	\$16,000	\$18,400	\$21,160	\$55,560
Water, Sewage and Other Systems (sector 32)	2213	\$16,000	\$18,400	\$21,160	\$55,560
Telecommunications (sector 422)	5133	\$16,000	\$18,400	\$21,160	\$55,560
Capital Equipment					
Lawn and Garden Equipment Manufacturing (sector 258)	333112	\$25,000	\$37,500	\$12,500	\$75,000
Automobile and Light Truck Manufacturing (sector 344)	33611	\$25,000	\$37,500	\$12,500	\$75,000
Furniture and Fixtures					
Office Furniture, Except Wood, Manufacturing (sector 370)	337214	\$3,000	\$47,500	\$62,500	\$113,000
Showcases, Partitions, Shelving and lockers (sector 371)	337215	\$3,000	\$47,500	\$62,500	\$113,000
Computers and Communications					
Electronic Computer Manufacturing (sector 302)	334111	\$9,000	\$28,500	\$37,500	\$75,000
Telephone Apparatus Manufacturing (sector 306)	33421	\$9,000	\$28,500	\$37,500	\$75,000
Buildings, Office Rent					
Real Estate (sector 431)	531	\$30,000	\$70,000	\$90,000	\$190,000
Equipment					
Heavy Duty Truck Manufacturing (sector 345)	33612	\$1,750,000	\$2,125,000	\$2,000,000	\$5,875,000
Truck Trailer Manufacturing (sector 347)	336212	\$1,750,000	\$2,125,000	\$2,000,000	\$5,875,000
Overhead Cranes, Hoists, and Monorail Systems (sector 293)	333923	\$1,750,000	\$2,125,000	\$2,000,000	\$5,875,000
Industrial Truck, Trailer, and Stacker Manufacturing (sector 294)	333294	\$1,750,000	\$2,125,000	\$2,000,000	\$5,875,000
Construction					
Manufacturing and Industrial Buildings (sector 37)	23	\$4,000,000	\$2,000,000	\$4,000,000	\$10,000,000
Highway, Street, Bridge and Tunnel Construction (sector 39)	23	\$2,500,000	\$2,000,000	\$1,000,000	\$5,500,000
TOTAL INVESTMENT		\$14,247,000	\$14,130,200	\$15,176,480	\$43,553,680

1. 2001 Implan Sectoring Scheme

Appendix D: Advanced Vehicle research Center, IMPLAN Model Results

Employment*				
Year	Direct	Indirect	Induced	Total
2006	95	14	29	138
2007	65	10	20	96
2008	85	12	26	123
Total	245	37	75	357

*In Job-hours as reported by IMPLAN

Note: sum of components may not add up to totals due to rounding

Industry Output*				
Year	Direct	Indirect	Induced	Total
2006	\$12.3	\$1.3	\$2.1	\$15.6
2007	\$11.6	\$0.9	\$1.4	\$13.9
2008	\$12.9	\$1.0	\$1.8	\$15.7
Total	\$36.8	\$3.2	\$5.3	\$45.3

*In millions of dollars deflated to the year 2005

Note: sum of components may not add up to totals due to rounding

Labor Income*				
Year	Direct	Indirect	Induced	Total
2006	\$3.2	\$0.4	\$0.7	\$4.3
2007	\$2.2	\$0.3	\$0.5	\$2.9
2008	\$2.9	\$0.4	\$0.6	\$3.8
Total	\$8.2	\$1.1	\$1.7	\$11.0

*In millions of dollars deflated to the year 2005

Note: sum of components may not add up to totals due to rounding