

**Economic Impact of
Diamond State Sports and Learning Center**

prepared for the

Diamond State Sports and Learning Center Planning Committee

by

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Introduction

The purpose of this study is to measure the economic impacts of the proposed Diamond State Sports and Learning Center (DSSLC). The study is commissioned by the Diamond State Sports and Learning Center (DSSLC) Committee.

In the context of business, economic impact is defined as the net economic change in a host community that results from the economic activity attributed to a firm, business, or facility. The purpose of an impact analysis is to measure the value of benefits that a community accrues due to the “expected” economic activity. Benefits can be measured in terms of expenditures, output, or employment. For the purposes of this study, the economic impact of the DSSLC’s operations will be measured by the increase in total employment, total gross state product, fiscal revenue, and personal income.

The report is organized in the following manner: first, an executive summary outlines the key findings. Second, a brief background of the proposed center is presented. Third, the methodology is discussed, which includes an overview of multiplier analysis. The results of the study follow, and then additional impacts and limitations are given. An Appendix is included containing “Assumptions and Model Inputs”, a glossary, and additional estimates. The report concludes with observations and the appendix.

Executive Summary

The purpose of this report is to measure the economic impact of the proposed Diamond State Sports and Learning Center (DSSLC) to the State of Delaware. The primary data source for this research is the independent feasibility study by C. H. Johnson, Inc., which provides revenue, employment, event, and attendance projections. Economic impact studies are used across the nation to measure the impact of various projects, events and industries. Such studies are used to understand the benefits that flow from a particular project, event or industry. The facility would offer recreational and competitive athletic opportunities as well as increased educational opportunities for children. The sports facilities would primarily be oriented for use by regional sports organizations and teams. The planned DSSLC would fill an unmet need for such facilities in the local marketplace.

The major findings of this study are:

- The facility is expected to have a positive impact on the economy. The construction of the facility will produce a “one-time” gain for the State of Delaware. It will generate 185 jobs in the state through direct, indirect, and induced employment effects, and \$6.6 million dollars in personal income.¹
- The operation of the facility will support approximately 45 continuing jobs *per year* through direct, indirect, and induced employment effects.²
- The continuing operation of the DSSLC will generate between \$1.4 million and \$2.0 million in total personal income *per year* between 2005 and 2014.
- DSSLC will generate between \$1.5 million and \$1.7 million of output *per year* for the State.
- Non-professional sports facilities and learning centers are average-multiplier industries.³ While the permanent employees are well compensated, most staff are part time, with average compensation, producing moderate impacts for the economy.
- At present, there is pent up demand for this type of facility. Area teams leave the state to practice and compete. The DSSLC will therefore add net new industry sales to the area, without adversely affecting a competitor facility in the state. The facility will also reduce the need for Delaware residents to use out-of-state facilities for sports and community events. This out-of-state spending represents a leakage from (i.e., losses or flows out of) the state economy that will be recaptured by the use of the DSSLC.

¹ The construction effects are based on a regional purchase coefficient of 93.3%.

² The operation effects are based on regional purchase coefficient of 79.6%.

³ The output multiplier for the recreation service industry is 1.5, which is equivalent to the average output multiplier of all industries. The employment multiplier for the recreation service industry is approximately 1.7, which is equivalent to the average employment multiplier of all industries.

- The DSSLC can bring non-economic benefits to the area by broadening the sports and recreation choice of the community. It could also improve the community's regional image.
- The DSSLC has the capacity to host numerous special events throughout the calendar. Hosting special sporting events such as high school basketball tournaments have the potential to garner significant publicity for the City and region. Such events can spur increased tourism activity in the City as visitors to the DSSLC visit other area attractions, and they may return again in the future.
- Additionally, a Charter School tenant at the facility will increase the educational opportunities of residents. The Charter School may employ up to 28 staff. If all school employees are not previously employed in the City of Wilmington and are not current city residents, their employment at the DSSLC will generate additional net tax revenue for the city. Tax revenues flowing from the Charter School employment include head tax revenue of approximately \$3,000 *per year*, and city wage tax revenue of approximately \$14,000 *per year*.
- With the passage of a two percent hotel revenue tax, the City of Wilmington will derive additional revenue from out-of-state attendees of the DSSLC who chose to stay at one of the City's hotels. An optimistic forecast of these revenues suggests that approximately \$55,000 rental room tax may be due *per year*, assuming the estimate attendees all stay in City hotels. To the degree that out-of-state attendees staying in hotels choose non-City hotels, this revenue will be reduced.
- The operation of the facility will generate additional revenue for the City of Wilmington via the head tax. Estimated City employment will yield approximately \$3,000 head tax *per year*.
- The following table indicates the projected tax revenues for the city.

Figure A. Selected Perspectives on Projected Total City Taxes*

Year	Revenues from DDSLC with Roller Rink: Anticipated Utilization¹	Revenues from DDSLC with Roller Rink: Reduced Utilization²
2004	93,988	93,988
2005	84,030	50,980
2006	83,395	49,995
2007	91,563	53,437
2008	91,803	53,090
2009	95,494	54,735
2010	98,183	56,156
2011	99,083	56,786
2012	100,967	57,903
2013	101,274	58,342
2014	101,900	59,051

*Includes City Wage Tax & City Head Tax from scenario 1 PLUS estimated City Room Tax and City Wage and Head Taxes from the impact of the Charter School.

¹Scenario 1 in the text, with demand consistent with C. H. Johnson report.

²Scenario 1 in the text with utilization reduced (lower) than demand consistent with C. H. Johnson report.

- The DSSLC's establishment could be a catalyst for retail activity in the community. The facility, together with the Charter School could enhance housing values and make the area more attractive for present and future residents.

Background

The Diamond State Sports and Learning Center Planning Committee is considering development of a new multipurpose sports and education center (called the Diamond State Sports and Learning Center, or DSSLC) in Wilmington, DE. The facility will be located on the site of Eden Park, in Wilmington, Delaware.

The facility would offer recreational and competitive athletic opportunities as well as an educational component for children. The sports facilities would primarily be oriented for use by regional sports organizations and teams. In general, the planned DSSLC would fill an unmet need for such facilities in the local marketplace.

The proposed facility is estimated to cost between \$10 million and \$12 million. A roller rink option within the facility is also being considered. A feasibility study of the proposed facility was commissioned by the Diamond State Sports and Learning Center Planning Committee and was conducted by C.H. Johnson Consulting, Inc.⁴

The type of activities that may occur at the DSSLC include men's and women's college basketball games, college volleyball games, basketball and volleyball practices, high school/club sports events and tournaments, high school sports practices, youth and adult leagues, camps and clinics, special sporting events, college graduations, and community events such as banquets and other ticketed events. A potential Charter School tenant may also use the facility.

⁴ A copy of the feasibility study may be obtained from McFalls and Associates, 2 Mill Road, Suite 207, Wilmington, DE 19806.

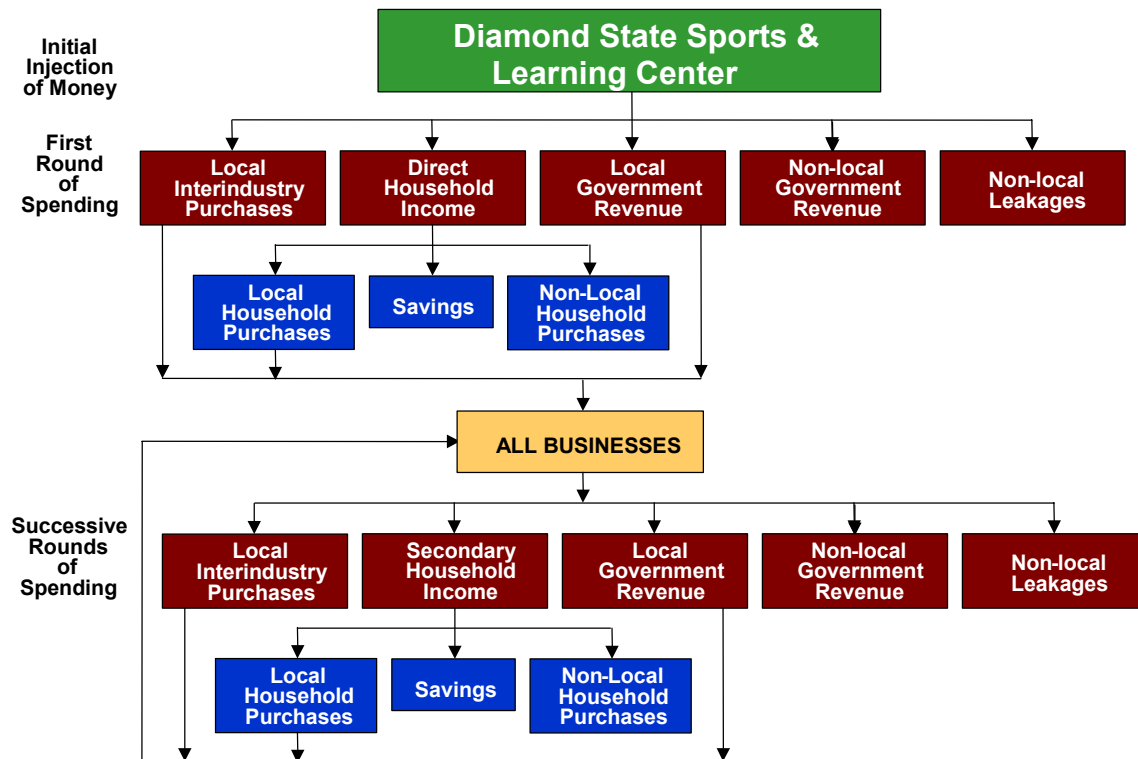
Methodology

A feasibility study by C. H. Johnson Consulting, Inc. provides revenue estimates under different operating scenarios. These data serve as inputs into an econometric model of the Delaware economy, which is used to trace the impact of the DSSLC and all of its consequent effects. The relationship between the total impact of the DSSLC and its actual activity is termed “multiplier effects.” This section will discuss the use of economic multipliers.

A multiplier is the numerical relationship between an original change in economic activity and the ultimate change in activity that results as the money is spent and re-spent through various sectors of the economy. There are several kinds of multipliers used to assess economic impacts of new activity, including employment multipliers, income multipliers and output multipliers.

Figure 1 below illustrates the multiplier process. The DSSLC’s operation equates with a certain level of economic activity. These expenditures are disbursed in five different ways. The three local recipients of the disbursement will continue to spend this money in the same five ways over successful rounds of spending. Money that flows to non-local government and non-local leakages (intermediate purchases from non-Delaware suppliers, and non-Delaware employees), reflected by the regional purchase coefficient, is lost. The initial expenditure has a ripple effect through the economy as successive rounds of spending magnify its impact. This is the principle of the multiplier.

Figure 1
The Concept of the Multiplier.



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The multiplier analysis used in this study captures the full effects (direct, indirect and induced) of the DSSLC on the economy. These effects are described below.

Direct Effects

Direct economic impacts consist of the jobs and payroll created by the primary producers (i.e., DSSLC).

Indirect Effects

Indirect impacts consist of the additional jobs and payroll created when the primary producing company purchases goods and services from the many diverse businesses that support it. These businesses include equipment suppliers, construction services, transportation services, management services, food services, and many other types of support businesses. The direct impacts include both the payroll of the support businesses themselves,

and the additional payroll created when employees of the support businesses spend their wages throughout the local economy.

Induced Effects

Induced effects consist of the additional payroll created throughout the economy when the employees of the primary producers spend their personal incomes on consumer goods, other property, services and taxes.

Economic impact may be measured in a number of ways: employment, income or output. This study will report the DSSLC's impact in terms of each of these measures.

An employment multiplier is the total change in employment generated in the local economy for each unit change of employment in a sector of that economy. (Note that jobs can be full-time or part-time positions.) For example, the employment multiplier for this sector is 1.2, and this indicates that for every 10 jobs in the industry, there would be 2 additional jobs generated in other industries (See Figure 2).

A household income (or earnings) multiplier is the total change in household income throughout the local economy from a \$1.00 change in household income payment by an export sector. For example, in this sector the multiplier is 1.4, so that for every \$100 earned in this sector an additional \$40 in income would be realized in other sectors (See Figure 2).

An output (or business) multiplier is the total change in sales generated throughout the local economy by a \$1.00 change in export sales of a particular sector.

Multipliers are available for every industry classified by federal statistical agencies. Each industry is assigned a different multiplier based on several factors, including the residency of workforce, the average wages paid, and the degree of regional purchasing—the proportion of intermediate purchases that is satisfied locally.

Multipliers are also available by areas (county, state, region). Because the composition of each area's economy is different, there can be wide variation in multipliers across economies.

Amusement and recreation services, not elsewhere classified, is the industry classification that best describes the operation of the DSSLC. This industry has a relatively lower employment and wage multiplier than other industries in the state. This is in part reflective of the relatively average/low wage nature of the industry, which mitigates the impact of successive rounds of spending. The multipliers are also in part reflective of Delaware's size, geography and economy; factors that lend themselves to leakages from (i.e., losses or flows out of) the state economy.

Figure 2
Comparison Multipliers for Delaware

INDUSTRY	EMPLOYMENT	WAGES
Amusement and Recreation Services, NEC	1.2	1.4
Banking	2.2	1.7
Computer and data processing services	1.8	1.3
Credit agencies	1.2	1.7
Drugs	2.7	1.7
Eating & drinking establishments	1.2	1.5
Inorganic chemicals	3.4	2.1
Motor vehicles	3.2	1.8
Motor vehicle parts and accessories	1.9	2.5
Organic fibers	3.1	1.7
Petroleum products	3.3	3.0
Poultry and eggs	2.4	2.1
Wholesale trade	1.7	1.6

Source: Minnesota IMPLAN Group, Inc. REMI, Inc.
Center for Applied Demography and Survey Research, University of Delaware.

Results

The feasibility study estimates revenues of the facility under a variety of scenarios, and the options of with and without a roller rink addition. The scenarios and options are predicated upon a baseline which encompass the overall characteristics and features of the proposed DSSLC. The revenues estimates and descriptions of these scenarios and options are detailed below. Alternative reduced utilization projections are estimated to provide a contrast to the major scenarios and options employed in this study, and this will be discussed later in the report.

Baseline

Baseline presents a likely scenario of facility operations based on its expected orientation and other characteristics; actual results will be affected by a number of factors regarding the facility's eventual orientation, demand mix, staffing and others. For example, because certain types of events are more profitable than others, a decision to host more events that are highly profitable will clearly increase the facility's net revenue. In addition, a smaller full-time staff would decrease operating expenses and make the facility more profitable, assuming that the same level of demand could be accommodated with a smaller staff.

Sensitivity Analysis

A sensitivity analysis is the evaluation of the various scenarios and options.

Scenario 1: Staffing Level

While a full-time staff of nine people is assumed for the facility, it is possible that a smaller staff could potentially provide the same level of services and accommodate the same level of demand as is projected. The number of full-time staff is reduced from nine to five. Revenue is assumed to be unaffected.

Scenario 2: Demand Mix

Different event types have various levels of profitability for the facility, and the actual demand mix will influence the facility's net income. This scenario revises the event demand projection, holding constant all other variables in the initial projection. Revenue changes relative to baseline and Scenario 1.

Scenario 3: Staffing level and Demand Mix

The previous two scenarios incorporate a change in only one variable (staffing level and demand mix). This scenario assumes both changes simultaneously—a reduced staff as well as the revised demand mix. Revenue is the same as under Scenario 2.

Roller Rink Facility Option

One potential development option involves the inclusion of a indoor roller rink. This type of facility has been shown to be successful, in terms of its demand and revenues, and has had a beneficial impact on the social fabric of inner-city neighborhoods. A USA roller rink of approximately 25,000 square feet is incorporated into the revenue estimates.

Figure 3 presents the revenue estimates of the DSSLC under the various scenarios.

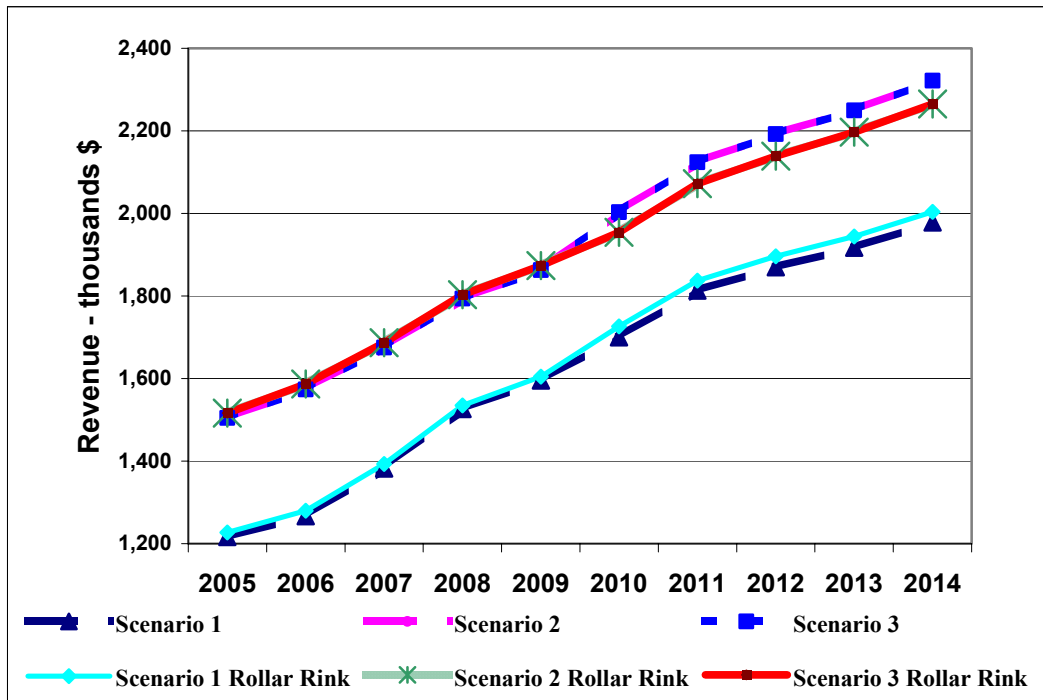
Figure 3
Total Revenue (nominal dollars*)

Without Roller Rink					
Year	2005	2006	2007	2008	2009
Scenario 1 Staffing Level	1,216,000	1,267,000	1,382,000	1,526,000	1,595,000
Scenario 2 Demand Mix	1,505,000	1,574,000	1,675,000	1,794,000	1,863,000
Scenario 3 Staffing Level and Demand Mix	1,505,000	1,574,000	1,675,000	1,794,000	1,863,000
Year	2010	2011	2012	2013	2014
Scenario 1 Staffing Level	1,700,000	1,813,000	1,870,000	1,917,000	1,978,000
Scenario 2 Demand Mix	2,003,000	2,124,000	2,192,000	2,250,000	2,322,000
Scenario 3 Staffing Level and Demand Mix	2,003,000	2,124,000	2,192,000	2,250,000	2,322,000
With Roller Rink					
Year	2005	2006	2007	2008	2009
Scenario 1 Staffing Level	1,227,000	1,280,000	1,393,000	1,535,000	1,605,000
Scenario 2 Demand Mix	1,516,000	1,587,000	1,687,000	1,803,000	1,874,000
Scenario 3 Staffing Level and Demand Mix	1,516,000	1,587,000	1,687,000	1,803,000	1,874,000
Year	2010	2011	2012	2013	2014
Scenario 1 Staffing Level	1,726,000	1,837,000	1,896,000	1,944,000	2,004,000
Scenario 2 Demand Mix	1,954,000	2,072,000	2,139,000	2,197,000	2,265,000
Scenario 3 Staffing Level and Demand Mix	1,954,000	2,072,000	2,139,000	2,197,000	2,265,000

*Nominal dollars do not take into account inflation.

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Chart 1 – Graph of Total Revenue, All Scenarios



The difference in revenues across the different scenarios is small, as seen in Chart 1. For example, in 2014, Scenario 3 without Roller Rink is 1.7% higher than Scenario 1 without Roller Rink. Scenario 3 with Roller Rink is 1.3% higher than Scenario 1 with Roller Rink. Scenario 1 revenue estimates are 1.3% higher with the roller rink addition than without. Scenario 2 revenue estimates are approximately 2.5% lower with the roller rink addition than without it. This relatively small variation in revenue estimates leads to only small variation in economic impact results.

Since the anticipated facility will include the roller rink, the results presented here will focus on that scenario.

Figure 4
Scenario 1 with Roller Rink: Economic Impacts of the Proposed Diamond State Sports and Learning Center to the State

Variable	YEAR					
	2004	2005	2006	2007	2008	2009
Employment	184.6	33.72	33.23	33.87	35.77	35.89
GRP (Chained 96\$)	8,430,000	980,000	958,000	954,000	1,015,000	1,019,000
GRP (Constant 96\$)	8,766,000	1,022,000	1,003,000	1,007,000	1,072,000	1,083,000
Pers Inc (Nom \$)	6,598,000	1,244,000	1,221,000	1,232,000	1,301,000	1,339,000
PCE-Price Index (Constant 96\$)	0.000519	0.001221	0.00071	0.00061	0.000534	0.000473
Real Disp Pers Inc (Constant 96\$)	5,198,000	734,000	805,000	816,000	866,000	891,000
Demand (Constant 96\$)	16,220,000	1,637,000	1,648,000	1,595,000	1,663,000	1,648,000
Output (Constant 96\$)	17,280,000	1,457,000	1,396,000	1,389,000	1,469,000	1,461,000
Variable	YEAR					
	2010	2011	2012	2013	2014	
Employment	37.48	39	39.06	38.88	39	
GRP (Chained 96\$)	1,080,000	1,148,000	1,163,000	1,167,000	1,190,000	
GRP (Constant 96\$)	1,160,000	1,232,000	1,247,000	1,259,000	1,282,000	
Pers Inc (Nom \$)	1,431,000	1,526,000	1,595,000	1,652,000	1,717,000	
PCE-Price Index (Constant 96\$)	0.00042	0.000382	0.000343	0.000328	0.000336	
Real Disp Pers Inc (Constant 96\$)	950,000	1,011,000	1,043,000	1,066,000	1,091,000	
Demand (Constant 96\$)	1,762,000	1,877,000	1,896,000	1,900,000	1,930,000	
Output (Constant 96\$)	1,575,000	1,675,000	1,717,000	1,709,000	1,755,000	

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The aggregate impacts of the DSSLC under Scenario 1 are present in Figure 4.

The construction period generates a one-time impact for the economy. The \$11 million construction creates 185 jobs in the state economy, and \$8.4 million in gross state product (constant or adjusted inflation, 1996 dollars) (or \$19.4 million in nominal 2004 dollars). Assuming that the facility opens in 2005, the employment impact will be approximately 34 jobs, rising to 39 jobs in 2014. Personal income is more than \$1 million higher *each year* the facility is in operation.

The roller rink facility is assumed to effectively serve as the project's anchor tenant in place of a college tenant. Under this scenario, the public sector or a private developer group would build the roller-rink facility, and USA Skates would equip and manage it. Without the presence of a college tenant and its consistent use of the Center, the facility would be able to accommodate an increased number of other events. However, in this scenario, the only demand change that is made is the loss of the anchor tenant's events, in addition to the presence of the roller rink.

City Wage Tax

The additional employment and income generated directly, indirectly and induced by the DSSLC have tax consequences for the City of Wilmington. These results are given in Figure 5. Figure 5 presents the estimated employment related tax based on Scenario 1 revenues. The creation of jobs in Wilmington will create tax revenue through the city wage tax (1.5% of gross salary) and the city head count tax (\$10.00 per position).

Figure 5
Scenario 1 with Roller Rink:
Estimated City of Wilmington Employment Related Tax Revenue

Variable	YEAR					
	2004	2005	2006	2007	2008	2009
State Employment	184.6	33.7	33.2	33.9	35.8	35.9
City Employment	137	25.1	24.7	25.2	26.7	26.7
City Wage Tax (\$)	78,154	11,891	11,061	10,697	10,987	10,922
Head Tax (\$)	15,834	2,413.2	2,366.4	2,429.4	2,599.5	2,604.9
Variable	YEAR					
	2010	2011	2012	2013	2014	
State Employment	37.5	39	39	38.9	39	
City Employment	27.9	29.1	29.1	29.0	29	
City Wage Tax (\$)	11,543	12,229	12,510	12,746	13,084	
Head Tax (\$)	2,753.4	2,888.4	2,893.8	2,877.6	2,885.7	

For the purpose of estimating the employment related tax revenue, the impacts for New Castle County are reduced 25% to assess the impact on the City of Wilmington. City wage tax is based on wage and salary earnings. Head tax is equal to City employment minus five, multiplied by \$10 per head per month. Center for Applied Demography and Survey Research, University of Delaware.

Under Scenario 3, alternate demand and staffing mix, the DSSLC with roller rink facility will generate approximately 45 jobs in the State, and \$2 million in personal income, see Figure 6 below.

Figure 6
Scenario 3 with Roller Rink: Economic Impacts of the Proposed Diamond State Sports and Learning Center to the State

Variable	YEAR					
	2004	2005	2006	2007	2008	2009
Employment	184.6	42.66	42.21	41.99	42.54	42.3
GRP (Chained 96\$)	8,430,000	1,274,000	1,259,000	1,221,000	1,225,000	1,213,000
GRP (Constant 96\$)	8,766,000	1,328,000	1,316,000	1,286,000	1,293,000	1,289,000
Pers Inc (Nom \$)	6,598,000	1,450,000	1,459,000	1,480,000	1,526,000	1,564,000
PCE-Price Index (Constant 96\$)	0.000519	0.001221	0.00071	0.00061	0.000534	0.000473
Real Disp Pers Inc (Constant 96\$)	5,198,000	887,000	977,000	990,000	1,024,000	1,030,000
Demand (Constant 96\$)	16,220,000	2,129,000	2,151,000	2,048,000	2,037,000	1,980,000
Output (Constant 96\$)	17,280,000	1,957,000	1,884,000	1,816,000	1,804,000	1,762,000
Variable	YEAR					
	2010	2011	2012	2013	2014	
Employment	42.42	43.82	43.88	43.76	43.95	
GRP (Chained 96\$)	1,225,000	1,289,000	1,305,000	1,316,000	1,335,000	
GRP (Constant 96\$)	1,312,000	1,381,000	1,400,000	1,415,000	1,446,000	
Pers Inc (Nom \$)	1,625,000	1,724,000	1,797,000	1,862,000	1,942,000	
PCE-Price Index (Constant 96\$)	0.000542	0.000481	0.000504	0.000526	0.000519	
Real Disp Pers Inc (Constant 96\$)	1,064,000	1,129,000	1,152,000	1,171,000	1,202,000	
Demand (Constant 96\$)	2,003,000	2,106,000	2,117,000	2,121,000	2,167,000	
Output (Constant 96\$)	1,785,000	1,884,000	1,907,000	1,923,000	1,961,000	

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Figure 7
Scenario 3 with Roller Rink:
Estimated City of Wilmington Employment Related Tax Revenue

Variable	YEAR					
	2004	2005	2006	2007	2008	2009
State Employment	184.6	42.7	42.2	42.0	42.5	42.3
City Employment	137	31.7	31.4	31.3	31.7	31.5
City Wage Tax (\$)	78,154	14,310	13,725	13,320	13,230	13,073
Head Tax (\$)	15,834	3,209.7	3,168.3	3,154.8	3,207	3,179.1
Variable	YEAR					
	2010	2011	2012	2013	2014	
State Employment	42.4	43.8	43.9	43.8	44.0	
City Employment	31.6	32.7	32.7	32.6	32.7	
City Wage Tax (\$)	13,196	13,838	14,119	14,400	14,760	
Head Tax (\$)	3,189.9	3,319.5	3,324.9	3,314.1	3,322.2	

For the purpose of estimating the employment related tax revenue, the impacts for New Castle County are reduced 25% to assess the impact on the City of Wilmington. City wage tax is based on wage and salary earnings. (\$): Money values are in nominal dollars. Head tax is equal to City employment minus five, multiplied by \$10 per head per month. Center for Applied Demography and Survey Research, University of Delaware.

To summarize, there are two distinct impacts that flow from the DSSLC: the construction of the facility, and the operation of the facility. The construction of the facility is estimated to generate over 180 jobs in the state. The operation of the facility is estimated to support approximately 45 continuing jobs in the state *per year*.

Figure 8 disaggregates the employment effect. The DSSLC makes the largest contribution to manufacturing employment. During the construction period, 115 jobs are created in the state by direct, indirect, and induced effects. The services industry, which includes both business and personal services, gains over 32 jobs and retail trade benefits with over 22 jobs. These industries gain from both direct expenditures of the DSSLC and also from the indirect and induced worker expenditures. In the post construction period, the services sector is the largest beneficiary of the DSSLC's operation.

Figure 8
Scenario 1 with Roller Rink: Disaggregated Employment Impact of the Proposed Diamond State Sports and Learning Center

Industry	Construction Period	Post Construction Period
Construction	114.1	0.9
Manufacturing	3.6	0.000
Transportation and Public Utilities	1.5	0
Finance, Insurance, & Real Estate	4.7	-1.5
Retail Trade	22	1.7
Wholesale Trade	2.9	0.1
Services	31.9	35
Agriculture	1.9	0.3
Government	2.0	3.0
Total	184.6	39.5

Center for Applied Demography and Survey Research, University of Delaware.

Note: Columns may not sum to totals due to rounding. Private industry reported only. Post construction results are for 2014.

Lower Projected Revenue Outlook

The C. H. Johnson feasibility study's "financial projection is fairly optimistic in that it assumes a robust event calendar, a relationship with a college tenant, high school use, and fairly aggressive levels of commissions and advertising revenues."⁵ Alternative revenue scenarios were estimated to discern the sensitivity of the economic impact of the sports

⁵ Section 4 Page 25, "Feasibility Study" for the Diamond State Sports and Learning Center Planning Committee, C.H. Johnson Consulting, Inc.

facility's operation. The revenue projections in the feasibility study are reduced by fifty percent, and the economic impact measured. Scenario 1 with Roller Rink is selected to illustrate the sensitivity of the results to changes in the revenues. The results are present below.

Figure 9
Scenario 1 with Roller Rink: Reduced Utilization Growth Economic Impact of the
Proposed Diamond State Sports and Learning Center to the State

Variable	YEAR					
	2004	2005	2006	2007	2008	2009
Employment	184.6	14.71	14.56	14.83	15.99	16.36
GRP (Chained 96\$)	8,430,000	343,000	343,000	332,000	374,000	393,000
GRP (Constant 96\$)	8,766,000	359,000	355,000	351,000	393,000	420,000
Pers Inc (Nom \$)	6,598,000	801,000	725,000	675,000	675,000	679,000
PCE-Price Index (Constant 96\$)	0.000519	0.001221	0.00071	0.00061	0.000534	0.000473
Real Disp Pers Inc (Constant 96\$)	5,198,000	401,000	464,000	441,000	446,000	452,000
Demand (Constant 96\$)	16,220,000	561,000	591,000	519,000	538,000	565,000
Output (Constant 96\$)	17,280,000	401,000	374,000	374,000	439,000	496,000
Variable	YEAR					
	2010	2011	2012	2013	2014	
Employment	17.7	18.86	19.17	19.53	19.84	
GRP (Chained 96\$)	462,000	519,000	549,000	584,000	607,000	
GRP (Constant 96\$)	492,000	557,000	591,000	626,000	652,000	
Pers Inc (Nom \$)	725,000	778,000	816,000	858,000	904,000	
PCE-Price Index (Constant 96\$)	0.000206	0.000176	0.000191	0.000168	0.000183	
Real Disp Pers Inc (Constant 96\$)	488,000	525,000	536,000	555,000	576,000	
Demand (Constant 96\$)	683,000	786,000	835,000	885,000	954,000	
Output (Constant 96\$)	610,000	717,000	778,000	824,000	885,000	

Revenues are reduced 50% relative to feasibility study predictions.

Revenues are reduced 50% relative to feasibility study predictions. Center for Applied Demography and Survey Research, University of Delaware.

Figure 10
Scenario 1 with Roller Rink: Reduced Utilization Growth Estimated
City of Wilmington Employment Related Tax Revenue

Variable	YEAR					
	2004	2005	2006	2007	2008	2009
State Employment	184.6	14.71	14.56	14.83	15.99	16.36
City Employment	136.95	10.943	10.823	11.078	11.903	12.203
City Wage Tax (\$)	78,154	6,738	5,525	4,710	4,484	4,356
Head Tax (\$)	15,834	713.1	698.7	729.3	828.3	864.3
Variable	YEAR					
	2010	2011	2012	2013	2014	
State Employment	17.7	18.86	19.17	19.53	19.84	
City Employment	13.208	14.055	14.303	14.558	14.738	
City Wage Tax (\$)	4,742	5,193	5,493	5,815	6,222	
Head Tax (\$)	984.9	1,086.6	1,116.3	1,146.9	1,168.5	

For the purpose of estimating the employment related tax revenue, the impacts for New Castle County are reduced 25% to assess the impact on the City of Wilmington. City wage tax is based on wage and salary earnings. (\$): Money values are in nominal dollars. Head tax is equal to City employment minus five, multiplied by \$10 per head per month. Center for Applied Demography and Survey Research, University of Delaware.

Clearly, halving the revenue estimates proportionately reduces the economic impacts of the facility. Therefore, the size of the economic impact of the facility is directly proportional to the revenues generation by its operation.

Tax on Hotel Rentals

The City of Wilmington recently passed a tax on hotel rentals. The tax rate is 2% on room rental revenue. The State collects 8% on all room rentals. The amount of increased hotel activity stemming from the DSLC is not predicted in the feasibility study. However, attendance estimates by event type are provided (see Figure 11 below), and are useful to derive an estimated increase in hotel demand.

Figure 11
Projected Attendees by Category and Year

Category	2005	2006	2007	2008	2009
Men's and Women's College Basketball Games	26,000	26,000	27,300	27,300	27,300
Women's College Volleyball Games	2,300	2,300	2,600	2,600	2,600
College Basketball and Volleyball Practices	0	0	0	0	0
High School/Club Sports Events and Tournaments	70,000	70,000	83,300	83,300	92,500
High School Sports Practices	0	0	0	0	0
Youth and Adult Leagues	0	0	0	0	0
Camps and Clinics	0	0	0	0	0
Special Sporting Events	14,000	14,000	18,500	18,500	18,500
College Graduations	7,500	7,500	7,500	7,500	7,500
Community Events – Banquets	10,500	10,500	10,500	10,500	10,500
Community Events – Ticketed	15,000	15,000	15,000	18,000	18,000
Total	145,300	145,300	164,700	167,700	176,900
	2010	2011	2012	2013	2014
Men's and Women's College Basketball Games	26,700	26,700	26,700	26,700	26,700
Women's College Volleyball Games	2,600	2,600	2,600	2,600	2,600
College Basketball and Volleyball Practices	0	0	0	0	0
High School/Club Sports Events and Tournaments	92,500	92,500	92,500	92,500	92,500
High School Sports Practices	0	0	0	0	0
Youth and Adult Leagues	0	0	0	0	0
Camps and Clinics	0	0	0	0	0
Special Sporting Events	22,200	22,200	25,900	25,900	25,900
College Graduations	9,000	9,000	9,000	9,000	9,000
Community Events - Banquets	12,600	12,600	12,600	12,600	12,600
Community Events - Ticketed	18,000	21,000	21,000	21,000	21,000
Total	183,600	186,600	190,300	190,300	190,300

Source: C.H. Johnson Consulting, Inc. Feasibility Study, Table 4-2, Section 4, page 3.

Not every event is expected to attract significant out-of-state attendees, and not every out-of-state attendee will stay in a hotel, and those that do, may not select a Wilmington hotel.

However, an estimate of Wilmington hotel tax revenue can be made based on reasonable assumptions. A survey of attendees at the “Slam Dunk to the Beach” basketball tournament in Cape Henlopen, Delaware, found that forty percent of attendees were from out-of-state.

Further, the survey found that one-third of these out-of-state attendees stayed in a hotel.

Given the similar nature of this event to the events at the DSLC, it is reasonable to apply these ratios to determine the increased hotel activity.

Figure 12
Estimated Out-of-State Visitors by Event Type

Attendance Generating Out-of-State Visitors	2005	2006	2007	2008	2009
Men's and Women's College Basketball Games	10,400	10,400	10,920	10,920	10,920
Women's College Volleyball Games	920	920	1,040	1,040	1,040
College Basketball and Volleyball Practices	0	0	0	0	0
High School/Club Sports Events and Tournaments	28,000	28,000	33,320	33,320	37,000
High School Sports Practices	0	0	0	0	0
Youth and Adult Leagues	0	0	0	0	0
Camps and Clinics	0	0	0	0	0
Special Sporting Events	5,600	5,600	7,400	7,400	7,400
College Graduations	3,000	3,000	3,000	3,000	3,000
Community Events - Banquets	0	0	0	0	0
Community Events - Ticketed	0	0	0	0	0
Total	47,920	47,921	55,682	55,683	59,364
Hotel Visitors	15,973	15,974	18,561	18,561	19,788
Room Revenue	\$2,619,627	\$2,619,681	\$3,043,949	\$3,044,004	\$3,245,232
City Room Tax (2%)	\$52,393	\$52,394	\$60,879	\$60,880	\$64,905
State Room Tax (8%)	\$209,570	\$209,575	\$243,516	\$243,520	\$259,619
	2010	2011	2012	2013	2014
Men's and Women's College Basketball Games	10,680	10,680	10,680	10,680	10,680
Women's College Volleyball Games	1,040	1,040	1,040	1,040	1,040
College Basketball and Volleyball Practices	0	0	0	0	0
High School/Club Sports Events and Tournaments	37,000	37,000	37,000	37,000	37,000
High School Sports Practices	0	0	0	0	0
Youth and Adult Leagues	0	0	0	0	0
Camps and Clinics	0	0	0	0	0
Special Sporting Events	8,880	8,880	10,360	10,360	10,360
College Graduations	3,600	3,600	3,600	3,600	3,600
Community Events - Banquets	0	0	0	0	0
Community Events - Ticketed	0	0	0	0	0
Total	61,205	61,206	62,687	62,688	62,689
Hotel Visitors	20,402	20,402	20,896	20,896	20,896
Room Revenue	\$3,345,873	\$3,345,928	\$3,426,889	\$3,426,944	\$3,426,999
City Room Tax (2%)	\$66,917	\$66,919	\$68,538	\$68,539	\$68,540
State Room Tax (8%)	\$267,670	\$267,674	\$274,151	\$274,156	\$274,160

Out-of-state attendees are estimated as forty-percent of total attendees. Hotel users are one-third of total out-of-state attendees. Average downtown Wilmington room rate is \$164.

The estimated room tax revenue ranges from \$52,000 in 2004 to \$68,000 in 2014. This number is a **best-case** estimate. Not every attendee will stay in a Wilmington hotel. To the extent that the out-of-state attendees staying in hotels choose non-Wilmington accommodation, these revenues will be reduced.

DSSLC Employment

The following table summarizes the employment at the DSSLC. The DSSLC may operate with nine full time staff. An alternative, reduced, staffing scenario is also proposed in the Feasibility Study wherein full time staff are reduced to five. A number of part time and temporary staff will be necessary to operate the facilities various operations and events. The Feasibility Study budgets \$175,000 per year for part time staff, which equates to approximately 18 staff (based on \$10,000 costs per part time staff member).

The Charter School will employ approximately twenty-five staff, up to eighteen of which will be teachers. The banquet hall will employ approximately four, plus a number of servers and helpers.

Not all employment constitutes net new positions in the economy. For example, the funding for the Charter School staff is a transfer from the Department of Education away from public schools. The other positions at the DSSLC are represented in the revenue forecasts by C.H. Johnson, and are represented in the economic impacts.

Figure 13
Diamond State Learning Center Staffing

DSSLC Full Time Staff *	Number of Positions
Executive Director & Assistant	2
Operations and Marketing Manager	1
Maintenance Manager	1
Financial Manager	1
Assistant to the Manager	1
Full-Time Event Staff	1
Custodian/Janitorial	1
Security	1
Total Full Time Staff	9
DSSLC Part-Time Staff	18
Charter School	
Principal	1
Vice-Principal	1
Teachers	16-18
Guidance Counselors	2
Business Manager	1
Custodians	2
Secretaries	2-3
Banquet Hall	
Manager	1
Cooks	2-3
Servers	Not known
Helpers	Not known

Source: C.H. Johnson Feasibility Study. Part-time staff are estimated based on \$10,000 per year salary. Charter School and Banquet Hall figures are provided by Theo Gregory.

* An alternative, reduced full-time DSLC staff structure is also proposed in the Feasibility Study. Under that scenario, five full-time permanent staff are employed.

Additional Impacts

As stated earlier, there are additional economic and non-economic impacts associated with the DSSLC. These additional factors, which lie beyond the scope of the econometric model, are detailed below.

Community

The non-economic impacts associated with the DSSLC include social benefits such as enriching the choices for sports entertainment in the local area, improving the image of the community as a center of activity, and promoting the area's national and regional image.

The facility will also reduce the need for Delaware residents to use out-of-state facilities for sports and community events. This out-of-state spending represents a leakage from the state economy that will be recaptured by the use of the DSSLC.

Charter School

A Charter School may be housed in the facility. The school would pay rent for the use of the space. Charter Schools are funded by the State, based on enrollment. Students enrolled in Charter Schools instead of other public schools represent a **transfer** of funds from one institution to another. Therefore, the operation of such a school **does not represent a net new increase in economic activity within the state**, and its operating costs are not included in the model. If the Charter school staff were previously employed within the City, then the City's tax impact nets to zero. However, if the staff come from outside the City, --and are not city residents, -- to take positions within the City, then there will be some tax incidence proportional to the number of staff that fall into this scenario. Figure 18 details the potential City tax revenues flowing from the Charter School. These data are a **best-case scenario whereby all school staff are assumed previously employed outside, and non-residents, of the city. If any staff are currently employed in the city, their individual net tax impact would be zero.**

Figure 14
Impact of Charter School Operations at DSSLC
City of Wilmington Employment Related Tax Revenue

Variable	YEAR					
	2004	2005	2006	2007	2008	2009
City Employment	0.0	32.5	31.7	31.0	29.9	29.2
City Wage Tax (\$)	0.0	14,036	14,376	14,463	14,348	14,162
Head Tax (\$)	0.0	3,296.4	3,198	3,094.8	2,989.2	2,900.4
Variable	YEAR					
	2010	2011	2012	2013	2014	
City Employment	28.8	28.6	28.3	28.1	28.1	
City Wage Tax (\$)	14,120	14,220	14,234	14,334	14,621	
Head Tax (\$)	2,850	2,827	2,791	2,777	2,770	

For the purpose of estimating the employment related tax revenue, the impacts of the Charter School are assumed to fall within the City of Wilmington. This is a best-case scenario; the reality may be that certain staff are already employed in the City or city residents, in which case their tax incidence will net to zero. City wage tax is based on wage and salary earnings. (\$): Money values are in nominal dollars. Head tax is equal to City employment minus five, multiplied by \$10 per head per month. Center for Applied Demography and Survey Research, University of Delaware.

The availability of an alternative school in the area broadens the educational choice of residents, making it a positive impact on the area. Moreover, the school may make the area more attractive to residents and could have a positive effect on property values.⁶

⁶ The potential increase in property values accrued from the facility and Charter School are not quantified in the feasibility study, and are not modeled in this research.

Limitations

A number of factors limited the accuracy of the study. It is the opinion of the authors that additional research would enable a more accurate measure of the economic impact of the center. Detailed below are the items affecting the accuracy of the study.

Revenue Estimates

The revenue estimates provided in the feasibility study are accepted as being accurate. The actual revenues may vary depending on the level of success of the facility. In the absence of a superior data source, the revenue estimates are utilized.

Opportunity Cost

Opportunity cost may be defined as the benefits and costs forgone by choosing one project over another. In the case of this research, the opportunity cost may be the benefits and costs that may accrue from an alternate use of the land, or financing. No alternative is considered in this research.

City versus County Impacts

The REMI model is calibrated by county. Therefore, the lowest level of geography at which the impacts of the DSSLC are measured is the county. To estimate the City of Wilmington wage and head tax, the 75% county effects were assumed to all fall within the city. This assumption may be reasonable given the nature of the employment at the DSSLC. Part time workers for the concession stands, custodial staff, are positions that are more likely to be filled by local workers than not. Nevertheless, the wages and head tax figures represent the ceiling for tax revenues collected on the DSSLC's employment. The actual figure is likely to be fractionally lower.

Appendix

Assumptions and Model Inputs

Revenues versus Employment

The revenues under each scenario are entered as industry sales, on the principle that the facility will satisfy pent up demand in the economy. Therefore, no counterbalancing displacement of local sales occurs.

The feasibility study offers estimates of permanent full-time employment, but only a total wage expense for part-time workers. As an alternative, the model was simulated using employment in place of revenue. Given the limited full time employment at the facility, using revenue to describe the DSSLC's operation is the best available data to describe the operation of the facility.

The model output generated by the use of revenues produced expenditures that approximated the direct expenditures of the DSSLC as estimated in the feasibility, plus indirect and induced impacts.

REMI Policy Insight

REMI Policy Insight™ is the leading regional economic forecasting and policy analysis model. For this study, the REMI Policy Insight™ model for Delaware is employed. The model was built using the REMI model building system, which consists of hundreds of programs developed over the last two decades. The system assembled the Delaware model using data from the Bureau of Economic Analysis, the Bureau of Labor Statistics, the Department of Energy, the Bureau of Census, and other public sources.

REMI Policy Insight™ is a structural model, meaning that it clearly includes cause-and-effect relationships. The model is based on two key underlying assumptions from mainstream economic theory: households maximize utility and producers maximize profits. Since these assumptions make sense to most people, lay people as well as trained economists can understand the model.

In the model, businesses produce goods to sell to other firms, consumers, investors, governments and purchasers outside the region. The output is produced using labor, capital, fuel, and intermediate inputs. The demand for labor, capital and fuel per unit of output depends on their relative costs, since an increase in the price of any one of these inputs leads to substitution away from that input to other inputs. The supply of labor in the model depends on the number of people in the population and the proportion of those people who participate in the labor force. Economic migration affects the population size. People will move into an area if the real after-tax wage rates or the likelihood of being employed increases in a region.

Supply and demand for labor in the model determine the wage rates. These wage rates, along with other prices and productivity, determine the cost of doing business for every industry in the model. An increase in the cost of doing business causes either an increase in prices or a cut in profits, depending on the market for the product. In either case, an increase in costs would decrease the share of the local and U.S. market supplied by local firms. This market share combined with the demand described above determines the amount of local output. Of course, the model has many other feedbacks. For example, changes in wages and employment impact income and consumption, while economic expansion changes investment and population growth impacts government spending.

Figure 15 is a pictorial representation of REMI Policy Insight. The Output block shows a business that sells to all the sectors of final demand as well as to other industries. The Labor and Capital Demand block shows how labor and capital requirements depend both on output and their relative costs. Population and Labor Supply contribute to demand and to wage determination. Economic migrants in turn respond to wages and other labor market conditions. Supply and demand interact in the Wage, Price and Profit block. Prices and profits determine market shares. Output depends on market shares and the components of demand.

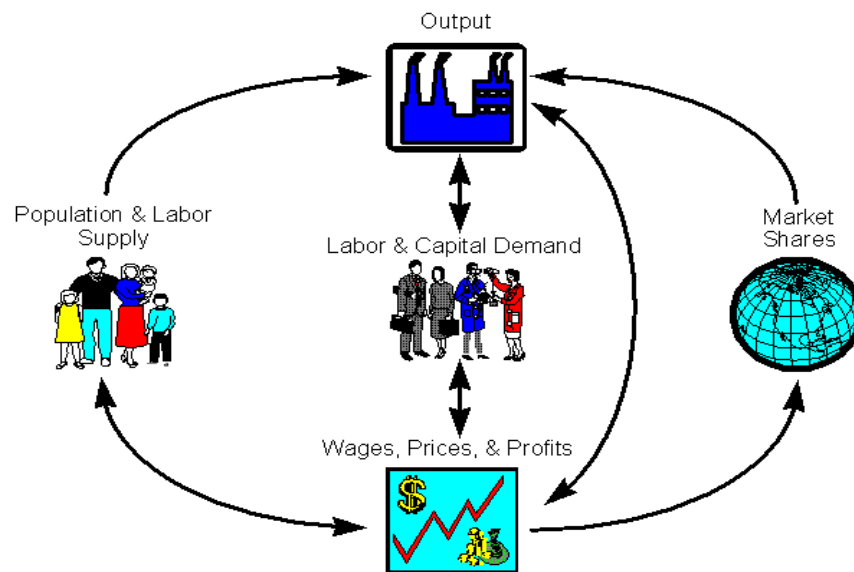


Figure 15 REMI Policy Insight™ overview

The REMI model brings together all of the above elements to determine the value of each of the variables in the model for each year in the baseline forecast. The model includes all the inter-industry interactions that are included in input-output models in the Output block, but goes well beyond an input-output model by including the linkages among all of the other blocks shown in Figure 15.

In order to broaden the model in this way, it was necessary to estimate key relationships. This was accomplished by using extensive data sets covering all areas in the country. These large data sets and two decades of research effort have enabled REMI to simultaneously maintain a theoretically sound model structure and build a model based on all the relevant data available.

Figure 16 shows the policy simulation process for a scenario called Policy X. The effects of a scenario are determined by comparing the baseline REMI forecast with an alternative forecast that incorporates the assumptions for the scenario. The baseline REMI forecast uses recent data and thousands of equations to generate projected economic activity for a particular region. The policy variables in the model are set equal to their baseline value (typically zero for additive variables and one for multiplicative variables) when solving for the baseline forecast. To show the effects of a given scenario, these policy variables are given values that represent the direct effects of the scenario. The alternative forecast is generated using these policy variable inputs. Figure 16 shows how this process would work for a policy change called Policy X.

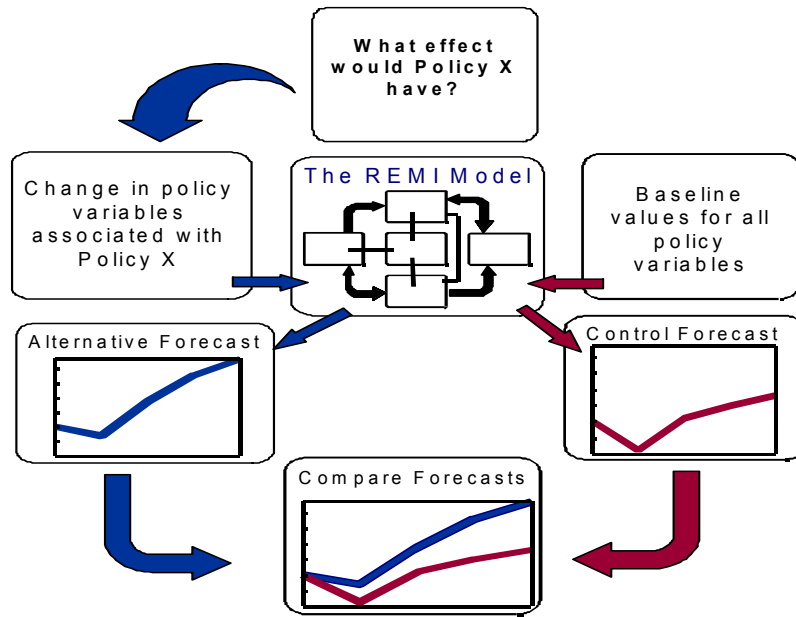


Figure 16 Policy X Scenario

Glossary

- **Employment** (thousands) Bureau of Economic Analysis (BEA) concept based on place of work; includes full-time and part-time employees; includes the self-employed; individuals may have more than one job and therefore may be counted twice.
- **GRP** (Billions of dollars, adjusted for inflation using chained 1996 dollars) Gross Regional Product as a value added concept is analogous to the national concept of Gross Domestic Product. It is equal to output excluding the intermediate inputs. It represents compensation and profits. Total value of goods and services produced, adjusted for inflation using the chained inflation measure, expressed in 1996 dollars.
- **GRP** (Billions of dollars, adjusted for inflation using constant 1996 dollars) As above, adjusted for inflation using non-chained inflation measure, expressed in 1996 dollars.
- **Personal Income** (Billions of unadjusted dollars). This is a Bureau of Economic Analysis (BEA) concept based on place of residence; the sum of wage and salary disbursements, other labor income, proprietors' income, rental income, personal dividend income, personal interest income, and transfer payments, less personal contributions for social insurance.
- **PCE-Price Index** (1996 base year). Consumer price deflator of the region.
- **Real Disposable Personal Income** (Billions of dollars, adjusted for inflation using constant 1996 dollars). Personal income adjusted for income taxes and prices. Expressed in billions of 1996 dollars.
- **Demand** (Billions of dollars, constant price 1996 dollars). The amount of goods and services demanded by the local region. Demand equals imports plus self supply. A change in aggregate demand results from changes in all or one of the following types of demand: Consumption, Investment, Intermediate, Government and Net Exports.
- **Output** (Billions of dollars, constant price 1996 dollars). The amount of production in dollars, including all intermediate goods, plus value-added (compensation and profits). Can also be defined as $\text{Output} = \text{Self-supply} + \text{exports} + \text{interregional trade} + \text{exogenous production}$.

Economic Impacts of DSSLC without Roller Rink

The C. H. Johnson feasibility study includes a set of revenue estimates for the DSSLC *without* a roller rink. The following tables and charts illustrated the economic impacts that may be expected based on the DSSLC operating *without* a roller rink. C.H. Johnson assumes a college tenant will be in place in the absence of the roller rink.

The aggregate impacts of the DSSLC under Scenario 1 are present in Figure 17. The construction period generates a one-time impact for the economy. The \$11 million construction creates 185 jobs in the state economy, and \$8.4 million in gross state product (constant or adjusted inflation, 1996 dollars) (or \$19.4 million in nominal 2004 dollars). Assuming that the facility opens in 2005, the employment impact will be 33.4 jobs, rising to 38.5 jobs in 2014. Personal income is more than \$1 million higher each year the facility is in operation.

Figure 17
Scenario 1 without Roller Rink: Economic Impacts of the Proposed Diamond State Sports and Learning Center to the State

Variable	YEAR					
	2004	2005	2006	2007	2008	2009
Employment	184.6	33.36	32.87	33.63	35.52	35.64
GRP (Chained 96\$)	8,430,000	969,000	946,000	946,000	1,007,000	1,015,000
GRP (Constant 96\$)	8,766,000	1,011,000	988,000	996,000	1,064,000	1,080,000
Pers Inc (Nom \$)	6,598,000	1,234,000	1,211,000	1,221,000	1,289,000	1,328,000
PCE-Price Index (Constant 96\$)	0.000519	0.001213	0.000702	0.000603	0.000526	0.000435
Real Disp Pers Inc (Constant 96\$)	5,198,000	727,000	801,000	809,000	862,000	889,000
Demand (Constant 96\$)	16,220,000	1,614,000	1,633,000	1,572,000	1,656,000	1,637,000
Output (Constant 96\$)	17,280,000	1,446,000	1,373,000	1,366,000	1,457,000	1,453,000
Variable	YEAR					
	2010	2011	2012	2013	2014	
Employment	36.87	38.51	38.51	38.33	38.51	
GRP (Chained 96\$)	1,064,000	1,133,000	1,144,000	1,156,000	1,175,000	
GRP (Constant 96\$)	1,141,000	1,217,000	1,228,000	1,244,000	1,270,000	
Pers Inc (Nom \$)	1,411,000	1,511,000	1,572,000	1,629,000	1,698,000	
PCE-Price Index (Constant 96\$)	0.000397	0.000374	0.000382	0.000351	0.000366	
Real Disp Pers Inc (Constant 96\$)	940,000	1,000,000	1,022,000	1,047,000	1,070,000	
Demand (Constant 96\$)	1,724,000	1,850,000	1,854,000	1,869,000	1,907,000	
Output (Constant 96\$)	1,541,000	1,659,000	1,678,000	1,694,000	1,724,000	

Center for Applied Demography and Survey Research, University of Delaware.
See glossary for the definition of variables

City Wage Tax

The additional employment and income generated directly, indirectly and induced by the DSSLC have tax consequences for the City of Wilmington. These results are given in Figures 18 and 19 and Charts 2 and 3. Figure 18 presents the estimated employment related tax based on Scenario 1 revenues. The creation of jobs in Wilmington will create tax revenue through the city wage tax (1.5% of gross salary) and the city head count tax (\$10.00 per position). As presented in the following Charts 2 and 3, there is little difference between Scenario 1 and 3.

Chart 2
Estimated City of Wilmington – City Wage Tax, Scenarios 1 and 3
(Without Roller Rink)

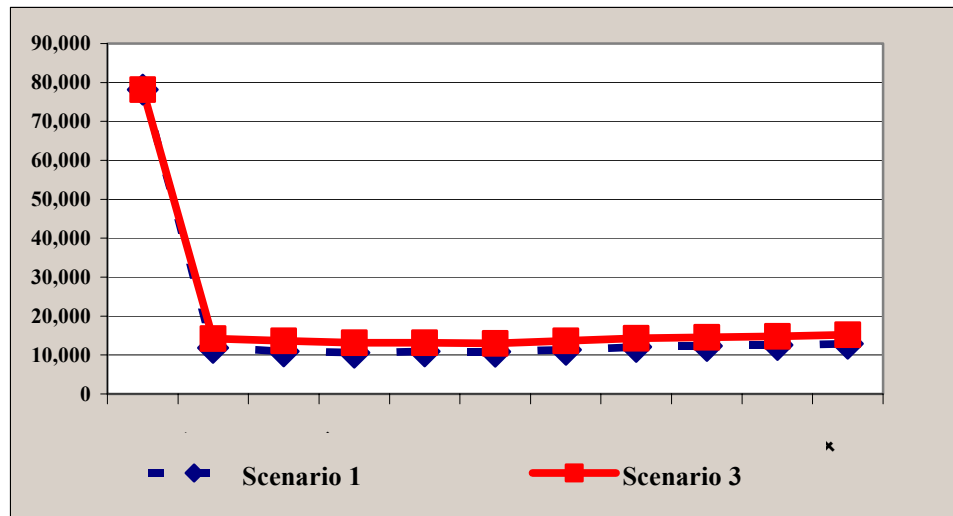


Chart 3
Estimated City of Wilmington – Head Tax, Scenarios 1 and 3
(Without Roller Rink)

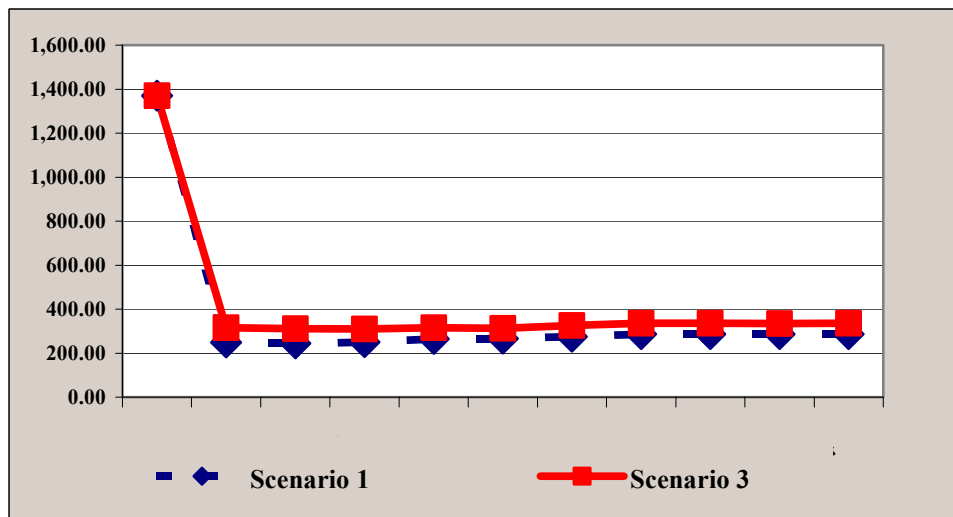


Figure 18
Scenario 1 without Roller Rink:
Estimated City of Wilmington Employment Related Tax Revenue

Variable	YEAR					
	2004	2005	2006	2007	2008	2009
State Employment	184.6	33.4	32.9	33.6	35.5	35.6
City Employment	137.0	24.9	24.4	25.0	26.5	26.6
City Wage Tax (\$)	78,154	11,801	10,954	10,590	10,900	10,836
Head Tax (\$)	15,834	2,382.6	2,333.1	2,405.1	2,577.9	2,588.7
Variable	YEAR					
	2010	2011	2012	2013	2014	
State Employment	36.9	38.5	38.5	38.3	38.5	
City Employment	27.5	28.7	28.7	28.6	28.7	
City Wage Tax (\$)	11,543	12,229	12,510	12,746	13,084	
Head Tax (\$)	2,698.5	2,844.3	2,844.3	2,830.8	2,841.6	

For the purpose of estimating the employment related tax revenue, the impacts for New Castle County are reduced 25% to assess the impact on the City of Wilmington. City wage tax is based on wage and salary earnings. Head tax is equal to City employment minus five, multiplied by \$10 per head per month. Center for Applied Demography and Survey Research, University of Delaware.

Figure 19 presents the economic impact of the DSSLC under Scenario 3 (alternate staffing and demand mix). (The revenue estimates for Scenario 2 and Scenario 3 are identical, therefore the economic impact is estimated for Scenario 3 alone.) Under Scenario 3, the DSSLC will generate approximately 42 jobs in 2005, rising to 45 jobs in 2014, or about 10 more jobs per year than under Scenario 1.

Gross Regional Product (GRP) rises \$1.3 million (chained 1996 dollars) per year while the facility is open. Personal income is estimated to increase by \$1.4 million in 2005, rising to \$2 million in 2014.

Figure 19
Scenario 3 without Roller Rink: Economic Impacts of the Proposed Diamond State
Sports and Learning Center to the State

Variable	YEAR					
	2004	2005	2006	2007	2008	2009
Employment	184.6	42.36	41.78	41.63	42.3	41.99
GRP (Chained 96\$)	8,430,000	1,266,000	1,240,000	1,213,000	1,221,000	1,205,000
GRP (Constant 96\$)	8,766,000	1,320,000	1,297,000	1,278,000	1,286,000	1,286,000
Pers Inc (Nom \$)	6,598,000	1,442,000	1,450,000	1,467,000	1,518,000	1,553,000
PCE-Price Index (Constant 96\$)	0.000519	0.001266	0.000755	0.000679	0.00061	0.000626
Real Disp Pers Inc (Constant 96\$)	5,198,000	879,000	971,000	979,000	1,017,000	1,017,000
Demand (Constant 96\$)	16,220,000	2,113,000	2,129,000	2,026,000	2,022,000	1,965,000
Output (Constant 96\$)	17,280,000	1,934,000	1,865,000	1,793,000	1,793,000	1,755,000
Variable	YEAR					
	2010	2011	2012	2013	2014	
Employment	43.7	45.1	45.04	44.86	45.1	
GRP (Chained 96\$)	1,278,000	1,335,000	1,350,000	1,347,000	1,373,000	
GRP (Constant 96\$)	1,366,000	1,434,000	1,450,000	1,453,000	1,484,000	
Pers Inc (Nom \$)	1,659,000	1,762,000	1,839,000	1,896,000	1,980,000	
PCE-Price Index (Constant 96\$)	0.000588	0.000572	0.000603	0.000595	0.000626	
Real Disp Pers Inc (Constant 96\$)	1,076,000	1,135,000	1,158,000	1,179,000	1,207,000	
Demand (Constant 96\$)	2,087,000	2,178,000	2,193,000	2,182,000	2,228,000	
Output (Constant 96\$)	1,862,000	1,957,000	1,976,000	1,976,000	2,022,000	

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Scenario 3 City of Wilmington employment tax revenue estimates are presented below in Figure 22. City wage tax is estimated to increase about \$80,000 during the year of construction and by about \$13,000 during the operation of the facility. The employment tax effect during the construction period depends on the degree the direct, indirect, and induced effects of the construction fall within the city bounds. To the degree that these effects fall outside of the city, the tax effects will be lower.

Figure 20
Scenario 1 without Roller Rink: Reduced Utilization Growth Economic Impact of the
Proposed Diamond State Sports and Learning Center to the State

Variable	YEAR					
	2004	2005	2006	2007	2008	2009
Employment	184.6	14.5	14.43	14.71	15.87	16.24
GRP (Chained 96\$)	8,430,000	343,000	336,000	332,000	374,000	393,000
GRP (Constant 96\$)	8,766,000	355,000	347,000	347,000	393,000	420,000
Pers Inc (Nom \$)	6,598,000	797,000	717,000	671,000	675,000	675,000
PCE-Price Index (Constant 96\$)	0.000519	0.001221	0.00071	0.00061	0.000534	0.000473
Real Disp Pers Inc (Constant 96\$)	5,198,000	397,000	456,000	439,000	446,000	450,000
Demand (Constant 96\$)	16,220,000	549,000	580,000	511,000	538,000	565,000
Output (Constant 96\$)	17,280,000	389,000	370,000	366,000	439,000	492,000
Variable	YEAR					
	2010	2011	2012	2013	2014	
Employment	17.46	18.62	18.98	19.23	19.65	
GRP (Chained 96\$)	450,000	511,000	546,000	568,000	599,000	
GRP (Constant 96\$)	481,000	553,000	584,000	610,000	652,000	
Pers Inc (Nom \$)	717,000	771,000	809,000	843,000	897,000	
PCE-Price Index (Constant 96\$)	0.000191	0.000168	0.000145	0.000145	0.000168	
Real Disp Pers Inc (Constant 96\$)	485,000	521,000	540,000	555,000	574,000	
Demand (Constant 96\$)	660,000	771,000	824,000	877,000	931,000	
Output (Constant 96\$)	588,000	706,000	763,000	816,000	877,000	

Revenues are reduced 50% relative to feasibility study predictions.

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Figure 21
Scenario 1 without Roller Rink: Reduced Utilization Growth Estimated
City of Wilmington Employment Related Tax Revenue

Variable	YEAR					
	2004	2005	2006	2007	2008	2009
State Employment	184.6	14.5	14.43	14.71	15.87	16.24
City Employment	136.95	10.778	10.71	10.965	11.835	12.128
City Wage Tax (\$)	78,154	6,695	5,439	4,656	4,463	4,335
Head Tax (\$)	15,834	693.3	685.2	715.8	820.2	855.3
Variable	YEAR					
	2010	2011	2012	2013	2014	
State Employment	17.46	18.62	18.98	19.23	19.65	
City Employment	12.975	13.868	14.145	14.325	14.58	
City Wage Tax (\$)	4,635	5,129	5,408	5,708	6,116	
Head Tax (\$)	957	1,064.1	1,097.4	1,119	1,149.6	

For the purpose of estimating the employment related tax revenue, the impacts for New Castle County are reduced 25% to assess the impact on the City of Wilmington. City wage tax is based on wage and salary earnings. (\$): Money values are in nominal dollars. Head tax is equal to City employment minus five, multiplied by \$10 per head per month. Center for Applied Demography and Survey Research, University of Delaware.

Figure 22
Scenario 3 without Roller Rink:
Estimated City of Wilmington Employment Related Tax Revenue

Variable	YEAR					
	2004	2005	2006	2007	2008	2009
State Employment	184.6	42.36	41.78	41.63	42.3	41.99
City Employment	136.95	31.515	31.103	31.035	31.515	31.29
City Wage Tax (\$)	78,154	14,220	13,624	13,185	13,151	12,960
Head Tax (\$)	15,834	3,181.8	3,132.3	3,124.2	3,181.8	3,154.8
Variable	YEAR					
	2010	2011	2012	2013	2014	
State Employment	43.7	45.1	45.04	44.86	45.1	
City Employment	32.573	33.623	33.6	33.42	33.555	
City Wage Tax (\$)	13,624	14,265	14,569	14,783	15,210	
Head Tax (\$)	3,308.7	3,434.7	3,432	3,410.4	3,426.6	

For the purpose of estimating the employment related tax revenue, the impacts for New Castle County are reduced 25% to assess the impact on the City of Wilmington. City wage tax is based on wage and salary earnings. (\$): Money values are in nominal dollars. Head tax is equal to City employment minus five, multiplied by \$10 per head per month. Center for Applied Demography and Survey Research, University of Delaware.