Economic Impact of Sports Events in Centre County

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ESI ECONSULT SOLUTIONS INC.
economics | strategy | insight

1435 WALNUT STREET, 4TH FLOOR | PHILADELPHIA, PA 19102
215-717-2777 | ECONSULTSOLUTIONS.COM

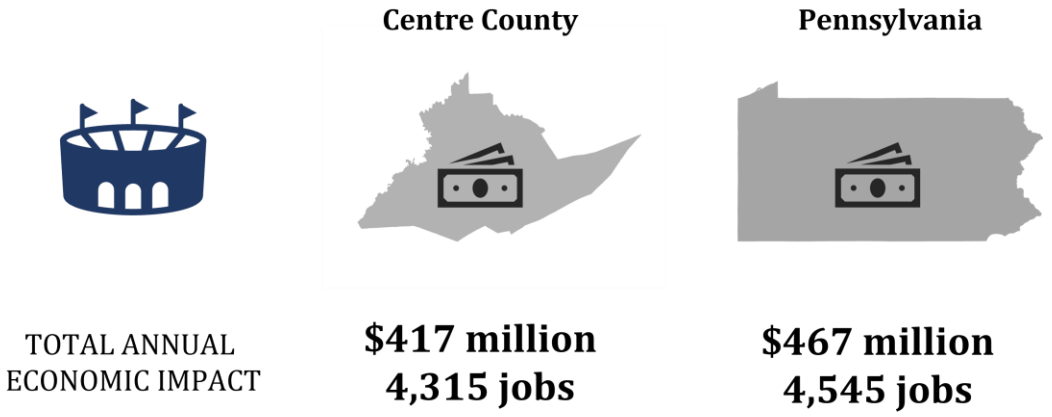
Executive Summary

Centre County, Pennsylvania is home to Happy Valley and the main campus of the Pennsylvania State University (Penn State). Tourism activity to Centre County is promoted by the Happy Valley Adventure Bureau (HVAB) and is an important driver of the county's economy and growth trajectory. A key driver of tourism activity in the area are visitors attracted by the variety of sports events and activities that occur on the Penn State campus and at sites throughout the county over the course of the year. In recognition of the importance of this activity, the HVAB announced plans to create the Happy Valley Sports & Entertainment Alliance in 2021. This study describes and quantifies the annual impact of sports event on the Centre County economy.

Penn State Athletics is a Division I athletics organization with 31 different sports teams that competes in the Big Ten Conference. Penn State football games, and the variety of other competitions and events at Penn State athletics facilities, attract significant visitation each year. In addition, Centre County has other athletic events that draw visitors to locations throughout the county, ranging from marathons, minor sports leagues (State College Spikes), and tournaments. These events are hosted at major venues including the Nittany Valley Sports Centre, C3 Sports, and various venues maintained by the Centre Region Parks and Recreation Department.

Sports event attendees have a significant impact within the Centre County economy as they dine in local restaurants, shop at local stores, and in some cases stay overnight within the County. Visitor spending represents net new dollars draw into Centre County, and generates subsequent spillover impacts supporting local businesses and jobs. Visitor spending is supplemented by the economic impacts from the operations of Penn State Athletics, which is a major employer and procurer of goods and services.

This study estimates that in the aggregate, sports events and associated activity are estimated to generate an annual economic impact of approximately $417 million within Centre County, supporting 4,315 jobs with $133 million in employee compensation. Impacts of this economic activity within Pennsylvania are $467 million.



1.7 million

Sports event attendees each year



$102 million

aggregate visitor spending brought into Centre County



$87 million

annual economic impact in Centre County from football visitor spending



2,660 jobs

supported directly and indirectly by Penn State Athletics operations each year in Centre County.

Visitor Spending

Events throughout the county combined with Penn State Athletics produce a significant economic footprint in Centre County. ESI used industry data to estimate visitor spending from sports events throughout Centre County.

- Penn State football games attracts about 890,500 attendees, other Penn State Athletics events attract about 666,500 attendees, and countywide events attract nearly 150,000 attendees.
- While annual per room hotel rates on lodging in Centre County averaged around $127 in 2021, day by day analysis shows that hotel rates on fall football weekends averaged more than $360.

Athletic event attendee spending generates $149 million in total economic impact in Centre County, supporting 1,655 FTE, with $46 million in employee compensation.

Organizational Spending

In addition to visitor activity, the Penn State Athletics Department is a major economic engine for Centre County and the state in its capacity as an employer and purchaser of local goods and services. Penn State Athletics is a self-sustaining organization within PSU, paying for its expenditures from a combination of ticket sales, concessions, conference distribution, multimedia and licensing revenues, and donor support. It is estimated that direct and spillover impacts from Penn State Athletics produces $268 million in annual economic impact in Centre County, supporting 2,660 jobs and $87 million in employee earnings.

Additional Impacts from Athletics Events

Beyond the impacts quantified in this report, the presence of large-scale athletics events provides a number of additional benefits for Centre County and its economy:

- Licensing and merchandising, media exposure and spending provide outlets for revenue-generation and image-building.
- Donations and charitable contributions put dollars from Penn State alumni around the world to work in the Centre County economy.
- Community engagement and volunteer activity expand impacts within the local community.
- Destination awareness and repeat visitation are built through sporting events, growing tourism activity over the long term.

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1. Introduction

1.1. Report Purpose

Centre County, Pennsylvania is a community that has seen consistent growth in population and economic vitality in recent decades. The county is home to Happy Valley and the main campus of the Pennsylvania State University (Penn State). Tourism activity to Centre County is promoted by the Happy Valley Adventure Bureau (HVAB), the official destination marketing organization for the county.

One of the key components of Centre County's tourism economy are visitors attracted for the variety of sports events and activities that occur on the Penn State campus and at sites throughout the county over the course of the year. In recognition of the importance of this activity, the HVAB created the Happy Valley Sports & Entertainment Alliance in 2021.



The purpose of this study is to quantify the current economic impacts from sports events and the associated visitor activity within Centre County. This study can serve as a baseline for future growth driven by the work of the HVAB, Sports & Entertainment Alliance, and Penn State Athletics.

1.2. About Happy Valley Adventure Bureau and Penn State Athletics

About Happy Valley Adventure Bureau (HVAB)

The Happy Valley Adventure Bureau is a nonprofit organization that works on the fundamental principle that "cooperative group action" can attract meetings and visitors to the area more effectively than independent action. As Centre County's official destination marketing organization, HVAB's mission is to develop, promote and participate in travel-related activities and coordinate visitor services aimed at improving the county's economic activities and quality of life. Happy Valley is promoted as a vacation and meeting destination to certain target audiences. Being a membership-based organization, HVAB offers benefits to its members such as a network of business professionals who value travel and tourism as an integral step in creating a wealthy and financially strong region.

THE HAPPY VALLEY ADVENTURE BUREAU

About the Sports & Entertainment Alliance

The Happy Valley Adventure Bureau announced plans to create the Happy Valley Sports & Entertainment Alliance in November of 2021, to attract more events to Centre County and the overall region. The creation of this alliance had been a concept for a while, but with continued community

support and the imminent need to seek out and attract larger national and international sports and entertainment events, it quickly became a reality. Happy Valley Sports & Entertainment Alliance aims to highlight Centre County and its rich sports history. The ultimate objective is to frame Centre County as a sports destination and entertainment, by providing a variety of events, lodging and dining options, and impressive venues.

About Penn State University Athletics

Penn State University (PSU) is a public, four-year institution of higher education with a 7,958-acre campus, founded in 1855 and boasting more than 45,000 students and 25,000 faculty and staff. Penn State University Athletics ("Penn State Athletics") is a Division I athletics organization competing in the Big Ten Conference that hosts 31 different sports teams, of which 29 are Division 1, known as the Nittany Lions. Penn State Athletics prides itself on providing its elite student-athletes with a transformative experience that develops them both on and off the field. Penn State Athletics named Patrick Kraft to lead the Athletics Department in July 2022. At Penn State University, he will oversee 31 sports and over 800 student-athletes.[1]

1.3. Economic and Fiscal Impact Modeling Approach

Throughout this report, Econsult Solutions, Inc. (ESI) employed industry-standard economic modeling techniques to estimate the direct and indirect economic activity generated by sports events in Centre County, including the Athletics Department of Penn State University. Direct activities are translated into total economic output, employment, and earnings, as well as tax revenue impact.

Economic impacts are the sum of direct activity attributable to Penn State Athletics and other sports venues or events, either through spending by visitors drawn to the area by these events, or direct operational spending by Penn State Athletics, and the spillover impacts of that direct activity. Within an interconnected economy, each dollar of direct expenditures generates multiple waves of spillover impacts through spending on goods and services purchased within a given region ("indirect impacts") as well as spending resulting from the labor income generated by the initial activity that ripples through the region ("induced impacts"). ESI used IMPLAN modeling software to estimate indirect and induced impacts and sums them with the direct activity to produce total economic impact. IMPLAN also estimates the number of jobs that are supported by the spillover impacts (indirect and induced impacts). For ease of comprehension, ESI converts these jobs into Full-Time Equivalent (FTE) jobs, and all jobs expressed in this report are FTE jobs. ESI also created a custom fiscal impact model to translate economic impacts into their commensurate effect the state tax base. See the Appendix for additional details on ESI's economic and fiscal impact model methodology.

Penn State University provided data inputs on institutional activity, including operational budget and attendance data. For each input, the most recent and appropriate available data is used (often but not

[1] 'Penn State hires former Temple AD to head athletics department', Philadelphia Business Journal, April 2022, https://www.bizjournals.com/philadelphia/news/2022/04/29/temple-penn-state-athletic-director.html?utm_source=st&utm_medium=en&utm_campaign=OT&utm_content=pl&ana=e_pl_OT&j=27541502&senddate=2022-04-29

always from FY 2022). ESI also directly contacted various sports organizations across Centre County. These organizations provided data from 2019 to present, either on its operational budgets (if available) and its annual events attendance. To account for this slight variation in timing of attendance data, ESI averaged this attendance on an annual basis and considers this approach a "typical" year of visitation and associated spending.

1.4. Organization of the Report

The subsequent sections of the report is organized as follows:

- **Section 2: Impact from Centre County Athletic and Recreational Event Attendee Spending**: This section examines the visitor spending and resulting economic impact from spectators and participants of sports events in Centre County. This section separately considers Penn State football games, other Penn State games and events, and athletics events occurring throughout the county.
- **Section 3: Impact from Organizational Spending**: In addition to visitor dollars, Penn State Athletics is a major employer and a significant procurer of a wide range of goods and services in support of its regular operations. These direct investments, like visitor spending, in turn have a multiplier effect with the county and state economy.
- **Section 4: Additional Economic Impacts from Athletics Events**: Beyond the visitor and organizational spending effects, athletics events play an important role in sustaining economic activity and future visitation to Centre County. Penn State Athletics and its national footprint brings attention to the county, attracts donations that spur investment, and contributes a significant level of community service.
- **Section 5: Summary of Impacts**: The concluding section summarizes the annual economic impacts from both attendee and organizational spending to Centre County and the Commonwealth of Pennsylvania.



2. Impact from Sports Event Visitor Spending

2.1. Section Overview

Centre County and Penn State Athletics host numerous athletic and recreational events each year which attract both local and non-local attendees. Sports event attendees make a significant economic impact on the local community as they dine in local restaurants, shop at local stores, and in some cases stay overnight within the County. Visitor spending represents net new dollars draw into the County, and generates subsequent spillover impacts supporting local businesses and jobs.

$102 million

aggregate attendee spending brought into Pennsylvania



This section reviews the range of sports events taking place in Centre County, estimates the visitor spending associated with these events annually, and models the total economic impact within the County and state. Spending captured by Penn State (such as game tickets) are excluded from these estimated, since they are accounted for in the Penn State Athletics budget reviewed in Section 3 below.

Sports event visitors to Centre County are estimated to spend $102 million annually throughout the County. This influx of spending generates an annual economic impact of $149 million within Centre County, supporting more than 1,600 FTE jobs.

2.2. Modeling Visitor Spending

Visitors come to Centre County over the course of the year for a variety of purposes including leisure trips, business travel, conferences, and sports events. Visitation to the County was estimated at 4.6 million in 2019, before falling to 3.2 million in 2020 due to travel pullbacks from the COVID-19 pandemic, and the County is well positioned to reach or exceed pre-COVID levels as the tourism industry recovers.[2] According to data published by the Pennsylvania Tourism Office, tourism spending within Centre County totaled $823 million in 2019, including $143 million on lodging.[3]

11.3%

Of visitors to Centre County's main reason for visiting was due to a sporting event



Sports events are one of the major visitor draws to Centre County throughout the year. A visitor intercept survey conducted by researchers in the Penn State Department of Recreation, Park and Tourism Management for the HVAB from May 2019 to February 2020 found that 11.3 percent of visitors to the county reported that the "main purpose" of their visitor was a sporting event. Overall, 15.8 percent of visitors reported attending a Penn State sporting event during their stay, while 4.6 percent attended a non-Penn State sporting event.

[2] "Visitation Analysis for Centre County, PA," *Tourism Economics*, https://happyvalley.com/userfiles/files/Centre%20County%20visitation%20analysis%20-%202020_client.pdf.
[3] "Economic Impact of Travel & Tourism in Pennsylvania, 2019," *Tourism Economics*, https://www.visitpa.com/sites/default/files/pdfs/Economic%20Impact%20of%20Tourism%20in%20PA%202019_FINAL-min.pdf.

Penn State football is the most visible example of the visitor draw of sporting events to the County, with a sold out stadium of more than 100,000 on seven football weekends a year, as well as significant attendees to the Blue White game in the spring. In addition, thousands of participants and fans come for races, marathons, athletic tournaments, collegiate sporting events, sports camps, and other events hosted at Penn State Athletics facilities on a regular basis throughout the year.

Beyond the university, venues and events around Center County attract a regular flow of attended and visitor spending throughout the year. These include the State College Spikes summer baseball team, indoor venues, events such as races and marathons occurring in the county, and amateur or scholastic competitions that involve travel.

Visitor spending associated with these events are estimated through a multi-step process reviewed below and in further detail in the report Appendix. Various sports organizations through the county and Penn State Athletics provided attendance figures for their events, as well geographic data on ticket purchases where available or estimates of the geographic distribution of attendees. Spending profiles were developed by attendee type based on tourism industry data points to reflect the variation in the level and composition of spending for day and overnight visitors. Differentials were also accounted for in lodging spending for Penn State football attendees, based on the significantly higher lodging rates evident in industry data on football weekend.

A material portion of attendees to sporting events are students and local residents. Spending by these groups were conservatively excluded from the study, because they do not represent "net new" spending to the County. In addition, spending (such as event tickets) directly captured by Penn State Athletics supports operational activity modeled in Section 3 and was excluded to avoid double counting.[4]

The following per visitor spending profiles are utilized for visitors (see Figure 2.1):

Figure 2.1: Est. Per Visitor Spending in Centre County by Visitor Type

	Student/Local	Day Visitor	Overnight Visitor	Overnight – PSU Football
Lodging	N/A	--	$78	$241
Food	N/A	$37	$74	$74
Transportation	N/A	$10	$25	$25
Misc. Retail	N/A	$18	$39	$39
Total	**N/A**	**$65**	**$216**	**$380**

Source: ESI Analysis of Tourism Industry Data[5]

[4] This spending circulating through the local economy is technically categorized as "ancillary" spending.
[5] See Appendix for further detail on the data sources and calculations utilized to define visitor profiles

2.3. Impact from Penn State Football Games



Many attendees come from out of the region to watch PSU's football team, which carries a national following and accounts for a plurality of total athletic event attendance. Ticketed attendees to Penn State football total nearly 750,000 for the seven annual home football games, with additional visitation of around 62,000 for the Blue White game in the spring of 2022.[6]

In addition to attendees, these games attract visiting media, tailgaters, visiting teams competing against PSU, and additional fans and staff for visiting teams. Accounting for all of these components, it estimated that there are **about 890,500 attendees of football games held at PSU in a typical season.**[7]

Penn State Football attendees have an elevated spending profile due to the national following and concentration of demand for lodging on football weekends. While annual per room hotel rates on lodging in Centre County averaged around $127 in 2021 according to Smith Travel Research data, day by day analysis shows that hotel rates on fall football weekends averaged more than $360. A similar effect of football games can be seen on the rental market. State College borough has nearly 500 active rental properties across Airbnb, Vrbo, and Rent Like a Champion. These properties have an average daily rate of $488, which increases to $700 during November, the height of football season.[8]

Attendees are sorted into locals, regional and overnight visitors based on analysis of ticket data, and assigned a spending profile reflecting the elevated lodging spending. Football game ticketholders and other attendees are estimated to spend $66.9 million on lodging, food, transportation, and retail expenditures. Of this $66.9 million, it is estimated that $58.7 million goes to businesses located in Centre County (see Figure 2.2).[9]

[6] Mark Wogenrich, "Observations from the Blue-White Game," *Sports Illustrated,* April 23, 2022, https://www.si.com/college/pennstate/football/penn-state-football-blue-white-game-2022#:~:text=It%20was%20an%20entertaining%20way,Beaver%20Stadium%20there%20was%20football..

[7] This figure also includes an estimate of tailgaters.

[8] AirDNA Market Minder: State College, PA, Accessed June 21, 2022, https://www.airdna.co/vacation-rental-data/app/us/pennsylvania/state-college/overview.

[9] A portion of spending by athletic attendees in Centre County goes to manufacturers and wholesalers that are located outside of the county. See Appendix for more detail.

Figure 2.2: Est. Penn State Football Annual Ancillary Spending ($Millions)

	Day Trip	Overnight Trip	Total
Lodging	--	$25.0	$25.0
Food	$16.8	$7.7	$24.5
Transportation	$3.3	$1.9	$5.3
Misc. Retail	$8.0	$4.0	$12.1
Total	$28.2	$38.8	$66.9
Minus Non-Modeled Amount			*($8.2)*
Modeled Amount			$58.7

Source: Penn State University (2022); IMPLAN (2019); Econsult Solutions, Inc. (2022)

$87 million

Annul economic impact in the Centre County economy from football visitor spending



This influx of ancillary spending by students, participants, and attendees has a multiplier effect throughout the region, helping to support the tourism economy in Centre County and Pennsylvania. Figure 2.3 shows the aggregate annual economic impact from ancillary spending due to home football games. Spending by football visitors is estimated to yield $87 million in economic impact within the Centre County economy, supporting about 930 jobs with $26.3 million in employee compensation. The economic impact of this spending within the Commonwealth of Pennsylvania is $97 million.[10]

Figure 2.3: Annual Economic Impact from Ancillary Spending by Penn State Football Attendees

	Centre County	Pennsylvania
Direct Output ($M)	$58.7	$58.7
Indirect & Induced Output ($M)	$28.5	$38.4
Total Output ($M)	**$87.2**	**$97.0**
Annual Employment Supported (FTE)	**930**	**985**
Employee Compensation ($M)	**$26.3**	**$29.2**

Source: Penn State University (2022); IMPLAN (2019); Econsult Solutions, Inc. (2022)

2.4. Impact from Other Penn State Athletics Events

Penn State Athletics also boasts a number of other nationally recognized sports teams that draw in attendees to the region, such as basketball, hockey, wrestling, and volleyball. While the impact of football is modeled separately from other PSU Athletics events, PSU has many other prominent sports programs with highly competitive teams that regularly win championships and have significant attendance, including the 2022 national championship wrestling team, and teams such as women's soccer, women's volleyball, men's gymnastics, and fencing that have won recent national championships.

[10] Note that since the Centre County economic is fully within the state of Pennsylvania, indirect and induced impacts are by definition bigger within the state economy, since they include all effects within Centre County as well as spillover effects in other counties in Pennsylvania.

Based on data provided by Penn State, these additional athletics events draw over 666,500 attendees to campus annually. Among the attendees are visiting teams, which often bring a significant contingent of athletes, coaches and other staff to the area for a competition. Event attendance data comes from the following athletics events: Men's Basketball, Gymnastics, Hockey, and Lacrosse; Women's Basketball, Hocket, Lacrosse, and Volleyball; Softball; Wrestling; Non-Ticketed Sports; Team Camps; and Bryce Jordan Center attendees (other University events, concerts, trade shows, and other events).

Outside of their time on campus, visitors spend on food, lodging, or retail items in the businesses in the region, thus generating additional economic activity. Based on the estimated distribution of day and overnight visitors, and the visitor spending profiles developed above, it is estimated that these attendees and participants spend approximately $36 million, of which $30 million remains in Centre County (see Figure 2.4).

Figure 2.4: Est. Penn State Athletics non-Football Event Spending ($Millions)

	Day Trip	Overnight Trip	Total
Lodging	--	$6.8	$6.8
Food	$10.3	$6.6	$16.9
Transportation	$2.0	$1.7	$3.7
Misc. Retail	$4.9	$3.4	$8.4
Total	$17.3	$18.5	$35.8
Minus Non-Modeled Amount			($5.7)
Modeled Amount			**$30.1**

Source: Penn State University (2022); IMPLAN (2019); Econsult Solutions, Inc. (2022)

Including spillover effects, this direct visitor spending of $30 million associated with non-football Penn State Athletics events yields a total economic impact of $45 million impact in Centre County, supporting more than 500 FTE jobs with $13.5 million in employee compensation. The economic impact of this spending within the Commonwealth of Pennsylvania is $53 million (see Figure 2.5).

Figure 2.5: Annual Economic Impact from Ancillary Spending by Attendees of Other Penn State Athletics Events

	Centre County	Pennsylvania
Direct Output ($M)	$30.1	$30.1
Indirect & Induced Output ($M)	$14.8	$22.7
Total Output ($M)	**$44.8**	**$52.8**
Annual Employment Supported (FTE)	**505**	**545**
Employee Compensation ($M)	**$13.5**	**$15.9**

Source: Penn State University (2022); IMPLAN (2019); Econsult Solutions, Inc. (2022)

2.5. Impact from Events throughout Centre County

Beyond the Penn State campus, Centre County has assets such as golf courses, sports camps, and other year-round sports venues. The County is a destination for athletic tournaments, races, marathons, minor league baseball (State College Spikes), and more. Centre County is also recognized for its hiking- and biking-friendly trails. In particular, the county's world-class fishing facilities have hosted multiple US Presidents and fishing competitions, which drew attendees across the country with a significant boost to the local economy.

With assistance from the HVAB, ESI contacted several recreational and sports-related organizations to obtain attendance data. Events across Centre County include major tournaments hosted at various venues such as the Nittany Valley Sports Centre, C3 Sports, and various venues maintained by the Centre Region Parks and Recreation Department. These events and activities provide a flow of visitors to the County throughout the year. These identified athletics events are estimated to draw nearly 150,000 attendees each year, with the largest chunk of attendees for the State College Spikes (see Figure 2.6).

92,000

attendees to State College Spikes games



Figure 2.6: Est. Participants and Attendees at Athletic Events throughout Center County[11]

Countywide Athletics Events	Total
Baseball	1,110
Basketball	23,730
Bike Race	1,280
Field Hockey	1,200
Golf	210
Gymnastics	5,300
Other	1,500
Race/Marathon	460
Softball	4,380
Swimming	2,310
State College Spikes	92,450
Volleyball	800
Wrestling	13,530
Total	**148,260**

Source: Sports Organizations (2022); Econsult Solutions, Inc. (2022)

The distribution of local, day trip and overnight visitors associated with these events are estimated and matched with the spending profile for each visitor type. Based on this approach, annual ancillary spending from these attendees is estimated at $15 million of direct spending, of which around $13 million remains within Centre County (see Figure 2.7).

Figure 2.7: Centre County Recreational Events Attendee Spending Profile ($Millions)

	Day Trip	Overnight Trip	Total
Lodging	$0.0	$4.5	$4.5
Food	$1.7	$4.3	$6.0
Transportation	$0.3	$1.1	$1.4
Misc. Retail	$0.8	$2.3	$3.1
Total	$2.8	$12.2	$15.0
Minus Non-Modeled Amount			($2.1)
Modeled Amount			$12.9

Source: Happy Valley Adventure Bureau (2022); Various Countywide Sports Organizations (2022); Econsult Solutions, Inc. (2022)

Including spillover effects, this direct spending from countywide athletics events generates $16.9 million in annual economic impact within the Centre County economy, supporting 215 FTE jobs with $5.8 million in employee compensation. The economic impact of this spending within the Commonwealth of Pennsylvania is $23 million (see Figure 2.8).

[11] These visitor numbers do not include participants or attendees from Woodward Camp and Grange Entertainment. The overall impact may be greater if data were included from these organizations.

Figure 2.8: Annual Economic Impact from Ancillary Spending by Attendees of Centre County Recreational Events

	Centre County	Pennsylvania
Direct Output ($M)	$12.9	$12.9
Indirect & Induced Output ($M)	$3.9	$9.7
Total Output ($M)	**$16.9**	**$22.7**
Annual Employment Supported (FTE)	**215**	**230**
Employee Compensation ($M)	**$5.8**	**$6.9**

Source: Sports Organizations (2022); IMPLAN (2019); Econsult Solutions, Inc. (2022)

2.6. Aggregate Impact from Visitor Spending

Events throughout the county combined with Penn State Athletics events produce a significant economic footprint in Centre County. Adding together the three categories reviewed above, annual attendees at sports events in Centre County are estimated to total 1.7 million. These attendees are estimated to directly spend $117.7 million, of which $101.7 million remains in the Centre County economy (see Figure 2.9).

Figure 2.9: Est. Annual Visitation and Spending from Sports Events in Centre County

	PSU Football	PSU Other Athletic Events	Countywide Events	Total
Attendees	**890,550**	**666,420**	**148,260**	**1,705,230**
Direct Spending ($M)	$66.9	$35.8	$15.0	$117.7
Minus Non-Modeled Amount ($M)	*($8.2)*	($5.7)	($2.1)	($16.0)
Modeled Spending ($M)	**$58.7**	**$30.1**	**$12.9**	**$101.7**

Including spillover effects, athletic event attendee spending generates $149 million in total economic impact in Centre County, supporting 1,655 FTE jobs, with $46 million in employee compensation. The economic impact of this spending within the Commonwealth of Pennsylvania is $173 million.

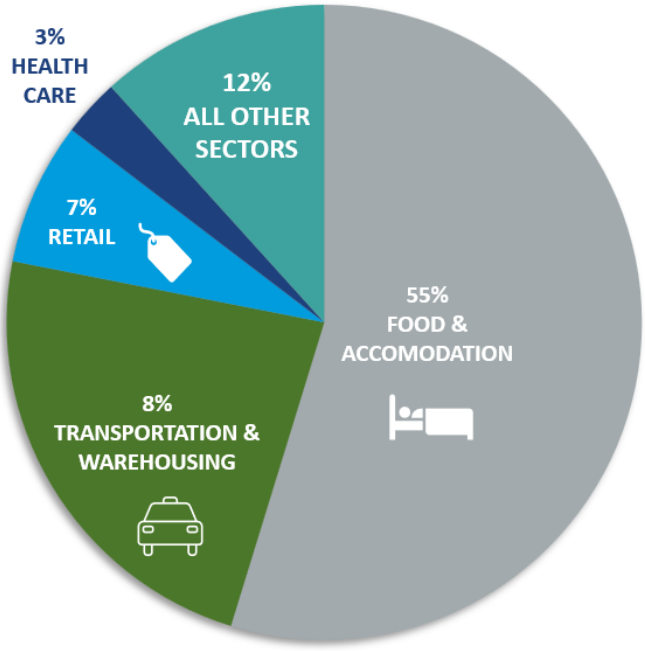
Figure 2.10: Aggregate Annual Economic Impact from Ancillary Spending by Attendees of Centre County Athletic and Recreational Events

	Centre County	Pennsylvania
Direct Output ($M)	$102	$102
Indirect & Induced Output ($M)	$47	$71
Total Output ($M)	**$149**	**$173**
Annual Employment Supported (FTE)	**1,655**	**1,760**
Employee Compensation ($M)	**$46**	**$52**

Source: Penn State University (2022); Sports Organizations (2022); IMPLAN (2019); Econsult Solutions, Inc. (2022)

Visitor spending reaches a variety of business types and industries. In turn, the multiplier effect of spending reaches additional portions of the economy, as visitor dollars are recirculated throughout the supply chain of visitor serving business, and as direct wages are recirculated as household spending. This means that jobs are supported in a wide range of sectors ranging from direct sectors like food and accommodations to downstream sectors like healthcare services (see Figure 2.11).

Figure 2.11: Industry Distribution of Statewide Employment Impact from Centre County Athletic and Recreation Attendee Spending



Source: Penn State University (2022); Sports Organizations (2022); IMPLAN (2019); Econsult Solutions, Inc. (2022)

2.7. Tax Revenue Impact from Athletic and Recreational Attendee Spending

The direct and downstream effects from visitor spending also boosts tax bases, generating tax revenues for various government justifications each year. Notable among these are state income, sales tax, and corporate income tax (business tax).[12]

It is estimated that the economic impact that results from athletic and recreational attendee spending produces $6 million in tax revenues for the Commonwealth of Pennsylvania each year (see Figure 2.12).

Figure 2.12: Estimated Annual Tax Revenue Impact from Centre County Athletic and Recreational Attendee Spending to the Commonwealth of Pennsylvania

Tax Type	Pennsylvania ($M)
Income	$0.9
Sales/Hotel	$1.9
Business	$0.6
Total	**$6.0**

Source: Pennsylvania CAFR (2017); IMPLAN (2019); Econsult Solutions, Inc. (2022)

This economic activity also supports local earnings and property value which in turn support local municipal and school district tax bases.

[12] Note that Pennsylvania applies a state "hotel tax" on lodging spending at an identical rate (6%) to the sales tax on other goods and services. The hotel tax is grouped with the sales tax for the purpose of this analysis.

3. Impact from Organizational Spending

3.1. Section Overview

In addition to visitor activity, the Penn State Athletics Department is a major economic engine for Centre County and the state in its capacity as an employer and purchaser of local goods and services. This section uses annual operating expenditures express this operating footprint in terms of its economic impact at the county and statewide level using standard input-output modeling techniques.

2,660 jobs
supported directly and indirectly by Penn State Athletics operations each year in Centre County.

It is estimated that direct and spillover impacts from Penn State Athletics produces $268 million in annual economic impact in Centre County, supporting 2,660 jobs and $87 million in employee earnings.[13]

3.2. Direct Annual Operating Expenditures

Direct operations produce spillover effects at each geographic level, stimulating business activity and supporting employment across a variety of sectors. The total economic impact is the sum of the direct expenditures from the Penn State Athletics Department, the indirect impacts that result from institutional spending on goods and services with vendors within each geography, and the induced impacts that result when employees recirculated their wages locally in the form of household spending.

This section primarily focuses on the operational footprint of Penn State Athletics. Other Centre County recreational organizations such as C3 Sports, Nittany Valley Sports Centre, Tussey Mountainback, and the State College Spikes also spend money on employees and goods and services in support of venue operations and events. Limited data was available on the magnitude and composition of this spending, which is likely far lower in aggregate than the operational activity of Penn State Athletics. Accordingly, calculations in this section focus on the economic impact from Penn State Athletics' operating activities.

3.3. Economic Impact from Penn State Athletics Organizational Spending

Penn State Athletics is a self-sustaining organization within PSU, paying for its expenditures from a combination of ticket sales, concessions, conference distribution, multimedia and licensing revenues, and donor support.[14] The total functional operating expenditures of Penn State Athletics for FY 2020 were reported at $158 million.[15]

To determine the magnitude of the economic impact of Penn State Athletics' operational activity, it is first necessary to understand the composition of annual expenditures within the local state economies. Since economic impact relates largely to where expenditures occur, deductions are made for budgetary

[13] Jobs are expressed in Full-Time Equivalent (FTE) jobs. All jobs expressed in this report are FTE jobs.
[14] As noted in Section 2, visitor spending that generates revenue for Penn State, such as ticket sales, are included in organizational spending, because these revenues ultimately support the operations of the Athletics Department.
[15] Operating activity data was obtained from Penn State Athletics NCAA 2021-22 report, and further supplemented by data provided directly by Penn State Athletics.

items that do not represent spending within a given geography. For example, this modeling approach excludes team travel paid by Penn State Athletics from the analysis because that expenditure is largely spent outside of the local and state economies. After that adjustment, the modeled amount of direct spending within the economy is around $151 million (see Figure 3.1).

Figure 3.1: Summary of Penn State Annual Athletics Operating Expenditures

Category	Included in Model	Operating Expenses ($M)	Modeled Amount ($M)
All Salaries & Fringe Benefits	Yes	$63.3	$63.3
Financial Aid	Yes	$21.7	$21.7
Operational Expenses	Yes	$63.1	$63.1
Post Season Participation	Yes	$2.8	$2.8
Team Travel	No	$7.1	$0.0
Total Expenses		**$157.9**	**$150.9**

Source: Penn State University (2022); Econsult Solutions, Inc. (2022)

Direct operations produce spillover effects at each geographic level, stimulating business activity and supporting employment across a variety of sectors. The total economic impact is the sum of the direct expenditures made by Penn State Athletics, the indirect impacts that result from institutional spending on goods and services with vendors within each geography, and the induced impacts that result when employees of Penn State Athletics spend their salaries and wages locally.

Including these spillover impacts, operational activities have an economic impact of $268 million within the Centre County economy each year, supporting 2,660 FTE jobs with $87 million in employee compensation (see Figure 3.2). The economic impact of this activity within the Commonwealth of Pennsylvania is $96 million.

Figure 3.2: Economic Impact from Penn State Athletics Annual Operations

	Centre County	Pennsylvania
Direct Output ($M)	$151.0	$151.0
Indirect & Induced Output ($M)	$116.9	$143.8
Total Output ($M)	**$267.9**	**$294.8**
Annual Employment Supported (FTE)	**2,660**	**2,785**
Employee Compensation ($M)	**$87.2**	**$95.9**

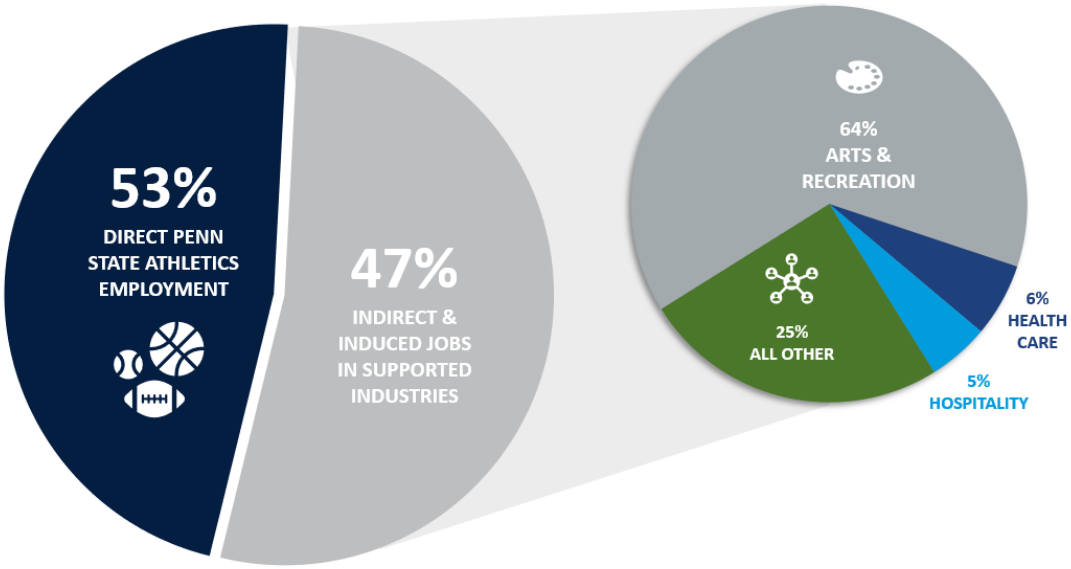
Source: Penn State University (2022); IMPLAN (2019); Econsult Solutions, Inc. (2022)

3.4. Industry Distribution of Economic Impact from Organizational Spending

While the operating activity of Penn State Athletics exclusively focuses on athletics, the economic impact of that activity supports additional economic activity beyond this sector. Approximately 53 percent of the jobs generated by Penn State Athletics operational impact are in industries supported by procurement of various goods and services or by the income earned by employees who then spend

those earnings into the local and state economies. These supported industries include arts, entertainment, and recreation (64 percent of the indirect and induced impact), health care and social assistance (6 percent, and accommodation and food services (5 percent) (see Figure 3.3).

Figure 3.3: Industry Distribution of Statewide Employment Impact from Centre County Athletic and Recreation Operations



Source: Penn State University (2022); Various Countywide Sports Organizations (2022); IMPLAN (2019); Econsult Solutions, Inc. (2022)

3.5. Tax Revenue Impact from Organizational Spending

Although Penn State University is a not-for-profit institution and is exempt from many direct taxes, the economic impacts from its operations still generate tax revenues. Penn State Athletics increase the Commonwealth of Pennsylvania's tax bases directly by employing staff which generates taxable income, and indirectly via spending by vendors and employees in the private economy. It is estimated that impacts from Centre County athletic and recreational organizations generate nearly $3 million in tax revenue for the Commonwealth of Pennsylvania each year (see Figure 3.4).[16]

[16] Tax revenue impacts are calculated for the Commonwealth of Pennsylvania. However, the operating activity also supports other local tax revenues not calculated in this analysis.

Figure 3.4: Estimated Annual Tax Revenue Impact from Penn State Athletics Operations to the Commonwealth of Pennsylvania

Tax Type	Pennsylvania ($M)
Income	$1.7
Sales	$0.9
Business	$0.3
Total	**$2.8**

Source: Pennsylvania CAFR (2017); IMPLAN (2019); Econsult Solutions, Inc. (2022)

Penn State Athletics Events are Self-Sustaining

Penn State Athletics' operating activities are self-sustaining, meaning the Athletics Department does not rely on direct funding from the University itself. Penn State Athletics is able to generate revenue through its ticketed games, which helps to sustain its operations. Subsequently, Penn State Athletics is able to pay for third-party services such as security, clean up, trash removal, and services needed to host its games and other events. These third-party services would have otherwise been paid for by State College Borough or Centre County.

4. Additional Economic Impacts from Athletic Events

4.1. Section Overview

In addition to the quantifiable impacts from visitor spending and ongoing operations, athletic events contribute significantly to the fabric of Centre County, and in turn its image and its economy. Athletics help attract donations into the institution and county, generate volunteerism and community service, and establish Centre County as a tourist destination, helping to build repeat visitation. Several of these benefits merit additional discussion and analysis as representations of how sports activity helps to drive additional economic and social benefits for Centre County.

4.2. Additional Benefits Derived from Penn State Athletics Events

Licensing and Merchandising Generates Further Economic Activity

While Penn State is a non-profit entity, the Penn State Athletics' brand and the brand of its sports events have significant commercial value. One manifestation of this is arrangements for private businesses to license imagery to sell branded merchandise. The licensing fee is a benefit to Penn State Athletics, which it uses to invest in its student-athletes through providing scholarships, enhancing programing, and improving facilities. The revenues accrued to Penn State Athletics through licensing revenue are thus a component of the annual operations impact accounted for in Section 3 of this report.

Penn State Athletics merchandise is sold all over the country, including within Centre County and throughout Pennsylvania. Those sales represent direct business activity for the retail vendors, which supports jobs within the county and state. More broadly, wherever Nittany Lion merchandise is purchased, the licensing revenues flow back to Penn State and Centre County. The Athletics Department is therefore a key mechanism through which the university attracts spending from around the country and around the globe and channels it into the Centre County economy, supporting the local jobs and local spending associated with the operations of Penn State Athletics.

Impact from Media Exposure and Spending

Penn State sports games are broadcasted locally and nationally, reaching a significant audience of viewers. This media exposure has commercial value on multiple levels. Narrowly, local business are able to purchase advertising platforms to promote their services to viewers. This promotion is intended to enhance business sales and expand their customer base. This ultimately draws in additional activity into the local and state economy.

More broadly, the presence of Penn State Athletics in the national media and the association with Happy Valley and Centre County have significant image-building value. These associations benefit the county as a place for resident and business attraction, and from a tourism perspective, as a place to visit. While this "organic" brand building is difficult to compare to paid advertising channels, the audiences for major sporting events like a nationally televised football game are very significant relative to the audiences that can be reached through a limited tourism marketing budget. As a result, Penn State Athletics provide one of the major associations that many potential visitors may have with Happy Valley and Centre County as a potential tourism destination.

4.3. Donations and Charitable Contributions

With its strong cohesion with the alumni community, Penn State Athletics has effectively contributed to the university's fundraising campaign. In FY 2022, the annual athletics donations to PSU Athletics reached $53,604,442, a 43 percent increase from the previous year and the highest amount of athletics donations in the past five years. PSU Athletics donations also are approximately 13.2 percent of the total donations of Penn State in FY 2022. These donations are another means through which dollars are attracted from around the county and the world and funnel into Centre County, supporting supporting local economic activity as they are spent on Athletic Department operations and capital projects.

$53 million

Annual donations made to Penn State Athletics



More broadly, successful athletic programs have been shown to generate positive impact on a university's overall alumni donations. A study by Adam G. Walker from University of Memphis concluded that the success in either basketball or football at NCAA Division I schools led to a significant increase overall private contributions, regardless of public or private affiliation, history of athletics success, or region.[17] Another study by the National Bureau of Economic Research and University of California at Berkeley confirmed the same pattern: the success of a football program boosted alumni donations.[18] In particular, the research found that an additional football win increase a school's athletic donations by $136,400.

Donors to Penn State Athletics also provide generous support for the school's development projects. In FY 2022, Penn State raised $46 million from philanthropy to fund the renovation of Lasch Football Building. The university valued football as the top connection with alumni donors, attributing its fundraising success to "the camaraderie and the love of athletics" fostered through football. Another notable donor-funded development project is the renovation of Panzer Lacrosse Stadium with approximately $5.5 million private giving. These donations help to directly fund capital projects, which both creates economic activity and employment during the construction phase, and provides a platform for more events and associated activity going forward.

Athletics offer a source of social cohesion for current students and alumni, providing a tangible way in which alumni can connect during game days. At Penn State, the President's Office hosts tailgates and a suite at all home football games. Penn State Athletics scheduled the University-wide campaign launch in 2017 and closing celebrations around the Blue White Football games in 2022. Several academic units on campus purchase suites and/or premium seating and/or host tailgates to entertain donors at home games. Penn State Athletics partners with the Alumni Association to host Coaches Caravans in several cities around Pennsylvania and beyond to use the popularity of Athletics to help promote the Alumni Association.

[17] Walker, "Division I Intercollegiate Athletics Success and the Financial Impact on Universities," *University of Memphis, 2015.*
[18] Chung, "How much is a win worth? An application to Intercollegiate athletics," *Harvard Business School*, 2017.

4.4. Community Engagement and Volunteering

Penn State and PSU Athletics regard community service as an integral part of their mission with the goal of preparing Penn State student-athletes for a lifetime of impact. The 2021-22 academic year saw a continued commitment to this mission of service that made an impact among Penn State partners, the State College community, Central Pennsylvania, and ultimately the student-athletes.



Penn State Athletics leverages its recognition on and off the field to develop meaningful ways to engage with the various communities through a number of volunteer initiatives. The student-athletes' persistent effort in community service can be demonstrated by the longstanding partnership with the campus-wide IFC/Panhellenic Dance Marathon (THON). This program raises funds for children and families fighting pediatric cancer through team donor drive competition. Over the past four years, student-athletes not only have collected almost $300,000 donations but more importantly have helped build the community of THON children and families.

Moreover, signature community service programs, such as the year-around youth literacy Reading Rewards Program and Sports Museum Trick-or-Treat, facilitate the interaction between the local community and all 31 teams at Penn State. The student-athletes are also engaged in environmental and social causes beyond Penn State campus. At the annual REPLAY Event, the Student-Athlete Advisory Board (SAAB), partnered with the university's Sustainability Institute, collected used athletic equipment from a local elementary school and donated to the YMCA of State College. In addition, the SAAB arranged several food, clothing and gift drives benefitting local organizations such as the Lion's Pantry for Penn State students, the Centre County Homeless Shelter and Hearthside Nursing & Rehab Center.

4.5. Building Destination Awareness and Repeat Visitation

Sporting events are an integral part of the Pennsylvania's tourism economy. A study on the economic impacts of sports events in Pennsylvania found that in 2015, there were nearly 5.5 million sports-related visits that generated $438 million in spending. The events that counted the most attendees and participants were college-related.[19]

With Penn State Athletics and the range of other sporting events throughout the County discussed throughout this report, sports events represent one of the defining features of Centre County and Happy Valley as a tourism destination. The creation of the Sports & Entertainment Alliance is both a recognition of and an opportunity to expand this impact. It also indicates the support from the community, academic institutions, and key stakeholders to put Centre County on the map of the competitive sports landscape.

[19] Oxford Economics, "Economic Impacts of Sports Events in the Commonwealth of Pennsylvania," August 2017.

In addition to contributing to the destination brand and visitor attraction, sports events can serve as an introduction to a destination that leads to future repeat visitation. A race, marathon, tournament, or Penn State Athletics event can serve as an introductory visit for an attendee. Attendees who are especially interested in recreation and sports can be drawn to visit Centre County again after experiencing their visit there. Since events are held year-round across Centre County, attendees have opportunities to either return to events they are interested in or explore other events Centre County offers in terms of sports and recreation. Attendees may also have a positive association with attending an event in Centre County and return for leisure outside of these sports-related events. Through these means, sporting events play a significant in attracting new and repeat visitors to Centre County.

5. Summary of Impacts

5.1. Summary of Economic Impacts from Organizational and Attendee Spending

Athletics' aggregate economic impact derives from direct, indirect, and induced effects in two mutually exclusive categories of economic activity directly attributable to the institution:

1. *Visitor spending*, reflecting participants and attendees drawn to the area by athletic and recreational events held in Centre County that support the local hospitality, food, and retail industries. These impacts are estimated at $149 million within Centre County and $173 million within Pennsylvania.
2. *Annual operations*, including the broad base of employment, procurement, and administrative activities that comprise the daily activities of Penn State Athletics. These impacts are estimated at $268 million annually within Centre County and $295 million within Pennsylvania.

In the aggregate, sports events and associated activity are estimated to generate an annual economic impact of approximately $417 million within Centre County, support 4,315 jobs with $133 million in employee compensation (see Figure 5.1).

Figure 5.1: Aggregate Annual Economic Impact within Centre County

	PSU Athletics Operations	Visitor Spending PSU Football	Visitor Spending PSU non-Football	Penn State Athletics Total	Visitor Spending Countywide Events	Grand Total
Total Economic Impact ($M)	$268	$87	$45	$400	$17	$417
Employment Supported (FTE)	2,660	930	510	4,100	215	4,315
Employee Compensation ($M)	$87	$26	$13	$127	$6	$133

Within the Commonwealth of Pennsylvania, this supports a total of $459 million in economic impact, supporting 4,375 jobs with $146 million in employee compensation (see Figure 5.2).

Figure 5.2: Aggregate Annual Economic Impact within Pennsylvania

	PSU Athletics Operations	Visitor Spending PSU Football	Visitor Spending PSU non-Football	Penn State Athletics Total	Visitor Spending Countywide Events	Grand Total
Total Economic Impact ($M)	$295	$97	$53	$445	$23	$467
Employment Supported (FTE)	2,785	985	545	4,315	230	4,545
Employee Compensation ($M)	$96	$29	$16	$141	$7	$148

6. Appendix: Economic and Fiscal Impact Modeling Methodology

6.1. Report Methodology

The purpose of this appendix is to highlight the scope and methodology of this report and of the quantitative analysis tools used in it, so that its findings can be properly understood and interpreted. Additional detail on the methodology and data sources used to calculate the direct economic impact in each component category and the economic and fiscal modeling undertaken can be found in the appendices that follow.

Scope of Analysis

Economic and fiscal impacts are calculated in two categories of activity: Penn State expenditures on operations, and ancillary spending by participants and attendees attracted sports events. Impacts are calculated on an annual basis, and are undertaken in non-overlapping fashion, meaning that they can be summed to represent aggregate impact. The goal of this analysis is to quantify the current annual level of economic activity associated with Centre County sports and recreation. Data inputs on institutional activity are largely provided by Penn State Athletics and or in partnership with Happy Valley Adventure Bureau. These inputs are supplemented with other public data sources. In addition, assumptions are at times required to estimate the level of activity where direct data is not available.

For each input, the most recent and appropriate available dataset is utilized. In the case of operational data, this information covers FY 2020, representing a typical year largely undisrupted by the COVID-19 pandemic. In the case of ancillary spending, Penn State Athletics attendee counts reflect 2021-2022 activity and Centre County Recreational Event attendance levels are averaged over multiple years (2021 and 2022) to generate an appropriate assessment of typical annual activity. Therefore, the analysis should be understood to represent the current annualized level of activity, rather than representing the impact for any specific fiscal year.

The geographies of Interest for this study are the Centre County and the commonwealth of Pennsylvania. Economic impacts are calculated for each of these geographies, while tax revenue impacts are calculated only for the commonwealth of Pennsylvania.

6.2. Economic and Fiscal Impact Models

Economic impact estimates are generated by estimating the initial amount of direct activity occurring within each geography of interest, and then using input-output models to translate this direct economic activity into the total amount of economic activity that it supports. Expenditures within a given geography give rise to “spillover” impacts when those dollars are recirculated to suppliers and to employees within the local and state economy. In so doing, they also support additional employment and earnings, and generate tax revenue for local governments and for the Commonwealth of Pennsylvania.

ESI has constructed an input-output model of the county and state economy using IMPLAN software to estimate the total impact of these expenditures. The detail that follows explains briefly the theory behind input-output modeling, the mechanics of utilizing it to estimate economic and employment impacts, and the fiscal model utilized to estimate tax revenue impacts from athletic and recreational event economic activity.

Input-Out Modeling

Economic impact estimates for annualized capital and operating activity are generated by utilizing input-output models to translate an initial amount of direct economic activity into the total amount of economic activity that it supports, which includes multiple waves of spillover impacts generated by spending on goods and services and by spending of labor income by employees. In an inter-connected economy, every dollar spent generates two spillover impacts:

- First, some amount of the proportion of that expenditure that goes to the purchase of goods and services gets circulated back into an economy when those goods and services are purchased from local vendors. This represents what is called the “indirect effect,” and reflects the fact that local purchases of goods and services support local vendors, who in turn require additional purchasing with their own set of vendors.
- Second, some amount of the proportion of that expenditure that goes to labor income gets circulated back into an economy when those employees spend some of their earnings on various goods and services. This represents what is called the “induced effect,” and reflects the fact that some of those goods and services will be purchased from local vendors, further stimulating a local economy.

The role of input-output models is to determine the linkages across industries in order to model out the magnitude and composition of the spillover impacts to all industries of a dollar spent in any one industry. Thus, the total economic impact of athletic and recreational events in Centre County is the sum of its own direct economic footprint, plus the indirect and induced effects generated by that direct footprint.

Indirect and induced impacts grow at each successive level of geography, due both to more purchasing and recirculation activity happening within the larger geography and to a greater capture of downstream activity. For example, procurement that takes place elsewhere in the commonwealth outside of Centre County increases its statewide impact relative to its Centre County impact.

Input-Output Mechanics

To model the impacts resulting from the direct expenditures, ESI developed a customized economic impact model using the IMPLAN input/output modeling system. IMPLAN represents an industry standard approach to assess the economic and job creation impacts of economic development projects, the creation of new businesses, and public policy changes within a county on its surrounding area.

IMPLAN has developed a social accounting matrix (SAM) that accounts for the flow of commodities through economics. From this matrix, IMPLAN also determines the regional purchase coefficient (RPC), the proportion of local supply that satisfies local demand. These values not only establish the types of

goods and services supported by an industry or institution, but also the level in which they are acquired locally. This assessment determines the multiplier basis for the local and regional models created in the IMPLAN modeling system. IMPLAN takes the multipliers and divides them into 546 industry categories in accordance with the North American Industrial Classification System (NAICS) codes.

Tax Revenue Impacts

The direct, indirect and induced economic output from athletics and recreational activity produce increases in various tax bases, which in turn lead to increased tax revenue collections for local governments and for the Commonwealth. While IMPLAN produces estimates of these tax revenue amounts, ESI does not utilize these results directly. Instead, we utilize a custom fiscal model that relies on the known relationships between various types of economic activity and tax collections (i.e., effective tax rates) to translate the increases in activity estimates by IMPLAN into attendant tax revenue results for the commonwealth of Pennsylvania.

For a non-profit entity such as Pennsylvania State University, care must also be given to ensure that taxable and non-taxable activity types are properly distinguished. Most notably, PSU's direct activity is not subject to any sales, income or property tax. However, income generated by PSU's employment footprint is subject to Pennsylvania income tax. In addition, the indirect and induced impact of PSU's activity as it ripples throughout the economy occurs broadly within the private sector of the economy and is therefore understood to be tax generating.

In addition, it is acknowledged that athletic and recreational activity also generates taxable activity within and therefore tax revenues to additional jurisdictions besides the Commonwealth of Pennsylvania. These amounts are much smaller than the ones calculated here and are excluded from this analysis.

6.3. Visitor Spending Detail

To accurately estimate visitor spending, it was necessary to not only determine a credible estimate of attendees but also sort those attendees into different spending profiles, recognizing that not all attendees have the same economic footprint.

Penn State Athletics and sports organizations through the county and provided attendance estimates for their events, as well as ticket data or estimated visitor proportions. This information was used to segment event attendees into one of four categories:

- *Students* attending events on campus at Penn State
- *Locals* attending events at either Penn State or elsewhere in the county
- *Day Trip visitors* coming from outside of the county for an event but not staying overnight
- *Overnight visitors* coming from outside of the county and staying overnight

Throughout this analysis, the term "attendee" is used to refer to any person in attendance at a sporting event (inclusive of students and locals). However, spending by local sports event attendees and PSU

students were conservatively excluded from the spending impact analysis.[20] The expenditures of the remaining day trip and overnight visitors is therefore characterized as "visitor spending."

This categorization of attendees is used to account for differences in travel and spending patterns within each group of attendees. Through conversations with HVAB and PSU, and analysis of industry data, ESI developed differential profiles of participants' spending patterns. Distinctions are made between day trip and overnight visitors. Within overnight visitors, distinctions are drawn in lodging spending for football visitors, reflective of the elevated lodging costs on football weekends.

Day trip and overnight visitor spending profiles were established using these four major expenditure categories: 1) hotel/lodging, 2) food, 3) transportation, and 4) retail expenditures. Regional attendees will incur more transportation, food, and retail expenditures as they are traveling from a farther distance to the event. Overnight attendees, who are traveling from an even farther distance that warrants an overnight stay, will incur hotel/lodging expenses in addition to food, transportation, and

The following figures step through the average daily and aggregate spend by the respective day and overnight visitor. The food, transportation, and retail spending estimates were derived from Penn State's *Economic Impact of Visitors to Centre County, PA in 2019* report. These spending categories were then inflated to 2022 terms, based on the change in the Consumer Price Index between 2019 and 2022.

Lodging spending is estimated through a unique calculation that accounts for differences between football weekends, which see heightened demand for lodging, impacting this average spend. Hotel spending associated, both on football weekends and annually, is known with relative precision based on industry data from Smith Travel Research (STR). The annual ratio between hotel revenue and total lodging revenue (which includes non-hotel paid accommodations) is applied to the estimated hotel revenue from football weekends to estimate a total lodging spend associated with those 8 weekends. The remaining annual lodging spend is then applied across the remainder of the year in order to determine average lodging spend outside of football weekends, which are applied to visitors for non-football sports events (either at Penn State or elsewhere in the county). Importantly, these averages include overnight attendees that do not stay in paid lodging. As a result, these averages are lower than average daily hotel rates.

Figure 6.1: Est. Per Visitor Spending in Centre County by Visitor Type

	Student/Local	Day Visitor	Overnight Visitor	Overnight – PSU Football
Lodging	N/A	--	$78	$241
Food	N/A	$37	$74	$74
Transportation	N/A	$10	$25	$25
Misc. Retail	N/A	$18	$39	$39
Total	**N/A**	**$65**	**$216**	**$380**

Source: Penn State University (2022) Happy Valley Adventure Bureau;; Sports Organizations (2022); Econsult Solutions, Inc. (2022)

[20] While locals or students may well have ancillary spending associated with attending an event (such as food & beverage before or after a game, etc.), this spending by locals can be conceived of as an internal shift in spending within the county, rather than net new spending in the county.

Attendee estimates are then combined with per visitor spending profiles to derive annual visitor spending estimates. However, an adjustment is made to account for the fact that some of that spending immediately leaves the region and therefore does not have a multiplier effect within the regional economy. For example, a large proportion of retail spending goes to manufacturers and wholesalers, most of which are outside the region. Therefore, our modeling approach conservatively includes only the retail margin (i.e., the difference between the purchase price for the retailer and the sales price for the customer).

Figure 6.2 shows the total aggregate spending estimates by event type and category.

Figure 6.2: Total Attendee Spend by Spending Category and Attendee Type

	Attendee Spend ($M)
Housing / Lodging	
Penn State Football	$25.0
Other PSU Athletic Event	$6.8
Centre County Recreation	$4.5
Total	$36.4
Food & Beverage	
Penn State Football	$18.7
Other PSU Athletic Event	$16.9
Centre County Recreation	$6.0
Total	$41.6
Local Transportation	
Penn State Football	$4.1
Other PSU Athletic Event	$3.7
Centre County Recreation	$1.4
Total	$9.2
Retail & Entertainment	
Penn State Football	$9.3
Other PSU Athletic Event	$8.4
Centre County Recreation	$3.1
Total	$20.7
Total Attendee Spend	
Penn State Football	$57.
Other PSU Athletic Event	$35.8
Centre County Recreation	$15.0
Total	**$108.0**
(Retail margin deduction)	*$14.1*
Modeled Ancillary Spending	**$93.8**

Source: Penn State University (2022) Happy Valley Adventure Bureau;; Sports Organizations (2022); Econsult Solutions, Inc. (2022)

About Econsult Solutions, Inc.

This report was produced by Econsult Solutions, Inc. ("ESI"). ESI is a Philadelphia-based economic consulting firm that provides businesses and public policy makers with economic consulting services in urban economics, real estate economics, transportation, public infrastructure, development, public policy and finance, community and neighborhood development, planning, as well as expert witness services for litigation support. Its principals are nationally recognized experts in urban development, real estate, government and public policy, planning, transportation, non-profit management, business strategy and administration, as well as litigation and commercial damages. Staff members have outstanding professional and academic credentials, including active positions at the university level, wide experience at the highest levels of the public policy process and extensive consulting experience.



1435 WALNUT STREET, 4TH FLOOR, PHILADELPHIA, PA 19102
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