



# Chicago 2016 Economic Impact Analysis

*The Expected Incremental Economic Impact  
of Chicago Hosting the 2016 Olympic and Paralympic Games*

Prepared by:

Dennis H. Tootelian, PhD, Professor of Marketing and Director of the  
Center for Small Business in the College of Business Administration at  
California State University, Sacramento

and

Sanjay B. Varshney, PhD, Dean of the College of Business Administration  
at California State University, Sacramento

## INTRODUCTION FROM CHICAGO 2016

Chicago 2016 is the committee seeking the privilege of hosting the 2016 Olympic and Paralympic Games. Working closely with the City of Chicago and the United States Olympic Committee (USOC), Chicago 2016's bid for the 2016 Games has five major goals:

- To deliver an extraordinary experience for all constituents, including athletes, the Olympic Family, spectators, the local community, participating media and the global-viewing audience
- To inspire youth through sport
- To strengthen the Olympic Movement in the United States
- To promote harmony throughout the world
- To help transform Chicago's urban landscape

These goals are largely centered on promoting the Olympic ideals and building global friendships with the world. Hosting the Games would also help engage young people in sport. Participating in sport helps young people build self-esteem and instills the values of respect, hard work and fair play..

Should Chicago be chosen to host the Games, the city would benefit from enormous visibility on the global stage. This exposure would directly benefit the city's tourism industry, educational institutions, cultural institutions and business community. The long-term legacy and lasting impact of the Games on a Host City are perhaps the greatest benefits of hosting the Olympic and Paralympic Games.

Recent examples of the lasting impact of hosting the Games include:

- Atlanta currently has almost 280 more international businesses in the region than it did prior to the 1996 Games. Before hosting the Games, Atlanta had 38 foreign consulates, 27 foreign chambers of commerce and 12 Sister Cities; now the region boasts 50 foreign consulates, 31 foreign chambers of commerce and 18 Sister Cities, according to the Atlanta Chamber of Commerce.
- Since the 2004 Games in Athens, the number of tourists visiting Greece increased by 5.6 percent and 8.4 percent in 2005 and 2006, respectively, according to the Greece Tourist Industry.
- Hosting the 1992 Games clearly boosted Barcelona's hotel industry; from 1990 to 2002, the number of hotels nearly doubled to 215, from 118, and the number of overnight stays grew to 8.7 million, from 3.8 million, according to Turisme de Barcelona.

- The number of international passengers passing through Sydney Airport has increased by 25 percent since the city hosted the 2000 Games, reaching 10 million in the past year. That figure is expected to exceed 20 million by 2023–24, according to Tourism & Transport Forum Australia. Total tourism employment in Australia has increased at an average annual rate of 2.4 percent from 1997–98 to 2006–07, according to Tourism Australia.

Hosting the Games would give Chicago the opportunity to enhance its reputation globally as a desirable place to live and work. The Games would provide the city and region with the opportunity to showcase its excellent cultural and educational institutions, strong business community and diversity to a global audience.

Chicago 2016 believes all of these goals are important and worth pursuing, although we understand they are not readily quantifiable.

At the same time, Chicago 2016 is committed to operating in a fiscally prudent and transparent manner and sought to quantify the economic benefit that hosting the Games would generate in the period leading up to and past the Games. To that end, Chicago 2016 commissioned an independent study to assess the likely economic impact of hosting the Games. The study measures the direct and indirect benefits associated with preparing and hosting the 2016 Olympic and Paralympic Games.

Chicago 2016 asked Tootelian & Associates, a Sacramento-based marketing and management consulting firm with deep experience in performing economic-impact studies, to conduct this study. Tootelian & Associates is led by economist Dr. Dennis H. Tootelian with assistance from associate Dr. Sanjay B. Varshney, both of California State University, Sacramento.

The economists were asked to approach the data as conservatively and realistically as possible. Specifically, they were asked to address a criticism often levied against economic-impact studies of mega-events: namely, that they fail to take into account benefits that likely would have occurred anyway, and benefits likely to be lost because of the event (e.g. local residents choosing to leave during the event to avoid crowds).

Therefore, this study estimates the incremental impact, or spending and benefits, that would occur *only* if Chicago hosts the 2016 Games. The spending and impact estimates have been discounted to reflect spending that likely would occur even without the Games. For example, tourists will come to Chicago regardless whether Chicago hosts the 2016 Games, and there will be spending on construction and infrastructure improvements with or without the Games. Therefore, the economists were asked to exclude this type of spending and the resulting benefits.

Chicago 2016 was responsible for providing basic-input data to the economists. Specifically, these categories included estimates of construction costs for the Olympic venues, labor costs associated with the planning and delivery of the Games and tourist-visitation volumes and their associated spending as a consequence of attending the Games.

Chicago 2016 is sensitive to the fact that construction costs are a major driver of the overall estimate, so a high degree of confidence must be placed in this estimate in particular. Chicago 2016 worked extensively with Games-experienced venue planners, architects and construction firms to develop robust cost estimates for permanent and temporary venues, as well as venue overlay and fit-out costs.

Chicago 2016 took advantage of the benefit of recent previous experience of hosting Olympic Games in the United States (notably, Atlanta in 1996 and Salt Lake City in 2002) to estimate the numbers and types of personnel, contracted services, technology and other costs that will be required in the planning and execution of the Games.

The preliminary-input estimates provided to the economists were developed in late 2006 and early 2007 during the domestic phase of the bid. We do not that anticipate any future updates will materially change the conclusions of this report.

Since early 2007, the economic picture has changed considerably. Therefore, in the fall of 2008, Chicago 2016 asked the economists to reevaluate the data and findings. Both the authors and Chicago 2016 concluded that the planning horizon being researched (2011 through 2021) is sufficiently far into the future that the findings retain their long-term validity, despite the current economic climate.

The report that follows explains the incremental economic impact that hosting the 2016 Games would have on the City of Chicago, Cook County, the six-county metropolitan region, and the State of Illinois. In the report, Dr. Tootelian and Dr. Varshney also explain the methodology that led to their conclusions.

We believe that the results of this study are realistic and provide confidence in the financial viability of hosting the 2016 Olympic and Paralympic Games in Chicago.

## **CONTENTS:**

Page 6: Executive Summary

Page 7: Introduction

Page 8: How the Study Was Conducted

Page 13: The Findings

Page 17: Summary and Conclusions

Page 18: Appendix

Page 21: Glossary

Page 23: About the Economists Who Conducted the Study

## EXECUTIVE SUMMARY

Chicago 2016 engaged Tootelian & Associates to conduct an economic-impact analysis of Chicago hosting the 2016 Olympic and Paralympic Games. Chicago 2016 outlined a number of goals that are not quantifiable, such as furthering the Olympic Movement and providing an opportunity to unify citizens around a common goal. The organization is also committed to operating in a fiscally prudent and transparent manner. Chicago 2016 asked Tootelian & Associates to quantify the economic benefits of hosting the 2016 Games to the city and region beyond the one-time event itself.

Tootelian & Associates is headed by economist Dr. Dennis H. Tootelian. Dr. Sanjay Varshney is an associate of Tootelian & Associates. Both economists are faculty members at the business school of California State University, Sacramento and have done extensive research and consultation on the economic impact of large-scale projects.

The economists used two models in its analysis: an input or feeder model to accurately estimate spending to plan and execute the Games, and a widely used model called IMPLAN (**IM**ppact analysis for **PLAN**ning).

The findings were broken into three periods: Pre-Games (2011-2015), Games year (2016), and Post-Games (2017-2021).

Below are the major conclusions:

- The **total expected incremental economic impact** of hosting the 2016 Games in Illinois is expected to be **\$22.5 billion**.
  - The expected impact in Chicago is **\$13.7 billion**.
- The **total expected incremental job creation** of hosting the 2016 Olympic and Paralympic Games in Illinois is expected to be in excess of **315,000 job-years**.
  - Of the job-years created, **172,000** will be in Chicago.
  - Job-years aggregates total hours of jobs created—full- and part-time, permanent and temporary—into the equivalent of full-time jobs.
- Jobs will be created across a variety of industries, with a concentration in hospitality and construction.

Tootelian & Associates is confident that the study results outlined here are realistic and support the financial viability—and benefits—of Chicago hosting the 2016 Olympic and Paralympic Games.

## INTRODUCTION

In March 2007, Chicago 2016 retained Tootelian & Associates, a Sacramento, CA-based marketing and management consulting firm, to conduct an independent study of the potential economic benefits that would accrue as a result of hosting the 2016 Olympic and Paralympic Games in Chicago.

Tootelian & Associates is headed by economist Dr. Dennis H. Tootelian. Dr. Sanjay Varshney is an associate of Tootelian & Associates. Both economists are faculty members at the business school of California State University, Sacramento, and have done extensive research and consultation on the economic impact of large-scale projects and events. This report details the findings of the study.

Since work began on this study in early 2007, the economic picture has changed considerably. Therefore, in the fall of 2008, Chicago 2016 asked the authors to re-evaluate the data and findings. The authors reviewed the analysis and concluded that the planning horizon being examined (2011 through 2021) is sufficiently far into the future that the findings retain their long-term validity, despite the current economic climate.

The analysis focused on the economic stimulus effect of three main areas of spending:

- Infrastructure investments needed to prepare for the Games
- Operating expenditures needed to plan and host the Games
- Tourism generated as a result of being the Host City

The analysis estimated the economic impact to various geographic regions, including:

- City of Chicago
- Cook County
- Six-county region of Cook, Du Page, Kane, Lake, McHenry, and Will counties
- State of Illinois

The analysis did not measure the impact beyond Illinois, although there undoubtedly would be some benefit throughout the Midwest and United States from business-to-business opportunities and tourism.

The analysis covered an 11-year time horizon spanning:

- Pre-Games planning years (2011-2015)
- Games year (2016)
- Post-Games years (2017-2021)

The analysis did not include the period between October 2009, when the International Olympic Committee (IOC) awards the Games to a Host City, and December 2010. This 15-month start-up period is not expected to generate significant spending. All of the analyses and findings are based on 2006 dollars.

## HOW THE STUDY WAS CONDUCTED

Tootelian & Associates used two economic models to conduct this analysis. The initial, or feeder, model took as its inputs data provided by Chicago 2016 pertaining to anticipated direct expenditures associated with preparing for and hosting the Games. Tootelian & Associates then modeled various economic-impact scenarios and also applied appropriate discounting factors, called offsets, to assure Chicago 2016 that the impact of hosting the Games was not being overstated and that the benefit estimates reported from the study were properly conservative.

The expenditure data, after offsets were applied, became input to the second model, IMPLAN<sup>®1</sup> (IMpact analysis for PLANning). This suite of computer software is widely used in the U.S. and internationally to assess the economic impact to a region of being the site of some new economic stimulus, such as locating a new factory, opening a new hotel, hosting a convention, etc. It has more than 1,500 users, including federal and state governments, universities and the private sector.

### *Primary Inputs:*

If Chicago is awarded the 2016 Games by the IOC, the bid committee will form into an Organizing Committee for the Olympic Games (OCOG). The OCOG will be responsible for Games planning and implementation, and temporary adaptations of existing venues for Games-time use, known as overlay. Other (non-OCOG) entities, most likely a private real estate developer or consortium of developers, will be responsible, at the direction of the OCOG, to deliver the permanent venues and the mixed-use residential housing that will be used during the Games as the Olympic Village.

Chicago 2016 prepared the estimates of permanent and temporary construction costs for the Olympic venues and village, labor costs associated with the planning and delivery of the Games, and visitor volumes and their associated spending as a consequence of attending the Games. These preliminary input estimates were developed in late 2006 and early 2007 during the domestic phase of the bid.

Overall, the OCOG and non-OCOG budgets for the Games will be almost \$4.7 billion.

- *OCOG Construction Costs:* The estimated OCOG budget for this temporary venue construction and operation is \$994 million.

---

<sup>1</sup> IMPLAN Professional<sup>®</sup> is an economic impact assessment software system created by the Minnesota IMPLAN Group, Inc. ([www.implan.com](http://www.implan.com)). MIG, Inc. was founded in 1993 as a result of work being undertaken at the University of Minnesota. Data provided through IMPLAN mainly comes from federal government data sources. These include the U.S. Bureau of Economic Analysis, U.S. Bureau of Labor Statistics, and the U.S. Bureau of the Census. Analyses for all states and counties are made for 509 industrial sectors.



- *Games Planning and Delivery Costs:* Chicago 2016 expects an OCOG budget of approximately \$2.4 billion for Games planning and operating expenses. The primary cost elements composing this estimate are staffing, technology, transport, security services and administrative costs. Most of this would be spent in 2011-2016.
- *Olympic Village Construction Costs:* After consultation with the private real estate and investment community, Chicago 2016 concluded that private funding will total more than \$1.2 billion (the non-OCOG budget), primarily for construction of the Olympic Village, which will be converted after the Games to mixed-use residential housing, and the permanent portion of competition venues. About \$100 million of the \$1.2 billion represents the estimated construction costs for the permanent portion of competition venues.
- *Visitor Spending:* Total visitor spending, including that by visitors during the Games year, is expected to be \$7.0 billion. Chicago 2016 examined the historical experience of recent Games conducted in Atlanta (1996), Sydney (2000) and Athens (2004) to develop the estimate of the numbers of visitors the Games will attract. Beyond the athletes and spectators, the Olympic and Paralympic Games attract thousands of visitors to the Host City, including media personnel, temporary Games-time workers, sport and technical officials, sponsor support staff and others. These visitation estimates were aligned to normal Chicago tourism statistics to estimate their average spending, length of stay, proportion of visitors staying in hotels, etc. In addition to data provided by Chicago 2016, Tootelian & Associates conducted additional research on visitor patterns.

Beginning with a widely reported normal visitation figure of 44 million visitors per year, the study predicted a modest proportionate increase during pre-Games years that could be attributable to Chicago being named the host of the Games. For conservatism, no growth was projected in the non-Games visitation numbers. Games-year visitation projections are based on projected ticket sales and official delegations expected to attend the Games, as well as media and broadcast personnel, and temporary Games-time workers such as security personnel, bus drivers, sponsor support staff and others. Visitor spending is predicated on the proportion of visitors from regional, national and international points of origin, existing average length of stay, and average daily spending on hotels, restaurants, shopping and the like. Finally, offsets or discounts were applied to the baseline projections as described below.

***The Feeder Model:***

Previous economic impact studies of Olympic and other events have been subject to the criticism that they do not take account of crowding-out or offsetting effects. This study took care to measure only the *incremental* impacts of the Games. It was assumed, for instance, that some level of construction and renewal or new development of Chicago's housing infrastructure will continue as it has in the past even if Chicago does not host the Games. Not all of the goods and services purchased in preparation for and during the Games will be purchased from local businesses (i.e., the out-migration of spending). Similarly, tourism will continue to occur regardless whether Chicago hosts the Games.

Output of the feeder model was adjusted to take account of these offsets. Overall, direct expenditure estimates were discounted by as much as 70 percent to address the offsets. Examples of adjustments taken were:

- *Visitor Expenditures:* Discounted to account for visitor spending outside the area, crowding out of local residents, crowding out of non-local tourists, and visitors shifting their trips to other dates. This discounting also reflects the impact of potential visitors who may stay away to avoid perceived over-crowding and traffic.
- *Capital Expenditures:* Discounted to recognize that certain Olympic-related construction projects will cause other projects to be scaled back or delayed. For example, construction of the Olympic Village likely will cause local real estate developers to reduce the rate of development they otherwise would have undertaken in recognition of the housing supply that will be brought to market post-Games. Capital expenditures also are discounted to account for spending outside the Games area (e.g., outside suppliers), even though all the venues are inside the area, and for spending that government and private business would have undertaken irrespective of hosting the Games.
- *Operating Expenditures:* Discounted to account for the out-migration of spending outside the area and for spending that government and private business would have undertaken irrespective of hosting the Games.

### ***Scenario Analysis:***

Planning for an event of this magnitude and calculating its impact over an 11-year time frame is not an exact science. Many external factors, economic conditions, commodity prices, security considerations, etc., come into play that cannot be precisely accounted for at any given point in time. With this in mind, the authors developed three scenario models for the incremental economic impact of the Games: low level, expected level and high level.

- *Low Level:* This scenario's assumptions are very conservative. The low level spending estimate is 51 percent of the expected level. This is after extensive offsets have been applied.
- *Expected Level:* This is the scenario that the authors believe is most likely to occur. The authors emphasize that the assumptions made in this scenario are considered quite conservative. Unless otherwise noted, the expected levels are used throughout this report.
- *High Level:* This scenario contains assumptions that are only slightly less conservative than the ones used for the expected level. The authors believe these assumptions are within the realm of possibility, assuming focused and disciplined execution of Chicago 2016's operating plan.

### ***The IMPLAN<sup>®</sup> Model:***

IMPLAN is a suite of software and tools that uses a technique in economics known as input-output analysis. Wassily Leontief was awarded the Nobel Prize in economics in 1973 for work in this field. In essence, input-output analysis recognizes that a change in one economic sector (e.g. construction) has a multiplier effect in other sectors. The authors used input estimates provided by Chicago 2016, adjusted by the feeder model to account for offsets, to estimate with IMPLAN what the overall effect on the regional economy would be of a Games hosted in the city.

### ***The Multiplier Effect:***

The multiplier effect reflects the increased economic activity that comes from sales being generated, and expenses being incurred, by a business. When a business generates sales, it must use some of that money to purchase other goods and other services and hire people to meet the demand for its products and services. Purchases made by the business represent sales to other companies that must then also purchase goods and services and hire people to meet their new demand. The additional hiring to meet demand means more people will have income, which they will use to purchase goods and services. All of this brings added sales to companies within in the community. The net effect is that sales dollars are recycled in the community.

In the case of Chicago hosting the 2016 Olympic and Paralympic Games, the aggregate of construction expenditures, new job creation and tourism spending would represent a major direct economic stimulus. IMPLAN estimates what the multiplier effect would be to the overall regional economy.

IMPLAN considers all expenditures made and all people employed in a particular initiative to be a Direct Economic Benefit. This benefit is amplified by two additional multiplier effects:

- **Business-to-Business (Indirect) Benefit:** This arises as a result of economic activity generated by suppliers of goods and services to the initiative.
- **Consumption (Induced) Benefit:** This measures the consumption expenditures of direct and indirect sector employees. Examples of this would be employees' spending on retail purchases, housing, banking, medical services and insurance.

IMPLAN includes a database of geographic- and industry-specific economic characteristics that allows the model to calculate the multiplier effects from these two sources.

### *Assessing the Economic Impact:*

The model presents the economic impact in four ways:

- ***Output*** accounts for total economic activity including all sources of income for a given time period for an industry in dollars. This is the best overall measure of business and economic activity because it is the measure most businesses use to determine current activity levels.
- ***Indirect Business Taxes*** consist of property taxes, excise taxes, fees, licenses, and sales taxes paid by businesses to various taxing authorities. All taxes levied during the normal operation of businesses are included. However, IMPLAN does not include taxes on business profits or personal income are not included because they vary so widely from place to place.
- ***Labor Income*** includes all forms of employee compensation paid by employers (e.g., total payroll costs including wages and salaries of workers, health and life insurance benefits, retirement payments, non-cash compensation), and proprietary income (e.g., self employment income, income received by private business owners including doctors, lawyers).
- ***Employment*** demonstrates the number of jobs generated and is calculated as job-years, which aggregates total hours of employment in all forms (full- and part-time, temporary, and permanent jobs) into the equivalent of full-time jobs.

## THE FINDINGS

The Tootelian & Associates analysis concludes that Illinois should expect to realize a *substantial* incremental economic impact should Chicago host the 2016 Olympic and Paralympic Games.

Table 1 below details **\$8.4 billion** in overall *incremental* capital and operating budgets and visitor spending in Illinois. *Incremental* means that the total dollars have been substantially discounted to account for offsets, because some spending would occur within the region regardless whether the Games are held in Chicago. Offsets also account for the crowding out effect, such as locals leaving the area to avoid perceived congestion because of the Games, and out-migration of spending, whereby materials are sourced from outside the region.

The OCOG and non-OCOG budgets for the Games will be almost **\$4.7 billion** and will occur under the low, expected and high impact scenarios.

In addition to the capital and operating expenditures, the number of visitors to the city will increase before, during and after the Games. The incremental visitor spending is expected to total more than **\$7.0 billion**.

**Table 1: Expected Overall Incremental Expenditures for Illinois<sup>2</sup>**

Incremental Expenditures (for 11-year period)	Expected (\$ billions)
OCOG Budget	\$3.4
Non-OCOG Budget	<u>\$1.2</u>
<b>Sub-Total OCOG + Non-OCOG Budgets</b>	<b>\$4.7</b>
Less Offsets	(\$3.3)
Incremental Visitor Spending	<u>\$7.0</u>
<b>Total Incremental Expenditures</b>	<b>\$8.4</b>

The expected expenditures will occur in three time phases: Pre-Games (2011 through 2015), Games year (2016), and Post-Games (2107 through 2021). Table 2 below shows expected *incremental* expenditures in Illinois for each time period.

<sup>2</sup> For low and high levels, see Appendix

**Table 2: Expected Incremental Expenditures by Time Period<sup>3</sup>**

Type of Expenditure	Expected Level (\$ billions)
<b>Pre-Games (2011 through 2015)</b>	
Capital Expenditures	\$0.3
Operating & Visitor Expenditures	\$2.3
<b>Total</b>	<b>\$2.6</b>
<b>Games Year (2016)</b>	
Capital Expenditures	\$0.1
Operating & Visitor Expenditures	\$3.8
<b>Total</b>	<b>\$3.9</b>
<b>Post-Games (2017 through 2021)</b>	
Capital Expenditures	\$0.05
Operating & Visitor Expenditures	\$1.9
<b>Total</b>	<b>\$1.9</b>
<b>Total Incremental Expenditures</b>	<b>\$8.4</b>

Incremental economic impact includes total incremental revenues from all sources of income—called *output* by economists—and is considered the best overall measure of business and economic activity. To calculate the total impact expected, IMPLAN looks at three things: business generated directly by the planning and operating of the Games, in this case expected to be \$8.4 billion; indirect business-to-business benefits, \$2.3 billion; and consumption benefit. This benefit reflects the spending of employees in the direct and indirect sectors and employees’ spending on retail purchases, housing and services, such as banking or insurance. In this case, consumption benefit is expected to be \$11.8 billion.

Table 3 below shows the results of IMPLAN’s calculations.

**Table 3: Incremental Economic Impact<sup>4</sup>**

Type of Impact Calculated	Expected Levels (\$ billions)
Direct Benefit	\$8.4
Business-to-Business (Indirect) Benefit	\$2.3
Consumption (Induced) Benefit	\$11.8
<b>Total Output</b>	<b>\$22.5</b>

<sup>3</sup> For low and high levels, see Appendix

<sup>4</sup> For low and high levels, see Appendix

Throughout Illinois, the total incremental economic impact of Chicago’s hosting the 2016 Games is expected to be **\$22.5 billion**. Of that, \$21.0 billion is expected to be realized in the six-county metropolitan region (Will, Lake, McHenry, DuPage, Kane and Cook Counties; Cook County includes the City of Chicago). Of the total expected impact to the six-county region, \$19.2 billion is expected to be realized in Cook County alone, including the City of Chicago. And of that total, \$13.7 billion is expected to be realized in City of Chicago alone.

## Economic Impact of Hosting the 2016 Games by Geography

**Table 4: Expected Economic-Impact Scenario<sup>5</sup>**

<b>Impact Being Calculated</b>	<b>Illinois</b> (includes all categories) (\$ billions)	<b>Six-County Region</b> (includes Cook & City of Chicago) (\$ billions)	<b>Cook County</b> (includes city of Chicago) (\$ billions)	<b>City of Chicago</b> (\$ billions)
<b>Output</b>	\$22.5	\$21.0	\$19.2	\$13.7
<b>Indirect Business Taxes</b>	\$1.5	\$1.4	\$1.3	\$1.0
<b>Labor Income</b>	\$11.2	\$10.8	\$10.2	\$7.2

The total incremental economic impact includes output, indirect business taxes and labor income. Indirect business taxes include most of the taxes and fees that business pay. Labor income includes all form of compensation paid by employers, including wages, benefits, retirement payments and non-cash compensation.

Job creation is a major underpinning of the expected economic impact of Chicago hosting the 2016 Games, because jobs have a major multiplier effect as new jobs generate wages that, in turn, are spent and lead to the creation of yet more jobs.

Chicago hosting the 2016 Games is expected to generate approximately 315,000 job-years over the 11-year time period studied. The IMPLAN model calculates job-years as the total hours of new jobs created, then aggregated into the equivalent number of full-time annual jobs. Of the total job-years, 172,000 will be in the City of Chicago.

The largest portion of jobs created will be in tourism-related industries, including hospitality and entertainment. The IMPLAN model calculates that more than 213,000 of the job years created will be in tourism-related industries. Of the job-years created, 135,000 will be in the City of Chicago.

Almost 8,000 job years will be construction related—a significant number considering the number of existing venues that will be utilized for the Games.

<sup>5</sup> For low and high levels, see Appendix

The IMPLAN model cannot accurately predict exactly when during the 11-year time period studied individual jobs will occur. However, Chicago 2016 expects the majority of construction-related work to occur in the years leading up to the Games, although there will be more than usual jobs in this category after the Games to deconstruct venues and convert the Olympic Village to mixed-use housing. And the number of visitors to Chicago will increase during 2011-2015 as people come to prepare for the Games. The number will peak in 2016, but is expected to remain above current levels afterwards, reflecting the heightened visibility of the city.

**Table 5: Expected Employment-Impact Scenario<sup>6</sup>**

<b>In Job Years</b>	<b>State of Illinois</b> (includes all categories)	<b>Six-County Region</b> (includes Cook & City of Chicago)	<b>Cook County</b> (includes city of Chicago)	<b>City of Chicago</b>
<b>Employment</b>	315,000	285,000	267,000	172,000

The economic impact set out above is not spread evenly across the 11-year period from 2011 – 2021. The impacts gradually ramp up in the years preceding the Games, with a significant spike in the Games year, and a gradual ramp-down in the years following the Games.

---

<sup>6</sup> For low and high levels, see Appendix



## SUMMARY AND CONCLUSIONS

The analysis set out above leads to the following findings and conclusions:

- The total incremental economic impact for Illinois is expected to be **\$22.5 billion** over the 11-year time period studied.
- Of that, total incremental visitor spending, which includes business and tourist travel, is expected to be **\$7.0 billion**.
- The equivalent of **315,000 job years** will be created during the 11-year time period studied.

Tootelian & Associates is confident that the findings outlined in this report are credible, conservative and achievable. The expected economic impact of Chicago hosting the 2016 Games would be significant for the city, the region and the state.

## APPENDIX

Following are charts showing inputs, expenditures and economic impact at the low, expected and high levels.

**Table 1: Expenditure Inputs at Different Impact Levels**

Type of Expenditures	Low (\$ billions)	Expected (\$ billions)	High (\$ billions)
OCOG Budget (Capital + Operating)	\$3.5	\$3.5	\$3.5
Non-OCOG Budget (Capital)	<u>\$1.2</u>	<u>\$1.2</u>	<u>\$1.2</u>
<b>Subtotal, Direct Expenditure</b>	<b>\$4.7</b>	<b>\$4.7</b>	<b>\$4.7</b>
Less Offsets	(\$3.5)	(\$3.3)	(\$3.0)
Plus Incremental Visitor Spending	<u>\$3.2</u>	<u>\$7.0</u>	<u>\$12.2</u>
<b>Total Incremental Expenditures</b>	<b>\$4.4</b>	<b>\$8.4</b>	<b>\$13.9</b>

**Table 2: Incremental Expenditures by Time Period at Different Levels**

Type and Time of Expenditures	Low (\$ billions)	Expected (\$ billions)	High (\$ billions)
<b>Pre-Games (2011 through 2015)</b>			
Capital Expenditures	\$0.2	\$0.3	\$0.3
Operating & Visitor Expenditures	<u>\$1.1</u>	<u>\$2.3</u>	<u>\$3.9</u>
<b>Total</b>	<b>\$1.3</b>	<b>\$2.6</b>	<b>\$4.2</b>
<b>Games Year (2016)</b>			
Capital Expenditures	\$0.1	\$0.1	\$0.2
Operating & Visitor Expenditures	<u>\$1.9</u>	<u>\$3.8</u>	<u>\$6.0</u>
<b>Total</b>	<b>\$2.0</b>	<b>\$3.9</b>	<b>\$6.2</b>
<b>Post-Games (2017 through 2021)</b>			
Capital Expenditures	\$0.0	\$0.05	\$0.1
Operating & Visitor Expenditures	<u>\$1.0</u>	<u>\$1.9</u>	<u>\$3.5</u>
<b>Total</b>	<b>\$1.0</b>	<b>\$1.9</b>	<b>\$3.6</b>
<b>Total Incremental Expenditures</b>	<b><u>\$4.3</u></b>	<b><u>\$8.4</u></b>	<b><u>\$13.9</u></b>

**Table 3: Incremental Economic Impact at Different Levels**

	<b>Low</b> (\$ billions)	<b>Expected</b> (\$ billions)	<b>High</b> (\$ billions)
Direct Benefit	\$4.3	\$8.4	\$13.9
Business-to-Business (Indirect) Benefit	<u>\$1.2</u>	<u>\$2.3</u>	<u>\$3.7</u>
Consumption (Induced) Benefit	<u>\$6.0</u>	<u>\$11.8</u>	<u>\$19.5</u>
<b>Total Output</b>	<b>\$11.5</b>	<b>\$22.5</b>	<b>\$37.1</b>

## Economic Impact of Hosting the 2016 Games by Geography

**Table 4: Economic-Impact Scenario—Low Level**

<b>Impact Being Calculated</b>	<b>Illinois</b> (includes all categories) (\$ billions)	<b>Six-County Region</b> (includes Cook & City of Chicago) (\$ billions)	<b>Cook County</b> (includes city of Chicago) (\$ billions)	<b>City of Chicago</b> (\$ billions)
<b>Output</b>	\$11.5	\$10.7	\$9.8	\$7.8
<b>Indirect Business Taxes</b>	\$0.7	\$0.7	\$0.7	\$0.5
<b>Labor Income</b>	\$5.7	\$5.5	\$5.2	\$4.1

**Table 4: Economic-Impact Scenario—Expected Level**

<b>Impact Being Calculated</b>	<b>Illinois</b> (includes all categories) (\$ billions)	<b>Six-County Region</b> (includes Cook & City of Chicago) (\$ billions)	<b>Cook County</b> (includes city of Chicago) (\$ billions)	<b>City of Chicago</b> (\$ billions)
<b>Output</b>	\$22.5	\$21.0	\$19.2	\$13.7
<b>Indirect Business Taxes</b>	\$1.5	\$1.4	\$1.3	\$1.0
<b>Labor Income</b>	\$11.2	\$10.8	\$10.2	\$7.2

**Table 4: Economic-Impact Scenario—High Level**

<b>Impact Being Calculated</b>	<b>Illinois</b> (includes all categories) (\$ billions)	<b>Six-County Region</b> (includes Cook & City of Chicago) (\$ billions)	<b>Cook County</b> (includes city of Chicago) (\$ billions)	<b>City of Chicago</b> (\$ billions)
<b>Output</b>	\$37.2	\$34.8	\$31.7	\$22.7
<b>Indirect Business Taxes</b>	\$2.4	\$2.4	\$2.2	\$1.6
<b>Labor Income</b>	\$18.5	\$17.8	\$16.8	\$11.9

**Table 5: Employment-Impact Scenario—Low Level**

<b>In Job Years</b>	<b>Illinois</b> (includes all categories)	<b>Six-County Region</b> (includes Cook & City of Chicago)	<b>Cook County</b> (includes city of Chicago)	<b>City of Chicago</b>
<b>Employment</b>	161,000	145,000	136,000	98,000

**Table 5: Employment-Impact Scenario—Expected Level**

<b>In Job Years</b>	<b>Illinois</b> (includes all categories)	<b>Six-County Region</b> (includes Cook & City of Chicago)	<b>Cook County</b> (includes city of Chicago)	<b>City of Chicago</b>
<b>Employment</b>	315,000	285,000	267,000	172,000

**Table 5: Employment-Impact Scenario—High Level**

<b>In Job Years</b>	<b>Illinois</b> (includes all categories)	<b>Six-County Region</b> (includes Cook & City of Chicago)	<b>Cook County</b> (includes city of Chicago)	<b>City of Chicago</b>
<b>Employment</b>	522,000	471,000	441,000	285,000

## GLOSSARY

The following are terms that are used throughout this report:

**Business-to-Business (Indirect) Benefit:** This arises as a result of economic activity generated by suppliers of goods and services to a given initiative (in this case, Chicago hosting the 2016 Games)

**Consumption (Induced) Benefit:** This measures the consumption expenditures of direct and indirect sector employees. Examples of this would be employees' spending on retail purchases, housing, banking, medical services and insurance.

**Direct Benefits:** Economic activity contained exclusively within a designated sector(s). This includes all expenditures made and all people employed.

**Employment;** Measured in full-time equivalents. This is the number of people employed, computed by converting all hours of all jobs created, including full- and part-time work, into the equivalent of full-time annual jobs.

**Expected Level:** Estimates of issues covered in this report (spending, economic impacts, jobs, etc.) that use conservative assumptions and are considered by the authors the most likely to occur.

**High Level:** Estimates that use somewhat less conservative assumptions than the "expected" levels; not a best-case scenario.

**Incremental Value:** Spending and impact levels after offsets are deducted to reflect values that would occur *only* if a given activity (e.g. the 2016 Games in Chicago) occurs.

**Indirect Benefits:** The creation of additional economic activity that results from linked businesses, suppliers of goods and services, and provision of operating inputs.

**Indirect Business Taxes:** Property taxes, excise taxes, fees, licenses and sales taxes paid by businesses. (Taxes on profits or income are not included.)

**Induced Benefits:** The consumption of expenditures of direct and indirect sector employees. Examples of induced benefits include employees' expenditures on items such as retail purchases, housing, banking, medical services and insurance.

**Labor Income:** All form of employee compensation paid by employers (including wages and salaries, benefits, health and life insurance premiums, retirement payments, and non-cash compensation). This category also includes proprietary income, such as self-employment income and income received by private business owners, including doctors and lawyers.

**Low Level:** Somewhat of a worst-case-scenario estimate of items covered in this report.

**Multiplier Effect:** The effect that industries have on each other, based on the supposition that one industry uses the outputs of others as inputs. The multiplier effect captures the net effect as dollars are recycled throughout the community.

**Output:** Total revenues, including all sources of income for a given time period for an industry, in dollars. This is the best overall measure of business and economic activity because it is the measure most businesses use to determine current activity levels. The sum of the Direct Benefit, the Business-to-Business Benefit, and the Consumption Benefit is the Output. Output is the total economic activity associated with the initiative.

**Offsets:** Discounts or reductions to reflect spending and/or impacts that likely would occur regardless whether a given activity occurs. In this report, offsets of spending and impact estimates were made for many items, including:

- City expenditures that might not be spent or are redirected
- Capital expenditures that might be spent outside of this area
- Visitors who are local
- Increases in tourist and business visits because of the Games
- Visitors who might not stay in area hotels
- Discount for spending by visitors outside the area
- Discount for locals who leave the area
- Discount for non-locals who choose not to visit the area
- Discount for visitors who would have come regardless whether the Games are held

## ABOUT THE AUTHORS

Dr. Dennis H. Tootelian and Dr. Sanjay B. Varshney of Tootelian & Associates, a Sacramento, CA-based marketing and management consulting firm, conducted this study on behalf of Chicago 2016. The firm specializes in performing economic impact studies, conducting market research, and assisting its clients with business and marketing plans.

### **Dr. Dennis H. Tootelian**

Dr. Tootelian is founder of Tootelian & Associates. He is Professor of Marketing in the College of Business Administration at California State University, Sacramento. For more than 30 years he has served as Director of the Center for Small Business in the College of Business Administration at the university. He received his Ph.D. in marketing from Arizona State University, with minors in accounting and management. He also has an undergraduate minor in economics.

Dr. Tootelian has worked as a consultant with many Fortune 500 companies, not-for-profit organizations, and federal and state government agencies. He has published scores of articles about business issues and co-authored six texts on marketing and small-business management. His articles have appeared in numerous journals, including *Journal of Marketing*, *Journal of Retailing*, *Journal of Business Research*, *Journal of Health Care Marketing* and *Journal of Professional Services Marketing*. Results of his applied research have been covered by numerous media, including *The Congressional Record*, *The Wall Street Journal*, *Forbes*, *the Kiplinger Report*, *USA Today* and the ABC National News Web site.

For the Chicago 2016 analysis, Dr. Tootelian focused largely on input data and the feeder model, including determining offsets to key data, such as capital spending amounts, anticipated numbers of tourists, and impact of tourist spending.

### **Dr. Sanjay B. Varshney**

Dr. Varshney is Dean of the College of Business Administration at California State University, Sacramento. He was previously Dean of the Business School at State University of New York, Utica. He earned his Ph.D. in Finance from Louisiana State University, Baton Rouge. He also has a Master's degree in economics from the University of Cincinnati and an undergraduate degree in Accounting and Financial Management from Bombay University.

Dr. Varshney has a strong background in statistics, econometrics and research methodology. Accordingly, he has conducted numerous research studies for private and public entities. He also has been a financial consultant for leading Wall Street Firms. He also is a Partner and Principal of Varshney & Associates, which provides management consulting and financial services to a variety of clients. His articles have been published in many journals, including *Journal of Economics and Finance*, *Journal of Management Research*, *Studies in Economics and Finance*, *Journal of Real Estate Economics* and *Journal of Applied Business Research*.

For the Chicago 2016 analysis, Dr. Varshney was primarily responsible for applying the IMPLAN model.