

# 2017 Impact Analysis



# Introduction

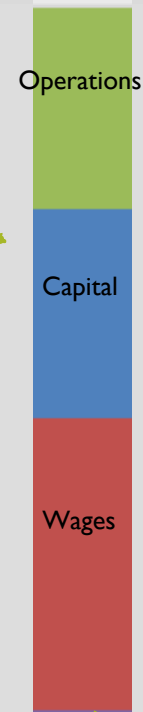
The following report illustrates the economic contributions made by the Chattanooga Zoo to the Southeastern Tennessee region in 2017. Economic contributions are created through operational spending, capital projects, employment wages, and volunteerism. Annual expenditures for wages, salaries, as well as goods and services reflect the Chattanooga Zoo's direct impact on the local economy. These in turn, have residual effects termed induced and indirect impact. Indirect effects represent how initial expenditures prompt increased spending from interrelated businesses within the supply chain. Induced effects signify the economic influences made on all local industries caused by new household income created from the Zoo's direct impact. To clarify, this study was based solely on expenditures provided by the zoo's operations ledger and does not include a tourism effect. Examining a tourism aspect would involve an analysis of visitor data and assessing where else in the economy travelers were spending their money (i.e., hotels, restaurants, retail stores, etc.). Thus, the economic contributions illustrated in the report represent conservative figures in relationship to other economic contribution studies which included visitor data in their final economic multiplier.



# Operational & Capital IMPACT

Direct - \$1,815,516  
Indirect - \$548,345  
Induced - \$1,420,733  
**\$3,784,594**

Expenditure %



30% OF ZOO'S  
TOTAL SPENDING IS  
FOR CAPITAL  
PROJECTS



## Employment Wages IMPACT

Induced - \$1,021,697  
**\$1,021,697**

## Volunteerism IMPACT

784 Registered Volunteers  
**\$164,377**

**\$4,970,668**  
**Total Impact**

EXCEEDING THE ZOO'S SPENDING BY NEARLY  
\$1.5 MILLION

ZOO CONTRIBUTIONS

**\$2,851,816**

IN HOUSEHOLD SPENDING

AND

**38** JOBS SUPPORTED REGIONALLY



**215k** in state tax  
revenue

**570k** in federal tax  
revenue



29% OF ZOO'S  
TOTAL SPENDING IS  
FOR OPERATIONS



255,928 Visitors  
in 2017



33% of Visitors were from  
outside a 50 mile radius

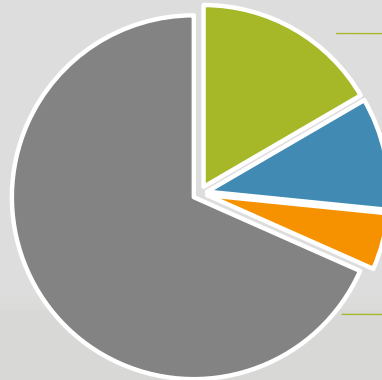


# Direct Economic Effects: 2017 Synopsis

Total Operating Expenses (after Subtracting Employee Benefits & Taxes)	\$1,052,599
Total Capital Expenses	\$1,053,340
Employment Wages	\$1,477,677
<b>Total Direct Spending in 2017</b>	<b>\$3,583,616</b>

## Annual Fiscal Impact

Local vendors in the SE TN region captured an estimated 87% of Chattanooga Zoo's expenditures



Income Tax \$191,000

Sales Tax \$115,000

Property Tax \$58,000

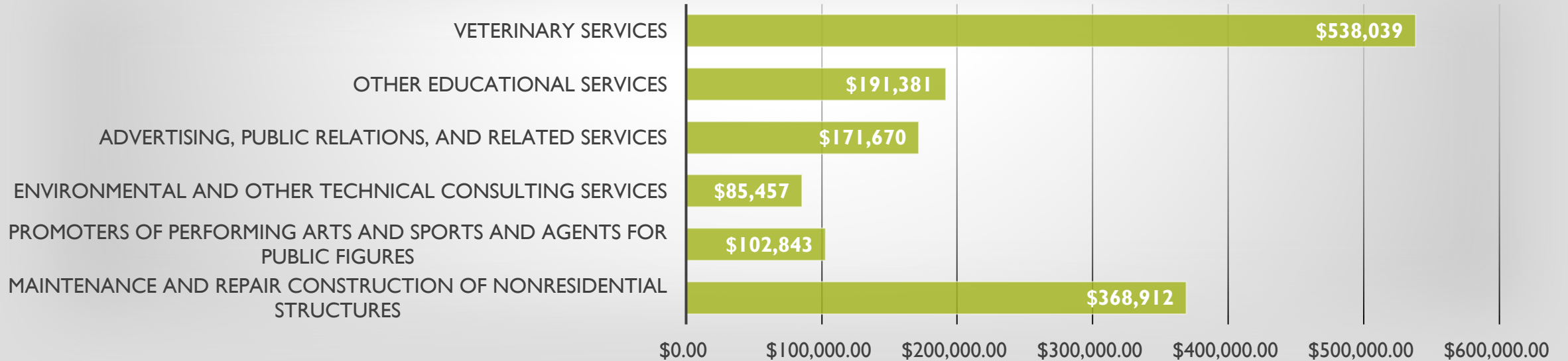
**Total \$785,000**





# Community Impact

## SIX INDUSTRY SECTORS WITH MOST INDIRECT JOBS FROM ZOO



\*\*\*Note: Dollar figures represent added employee income as a result of zoo operations



# Educational Impact

Outreach programs provide fun & interactive opportunities to schools and community organizations throughout the Southeastern TN region

- **Educational programs include:**

- Zoo Camp
- Zoo Overnights
- Zoo Tales
- Series of 16 homeschool programs
- Movin' and Groovin' Animals
- Recipe for a Habitat
- Amazing Adaptations
- Buy, Sell, Save
- Kits & Cubs
- Scout Programs

Serving **40,000**  
children per year



# Methods

## Operations

The study employed an economic contribution analysis, which differs from an impact analysis in that it analyzes existing organizational ventures rather than new economic activity. Data was analyzed by using an input-output model, Impact Analysis for PLANing (IMPLAN), to estimate the Zoo's economic contributions. Expenditure data was gathered through correspondence with representatives from the Chattanooga Zoo. Itemized operational and capital expenses were each coded to reflect specific economic sectors within the IMPLAN software. Overall, these expenses fell among 27 unique categories. The next step involved identifying a regional geographic impact area that would best represent a regional impact. Eighteen counties were included to reflect a Southeastern Tennessee impact region. This delineation then permitted the research team to identify what percentage of each commodity purchased was done within the designated region. Only expenses which were made with vendors residing within the impact region were included in the analysis.

## Employee Wages

Induced impacts from increased household income from employee expenditures on the local economy were also taken into consideration when generating the economic impact from annual operations to the Southeastern Tennessee region.

## Volunteerism

Economic impacts pertaining to volunteerism was established according to standards set by The Independent Sector. This is a non-partisan network of organizations providing, among other services, research expertise to nonprofits. According to their assessments, volunteer work in Chattanooga, TN is valued at \$21.98 per hour.

# APPENDIX A

## Zoo Operations & Capital Expenses

Impact Type	Employment	Labor Income	Total Value Added	Output
Direct Effect	13.9	\$1,866,069.7	\$2,041,561.9	\$1,815,515.9
Indirect Effect	4.5	\$185,665.8	\$289,676.6	\$548,345.3
Induced Effect	11.0	\$465,314.2	\$801,785.3	\$1,420,732.8
Total Effect	29.3	\$2,517,049.6	\$3,133,023.8	\$3,784,594.0

## Zoo Employment Wages

Impact Type	Employment	Labor Income	Total Value Added	Output
Direct Effect	0.0	0.0	0.0	0.0
Indirect Effect	0.0	0.0	0.0	0.0
Induced Effect	7.9	\$334,766.9	\$576,406.3	\$1,021,696.8
Total Effect	7.9	\$334,766.9	\$576,406.3	\$1,021,696.8

*Total Economic Impact* is the result of a non-linear ripple effect generated from the direct expenditures made by the Zoo within the specified Southeastern TN region. In the table above, the *Direct Effect* represents the marginal (non-leaked) money remaining in the region. *Indirect Effects* are the result of local businesses spending more on employment and materials, as a result of added business. *Induced Effects* include additional spending by local employees as a result of increased hours/income due to zoo operations. Further, these effects impact the region in various ways: 1) *Employment*: the number of full-year, full-time jobs supported by the zoo, 2) *Labor Income*: added income for current employees, 3) *Total Value*: true profits after accounting for employment, taxes, and other everyday business expenses, and 4) *Output*: total overall sales and revenue from zoo operations.



# APPENDIX B

## Top 10 Industries Impacted by Zoo Operations & Capital Expenses

Description	Employment	Labor Income	Value Added	Output
Maintenance and repair construction of nonresidential structures	6.4	\$368,912	\$399,249	\$866,141
Promoters of performing arts and sports and agents for public figures	2.3	\$102,843	\$116,331	\$242,729
Environmental and other technical consulting services	1.3	\$85,457	\$65,565	\$105,874
Advertising, public relations, and related services	1.2	\$171,670	\$276,988	\$299,749
Other educational services	1.1	\$191,381	\$191,944	\$37,879
Limited-service restaurants	0.8	\$14,007	\$31,968	\$60,109
Full-service restaurants	0.7	\$16,274	\$18,200	\$35,926
Retail - Miscellaneous store retailers	0.7	\$16,583	\$19,033	\$29,354
Real estate	0.7	\$33,547	\$94,345	\$134,498

# APPENDIX C

## Top 10 Industries Impacted by Zoo Employment Wages

Description	Employment	Labor Income	Value Added	Output
Limited-service restaurants	0.5	\$9,437	\$21,538	\$40,496
Full-service restaurants	0.5	\$10,140	\$11,340	\$22,385
Real estate	0.3	\$15,716	\$44,198	\$63,008
Retail - General merchandise stores	0.3	\$8,720	\$13,980	\$21,563
Hospitals	0.3	\$29,436	\$25,045	\$43,609
Offices of physicians	0.3	\$25,650	\$25,013	\$37,876
Retail - Food and beverage stores	0.2	\$6,894	\$10,279	\$15,955
Nursing and community care facilities	0.2	\$7,231	\$8,239	\$12,904
Employment services	0.2	\$4,522	\$7,003	\$10,291

# APPENDIX D

State Tax Summary for Zoo Operation & Capital Expenses					
	Employee Compensation	Proprietor Income	Tax on Production & Inputs	Households	Corporations
Dividends					\$281
Social Ins Tax- Employee Contribution	\$0	\$0			
Social Ins Tax- Employer Contribution	\$0				
TOPI: Sales Tax			\$80,512		
TOPI: Property Tax			\$40,361		
TOPI: Motor Vehicle Lic			\$976		
TOPI: Severance Tax			\$29		
TOPI: Other Taxes			\$12,273		
TOPI: S/L NonTaxes			\$99		
Corporate Profits Tax					\$7,819
Personal Tax: Income Tax				\$2,335	
Personal Tax: NonTaxes (Fines- Fees				\$4,877	
Personal Tax: Motor Vehicle License				\$1,790	
Personal Tax: Property Taxes				\$692	
Personal Tax: Other Tax (Fish/Hunt)				\$1,433	
<b>Total State and Local Tax</b>	<b>\$0</b>	<b>\$0</b>	<b>\$134,249</b>	<b>\$11,126</b>	<b>\$8,100</b>

# APPENDIX E

State Tax Summary for Zoo Employment Expenses					
	Employee Compensation	Proprietor Income	Tax on Production & Inputs	Households	Corporations
Dividends					\$107
Social Ins Tax- Employee Contribution	\$0	\$0			
Social Ins Tax- Employer Contribution	\$0				
TOPI: Sales Tax			\$34,197		
TOPI: Property Tax			\$17,143		
TOPI: Motor Vehicle Lic			\$415		
TOPI: Severance Tax			\$12		
TOPI: Other Taxes			\$5,213		
TOPI: S/L NonTaxes			\$42		
Corporate Profits Tax					\$2,982
Personal Tax: Income Tax				\$313	
Personal Tax: NonTaxes (Fines- Fees				\$653	
Personal Tax: Motor Vehicle License				\$240	
Personal Tax: Property Taxes				\$93	
Personal Tax: Other Tax (Fish/Hunt)				\$192	
<b>Total State and Local Tax</b>	<b>\$0</b>	<b>\$0</b>	<b>\$57,022</b>	<b>\$1,491</b>	<b>\$3,089</b>

# APPENDIX F

## Federal Tax Summary for Zoo Operation & Capital Expenses

	Employee Compensation	Proprietor Income	Tax on Production & Inputs	Households	Corporations
TOPI: Excise Taxes			\$14,286		
TOPI: Custom Duty			\$5,390		
TOPI: Fed NonTaxes			\$680		
Corporate Profits Tax					\$30,457
Personal Tax: Income Tax				\$166,116	
Social Ins Tax-Employer Contribution	\$127,788				
Social Ins Tax-Employee Contribution	\$132,904	\$14,744			
<b>Total Federal Tax</b>	<b>\$260,693</b>	<b>\$14,744</b>	<b>\$20,355</b>	<b>\$166,116</b>	<b>\$30,457</b>

## Federal Tax Summary for Zoo Employment Expenses

	Employee Compensation	Proprietor Income	Tax on Production & Inputs	Households	Corporations
Corporate Profits Tax					\$11,617
Personal Tax: Income Tax				\$22,256	
Social Ins Tax-Employee Contribution	\$16,278	\$2,973			
Social Ins Tax-Employer Contribution	\$15,651				
TOPI: Custom Duty			\$2,289		
TOPI: Excise Taxes			\$6,068		
TOPI: Fed NonTaxes			\$289		
<b>Total Federal Tax</b>	<b>\$31,929</b>	<b>\$2,973</b>	<b>\$8,646</b>	<b>\$22,256</b>	<b>\$11,617</b>



# APPENDIX G

Table: Impact Comparison by City

City	Visitors	Operating Expenses	Operating Impact	Employment Wages	Employment Impact	Visitor Impact	Total Economic Impact
Chattanooga (2017)	256,000	2,105,939*	3,784,594	1,477,677	1,021,697	N/A	5,000,000
Cincinnati (2012)	1,440,000	37,100,000*	82,000,000	N/A	N/A	60,400,000	143,000,000
Denver (2016)	2,051,000	53,000,000*	102,000,000**	19,300,000	\$9,001,000	6,400,000	116,700,00
San Antonio (2016)	1,200,000	N/A	N/A	9,620,640	7,660,819	50,000,000	85,000,000
Knoxville (2014)	416,673	5,219,686	N/A	4,377,998	N/A	28,747,514	N/A
Dallas (2015)	1,000,000	29,594,000**	N/A	N/A	N/A	N/A	50,000,000 (Oper. + Vis)

\* Operating Expenses = Capital + Operational Costs

\*\* Operating Impact = Capital + Operational + Employment

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