

POTTER PARK ZOO

ECONOMIC CONTRIBUTION ANALYSIS

POTTER PARK



May 2024

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POTTER PARK ZOO BY THE NUMBERS

Opened in 1920, the Potter Park Zoo is a local institution and tourist attraction that has inspired conservation and an appreciation for the natural world by engaging families from the Lansing area and beyond. For over 100 years, this award-winning, nationally accredited facility has not only sparked unforgettable moments and lifelong memories for visitors but has also made significant contributions to the region's economy and tax revenue. The results of this economic contribution analysis are intended to document and highlight the economic contributions made by the zoo and its visitors.

\$23.1 M
in annual economic output

EVERY \$1 = **+\$0.82**
in total spending in the local economy

**175 JOBS SUPPORTED
AND SUSTAINED**

184,000+
VISITORS
each year

127,000+
LOCAL VISITORS

57,000+ NONLOCAL VISITORS

33,900+ EVENT ATTENDEES

From a broader economic perspective, this analysis estimates that zoo operational and visitor spending contributes over **\$13.2 million to the value-added** each year

Direct and secondary transactions contribute over **\$3 million** in taxes each year, with **\$1.1 million of that revenue** being accrued at the local, county, and state level



BACKGROUND

APPROACH

The Potter Park Zoo and Potter Park Zoological Society, referred to together as Potter Park Zoo for the purposes of this analysis, partnered with Public Sector Consultants (PSC) to estimate the direct, indirect, and induced effects of Potter Park Zoo's spending on the Lansing area. The region of analysis for the study is the Lansing-East Lansing Metropolitan Statistical Area (MSA), composed of Ingham, Eaton, Clinton, and Shiawassee Counties. To conduct this analysis, PSC used Impact Analysis for Planning (IMPLAN), an input-output modeling tool that traces transactions among and between different sectors to quantify how activity in one part of the economy affects others. More specifically, PSC analyzed the economic contributions of:

Zoo operational spending

All expenditures required to operate the zoo, including on vendors

Zoo visitor spending

All spending that happens outside of the zoo by local, state-based, and out-of-state visitors¹

The zoo creates a local cycle of economic benefits that begins with a visit. When visitors come to the zoo, they spend money at the zoo and in the local economy. For example, visitors pay an entrance fee to the zoo, buy souvenirs and lunch at the zoo, and then leave to eat dinner at a local restaurant and stay at a hotel if they are not from the area. To support the visitor experience, the zoo makes operational expenditures, including on employees, that trigger economic activity for other local industries. The zoo purchases veterinary care, facility construction and maintenance services, food for the animals, and other goods and services from local suppliers. This spending creates jobs in supplier industries that support additional economic activity when supplier industry employees spend money on other local goods and services, maybe even visiting the zoo to start the cycle again. This contribution study measured the combined economic effects from this cycle, which are called total economic output.



¹ Excludes any spending by these visitors within the zoo to avoid double counting

KEY TERMS

Direct, indirect, and induced effects are additive, generating total economic effects as the sum of the three effects. These effects can be measured for local, county, state, and federal tax contributions, as well as for the following four economic indicators:

Employment

Number of full- and part-time jobs in affected industries

Labor income

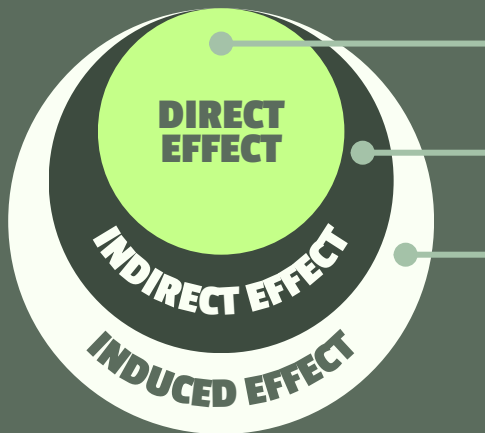
Total value of employee and proprietor compensation (excludes retained and distributed profits)

Value-added

Regional income, also called gross regional product, which incorporates labor income; property-type income, including retained and distributed profits; and net government income (taxes minus transfers)

Output

The value of production by industry, which can also be described as annual revenues (value of sales transactions) plus net change in inventories



Economic impact directly through an organization's employment and operations

Economic impact through spending on supply chain and supporting industries

Economic impact through local re-spending of income by direct and indirect employees



MODEL INPUTS

To conduct this analysis, PSC relied on budget and expenditure projections provided by the zoo, as well as a literature review, using adjusted total expenditures from the zoo's budget for the operational analysis. To measure the effects of visitor spending, PSC estimated the number of visitors and applied those counts to visitor spending profiles broken down by type (e.g., local, state [nonlocal], and out of state). PSC worked closely with the zoo to establish visitor counts by type and determined that local visitors would refer to those living within the Lansing-East Lansing MSA.

PSC also consulted with the zoo and reviewed relevant economic contribution and impact studies to build the visitor spending profiles shown in Exhibit 1.

EXHIBIT 1. Expenditure Profiles by Visitor Type²

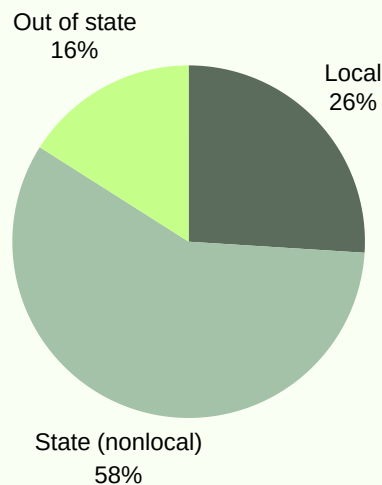
Category	Local	State (nonlocal)	Out of State
Lodging	\$0.00	\$21.18	\$55.06
Meals	\$9.55	\$33.44	\$77.68
Transportation (e.g., gasoline)	\$0.00	\$7.52	\$11.28
Other retail	\$2.30	\$4.10	\$6.14
Total	\$11.85	\$66.24	\$150.16

Note: Items may not total due to rounding.

Source: PSC analysis; CSL International 2023; Anderson Economic Group (AEG) 2019; Michigan Economic Development Corporation (MEDC) 2019; MEDC 2022

Based on estimated spending profiles and visitor counts, local visitors accounted for 26 percent of total visitor spending (Exhibit 2). State (nonlocal) visitors accounted for 58 percent of total visitor spending, while out-of-state visitors accounted for 16 percent.

EXHIBIT 2. Percentage of Total Visitor Spending by Visitor Type



² Refer to the appendix for more detail on the assumptions used to derive these expenditure profiles.

RESULTS AND KEY FINDINGS

This section features results from the overall analysis as well as breakdowns for operational and visitor spending individually.

OVERALL RESULTS

The combined economic contribution results for operational and visitor spending are expected to directly support **119 jobs**. Another **56 jobs** are supported by secondary transactions made by businesses and their workers. In total, the zoo contributes more than \$23.1 million in total economic output to the MSA through operational and visitor spending (Exhibit 3). Put simply, for every \$1 in total spending, an additional \$0.82 is generated in the local economy.

EXHIBIT 3. Overall Results—Economic Indicators

Source: PSC analysis

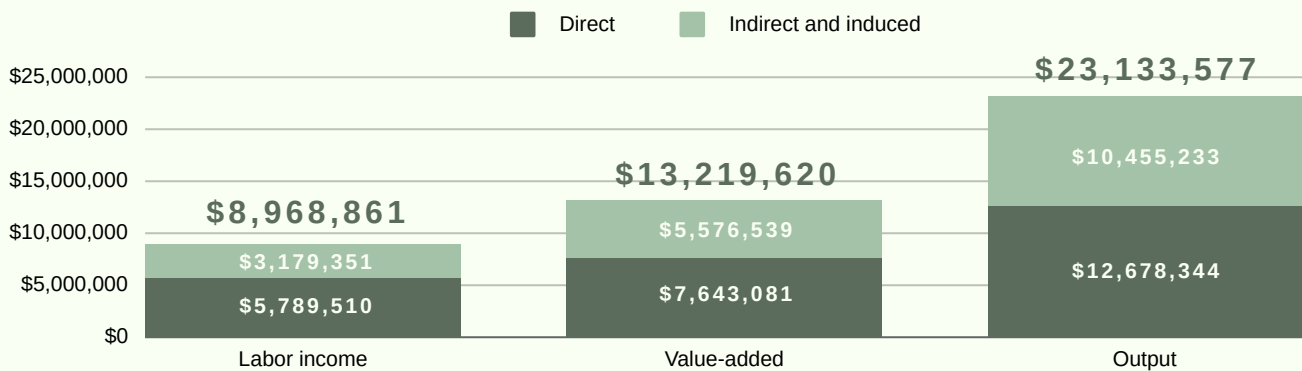
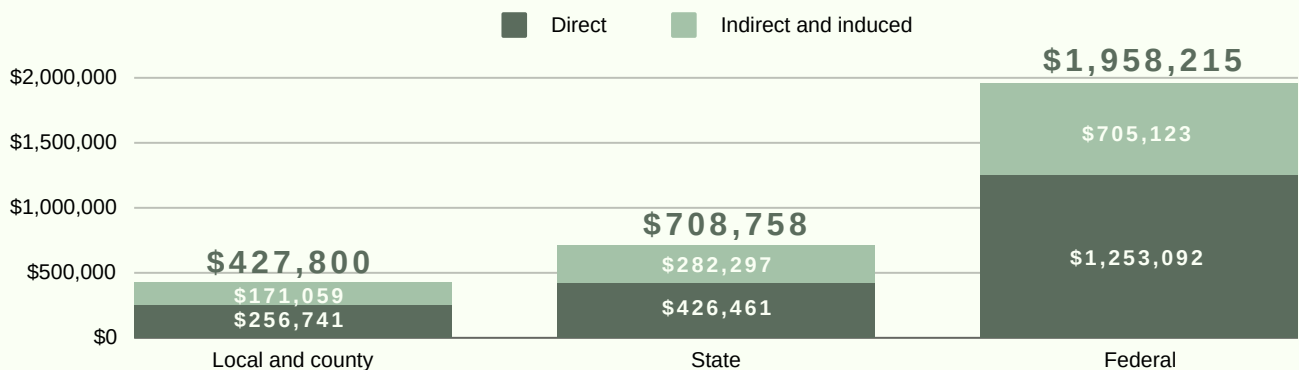


Exhibit 4 shows the estimated tax earnings at various government levels supported by this spending.

EXHIBIT 4. Overall Results—Tax Results

Source: PSC analysis



OVERALL RESULTS KEY TAKEAWAYS

119 JOBS

Annual zoo operational spending and visitor purchases outside of the zoo directly support and sustain 119 jobs each year

56 JOBS

In addition to these direct jobs, the indirect and induced purchases made by households and businesses as part of this spending are expected to support another 56 jobs

\$13.2 MILLION TO THE VALUE-ADDED

From a broader economic perspective, this analysis estimates that zoo operational and visitor spending contributes over \$13.2 million to the value-added each year

\$23.1 MILLION

In total, the zoo contributes more than \$23.1 million in total economic output to the area through operational and visitor spending

EVERY \$1 = **+\$0.82**
in total spending in the local economy

\$3 MILLION

This direct spending and secondary transactions contribute over \$3 million in taxes each year

\$1.1 MILLION

Over \$1.1 million of that revenue being accrued at the local, county, and state levels



OPERATIONAL SPENDING

Below are the results of PSC’s analysis of the effects of operational spending by the zoo on the Lansing-East Lansing MSA’s economy. This spending is expected to directly support **62 jobs**. Another **36 jobs** are supported by secondary transactions made by businesses and their workers. Spending and economic effects are estimated to occur on an annual basis.

In total, operational spending by the zoo contributes more than \$14.1 million in total economic output (Exhibit 5). For every \$1 spent in operational spending, an additional \$0.91 is generated in the local economy.

EXHIBIT 5. Operational Analysis—Economic Indicators

Note: Items may not total due to rounding.
Source: PSC analysis

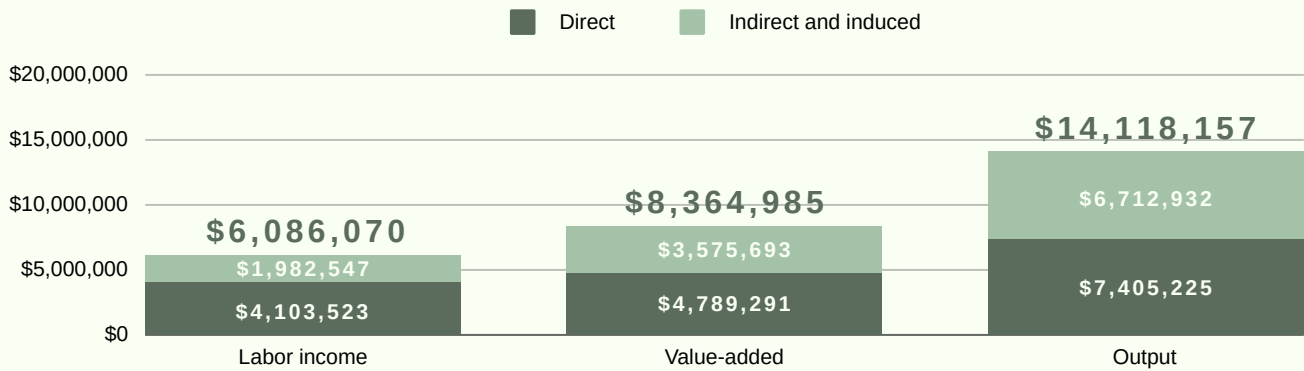
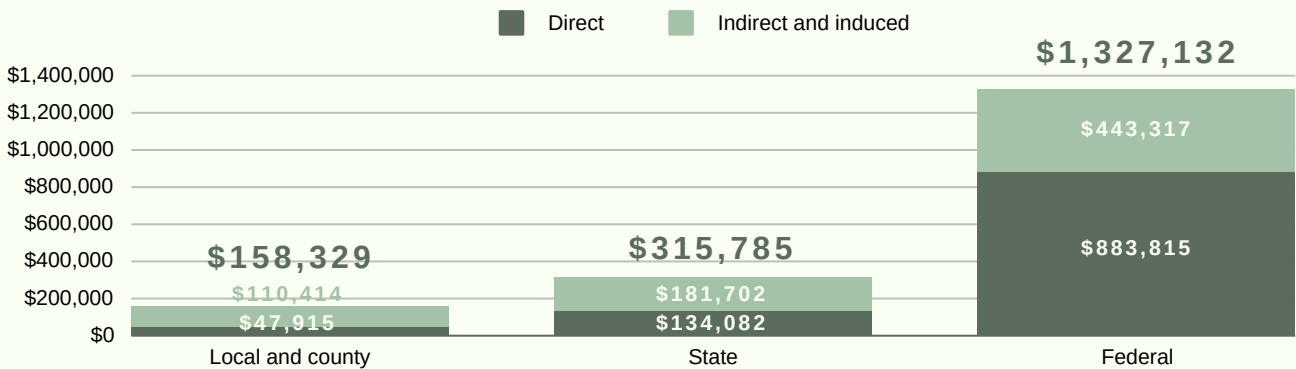


Exhibit 6 shows the estimated tax earnings at various government levels supported by zoo operational spending.

EXHIBIT 6. Operational Analysis—Tax Results

Source: PSC analysis



OPERATIONAL SPENDING KEY TAKEAWAYS

62 JOBS

Annual zoo operational spending directly supports and sustains 62 jobs each year

36 JOBS

In addition to these direct jobs, the indirect and induced purchases made by households and businesses as part of this spending are expected to support another 36 jobs

\$8.4 MILLION TO THE VALUE-ADDED

From a broader economic perspective, this analysis estimates that zoo operational spending contributes approximately \$8.4 million to the value-added each year

\$14.1 MILLION

In total, the zoo contributes to over \$14.1 million in total economic output to the area through its operational spending

EVERY \$1 = **+\$0.91**
in total spending in the local economy

\$1.8 MILLION

Direct spending and secondary transactions contribute \$1.8 million in taxes each year

\$475,000

With nearly \$475,000 of that revenue being accrued at the local, county, and state levels



VISITOR SPENDING

While visitor spending within the zoo is already captured in the operational analysis, visitors also spend money outside of the zoo that is associated with their visit. Overall, visitor spending directly contributes to **57 jobs** and supports another **20 jobs** via spending by businesses patronized by these visitors and spending from income earned by the employees of the patronized businesses. Exhibit 7 provides a breakdown of the economic contributions of visitor spending in the Lansing-East Lansing MSA each year.³ In total, for every \$1 spent by visitors to the zoo, an additional \$0.71 is generated in the local economy.

EXHIBIT 7. Visitor Analysis—Economic Indicators

Source: PSC analysis

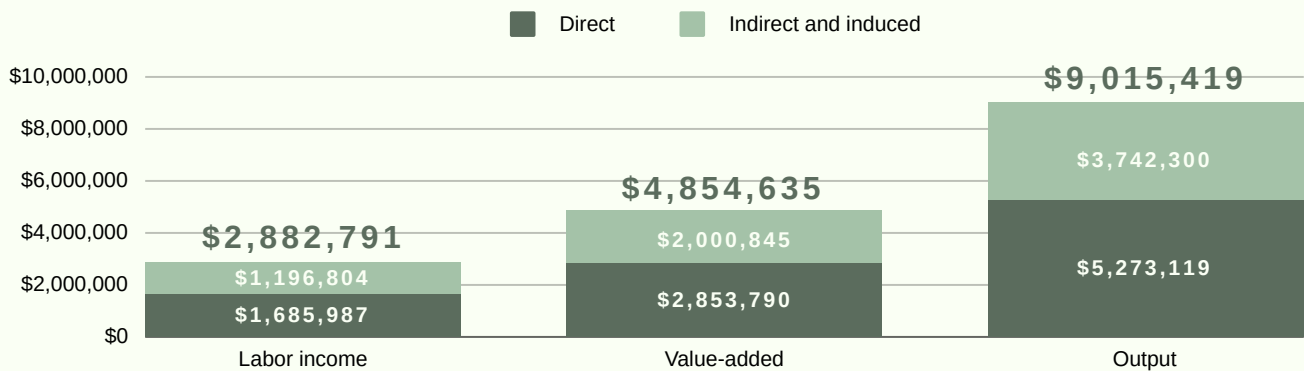
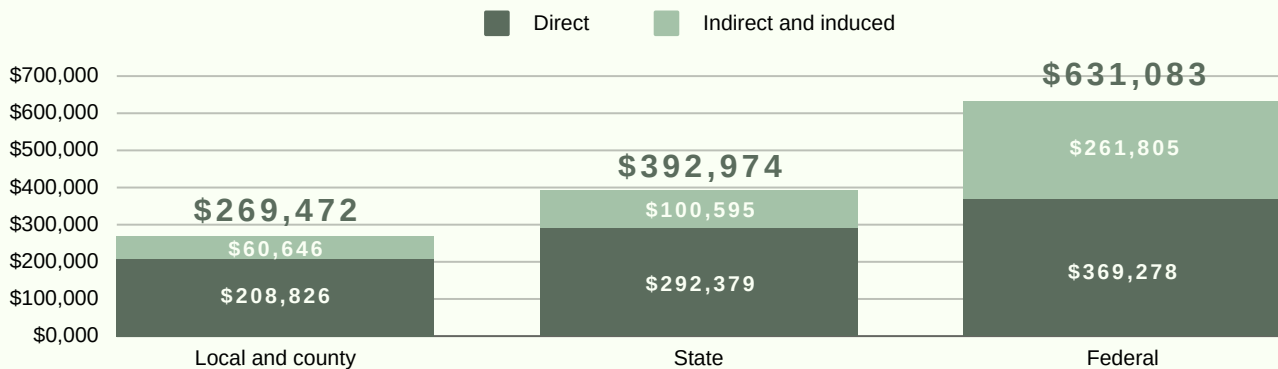


Exhibit 8 shows the estimated tax earnings at various government levels supported by zoo operational spending.

EXHIBIT 8. Visitor Analysis—Tax Results

Source: PSC analysis



³ For economic contributions by visitor type, see Appendix B

VISITOR SPENDING KEY TAKEAWAYS

57 JOBS

Visitor spending outside the zoo directly contributes to and sustains 57 jobs each year, with more than **80 percent** being supported by visitors from Michigan

20 JOBS

In addition to these direct jobs, the indirect and induced purchases made by households and businesses as part of this spending support another 20 jobs

\$4.9 MILLION TO THE VALUE-ADDED

From a broader economic perspective, this analysis estimates that zoo visitor spending contributes nearly \$4.9 million to the value-added each year

\$9 MILLION

In total, zoo visitors contribute just over \$9 million in total economic output to the area each year

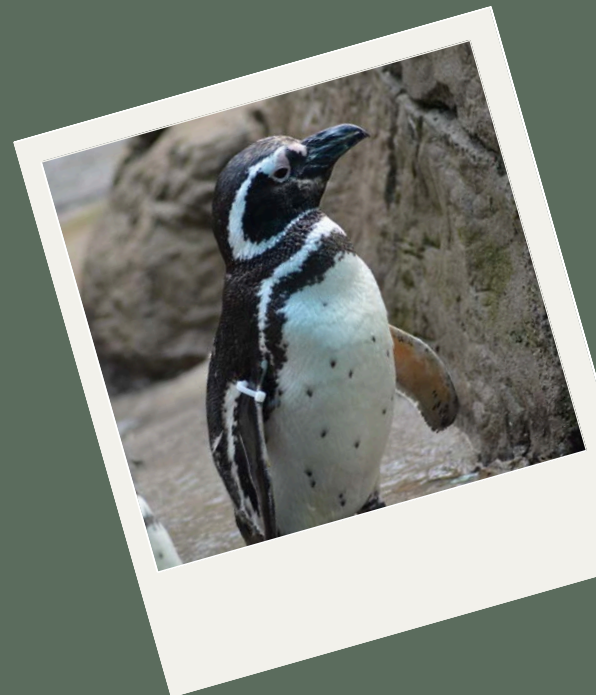
EVERY \$1 = **+\$0.71**
in total spending in the local economy

\$1.3 MILLION

Direct spending and secondary transactions contribute almost \$1.3 million in taxes each year

\$660,000

with just over \$660,000 of that revenue being accrued at the local, county, and state levels



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APPENDIX A: IMPLAN MODELING AND METHODOLOGY

IMPLAN MODELING

To analyze the economic contributions of operational and visitor spending, PSC used Impact Analysis for Planning, an input-output model to estimate economic impacts and contributions. This model is a staple for regional economic analyses.

IMPLAN TERMINOLOGY AND METHODOLOGY

Input-output models trace transactions among and between different economic sectors (like households, businesses, and governments) over the course of a year. Tracing these transactions offers a clearer picture of how a change in economic activity in one part of the economy creates changes in other parts of the economy. When a business sells from inventory, it takes a portion of those earnings to pay for other goods and services (for example, to restock its inventory). Some of the wages companies pay to employees will go to local retailers and service providers, continuing the ripple effect throughout the economy. Because of all these additional transactions, the overall economic effect is greater than the value of all the different direct revenue streams (employer to employee, consumer to business, business to business, etc.), resulting in what is called the multiplier effect. The existence of multiplier effects in regional and national economies is well documented in economics literature (Coughlin and Mandelbaum 1991).

DIRECT EFFECTS

The standard approach to modeling economic impacts with input-output models is to begin by establishing the value of transactions that represent direct expenditures giving rise to the economic effect. For the purposes of this study, these include operational expenditures as well as purchases made by visitors at establishments outside of the zoo. The direct effects of this spending occur in various commodity categories with unique supply chains within and outside of the modeled economy (Lansing-East Lansing MSA). For example, purchases made from a vendor for animal care create a different set of secondary transactions than purchases for restaurant meals.

INDIRECT AND INDUCED EFFECTS

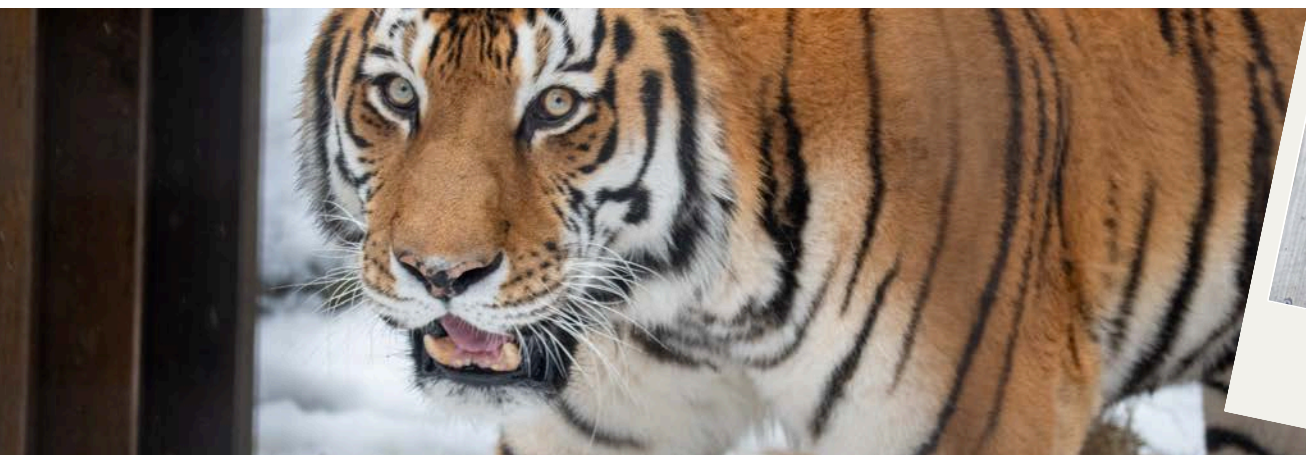
Direct effects, measured in dollars transacted, are then used to estimate the secondary transactions that happen because of the direct effects. The first set of secondary transactions is the indirect effects, which are transactions between business sectors. Indirect effects are the intermediate purchases of goods from one business to another (such as restocking). A business's operational costs—like electricity, rent, and business services—are also indirect effects. Indirect effects ripple throughout the economy as businesses purchase goods and services from other

businesses. These transactions cascade throughout the region, reduced only by the extent that inputs are purchased from suppliers from outside the region. The second set of secondary transactions are called induced effects. Induced effects measure the value of new transactions by households, governments, and other institutions in response to higher labor income, taxes, and profits. These household and institutional expenditures from earnings generate new rounds of business-to-business transactions and associated payments to institutions. These expenditures continue throughout the regional economy, hampered only by the extent to which purchases are made for goods, services, and payments to institutions outside the local economy. The direct, indirect, and induced effects are summed together to calculate the total economic effects.

While the underlying model simulation tracks the value of transactions as they traverse the economy, the economic effect measured by the value of transactions provides only one measure of economic effect. More common measures of economic outcomes are the effect on employment or income. IMPLAN and similar input-output economic simulation models use fixed ratios of employment and income to sales transactions to estimate how changes in sales transactions convey effects on employment and income. Fixed ratios are created for each of the more than 500 industries underlying the IMPLAN model; once total economic effects measured in dollars are calculated for all 500-plus industries, the fixed ratios are used to convey that measure in employment and income terms.

DATA SOURCES

For operational spending totals, PSC relied on annual budget data provided by the Potter Park Zoo and the Potter Park Zoological Society. Visitor counts were calculated using data from 2023 and results are displayed in 2024 dollars. For visitor spending, PSC consulted with zoo leadership and reviewed studies of Lansing-area and Michigan-based tourism (e.g., MEDC 2019, MEDC 2022, and AEG 2019) and many economic contribution and impact studies to produce professional estimates for expenditure profiles (e.g., Fuller 2013, CSL International 2023, Erkkila 2018, Maryland Department of Business & Economic Development 2011, Tourism Economics 2023, Indianapolis Zoo 2021, Applied Economics 2022, USF 2003).



APPENDIX B: DETAILED VISITOR OUTPUTS

EXHIBIT 1B. Estimated Number of Visitors by Type

	Estimated Number of Visitors
Local	127,082
State (nonlocal)	51,367
Out of state	6,261
Total	184,710

EXHIBIT 2B. Economic Indicator Effects of Local Visitors

	Employment	Labor Income	Value-added	Total Output
Direct	17	\$486,247	\$667,873	\$1,380,839
Indirect and induced	6	\$350,587	\$587,352	\$1,098,296
Total	23	\$836,834	\$1,255,225	\$2,479,135

EXHIBIT 3B. Economic Indicator Effects of State (Nonlocal) Visitors

	Employment	Labor Income	Value-added	Total Output
Direct	31	\$934,257	\$1,693,112	\$3,021,728
Indirect and induced	11	\$659,415	\$1,101,539	\$2,060,630
Total	42	\$1,593,673	\$2,794,651	\$5,082,358

Note: Numbers may not total due to rounding.

EXHIBIT 4B. Economic Indicator Effects of Out-of-state Visitors

	Employment	Labor Income	Value-added	Total Output
Direct	9	\$265,483	\$492,805	\$870,552
Indirect and induced	3	\$186,801	\$311,954	\$583,374
Total	12	\$452,284	\$804,759	\$1,453,926