

# BREVARD ZOO & FUTURE AQUARIUM ECONOMIC IMPACT ANALYSIS





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## EXECUTIVE SUMMARY

The Brevard Zoo and the future Brevard Aquarium, as major sources of economic activity already do and will have a substantial impact on the local economy. This impact is a result of operating expenditures in the community, through the compensation paid to employees and through visitor spending in local businesses. These entities are and will be at the core of a series of economic transactions triggering significant activity in the Brevard economy.

Among the key findings pertaining to the Brevard Zoo:

- In 2015, the Brevard Zoo had an estimated total economic impact of **\$59.5 million in area sales**, generating a **local income of \$21.0 million** and supporting **805 jobs**.
- Of the total annual estimated impact, Brevard Zoo had an estimated economic impact resulting from operating expenses of \$19.3 million in area sales, generating a local income of \$8.2 million and supporting 310 jobs.
- And \$40.2 million of the total annual estimated impact was attributable to spending by out-of-area visitors on lodging, dining, souvenirs and other purchases in connection with their visit to the Zoo, generating \$12.9 million in income and supporting 495 jobs.

Among the key findings pertaining to the future Brevard Aquarium:

- Annually, the Brevard Aquarium will have an estimated total economic impact of **\$85.5 million in area sales**, generating a **local income of \$26.0 million** and supporting **937 jobs**.
- Of the total annual impact, Brevard Aquarium will have an estimated economic impact resulting from operating expenses of \$19.4 million in area sales, generating a local income of \$4.8 million and supporting 123 jobs.
- And \$66.1 million of the total annual estimated impact will be attributable to spending by out-of-area visitors on lodging, dining, souvenirs and other purchases in connection with their visit to the Aquarium, generating \$21.2 million in income and supporting 814 jobs.
- Capital expenditures associated with the Aquarium's construction will have an estimated one-time, non-recurring economic impact of \$62.6 million in area sales, generating a local income of \$19.3 million and supporting 469 jobs.

## METHODOLOGY

In assessing the overall impact of Brevard Zoo and future Brevard Aquarium, only economic activities that would not have occurred in the region had it not been for the existence of the Zoo or Aquarium were considered. It is assumed that the Zoo and Aquarium are/would be solely responsible for the following economic stimuli:

- I. Spending of operating expenses
- II. Spending of wages paid to the entities' employees
- III. Construction expenditures associated with the Aquarium
- IV. Spending by out-of-area visitors on lodging, dining, souvenirs and other purchases in connection with their visit

The analysis within delineates the direct, indirect and induced effects of each of these expenditures on the Brevard economy. In each case, the three effects sum to provide the total economic impact for that expenditure.

The **direct impact** refers to the initial event applied to a specific industry; in this instance, the operating expenditures associated with the Zoo/Aquarium activity.

The **indirect impact** refers to the effect upon the local supply chain resulting from the initial event.

The **induced impact** refers to the effect of the spending of labor income resulting from the initial jobs and indirect jobs.

The increase in output of all of the affected companies invariably leads to an increase in earnings for workers and owners. It is assumed this translates into greater household spending in the community.

Economic impact may be expressed in terms of output (sales generated), labor income (wages paid / proprietor income received), or employment (jobs supported). In most economic impact studies, it is the effect on output that is widely reported as the overall economic impact. Insofar as the change in output best represents the new economic activity generated for the region, this analysis does not deviate from that wisdom. It is stressed, however, that all three impact categories are related; readers should guard against summing together different measures of the same economic change.

Estimates of the impacts in this analysis were calculated using the Brevard County model of the IMPLAN modeling system, developed by the Minnesota IMPLAN Group. Using actual historical data to replicate trade flows within the Brevard County economy, the model allows analysts to estimate changes in output, income and employment in all industry sectors resulting from a change in spending in one sector. In this application, the model's underlying data was modified slightly to reflect more current numbers made available to us by Brevard Zoo.

Well regarded by academic and professional researchers, the EDC feels IMPLAN provides reasonable and conservative estimates of direct, indirect and induced impacts.

## INTRODUCTION

The Brevard Zoo, in conducting its mission through innovative educational programs and extensive conservation efforts, is a major source of economic activity. The Brevard Zoo supports a large number of jobs, generating labor income and consumer spending to the benefit of the local, regional and state economies. Additionally, a similar significant economic impact is expected from the future Brevard Aquarium construction and operation.

The Economic Development Commission of Florida's Space Coast was asked to estimate the economic benefits accruing to Brevard County from the current Zoo and the future Aquarium activities. Our findings, based on the Zoo's operations in calendar year 2015 and the Aquarium's projected operations, are presented herein.

Readers should note the analysis captures only those benefits that can be easily quantified. Brevard Zoo/Aquarium's impact on the local community are and will be far-reaching, including many educational and cultural benefits that are impossible to measure in dollar terms, thus not mentioned in this report.

The Zoo/Aquarium's probable fiscal benefits are not referenced in this analysis. Although related, fiscal impacts are not the same as economic impacts. This analysis is purely economic.

This report aims to provide objective and conservative information on the Zoo and Aquarium performance and impact on the community. It is achieved by analyzing the impact of the operating expenses, and tourism expenses associated with the Brevard Zoo and the future Brevard Aquarium, as well as the impact of the construction of the Aquarium.

## PART I: BREVARD ZOO ECONOMIC IMPACT

### I. Annual Impact of Operating Expenses and Wages

Brevard Zoo is a large consumer of goods and services like any other business. While conducting its primary mission of “Wildlife Conservation through Education & Participation”, the Zoo spending includes expenditures for utilities, repair and maintenance, animal care and feeding, security, customer services, and administration.

In 2015, **direct expenditures** associated with the Zoo’s ongoing operations, including payroll for **234 employees**, totaled **\$10,486,297**.

These expenditures supported a broad range of businesses locally as these dollars were re-spent for consumer goods and services, and supplies. These expenditures by the Brevard Zoo in 2015 supported additional payroll and jobs and generated additional spending across all sectors of the economy.

The **multiplier effect** for this spending by the Brevard Zoo is **1.84**; that is, for each dollar (\$1) of annual spending by the Brevard Zoo, an additional \$0.84 was generated within the local economy for a total of **\$19,264,544 in economic activity** (output).

This spending supported **310 jobs directly and indirectly** as these moneys were spent and re-spent and generated a total of **\$8,170,933 in labor income**, including the zoo jobs and income.

**Table 1: Annual Brevard Zoo Operations Impact:**

	Direct*	Indirect**	Induced***	Total
<b>Output (Sales)</b>	\$10,475,937.00	\$4,406,023.30	\$4,382,584.40	<b>\$19,264,544.70</b>
<b>Income Generated</b>	\$5,592,028.00	\$1,214,241.30	\$1,364,664.60	<b>\$8,170,933.80</b>
<b>Jobs Supported</b>	234	39	37	<b>310</b>

*\*Zoo operations and output; \*\*Numbers generated by Zoo supply chain needs; \*\*\*Numbers generated by the spending of all wages associated with direct and indirect activity - Source: IMPLAN, MIG, Inc., Brevard County Dataset*

Let us note that purchases made by the Zoo outside of the local area do not contribute money to the region, but rather ‘leak’ out of the local economy. This concept of leakage runs throughout the analysis. Just as the Zoo does not purchase all its goods and services from the Brevard area, neither do its suppliers source all of their inputs locally, nor households spend all of their income within county lines.

The same concept applies to wages spending, while a portion of Zoo employees’ income undoubtedly flows out of the area - in the form of mortgage payments to out-of-area banks, for example - a significant percentage is retained locally. Provisions are made for this throughout the analysis model.

## II. Annual Impact of Visitor Spending

Visitors attracted to the Brevard Zoo are a significant source of economic activity that occurs beyond the Zoo in the form of expenditures for retail products, food and beverage services, recreational activities, overnight lodgings, and transportation services.

However, not all visitors are relevant to this analysis; in assessing the economic benefits the Brevard Zoo brings to the area, only the inflow of 'new money' is considered. Thus, the spending of local visitors is excluded in the calculations, assuming their dollars would otherwise still have been spent locally.

Spending by out-of-area visitors on-site is also excluded due to the assumption that these revenues in part drive the Zoo's operating expenses and payroll captured elsewhere in this analysis.

While the Zoo is typically not considered sufficient cause for a trip to Brevard County on its own, research indicates the primary characteristic of a Zoo visitor is that he or she stays a day longer in Brevard County. Using daily average tourist expenditure data provided by the State's office of tourism (Visit Florida), i.e. what a visitor to Florida is typically expected to spend in one day; in this case, the spending off-site in connection with his or her visit to the Zoo.

The Zoo attracted **415,000 visitors in 2015**, of which **166,000** were **out-of-area visitors** (40%). The typical out-of-area visitor spends an average of **\$159.40** off-site in connection with their trip to the Zoo, delineated as follows:

**Table 2: Typical Daily Florida Visitor Spending by Category**

Daily Spending	Per Person	For 166,000 visitors
Lodging	\$51.70	\$8,582,200
Transportation	\$34.70	\$5,760,200
Food	\$35.50	\$5,893,000
Souvenirs	\$18.30	\$3,037,800
Attractions	\$19.20	\$3,187,200
<b>Total</b>	<b>\$159.40</b>	<b>\$26,460,400</b>

It is estimated that in 2015, this injection of **\$26,460,400 of out-of-area visitor spending** created **\$40,211,898 in total area economic activity** (output), supported **495 jobs** and generated **\$12,868,867 in labor income**.

**Table 3: Annual Brevard Zoo Out-of-Area Visitor Spending Impact:**

	Direct*	Indirect**	Induced***	Total
<b>Output (Sales)</b>	\$26,460,400.42	\$6,850,082.23	\$6,901,416.21	<b>\$40,211,898.86</b>
<b>Income Generated</b>	\$8,617,961.19	\$2,101,829.56	\$2,149,076.70	<b>\$12,868,867.45</b>
<b>Jobs Supported</b>	376	61	58	<b>495</b>

*\*Tourist spending impact; \*\*Numbers generated by tourism demand supply chain needs; \*\*\*Numbers generated by the spending of all wages associated with direct and indirect activity - Source: IMPLAN, MIG, Inc., Brevard County Dataset*

### III. Combined Brevard Zoo and Associated Tourism Impact

The overall combined estimated annual impact of the Brevard Zoo operating expenditures and related tourism expenditures represent **\$59,476,443 in economic activity**, supporting **805 jobs directly and indirectly** as these moneys were spent and re-spent and generated a total of **\$21,039,801 in labor income**, including direct jobs and income.

**Table 4: Annual Brevard Zoo Operations and Out-of-Area Visitor Spending Impact:**

	Direct*	Indirect**	Induced***	Total
<b>Output (Sales)</b>	\$36,936,337.42	\$11,256,105.54	\$11,284,000.57	<b>\$59,476,443.53</b>
<b>Income Generated</b>	\$14,209,989.19	\$3,316,070.81	\$3,513,741.30	<b>\$21,039,801.30</b>
<b>Jobs Supported</b>	610	100	95	<b>805</b>

*\*Operations and Tourist spending impact; \*\*Numbers generated by operation and tourism demand supply chain needs; \*\*\*Numbers generated by the spending of all wages associated with direct and indirect activity - Source: IMPLAN, MIG, Inc., Brevard County Dataset*

# PART II: FUTURE BREVARD AQUARIUM ECONOMIC IMPACT

## I. Annual Impact of Operating Expenses and Wages

Brevard Aquarium is anticipated to be a large consumer of goods and services like any other business. While conducting its primary mission the Aquarium spending will include expenditures for utilities, repair and maintenance, animal care and feeding, security, customer services, and administration.

In the first five years of operation, average annual **direct expenditures** associated with the Aquarium’s ongoing operations including payroll for **57 employees**, is projected to total **\$6,367,478**.

These expenditures will support a broad range of businesses locally as these dollars are re-spent for consumer goods and services, and supplies. These expenditures by the Brevard Aquarium will support additional payroll and jobs and generate additional spending across all sectors of the economy.

The **multiplier effect** for this spending by the Brevard Aquarium will be **1.64**; that is, for each dollar (\$1) of annual spending by the Brevard Aquarium, an additional \$0.64 will be generated within the local economy for a total of **\$19,421,423 in economic activity** (output).

This spending will support **123 jobs directly and indirectly** as these moneys will be spent and re-spent and generate a total of **\$4,820,003 in labor income**, including the aquarium jobs and income.

**Table 5: Annual Brevard Aquarium Operations Impact:**

	Direct*	Indirect**	Induced***	Total
<b>Output (Sales)</b>	\$11,851,568	\$4,984,760	\$2,585,095	<b>\$19,421,423</b>
<b>Income Generated</b>	\$2,641,297	\$1,373,733	\$804,972	<b>\$4,820,003</b>
<b>Jobs Supported</b>	57	44	22	<b>123</b>

*\*Aquarium operations and output; \*\*Numbers generated by Aquarium supply chain needs; \*\*\*Numbers generated by the spending of all wages associated with direct and indirect activity - Source: IMPLAN, MIG, Inc., Brevard County Dataset*

Let us note that purchases which will be made by the Aquarium outside of the local area will not contribute money to the region, but will rather ‘leak’ out of the local economy. This concept of leakage runs throughout the analysis. Just as the Aquarium will not purchase all its goods and services from the Brevard area, neither will its suppliers source all of their inputs locally, nor households will spend all of their income within county lines.

The same concept applies to wages spending, while a portion of Aquarium employees’ income will undoubtedly flow out of the area - in the form of mortgage payments to out-of-area banks, for example - a significant percentage will be retained locally. Provisions are made for this throughout the analysis model.

## II. Annual Impact of Visitor Spending

Visitors attracted to the Brevard Aquarium will be a significant source of economic activity that will occur beyond the Aquarium in the form of expenditures for retail products, food and beverage services, recreational activities, overnight lodgings, and transportation services.

However, not all visitors are relevant to this analysis; in assessing the economic benefits Brevard Aquarium will bring to the area, only the inflow of ‘new money’ is considered. Thus, the spending of local visitors is excluded in the calculations, assuming their dollars would otherwise still be spent locally.

Spending by out-of-area visitors on-site is also excluded due to the assumption that these revenues in part drive the Aquarium’s operating expenses and payroll, captured elsewhere in this analysis.

While the Aquarium might not typically be considered sufficient cause for a trip to Brevard County on its own, research indicates the primary characteristic of an Aquarium/Zoo visitor is that he or she stays a day longer in the area. Using daily average tourist expenditure data provided by the State’s office of tourism (Visit Florida), i.e. what a visitor to Florida is typically expected to spend in one day; in this case, the spending off-site in connection with his or her visit to the Aquarium.

The Aquarium is projected to attract an **annual average of 471,693 visitors** over the first five years of operation, of which **272,967** would be **out-of-area visitors** (60%). The typical out-of-area visitor spends an average of **\$159.40** off-site in connection with their trip, delineated as follows:

**Table 6: Typical Daily Florida Visitor Spending by Category**

Daily Spending	Per Person	For 272,967 visitors
Lodging	\$51.70	\$14,112,371
Transportation	\$34.70	\$9,471,940
Food	\$35.50	\$9,690,313
Souvenirs	\$18.30	\$4,995,288
Attractions	\$19.20	\$5,240,958
<b>Total</b>	<b>\$159.40</b>	<b>\$43,510,870</b>

It is estimated that this annual injection of **\$43,510,870 of out-of-area visitor spending** will create **\$66,123,512 in total area economic activity** (output), support **814 jobs** and generate **\$21,161,266 in labor income**.

**Table 7: Annual Brevard Aquarium Out-of-Area Visitor Spending Impact:**

	Direct*	Indirect**	Induced***	Total
<b>Output (Sales)</b>	\$43,510,867.7	\$11,264,116.0	\$11,348,528.4	<b>\$66,123,512.1</b>
<b>Income Generated</b>	\$14,171,175.1	\$3,456,199.7	\$3,533,891.8	<b>\$21,161,266.5</b>
<b>Jobs Supported</b>	618	100	96	<b>814</b>

*\*Tourist spending impact; \*\*Numbers generated by tourism demand supply chain needs; \*\*\*Numbers generated by the spending of all wages associated with direct and indirect activity - Source: IMPLAN, MIG, Inc., Brevard County Dataset*

### III. Combined Brevard Aquarium and Associated Tourism Impact

The overall combined estimated annual impact of the future Brevard Aquarium operating expenditures and related tourism expenditures will represent **\$85,544,935 in economic activity**, supporting **937 jobs directly and indirectly** as these moneys will be spent and re-spent and will generate a total of **\$25,981,269 in labor income**, including direct jobs and income.

**Table 8: Annual Brevard Aquarium Operations and Out-of-Area Visitor Spending Impact:**

	Direct*	Indirect**	Induced***	Total
<b>Output (Sales)</b>	\$55,362,435.70	\$16,248,876.04	\$13,933,623.43	<b>\$85,544,935.17</b>
<b>Income Generated</b>	\$16,812,472.47	\$4,829,933.06	\$4,338,863.99	<b>\$25,981,269.52</b>
<b>Jobs Supported</b>	675	144	118	<b>937</b>

*\*Operations and Tourist spending impact; \*\*Numbers generated by operation and tourism demand supply chain needs; \*\*\*Numbers generated by the spending of all wages associated with direct and indirect activity - Source: IMPLAN, MIG, Inc., Brevard County Dataset*

### IV. One Time Impact of Construction

The projected **\$45,000,000** to be invested in the **construction of the Brevard Aquarium** will significantly affect the local economy, in the sense that local contractors will be hired, and purchases of large quantities of material from local businesses will be made, the indirect and induced effects of this construction spending will be considerable.

It is estimated that the Aquarium’s construction activity will have a one-time, non-recurring impact, generating **\$62,640,365 in total area economic activity** (output), which will in turn support **469 jobs** paying **\$19,274,668 in labor income**.

**Table 9: Brevard Aquarium Construction Capital Investment Impact:**

	Direct*	Indirect**	Induced***	Total
<b>Output (Sales)</b>	\$45,000,000	\$7,303,681	\$10,336,685	<b>\$62,640,365</b>
<b>Income Generated</b>	\$13,436,214	\$2,619,637	\$3,218,817	<b>\$19,274,668</b>
<b>Jobs Supported</b>	332	49	88	<b>469</b>

*\*Aquarium construction spending and output; \*\*Numbers generated by Aquarium construction supply chain needs; \*\*\*Numbers generated by the spending of all wages associated with direct and indirect activity - Source: IMPLAN, MIG, Inc., Brevard County Dataset*

## CONCLUSION

The Brevard Zoo's impact on the local economy is multi-faceted.

As consumers of local goods and services, the Zoo and Aquarium do and will stimulate sales of area businesses; as employers of local residents, they do and will generate income staying in the community; and as notable attractions, they do and will play important roles in the experience and planning of visitors who spend money in local businesses.

The result of the total Brevard Zoo's impact in 2015, was an estimated economic stimulus for Brevard County of \$59.5 million in annual sales, 805 jobs and \$21.0 million in income.

The expected result of the total Brevard Aquarium's estimated annual impact is an economic stimulus for Brevard County of \$85.5 million in annual sales, 937 jobs and \$26.0 million in income.

The true value of such amenities extends far beyond that which can be recorded in monetary terms. However, the magnitude of these entities overall impact on Brevard County can be gauged by quantifying the effect of expenditure flows they do and will stimulate.





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