



# **The Economic Contributions of the National Aquarium**

2012 Assessment

SUBMITTED BY: SAGE POLICY GROUP, INC.; OCTOBER 2012

**Dear Friends,**

Since our exciting beginnings over 30 years ago, the National Aquarium has served as a nonprofit leader in the field of marine conservation and science. We are proud to be an economic engine for the City of Baltimore, the State of Maryland, and the District of Columbia and its surrounding communities—positively impacting employment, visitation, and spending in our region.

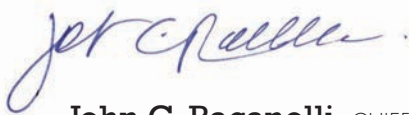
In 2012, National Aquarium commissioned Sage Policy Group, Inc. to measure our economic impact on the region. This document is a summary of the study and includes major statistical findings, key analyses, and the following essential economic indicators about the National Aquarium's effect:

- **\$319.6 million in annual economic impact**
- **3,347 jobs created**
- **\$11.7 million annual tax revenues to the State of Maryland**
- **\$5.9 million annual tax revenues to the City of Baltimore**
- **1.5 million annual visitors**

We continue to innovate and invest in our communities through expansion and renovation of our exhibits, ongoing conservation initiatives in the region, and our commitment to education and outreach to local schools and students. We are proud to directly employ over 590 people at our locations in Washington, DC and Baltimore, MD, in addition to the 3,347 jobs we create in the region.

Each year, over 1.5 million annual visitors learn about urgent issues affecting the aquatic world and actions they can take to protect our blue planet. Over 60,000 school children visit the National Aquarium each year, and 50,000 of those students receive free admission as part of our Maryland free schools programs. Outside our walls, we are making great strides in our conservation efforts, which are vital to restoring critical habitats in the Chesapeake Bay and along the Atlantic coastline. These efforts are the cornerstone of our education program and our engagement with the community.

We are pleased to share this positive economic impact data and proud of our role in sustaining the economic vitality of the City of Baltimore, the State of Maryland, and the District of Columbia. Our commitment to our mission to inspire conservation of the world's aquatic treasures has never been greater.



**John C. Racanelli** CHIEF EXECUTIVE OFFICER

P.S. One of our top priorities is ensuring that all Marylanders have the opportunity to visit the National Aquarium and enjoy the world's aquatic treasures. In addition to our many programs for Maryland students and schools, we also offer several affordable access programs for Maryland residents including Fridays after Five, Dollar Days, and Maryland Mornings, an exclusive discount for Maryland residents.



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## Preamble

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Every successful city, particularly those that emerge as tourist destinations, can boast at least one amenity or neighborhood that other cities simply cannot replicate. In Philadelphia, it's the Liberty Bell; in Washington, DC, it's the Smithsonian; in New Orleans, it's the French Quarter; in San Francisco, it's the Golden Gate Bridge; and in Baltimore, it's the National Aquarium.

The National Aquarium often serves as the principal motivation to come to Baltimore. This is made obvious by attendance figures, which indicate that 1.37 million people visited the Aquarium in Baltimore in 2012. These visitors are then able to easily access other Baltimore destinations, whether Oriole Park at Camden Yards, Port Discovery, the Maryland Science Center, Fells Point, or Federal Hill. As visitors journey through the community, they generate economic impact through their spending. This analysis indicates that in the most recent year for which data are available, the National Aquarium directly and indirectly supported more than \$314 million in economic impact in Maryland.

But there is more to the Aquarium than economic impacts—there are important educational ones as well. The Aquarium hosts 108,000 Maryland students each year, providing young people with insights into the nature of sensitive ecosystems, their personal environmental impacts, and key ways to mitigate these effects. The Aquarium also provides facilities to support cutting edge research—the type of research that will be of enormous importance as Marylanders and others continue to work to improve the conditions of the Chesapeake Bay.

In the final analysis, it is evident the Aquarium is a treasure trove of economic, fiscal, environmental, and educational impacts. The report that follows will provide readers with an assessment of its measurable contributions to the region. While the study's findings are based on 2011 and 2012 data, one should expect similar results for years to come.

# Executive Summary

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## Quantifying the National Aquarium's Economic and Fiscal Impacts

This report characterizes and quantifies the economic contributions generated by the National Aquarium, a private, nonprofit organization with a mission to *inspire conservation of the world's aquatic treasures*. The National Aquarium has two locations—one in Baltimore's Inner Harbor and one in Washington, DC.

To quantify economic impacts, Sage Policy Group, Inc. (Sage) utilized Baltimore City, Washington, DC, and Maryland-specific IMPLAN multipliers to generate estimates of employment, income, and output. To conduct the fiscal portion of the analysis, Sage relied heavily upon publicly available information including government-published tax rates and budgetary information. As with economic impacts, fiscal impacts have been calculated for the City of Baltimore, the State of Maryland, and the District of Columbia.

## Analytical Findings

- In total, the National Aquarium supports substantial employment (3,347 jobs) and economic impacts (\$319.6 million) annually for the City of Baltimore, the State of Maryland, and the District of Columbia;
- Together, the facilities attract more than 1.5 million visitors each year;
- Between the two facilities, operational expenditures have expanded to more than \$50 million per annum; and
- Collectively, the Aquarium supports \$17.9 million in fiscal impact, or tax revenue, for the City of Baltimore, the State of Maryland, and the District of Columbia.

### THE CITY OF BALTIMORE AND STATE OF MARYLAND

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- Statewide, the National Aquarium supports 3,300 jobs, nearly \$127 million in annual employee compensation, and has an annual economic impact of \$314 million (these figures include Baltimore City impacts);
- In Baltimore City alone, the National Aquarium supports more than 2,900 jobs, total employee compensation approaching \$118 million, and has an annual economic impact of nearly \$272 million;
- The study team estimates that visitors to the National Aquarium, Baltimore spend nearly \$206 million per year on lodging, transportation, food, shopping, gas, and recreation;
- 88.14 percent of visitors to the National Aquarium, Baltimore reported that it was the primary reason for their visit to Baltimore;
- The State of Maryland directly and indirectly receives \$11.7 million in annual tax revenues from the Aquarium (City and State fiscal impacts are mutually exclusive); and
- The City of Baltimore directly and indirectly receives \$5.9 million in annual tax revenues from the Aquarium.

### THE DISTRICT OF COLUMBIA

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- The updated facility in Washington, DC helps support 43 jobs associated with annual employee compensation of \$2.1 million per annum and local business sales of \$5.6 million;
- Visitors to the Washington, DC location spend more than \$3 million per year; and
- The Aquarium supports \$0.3 million in fiscal impact in Washington, DC.

*Chart E1 provides summary information.*

## Chart E1: Summary of Findings (annual impacts)

### ECONOMIC IMPACT

	BALTIMORE CITY	MARYLAND	WASHINGTON, DC
Employment	2,913	3,304	43
Employee and Proprietor Income (in \$millions)	\$124.8	\$135.8	\$2.1
Business Sales	\$271.7	\$314.0	\$5.6

### FISCAL IMPACT

	BALTIMORE CITY	MARYLAND	WASHINGTON, DC
Income Tax (in \$millions)	\$3.4	\$5.5	\$0.1
Sales Tax (in \$millions)	\$0.0	\$6.2	\$0.2
Hotel Tax (in \$millions)	\$2.5	\$0.0	\$0.0
<b>TOTAL (in \$millions)</b>	<b>\$5.9</b>	<b>\$11.7</b>	<b>\$0.3</b>

### INPUTS

	BALTIMORE VENUE	WASHINGTON DC VENUE	TOTAL
Visitors	1,334,185	204,997	1,539,182
Visitor Spending (in \$millions)	\$205.8	\$3.1	\$208.9
Operating Expenditures (in \$millions)	\$50.3	\$1.9	\$52.1

Source: Sage Policy Group, Inc.

## An Institution Worth Supporting

From an economic perspective, the National Aquarium is worthy of continued support. Further expansion in operations would generate additional economic impact. The economic and fiscal impacts quantified throughout this report enable stakeholders to understand how important that support is in terms of employment, income, and tax revenues.

## The Economic Contributions of the National Aquarium: A 2012 Assessment

### I. Introduction

This report characterizes and quantifies the economic contributions generated by the National Aquarium, a private, nonprofit organization whose mission is *to inspire conservation of the world's aquatic treasures*. The National Aquarium has two locations—one in Baltimore's Inner Harbor and one in Washington, DC.

The Baltimore location is the number one paid tourist destination in the city. The National Aquarium, Baltimore is comprised of three architecturally distinct pavilions encompassing 500,000 square feet and more than 2.2 million gallons of water capacity: the original Aquarium building, opened in 1981; the Marine Mammal Pavilion, opened in 1990; and the Glass Pavilion, opened in 2006. The location boasts a “living collection that includes more than 16,000 animals from more than 660 species of fish, birds, amphibians, reptiles, and marine mammals that live in award-winning exhibits.”<sup>1</sup> In addition to live animal exhibits, the venue offers behind-the-scenes tours, sleepovers, and hosts special events. The location supports 275 paid staff and more than 600 trained volunteers. The venue attracts more than 1.3 million visitors each year.

## National Aquarium supports a total economic impact of \$319.6 million

It is important to note that while the Aquarium sustains an iconic structure in Baltimore City, it is an amenity for the entire region. Through August 2012, almost 170,000 visitors from other Maryland locales (approximately 15 percent of total visitation) visited the Aquarium. More of these visitors resided in Baltimore County (131,363) than in any other local jurisdiction.<sup>2</sup> This means that the Aquarium’s ability to educate and sensitize people to environmental and other issues, including young people, penetrates deep into the suburbs.

The Washington, DC location has been at its current address since 1932 and has worked in collaboration with the signature Baltimore location since 2003. Following a five-year renovation effort, the Washington facility was “re-introduced” to the public in 2008 and now features a “45-minute showcase of more than 250 unique and engaging species including alligators, piranha, shark, eel, gar, and adorable loggerhead turtles.”<sup>3</sup> The location hosts more than 200,000 visitors each year. It should be noted that despite its name and location, the Washington, DC site receives no federal operating support.<sup>4</sup>

Through their operations and ongoing capital investments, the National Aquarium produces significant economic and fiscal impacts in both communities. This study separately assesses the impact of the two locations and uses as its source material operational expenditures and visitor spending data.

Importantly, the study team specifically analyzed the spending of visitors who have stated that their primary reason for visiting Baltimore’s Inner Harbor or Washington, DC was to patronize a National Aquarium facility. As a result, visitor spending that takes place within the walls of the facilities and in the general vicinity can be reasonably attributed to the existence and functioning of these two facilities.

From a geographic perspective, economic and fiscal impacts are separately quantified for the City of Baltimore, the State of Maryland, and the District of Columbia. What is not quantified are some of the spinoff effects that can be fairly attributed to the National Aquarium, including the impact the Aquarium has had in underpin-

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<sup>1</sup> National Aquarium, Baltimore Venue Fact Sheet. Available at [aqua.org/news/fact-sheets/baltimore](http://aqua.org/news/fact-sheets/baltimore).

<sup>2</sup> IMPACTS Research & Development; Tourism Economics

<sup>3</sup> National Aquarium, Washington DC Venue Fact Sheet. Available at [aqua.org/news/fact-sheets/dc](http://aqua.org/news/fact-sheets/dc).

<sup>4</sup> Rent for the National Aquarium, Washington, DC is recused in the Commerce Building.

ning the renaissance of Baltimore’s gleaming waterfront—a waterfront that has attracted global attention and is now viewed by many urban planners as a model for other cities.

## II. Methodology: Quantifying Impacts

To quantify economic impacts, Sage utilized Baltimore City, Washington, DC, and Maryland-specific IMPLAN<sup>5</sup> multipliers to generate estimates of employment, income, and output. Calculated employment impacts include both full and part-time workers. The study team has also calculated employment contributions in the form of full-time equivalents (FTE). Labor income is defined as encompassing all forms of employment income including employee compensation (wages and benefits) and proprietor income (earnings of business owners). Output represents the sum total of value-added contributions. This is captured in the form of business sales that take place due to National Aquarium operating expenditures, associated visitor spending, and secondary impacts produced by the businesses and workers that are directly related to Aquarium operations.

To conduct the fiscal portion of the analysis, Sage relied heavily upon publicly available information including government-published tax rates and budgetary information. As with economic impacts, fiscal impacts have been calculated for the City of Baltimore, the State of Maryland, and the District of Columbia.

### A. KEY ANALYTICAL CONCEPTS AND DEFINITIONS

#### THE NEED TO CONSIDER MULTIPLIER EFFECTS

Economic activity produced by National Aquarium operations generates a multiplier effect that impacts the economies of Baltimore City, Washington, DC, and Maryland and expands the benefits created directly by ongoing activity taking place within the facilities. In the language of economics, these additional economic activities are termed the indirect and induced effects of the jobs, income, and sales generated directly by the facilities.

#### DEFINING DIRECT, INDIRECT, AND INDUCED EFFECTS

**Direct and Indirect Effects**—The jobs physically located at the Aquarium or supported directly by Aquarium visitor spending are considered direct effects. Indirect effects occur

when, for example, the Aquarium or contractors of the Aquarium purchase goods and services from other firms in Baltimore City (inputs), the State of Maryland, and/or the District of Columbia. These businesses purchase everything from building materials to accounting and advertising services and lease equipment from local firms. In turn, these suppliers purchase office supplies, insurance, and many other items and services from other firms, many of which are local. In its totality, this succession of purchases

**National Aquarium  
supports 3347 jobs in  
Baltimore City, Washington,  
DC, and Maryland.**

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<sup>5</sup> IMPLAN is the most commonly utilized econometric software for analyses of its type and has emerged as the industry standard for this type of quantification. The model is comprised of economic multipliers that reflect the statistical relationship between various local industries and the likelihood that certain goods and services will be sourced locally as opposed to outside the community. These multipliers are updated each year and Sage purchases model licenses on an annual basis. This study utilizes the most recent multipliers to date.



by suppliers and suppliers of suppliers produces indirect effects, which are also known as business-to-business purchasing effects.

It should be noted that the model employed for this study attempts to account for every dollar spent, to determine where those dollars were or will be spent and for what purposes. In other words, all of the spending associated with Aquarium operations and visitor spending is integrated into the model, with the multipliers assessing the impact of this spending on the local economy given the relationship between various local industries and the likelihood that money spent on goods and services has been or will be spent within the confines of the community. The greater the level of purchases made within the community, the greater are the impacts of Aquarium operations on the local/regional economy.

**Induced Effects**—The wages and income received by the employees of the Aquarium and of the succession of suppliers linked to the Aquarium create additional effects. A portion of these wages is spent in the City of Baltimore, the State of Maryland, and/or the District of Columbia for a broad range of consumer purchases ranging from housing and groceries to entertainment and holiday gifts.

The economic activity associated with these purchases is termed the induced effect. Again, the model attempts to account for each dollar that is absorbed by the local labor force and determine how those dollars are likely to be spent across product and service types. Most importantly, the model's multipliers reflect the likelihood that purchases by households have been or will be made locally as opposed to outside of the community. The higher the share of purchases made locally, the greater the induced economic effects. It is for this reason that the larger the scope of geographic inquiry, the greater is the likelihood that secondary economic impacts will be captured in the area under consideration.

Direct, indirect, and induced effects can be measured along three dimensions: employment (measured in full-time and part-time jobs as well as in the form of full-time equivalents), income (measured in dollars), and output or sales of goods and services (also measured in dollars). These effects are estimated using proprietary software and a computer model created specifically for this National Aquarium-centered analysis.<sup>6</sup>

Economic impacts calculated in this study can be considered ongoing, annual impacts. These impacts are likely to be similar from year to year absent significant shifts in local economic activity and/or changes to the National Aquarium's scale and scope of offerings. One key aspect of ongoing impacts relates to the retail sales and business services provided to the public directly by the National Aquarium. Visitor spending represents the other significant source of impact. Aquarium visitors spend money on food, transportation, retail items, and lodging in the case of overnight visitors. This spending behavior, in turn, generates jobs, income, and business sales for the local economy.

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<sup>6</sup> Using IMPLAN data, Sage produced a customized economic and fiscal impact model specific to this analysis. IMPLAN employment multipliers encompass total wage and salary employees as well as self-employed people in the region. Both full-time and part-time workers are measured to create an estimate of annual average jobs. CEW (Covered Employment and Wages) data, Regional Economic Information System (REIS), and County Business Patterns are used in conjunction to create the IMPLAN database because no one data set provides enough information to create a complete set of IMPLAN multipliers. In general, CEW data provide the County level industry structure for IMPLAN, while County Business Patterns' data are used to make non-disclosure adjustments to CEW data, and REIS data are used to control totals (i.e., prevent double-counting). These data are critical to the analysis because the model works to capture the manner in which Aquarium operations interact with the local labor market in terms of demand for human capital and need for skill sets not sufficiently supplied by the local workforce.

Finally, in addition to economic impacts, the operations of the National Aquarium and associated visitor spending create fiscal impacts defined as new streams of tax revenue for Baltimore City, the State of Maryland, and the District of Columbia. As with economic impacts, the model works to account for each dollar spent and the manner in which this spending occurs using data characterizing consumer behavior and describing the interaction between various local industries. The model also accounts for nuanced aspects of the relevant tax codes. For instance, in Maryland, services are generally not subject to retail sales taxes. The model accounts for this. The model cannot, however, predict future changes in the City or State tax code. For instance, if over time the State of Maryland decides to apply the retail sales tax to additional service segments, Sage's estimates of future fiscal impact will prove understated.

This analysis includes estimates of income tax, sales tax, other taxes, and applicable fees. These taxes are calculated within Sage's model using published tax rates. Incorporating fiscal impacts directly into a model rather than conducting economic and fiscal impact analyses separately ensures internal consistency between estimated economic and fiscal impacts. However, to ensure that the IMPLAN model is properly calculating tax revenue impacts, Sage separately calculates tax impacts manually. Sage has determined that the Sage-modified IMPLAN model has produced robust estimates of both economic and fiscal impacts associated with the National Aquarium facilities in Baltimore and Washington, DC.

## **B. ECONOMIC AND FISCAL IMPACTS ARE A PRODUCT OF OPERATING EXPENDITURES AND VISITOR SPENDING**

It is worth noting that expenditures are typically viewed as a negative aspect of business life. However, in the world of economic impact modeling, expenditures are to be viewed more positively since the greater the level of expenditures, the greater the level of economic impact upon the community. For instance, larger expenditures on payroll imply larger income gains and enhanced local purchasing power.

In 2012, the Baltimore location paid more than \$17 million in payroll expenses. The Washington, DC location had payroll expenditures of roughly \$800,000. The facilities also spent significant sums on capital improvements, utilities, advertising, and other services. In total, the National Aquarium registered \$50.3 million in expenditures in 2012 in Baltimore and \$1.9 million in expenditures in Washington, DC. Chart 1 details expenditures associated with operations at the facilities in Baltimore and Washington, DC.

**CHART 1: NATIONAL AQUARIUM EXPENDITURES BY LOCATION, 2012**

TYPE OF EXPENDITURE (IN \$MILLIONS)	BALTIMORE	WASHINGTON, DC
Payroll	\$17.2	\$0.8
Capital Expenditures*	\$6.1	\$0.3
Utilities	\$3.4	\$0.0
Advertising, Printing, Publishing	\$3.3	\$0.2
Maintenance/Repairs	\$2.9	\$0.0
Supplies	\$2.6	\$0.1
Professional, Legal and Consulting	\$1.3	\$0.1
Retail Services	\$3.0	\$0.0
Guest Photo Services	\$0.8	\$0.0
Food Services	\$2.3	\$0.0
Catering Services	\$3.3	\$0.2
Other	\$4.0	\$0.1
<b>TOTAL</b>	<b>\$50.3</b>	<b>\$1.9</b>

\*Five-year average, \$12.6 million Blacktip Reef capital project projected for 2012 to 2013

Source: National Aquarium, Sage Policy Group, Inc.

Chart 2 provides a breakdown of revenues for the National Aquarium by location and type. Although these figures were not used to quantify the economic impact of the two locations, these data are still noteworthy (economic impact is driven by expenditures as opposed to revenues, but revenues support the expenditures). The economic and fiscal impacts quantified in this report help stakeholders understand how important that support is in terms of employment and income. Naturally, there is also a strong educational component attached to the National Aquarium.

## CHART 2: NATIONAL AQUARIUM REVENUES BY LOCATION, 2012 (IN \$MILLIONS)

TYPES OF REVENUES	BALTIMORE	WASHINGTON, DC
General Admission Ticket Sales	\$24.8	\$1.6
Groups/Education Programs	\$3.9	\$0.0
Memberships	\$3.6	\$0.0
Contributions and Grants	\$9.5	\$0.1
Catered Events and Net Receipts	\$3.7	\$0.0
Retail Sales	\$7.7	\$0.0
Other	\$2.3	\$0.4
<b>TOTAL REVENUES</b>	<b>\$55.5</b>	<b>\$2.1</b>

Source: National Aquarium, Sage Policy Group, Inc.

In 2012, the National Aquarium anticipates welcoming over 1.5 million visitors, with more than 1.3 million visiting the Baltimore location and 200,000 visiting the Washington, DC location. Approximately 70 percent of visitors to the Baltimore location and nearly 90 percent of the Washington site visitors purchased general admission tickets. Other visitors were members of educational and other groups, National Aquarium members, and/or attendees of special events. Please see Chart 3 for relevant statistical detail.

## CHART 3: NATIONAL AQUARIUM VISITORS, 2012

	BALTIMORE			WASHINGTON, DC
	MARYLAND RESIDENTS	OUT-OF-STATE RESIDENTS	TOTAL	TOTAL
General Admissions	308,123	625,582	933,705	183,174
Educational Groups	59,738	48,877	108,615	8,340
Tour Groups	21,848	66,607	88,455	7,594
Members	109,932	42,751	152,683	3,222
Other	35,509	15,218	50,727	2,667
<b>SUBTOTAL</b>	<b>535,150</b>	<b>799,035</b>	<b>1,334,185</b>	<b>204,997</b>

Source: National Aquarium

**TOTAL VISITORS 1,539,182**

One of the major issues in economic impact modeling is the attribution problem. This is particularly true with respect to tourist destinations. The analytical question revolves around the extent to which visitor spending outside of the facility being studied can be properly attributed to the facility. Fortunately, in the case of the National Aquarium, the attribution problem is not of particular concern. That's because 88.14 percent of visitors to the Aquarium in Baltimore reported that it was the primary reason for their visit according to the 2012 National Aquarium Annual Summary of Visitor Research by IMPACTS Research & Development (IMPACTS).

Accordingly, for purposes of this impact study, the study team presumed that 88.14 percent of all visitors visited Baltimore with the Aquarium as the main reason for their visit. For the Washington, DC location, the study team assumed that 10 percent of all visitors visited Washington, DC with the Aquarium as the main reason for their visit. Therefore, attributed visitor spending estimates only reflect spending by 88 percent of visitors to the Baltimore location and 10 percent of visitors to the Washington, DC location.

Nearly one out of every three (31.3 percent) visitors to National Aquarium, Baltimore stays overnight in the region. The study team based this estimate on the number of visitors surveyed by IMPACTS who stated they were staying in the area overnight. For the Washington, DC location, the study team assumed no visitors with a primary reason for visiting the Aquarium stayed overnight.

Based on information supplied by IMPACTS and Tourism Economics, the study team estimated the average spending of a visitor to the National Aquarium. According to these sources, the average day trip visitor to the Aquarium spends \$109.80 per trip while an overnight visitor spends approximately \$372.18 per trip, including \$123.78 on lodging.<sup>7</sup> The study team assumed similar spending patterns for visitors to both locations.

The study team estimates that visitors to the National Aquarium, Baltimore spend more than \$205 million per year while visitors to the Washington, DC location spend more than \$3 million per year on lodging, transportation, food, shopping, gas, and recreation. Food and beverage and shopping figures reflect spending on food, concessions, and souvenirs at the Aquarium and recreation figures include ticket sales for the Aquarium. See Chart 5 for related statistical detail.

Visitor spending provides a majority of the impact associated with the National Aquarium facilities, Baltimore and Washington, DC. The section below describes the combined impact of visitor spending and facility operation.

**88.14 percent of visitors to the Aquarium in Baltimore reported that it was the primary reason for their visit**

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<sup>7</sup> Economic and fiscal impacts assume that 57.1 percent of visitors stayed in hotels and motels while all remaining visitors stayed in homes of friends and family.

#### CHART 4: VISITOR SPENDING ESTIMATES PER VISITOR

CATEGORY	OVERNIGHT (IN MILLIONS)	DAY TRIP (IN MILLIONS)
Lodging	\$123.78	\$0.00
Local Transportation	\$27.38	\$11.57
Food and Beverage	\$98.77	\$39.05
Shopping	\$53.19	\$19.52
Gas Stations	\$9.12	\$3.85
Recreation	\$59.93	\$35.81
<b>TOTAL</b>	<b>\$372.18</b>	<b>\$109.80</b>

Sources: IMPACTS Research & Development; Tourism Economics

#### CHART 5: NATIONAL AQUARIUM ANNUAL VISITOR SPENDING (IN \$ MILLIONS)

VISITOR SPENDING (IN MILLIONS)	BALTIMORE		WASHINGTON, DC
	OVERNIGHT	DAY TRIP	DAY TRIP
Lodging	\$26.0	\$0.0	\$0.0
Local Transportation	\$10.1	\$9.3	\$0.2
Food and Beverage (includes sales in Aquarium)	\$36.3	\$31.5	\$0.8
Shopping (includes sales in Aquarium)	\$19.5	\$15.7	\$0.4
Fuel	\$3.4	\$3.1	\$0.1
Recreation (includes Aquarium admission)	\$22.0	\$28.9	\$1.6
<b>NUMBER OF VISITORS WITH AQUARIUM AS MAIN PURPOSE</b>	<b>367,488</b>	<b>806,595</b>	<b>20,500</b>
<b>TOTAL</b>	<b>\$117.3</b>	<b>\$88.6</b>	<b>\$3.1</b>

Source: National Aquarium

### III. The Economic and Fiscal Impacts of the National Aquarium

#### A. ECONOMIC IMPACTS

The study team measured the impact of the National Aquarium along four dimensions—output/sales, employment (total and FTE), employee compensation (which includes the value of benefits), and proprietor's income (i.e., business owner income). These impacts are based on 2012 visitor and expenditure statistics with the exception of capital expenditures, for which the study team utilized a five-year average.

Direct job impacts reflect those generated directly by visitor spending, on-site jobs, and those jobs held by contractors that would otherwise be reflected on a corporate or institutional payroll. Sage estimates that the National Aquarium, Baltimore generates 2,257 *direct* full and part-time jobs (1,894 FTE) annually. An additional 279 jobs are supported citywide annually due to the purchase of a variety of services provided by area businesses to support Aquarium operations (indirect impacts). The Aquarium supports an additional 378 jobs in Baltimore City by enhancing spending in the local economy. These jobs fall within the induced effects category.

Visitor spending and operations support 2,913 jobs (2,483 FTE) in Baltimore City with associated employee compensation of \$117.6 million and proprietor income of \$7.2 million per year. The National Aquarium, Baltimore also supports \$271.7 million in annual sales of goods and services by city businesses once multiplier effects are fully considered.

On a statewide basis, National Aquarium operations and visitor spending support an estimated 3,304 jobs (includes the jobs in Baltimore City) with associated employee compensation of \$126.8 million and proprietor income of \$9.0 million. Businesses statewide benefit from augmented sales of \$314 million, with a large fraction of sales taking place in Baltimore City. The impact upon Maryland's economy is associated with the Baltimore facility. While not reflected in this study, some of the impacts from the Washington, DC facility that do not take place in the District take place in Maryland and Virginia. These include visitor and employee spending and purchases from suppliers that are not located within the District of Columbia.

Visitor spending and the operations of the National Aquarium in Washington, DC support 43 jobs (36 FTE) in the District with associated employee compensation of \$2.1 million and proprietor income of \$0.1 million. This activity also supports \$5.6 million in annual sales of goods and services among Washington, DC businesses.

In total, the National Aquarium generates substantial employment (3,347 jobs) and economic impacts (\$319.6 million) annually to the State of Maryland, the City of Baltimore, and Washington, DC. Chart 6 further details the employment and economic impacts of both locations.

## CHART 6: ANNUAL ECONOMIC IMPACT OF NATIONAL AQUARIUM OPERATIONS AND VISITOR SPENDING

TYPE OF IMPACT	FULL & PART-TIME JOBS	FULL-TIME EQUIVALENT JOBS	EMPLOYEE COMPENSATION (IN \$ MILLIONS)	EMPLOYEE WAGES & SALARIES (IN \$ MILLIONS)	PROPRIETOR INCOME (IN \$ MILLIONS)	BUSINESS SALES (IN \$ MILLIONS)
<b>BALTIMORE CITY</b>						
Direct effects	2,256.5	1,893.9	\$82.7	\$70.1	\$3.8	\$175.3
Indirect effects	278.9	253.9	\$15.2	\$12.5	\$1.9	\$42.8
Induced effects	377.8	334.9	\$19.7	\$16.4	\$1.5	\$53.5
<b>TOTAL</b>	<b>2,913.1</b>	<b>2,482.7</b>	<b>\$117.6</b>	<b>\$99.0</b>	<b>\$7.2</b>	<b>\$271.7</b>
<b>MARYLAND</b>						
Direct effects	2,279.6	1,913.5	\$83.6	\$71.4	\$3.9	\$176.3
Indirect effects	377.7	345.2	\$17.1	\$14.0	\$2.2	\$55.3
Induced effects	646.8	573.2	\$26.0	\$21.7	\$3.0	\$82.4
<b>TOTAL</b>	<b>3,304.2</b>	<b>2,831.8</b>	<b>\$126.8</b>	<b>\$107.1</b>	<b>\$9.0</b>	<b>\$314.0</b>
<b>WASHINGTON, DC</b>						
Direct effects	34.9	29.1	\$1.6	\$1.4	\$0.1	\$3.9
Indirect effects	4.8	4.3	\$0.3	\$0.3	\$0.0	\$1.2
Induced effects	3.2	2.8	\$0.2	\$0.2	\$0.0	\$0.6
<b>TOTAL</b>	<b>42.9</b>	<b>36.2</b>	<b>\$2.1</b>	<b>\$1.8</b>	<b>\$0.1</b>	<b>\$5.6</b>

Note: Numbers may not add due to rounding. Source: Sage Policy Group, Inc.

### B. FISCAL IMPACTS

The economic impacts summarized above are associated with tax revenue creation for Baltimore City, the State of Maryland, and the District of Columbia. Principal sources of tax revenue include income and retail sales/use taxes. Another important source of local tax revenue is the hotel tax that is levied on the cost of lodging.

Fiscal impacts for Baltimore City, the State of Maryland, and the District of Columbia are summarized in Chart 7. Baltimore City receives \$5.9 million per year in tax revenues as a result of National Aquarium operations and associated visitor spending. This includes \$3.4 million in income tax revenues and \$2.5 million in hotel tax revenues. The State of Maryland collects \$11.7 million in annual tax revenues as a result of National Aquarium operations. This includes \$5.5 million in income tax revenues and \$6.2 million in sales tax revenues. The District of Columbia collects \$0.3 million in annual tax revenues as a result of National Aquarium operations. This includes \$0.1 million in income tax revenues and \$0.2 million in sales tax revenues.



In total, the National Aquarium contributes \$17.9 million in fiscal impact to the three governments. Not captured in these estimates is impact upon other local governments, including Baltimore County and Anne Arundel County, which are also likely to benefit from visitation to the Aquarium (e.g., through overnight stays at local hotels).

**CHART 7: ANNUAL FISCAL IMPACT OF AQUARIUM OPERATIONS AND VISITOR SPENDING**

	BALTIMORE CITY	MARYLAND	WASHINGTON, DC
Income	\$3.4	\$5.5	\$0.1
Sales	\$0.0	\$6.2	\$0.2
Hotel	\$2.5	\$0.0	\$0.0
<b>TOTAL</b>	<b>\$5.9</b>	<b>\$11.7</b>	<b>\$0.3</b>

Source: Sage Policy Group, Inc.

## Conclusion

The National Aquarium supports a signature facility in Baltimore that forms the heart of the city’s waterfront-led renaissance and an updated, increasingly important facility in Washington, DC. The Baltimore facility’s architecture is iconic. Its presence is largely responsible for the revitalization of the Inner Harbor, which in turn is responsible for the rejuvenation of neighborhoods such as Federal Hill, Fells Point, Otterbein, Canton, and the development of Harbor East.

The study team estimates that visitors to the National Aquarium, Baltimore spend more than \$205 million per year while visitors to the Washington, DC location spend more than \$3 million per year on lodging, transportation, food, shopping, gas, and recreation.

Facility operations and visitor spending jointly produce large regional economic impacts. In Baltimore City, the National Aquarium directly and indirectly supports more than 2,900 jobs for a total employee compensation of \$117.6 million. Local business sales are bolstered by nearly \$272 million. Statewide, the National Aquarium supports 3,300 jobs, and nearly \$127 million in annual employee compensation and \$314 million in business sales.

In Washington, DC, the presence of the National Aquarium has expanded in recent years. After five years of renovations, the Washington, DC facility was re-introduced to the community in 2008. Today, the facility supports 43 jobs associated with annual employee compensation of \$2.1 million per annum. The facility also supports \$5.6 million in total business sales.

These economic contributions produce positive fiscal impacts. In the City of Baltimore, Aquarium operations support nearly \$6 million in annual tax revenues. The State of Maryland receives \$11.7 million in annual tax revenues from the Aquarium. City and State fiscal impacts are mutually exclusive. The Aquarium supports \$0.3 million in fiscal impact in Washington, DC. Collectively, the Aquarium supports \$17.9 million in fiscal impact for these three governments.

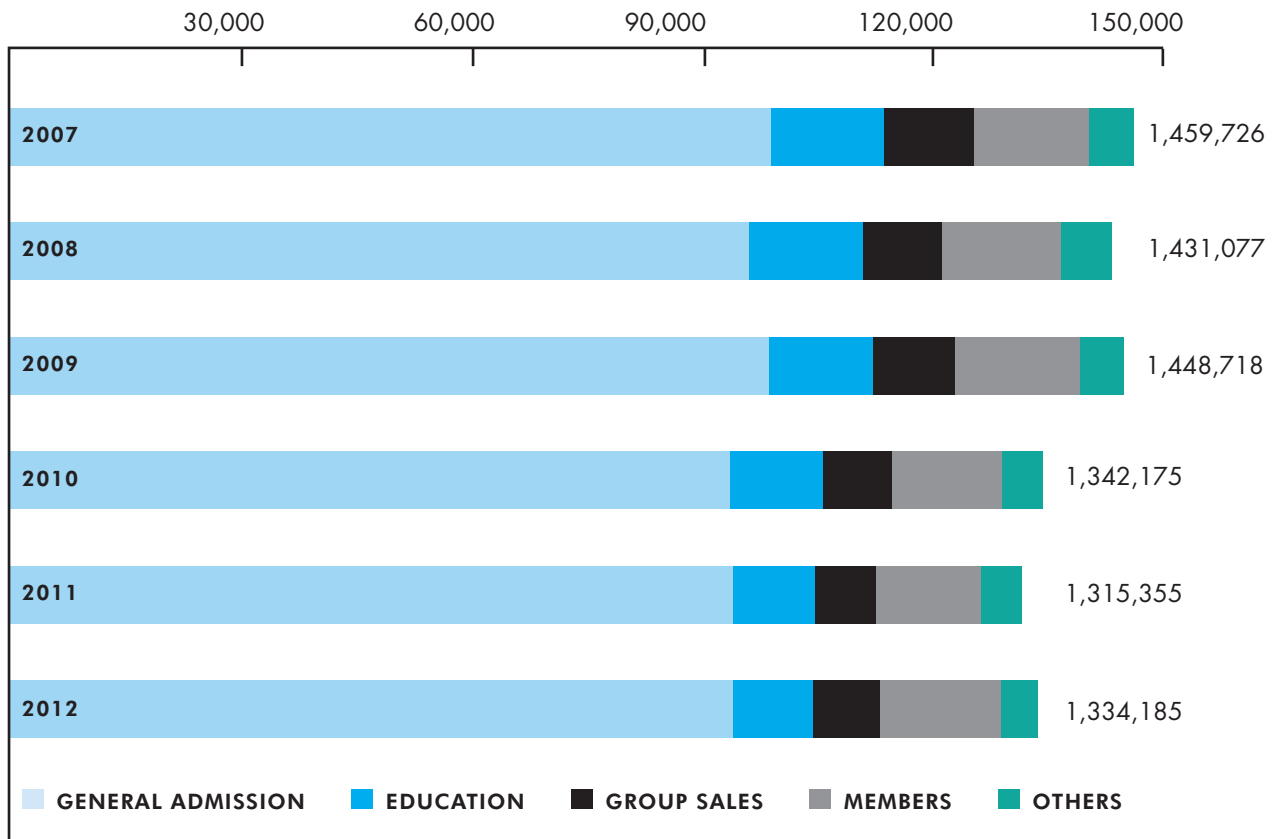
From an economic and policy perspective, the National Aquarium is worthy of continued support. Further expansion in operations would generate additional economic impact. In order to continue to attract visitors from around the world and remain a vibrant economic engine, the National Aquarium requires the continued support of the broader public, policymakers, and major donors. The economic and fiscal impacts quantified throughout this report enable stakeholders to understand how important that support is in terms of employment, income, and tax revenues.

## **Appendix**

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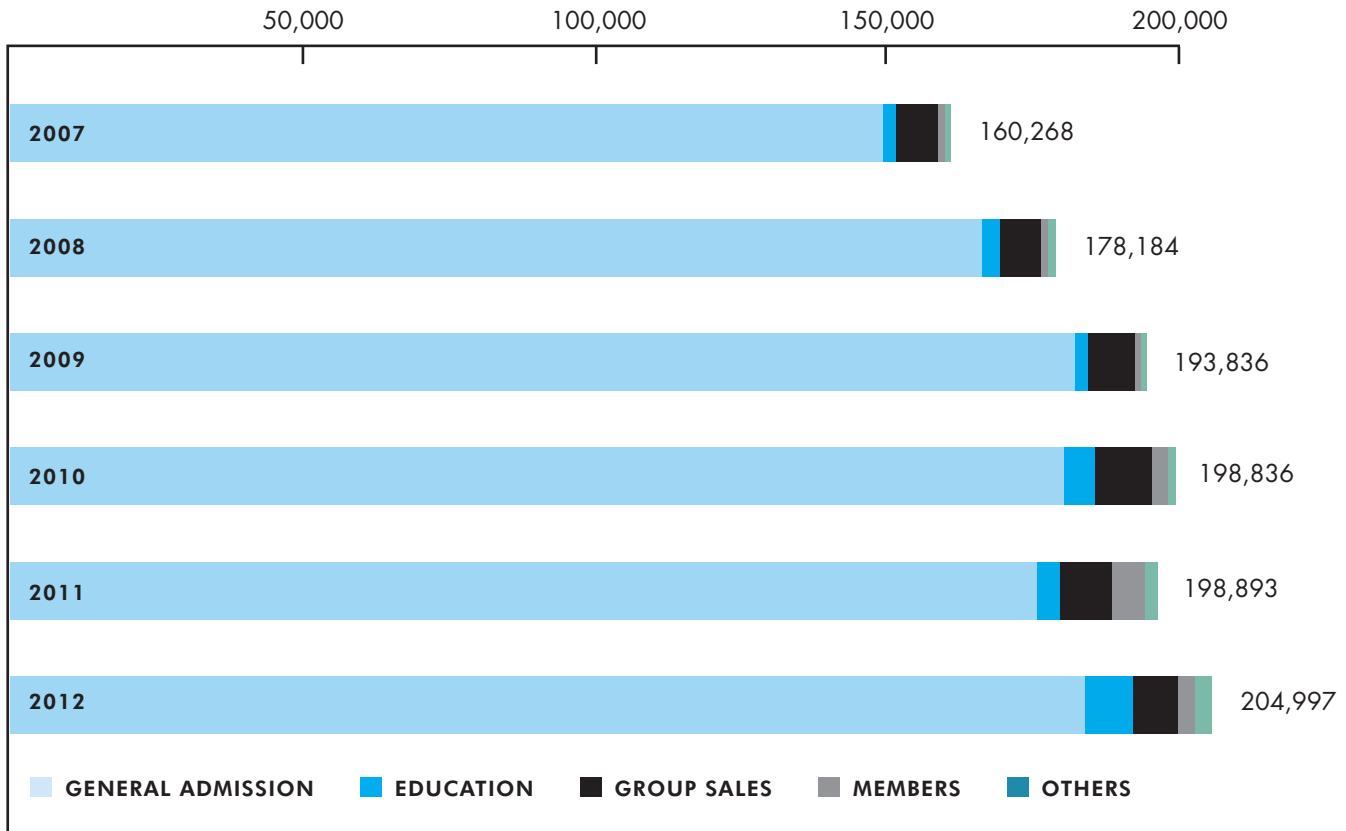
Charts A1 and A2 provide additional detail regarding attendance figures for the two National Aquarium locations for the years 2007-2012. Attendance at the National Aquarium, Baltimore has slipped 9.4 percent since 2007 when attendance stood at 1.46 million visitors, likely a reflection of the economic downturn, but grew 1.4 percent over last year's total. With the exception of 2011, attendance at the Washington, DC location has been increasing each year with 2012 attendance 27.9 percent higher than in 2007.

**CHART A1: NATIONAL AQUARIUM, BALTIMORE ATTENDANCE BY TYPE OF VISITOR, 2007 THROUGH 2012**



Source: National Aquarium

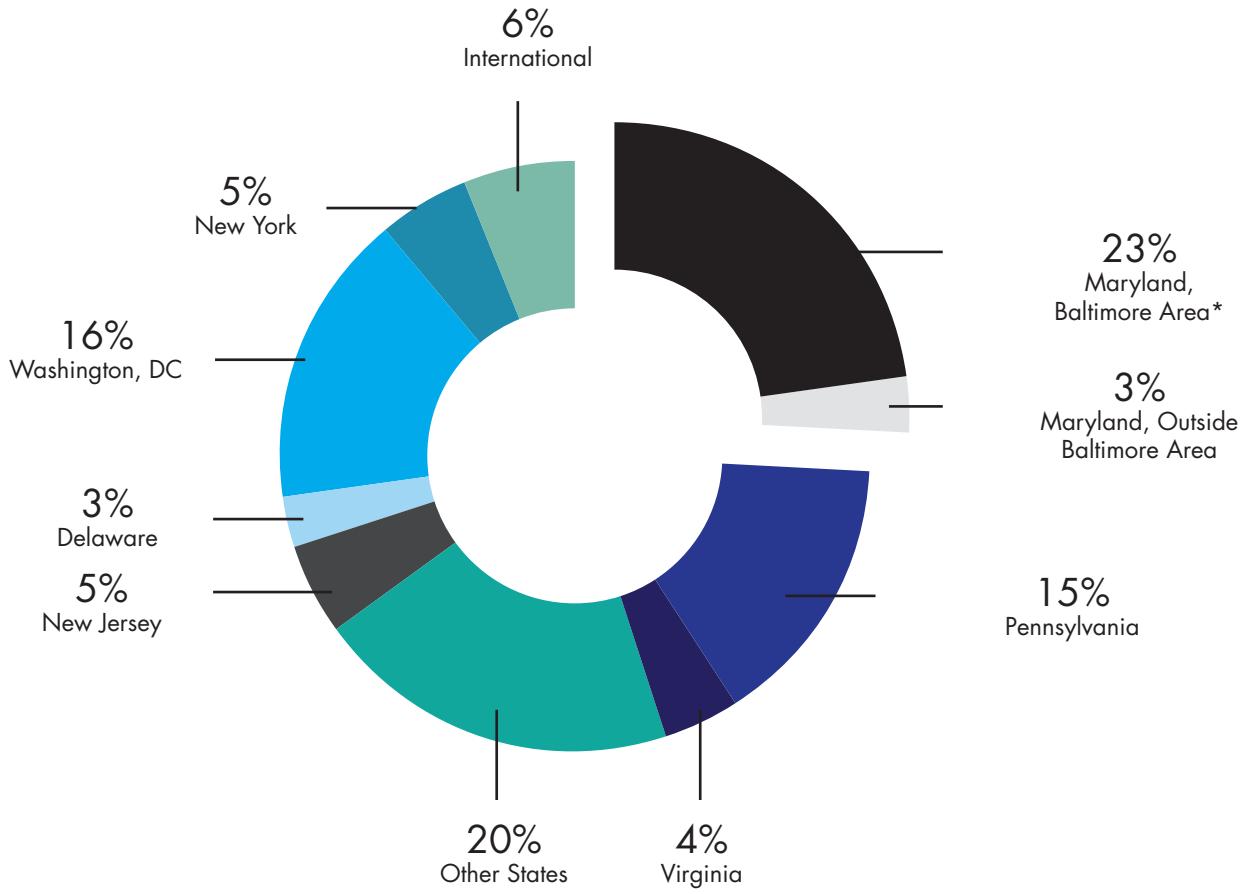
**CHART A2: NATIONAL AQUARIUM, WASHINGTON, DC ATTENDANCE BY TYPE OF VISITOR, 2007 THROUGH 2012**



Source: National Aquarium

Chart A3 provides detail regarding the regional breakdown of National Aquarium visitors to the Baltimore location. In 2010, 26 percent of visitors were from Maryland while another 16 percent were from Washington, DC. Pennsylvania residents accounted for the second largest share of out-of-state visitors with 15 percent. International visitors from Canada, the United Kingdom, France, and other international locations accounted for 6 percent of visitation to the National Aquarium’s Baltimore location.

CHART A3: 2011 NATIONAL AQUARIUM, BALTIMORE VISITOR ORIGIN



\*Baltimore Area refers to Baltimore City and Baltimore metropolitan suburbs  
Source: National Aquarium

The chart below provides additional detail regarding the economic impact of the National Aquarium. Specifically, the chart provides insight into the different economic impacts of operations and visitor spending.

**CHART A4: BREAKDOWN OF ECONOMIC IMPACT OF NATIONAL AQUARIUM, 2012**

<b>OPERATIONS</b>						
<b>TYPE OF IMPACT</b>	<b>FULL &amp; PART-TIME JOBS</b>	<b>FULL-TIME EQUIVALENT JOBS</b>	<b>EMPLOYEE COMPENSATION (IN \$MILLIONS)</b>	<b>EMPLOYEE WAGES &amp; SALARIES (IN \$MILLIONS)</b>	<b>PROPRIETOR INCOME (IN \$MILLIONS)</b>	<b>BUSINESS SALES (IN \$MILLIONS)</b>
<b>BALTIMORE CITY</b>						
Direct effects	442.4	377.8	\$25.6	\$22.0	\$1.4	\$52.9
Indirect effects	104.0	95.4	\$5.6	\$4.7	\$0.8	\$16.4
Induced effects	122.6	108.7	\$6.4	\$5.3	\$0.5	\$17.4
<b>TOTAL</b>	<b>668.9</b>	<b>581.8</b>	<b>\$37.6</b>	<b>\$32.0</b>	<b>\$2.7</b>	<b>\$86.7</b>
<b>MARYLAND</b>						
Direct effects	450.7	384.9	\$26.1	\$22.4	\$1.4	\$52.9
Indirect effects	136.8	125.5	\$5.8	\$4.8	\$0.9	\$20.0
Induced effects	221.7	196.5	\$8.9	\$7.4	\$1.0	\$28.2
<b>TOTAL</b>	<b>809.2</b>	<b>706.9</b>	<b>\$40.8</b>	<b>\$34.6</b>	<b>\$3.3</b>	<b>\$101.2</b>
<b>WASHINGTON, DC</b>						
Direct effects	16.8	14.0	\$1.0	\$0.9	\$0.0	\$2.6
Indirect effects	3.7	3.4	\$0.3	\$0.2	\$0.0	\$0.9
Induced effects	2.1	1.8	\$0.1	\$0.1	\$0.0	\$0.4
<b>TOTAL</b>	<b>22.5</b>	<b>19.1</b>	<b>\$1.4</b>	<b>\$1.2</b>	<b>\$0.0</b>	<b>\$3.9</b>

<b>VISITOR SPENDING</b>						
<b>TYPE OF IMPACT</b>	<b>FULL &amp; PART-TIME JOBS</b>	<b>FULL-TIME EQUIVALENT JOBS</b>	<b>EMPLOYEE COMPENSATION (IN \$MILLIONS)</b>	<b>EMPLOYEE WAGES &amp; SALARIES (IN \$MILLIONS)</b>	<b>PROPRIETOR INCOME (IN \$MILLIONS)</b>	<b>BUSINESS SALES (IN \$MILLIONS)</b>
<b>BALTIMORE CITY</b>						
Direct effects	1,814.1	1,516.2	\$57.1	\$48.1	\$2.4	\$122.4
Indirect effects	174.9	158.6	\$9.6	\$7.8	\$1.1	\$26.4
Induced effects	255.2	226.2	\$13.3	\$11.1	\$1.0	\$36.2
<b>TOTAL</b>	<b>2,244.2</b>	<b>1,900.9</b>	<b>\$80.0</b>	<b>\$67.1</b>	<b>\$4.5</b>	<b>\$185.0</b>
<b>MARYLAND</b>						
Direct effects	1,828.8	1,528.5	\$57.5	\$49.0	\$2.4	\$123.4
Indirect effects	240.9	219.7	\$11.3	\$9.2	\$1.3	\$35.3
Induced effects	425.1	376.7	\$17.1	\$14.2	\$1.9	\$54.1
<b>TOTAL</b>	<b>2,494.8</b>	<b>2,124.8</b>	<b>\$85.9</b>	<b>\$72.4</b>	<b>\$5.7</b>	<b>\$212.8</b>
<b>WASHINGTON, DC</b>						
Direct effects	18.2	15.2	\$0.5	\$0.5	\$0.1	\$1.3
Indirect effects	1.1	1.0	\$0.1	\$0.1	\$0.0	\$0.3
Induced effects	1.1	1.0	\$0.1	\$0.1	\$0.0	\$0.2
<b>TOTAL</b>	<b>20.3</b>	<b>17.1</b>	<b>\$0.7</b>	<b>\$0.6</b>	<b>\$0.1</b>	<b>\$1.7</b>

*Note: Numbers may not add due to rounding. Source: Sage Policy Group, Inc.*



## **We inspire conservation of the world's aquatic treasures.**

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### **Baltimore, MD**

501 E. PRATT STREET  
BALTIMORE, MARYLAND, 21202  
410-576-3800  
TTY/TDD: 410-727-3022

### **Washington, DC**

COMMERCE BUILDING, ROOM B-077  
14TH AND CONSTITUTION AVENUE, NW  
WASHINGTON, DC 20230  
202-482-2825

