

The Virginia Aquarium & Marine Science Center



DESTINATION OF CHOICE: THE VIRGINIA AQUARIUM & MARINE SCIENCE CENTER

Which tourist and scientific center in Hampton Roads has attracted 11 million guests (including 1 million students) since opening in 1986? What is the Commonwealth's most popular non-historical, nonprofit tourist attraction? Unless tutored, many might be inclined to answer the Nauticus/ USS Wisconsin complex in Norfolk to both questions. The correct answer, however, is the Virginia Aquarium & Marine Science Center in Virginia Beach.

The 11 million visitors have been treated to unique and educational experiences with live animal displays, interactive science exhibits, and both in-house and outreach natural history programs. In addition, the Virginia Aquarium's Research and Conservation division has made major contributions to the scientific understanding of marine mammals and sea turtles in the mid-Atlantic region. The Aquarium employs 142 people throughout the year and utilizes an amazing 1,000 volunteers and numerous student interns in a variety of support roles.

Whether or not one is interested in the attractive exhibits and programs the Aquarium has to offer, it should be of interest that the facility forms the foundation stone for the strategic development and enhancement of a large section of Virginia Beach, which stretches from Rudee Inlet in the north to Oceana Naval Air Station in the south. Over the next few decades, this plan is anticipated to reshape this section of the city.

From Idea to Aquarium

Soon to celebrate its 25th anniversary, the Virginia Aquarium & Marine Science Center started as an idea in 1973, when C. Mac Rawls, a science supervisor for Virginia Beach Public Schools, was asked to head a panel to study the school board's suggestion for a science resource room. After two years of study

and discussion, the panel recommended a marine science museum devoted to educating the public about Virginia's marine environment, and suggested the city hire an expert to review the committee's plan and offer further recommendations. The project became known as the Virginia Beach Marine Science Museum and, in 1979, the city of Virginia Beach donated a 9-acre site between Owl Creek and General Booth Boulevard for the facility. Rawls was named director of the museum.

A year later, the City Council appointed three task forces to aid in the development of the Virginia Marine Science Museum, whose first task was to rename the yet-to-be-built facility the Virginia Museum of Marine Sciences. Shortly thereafter, the 10-member Museum Foundation Task Force officially formed the Virginia Marine Science Museum Foundation Inc., which was – and still is – the Aquarium's nonprofit fundraising body. In 1983, the foundation, as well as other museum supporters, successfully lobbied to persuade the Virginia General Assembly to appropriate \$2 million for construction of the museum. The city of Virginia Beach added \$3.5 million, and the project was soon under way.

Meanwhile, the foundation conducted a \$2 million capital campaign to pay for the museum's exhibits, while other related happenings were taking place. Rawls and his staff of six moved from their office on Arctic Avenue to their new quarters at Camp Pendleton, and Harold, a 17-pound lobster caught by Hagan Seafood Corp., was donated to the museum as its first live animal exhibit.

On June 14, 1986, the 41,500-square-foot facility officially opened to the public, but not before undergoing another name change, back to the Virginia Marine Science Museum. Attendance that summer exceeded projections by about 45 percent, as more than 109,000 visitors entered the doors in the first three months.

Conservation Leads the Way

In the late 1980s, the museum took its conservation-through-education mission to the next level, and a team of expert staff and volunteers, funded by the foundation, began responding to stranded marine mammals and sea turtles that washed up sick, injured or dead along Virginia's shores. The new stranding program provided the impetus for numerous research projects on seals, dolphins, right whales and endangered sea turtles, leading to millions of dollars in conservation research grants and positioning the staff as experts in those fields. Today, the Aquarium's right whale expert teaches staff at other institutions on the East Coast about the biology and behavior of these animals and is frequently called upon to participate in a stranding event or necropsy (animal autopsy) of this species. And because of the 2009 acquisition of a pair of critically endangered *tomistoma* crocodiles – one of only seven pairs in the United States – the Aquarium's reptile curator has traveled to Thailand and Borneo to both study the animals in the wild and consult on in situ research projects. And research begets research: **the Aquarium's academic, government and non-government partnerships resulted recently in the awarding of an estimated \$4.5 million National Oceanic and Atmospheric Administration grant for sea turtle research.**

Also during this year, the foundation funded the development of an outreach program that has evolved into the present-day Ocean in Motion traveling aquarium program. Today, Ocean in Motion travels as far away as Bristol, Staunton and Danville, bringing marine education, along with a host of saltwater critters, to more than 25,000 schoolchildren annually.

Expanding and Attracting

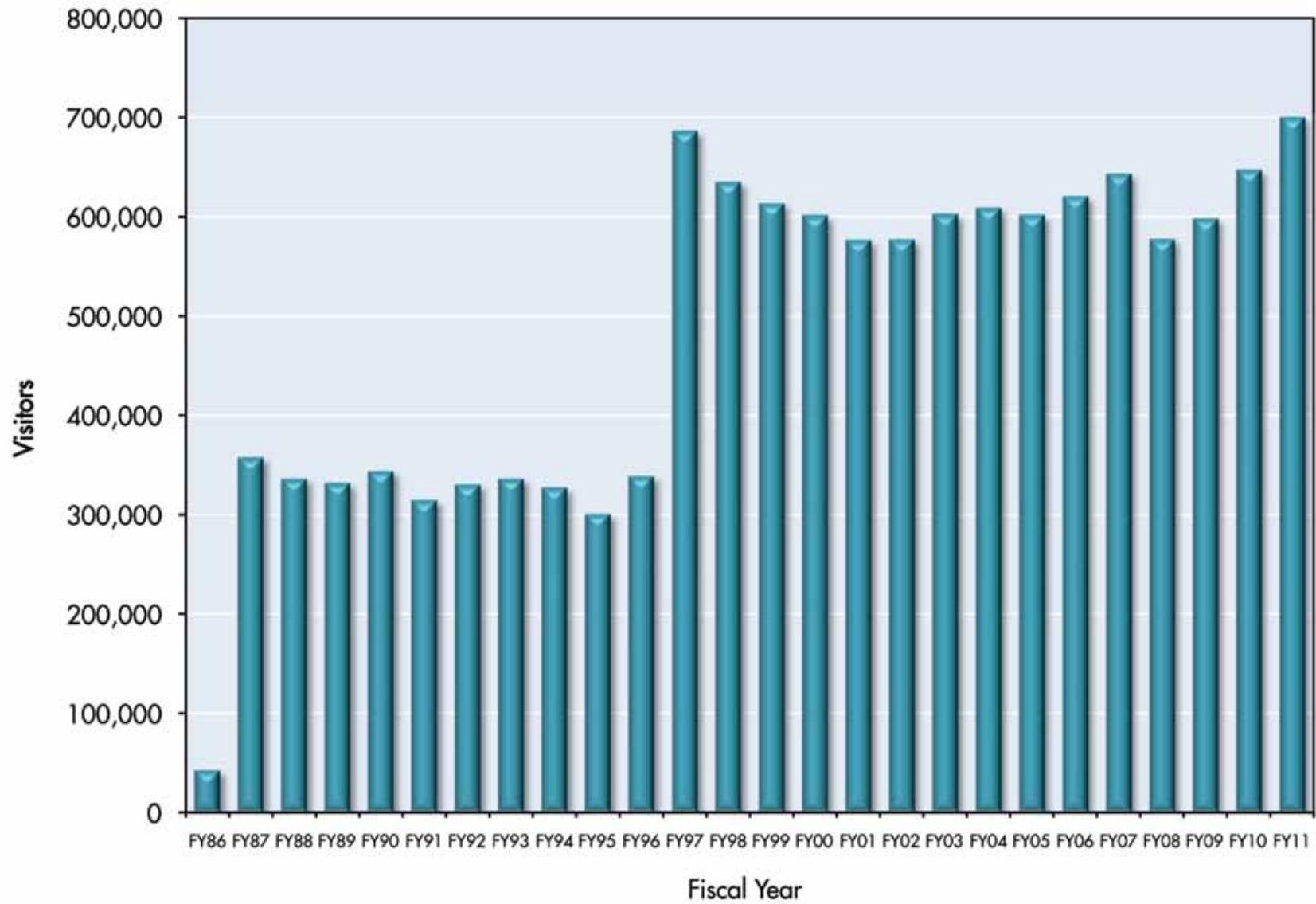
By the early 1990s, plans were in place for a second phase of the Virginia Marine Science Museum that would triple its size to 120,000 square feet, and add more than 45 acres of land, two buildings and a connecting nature trail over the Owl Creek marsh. Virginia Beach City Council approved \$32.8 million from the Tourism Growth Investment Fund (a direct funding stream from the city's hospitality industry) for the expansion.

As an additional source of revenue, the museum introduced winter whale watching trips, developing an off-season tourism industry for the city. In 2009, this venture resulted in an estimated \$611,000 in direct spending to local hotels, restaurants and shops. The foundation raised another \$5 million for the expansion's exhibits, and phase II opened in 1996 with an attendance increase that surpassed projections. The two years following the expansion saw an unprecedented period of growth for the facility, with annual attendance approaching 700,000 in 1997, then settling around the 600,000 level by 1999, where it remained for the next decade.

Competition for tourist dollars is intense and sites that are perceived to be old or unchanged often experience a drop in attendance. Such perceptions make it more difficult to attract both new visitors in search of a novel experience and repeat visitors. It appears that this has been responsible for the facility's stagnant and falling attendance rates during the past decade. The foundation responded to this circumstance with a set of attractive new exhibits, but they took time to develop and construct and in the short-term probably reduced rather than increased attendance. However, these innovations have been successful. Graph 1 reveals that attendance at the Virginia Aquarium & Marine Science Center (so named on July 1, 2004) was projected to reach 647,000 in fiscal year 2010, and 700,000 in fiscal year 2011 because of the new exhibits.

GRAPH 1

VISITOR ATTENDANCE AT THE VIRGINIA AQUARIUM



Visitors do much more than see fish when they come to the Virginia Aquarium. Per capita spending has increased from \$9.35 in FY 1999 to \$14.16 in FY 2010.

In addition to Aquarium admission, guests purchase IMAX film tickets, gift shop souvenirs and Aquarium-themed photos. They also dine in the café, cruise the creek on a pontoon boat and opt to get wet in animal encounter programs like the in-the-water Seal Splash. The Aquarium’s effort to increase earned income has created spinoff revenue in the form of taxes for the city of Virginia Beach as well as the Commonwealth of Virginia. Admission and sales/meal taxes generated as a result of Aquarium operations grew from \$396,000 in FY 1999 to \$774,000 in FY 2010, a 95 percent increase.

When out-of-town visitors come to Virginia Beach and visit the Aquarium, they also tend to spend more and stay longer (see Table 1). What is not clear is whether the facility per se attracts higher-spending and longer-staying visitors, or whether such individuals simply discover and take advantage of the Aquarium after they come to Virginia Beach. There is no dispute, however, that the Aquarium forms an important part of a complex of tourist attractions that make Hampton Roads in general, and Virginia Beach in particular, more appealing.

The path to the current enterprise known as the Virginia Aquarium & Marine Science Center was not without pitfalls, however. In 1998, the facility had a new project on the drawing board that would include a 100,000-square-foot building housing a 1.6 million-gallon Atlantic Coast habitat, two indoor aviaries, a new classroom, hands-on interactive exhibits, a marine animal stranding and research center, and a new store. The signature animal species proposed for the new exhibition building was the bottlenose dolphin. Animal-rights activists threatened to protest and disrupt the city of Virginia Beach and the facility’s operations, however, over their objection to dolphins in captivity. As a result of both the opposition and the commitment of funds for the proposed new convention center, city leaders decided not to approve funding for the project at that time.

Characteristics	Over \$1,000	\$500-\$1,000	\$250-\$499	Less than \$250
Nights stayed	5.6	2.8	2.0	2.0
Party size	4.3	3.2	2.8	3.0
Stayed in hotel	71%	84%	77%	33%
Visited Busch Gardens or Williamsburg	26%	17%	9%	9%
Sports (golf, fishing)	19%	8%	9%	5%
Visited Aquarium	32%	16%	23%	5%

Source: Gilbert Yochum and Vinod Agarwal, Virginia Beach 2009 Boardwalk Overnight Visitor Survey

The Virginia Marine Science Museum (as it was known then) subsequently opened a teaching facility, Bay Lab, at First Landing State Park in 1999. This hands-on educational laboratory, filled with aquariums, touch tanks and microscopes, offers programs focusing on various Chesapeake Bay topics, and serves more than 1,400 students and families each year. However, the Aquarium’s research interests these days reach far beyond Hampton Roads’ waterways: it has hosted summits on alternative energy, provided ship speed studies that have international whale protection implications, mapped port traffic for use in wind farm planning and, in partnerships with local and national universities, is developing research projects that will help this area and other shoreline communities predict and prepare for sea level rise as a result of global warming. A 40-foot research vessel, the Ocean Explorer, was christened in 2009 as part of a joint venture with Virginia Wesleyan College. The college will use the vessel for its marine biology and environmental curricula, while the Aquarium will be able to conduct on-the-water research and, in rare cases, large marine mammal interventions during beaching or entanglement. These partnerships provide a model for other nonprofits, bringing an entrepreneurial focus to what are largely public funds, whether through dedicated tax streams or grants.

Following Rawls' retirement in 2001, Lynn Clements, former deputy director and interim director, was named the executive director of the Virginia Marine Science Museum and the city of Virginia Beach director of the Department of Museums and Cultural Arts.

The Virginia Beach City Council endorsed the facility's name change to the Virginia Aquarium & Marine Science Center in 2004, accompanied by a branding campaign launched by the ad agency BCF. While still embracing its core mission of conservation through education, the Aquarium, in concert with the foundation's board of trustees and city leaders, cast an eye toward long-term fiscal sustainability. Cultural Arts became a separate entity with the completion of the Sandler Center for the Performing Arts in 2007, with Clements continuing to oversee the Aquarium and the city-owned historic houses: Francis Land House, Lynnhaven House and Adam Thoroughgood House. This is a somewhat unusual arrangement, but one that has worked well.

Funding and Fundraising

Today's Virginia Aquarium relies upon an interesting and flexible public/private partnerships structure that may well represent the future for the majority of tourist and scientific installations and organizations in Hampton Roads. Aquarium partnerships exist between the city of Virginia Beach and the Aquarium's foundation, and appear to succeed because each entity has distinct and separate areas of authority, control and responsibility, though common goals. The city owns the Aquarium buildings and grounds, and provides utilities, building maintenance and landscape services. The Aquarium's budget must be approved by City Council through the annual budget process or by agenda request. All revenues earned through admissions, memberships and Aquarium store sales are deposited into the city's general fund and designated for the facility's operations.

In contrast to many other facilities, the Aquarium earns 94 percent of the funds necessary to finance its annual operating budget. The city of Virginia Beach provides between \$300,000 and \$400,000 annually of the Aquarium's \$11

million budget (see Table 2), which includes general operating expenditures of \$3.6 million and a payroll of \$5.4 million. Any net revenues at year's end are deposited into a Replacement and Renewal Capital Improvement Program Fund, to be used for purchasing items such as pumps, filters and computer equipment on an as-needed basis. This fund has provided \$568,000 for these capital items since its inception in FY 2003.

As the fundraising component of the partnership, the Aquarium Foundation owns the exhibits and the animals, and conducts educational programming in support of the Aquarium's conservation-through-education mission, reaching nearly half a million children and adults in FY 2009. The foundation's annual operating budget of approximately \$2 million is funded through donations, grants, philanthropic-level and corporate memberships, sponsorships and educational program fees, such as those for boat trips and the Seal Splash experience. Foundation fundraising efforts also support temporary exhibits, research and conservation activities. Scientific study of marine animals through stranding response, rehabilitation, field research and conservation programs is a major focus of the foundation.

Fiscal Year	Revenues	Percent Change
FY 2005	\$8,221,601	
FY 2006	\$9,607,546	16.86%
FY 2007	\$9,342,398	-2.76%
FY 2008	\$8,960,116	-4.09%
FY 2009	\$8,284,984	-7.53%
FY 2010	\$9,406,557	13.54%
FY 2011	\$11,055,950	17.53%

The foundation's volunteer board of directors willingly provides many hours of their time in support of the Virginia Aquarium's mission. They work closely with staff members, providing legal and business guidance as well as budgetary approval and oversight of the foundation's annual budget. To ensure commonality of mission and purpose, the Aquarium's director serves as CEO of both the Aquarium and the foundation. This organizational structure combines the stability of the city's support for operations with the flexibility of a private foundation that can raise funds and set an entrepreneurial course for the facility.

Aquarium and foundation operations and partnerships generated \$672,414 in direct tax revenue to the city and the Commonwealth of Virginia through admissions and sales/meal taxes in fiscal year 2009; \$620,057 of that remained in the city of Virginia Beach and \$52,357 in sales tax was paid to the Commonwealth. An attendance boost is projected for FY 2011, the first full year of operation of Restless Planet, the facility's newest series of exhibits. This, coupled with increased admission prices, is projected to grow Aquarium revenues and expand the taxes generated by its operations to \$774,609.

Aquarium management has brought in temporary exhibits and launched new programs in an effort to keep up public interest, maintain attendance and thereby maintain revenue levels. Attendance and revenue declined between FY 2007 and FY 2009, primarily due to construction of new exhibits, but rebounded very nicely in FY 2010 and is projected to set a record in FY 2011.

The Aquarium also works closely with the Virginia Beach Convention & Visitors Bureau to entice a quarter of the city's overnight visitors to the facility, making it Virginia Beach's most-visited attraction. In FY 2011, the facility expects to host some 700,000 visitors, surpassing Colonial Williamsburg and making the Aquarium the Commonwealth's most popular non-historical destination.



Restless Planet

In 2003, the Virginia Marine Science Museum, as it was still known, recognized the need to renovate its 17-year-old exhibits. Not only was the science outdated, but also exhibit technology had changed drastically since the 1980s. Long gone were traditional, static exhibits. According to the minutes of the foundation's Exhibits Committee, the stated objectives of the project were as follows:

- Create a project exciting enough to increase visitation/attendance
- Maintain Virginia theme while incorporating novel ideas for educational exhibits that meet our conservation-through-education mission
- Maintain those aspects of the current Aquarium exhibits that make our facility unique (e.g., the mix of live animals/interactive exhibits)
- Create a balance between education and entertainment.

Because many people learn kinesthetically, the area would be modernized with immersive habitats that mimic the temperature, flora and fauna of the real-life areas they represent. More than 30 hands-on interactive exhibits that challenge visitors to test their skills and knowledge about salinity, gravity, volcanism, seismology and other sciences would be added to the facility's 300 existing interactive exhibits.

The largest project since the addition of a second building and nature trail in 1996, Restless Planet, which opened Nov. 21, 2009, comprises four immersive habitats, dozens of new hands-on interactive exhibits and 110,000 gallons of new aquariums showing the forces that shaped Virginia hundreds of millions of years ago. A project of this magnitude required considerable funding through a capital campaign and strategic partnerships. The Commonwealth of Virginia, the city of Virginia Beach and its citizens stepped up to the challenge.

In early 2008, six months before the scheduled conclusion of its \$27.8 million capital campaign, the Virginia Aquarium & Marine Science Center Foundation announced that it had already exceeded its campaign goal. Included in the total was \$14.4 million from the city of Virginia Beach to cover infrastructure

construction of the Restless Planet project. The Commonwealth of Virginia also appropriated \$2 million. As a result of meeting the goal, the Aquarium received a \$650,000 challenge grant from the Kresge Foundation of Troy, Mich.

The Aquarium's fiscal year 2008 operations provided \$662,749 to the city's net direct revenue return from tourism. However, a major improvement to the existing facility, in the form of the Restless Planet, would enable the Aquarium to attract more visitors each year and additional earned revenues of just under \$2 million, with a projected \$200,000 in admissions tax revenues to the city during the first year. The foundation, on the other hand, continues to fund education, research, exhibit development and maintenance, and animal acquisition and care.

Despite its relative independence, the Aquarium is feeling the impact of Virginia Beach's 2011 budget shortfall. To meet the required cuts in city-supported general operating expenses, the Aquarium has consolidated some programming and staff positions, reduced the number and cost of its IMAX offerings, expanded the hours of its more than 800 volunteers, and encouraged its members to "go green" by receiving their member newsletter and other materials via e-mail (an estimated savings of \$20,000 in printing costs alone). But budget cuts can only go so deep when your assets have an appetite. "No matter what happens, the animals still have to eat," said Executive Director Clements, referring to the expanded collection of 12,000 animals.

In addition to tax revenues, the Aquarium supports the local economy in other ways. Its recent \$25 million Restless Planet addition provided badly needed jobs for contractors, suppliers and subcontractors. Its 142 employees pay taxes, buy homes and otherwise contribute to the local economy each year through direct and indirect spending. This doesn't even take into account the overall impact of tourism, which pumps \$78.4 million a year into Virginia Beach tax revenues alone. With the exception of Colonial Williamsburg, the Virginia Aquarium led local attractions in both operating budget and visitation in 2008 (see Table 3).

During its first six weeks, Restless Planet saw a 54 percent increase in visitation over the same period in 2008. These increased admissions generated more than \$40,000 in tax revenue to the city of Virginia Beach. The Aquarium also is

one of the higher-priced local attractions: after a five-year moratorium on ticket price increases, partly due to the three-year construction process, the Aquarium raised its price from \$11.95 to \$17 for an adult admission, compared to the Virginia Living Museum's \$17 and Nauticus' \$11.95. But the Aquarium's price of admission is still well below Colonial Williamsburg's \$36 one-day ticket in 2010.

TABLE 3

LOCAL HAMPTON ROADS ATTRACTIONS: 2008

Attraction	Governance	Employees	Budget	Attendance	Ticket Price
Va. Living Museum	Private nonprofit	90	\$4.25m	215,000	\$17/\$13
Va. Zoo	City/nonprofit	76	\$3.5m	316,000	\$8/\$6
Nauticus	City/advisory	51	\$6m	400,000	\$11.95/\$9.50
Colonial Williamsburg	Private nonprofit	4,000 est.	\$249m	660,000	\$36/\$18
Va. Aquarium	City/nonprofit	142	\$11m	600,000	\$17/\$12

Source: Association of Zoos & Aquariums Member Directory 2009

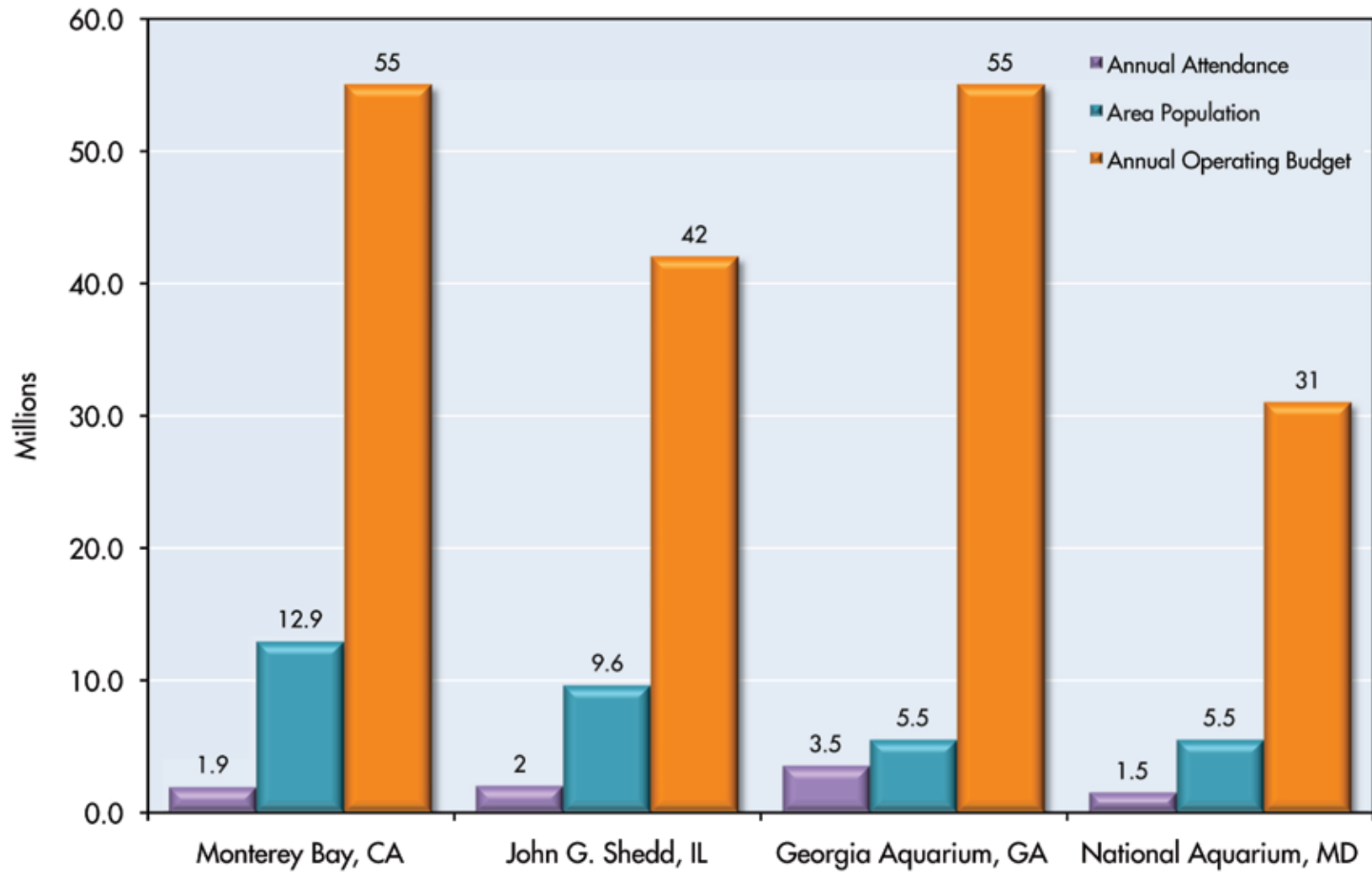
Graph 2 illustrates the gap between the Aquarium and four well-known, major aquariums in the country in terms of annual attendance and operating budgets. The differences hinge on several factors. The "Big Four" (the Monterey in California, the Shedd in Chicago, the Georgia in Atlanta and the National in Baltimore) enjoy much larger regional population bases, available land for physical plant expansion and operating budgets that average about three times that of the Virginia Aquarium. Not coincidentally, all but the National Aquarium are based on multimillion-dollar endowments from benefactors such as Hewlett-Packard and Home Depot.

The Virginia Aquarium may not yet be comparable to the Big Four in terms of attendance and budget, but it remains a viable contributor to the local economy and continues to attract a nearly equal mix of Virginia and out-of-state visitors (see Graph 3). The recently opened Restless Planet has resulted in gratifying increases in attendance and membership; however, the Aquarium must rely on an ever-changing blend of films, new temporary exhibits, programs and experiences to cater to audiences hungry not just for education, but for entertainment as well. It will take an innovative approach to bring 750,000 visitors annually to the Aquarium until the next major expansion allows it to reach the 1 million-visitor threshold that, for many, signifies the "big time" insofar as tourist and scientific sites are concerned.



GRAPH 2

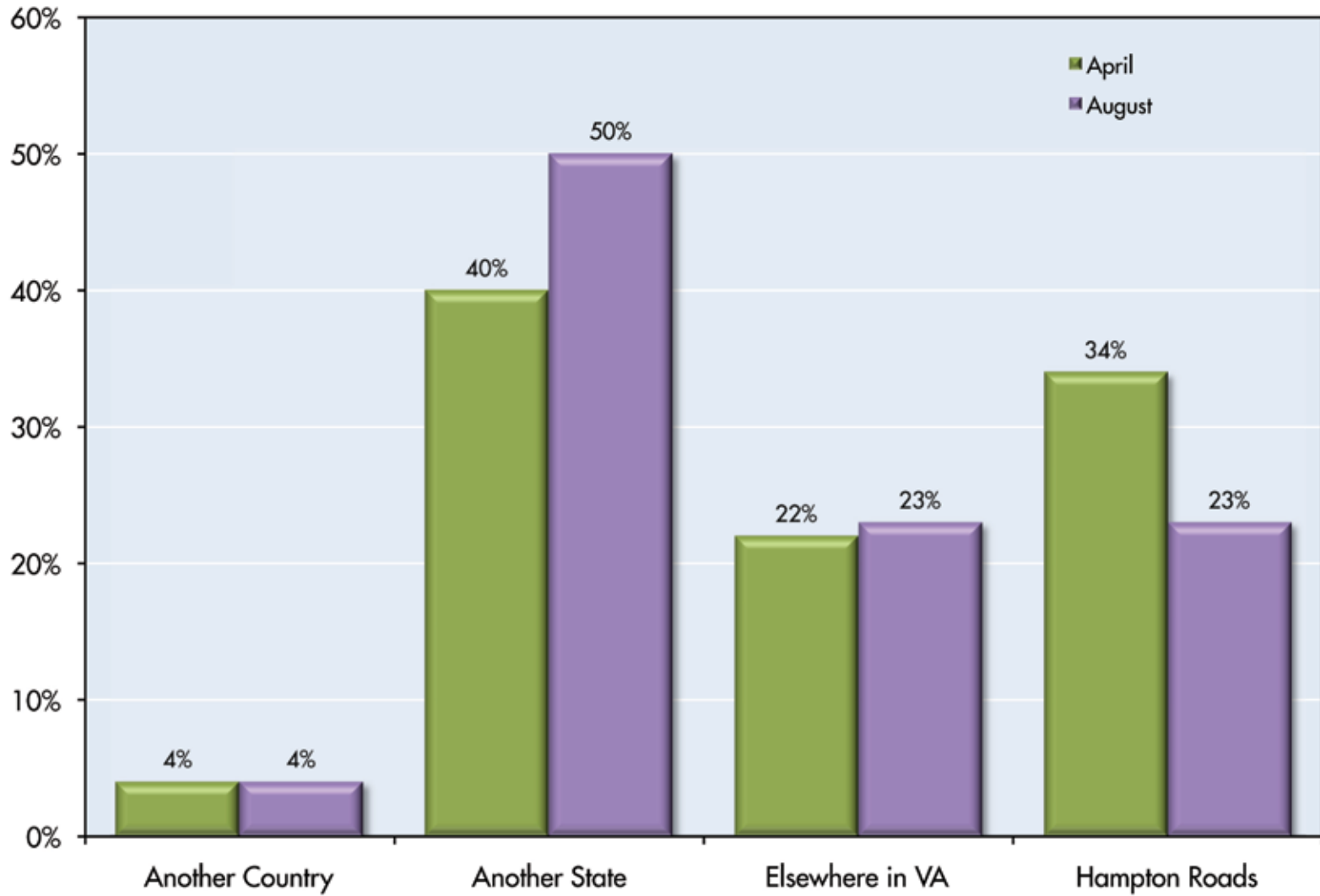
THE BIG FOUR U.S. AQUARIUMS



Source: Association of Zoos & Aquariums Member Directory 2009

GRAPH 3

WHERE VIRGINIA AQUARIUM VISITORS COME FROM



Source: Clarity oms, Virginia Aquarium Visitor Intercept Study, September 2006

The Virginia Aquarium and the Larger Virginia Beach Development Picture

If the Virginia Aquarium's goal is to attract attendance and funding similar to the "Big Four" depicted in Graph 2, then this is unlikely to be realized in the near future despite the very nice upsurge in attendance because of its newer attractions. However, farsighted planners such as Ned Williams, local commercial real estate broker and chairman of the Aquarium Foundation's board of trustees, believe that such a goal can be realized if it is integrated within a well-designed plan that not only includes the Aquarium, but also nearby attractions and amenities. As such, the Aquarium's development would anchor the development and enhancement of a major section of Virginia Beach.

Williams is spearheading the Aquarium/Owl Creek District Plan (ADP), a 20-year vision for the retail, cultural, maritime and natural environment of the area within Virginia Beach that stretches roughly from the Rudee Inlet bridge to Oceana. In addition to the Aquarium, the district encompasses a public boat ramp, residential area, state military reservation, Navy property and facility, the city's dredge operations facility, Department of Parks and Recreation open-space property, a tennis facility, public schools and the privately owned/operated Ocean Breeze Waterpark and Motor World.

In a recently published request for proposals for planning services for the ADP, the following priorities were addressed:

Recreation: Plans for human scale, pedestrian-friendly experiences incorporating existing and planned shared-use pathways; highlights open space preservation areas; ... and provides a harmonic link between the oceanfront and the District, all while complementing the surrounding physical environment as well as providing a platform for a several-day-visit experience

Research & Technology: Lays the foundation for marine research facilities in partnership with higher education; recognizes the planned Aquarium Marine

Animal Care Center as an exhibit support facility for future exhibit buildings that also contain research aspects

Education: Creates a stimulating framework for a life-long learning community, potentially including a children's environmental activity center and/or high school honors marine science summer resident program; environmental learning opportunities through outdoor, hands-on learning for all ages

Entertainment: Examines current nearby offerings, including the motor park and water park. Proposes locations, types and scale of additional family-friendly entertainment opportunities which complement similar facilities existing and planned within Virginia Beach and the region

Economic Development Opportunities: Offers opportunities for location of alternative energy and green businesses

Exhibits: Identifies location and scale for another exhibit building in order for the Virginia Aquarium to reach the national benchmark of 1 million annual guests.

A steering committee of Aquarium, foundation and city staff and leadership, local business leaders, academicians and military liaisons exists, and subcommittees have been established to oversee each of the six priorities. A \$200,000 planning budget, funded equally by the city of Virginia Beach (Open Space Funding CIP 3-148, Aquarium & Owl Creek Master Plan) and the Virginia Aquarium & Marine Science Center Foundation, will result in a plan that provides "a graphic vision of the District with recommended location and scale of existing and proposed land uses," including design guidelines directed toward achievement of that vision and strategies necessary to implement the plan.

The goal, explains Williams, is to create a nationally recognized center of excellence for programs relating to the coastal and marine environment through a process that will become a national model for land use development. This organic process will study and plan for the melding of the available property with the future needs of residents and tourists, combining military activity, ecotourism, recreation, scientific research, commerce and education in an authentic way to produce a viable plan for the next two decades and beyond. This plan builds on Virginia Beach's 2009 Resort Area Master Plan and is designed to serve as an economic engine for the region and state.

