THE DISTRICT OF COLUMBIA MARITIME HERITAGE CENTER

PROJECT PROPOSAL

ECONOMIC IMPACT STUDY PREPARED FOR THE NATIONAL MARITIME HERITAGE FOUNDATION, WASHINGTON, D.C.

By

HOWARD UNIVERSITY CENTER FOR URBAN PROGRESS

June 2005
INTRODUCTION
The National Maritime Heritage Foundation (NMHF) was registered as non-profit organization
in the District of Columbia in April 2000 with the objective of bringing back maritime history
and culture to the people of Washington Metropolitan Area. The vision of the NMHF is
“exploring the importance of maritime life of our nation by actively discovering the meaning of
seas and waterways to the people of District of Columbia.” In pursuance of this mission, the
NMHF has proposed a Maritime Heritage Project along Anacostia River Waterfront in
Washington, D.C. The project comprises two major inter-connected components designed to
bring back the glorious maritime tradition of America to the Washington metropolitan area.

Washington, D.C. has a rich maritime history. The two Washington rivers, Potomac and
Anacostia, were once the centers of commerce between the Ohio Valley, the Chesapeake, and
the ports of Europe. But, in recent years, much of this activity has ceased, and with it, the
Washingtonian’s connections to these rivers. According to the Office of Planning, Government
of the District of Columbia, “few residents or tourists are aware of the history and attractions of
the Southwest waterfront, and it remains a place cut off from the day-to-day life of our city.
Access is especially difficult for pedestrians, even though the waterfront is within easy walking
distance of the monumental core and downtown business attractions. Once there, the pedestrian
experience is further diminished by limited access to the water’s edge, extensive paved areas,
and few landscaped areas or pedestrian amenities. The Southwest Waterfront Development Plan
and AWI vision is intended to build upon the existing assets of the area – the waterfront, existing
businesses, history, maritime culture, proximity to the downtown and mass transit routes – to
create a new waterfront neighborhood which will be desirable to new residents and an attraction
to the people of Washington and to tourists."1 The NMHF project fits the bill in terms of putting Washingtonians back in touch with maritime history and culture. The National Capital Planning Commission have stated that the foundation's plans appear to mesh with its own recommendations for redevelopment of the South Capitol Street corridor.

The NMHF currently operates two small sailing programs. One is a community sailing program for adults, teenagers and families called DC Sail. DC Sail offers recreational, competitive and learn-to-sail opportunities for the community. The other is the Kids Set Sail Program which is a four year development program for kids aged 12 and above. The program focuses on providing children with both sailing and educational opportunities.

The NMHF now plans to expand its maritime activities to impact a larger section of the population locally and nationally through the Maritime Heritage Project along Anacostia River Waterfront in Washington, D.C. The project comprises two interconnected components designed to bring back the glorious maritime tradition of America to the Washington metropolitan area. One component of the NMHF project is to build a tall ship ‘Spirit of Enterprize’ and locate it on the Anacostia River in Washington, D.C. The other is to build a Maritime Heritage Center along the waterfront to help adults and children alike have a better understanding of the importance of maritime history.

This study is in the nature of a broad-based project proposal that looks into various components of the proposal, its cost and benefit. It also, as a research component of the project, looks at similar communities with comparable waterways and projects in order to get better insight into where this project might fit in competitively and market itself for attracting investment.

THE TALL SHIP - THE SPIRIT OF ENTERPRISE

There are about 227 tall ships located in different parts of the country, Washington, D.C. being one of the outstanding exceptions. These ships attract on average about 100,000 to 130,000 visitors a year. Typically tall ships are used for educational purposes, sailing lessons and cruises.

The proposed tall ship “Spirit of Enterprize” will be modeled on the ‘Enterprize’ which defended American shores and shipping some 200 years ago. It will be a topsail schooner 140 feet long and weigh 160 tons. The ship will be built on the waterfront in Washington, D.C. The construction is expected to start in October 2006. The goals of the Spirit of Enterprize project are:

- To give students and general public an opportunity to take part in the construction of a tall ship.
- Provide a source of educational and tourism opportunities for people in the Washington metropolitan area and beyond.
- Serve as a focal point to the proposed Maritime Heritage Center on the Anacostia.
- To overcome the lack of an official tall ship in Washington, D.C. D.C. is the only major port without a tall ship on the east coast.

The tall ship is expected to be a floating classroom where visitors can have access to hands-on lesson about the lives of seamen, the craftsmanship of wooden sailing vessels, and the important role of waterborne commerce in building Washington, D.C. and the nation. In addition, the tall ship will be available for cruises and special events, and will help shipmates from landlubbers to experienced sailors improve their skills under the guidance of professional crew of the ship. The Spirit of Enterprize is envisaged as ‘Washington’s Maritime Ambassador’ as it sails down the
Potomac into Chesapeake Bay and beyond. The ship will nicely fit in with the city plans to develop the city waterfront.

Figure 1
Liberty Classroom

Some examples of tall ships meeting educational needs of youth around the country

There are several examples of tall ships offering a variety of educational activities and entertainment to the local youth and tourists in the country and all around the world. These ships recreate maritime history of the nation in a most interesting manner. For example, the Freedom Schooner Amistad is modeled on the historic vessel made famous as a result of the Amistad incident in 1839. The Freedom Schooner Amistad visits ports nationally and internationally as an ambassador for friendship and goodwill everywhere. It serves as a floating classroom, icon, and monument to maritime history. The stated mission of the schooner is to provide educational
opportunities for people of all ages to learn about the high degree of common needs and interests we share as people – irrespective of racial, ethnic, cultural or economic differences.\(^2\)

In fulfillment of this mission, following programs are offered aboard the Amistad:

- **Diversity Sails Onboard**: This program offers formal and informal learning experiences. Participants interact with the ship’s crew and engage in a variety of leadership, cooperative learning and other educational activities designed to understand the common heritage of all Americans.

- **The Amistad Leadership Institute**: The Institute recruits high school students from across the country to participate in an intensive five-day after-school program onboard the Schooner. These young people get opportunities to meet with mentors, scholars, educators, and other role models in port and on sailing trips. This program is set within a Diversity Training model, which creates a safe environment in which to build trust between participants, shape a successful team and encourage individual and group dialogues.

- **Amistad Audio Tours**: The program aims to enhance the visitor experience aboard Amistad by providing an accurate account of the historic Amistad incident.

Another example is the Liberty fleet of tall ships in the Greater Boston Area. The liberty classroom seeks to introduce young people to the value and excitement of the sailing experience. The program offers local youth groups the chance to sail as student trainees on a three hour educational sail aboard the 125’ schooner Liberty Clipper. Sailing the waters of Boston harbor

historic long wharf, the Liberty classroom provides an introduction to seamanship (basics) under the direction of an experienced captain and crew.

Another example of a tall ship being used for educational purposes is the *Topsail Youth Program* in California. The Topsail Youth Program is an education and adventure experience aboard the large sailing vessel. The first part of the program typically consists of a series of one day sails in and around the Los Angeles - Long Beach Harbors scheduled over a period of several months. Each day's activities build on the skills and knowledge gained during the preceding day sails. These skills include problem solving, decision making, planning, self-reliance and leadership. Topsail program enriches, validates and challenges conventional school curricula by bringing biology, mathematics, physics, geography, history, literature and the environment to life in the real world classroom of the sea. The shipboard environment is challenging, yet nurturing - encouraging exploration and self-reliance. It is notably effective with youth who are not coping well with the demands of society and are at risk of dropping out of school and giving up. The program provides an educational venue that is rich in potential for the development of knowledge, skill and attitudes that are both necessary for the education of today's youth and difficult to teach in a traditional classroom.

Another outstanding example of a tall ship being used effectively for educating youth is the Learn the Ropes” program of *Sail Baltimore*. The program is aimed at providing the youth of the community with a unique experience to encourage learning maritime technologies, history,
geography, and more. Participants have included members from community centers, day camps, school children and Head Start programs.4

The NMHF plans to utilize the tall ship for education purposes is similar in context and scope to the ones illustrated here. The NMHF already has considerable experience in this area. It administers the Spirit-in-School education program, which is one of the most successful maritime programs in the District. The Spirit-in School is an interactive, hands-on educational curriculum which teaches math, science, physics, geography and history through the vehicle of maritime heritage. Spirit is a 16 foot tall ship which visits local schools and community events to promote the maritime heritage of Washington, D.C. and the U.S. The Spirit-in- school has visited over 20 D.C. schools in the last two years and has impacted over 2000 area school children.

**WASHINGTON MARITIME CENTER**

The NMHF project also includes the construction of a Washington Maritime Center on the waterfront to support and sustain the various programs planned by the NMHF. The Center will include a Community Sailing Center to bring the excitement of sailing to tourists as well as local visitors. The Community Sailing Center will provide an opportunity to the visitors to experience sailing, sailing education, and pleasure trips along the river. In addition, it will include a maritime museum and research center, with exhibition space, maritime collections, theaters, classrooms, activity centers, art gallery, restaurants, and retail stores. NMHF hopes the proposed maritime center would become a national center for tall ships from across the country.

The NMHF proposes the maritime center to be a unique architectural piece on the riverfront. The cross-section of a wooden tall ship will be housed in a pre-engineered building with the deck of the ship at or slightly above grade, the mast and sails protruding through the roof and the below

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deck areas below grade. Additional constructions, architecturally representative of the maritime center’s historical period, would be located around the ship and would house a food court, retail stores, and administrative facilities. Stories about maritime life would tie into the appropriate rooms on the ship, for instance the crew’s quarters will tell stories related to slave trade, cannons used to tell war stories, and the compass and wheel house to talk about navigation and geometry. It is also proposed to incorporate many interactive and immersive experiences such as ‘climb the rigging’, wind sail simulations, loading and firing cannons, and celestial navigation.

**Maritime Museum**

One of the key components of the maritime center will be the Maritime Museum. The mission and goal of the proposed museum are:

*Mission:* To promote an understanding and appreciation of the maritime culture and heritage of Washington, D.C. through the collection, documentation, exhibition, education and research of relevant materials.

*Goals:* Bring international, national and local tourists to Washington, D.C.’s waterfront; provide visitors a unique and high quality museum experience; promote a creative interest on Potomac and Anacostia history and culture; extend outreach programs and services to local schools and young people; provide a resource to communities.

The proposed museum will showcase Washington, D.C.’s maritime history and culture using a variety of permanent and temporary exhibits. The exhibits will reflect the interest of a wide spectrum of population of all ages. The museum will establish its own permanent collection of
exhibits and artifacts. Washington, D.C.’s past, present and future will be important themes at the museum.

Maritime related educational programs, arts, classes, lectures and entertainment will be part of museum activities. In addition it will highlight general themes such as importance of waterfront to tourism and their economic impact, ocean science technologies, exploration of ocean floor, and marine environments.

**Examples of Successful/Functioning maritime Museums**

*The Chesapeake Bay Maritime Museum* is dedicated to furthering an interest, understanding, and appreciation of the culture and maritime heritage of the Chesapeake Bay and its tributaries through collection, education, documentation, exhibition, research, and publication. Its mission is to be an educational leader among maritime museums by excelling in the preservation, interpretation, and study of the heritage of one of America's major maritime regions -- the Chesapeake Bay. In pursuance of this mission, the museum provides its visitors “with a vital and unsurpassed museum experience; promote creative inquiry on Chesapeake history and culture; expand our core collection; extend our outreach programs and services; plan effectively for the long term; provide an impartial forum and resource to serve the general public.”

The Chesapeake Bay Maritime Museum is both a regional educational institution and a resource for community educators and students. As the only institution dedicated exclusively to the study of the Bay's history and culture, it strives to make its research, collections, and library accessible to scholars and learners of all ages. It also provides innovative and engaging ways to interpret the Bay's culture through hands-on learning for school students and teachers. The Museum is also an

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educational resource for teachers, and has developed innovative programs for educators for grades three through six to teach their students about the crabbing and oystering industries of the Chesapeake Bay. The Museum offers a variety of school, student, and group programs for visiting the Museum, as well as summer classes and camps.

The Chesapeake Bay Maritime Museum collects and preserves the nation's most comprehensive assembly of material culture relating to the Chesapeake's tidewater region. With the largest collection of Chesapeake Bay watercraft in existence, an impressive array of working and decorative decoys, and maritime paintings by some of the world's leading artists, the Museum's 7,500 objects document the interaction of people and the tidewater Chesapeake Bay region over a 200-year period.

The Museum holds 85 vessels built from the 1880s to the 1970s, including wooden sail, power, and row boats. It is the largest and most important collection of its kind in the world. All of the region's waterfowling boats are represented, along with most of the major types used in the region's fisheries, as well as a good sample of recreational watercraft. Five historic vessels are maintained afloat: the 1889 oyster dredging bugeye Edna E. Lockwood (a National Historic Landmark), the 1912 river tug Delaware, a 1931 Potomac River dory boat, the 1934 Hooper Island draketail Martha, and the 1955 skipjack Rosie Parks. The 1909 power crab dredger Old Point is currently being restored in the Museum's working Boat Yard.

Diverse in media, the Museum's 7,500 objects include items relating to commerce and trade, navigation, fisheries, and waterfowling. The collection also encompasses objects that were made and used in the Chesapeake Bay tidewater region including: 288 duck, goose, swan, and
shorebird decoys by 70 regional makers such as Sam Barnes, Ben Dye, Daddy Holly, Ira Hudson, and the Ward brothers, 67 marine inboard and outboard gasoline and steam engines for propulsion, deck engines, bilge pumps, and more than 210 detailed scale ship models of Bay watercraft, folk art "sailor-made" models, and builders' half-models used in lieu of plans for local construction (Including Pilot #1, made by one of the boat's crew and representing the first steam pilot vessel in America) 421 paintings and prints by significant regional artists such as Louis Feuchter, H. Bolton Jones, and Otto Muhlenfeld, 474 tools of maritime trades, figureheads, decorative carvings, anchors, ceramics, paper ephemera, navigational instruments, textiles, and rigging gear.

*The Maritime Museum of San Diego* enjoys a worldwide reputation for excellence in restoring, maintaining and operating historic vessels. The museum has one of the world's finest collections of historic ships, including the world famous *Star of India*. The Maritime Museum of San Diego

**Figure 2**

*Martime Museum Of San Diego Exhibit*
features one of the finest collections of historic ships in the world, including; the world’s oldest active ship Star of India; the 1898 steam ferry Berkeley; the 1904 steam yacht Medea; the 1914 harbor Pilot boat and the Californian a replica of a mid 19th century revenue cutter.

The Maritime Museum of San Diego's permanent collection is presented in five galleries representing major themes of maritime history and their relation to San Diego, its harbor and strategic position on the Pacific. Exhibits aboard the 1863 bark Star of India place her in context as an example of the final and highest technology of the Age of Sail. Visual and hands-on displays show visitors how ships are sailed and how people worked and lived aboard them.

Charting the Sea covers two major eras of Pacific maritime history; the Age of Exploration and the Age of Science. San Diego, once an object of European discovery, is now a hub for expeditions into the depths of the world’s oceans. Although these stories are separated by hundreds of years, they follow the same path of human achievement through the discovery of new places and new technology. Instruments, maps and charts are featured in this exhibit.

**ESTIMATED PROJECT COST**

The NMHF estimates the land required for the project to be 1.5 to 2 acres, with a buildout of approximately 92,000 to 120,000 square feet. Table 1 details the space requirement:

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Component</th>
<th>Net Assigned Sq. feet.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Permanent Exhibits</td>
<td>20,000 – 30,000</td>
</tr>
<tr>
<td>2</td>
<td>Food &amp; Beverage (Restaurants, cafés, special events)</td>
<td>10,000 – 15,000</td>
</tr>
<tr>
<td>3</td>
<td>Auditorium</td>
<td>5,000</td>
</tr>
<tr>
<td>4</td>
<td>Retail</td>
<td>3,000 – 5,000</td>
</tr>
</tbody>
</table>

Table 1

Estimated Space Requirement for the National Maritime Center
The estimated cost for the entire project is $57.2 million. The detailed breakdown of the estimated cost of the project is presented in Table 2.

Table 2

Estimated Project Cost

<table>
<thead>
<tr>
<th>Component</th>
<th>Sq. Feet</th>
<th>Cost per Sq. Foot ($)</th>
<th>Total (Million $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhibits</td>
<td>28,000</td>
<td>400</td>
<td>11.2</td>
</tr>
<tr>
<td>Building Shell (includes lobby, administration, auditorium, and exhibit/program spaces)</td>
<td>120,000</td>
<td>225</td>
<td>27.0</td>
</tr>
<tr>
<td>Retail Store</td>
<td>5,000</td>
<td>250</td>
<td>1.3</td>
</tr>
<tr>
<td>Restaurants and special Events</td>
<td>15,000</td>
<td>350</td>
<td>5.2</td>
</tr>
<tr>
<td>Site/Waterfront improvements (includes docks/piers and boat storage)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spirit of Enterprize construction</td>
<td></td>
<td></td>
<td>6.5</td>
</tr>
<tr>
<td>Total estimated project cost</td>
<td></td>
<td></td>
<td>57.2</td>
</tr>
</tbody>
</table>

ANACOSTIA WATERFRONT INITIATIVE

In order to get an idea of how the proposed Maritime Heritage project fits into the waterfront development plans for Washington, D.C., it is essential to look into the anacistia Waterfront Initiative.

The District of Columbia Comprehensive Plan calls for the development of a “waterfront and shoreline plan, in cooperation with the NCPC, which capitalizes on unrealized opportunities for creating exciting and imaginative water-focused recreation, housing, commercial, and cultural
development along the Anacostia and Potomac Rivers and which ensures that new development enhances the physical and environmental quality of the rivers and adjoining areas.”

(§1115.1 © )

The Office of Planning, Government of the District of Columbia, has developed an extensive Southwest Waterfront Development Plan and Anacostia Waterfront Initiative. According to the Office of Planning, the Anacostia Waterfront Initiative, together with concurrent private and community efforts, creates a waterfront that rivals all other great urban waterfronts and enhances the District of Columbia’s reputation as one of the most beautiful national capitals in the world.6 The Anacostia Waterfront Initiative envisions “a new, energized waterfront for this millennium, one that will unify the diverse waterfront areas into a cohesive and attractive mixture of commercial, residential, recreational, and open-space uses. The Initiative will coordinate waterfront development and conservation, develop enhanced park areas, and provide greater access to the waterfront from neighborhoods on both sides of the river, as well as from the Mall, Capitol Hill, and Downtown.”7

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6 http://planning.dc.gov/planning/cwp/view,a,1285,q,571854.asp
7 Ibid
The Anacostia Waterfront Initiative

The goals for the Anacostia Waterfront Initiative are drawn from a number of sources and will evolve over the course of the planning process. The following goals constitute provide a framework for planning, design, and decision-making:

- Create a riverfront that serves a world-class capital city for the new millennium
- Create a coordinated plan for the waterfront that can be implemented over time
- Improve the river's water quality and enhance its natural beauty
- Promote sustainable development and smart growth strategies
- Stimulate economic revitalization through commercial activity and job creation
- Link the neighborhoods along the river and create direct access to the water from surrounding communities
- Address the concerns of all segments of the community, including residents, business and property owners, and visitors
- Create open green spaces and maritime activities
• Maximize educational and training opportunities for residents of the District
• Minimize adverse effects on waterfront communities and the environment
• Promote excellence in design

IMPACT OF WATERFRONT DEVELOPMENT ON LOCAL ECONOMIES

Today, the water-based economies of a number of cities all across the nation, continues to evolve from shipping and factories to services and recreation. One of the primary examples close to home is the waterfront development in Baltimore. Baltimore’s Inner Harbor, once a rundown area of wharves, produce markets, and railroad yards, now features office towers, hotels, housing, parkland, and marinas, along with the National Aquarium, the Baltimore Convention Center, and the inner Harbor - a bustling complex of restaurants and small merchants. The result has been a revitalization not only of the waterfront but of nearby downtown Baltimore as well, even a transformation of Baltimore’s overall image, making the city into a popular center of tourism and conventions.

"The success of the Inner Harbor has begun to spread, particularly to the east towards Fells Point," describes Walter Sondheim Jr., a Baltimorean who has been involved in waterfront redevelopment since 1970. "The waterfront has become a center for commercial activity, particularly for office space and hotels." 8 Sondheim argues that there are ways to spread around that growth. "Some of the tax revenues produced by the Inner Harbor finds its way into neighborhood development," he notes. As new waterfront development increases the property

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tax base and attracts tourism dollars, the economic role of Baltimore's harbor will continue to evolve.9

The economic development component of the waterfront projects, in general, focus on six areas:

• Traditional economic development marketing and attraction efforts
• Nontraditional economic development efforts, recognizing the dual nature of tourism and heritage efforts in terms of providing employment and earnings, as well as being drivers of quality of life, attractiveness and identity
• Activities that relate to community revitalization, particularly downtown development and "Main Street" initiatives
• Opportunities for structural linkages to other components of the local economy, particularly in the area of job creation
• Identification of specific projects and geographic areas that should be targeted for business or commercial development efforts based on land use patterns
• Ideas for special events that might be tied to waterfront development efforts

A business attraction analysis will also identify industries or general businesses to be targeted for attraction or expansion efforts. These businesses could be either be existing ones or selectively promoted because they could benefit from other Anacostia waterfront development projects.

These target businesses should fit the following general criteria:

• Increase the diversity of the economic base
• Provide opportunity for employment for residents across a range of wage levels

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9 http://www.rich.frb.org/publications/economic_research/region_focus/spring_2003/economic_history.cfm
• Offer a potential for growth
• Serve to attract other similar businesses in a related "cluster"
• Support District’s overall economic development goals

These businesses should also include micro-enterprises by small-scale entrepreneurs. Sources of financing for this entrepreneurial development need to be analyzed

For waterfront redevelopment to succeed city governments must be prepared to finance infrastructure which may not give a dollar return for some years to come. This is obviously a tall order in times of fiscal austerity and shrinking government responsibilities. More conservative approaches are likely to be “one size fits none”—banal urban landscapes that deprive the city of any individual character. City officials must be receptive to new ideas and encourage a creative, flexible and entrepreneurial environment for developers and other partners.\(^{10}\)

ECONOMIC IMPACT ASSESSMENT OF MARITIME PROJECT

What is Economic Impact Assessment

Economic impacts of projects and programs are those that affect the level of economic activity in a region, state or county either positively or negatively. For instance they directly affect the economic well-being of area residents and businesses by changing employment levels and retail expenditures. They also may impact the area’s financial situation by increasing or decreasing the assessment base and the demand for services.

An economic impact assessment traces spending through an economy and measures the cumulative effects of that spending. The impact region is determined by the nature of the

proposal and can be the entire country, province, an individual municipality or a combination of municipalities. Defining the area of influence is an important first step in the process.

Estimating the economic impact of a project or development can be a very helpful process for understanding the potential benefits of various forms of growth. It should be noted, however, that the means of estimating these benefits are more useful in understanding the likely order of magnitude of impacts rather than specific amounts.

Economic impact assessment generates an estimate of the economic consequences of a particular project on the local economy. However, this provides only one piece of the puzzle in a broader evaluation or decision-making process. For example, there may be social benefits and ecological consequences that need to be taken into account, which would require a different methodology. In some cases a more general cost benefit analysis will attempt to place a monetary value on environmental and social impacts.

Economic impact analysis of projects describes the effects of projects on major economic indicators as employment, sales, incomes and tax revenues. Economic impact studies enhance our understanding of both macro and micro economic processes involved and thus enable more informed judgments to be made on key policy issues. Most economic impact analyses in this country use an input-output model based on the national input-output model produced by the U.S. Bureau of Economic Analysis.

An input-output model is based on a detailed level of industrial sector information and a depiction of inter-industry relations. Within this model, the economy of the area under discussion is mapped in table form with each industry listed across the top as a consuming sector and down
the side as a producing sector. A column in the table or “matrix” depicts the inputs needed from every other industry to produce its output. This is the transactions matrix.

This relationship between one form of economic activity and the total additional activity it generates is called the **multiplier effect**. An economic impact assessment is based on the concept of the multiplier. The multiplier is an estimate of how much additional economic activity will result from an investment in the economy. It is called the multiplier because total impacts are larger than the initial, direct impacts.

Multipliers can vary by sector and by region. There are sophisticated economic impact models (Input - Output Models) that calculate multipliers separately for each sector of the economy and for different geographic regions.

Total economic impacts encompass both direct and multiplier effects. The latter incorporate indirect and induced impacts. The character of the direct impacts of any maritime activity is derived from the recipes of the activities involved: the local spending on terminal operations; steamship, ferry, and cruise operations; port authorities, inland transportation services, passengers and crew, and various types of construction and equipment purchase activities. The process for estimating a given project’s indirect and induced economic impacts is more roundabout. By definition, a project’s first round of indirect impact includes the local purchases of any supplies and/or services that are required to produce the direct effects. Subsequent purchases of supplies and services generate other rounds of indirect impacts. Induced impacts are the purchases that arise, in turn, from the increase in aggregate labor income of households. Aggregate labor income is defined as the sum of wages, salaries, and proprietors’ income. Both
the indirect and induced economic impacts demonstrate how the demand for direct requirements reverberates or ripples through an economy.

The primary source of direct spending involves visitors from outside the area coming and making purchases in area hotels, restaurants, retail establishments, and transportations. We do not take into account expenditures of local visitors as we assume that they would likely made expenditures within the local area in some other manner even if the event had not been held.

The analysis of direct spending related to the National Maritime Center begins with estimating the number of visitors that the proposed will attract. According to the Travel Association of America (TIA) Washington, D.C. Domestic Visitation, 2003 data, 16.4 million visited the District of Columbia in 2003 registering an increase of 3.2% over that of 2002. According to TIA, total international arrivals to the U.S. in 2004 were 12.5% greater than 2003. The TIA projects strong tourism development for the Washington, D.C. area, thanks to the development of new hotels, restaurants, and attractions, and expected increases in international groups.

The increase in domestic and international visitors was driven by leisure travel. About 66% of the visitors came for leisure purposes, 29% for business/convention purposes, and 5% for business/pleasure purposes. Among overnight visitors, the primary reasons for visits to Washington, D.C. was: social/family events (24%); Historical places/museums (23%); Shopping (21%); City/urban sight seeing (21%); seminar/courses (14%); Zoo/aquarium/science museum (11%); Art Museum/gallery (9%); and national/State Parks (8%).

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11 TIA TravelScope, WCTC.
Smithsonian Museums are the biggest attractions to museum visitors in Washington, D.C.. An estimated 11 million visited National Air and Space Museum and 9 million visited the National History Museum. Both these museums are in downtown area.

For the purpose of this study, it is assumed that 11% of visitors who were interested in science museums would also be interested in visiting the National Maritime Center. That would be about 2 million visitors a year in 2004. Assuming that this number grows at a modest rate of 2% a year, by the year 2012, when the Center and Museum will be operational, the estimated number of visitors would be 2.34 million. The average daily spending per visitor for the Washington, D.C. area is estimated by the WCTC to be $378, which covers expenditure on hotels, restaurants, entertainment, retail, auto rental, local transit and other miscellaneous expenditures. Of this it is estimated that about $50 will be spent at the maritime center ($25 at the restaurant and another $25 at retail) per person. So the estimated direct expenditure is $117 million per year starting 2012.

The multiplier for Washington, D.C. restaurant is 1.4984 and retail is 1.5176. Applying these multipliers, the total output (total direct, indirect and induced spending) is estimated to be $176.43 million in the year 2012. As for employment that will be generated as a result of visitor spending, we apply the employment multiplier for restaurant expenditure, which is 28.1470 for $1,000,000 direct spending and 32.5787 per $1,000,000 direct spending for retail business. Applying these multipliers, the new employment that will be created in the District of Columbia as a result of the spending by visitors to the museum is estimated to around 5359. Assuming a flat 5% sales tax, the economic activity relating to the project would generate a significant $ 8.8 million.
As the Maritime Center becomes operational and receives publicity, we can expect the number of visitors to grow rapidly initially, and then gradually, before becoming stable after a period of time. It is assumed that in the first three years the income generated will grow at 5% and in the next two years at 3%. The annual growth of income to the District economy as a result of the project is presented in Table 3 and figure 4.

Table 3

Growth of Annual Output/Income

<table>
<thead>
<tr>
<th>Year</th>
<th>Income (Million $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>176.43</td>
</tr>
<tr>
<td>2013</td>
<td>185.25</td>
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<tr>
<td>2014</td>
<td>194.51</td>
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<td>210.35</td>
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<tr>
<td>2017</td>
<td>216.66</td>
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<tr>
<td>Total</td>
<td>1187.43</td>
</tr>
</tbody>
</table>

Figure 4

Growth of Annual Output/Income
In addition, the estimated project construction cost is $57 million. The construction of the center will have substantial one-time benefit to the state economy. The multiplier for new construction in the District is 2.28. Thus the one time income to the District economy from the construction of the Maritime center will be $129.96 million. The employment multiplier for a new construction is 35.9 per $1,000,000 expenditure. So the one-time new employment that will be generated as a result of construction activities will be 2046.

**Summary of Economic Benefits**

- Economic impact in terms of output/income to the District economy is estimated to be $176.43 million, growing to $216.66 million by the year 2017. The total income in the first six years of the operation of the maritime Heritage Project is estimated to be over one billion dollars.

- New employment will be created in the initial year of project operation by 5359. An annual 7% growth in employment will add additional jobs of 2155 by the year 2017. Thus the jobs created as a result of the project in its first six years of operation will add up to 7514.

- Revenue to the state as result of sales tax at 5% of output will be $8.88 million in the first year rising to $10.83 million in the sixth year. The total revenue to the state in the first six years of the project will be $59.41 million. Also additional revenue by way of income tax will accrue as new employment opportunities are created.

- In addition an one-time income of $129.96 million and employment creation of 2046 will occur during the construction of the project between 2006 and 2012.
**Non-pecuniary benefits**

According to the UK Museums Associations, “museums enable people to explore collections for inspiration, learning and enjoyment.”\(^{12}\) In this sense they have a central role to play in sustaining and developing cultural, social, educational, and economic well-being. Museums have a wide-ranging impact on the quality of life. It is also important to note that not all benefits of museums are to be seen as being channeled through the current generation of visitors.

**Project Funding**

The NMHF proposes to build the ship and museum through fund raising and some possible government money. The group has asked federal lawmakers for $5 million a year over three years to cover operating costs for the projects.

\(^{12}\) [http://www.infosite.co.uk/masite/annrev.html](http://www.infosite.co.uk/masite/annrev.html).