



MARITIME MUSEUM OF SAN DIEGO

Independent Attendance and Financial Projections – Final Report

August 2017

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EXECUTIVE SUMMARY

The Maritime Museum of San Diego (MMSD) is one of the world's great maritime museums, featuring a renowned collection of historic vessels, some of which still sail. It is very entrepreneurial in generating substantial income from admissions, rentals and events and on-water programs. There are, nonetheless, opportunities to further increase attendance and revenue levels and therefore help to generate more income to enable the MMSD to even better achieve its mission. This takes into account that an estimated 1.5 to 2 million people per year walk along the waterfront boardwalk in front of the MMSD, many of whom take photos but most do not pay to go aboard to experience all that the Museum has to offer. There is also confusion that emerges from the fact there are two ticket booths and no single entry point for the MMSD or sense of there being a museum or visitor center associated with the site.

To address these and related the Board and senior management of the MMSD identified the opportunity to move the ships further from the shore and to develop a single entrance for a visitor center on a barge the would link to the ship collection. Also planned is to covert a vessel to a maritime-themed play ship to attract more children. The MMSD engaged Ted Silberberg, the Senior Principal responsible for Market and Financial Planning of Lord Cultural Resources, to evaluate the plan in the context of the experience of other selected maritime museums, existing markets for the MMSD and potential markets for San Diego, to suggest modifications to the plan and prepare independent projections of attendance, operating revenues and expenses assuming implementation of the plan.

The analysis was based on a site tour, workshop with senior management, an internal and external interview process, contextual, comparables and market analyses and the judgment and experience of the consultant.

The table that follows summarizes our projections of attendance, operating revenue and expenses for the Maritime Museum of San Diego (MMSD) in its opening three years following assumed implementation of the plan to relocate the vessels further from the shore and to add a single entry visitor center and a play ship.

We project a growth of on-site attendance from the rounded 136,000 level in 2016 to 180,000 in Year 1, 175,000 in Year 2 and a stabilized 172,000 in Year 3. Based on the analyses and assumptions in this report we project that the total operating budget for the MMSD (excluding depreciation and interest) will grow relatively modestly from about \$5.5 million to the \$5.8 million range. This limited growth is because of an assumption there would be a reallocation and not an increase in staff positions with implementation of the plan. Staffing is the largest operating cost category. Other expense categories should have modest increases. All financial projections are in constant 2017 dollars.

Assuming no changes in private and governmental support, earned income levels are projected to grow substantially from the 2016 level of about \$5.5 million to about \$6.6 million in Year 1 and \$6.4 million in Year 2 and Year 3, reflecting the higher attendance in the initial year.

The bottom line of the projections is that increased revenues will exceed the projected increased expenses by about \$827,000 in Year 1, \$693,000 in Year 2 and \$615,000 in the stabilized Year 3. Rather than assume a reduced level of support needed from private and government sources, we recommend that the MMSD seek to maintain private and government support at current levels, and use the surplus revenues to pay for continual enhancements to the vessels and the visitor experience and any debt repayment needed. The ideal scenario would be that capital funds required to implement the plan will not require debt. That would allow the full amount of the surplus to be reinvested into the museum every year. In that context, it must be emphasized that the focus of this study is on the operational implications of implementation of the plan to relocate the vessels, add a visitor center and play ship, and does not consider the capital cost requirements. The Board will need to consider the capital cost implications of the plan to help with decision-making but it is clear that the attendance, admissions and other earned income impacts will be very positive to the operation of the Maritime Museum of San Diego.

MMSD: Summary of Attendance, Operating Revenue and Expense Projections	Base Level	Year 1	Year 2	Year 3	Base Level	Year 1 %	Year 2 %	Year 3 %
Annual Attendance	135,700	180,000	175,000	172,000				
Projected Operating Revenues								
Admissions	\$1,673,000	\$2,451,060	\$2,359,350	\$2,303,424	30.2%	42.4%	40.6%	39.5%
Retail Sales	\$290,400	\$385,200	\$374,500	\$368,080	5.2%	6.7%	6.4%	6.3%
Educational and Public Programs	\$614,500	\$706,675	\$706,675	\$706,675	11.1%	12.2%	12.2%	12.1%
Facility Rentals	\$786,700	\$865,370	\$874,024	\$882,764	14.2%	15.0%	15.0%	15.1%
Membership	\$182,400	\$209,760	\$200,640	\$200,640	3.3%	3.6%	3.6%	3.5%
Fundraising Events	\$500,100	\$500,100	\$500,100	\$500,100	9.0%	8.6%	8.6%	8.6%
Other Earned Income	\$9,500	\$9,500	\$9,500	\$9,500	0.2%	0.2%	0.2%	0.2%
Existing Private Support	\$899,900	\$899,900	\$899,900	\$899,900	16.2%	15.6%	15.5%	15.4%
Existing Government Support	\$583,100	\$583,100	\$583,100	\$583,100	10.5%	10.1%	10.0%	10.0%
Total Revenue Projected	\$5,539,600	\$6,610,665	\$6,507,789	\$6,454,183	100.0%	114.3%	112.1%	110.6%
Projected Operating Expenses (excluding depreciation, interest)								
Salaries, Wages, Benefits	\$3,280,000	\$3,300,000	\$3,300,000	\$3,300,000	59.2%	57.1%	56.8%	56.5%
Building Occupancy	\$499,500	\$555,463	\$570,475	\$576,480	9.0%	9.6%	9.8%	9.9%
Exhibitions	\$407,300	\$448,030	\$452,510	\$457,035	7.4%	7.7%	7.8%	7.8%
Public and Educational Programs	\$22,400	\$29,120	\$29,120	\$29,120	0.4%	0.5%	0.5%	0.5%
Collections Care	\$48,800	\$55,000	\$55,000	\$55,000	0.9%	1.0%	0.9%	0.9%
General & Administrative	\$764,300	\$775,000	\$780,000	\$785,000	13.8%	13.4%	13.4%	13.4%
Marketing	\$349,400	\$401,810	\$413,864	\$426,280	6.3%	6.9%	7.1%	7.3%
Retail Cost of Goods Sold	\$166,300	\$219,564	\$213,465	\$209,806	3.0%	3.8%	3.7%	3.6%
Total Expenses	\$5,538,000	\$5,783,987	\$5,814,435	\$5,838,721	100.0%	100.0%	100.0%	100.0%
Surplus of Revenues Over Operating Expenses Excluding Depreciation and Interest	\$1,600	\$826,679	\$693,354	\$615,462	0.0%	14.3%	12.1%	10.6%

1. INTRODUCTION

This chapter summarizes the background to and purpose of this study as well as the methodology to conduct it.

1.1 BACKGROUND TO AND PURPOSE OF THIS STUDY

The Maritime Museum of San Diego (MMSD) is recognized as one of the world's great maritime museums, featuring a renowned collection of historic vessels, some of which still sail. These include the San Salvador, Star of India, HMS Surprise, World War II submarines and other vessels that host exhibition experiences, public and educational programs, library/research opportunities, facility rentals, collections storage and other functions that help to achieve the mission and mandate of the MMSD.

The MMSD is very entrepreneurial in generating substantial income from admissions, rentals and events and on-water opportunities and in numerous combination ticket partnerships. It attracts about 136,000 visitors in 2016 excluding member, education program and rentals visitors, and its earned income percentage is much higher than average, including over 30% from admissions revenue alone.

There are, nonetheless, opportunities to further increase attendance and revenue levels and therefore help to generate more income to enable the MMSD to even better achieve its mission and mandate. This reflects the fact that an estimated 1.5 to 2 million people per year walk along the waterfront boardwalk in front of the MMSD, many of whom look at the Star of India and other visible ships and take photos but most do not pay to go aboard to experience all that the Museum has to offer. There is also confusion that emerges from the fact there are two ticket booths and no single entry point for the MMSD or sense of there being a museum or visitor center associated with the site.

To address these and related issues and consistent with the Museum's 2020 vision for site redevelopment, the Board and senior management of the MMSD identified the opportunity to move the ships further from the shore and to develop a single entrance for a visitor center on a barge the would link to the ship collection. A second barge was also considered to enhance rentals business, which has declined in recent years, but this idea has now been eliminated from consideration. Also being considered is a maritime-themed play ship to attract more children.

There are, of course, capital and operating cost and funding implications associated with the plan. To help address the issue of the impact of assumed implementation of the plan on attendance, operating revenues and expenses, the MMSD required an independent perspective. It engaged Ted Silberberg, the Senior Principal responsible for Market and Financial Planning of Lord Cultural Resources¹, to evaluate the plan in the context of the experience of other selected maritime museums, existing markets for the MMSD and potential markets for San Diego. This leads in to independent projections of the impact on attendance, operating revenues and expenses of the MMSD assuming implementation of the plan.

1.2 SCOPE OF WORK AND METHODOLOGY

To meet the study's objectives, and with the assistance of MMSD staff, we carried out the following work elements:

- Reviewed and analyzed background material provided to us as well as additional data that we gathered or utilized.
- Toured the existing MMSD vessels, amenities, site and surroundings.
- Facilitated a workshop with the Board and senior management and conducted meetings with other staff of the MMSD. The internal consultation included:
 - Ken Anderson, Board President
 - Ray Ashley, President
 - Dennis Burks, Board Member
 - Bill Dysart, Board Member
 - Robin Gallant, Public Events Director
 - Gary Gould, Board Member
 - Erica Geary, Private Events Manager
 - Kelli Lewis, Development Director
 - Mark Montijo, Curator and Consultant
 - David O'Brian, Board Member
 - Warren Potts, Private Events Director
 - Imelda Samaniego, Retail Manager
 - Doug Sharp, Board Member
 - Kevin Sheehan, Collections Manager
 - Susan Sirota, Vice President
 - Theresa Smullen, Marketing Director
 - Maggie Walton, Exhibit Designer

External interviews and comparables contacts included:

- Mark Berlin, Director of Operations, USS Midway Museum
- Lindsay Berthiaume, Catering Sales and Special Events Coordinator, Coasterra
- Jonathan Boulware, Executive Director, South Street Seaport
- Andrea Compton, Superintendent, Cabrillo National Monument
- Greg Gorga, Executive Director, Santa Barbara Maritime Museum
- Gerry Granados, Membership Account Executive, San Diego Tourism Authority
- Sam Heed, Senior Historian and Director of Education, Kalmar Nyckel Foundation

¹ Please see Appendix B for a profile of Lord Cultural Resources as the largest and most renowned specialist museum planning firm in the world. Appendix C includes for a detailed CV of Ted Silberberg to highlight the depth of his knowledge and experience over the past decade to provide opinions and estimates associated with the project.

- Brian Hilemon, Director of Marketing Partnerships, San Diego Tourism Authority
 - Dave Pearson, Deputy Director, Columbia River Maritime Museum
 - Gillian Ware, National Sales Director, San Diego Tourism Authority
- Analyzed available contextual data regarding sources of revenue for specialized and history museums within the overall museums marketplace.
 - Analyzed data collected by the MMSD which compares the MMSD to other selected maritime museums, including those offering elements of particular comparability to plans being considered for the MMSD. Please see Appendix A for a detailed table of the available data.
 - Analyzed data regarding potential markets for San Diego and implications to the MMSD.
 - Provided an independent perspective on the plans and associated assumptions. Finalized assumptions have served to underlie the independent attendance, operating revenue and expense projections in the final chapter of the report that take into account the research and analysis in this study and internal estimates of MMSD staff.

It must be noted that the scope of work in this consulting engagement excludes recommendations to increase attendance and revenues by means other than relocating the vessels further from shore, adding a single entry visitor center and maritime themed play ship.

2. CONTEXTUAL, COMPARABLES AND MARKET ANALYSIS

This chapter provides part of the basis for attendance, operating revenue and expense projections for the Maritime Museum of San Diego (MMSD) assuming implementation of the plan to relocate the ships and create a single entrance at a new visitor center and a play ship for children. The chapter includes contextual, comparables and market analyses that help to inform recommendations/ assumptions in the next chapter of this report and the attendance, revenue and expense projections in Chapter 4.

2.1 REVENUE CONTEXT

The following table compares the sources of operating revenue for the Maritime Museum of San Diego in 2016 with median figures from the last comprehensive survey of the American Alliance of Museums (AAM), which was completed in 2009. Although quite dated, the AAM data are still relevant to making the point that the MMSD already outperforms in earned income the overall museums marketplace, and both specialized and history museums, which are the categories within which the MMSD would be most applicable.

While there are opportunities to increase both attendance and earned income, the data also confirm that there should be no expectation that the changes associated with the relocation of the vessels, visitor center and play ship will eliminate the need for ongoing private and governmental support for the MMSD. That is, all museums require private and /or governmental support for operations to help them achieve their educational, collections preservation, research and related responsibilities.

Comparative Sources of Operating Revenues				
	Maritime Museum of San Diego	Specialized Museums	History Museums	All US Museums
Earned Income	73%	33%	24%	28%
Endowment/Investment	0%	9%	9%	12%
Private Support	16%	38%	31%	37%
Government Support	11%	20%	36%	24%

Source: Maritime Museum of San Diego, 2016, and Financial Survey of American Association of Museums, 2009

2.2 MMSD COMPARED TO OTHER SELECTED MARITIME MUSEUMS

Appendix A includes available data compiled from other maritime museums in comparison to the MMSD and therefore provides benchmarks that will help to inform the attendance and financial projections. The institutions identified by the MMSD for comparability for general baseline comparison as institutions with similar missions and constituencies and which provided data are as follows:

- Columbia River Maritime Museum, Astoria OR
- Santa Barbara Maritime Museum, CA
- South Street Seaport, New York, NY
- Kalmar Nyckel (replica ship and building), Wilmington, DE

All have conventional history museum functions and all own or host historic vessels. Of these, the Kalmar Nyckel experienced the addition of a visitor center/museum facility and thus offers particularly useful comparability.

The San Francisco Maritime National Historical Park is also of particular significance because of initiatives to increase attendance and admissions revenue by means of increasing the distance between the ships and potential visitors and, along with the Kalmar Nyckel, is discussed in more detail in the following section to highlight available before and after information. However, San Francisco did not provide benchmarking data for Appendix A.

Mystic Seaport is also comparable in mission and operations and recently added a signature building, but exhibits have not yet opened and there would not be data available to track the effects for at least a year.

Regarding the benchmarking data in Appendix A, of particular interest for the purposes of this study for the MMSD relative to the other maritime museums, are the following points:

- **The Importance of Adequate Museum Exhibition Space to Attendance and Earned Income:** The relatively low attendance for South Street Seaport (29,000) and the Santa Barbara Maritime Museum (28,000 in 2016) in part reflect limited museum exhibition space of 9,000 and 7,500 sq. ft. respectively. For comparison purposes the MMSD has 20,000 sq. ft. of exhibition space but this is not in a traditional museum building or visitor center, it is on the ships themselves. *The addition of a visitor center building for the MMSD should help to increase attendance levels as discussed further in Chapter 3.*
- **Tourist Market Segments and Repeat Visitation:** The MMSD reports that 70% of its visitors are from out of state. The Columbia River Maritime Museum in Astoria Oregon also reports 70% from out of state. Both report substantially higher attendance levels than the comparable maritime museums in Appendix A. However, MMSD attendance levels and tourist visits are much lower than those of the USS Midway Museum, as discussed later in this chapter. This suggests opportunities for more tourist visitors, especially if additional packaging arrangements were developed with the Midway and if the issue of people believing they have seen the main ships from the waterfront boardwalk is resolved.

- **Visits by Children and Attendance by Women:** Appeal to children is important for most museums because adults often select museums to attend based on the perceived appeal to children. The MMSD reports that only 20% of non-school visitor parties include children. For the other maritime museums the range is for 25-50% of visitor parties to include children. Since children are more likely to be accompanied by mothers or other female caregivers the greater the appeal to children the greater the likelihood of attracting women. As will be discussed later in this chapter women are a more important market than men for museums and other cultural institutions for reasons set out. The MMSD reports women at 45% of total non-school visitors but interviews with staff suggested it might be closer to 40%. In any case *the data confirm the wisdom of adding a "play ship" to the plan for the MMSD and seeking to identify other strategies to increase appeal to children and women.*
- **School Group Attendance:** Education is core to the mission of the MMSD and all other museums. As will be discussed later in this chapter, there has been a general decline in field trips for financial and other reasons. The MMSD reports that 9% of its visitors are in school groups, which is within a common range. The visitor center and play ship should both help to increase school group attendance.
- **Average Length of Stay:** It is reported to be about 150 minutes for the MMSD, which exceeds figures for the other maritime museums compared. There are opportunities to increase it further in the context of the plans being considered. *Increased length of stay helps to justify increases in admission charges as well and the motivation for membership.*
- **Revenue from Rentals:** The 14% in rentals income of a \$6 million operating budget reported by the MMSD exceeds the reported rentals percentages of the other maritime museums, but total rentals revenues for the MMSD have been declining in recent years. The concept of a rentals barge was initially part of the plan but has been dropped at this time for practical reasons, including those discussed as part of this study.

2.3 EXPERIENCE OF TWO MARITIME MUSEUMS THAT OFFER PARTICULAR COMPARABILITY

There are very few maritime museums that support ships on the water as well as conventional museum exhibit space. Of these, none have experienced recent facility expansion directly comparable to that proposed by the Maritime Museum of San Diego. However, two have engaged in enhancements that offer comparability to the MMSD and help to guide our judgment regarding the potential impact on attendance, operating revenues and expenses of assumed implementation of the plans for the MMSD. These are the:

- San Francisco Maritime National Historical Park
- Kalmar Nyckel ship and visitor center/museum, Wilmington Delaware

In addition we consider the relevance of a proposal for Colonial Williamsburg in Virginia that would seek to limit the current free access to the overall site by visitors and thus confirms the need to address a similar situation to that faced by the MMSD.

2.3.1 San Francisco Maritime National Historical Park: Reducing Free Visible Access

The San Francisco Maritime National Historic Park was founded in 1950 by the San Francisco Maritime Museum Association as a private non-profit museum. It opened to the public in 1951 in a WPA-built art deco building known as the Aquatic Park Bathhouse. In 1954, the Museum acquired its flagship, the 1886 full-rigged ship *Balclutha*, and acquisition of other vessels followed.

In 1978, ownership of the Maritime Museum was transferred to the National Park Service and now forms the core of the San Francisco National Maritime Historical Park. While the Park Service operates the site with federal funds, it still depends to a great extent on the continued efforts of a non-profit Association to generate private support and earned revenue to help cover costs, including maintenance of the vessels.

The Park now includes a fleet of historic vessels, a visitor center and the Maritime Museum in the recently restored Aquatic Park Bathhouse building, as well as a library/research facility. *Although the Park Service has considered establishing a single set fee for the multiple entrances to public spaces, the current practice is to offer access to the Maritime Museum and visitor center free of charge, with entrance fees only applied for access to the vessels.*

Over the past few years, there have been experiments using different ways to collect fees, with varying results.

- Initially, the Park Service permitted relatively free access to Hyde Street Pier, where the vessels are located. While some individuals would purchase a boarding pass at the pier entrance, a majority would walk up alongside the exhibited ships for viewing or photo opportunities. If interested in actually boarding the vessels they needed to go back to the initial ticketing area to purchase tickets. This was time consuming, and many visitors felt they had received adequate value for their walk down the pier, and would not pay a fee and repeat the walk just to go on board for a still unknown experience. Others would just board without paying because the Park Service did not place personnel at each gangway, relying on an honor system.
- Next, in an attempt to encourage boarding pass sales and to discourage un-ticketed boarding, the Park established a ticket booth nearer the outer end of the pier and close to the vessels. This effort turned out to be counterproductive. Visitors could get close enough to the ships to feel that they had received value before they had the opportunity to purchase a ticket. Paid attendance declined.
- In November of 2015, the Park Service increased the admission price to board the ships from \$5.00 to \$10.00, and this led to a decline in attendance. *However, at the end of April, 2016, the Park restricted free access at a gated entry about 100 feet from the vessels. Paid attendance spiked to 24%-40% above the previous year's levels, even though the price had doubled.* The data confirm the wisdom of relocating the MMSD vessels away from the waterfront boardwalk and helps to establish benchmarks for the attendance projections in the Chapter 4 of this report.

2.3.2 Kalmar Nyckel: Adding a Museum/Visitor Center Facility

The Kalmar Nyckel Foundation was established in 1986 to create and interpret a focal point for local maritime history in Wilmington, Delaware. With funding from the State of Delaware, as well as from corporate and private donors, the Foundation launched their signature ship, the Kalmar Nyckel in 1997. Modeled after the original Kalmar Nyckel, Peter Minuit's flagship in the 1638 expedition that established the first permanent European settlement in the Delaware Valley, the vessel has established itself as the official "Tall Ship of Delaware."

Homeported at the Kalmar Nyckel Shipyard dock, adjacent to where the original colonists landed, the vessel has served most of her career as a seasonal attraction and educational platform, voyaging out for public sails and as an ambassador vessel to other coastal cities. While located next to public shops and parkland, the vessel has long failed to attract a significant number of visitors. Viewed as an iconic structure, the ship has been limited by seasonal weather and by *a perception that shore side viewing is the primary value offered.*

Recognizing the need to broaden their appeal, the Foundation raised funds for an adjacent 18,000 sq. ft. building, which opened in the spring of 2015. This building replaced a group of 20-year-old "huts," and allowed for 365-day operation for the first time. An attractive three-story structure, the Copeland Maritime Center houses exhibits, educational space and offices for the organization, and rental space for private events. The primary exhibition is the *Watercraft of the World* collection of 72 model ships representing 60 different countries.

While improvements within the Center are still not complete, the change has already had a positive impact. By the end of 2016, annual attendance had grown 25% over 2014, the year before the Center opened (20,000 to 25,000) and the growth trend is expected to continue. According to senior staff there is now the added perception of value and sense of place for the institution. *The ship is now seen as a component of a larger overall experience, making the site itself more of a destination. This is a positive indicator for the MMSD as it considers a visitor center as part of the plan for the future.*

At least one other positive impact is perhaps more subjective. Kalmar Nyckel is a volunteer dependent organization with an impressive, for its size, 49,000 volunteer hours contributed annually from 265 volunteers. While volunteerism has not increased as a result of recent changes, staff has observed a greater sense of pride and achievement in the volunteer crew, and management hopes that this will result in even greater retention and support from volunteers.

2.3.3 Colonial Williamsburg: Consideration of Gating the Entire Site

A key issue facing the MMSD is a perception that visitors have experienced it because they walk along the waterfront boardwalk, take selfies and other photos and can sometimes hear the interpretation offered. Most do not pay to actually attend or go onboard. Another example we are aware of in which a museum-related institution or site has faced the problem of the public believing that it has "been there, done that" without paying is Colonial Williamsburg in Virginia. Access to the property is free to the public, although Colonial Williamsburg charges for access to its trade shops, homes and museums, as well as for tours of the Governor's Palace.

The concept of charging for access to the overall grounds has been discussed for over 40 years to help enhance security for the site and boost revenues. In May of 2017 the Colonial Williamsburg Foundation made a formal request to City Council to put up a fence to keep non-paying visitors out. The need for permission from the City is because the City owns all of the streets in the Historic Area. The recent initiative is a reflection of a general decline in attendance at historic sites over the past two decades, including Colonial Williamsburg.² Although it is uncertain whether permission will be granted by the City, it does confirm the reality of lost revenue that is also faced by the MMSD.

2.4 BENCHMARKS FROM OTHER SELECTED MUSEUMS IN SAN DIEGO

The most relevant museums in San Diego for the Maritime Museum of San Diego were identified to be the Cabrillo National Monument, because of the link to the San Salvador, and the USS Midway because of proximity to the MMSD. These are discussed below in the context of interviews held with their senior management.

In advance of this, the following table sets out reported attendance, admission charge and other data for specialized museums in San Diego that offer some level of comparability to the MMSD. If the attendance data are accurate they indicate opportunities for the MMSD to have increased attendance, even taking into account that its figures do not include attendance by members, and those attending private events and educational programs, whereas the others almost certainly do. The data also suggest opportunities for a reasonable increase in admission charges in the context of an enhanced visitor experience and length of stay even taking into account that the adult charge at the MMSD was recently increased to \$18.00, following an increase in the adult admission charge to \$20.00 at the USS Midway Museum.

Selected Specialized Museums in San Diego							
Name of Museum	Reported Attendance	Adult Admission Charge	Child Admission Charge	Family Membership Charge	Full-Time Paid Staff	Part-Time Paid Staff	Volunteers
Maritime Museum of San Diego	143,500	\$16.00	\$8.00	\$75.00	37	50	415
San Diego Air and Space Museum	175,000	\$19.50	\$10.50	\$109.00	31	14	246
San Diego Automotive Museum	100,000	\$9.00	\$4.00	\$50.00	5	6	48
San Diego Model Railroad Museum	140,509	\$10.00	\$2.00	\$45.00	N/A	N/A	N/A
<i>Source: 2017 Official Museum Directory of the American Alliance of Museums</i>							

2.4.1 USS Midway Museum

The USS Midway Museum is located a few hundred yards along the waterfront boardwalk from the MMSD at Navy Pier. The museum consists of the aircraft carrier Midway and houses an extensive collection of aircraft, many of which were built in Southern California. The Museum attracts about 1.2 million visitors annually, of which 80% are tourists from beyond a 50-mile radius. The Midway therefore attracts about 8 times more than the total visitation of the MMSD. Strategies are needed to attract more visitors departing the Midway.

² Data from the National Endowment for the Arts, Survey of Public Participation in the Arts (1982, 1992, 2002, 2008, and 2012) indicated that in 2012 some 24% of Americans age 18 or older had attended at least one historic site over the past year compared to 35% who did so in 1982.

The Midway Museum reports an average length of stay of 3.5 hours. Admission prices were recently increased to be as follows and serve to provide a limit as to what might be possible to charge at the MMSD, even assuming the enhancements proposed and an increased length of stay over the current 2.5 hours at the MMSD:

- Adult. (ages 18-61) \$20.
- Senior. (ages 62+) \$17.
- Retired Military. (w/ID) \$10.
- Student. (ages 13-17 or w/College ID) \$15.
- Youth. (ages 6-12) \$10.
- School/Youth Groups (10 or more): \$6

Free admission is provided to active military, police and fire fighters and account for about 5% of all visitors. Audio tour opportunities are free with admission as is access to the Battle of Midway Theatre. There is an extra charge for the simulators.

Taking into account that most school group visits are from within the resident market area, about 60,000 visits per year, or 5% of the 1.2 million annual attendance, is from school groups. About 60% of visitors are male, which is similar to the male skew of the MMSD and thus another basis for crossover visits. *A substantial difference in the Midway Museum visitor profile relative to the MMSD is that about 60% of all visitor parties include children compared to 20% for the MMSD. More hands-on, interactive opportunities in the proposed visitor center and the play ship should help to increase child attendance at the future MMSD, if implemented.*

The Midway has a successful membership program of 14,000, some of whom are from across the country or overseas, and a successful rentals business, as it closes the Museum at 5 p.m. to allow for setup time for evening rentals. There are 700 events per year, of which 400 are military-related. Rentals are primarily corporate, and few weddings are held on board. Caterers use their own trucks. The Midway hangar deck can accommodate up to 2,000 persons and confirms that the MMSD continue to focus on the more numerous smaller rentals of up to 200 persons.

The Museum has an operating budget of \$29 million. It benefits from 100,000 hours per year of volunteer support, of which about 80% is from male volunteers.

Feedback to the plans for the MMSD were very positive. The Director of Operations interviewed commented that he has personally seen people go on the ships without paying while the person in the ticket booth was occupied.

2.4.2 Cabrillo National Monument

The Cabrillo National Monument is a 160-acre site operated by the National Parks Service and is of particular interest to the MMSD because the San Salvador is a replica of the ship Juan Rodriguez Cabrillo sailed to San Diego. The site is about 8 miles away from MMSD and was established in 1913 and became part of the National Park Service in 1934.

There is a charge of \$10 per vehicle to access the site, which includes a large statue of Cabrillo, an iconic lighthouse and a visitor center that was added in the 1960s with exhibition space, retail store and 80-seat auditorium which alternates four films per hour. A new film is being developed that will show the San Salvador and will refer to the MMSD in the credits and therefore help to increase awareness of the San Salvador as part of the MMSD. The primary attraction of the site, however, is its natural beauty and the spectacular view of the harbor.

School groups receive free admission and represented about 15,700 visitors of the total 900,000 annual visitors. About 25% of visitors are residents of San Diego.

National Parks Service policies preclude the holding of wedding receptions or corporate functions, except if associated with the Foundation that supports the site. The site is supported by 800 volunteers who allocated 24,000 hours.

Feedback to the plans for the future of the MMSD was very positive.

2.5 ANALYSIS OF PILOT SURVEY DATA FOR MMSD 2013-2016

The MMSD has offered tours of the bay on its vessel Pilot Swift Boat for many years. Surveys of those who have taken the 45-minute cruise over the period from 2013 through 2016 help to provide data useful to consideration of the changes being considered for the Museum. The data of particular interest to this study is the following point:

- How Heard About the Museum: This is the key statistic in the context of the impact of moving the ships further back and having a visitor center with one point of entry. *The percentage that heard/knew about the Museum based on driving or walking by is the highest single factor in every year surveyed and demonstrates the importance of walk-by and drive-by traffic and the issue of perceptions of having visited simply by walking by.*

Driving or walking by:

- 2013 - 62%:
- 2014 - 38%
- 2015 - 39%
- 2016 - 44%

2.6 ANALYSIS AND IMPLICATIONS OF POTENTIAL MARKETS

This section focuses on potential resident, school and tourist markets for San Diego and the implications to the Maritime Museum of San Diego and its plans. The analysis includes a review of available data as well as feedback from the interview process.

2.6.1 Resident Markets

Although tourists account for the large majority of visitors to the MMSD, the resident market is also important for the following main reasons:

- Residents are readily accessible and available on a year-round basis.
- Residents can be made aware of museums and their exhibitions and programs more easily and cost-effectively than may tourists.
- Residents are most likely to be repeat visitors.
- Residents are more likely to become volunteers, members and donors.
- Residents often advise, and accompany, visiting friends and relatives to area attractions.

Population Size and Projections

As indicated on the following table, there is a large and growing population, both close to the site and in the Metro area. Regional population growth to the year 2030 is projected to exceed both state and national averages, thereby exposing more and newer residents to the MMSD and helping to balance the resident-tourist mix of visitors. A growing resident population also increases the likelihood for visiting friends and relatives to attend since they are often informed and/or accompanied by the residents they are visiting. And it is the basis for higher membership levels.

Resident Population						% Change	% Change
	2000	2010	2015	Projected 2020	Projected 2030	Actual 2000-2010	Projected 2010-2030
5-Mile Radius	216,085	229,365	232,467	N/A	N/A	5.8%	N/A
10-Mile Radius	874,687	908,666	940,128	N/A	N/A	3.7%	N/A
City of Santa Diego	1,223,341	1,307,402	1,359,791	1,540,000	1,690,000	6.4%	22.6%
San Diego-Carlsbad MSA	2,813,833	3,095,313	3,223,096	3,512,160	3,946,230	9.1%	21.6%
California	33,871,648	37,253,956	38,421,464	41,373,300	45,538,190	9.1%	18.2%
USA	282,162,410	309,330,220	316,515,021	340,554,350	373,751,030	8.8%	17.2%

Sources: Policy Map, Woods & Poole Economics 2014, 2015 American Community Survey, City of San Diego Population Estimates

Gender

Women account for a slightly larger percentage of the population but are generally a more important market for museums than are men for the following main reasons:

- Women tend to make the decisions in a household regarding educational experiences for their children. Therefore, the greater the perceived educational benefits of museum/cultural opportunities the more likely they will be selected;
- Women account for a large majority of teachers who usually make the decisions regarding school field trip destinations;

- Women tend to make the decisions regarding attractions to visit while on family vacations and account for a large majority of bus tour passengers and trip planners.

Women are estimated to represent 40-45% of non-school visitors to the MMSD. This is a common range for maritime museums, which tend to be more popular for men. An increased focus on young children as planned and other initiatives to increase appeal to women is positive for the future of the MMSD.

Age

The general trend is to an aging population as the very large baby boom generation retires but lives longer and it more active than previous generations. In general the age profile of maritime museums skews older so this is positive for the MMSD. *Persons in older age categories, however, are more likely to have mobility issues, so the addition of a visitor center at a new single entrance to the MMSD should help to attract more seniors concerned about mobility on site.*

Another important market segment is children, who are under-represented among MMSD visitors. The idea of a play ship should help to boost attendance levels among children, who would be primarily accompanied by adults.

Key Age Distribution, 2015	City of San Diego %	San Diego-Carlsbad MSA %	California %	USA %
0-19 years	24.0%	25.4%	26.6%	26.0%
20 - 24 years	9.3%	8.5%	7.6%	7.1%
25 - 44 years	31.9%	29.1%	28.1%	26.4%
45 - 64	23.4%	24.6%	25.2%	26.3%
65 +	11.6%	12.3%	12.5%	14.1%
Median Age	34.0	35.1	35.8	37.6

Source: 2015 American Community Survey and Woods and Poole Economics

Education and Income

Level of education is the variable with the closest correlation to museum and other cultural attendance and participation, as supported by numerous studies. The higher the level of education of an individual, the more likely it will be that this person will attend or participate. Like education, household income is an important indicator of potential museum/cultural attendance, but is not as significant an indicator as education. That is, high education, low-income persons are more likely to attend than are persons of high income and low education.

With respect to educational attainment the table below indicates that there is a higher percentage of residents within the city and the metro area than state and national averages with a Bachelor's degree or higher. This is positive for the MMSD.

Educational Attainment, 2015 (residents age 25+)	% of Residents with BA or Higher	% of Residents with Less than High School Education
San Diego City	43.8%	14.5%
San Diego- Carlsbad MSA	37.2%	13.4%
California	32.3%	17.8%
United States	30.6%	12.8%

Source: 2015 American Community Survey, Woods and Poole Economics, 2014

Regarding per capita and household income levels, the data indicate figures for residents close to the site, within the city and metro area that exceed state and national averages. This is positive for the MMSD and opportunities for modest increases in admission charges.

Income Levels, 2015	Per Capita Income	Median Household Income	% Living in Poverty
5 Mile Radius	N/A	\$70,720	N/A
San Diego City	\$33,902	\$66,116	15.4%
San Diego- Carlsbad MSA	\$31,266	\$67,320	13.8%
California	\$30,318	\$61,818	15.3%
United States	\$28,930	\$53,889	13.5%

Source: US Census and 2015 American Community Survey

Ethnicity

The following table indicates the comparative ethnicity/race of residents close to the site, the city and metro area of San Diego in relation to state and national averages. Of particular importance is the large and growing Hispanic population. This market tends to have larger families and should be particularly interested in the play ship. Other strategies should be developed to increase the potential levels of attendance among the large and growing Hispanic resident market.

Ethnicity, 2015	White	Black	Asian	American Indian	Other	Hispanic	Foreign Born
5 Mile Radius	79.2%	4.6%	6.8%	0.6%	4.8%	22.9%	16.6%
10 Mile Radius	67.0%	7.4%	11.7%	0.7%	9.0%	34.1%	24.8%
San Diego City	64.1%	6.5%	16.7%	0.5%	7.1%	30.1%	26.6%
San Diego- Carlsbad MSA	74.9%	6.3%	13.7%	1.7%	8.6%	32.9%	N/A
California	65.5%	7.1%	15.6%	1.9%	14.9%	38.4%	27.0%
United States	76.1%	13.8%	6.1%	1.7%	5.6%	17.7%	12.9%

Source: Policy Map, US Census, and Woods and Poole Economics, 2014

Foreign born for the 5 and 10 mile radii are derived from a period ranging from 2011-2015

2.6.2 School Groups

The MMSD reports that about 9% of its total attendance is from among school group visitors. This is within a common range. School group visits are important to all museums for the following main reasons:

- Education is core to the mission and mandate of all museums;
- Children brought to museums as part of school field trips often convince their parents to take them again;
- For children in lower income/education families, attending on a field trip is often the only opportunity to attend museums.

The key determinants for schools to attend on field trips are the size of the student population within a convenient distance, relationship to curriculum, student enjoyment, proximity and cost, as well as the ability of an institution to help meet standards of learning and testing requirements.

Enrollment Levels and Projections

The following table indicates available data regarding the enrolled populations in the city and metro area compared to state and national averages. *The data confirm not only the importance of children but also of late teenagers and early 20s and the need for strategies to make the MMSD more of a date place.*

School Enrollment Levels	San Diego City	San Diego-Carlsbad MSA	California	USA
Population 3+ years enrolled	376,271	869,872	10,484,707	81,618,288
Nursery school (less than 5 years)	6.1%	6.0%	5.5%	6.1%
Kindergarten (5, 6 years)	4.3%	4.8%	4.9%	5.1%
Elementary (7-14 years)	31.2%	35.7%	38.9%	39.6%
Highschool (14/15-18 yrs)	17.7%	19.1%	22.4%	20.5%
College or graduate school (18/19 yrs+)	41.4%	34.3%	28.3%	28.8%

Source: 2015 American Community Survey

Curriculum Links

Attending the MMSD could be related to the social studies and history curricula at a variety of grade levels but the links are not as strong as may be offered by other types of museums. This suggests the importance of an even more compelling visitor experience as discussed below.

Interactivity and Student Enjoyment

It is common for field trips to be selected not only because of curriculum links but also because of the extent to which they provide hands-on or interactive participation. With cutbacks in the funds available to schools, there is likely to be an even greater emphasis on selecting field trip destinations that are learning-based and age-appropriate in relation to both content and activities, but also “fun” and interactive, thus offering students higher levels of learning enjoyment. This is rooted in the knowledge that children are more likely to learn if their

experience is interesting and enjoyable. The additional interactive opportunities of the assumed visitor center and play ship are therefore positive for school visits too.

Field Trip Policies and Cost

There are no mandated field trips in the region so the decision of which museum to attend is made by the classroom teacher to reflect both curriculum links and student enjoyment. Approval by the Principal is usually based on the extent to which a field trip is perceived to help meet the standards of learning. Field trips are also more likely to be selected if they have a STEM connection and if they offer the efficiency of two field trip destinations on one trip. In the case of the MMSD this may include additional combined field trips with the USS Midway.

2.6.3 Tourist Markets

Data from the San Diego Tourism Authority helps to profile the 17.2 million overnight tourists to San Diego in 2015 (projected to grow to 19.1 million by 2020) and potential implications to the MMSD and plans for its future. Overnight visitors are more likely to have time to visit attractions but day trip tourists are important too. There are also about 4.4 million day visitors from Mexico among the 18.5 million day visitors to San Diego.

- Purpose of Trip: Some 73% of overnight visitors were in San Diego on a pleasure/vacation trip or visiting friends and relatives, while 20% were in the city for business or convention purposes. Pleasure travelers and those visiting friends and relatives have more time to attend attractions, including the MMSD. *Moving the ships further from the boardwalk will reduce the incidence of residents taking their visitors to the board walk for photos and instead more will accompany them on-board.*
- Party Composition: Some 24% of overnight visitors arrived with children, growing to 30% of those staying at the homes of friends and relatives, which accounts for a very substantial 47% of all leisure visitors. This emphasizes the importance of seeking to widen appeal to children, including the play ship.
- Activities in San Diego: The main activities are the beach (23%) followed by Legoland, Old Town and the Zoo all at 12%. Although the MMSD is not listed among the top 10 attractions, positive is that the "Harbor/Waterfront" was mentioned by 11% of respondents. Creating the conditions to get more of them to pay for and not just walk by the ships close to shore should be very positive for paid attendance and earned income for the MMSD.

3. KEY ASSUMPTIONS UNDERLYING PROJECTIONS

This chapter sets out the key finalized assumptions associated with the plan and reflects some approved modifications to the original plan. The finalized assumptions help to underlie the attendance and financial projections in the chapter of this report.

3.1 KEY ELEMENTS OF THE PLAN

The key elements of the plan developed by the Board and senior management of the MMSD are as follows, including approved modifications.

- Moving the ships back from the waterfront boardwalk. At present the Star of India abuts the shoreline and allows passersby to hear what is said on board for educational programs and tours and to take close-up photos. The distance from the shore needs to offer a balance between being close enough to draw attention and far enough to encourage visitors to pay to attend the Museum. As suggested by the Board, about 30-40 feet appears to be appropriate.
- A new visitor center on a barge linking the shore to the ships that will provide a single point of entry and admissions and that will expose visitors to the retail store on both entry and exit. Ticketing is currently at two small booths along the waterfront that appear hucksterish and do not convey the image of a professional museum operation. The visitor center would also provide a greater sense of place associated with attending a traditional museum. The visitor center barge is assumed to accommodate a building with about 7,000 sq. ft. of flat deck surface to support about 5,000 sq. ft. of useable area, plus about 2,000 sq. ft. for circulation and open passageways for material handling. The space allocations on each floor are to be finalized in detailed design but are assumed to be as follows at this point:
 - Second Floor: Board room and break out rooms with a flexible layout available for rental totaling 1,048 sq. ft. Much of the of the public space on the first floor is assumed to have high ceilings, therefore limited the second floor space
 - First Floor:
 - Admissions/queue/teaser exhibits: 750 sq. ft.
 - Gift Shop Public Space: 1,240 sq. ft.
 - Gift Shop administrative and quick turn-around space: 220 sq. ft.
 - Theater (175 capacity): 1,340 sq. ft.
 - Admissions Office: 115 sq. ft.

- Table and Chair and Other Storage: 380
- Total First Floor: 4,045 sq. ft. plus circulation space and open passageways for material handling to bring maximum to 7,000 sq. ft.
- Below Deck on Barge (Lower Level)
 - Library: 750 sq. ft.
 - Employee and Volunteer Lounge and Administration: 800 sq. ft.
 - Volunteer Administration: 225 sq. ft.
 - Gift Shop Main Storage: 200 sq. ft.
 - Wardrobe storage and change rooms: 470 sq. ft.
 - Other lower level spaces for storage, administrative offices, training and other uses to bring the total up to a maximum 7,000 sq. ft.
- A maritime-themed play ship to attract more children, in both family and school groups. It would feature about 500 sq. ft. of floor space. In addition, the original concept had the play ship visible from the shore and a play park across the street. We recommend a location for the play ship that would not be visible from the shore because the park attracts a resident market that will know about the play ship based on word of mouth and do not require visibility. Moreover, the image of the MMSD to passersby should be the quality and appeal of the collections, especially the Star of India and the San Salvador.
- We also recommend moving the ships around periodically to create a sense of change and therefore increased likelihood for repeat visitation and membership. It will also mitigate the issue of the San Salvador traveling to other ports and therefore missing from the MMSD periodically.

3.2 ASSOCIATED RECOMMENDATIONS/ASSUMPTIONS

Other key assumptions that will require approval or modification before projections are made in the next phase of the study include:

- Admission Charges: It is assumed that the MMSD will continue the practice of offering lower admission charges than the USS Midway Museum. However, given the introduction of the visitor center and the play ship it is recommended and assumed that with implementation the adult admission charge be \$1.00 lower as opposed to the current \$2.00.
- Membership Charges: With somewhat higher admission charges, increased length of stay and more reasons for repeat visitation, the number of members and the amount that might be charged per membership should both increase. Projections of the growth in memberships are made in Chapter 4.
- Operating Schedule: With no assumed addition of a rentals/multi-purpose barge, it is assumed that there would be no difference to the operating schedule, with continuation of evening openings but that additional strategies to target exiting USS Midway visitors will be introduced.

- Staffing Levels: To maximize the bottom line operational benefits of the plan to move the ships further from the shore, add a single entry visitor center and play ship, the total staff level will not change. This will entail a redeployment of one of the two staff currently collecting admissions with only one entry point and also opportunities to integrate visitor center and retail staff. The redeployment is assumed to be to the play ship.
- Parking Availability and Cost: It is assumed that there will be no significant reduction to the number of parking spaces near the MMSD and that the cost of parking will not increase substantially.

4. ATTENDANCE, REVENUE AND EXPENSE PROJECTIONS

This Chapter sets out independent projections of attendance, operating revenues and expenses for the Maritime Museum of San Diego (MMSD) assuming implementation of plans to move the vessels further from the shore and to add a visitor center and play ship.

The projections set out here are for the opening three years of operation after implementation of the plan. Year 3 is a stabilized year that is reflective of subsequent years. The projections are based on the contextual/comparables and market analyses in Chapters 2, the assumptions detailed in the preceding chapter, estimates by MMSD staff, as well as the judgment and substantial experience of the consultant.

All projections are in 2017 constant dollars and it is thus assumed, for example, that salaries and wages will increase at no more than the prevailing rate of inflation each year. The projections build on a “base level” of 2016 actual attendance, income and expenditure figures for the MMSD and are of operating expenses minus estimated earned income and assume that all *existing* sources of government and private support for the MMSD will be maintained at the base level. This will allow the bottom line to be the amount required from *additional or reduced* private and government sources to break even each year to support the operating costs.

Rather than seek to specify an unknown opening date following implementation of the plan, the projections are simply for Year 1, 2 and 3 of operation, with Year 3 as a stabilized year representative of subsequent years of operation.

4.1 ON-SITE ATTENDANCE PROJECTIONS

To prepare attendance projections first requires a reasonable definition of who would or would not be defined as a visitor. The MMSD is very unusual among museums in defining a visitor to exclude members, and those attending private events and educational programs. This definition has been maintained for the purposes of the attendance projections that assume implementation of the relocation of the vessels and a visitor center and play ship but no other changes that might affect attendance levels.

The projections primarily reflect the experience of the other maritime museums discussed in Chapter 2 that have undergone similar changes. These are as follows:

- Experience of San Francisco Maritime Historical Park: In November of 2015, the Park Service increased the admission price to board the ships from \$5.00 to \$10.00, and this led to a decline in attendance. However, at the end of April, 2016, the Park restricted free access at a gated entry about 100 feet from the vessels. Monthly paid attendance spiked to 24%-40% above the previous year's levels. However, these monthly increases are in an opening year, and not necessarily representative of attendance in subsequent years.
- Kalmar Nyckel: The addition of an 18,000 sq. ft. museum/visitor center building resulted in a 25% increase in attendance in the opening year. Again, an opening year impact is not likely to be sustained in subsequent years.

Based on these experiences, the opinions of MMSD staff and our judgment and experience we estimate about a one-third increase in MMSD total attendance in Year 1 to a rounded 180,000 annual visitors and in the range of 25-30% in subsequent years, or about 175,000 in Year 2 and 172,000 in the stabilized Year 3. The higher attendance in the opening year is a common phenomenon, especially among regional residents.

The attendance projections assuming implementation of the plan are summarized in the following table, starting with a base level of existing attendance at the MMSD. The visitor-generated revenue categories that follow build upon these attendance estimates.

Paid Attendance Projections (rounded)	Base Level	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
Projected Total Attendance	135,700				180,000	175,000	172,000
Attendance by Main Segment							
Resident (50-mile radius)	20%	30%	25%	25%	54,000	43,750	43,000
Tourist	80%	70%	75%	75%	126,000	131,250	129,000
Total	100%	100%	100%	100%	180,000	175,000	172,000
Paid Attendance by Ticket Category							
Adult (19-61)	49%	44%	42%	41%	79,200	73,500	70,520
Senior, Military with ID, Student (13-18)	25%	25%	26%	26%	45,000	45,500	44,720
Child (3-12)	15%	20%	20%	20%	36,000	35,000	34,400
School Groups	9%	9%	10%	11%	16,200	17,500	18,920
Non-School Groups	2%	2%	2%	2%	3,600	3,500	3,440
Total Paid Attendance	100%	100%	100%	100%	180,000	175,000	172,000

4.2 PROJECTED OPERATING REVENUES

This section sets out our projections of operating revenues during the opening three years projected for the expanded and enhanced Maritime Museum of San Diego (MMSD). Projections are set out in 2017 constant dollars in the following categories:

- Admissions;
- Retail Sales;
- Facility Rentals;
- Membership;
- Public and Educational Programs;
- Fundraising Events;
- Other Earned Income;
- Existing Private Support;
- Existing Government Support.

For the purposes of these projections we assume that current levels of private and grant support will be maintained for each year to allow the bottom line to be the amount required from *additional or reduced* private and grant support to break even on operations each year.

4.2.1 Admissions

The MMSD reported about \$1,673,000 in admissions revenue in 2016. Our projections of admission revenue are based on the estimated attendance and the assumed somewhat higher admission charges with implementation of the plan. The projections also assume that discounts offered to visitors and free admissions will result in 10% lower admissions revenue. This leads to the following projections.

Ticket Categories	Admission Charges (2017 dollars)	Base Level Revenue	Year 1		Year 2		Year 3	
			Year 1 Visitors	Year 1 Admissions Revenue	Year 2 Visitors	Year 2 Admissions Revenue	Year 3 Visitors	Year 3 Admissions Revenue
Adult	\$19.00		79,200	\$1,504,800	73,500	\$1,396,500	70,520	\$1,339,880
Senior/Military with ID/Students	\$14.00		45,000	\$630,000	45,500	\$637,000	44,720	\$626,080
Child	\$11.00		36,000	\$396,000	35,000	\$385,000	34,400	\$378,400
School Groups (per person)	\$9.00		16,200	\$145,800	17,500	\$157,500	18,920	\$170,280
Non-School Groups (avg. per person)	\$13.00		3,600	\$46,800	3,500	\$45,500	3,440	\$44,720
Total Admissions Revenue (before discounts)			180,000	\$2,723,400	175,000	\$2,621,500	172,000	\$2,559,360
Total Admissions Revenue (after discounts/free admissions (10%))		\$1,673,000		\$2,451,060		\$2,359,350		\$2,303,424
Admissions Revenue per Visitor				\$13.62		\$13.48		\$13.39

4.2.2 Retail Sales

The existing 1,200 nsf retail store generated about \$290,400 in retail sales in 2016. That translates to about \$242 per sq. ft. and about \$2.14 per visitor. The size of the store in the new Visitor Centre is assumed to increase slightly to 1,240 nsf of public space but there will be more visitors exposed to it with higher attendance.

Assuming the same retail sales per visitor at \$2.14 leads to the following retail sales projections. (Costs of goods sold are included with the expense projections while staffing and other overhead costs are included with those expense projections later in this chapter.)

Retail Sales (1,240 nsf public space)	Base Level	Year 1	Year 2	Year 3
Total Attendance	135,700	180,000	175,000	172,000
Sales/Visitor	\$2.14	\$2.14	\$2.14	\$2.14
Total Sales	\$290,400	\$385,200	\$374,500	\$368,080
Sales per Sq. Ft.	\$234.19	\$321.00	\$312.08	\$306.73

4.2.3 Facility Rentals

The MMSD generated about \$786,700 in revenues from facility rentals in 2016. Although the concept of a rentals/multi-purpose barge is no longer assumed, the introduction of the visitor center including a multi-purpose space will increase space options for rentals and therefore potential revenues from this source, as will the play ship increase opportunities for birthday parties.

For the purposes of these projections we estimate a 10% increase in rentals revenue in Year 1, with a growth above the prevailing rate of inflation of 1% in each of the next two years to reflect greater awareness of rentals opportunities at the MMSD. This leads to the following projections.

Facility Rentals	Base Level	Year 1	Year 2	Year 3
Total Revenue	\$786,700	\$865,370	\$874,024	\$882,764

4.2.4 Membership

The MMSD reported about \$182,400 in membership revenue in 2016. For the purposes of these projections it is assumed that membership revenues will increase on about the same percentage basis as attendance in Year 1 (33% above the base level) and close to 25% in each of the next two years. This leads to the following projections.

Membership	Base Level	Year 1	Year 2	Year 3
Total Revenue	\$182,400	\$242,592	\$228,000	\$228,000

4.2.5 Public and Educational Programs

The Maritime Museum of San Diego has a variety of successful on-water and other public and educational programs that generated about \$614,500 in 2016. The introduction of a visitor center and play ship should create the opportunity for additional public programs and higher attendance should expose more people to those opportunities. However, some additional programs will be included with the price of admission. For the purposes of these projections we have estimated a 15% increase in revenues that would be applicable each year.

Public and Educational Programs	Base Level	Year 1	Year 2	Year 3
Total Revenue	\$614,500	\$706,675	\$706,675	\$706,675

4.2.6 Fundraising Events (net)

The MMSD generated about \$500,100 in net income from fundraising events in 2016. We do not project any difference in revenues from fundraising events after implementation of the plan to move the vessels further from shore, adding a visitor center and play ship. Therefore \$500,100 is projected for each of the three years.

4.2.7 Other Earned Income

The primary source of other earned income for the MMSD is publications. Implementation of plans for it should make no difference to other earned income, which is assumed to continue at the current \$9,500 for each year projected.

4.2.8 Existing Private Support (Donations/Sponsorships)

In 2016 the MMSD generated about \$899,900 in private support. For the purposes of these projections this figure is assumed to continue each year to allow the bottom line to be the additional or reduced amount required from private and grant support.

4.2.9 Existing Government Support

In 2016 the MMSD received a combined \$583,100 in support from City, State and Federal grant sources. Government grants may change on an annual basis but we have assumed that this amount will be maintained each year to allow the bottom line to be the amount of additional or reduced private and government support to break even.

It must be noted that the Transient Occupancy Tax (TOT) funding from the City of San Diego Commission for Arts and Culture should increase modestly because the amount is established by ordinance and is calculated by formula based on the size of the operating budget. But given the order of magnitude nature of projections this has not been projected.

4.3 PROJECTED EXPENSES

There are eight categories of projected operating expenses for the Maritime Museum of San Diego (MMSD). Excluding depreciation and interest, these are:

- Salaries, Wages and Benefits;
- Occupancy Costs;
- Exhibitions Costs;
- Public and Educational Programs;
- Collections and Research;
- General and Administrative;
- Marketing;
- Retail Cost of Goods Sold.

4.3.1 Salaries, Wages and Benefits

It has been assumed that implementation of the plan to relocate the ships further from the shore, add a visitor center and play ship will not require additional staff, but rather will lead to a modest reallocation of existing staff. In particular, with one entrance instead of two and the integration of retail into the visitor center, it will allow for the reduction in visitor service/admissions staff and their reallocation to the play ship and other needs. This would not require an increase in salaries or benefits so it is assumed that salaries and wages, in 2017 dollars, will remain at largely current levels but to take minor contingencies into account have been rounded up from the base level of about \$3,280,000 to *\$3.3 million each year*.

4.3.2 Occupancy Costs

These non-staff costs generally include utilities, repairs and maintenance, insurance and security. Whereas these costs are specific to museum buildings, in the case of the MMSD it is largely space on vessels with 52,750 gross sq. ft. under roof. At reported occupancy costs of \$499,500 this translates to \$9.47 per gsf. The introduction of a visitor center barge will add 7,000 gross sq. ft. while the play ship will add 500 sq. ft, or a combined 7,500 gsf. There will, however, also be a reduction of about 200 sq. ft. with the elimination of the two ticket booths, leading to a new 7,300 sq. ft. of space.

We estimate that the visitor center will require more electricity but that there would be lower maintenance costs in the initial years. Adding a net 7,300 sq. ft. of space will lead to a total of 60,050 gross square feet. Assuming that maintenance costs will increase over time we estimate that the cost per sq. ft. would be \$9.25 in Year 1, \$9.50 in Year 2 and \$9.60 per sq. ft. in Year 3. This leads to the following projections.

Occupancy	Base Level	Year 1	Year 2	Year 3
Gross Sq. Ft.	52,750	60,050	60,050	60,050
Cost per Sq. Ft.	\$9.47	\$9.25	\$9.50	\$9.60
Total Costs	\$499,500	\$555,463	\$570,475	\$576,480

4.3.3 Exhibitions Costs

These non-staff operating costs are for the changing or upgrading of exhibits, routine maintenance and temporary exhibitions as defined by the MMSD. In 2016 these costs totaled about \$407,300. The addition of the visitor center and play ship will add modestly to the exhibition space and higher attendance will require more routine maintenance associated with the exhibitions. We estimate an additional 10% in the opening year and 1% per year above the prevailing rate of inflation thereafter. This leads to the following projections.

Exhibitions	Base Level	Year 1	Year 2	Year 3
Total Costs	\$407,300	\$448,030	\$452,510	\$457,035

4.3.4 Public and Educational Programs

The 2016 operating budget of the MMSD indicates only about \$22,400 in non-staff costs associated with public and educational programs. This is far lower than the reported revenues from public and educational programs and reflects how the MMSD allocates its expenses to various categories. As set out earlier in the chapter, our projections are that public and educational programs revenue would increase by 5% over the base level in each of three years projected. For the purposes of these projections, given how low the reported costs are, we have estimated a 30% increase in public and educational programming costs as applicable to each year projected. This leads to the following projections.

Public and Educational Programs	Base Level	Year 1	Year 2	Year 3
Total Costs	\$22,400	\$29,120	\$29,120	\$29,120

4.3.5 Collections Care

In 2016 the MMSD spent about \$48,800 in non-staff expenditures on collections care. These costs are likely to increase somewhat with additional exhibition space in the visitor center. Our estimates of collections care costs is that they will increase to *\$55,000 per year*.

4.3.6 General and Administrative

General and administrative costs exclude staffing and often include office and related supplies, equipment, mailing, printing, telephone, travel, conferences, volunteer perquisites, professional services, the web site, dues and subscriptions, credit card fees, entertainment, and other items that do not fit into the other expense categories. For the MMSD these costs totaled about \$764,300 in 2016. Such costs are often closely related to staffing costs, but with no increase in staffing levels the general and administrative costs should increase only marginally each year as projected here.

General & Administrative	Base Level	Year 1	Year 2	Year 3
Total Costs	\$764,300	\$775,000	\$780,000	\$785,000

4.3.7 Marketing

The focus here is on non-staff marketing costs, including advertising and promotion. The MMSD allocated about \$349,800 to marketing in 2016.

There will be a need to increase the marketing budget to communicate the new visitor center and play ship, but with the increased emphasis on low cost social media the increase should not be substantial. We estimate the need for a 15% increase in Year 1 and 3% per year thereafter. This leads to the following projections.

Marketing	Base Level	Year 1	Year 2	Year 3
Total Costs	\$349,400	\$401,810	\$413,864	\$426,280

4.3.8 Retail Cost of Goods Sold

The MMSD reported about \$166,300 in retail cost of goods sold in 2016. With retail sales at \$290,400 this indicated a cost of goods of about 57% of retail sales revenues, which is within the norm of 50-60%. Assuming continuation of the 57% ratio this leads to the following projections.

Retail Cost of Goods Sold	Base Level	Year 1	Year 2	Year 3
Total Costs (@57%)	\$166,300	\$219,564	\$213,465	\$209,806

4.4 SUMMARY OF ATTENDANCE AND FINANCIAL PROJECTIONS

The following table summarizes our projections of attendance, operating revenue and expenses for the Maritime Museum of San Diego (MMSD) in its opening three years following assumed implementation of the plan to relocate the vessels further from the shore and to add a single entry visitor center and a play ship.

We project a growth of on-site attendance from the rounded 136,000 level in 2016 to 180,000 in Year 1, 175,000 in Year 2 and a stabilized 172,000 in Year 3.

Based on the analyses and assumptions in this report we project that the total operating budget for the MMSD (excluding depreciation and interest) will grow relatively modestly from about \$5.5 million to the \$5.8 million range. This limited growth is because of an assumption there would be a reallocation and not an increase in staff positions with implementation of the plan. Staffing is the largest operating cost category. Other expense categories should have modest increases. All financial projections are in constant 2017 dollars.

Assuming no changes in private and governmental support, earned income levels are projected to grow substantially from the 2016 level of about \$5.5 million to about \$6.6 million in Year 1 and \$6.4 million in Year 2 and Year 3, reflecting the higher attendance in the initial year.

The bottom line of the projections is that increased revenues will exceed the projected increased expenses by about \$827,000 in Year 1, \$693,000 in Year 2 and \$615,000 in the stabilized Year 3.

Rather than assume a reduced level of support needed from private and government sources, we recommend that the MMSD seek to maintain private and government support at current levels, and use the surplus revenues to pay for continual enhancements to the vessels and the visitor experience and any debt repayment needed. The ideal scenario would be that capital funds required to implement the plan will not require debt. That would allow the full amount of the surplus to be reinvested into the museum every year. In that context, it must be emphasized that the focus of this study is on the operational implications of implementation of the plan to relocate the vessels, add a visitor center and play ship, and does not consider the capital cost requirements. The Board will need to consider the capital cost implications of the plan to help with decision-making but it is clear that the attendance, admissions and other earned income impacts will be very positive to the operation of the Maritime Museum of San Diego.

MMSD: Summary of Attendance, Operating Revenue and Expense Projections	Base Level	Year 1	Year 2	Year 3	Base Level	Year 1 %	Year 2 %	Year 3 %
Annual Attendance	135,700	180,000	175,000	172,000				
Projected Operating Revenues								
Admissions	\$1,673,000	\$2,451,060	\$2,359,350	\$2,303,424	30.2%	42.4%	40.6%	39.5%
Retail Sales	\$290,400	\$385,200	\$374,500	\$368,080	5.2%	6.7%	6.4%	6.3%
Educational and Public Programs	\$614,500	\$706,675	\$706,675	\$706,675	11.1%	12.2%	12.2%	12.1%
Facility Rentals	\$786,700	\$865,370	\$874,024	\$882,764	14.2%	15.0%	15.0%	15.1%
Membership	\$182,400	\$209,760	\$200,640	\$200,640	3.3%	3.6%	3.6%	3.5%
Fundraising Events	\$500,100	\$500,100	\$500,100	\$500,100	9.0%	8.6%	8.6%	8.6%
Other Earned Income	\$9,500	\$9,500	\$9,500	\$9,500	0.2%	0.2%	0.2%	0.2%
Existing Private Support	\$899,900	\$899,900	\$899,900	\$899,900	16.2%	15.6%	15.5%	15.4%
Existing Government Support	\$583,100	\$583,100	\$583,100	\$583,100	10.5%	10.1%	10.0%	10.0%
Total Revenue Projected	\$5,539,600	\$6,610,665	\$6,507,789	\$6,454,183	100.0%	114.3%	112.1%	110.6%
Projected Operating Expenses (excluding depreciation, interest)								
Salaries, Wages, Benefits	\$3,280,000	\$3,300,000	\$3,300,000	\$3,300,000	59.2%	57.1%	56.8%	56.5%
Building Occupancy	\$499,500	\$555,463	\$570,475	\$576,480	9.0%	9.6%	9.8%	9.9%
Exhibitions	\$407,300	\$448,030	\$452,510	\$457,035	7.4%	7.7%	7.8%	7.8%
Public and Educational Programs	\$22,400	\$29,120	\$29,120	\$29,120	0.4%	0.5%	0.5%	0.5%
Collections Care	\$48,800	\$55,000	\$55,000	\$55,000	0.9%	1.0%	0.9%	0.9%
General & Administrative	\$764,300	\$775,000	\$780,000	\$785,000	13.8%	13.4%	13.4%	13.4%
Marketing	\$349,400	\$401,810	\$413,864	\$426,280	6.3%	6.9%	7.1%	7.3%
Retail Cost of Goods Sold	\$166,300	\$219,564	\$213,465	\$209,806	3.0%	3.8%	3.7%	3.6%
Total Expenses	\$5,538,000	\$5,783,987	\$5,814,435	\$5,838,721	100.0%	100.0%	100.0%	100.0%
Surplus of Revenues Over Operating Expenses Excluding Depreciation and Interest	\$1,600	\$826,679	\$693,354	\$615,462	0.0%	14.3%	12.1%	10.6%

APPENDIX A: COMPARATIVE DATA FOR SELECTED MARITIME MUSEUMS

As seen on the following table, not all museums were willing to provide all data requested, especially the financial data.

	Maritime Museum of San Diego, CA	Columbia River Maritime Museum, Astoria OR	Santa Barbara Maritime Museum, CA	South Street Seaport Museum, New York, NY	Kalmar Nyckel, Wilmington DE
On site Parking?	Y, not dedicated	Y, not dedicated	Y, not dedicated	N	Y, not dedicated
# of parking spaces	120	100	1000	walking distance	200
Cost of parking	\$1.75/hr	varies	\$3/hr	very expensive	\$0
Total building size	52,750 under roof	40,000	15,000	87,000 (9,000 active)	18,000
Total exhibition space size	20,000	22,000	7,500	9000	
Theater seats	270	300	88		
Total meeting room space (sf)	4,800	3 rooms/2,000			
Gift shop size (public sf)	1,200	1,500	900	1,000	
Food service	70	N	N	N	N
Food or gift shop concessioned out?	Food Y, Gift Shop N	N	N	Gift Shop	N
On water resources?	Harbor tours and ship charters			5 historic ships	Yes, the ship
Annual schedule	year round	year round	year round, closed Tues.	closed Monday, Tuesday	year-round, daily
Hours of operation	0900-2000 Summer 0900-2100	0930-1700	1000-1700	1100-1900	0900-1700
Adult admission	\$16	\$14	\$8	\$12	\$5
Senior admission	\$13	\$12	\$5	\$8	
Student/youth admission	\$13	\$5	\$5	\$8	\$3
Child admission	\$8	\$0	\$0	\$8	
School group admission per person	\$7	\$4	\$0	varies	
Bus tour admission per person	\$10	\$12	\$6		\$10
Any additional admission charge?	Harbor tours and charters	\$5 for 20 minute film		Harbor cruises, walking tours	
Attendance 2016	135,707 *	115,000	28,000	29,000	25,000
Attendance 2015	133,972	113,000	25,000	23,000	22,000
Attendance 2014	140279	113,000	24,000	18,000	20,000
Peak attendance season	Jun-Aug	August	July	May, June, July	summer
Low attendance season	Winter (weather, drydocking)	January	Jan	Jan -March	winter
Schools groups as % of attendance	9%	5%	5%		40%
Tour groups as % of attendance	2%	5%			25%
% of attendance within 50-mile radius	20%	1%	40%		60%
% of attendance elsewhere in state	10%	29%	20%		5%
% of attendance other USA	60%	70%	10%		10%
% international attendance	10%		10%		25%
% paid admissions	95%	99%	100%		75%
% free admissions	5%	1%			25%
% 12 and under	15%	5%	30%		5%
% 13-24	10%	5%	15%		15%
% 25-39	20%	20%	15%		15%
% 40-64	40%	50%	20%		25%
% 65 and older	15%	20%	20%		40%
% male	55%	50%	55%		
% female	45%	50%	45%		
% adults with children	20%	50%	50%		25%
% adults without children	80%	50%	50%		75%
% first time visitors	86%	80%	60%		25%
% repeat visitors	14%	20%	40%		75%
% weekday	36%	70%	40%		25%
% weekend	64%	30%	60%		75%
Length of visit school groups	120 min	60 min	90 min		240 min
Length of visit first time visitors	150 min	120 min		90 min everyone	90 min
Length of visit repeat visitors	150 min	120 min	90 min		90 min
Length of visit residents	150 min	60 min			90 min
Length of visit tourists	150 min	120 min			90 min
Membership program?	Y	Y	Y	Y	Y
Number of memberships	2,565	1400	900	450	300
Member visits as % of total visits	1%		25%		
Full time staff	39	11	5		3
Part time staff	89	15	8		2 to 10
# volunteers	250 active + 250 periodic	74	50		285
Operating expenditures 2016	\$6.0 mil	\$2.2 mil	\$1.2 mil		\$1 mil
Budget 2017	\$6.1 mil	\$2.2 mil	\$1.2 mil		\$1 mil
% of revenue for basic admissions	30%	60%	5%		2%
% of revenue for other admissions					1%
% of revenue from retail sales	5%		10%		
% revenue rentals	14%		10%		
% revenue memberships	3%		5%		2%
% of revenue educational programs	11%		2%		34%
% revenue fundraising events	9%		10%		10%
other earned revenue	1%	20%			
% revenue donations/sponsorships	16%		50%		40%
% revenue endowments		20%			
% revenue city government	8%				
% revenue state government	10%				10%
% revenue Federal government	3%		10%		1%
% expenditures salaries	54%		45%		49%
% expenditures building and facilities	8%		8%		40%
% expenditures exhibitions	7%				5%
% expenditures ed and public programs	5%		15%		5%
% expenditures curatorial	5%		1%		
% expenditures marketing	6%		3%		
% expenditures general/admin	13%		5%		1%
% expenditures cost of goods sold	3%				
% other expenditures	8%				
Comments	* MMSD attendance numbers do not include Member visits, Education Programs, or Private Events				

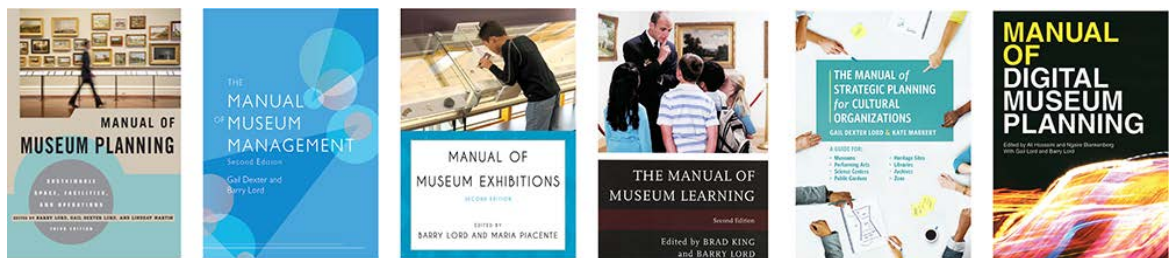
APPENDIX B: PROFILE OF LORD CULTURAL RESOURCES

Founded in 1981 in response to an emerging need for specialized planning services in the museum, cultural and heritage sector, Lord Cultural Resources is now the world's largest cultural professional practice. We've helped create iconic cultural destinations in more than 460 cities, in 57 countries on six continents. Our 2200+ projects include museums, mixed-use developments, cultural centers, art galleries, science centers, world expositions, visitor centers, heritage sites, festivals, theaters, archives, libraries and gardens.

Our clients — leaders at private and public corporations, foundations, governments and non-profit institutions — are interested in creating places, programs and resources that build cultural capital and serve society. We offer a comprehensive range of integrated services, collaborating with clients' visioning, planning and implementing projects. At our network of offices in Toronto, New York, London, Beijing and Mumbai, we place priority on respecting local context, cultural diversity and collaboration.

We customize our services for each client and project, ensuring that our services complement and augment existing strengths and capacities. We approach each project with an open mind, and ensure that everything we provide embodies the highest standards of integrity, ethics and professionalism.

In addition to this extensive practical planning experience, Lord Cultural Resources has made a definitive contribution to the development of museum planning through its pioneering publications. Our *Manual of Museum Planning* – an exhaustive 350-page guide considered to be the authoritative text on the subject – was originally published in 1991, and has since been released in a third edition in 2012. The *Manual of Museum Exhibitions*, originally published in 2002, was released in a second edition in 2014 and was honoured with the 2015 Ontario Museum Association (OMA) Award of Excellence in Publications. *The Manual of Museum Learning*, second edition, prescribing a number of innovative approaches to assist readers in transforming their institutions into fully 21st century learning museums, was published in 2016. The most recent *Manual of Digital Museum Planning*, explains how to plan, build and successfully manage the electronic architecture that houses a cultural institution in the 21st century.



APPENDIX C: DETAILED CV OF TED SILBERBERG

Ted Silberberg has worked in the museum, cultural and tourism planning fields since 1980, the last 29 years at Lord Cultural Resources. The following CV lists projects he has conducted only within the past 10 years. His full CV is available upon request.



TED SILBERBERG

SENIOR PRINCIPAL, MARKET & FINANCIAL PLANNING

- Education**
 - M.A., Political Science, York University, 1978
 - B.A., History and Political Science, York University, 1976
- Designations**
 - Certified Management Consultant (CMC), 1988-present
- Experience**
 - Senior Principal, Principal, Senior Consultant, Lord Cultural Resources, 1988-present
 - Senior Consultant, Frank Wolman Associates Inc., Management Consultants, 1983-88
 - Consultant, Deloitte Haskins & Sells Associates, Management Consultants, 1980-82
 - Peer Reviewer, *Museum Management and Curatorship*, ongoing
- Publications & Speeches**
 - "Balancing Mission and Money: Critical Issues in Museum Economics" in McCarthy, Conal, ed. *Museum Practice: Critical Debates in Contemporary Museums*. Oxford & Malden MA: Wiley-Blackwell, 2016.
 - "The Importance of Accurate Attendance Projections to the Right Sizing and Sustainability of Building Projects", Presentation to Building Museums Symposium, Miami, March 2014
 - "Market Analysis", *Manual of Museum Planning*, Altamira Press, 2012, pp. 73-87
 - "Attendance, Operating Revenue and Expense Projections", *Manual of Museum Planning*, Altamira Press, 2012, pp. 439-454
 - "Site Selection Process", *Manual of Museum Planning*, Altamira Press, 2012, pp. 549-555
 - "Expanding the Audience for Transport Museums", *Journal of the International Association of Transport and Communications Museums*, Volume 29, 2011, pp. 16-28 (co-author)
 - "How Various Museum Types May Attract Under-Represented Market Segments", Presentation to Conference of American Association of Museums, Los Angeles, May 2010
 - "Museums and the Recession," Presentation to the Conference of the Canadian Museum Association, St. John's Newfoundland, April 2010
 - "What Now, What's Next for Museums: Perspectives on the Economic Situation", Presentation to Canadian Museum Association Symposium, Toronto, January 2010
 - Challenging Economic Times: Threat or Opportunity, *Muse*, Canadian Association of Museums, September-October 2009, pp. 18-29

- “Innovative Ideas and Practices in Revenue Generation and Cost Control”, Presentation to Conference of American Association of Museums, Philadelphia, April 2009
- “Implications of Benchmarking Data to Strategic Business Planning”, Presentation to Florida Association of Museums, Miami, September 2008
- The Importance of Accuracy in Attendance Reporting, *International Journal of Arts Management*, December 2005
- Market and Financial Feasibility Analysis, *Manual of Museum Planning*, HMSO, UK, 1999
- Site Selection, *The Manual of Museum Planning*, HMSO, UK, 1999
- Feasibility Analysis for Children’s Museums, *Collective Vision: Starting a Children’s Museum*, Association of Children’s Museums, 1996
- Cultural Tourism and Business Opportunities for Museums and Heritage Sites, *Tourism Management*, August 1995
- Increasing Self-Generated Revenue: Children’s Museums at the Forefront of Entrepreneurship Into the Next Century, *Hand to Hand*, AYM, Summer 1993
and chapter in *Collective Vision: Starting a Children’s Museum* (Association of Children’s Museums, 1996)
- Children’s Museums and Downtown Revitalization, *Museum Development*, March 1992, pp. 33-39 and chapter in *Collective Vision: Starting a Children’s Museum* (Association of Children’s Museums, 1996)
- The Importance of Market and Feasibility Analysis, *The Manual of Museum Planning*, HMSO, U.K., 1991
- “Applied Research in Municipal Cultural Master Plans and Policies”, *Recreation Canada*, 1991 (co-author)
- “Making the Case: What Children’s Museums Have to Offer Downtown Revitalization Efforts”, *Hand to Hand*, Association of Youth Museums, Vol. X, No. 3, 1990 (co-author)
- The Public Interest and Shopping Centre Development in Ontario, Master’s Degree Thesis, York University, 1978
- “Re-establishing Downtown As the Community Focal Point”, *Streetbeat*, Ontario Ministry of Municipal Affairs and Housing, 1983
- “How to Deal with Parking in a Business Improvement Area”, *Business Improvement Areas*, 1976
- A Guide for the Revitalization of Retail Districts, Ministry of Industry and Tourism, 1976
- Towards the Effective Business Association, Project: Saving Small Business, 1974

Planning Studies (Lead or Major Role)

2017 (to date)

- American Kennel Club Museum of the Dog, Business Plan and Projections, New York, NY
- Maritime Museum of San Diego, Concept Review and Independent Attendance and Financial Projections, CA
- Montreal Children’s Museum, Business Plan and Projections, QC
- Museum of Toronto in Old City Hall, Preliminary Attendance and Financial Projections, ON
- National World War II Museum, Strategic Plan, New Orleans, LA

- 2016**
- Art Gallery of Nova Scotia and Nova Scotia College of Art and Design University Co-Location Business and Facility Plan
 - Art Gallery of Sudbury and Greater Sudbury Public Library Co-Location Business and Facility Plan, ON
 - Canakkale Children's Science Centre, Business Plan and Projections, Turkey
 - Franklin Institute, Strategic Plan, Philadelphia, PA
 - Idaho State Historical Museum, Business Plan and Projections, Boise
 - Louis Armstrong Museum, Independent Review of Internal Business Plan and Projections, Queens, New York
 - Maritime Museum of the Atlantic and Nova Scotia Museum of Natural History Co-Location Business and Facility Plan
 - Muskoka Heritage Place, Business Plan and Projections, ON
 - Niagara Military Heritage Centre, Feasibility Study, ON
 - Royal Military College of Canada Museum, Master Plan, Kingston ON
 - Santa Barbara Veteran's Museum, Master Plan, CA
 - Sing Sing Prison Museum, Master Plan, Ossining NY
 - Telus Spark Science Centre, Strategic and Business Plan, Calgary, AB
 - Virginia Key Beach African American Museum, Update to Business Plan, Miami, FL
- 2015**
- Armenian American Museum, Preliminary Operating Budget Projections, Glendale CA
 - Bakken Museum, Strategic and Business Plan to Replace Income from Primary Funder, Minneapolis, MN
 - Children's Museum Business Plans, Beijing and Hohhot, China
 - Contemporary Calgary, Feasibility Study, AB
 - Houston Botanic Garden, Business Plan and Projections, TX
 - Jewish Museum of Greater Washington DC, Update to Business Plan, DC
 - Manetti Shrem Museum of Art at UC Davis, Financial Plan, CA
 - Muskoka Boat and Heritage Centre, Master Plan, Gravenhurst ON
 - OSS Museum Master Plan, Loudon County, VA
 - Planet Word Site Evaluation, Washington, DC
 - Simcoe County Museum, Marketing Plan, Midhurst ON
 - Studio Museum in Harlem, Business Plan and Projections, New York, NY
 - Toronto Zoo Master Plan, Market and Financial Analysis, ON
- 2014**
- Bell Museum of Natural History and Planetarium, Business Plan, St. Paul, MN
 - Citadel National Historic Site, Master Plan, Halifax, NS
 - Dubai Auto Museum, Feasibility Study, UAE
 - Dusable Museum of African American History, Expansion Plan, Chicago, IL
 - Edward M. Kennedy Institute for the United States Senate, Strategic, Operational and Business Planning, Boston, MA
 - Holy Angels Convent and High School, Future Use Study, Sydney, NS
 - Jimmy Doolittle Aviation Attraction, Master Plan, Vacaville, CA
 - Museum of International Folk Art, Master Plan, Santa Fe, NM
 - Pop Culture Museum, Contextual, Market and Site Evaluation, Washington DC
 - Rosa Parks Apartment Museum, Concept and Feasibility Study, Montgomery, AL

- TD Bank Inuit Art Gallery, Concept Plan, Toronto, ON
- Tennessee State Museum, Master Plan for New Site and Facility, Nashville TN
- Toronto Zoo Strategic Plan, ON
- Virginia Wine Heritage Center, Feasibility Study, Charlottesville, VA
- 2013**
 - Al Maktoum Hospital Museum, Market and Financial Analyses in Master Plan Dubai, UAE
 - Bihar-Patna Science Center, Master Plan, India
 - Chicago Architecture Center, Update to Business Plan, IL
 - Houston Memorial Park, Market Analysis, TX
 - Hunley Museum, Visioning Workshop, North Charleston, SC
 - Jewish Historical Museum of Greater Washington DC, Business Plan Update
 - Museum of Contemporary Canadian Art, Business Plan, Toronto, ON
 - North Vancouver Museum, Business Plan/Feasibility Study, BC
 - Ontario College of Art and Design Gallery System Master Plan, Toronto,
 - Quinte West Natural History Museum, Feasibility Study, ON
 - Santa Barbara Children's Museum, Business Plan, CA
- 2012**
 - Art Gallery of Mississauga, Facility and Operations Plan, ON
 - Audain Art Museum, Business Plan and Projections, Whistler, BC
 - Bihar Museum, Attendance and Financial Projections, India
 - Fort Monroe Reuse Plan, Cultural Opportunities, VA
 - Fortress of Louisbourg, Attendance and Revenue Generation Strategies, NS
 - Koc Museum of Contemporary Art, Business Plan, Istanbul, Turkey
 - National Museum of African American History and Culture, Children's Gallery Analysis, Washington DC
 - National Urban League, Strategic Plan for New Museum, Harlem, NY
 - Toronto Museum Service Review for 10 City Museums
 - Tryon Palace, Business Plan and Projections, New Bern NC
 - Vancouver Art Gallery, Site Evaluation, Business Plan and Projections, BC
 - Wisconsin History Center, Independent Review of Analyses, Assumptions and Projections, Madison, WI
- 2011**
 - Art Gallery of Nova Scotia, Feasibility of New Site and Building, NS
 - Minnesota Museum of American Art, Business and Facility Plan, St. Paul, MN
 - NASA Goddard Science Exploration and Education Center, Pre-Opening Strategies, Greenbelt, MD
 - National Museum of Mounted Warfare, Master Plan, Fort Hood/Killeen, TX
 - Patna International Museum, Master Plan, India
 - Royal Ontario Museum Attendance Research and Strategies, ON
 - Salt Lake County Film and Media Arts Center, Feasibility Study, UT
 - Windsor City Museum, Feasibility Study, ON
- 2010**
 - Art Gallery of Sudbury, Concept Development and Business Plan, ON
 - Buffalo Canal Side Cultural Master Plan, NY
 - Catalina Island Museum, Business Plan, CA
 - Collaboration Strategies for Museums in Fort Worth, TX
 - Fort York National Historic Site Business Plan, Toronto, ON
 - Ontario Water Centre, Concept Development, Georgina, ON
 - Museum of Justice, Operations and Business Plan, Toronto, ON

- Toronto Zoo Elephant Study, ON
- 2009**
- Abu Dhabi Children’s Science Center, Preliminary Feasibility Study, UAE
 - American Indian Cultural Center and Museum, Update to Market Analysis and Attendance Projections, Oklahoma City, OK
 - Cuban Museum, Business Plan, Miami, FL
 - Dallas Museum of Nature and Science, Business Plan Update, TX
 - Fort Worth Aviation Museum, Strategic Master Plan, TX
 - NASA Goddard Science Exploration and Education Center, Feasibility Study and Master Plan, Greenbelt, MD
 - National Museum of the US Army, Market Analysis, Strategies to Maximize Attendance and Attendance Projections, Fort Belvoir, VA
 - Prince George’s African American Museum, Business Plan, North Brentwood, MD
 - Toronto Transit Museum and Visitor Centre, Concept Development Plan, ON
 - Utah Museum of Natural History, Update to Business Plan, Salt Lake City, UT
- 2008**
- Great Lakes Aerospace Science and Education Center, Business Plan, Sheboygan, WI
 - Houston Maritime Museum, Needs Assessment and Site Evaluation, TX
 - Jewish Historical Society of Greater Washington, Business Plan, DC
 - Maymont Experience, Business Plan, Richmond, VA
 - Miami Science Museum, Update to Market Analysis and Attendance Projections to Take Addition of Aquarium Into Account, FL
 - National Education Center, Library of Congress, Washington, DC
 - Toronto International Film Festival, Business/Operational Planning, ON
 - Venice Architectural Biennale in Cambridge, Business Work Plan, ON
- 2007**
- Adirondack Museum, Independent Review of Business Plan and Site Evaluation, NY
 - Casa Loma, Market Analysis and Attendance Projections, Toronto, ON
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