8-1-1994

Preliminary Feasibility Analysis of Visitor Attractions at the Cape May-Lewes Ferry Terminal

Harrison Price Company

PRELIMINARY FEASIBILITY ANALYSIS OF VISITOR ATTRACTIONS AT THE CAPE MAY-LEWES FERRY TERMINALS

Cape May, New Jersey
Lewes, Delaware

Prepared for

DELAWARE RIVER AND BAY AUTHORITY
August 1994

Prepared by

HARRISON PRICE COMPANY

222 West 6th Street • Suite 1000 • San Pedro, CA 90731
(310) 521-1300 • FAX (310) 521-1305

TABLE OF CONTENTS

Section		Page
1	**INTRODUCTION**	1-1
2	**SUMMARY OF FINDINGS**	2-1
3	**SITE AND MARKET ENVIRONMENT**	3-1
	SITE EVALUATION	3-1
	Locational Characteristics	3-1
	Weather Conditions	3-3
	Existing Attractions Inventory	3-6
	AVAILABLE MARKET SUPPORT	3-11
	Ferry Passengers	3-11
	Regional Resident Market	3-14
	Summary of Market Support	3-18
4	**CONCEPT RECOMMENDATIONS AND ATTENDANCE PLANNING GUIDELINES**	4-1
	ATTRACTION CONCEPT PARAMETERS	4-1
	Development Objectives	4-1
	Recommended Development Strategy	4-2
	Illustrative Concepts	4-3
	Themed Entertainment Center (Cape May)	4-4
	Environmental Showcase (Cape May)	4-5
	Theme Restaurant and Visitor Welcome Center (Lewes)	4-5
	POTENTIAL MARKET CAPTURE AND ATTENDANCE	4-5
	Experience of Similar Attractions	4-6
	Attendance Targets for the Cape May Attraction	4-6
	ILLUSTRATIVE PHYSICAL PLANNING GUIDELINES	4-11
	Design Day	4-11
	Net Public Area Requirements	4-13
	Supportable Food Service Area	4-13
	Supportable Merchandise Sales Area	4-15

TABLE OF CONTENTS
(continued)

Section		Page
5	**PRELIMINARY FINANCIAL ANALYSIS**	5-1
	ESTIMATED CAPITAL REQUIREMENTS	5-1
	Cape May Visitor Center	5-1
	Lewes Visitor Center	5-4
	Combined Development Costs	5-4
	ESTIMATED OPERATING REVENUES	5-4
	Cape May Admissions Income	5-5
	Food and Merchandise Sales	5-5
	Aggregate Operating Revenues	5-5
	ESTIMATED OPERATING EXPENSES	5-7
	NET OPERATING BALANCE	5-7

LIST OF TABLES

Table		Page
1	Weather Conditions in the Cape May-Lewes Area	3-5
2	Inventory of Major Existing Attractions in the Cape May-Lewes Ferry Market Area	3-7
3	Vehicles and Passengers Carried by the Cape May-Lewes Ferry	3-12
4	Monthly Distribution of Vehicles and Passengers Carried by the Cape May-Lewes Ferry	3-15
5	Population Trends in the Lewes-Cape May Region	3-17
6	Age Distribution of the Lewes-Cape May Regional Population	3-19
7	Household Income Distribution in the Lewes-Cape May Region	3-20
8	Market Support Available to Cape May-Lewes Ferry Terminal Attractions	3-21
9	Operating Characteristics of Selected Comparable Attractions	4-7
10	Market Capture Rates of Selected Visitor Centers	4-8
11	Estimated Market Capture and Attendance for a Visitor Attraction at the Cape May Ferry Terminal	4-9
12	Design Day Planning Guidelines for a Visitor Attraction at the Cape May Ferry Terminal	4-12
13	Supportable Food Service Area at the Lewes and Cape May Ferry Terminals	4-14
14	Supportable Merchandise Sales Area at the Lewes And Cape May Ferry Terminals	4-16
15	Illustrative Space Allocations and Capital Budget for the Cape May Ferry Terminal Visitor Attraction	5-2

LIST OF TABLES
(continued)

Table		Page
16	Illustrative Space Allocations and Capital Budget for the Lewes Ferry Terminal Visitor Attraction	5-3
17	Preliminary Estimate of Operating Revenues for the Cape May-Lewes Ferry Terminal Attractions	5-6
18	Preliminary Estimate of Operating Expenses for the Cape May-Lewes Ferry Terminal Attractions	5-8
19	Preliminary Estimate of Net Operating Income for the Cape May-Lewes Ferry Terminal Attractions	5-9

LIST OF FIGURES

Figure		Page
1	Regional Orientation Map	3-2
2	Site Vicinity Map	3-4
3	Vehicles and Passengers Carried by the Cape May-Lewes Ferry	3-13
4	Monthly Distribution of Passenger Traffic On the Cape May-Lewes Ferry	3-16

Appendix Figures

5	Conceptual Illustration of the Cape May Visitor Complex (Seaport Village)
6	Illustrative Featured Attraction at the Cape May Visitor Complex Special Effects Film Presentation ("Spirit Lodge")
7	Illustrative Featured Attraction at the Cape May Visitor Complex 3-D Film Presentation (Disasters at Sea/Pirate Attack)
8	Illustrative Featured Attraction at the Cape May Visitor Complex 3-D Film Presentation (Myths of the Sea)
9	Illustrative Featured Attraction at the Cape May Visitor Complex Showcase Exhibit (Whales/Whaling)
10	Illustrative Ocean-View Restaurant at the Lewes Visitor Complex
11	Illustrative Theme Exhibit at the Lewes Visitor Complex

Section 1

INTRODUCTION

Since July 1964, the Delaware River and Bay Authority (DRBA) has operated a car ferry service linking Cape May, New Jersey, to Lewes, Delaware across the Delaware Bay. Located in a long-established and popular seaside resort area, the Cape May-Lewes Ferry is a combination general transportation and tourist sightseeing excursion service currently handling some 356,000 vehicles and more than 1 million passengers annually with an existing fleet of five vessels. Volume is expected to grow to some 435,000 vehicles and 1.25 million passengers by the end of the decade. Reflecting the substantial number of tourists in the ridership, the ferry operates with a high summertime peak—the months of July and August accounted for 40 percent of all vehicles carried and 45 percent of all passengers carried during 1992.

The operation and facility requirements of the Cape May-Lewes Ferry have changed dramatically since inception of the service. Over the years, DRBA has improved ferry operations in response to changing conditions and growth in traffic, including the commissioning of new vessels designed to operate in the shallow waters of the Delaware Bay and expanding the fleet to accommodate increased demand. Currently, the agency is engaged in a comprehensive master plan to redevelop and modernize landside terminal facilities at both ends of the route, with the objectives of improving operating efficiency, creating enhanced visitor services and amenities, and adding revenue-generating attractions that will help to offset ferry operating deficits. Planning and design consultant Wallace Roberts & Todd, in association with S.T. Hudson Engineers, was retained to prepare the master plan, the final report for which was submitted in April 1994.

A preliminary concept for new and/or enhanced visitor services and attractions was included in the master plan prepared by the design team, which calls for a visitor center at each terminal that would offer a variety of hands-on interpretive experiences, aquarium exhibits, and other components treating the ecosystems, natural environment, and history of the Delaware Bay. As waiting time to board the ferry can be as long as two hours or more on busy summer weekends, a readily

available and largely captive audience exists for entertainment experiences that will help to pass the time, along with related dining and shopping opportunities. It is also envisioned that the terminal attractions will appeal to the broad regional population at large, including excursionists to the seaside resort district and children enrolled in area schools.

To assist in fine-tuning the conceptual plan for the two visitor centers, DRBA retained attractions specialist Harrison Price Company (HPC) to undertake a consulting program to determine the optimum nature, scope, and economic parameters of the entertainment components of the redevelopment project. A two-step approach was agreed upon: 1) a charrette conference that would establish basic guidelines on concept and theming, facility and entertainment content, attendance and visitor spending, sizing guidelines, and appropriate level of investment; and 2) based on the findings of the charrette panel, preparation of a preliminary economic feasibility prospectus that will serve as a blueprint for future action.

Charrette participants, whose insights and contributions are gratefully acknowledged, were as follows:

Harrison Price Company

- Harrison A. Price, Chairman and President
- Sharon J. Dalrymple, Senior Vice President

Independent Attractions Consultant

- Michael Lee, Michael V. Lee Design

Delaware River and Bay Authority

- Michael Harkins, Executive Director
- Brad E. Hopkins, Planning Director
- John Read, Assistant Planner

Wallace Roberts & Todd

- Timothy Korbelak, Associate

This report presents the combined findings of the charrette panel and the independent economic analysis subsequently undertaken by HPC. Following this introduction, **Section 2** contains a brief summary of major conclusions and recommendations. The Cape May-Lewes site and market environment are examined in **Section 3**, while **Section 4** discusses concept recommendations, develops attendance targets, and translates the latter into general physical capacity parameters. The report concludes with a preliminary financial analysis in **Section 5**. Several sketches illustrating the entertainment ambiance envisioned for the two visitor centers, prepared by designer Michael V. Lee, are presented in the report **Appendix**.

The conclusions delineated in this report are based on HPC's research of the Cape May-Lewes area marketplace, the experience of comparable attractions, and information on DRBA operations and plans for ferry terminal redevelopment as conveyed during the charrette. As in all studies of this type, projected results are contingent on assumptions developed in conjunction with the analysis. Some of these assumptions inevitably will not materialize, and unanticipated events and circumstances may occur. Other data or assumptions are inherently subject to interpretation with varying degrees of reliability and confidence. Consequently, actual results achieved during the period covered by this analysis will vary from the estimates contained herein, and these variations may be appreciable. Further, HPC has not been engaged to evaluate the effectiveness of management and is not responsible for future marketing efforts and other management actions on which actual results will depend. The study presumes no significant change in competitive position from that set forth here and makes no allowance for possible government restrictions on the development or the effect of changes in the local or national economy.

Section 2

SUMMARY OF FINDINGS

Major conclusions of HPC's analysis of the Cape May and Lewes ferry terminal visitor centers are briefly highlighted in this section of the report. Other than specifying certain critical assumptions, no attempt is made here to describe findings or rationale in detail or to present supporting documentation, which are fully contained in the main body of the report.

- Situated at the mouth of Delaware Bay approximately 90 miles south of metropolitan Philadelphia, Cape May and Lewes are excellently positioned within reasonable driving distance of a sizable population base and are moreover located in the heart of a popular seaside resort district.

- Tourist activity in the region has a distinct summer bias, primarily due to climate. Allowing that a radical change in the seasonal distribution of tourism is unlikely, a seven-month operating season is recommended for the proposed visitor attractions; restaurants and shops at the terminals, however, would be open year-round to serve ferry passengers and local residents.

- The conceptual plan for the proposed visitor centers outlined in this report is designed to minimize direct competition with existing attractions in the region, thereby helping to ensure that attendance targets are met.

- Ferry passengers and residents of the region within about 100 miles of Cape May-Lewes represent the two major components of market support available. By 1999 (the base planning year in this analysis), ferry ridership is projected at 1.2 million, of which slightly more than 1 million is concentrated in the assumed seven-month attraction operating period. Regional resident population will amount to approximately 9.9 million in 1999. Substantial market support is accordingly evident.

- A number of development objectives are integral to the planning process for the ferry terminal attractions, the most important of which is economic self-sufficiency. In light of this objective, HPC strongly discourages development of visitor centers of more or less the same scope at both Cape May and Lewes. Although this approach may appear fair and desirable in the context of a bi-state operation, it has several serious disadvantages which prevent fulfillment of "critical mass" requirements and financial goals.

- HPC accordingly recommends an uneven allocation of capital resources, with a significant portion of the available budget devoted to a major attraction at one site and the remaining budget devoted to a supporting and non-competitive facility at the other site. Discussions during the charrette in regard to site characteristics suggest that the Cape May terminal has the best potential for the major, high-profile attraction. The Lewes terminal, in contrast, offers excellent potential for a smaller, more sedate attraction geared to visitor services and low-key entertainment.

- Two illustrative concepts for Cape May were briefly explored during the charrette. The first, and preferred, concept is a themed entertainment center drawing on the history and lore of the Cape May-Lewes region. The featured entertainment component would be a special-format, high-impact film or special effects presentation, which would be supplemented by related exhibits as well as food service and retail facilities. The second concept would employ an environmental theme, with a walk-through aquarium or other major marine life presentation as the central element. Ancillary exhibits would treat other ecology-oriented topics and, again, an array of themed food service and retail merchandise would be included.

- The preferred concept for the Lewes site calls for a full-service, ocean-view restaurant, a visitor welcome center dispensing tourist information, gift shop, and a symbolic theme exhibit. The latter might showcase the restoration work being carried out on the historic *HMS De Braak*.

- Important assumptions underlying attendance models for the Cape May attraction are that it will incorporate high standards of programming and exhibitry, that it will be adequately promoted, that new content will be added

periodically to stimulate repeat visitation, that a moderate admission price will be charged, that the physical capacity of combined interior and exterior public spaces will be sufficient to accommodate heavy summer usage, and that a concerted effort will be made to generate "shoulder-season" patronage.

- Based on the foregoing assumptions, the experience of comparable attractions, and other considerations delineated in this report, estimated Cape May attraction attendance ranges between 409,000 visitors per year as a minimum objective and 560,000 as a maximum goal. The mid-range, or probable, forecast is for 490,000 visitors annually. Ferry passengers will comprise roughly 70 percent of the overall attendance base, with the remainder generated from within the regional resident population.

- Expected patterns of attendance, which reflect pronounced summer peaking, suggest that the average maximum number of people on-site during the busiest operating period (a typical Saturday afternoon in August) will amount to some 1,300 people on the mid-range model. This figure represents the simultaneous holding capacity requirement of the Cape May attraction—the sum of all theater, exhibit, food and merchandise, general circulation, and other spaces open to the public.

- At a planning ratio of 30 square feet per on-site visitor (the typical minimum standard for visitor centers and similar attractions), total public area required at Cape May under the mid-range performance scenario is accordingly 38,000 square feet.

- The recommended allocation for food service area is a total of 5,700 square feet, with 2,000 square feet located at Cape May (fast food or self-service cafe) and 3,700 square feet at Lewes (full-service restaurant of approximately 150 seats).

- Supportable merchandise sales space is estimated at 4,100 square feet, 2,700 square feet at the Cape May visitor center and 1,400 square feet at the Lewes visitor center.

- Based on the aforementioned sizing guidelines and adding allowances for general site enhancements, the total initial capital budget for Cape May is preliminarily estimated at $15.8 million. The Lewes visitor center is estimated to require $6.5 million in capital costs, for a combined total of $22.4 million for both projects.

- An adult admission fee of $5.00 is recommended for the Cape May visitor attraction; it is assumed that a free-admission policy would be followed at Lewes. Allowing for the probable mix of attendance, group discounts, and a moderate incidence of complimentary admissions, net Cape May admissions revenue is estimated at $3.75 per capita. On the basis of previously mentioned attendance forecasts, total gross admissions revenue is projected at $1.8 million per year as a stabilized, mid-range objective.

- Average visitor spending on food and beverages is targeted at $1.25 per capita, which applies to Cape May attraction visitors as well as other ferry passengers who do not patronize the entertainment facilities. Total annual gross food sales are calculated at $1.7 million per year on the mid-range model for combined Cape May and Lewes operations.

- Merchandise spending is expected to average $2.00 per capita for Cape May attraction visitors and 75 cents per capita for other ferry passengers. These figures translate into total gross Cape May-Lewes merchandise sales of $1.6 million as the mid-range target.

- Aggregate gross revenues from admissions, food and beverages, and merchandise amounts to $5.2 million per year at stabilization. The low attendance target implies total gross revenue of $4.7 million, while the high model calls for some $5.6 million. These estimates assume that all facilities and attractions will be operated by DRBA as opposed to outside concessionaires.

- Including allocations for the cost of food and merchandise goods sold, operating labor, marketing and promotion, and other major operating expenses, the aggregate mid-range operating budget for the Cape May and Lewes visitor centers is projected at $4.7 million per year. Low and high estimates are $4.4 million and $5.0 million, respectively.

- Deducting operating expenses from revenues, combined visitor center operations generate a moderate surplus under all performance benchmarks, ranging from net income of $307,000 annually under the low target to $622,000 per year under the high target; the mid-range model calls for an annual operating surplus of $475,000. Given adherence to the scope and quality of development envisaged in this report, with a strong entertainment magnet at the Cape May terminal, the goal of economic self-sufficiency appears readily attainable.

Section 3

SITE AND MARKET ENVIRONMENT

To provide a framework for the determination of an appropriate concept and development strategy for the Cape May-Lewes ferry terminal attractions, this section of the report is devoted to a capsule review of the site environment and the size and nature of the market the attractions will serve.

SITE EVALUATION

Subsequent paragraphs describe the broad locational characteristics of Cape May and Lewes, the existing regional inventory of visitor attractions, and trends in ferry patronage.

Locational Characteristics

The Cape May-Lewes region is situated at the mouth of Delaware Bay approximately 90 miles south of metropolitan Philadelphia, 100 miles east of Baltimore, and 120 miles east of Washington, D.C., as indicated in **Figure 1**. Principal north-south access to the Jersey shore and Cape May is provided by the Garden State Parkway, while U.S. 13/State Route 1 serves the Delaware shore and Lewes. Various feeder roads connect these major arterials with the numerous beach communities in the region, which lies at the heart of a 250-mile stretch of barrier islands and Atlantic Ocean coastline extending 125 miles north to Sandy Hook, New Jersey, and 125 miles south to Cape Charles, Virginia. The area is characterized by low to moderate development density interspersed with extensive wetlands and other environmentally sensitive lands.

A rich and colorful history dates back to the original inhabitants, the Lenni Lenape (Delaware) Indians, who thrived on the area's abundant fish, waterfowl, and game. The area's first European settlements were founded by the Dutch in the early 1600s, while later in the 17th century, the English established a flourishing whaling industry and colonial trading center. In the era of the Revolutionary War, the area was the base of notorious privateers such as Captain Kidd, who preyed on British trading

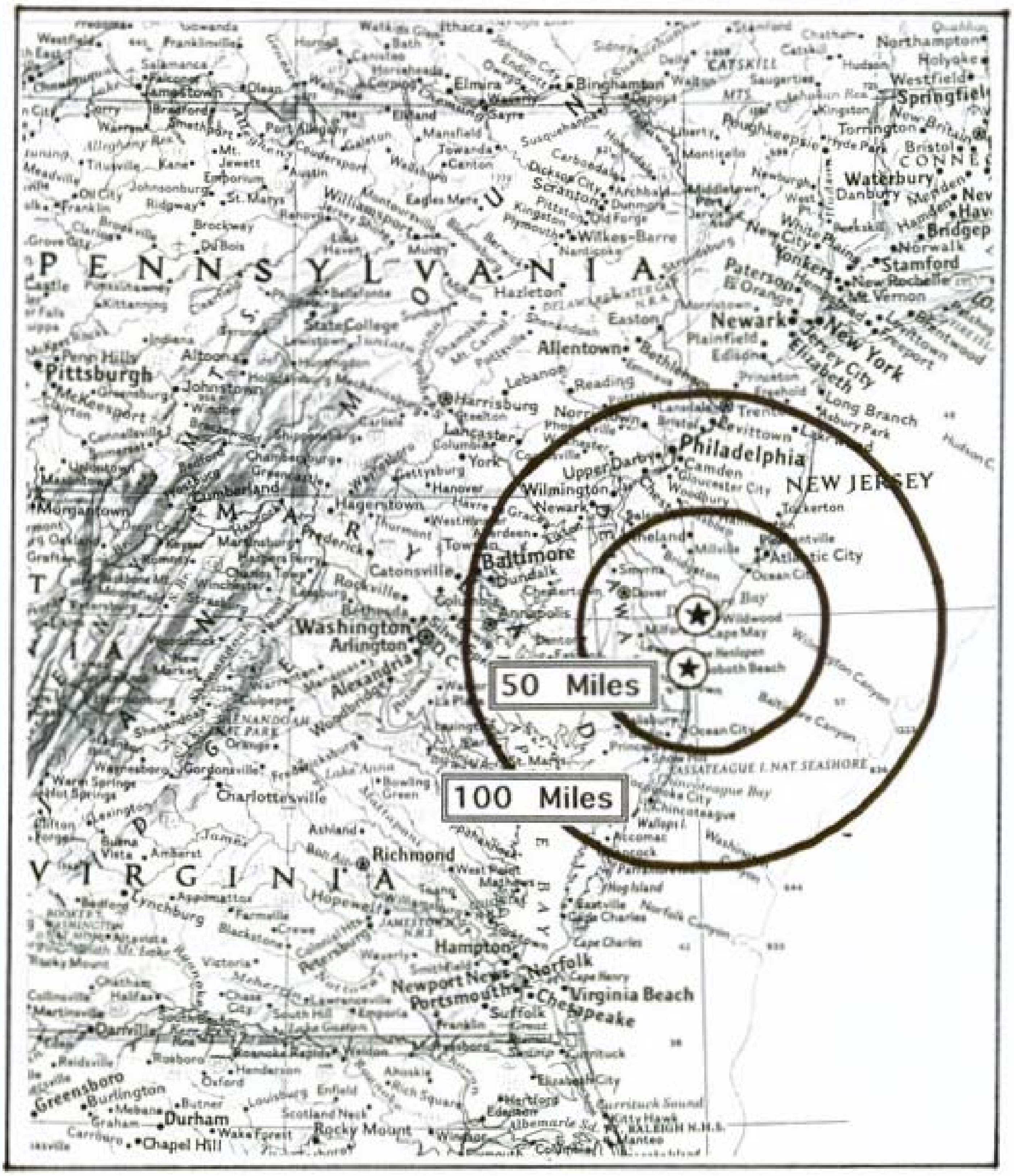


Figure 1

REGIONAL ORIENTATION MAP

vessels. Legend has it that Captain Kidd's famous treasure is still buried somewhere on Long Beach Island on the Jersey shore. With the arrival of the railroad in the mid-19th century, development of the area began to accelerate and, with the advent of the automobile in the early 1900s, the shore region burgeoned into the most popular vacation spot in the nation and the locale of countless summer homes passed on from generation to generation. Although the modern shore competes with many other destinations today, it remains an important tourist center, especially since the rebirth of Atlantic City in the late 1970s as a gaming and nighttime entertainment mecca.

The Cape May ferry terminal is located on the eastern edge of Delaware Bay, as shown in **Figure 2**, just south of the community of North Cape May. It is a short distance from several popular seaside resorts, including the charming Victorian enclave of Cape May, the youth hangout of Wildwood, and the yachting and sailing center of Stone Harbor. Substantial open space and environmental preserves surround the terminal, with many nearby coves, lagoons, and marshes providing prime opportunities for birdwatching and nature photography.

At the western edge of Delaware Bay, the Lewes ferry terminal lies between the historic town of Lewes, where some buildings still show the scars of bombardment by the British during the War of 1812, and the 3,000-acre Cape Henlopen State Park. Lewes is the northernmost of several major resort communities on the Delaware coast, others including Rehoboth Beach, Dewey Beach, Bethany Beach, and Fenwick Island, all of which attract an active, family-oriented trade. Swimming, surfing, fishing, crabbing, and clamming are the main activities enjoyed by visitors. Another long stretch of beach extends from Ocean City, Maryland, at the Delaware state line down to Assateague Island, a unit of the National Park Service and a protected wildlife refuge. The latter is the home of the famous Assateague wild ponies, descendants of horses that swam ashore from a foundering Spanish galleon in the 16th century.

Weather Conditions

A four-season climate characterizes the Cape May-Lewes region. As indicated in **Table 1**, winters are generally cold and snowy, with maximum temperatures in the low 40s and minimum (nighttime) temperatures in the mid-20s; winter storms can

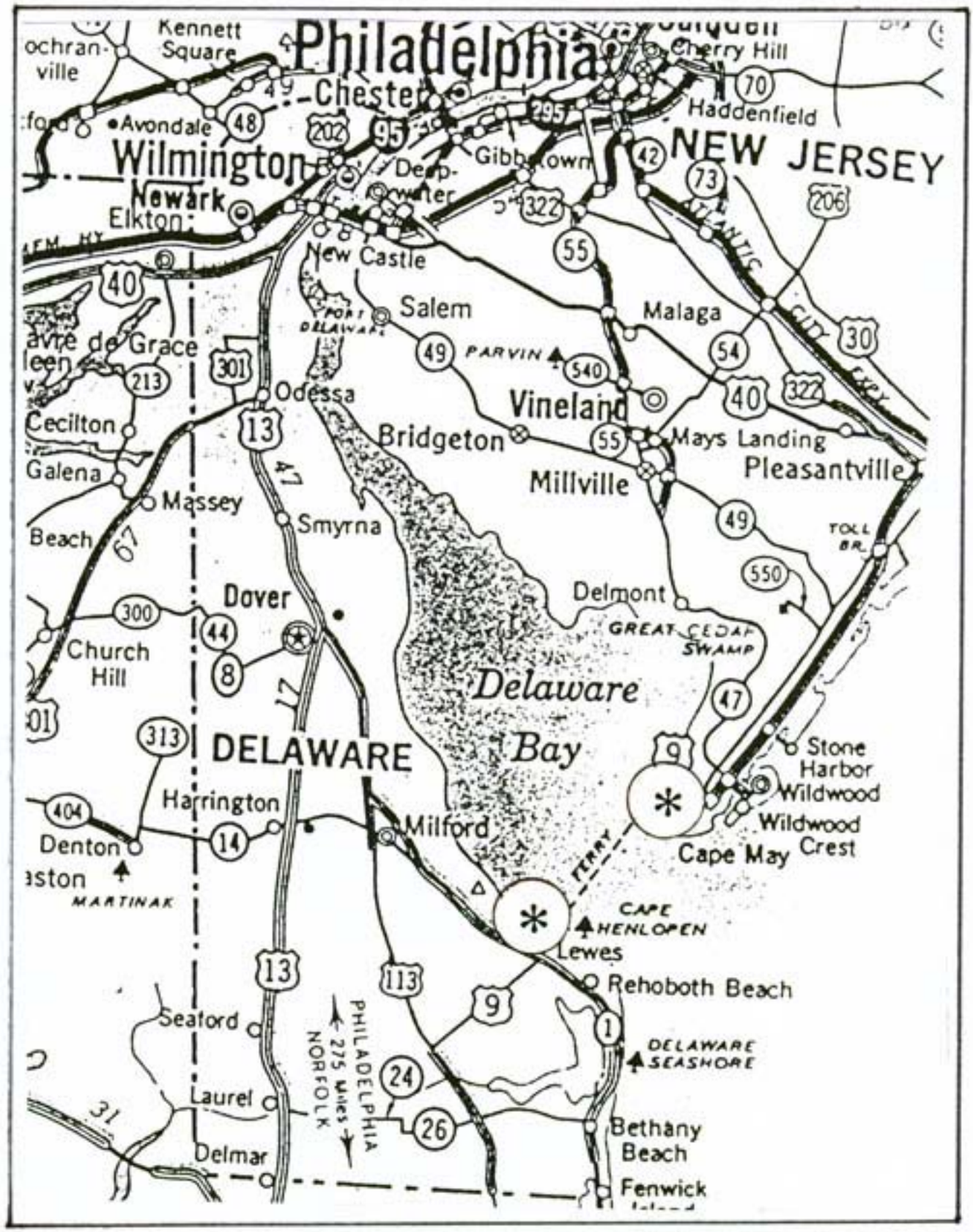


Figure 2

SITE VICINITY MAP

Table 1

WEATHER CONDITIONS IN THE CAPE MAY-LEWES AREA 1/
(30-Year Normal Values)

Month	Temperature (°F)		Average Precipitation (inches)	
	Average Minimum	Average Maximum	Rain	Snow
January	24	41	3.56	4. 8
February	25	43	3.37	5. 0
March	32	51	4.31	3. 2
April	41	62	3.37	0. 3
May	51	72	3.54	. . .
June	60	81	3.38	. . .
July	65	85	4.36	. . .
August	64	83	4.90	. . .
September	57	77	3.99	. . .
October	46	68	3.45	T
November	36	56	4.21	0. 4
December	26	44	4.01	2. 4
Annual	44	64	46.45	16. 1

T means trace.
1/ Based on data for Atlantic City (the nearest reporting station).

Source: National Oceanic and Atmospheric Administration.

bring fierce winds and heavy surf. The weather warms up rapidly in the spring and is succeeded by comfortable summer highs in the mid-80s and lows in the mid-60s. Warm days and cool evenings are the rule in autumn. Rainfall totals some 46 inches per year, which is very evenly distributed at the rate of three to four inches every month.

These weather conditions are the chief influence on the seasonal distribution of tourist activity in the region, which has a distinct summer bias. There is some evidence that tourism is steadily increasing outside the summer months, particularly on weekends during the spring and fall "shoulder" seasons, as people take advantage of lower off-season lodging rates. The bulk of tourist traffic, however, will likely retain a heavy summer concentration, suggesting that attractions developed at the ferry terminals will necessarily operate on a seasonal basis unless subsidized. Allowing that the DRBA goal for the proposed visitor attractions is economic self-sufficiency, a seven-month schedule will be assumed for planning purposes, encompassing daily operation during the core Memorial Day to Labor Day season and Friday-Sunday operation from Labor Day to the end of October and from early April to Memorial Day.

Existing Attractions Inventory

As a gauge of the competitive environment for new attraction development, **Table 2** lists major existing attractions in the local area as well as in the expanded regional market. Conventional boardwalk amusement parks (all seasonally operated) predominate in the local area, as indicated, with historic sites and Assateague National Seashore rounding out the inventory. The latter is the most heavily attended facility in the local group, drawing some 2.1 million visitors annually, followed by two amusement parks—Funland in Rehoboth Beach and Windsor Resort in Ocean City—each reporting attendance of approximately 1 million. Three other amusement parks fall in the range of 500,000 to 1 million visitors per year.

Beyond the immediate area are several major destination attractions, including the Six Flags Great Adventure theme park near Trenton, New Jersey, and Independence National Historic Site in Philadelphia, each of which records 3.5 million visitors per year. Other leading regional attractions include the National Aquarium in Baltimore, at an annual attendance of 1.5 million, the Philadelphia Zoo

Table 2

INVENTORY OF MAJOR EXISTING ATTRACTIONS IN THE CAPE MAY-LEWES FERRY MARKET AREA 1994

Attraction	Operating Schedule	Adult Admission Price	1993 Attendance (thousands)	Description
Local Area (50-75 miles) 1/				
Assateague National Seashore (Berlin, MD)	All year	Free	2,100	Aquarium, beaches, picnic areas, boating, fishing
Funland (Rehoboth Beach, DE)	Mid-Mar to Lab Day	Pay as you go	1,000+	Amusement park
Windsor Resort (Ocean City, MD)	Mid-June to Lab Day	Pay as you go	1,000+	Amusement park
Fantasy Island (Beach Haven, NJ)	Mem Day to Lab Day	Pay as you go	600	Amusement park
Nickels Midway Pier (Wildwood, NJ)	Mid-Apr to Sep	Pay as you go	500+	Amusement park
Trimper Rides of Ocean City (Ocean City, MD)	Mem Day to Lab Day	Pay as you go	500+	Amusement park

Table 2

(Continued)

Attraction	Operating Schedule	Adult Admission Price	1993 Attendance (thousands)	Description
Barnegat Lighthouse (Barnegat, NJ)	All year	$1.00	300-500	Historic lighthouse, picnic area, fishing
Tivoli Pier (Atlantic City, NJ)	Mar-Dec	$9.95	100-300	Family entertainment center
Storybook Land (Cardiff, NJ)	Mid-May to Sep	Pay as you go	100-300	Amusement park
Morey's Pier (North Wildwood, NJ)	Apr to mid-Sep	Pay as you go	100-300	Amusement park, water park
Gillian's Wonderland Pier (Ocean City, NJ)	Apr-Sep	Pay as you go	100-300	Amusement park
Mid-Atlantic Arts Center (Cape May, NJ)	All year	$5.00	126	Historic buildings, decorative arts museum
Historic Gardner's Basin (Atlantic City, NJ)	All year	Free	100+	Maritime village, aquarium

Table 2

(Continued)

Attraction	Operating Schedule	Adult Admission Price	1993 Attendance (thousands)	Description
Wetlands Institute (Stone Harbor, NJ)	All year	$3.00	45	Environmental learning center
Regional (50-100 miles) 2/				
Six Flags Great Adventure (Jackson, NJ)	Late Mar to mid-Sep	$29.95	3,500	Theme park, drive-thru safari
Independence National Historic Site (Philadelphia, PA)	All year	Free	3,500	Historic site, Liberty Bell
National Aquarium (Baltimore, MD)	All year	$11.50	1,547	Aquarium, oceanarium
Philadelphia Zoo (Philadelphia, PA)	All year	$7.00	1,300	Zoological park
New Jersey State Aquarium (Camden, NJ)	All year	$8.50	1,200	Aquarium
Franklin Institute (Philadelphia, PA)	All year	$9.50	1,000	Science center, planetarium, OMNIMAX theater

Table 2

(Continued)

Attraction	Operating Schedule	Adult Admission Price	1993 Attendance (thousands)	Description
Ft. McHenry National Monument (Baltimore, MD)	All year	$2.00	589	Historic site, reenactments
Philadelphia Museum of Art (Philadelphia, PA)	All year	$6.00	585	Art museum
Maryland Science Center (Baltimore, MD)	All year	$8.50	541	Science center, planetarium, IMAX theater
Baltimore Zoo (Baltimore, MD)	All year	$6.50	500	Zoological park

1/ Generally, attractions drawing 100,000 or more visitors per year.
2/ Attractions drawing more than 500,000 visitors per year.

Source: Harrison Price Company.

at 1.3 million, the New Jersey State Aquarium in Camden at 1.2 million, and the Franklin Institute in Philadelphia at 1 million. With the exception of Great Adventure, these major regional facilities operate year-round.

With a surfeit of amusement parks and a number of outstanding cultural institutions, a fairly competitive market is apparent in the subject region. In developing program content for the Cape May and Lewes visitor centers, every effort should accordingly be made to create entertainment experiences that differ from and complement what is already available in order to minimize direct competition and help to ensure that attendance targets are met. The next section of this report will describe illustrative concepts as developed during the charrette.

AVAILABLE MARKET SUPPORT

The two components of market support available to the subject visitor centers are passengers on the Cape May-Lewes ferry and residents of the regional market at large. The size and characteristics of these market segments are highlighted in the paragraphs to follow.

Ferry Passengers

The Cape May-Lewes ferry began operations in July 1964. **Table 3** presents historical ridership data, which are graphically illustrated in **Figure 3**. In 1965, the ferry's first full operating year, 161,000 vehicles and 533,000 passengers were carried, a volume which remained more or less constant over the next 12 years given a stable tourist industry. The opening of the first casino in Atlantic City in 1978 induced an upswing in area tourism, resulting in generally steady increases in ferry patronage averaging some 3 percent per year from 1980 to 1992. Decreases in traffic were recorded in 1991 and 1992, chiefly due to the national recession and associated slump in tourist visitation, and may have been exacerbated by a coincident ferry toll increase in 1991. Data for the first seven months of 1993, however, indicate that ridership has resumed its upward trend and is running about 7 percent ahead of the comparable year-earlier period. Projections prepared by Wallace Roberts & Todd (WRT) call for a total of approximately 379,000 vehicles and 1.1 million passengers by 1995, with continued growth to 435,000 vehicles and 1.2 million passengers by the end of the decade.

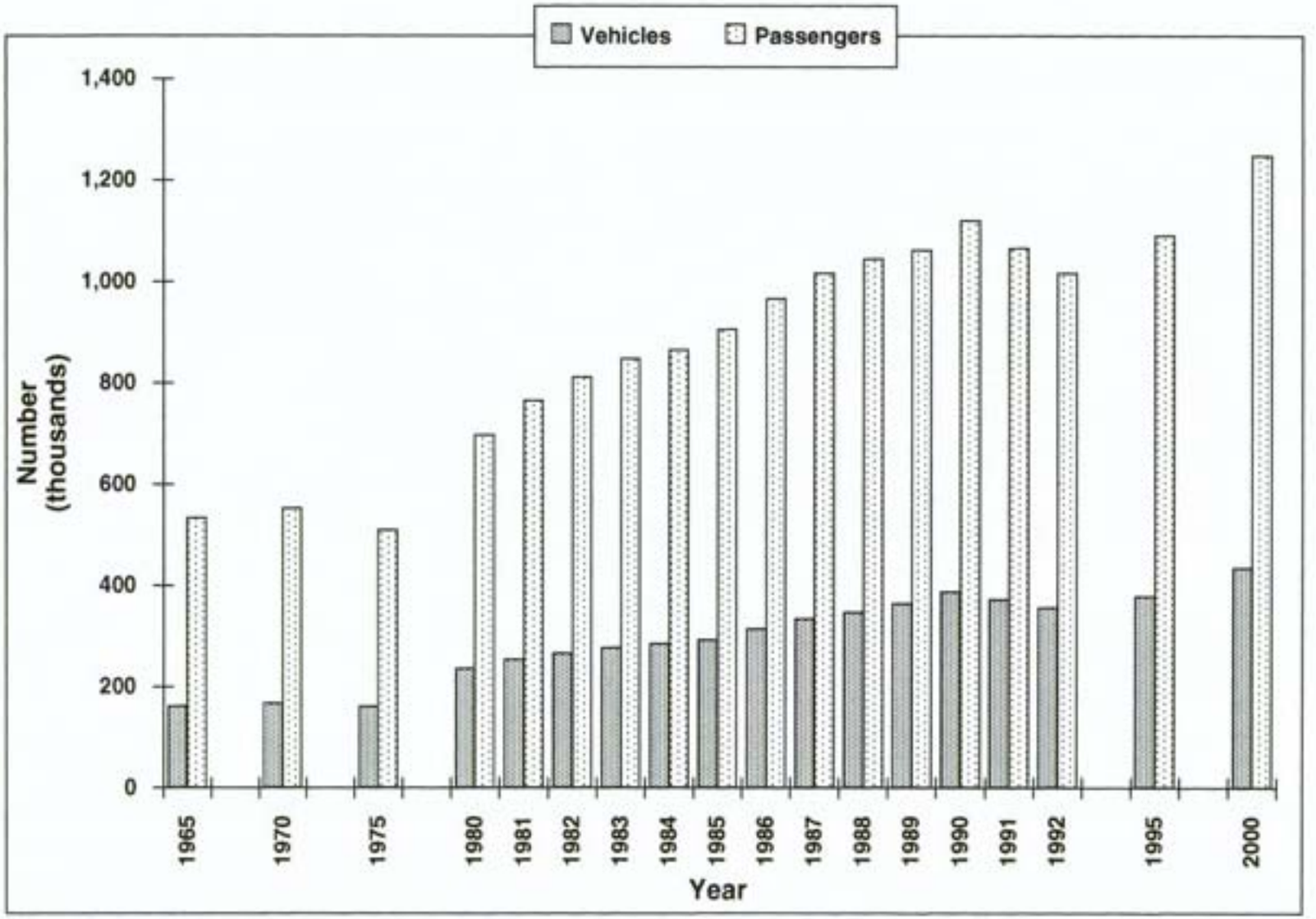
Table 3

VEHICLES AND PASSENGERS CARRIED BY THE CAPE MAY-LEWES FERRY
1965-2000

Year	Number of Vehicles (thousands) Passenger Vehicles	Other Vehicles 1/	Total	Number of Passengers (thousands)
1965 2/	153	8	161	533
1970	154	14	168	552
1975	147	14	161	510
1980	212	24	236	698
1981	227	27	254	765
1982	239	27	266	812
1983	250	27	277	848
1984	258	27	285	865
1985	266	26	292	906
1986	287	27	314	967
1987	306	28	334	1,017
1988	320	27	347	1,045
1989	332	32	364	1,063
1990	355	33	388	1,121
1991	343	29	372	1,066
1992	328	28	356	1,017
1995 Projected	...	...	379	1,091
2000 Projected	...	...	435	1,248
Average Annual Rate of Increase				
1965-1980	2.2%	7.6%	2.6%	1.8%
1980-1992	3.7	1.3	3.5	3.2
1992-2000	...	...	2.5	2.6

1/ Includes trucks, buses, motocycles, and bicycles.
2/ First full year of operation.

Source: Delaware River and Bay Authority, Wallace Roberts & Todd, and Harrison Price Company.



Source: Delaware River and Bay Authority and Wallace Roberts & Todd.

Figure 3

VEHICLES AND PASSENGERS CARRIED BY THE CAPE MAY-LEWES FERRY 1965-2000

A monthly distribution of ferry traffic during 1992 is contained in **Table 4**. The four months from June through September account for 62 percent of all vehicles carried and 67 percent of all passengers carried, with the month of August alone recording 21 percent of the annual vehicle total and 24 percent of the annual passenger total. This pronounced summer peak is readily evident from the graph in **Figure 4**, which plots passenger volume in both southbound (Cape May to Lewes) and northbound (Lewes to Cape May) directions. It can also be seen that traffic is quite evenly divided by direction, with nearly all riders making the round-trip.

In addition to the aforementioned seasonal concentration, ferry patronage also exhibits a strong weekend orientation. Detailed analysis by WRT reveals the following mean passenger volume by day of week for summer 1992:

	Average Number of Passengers Summer 1992		Weekend Index
	Weekdays	Weekend Days	
June	3,341	4,835	145
July	6,401	8,598	134
August	6,992	9,788	140
Average	5,569	7,898	142

Source: Wallace Roberts & Todd and Harrison Price Company.

Passenger traffic during the peak summer season, as shown, averages some 42 percent higher on weekend days than on weekdays. The WRT analysis further notes that of the two weekend days, Saturdays record a considerably higher peak than Sundays.

Regional Resident Market

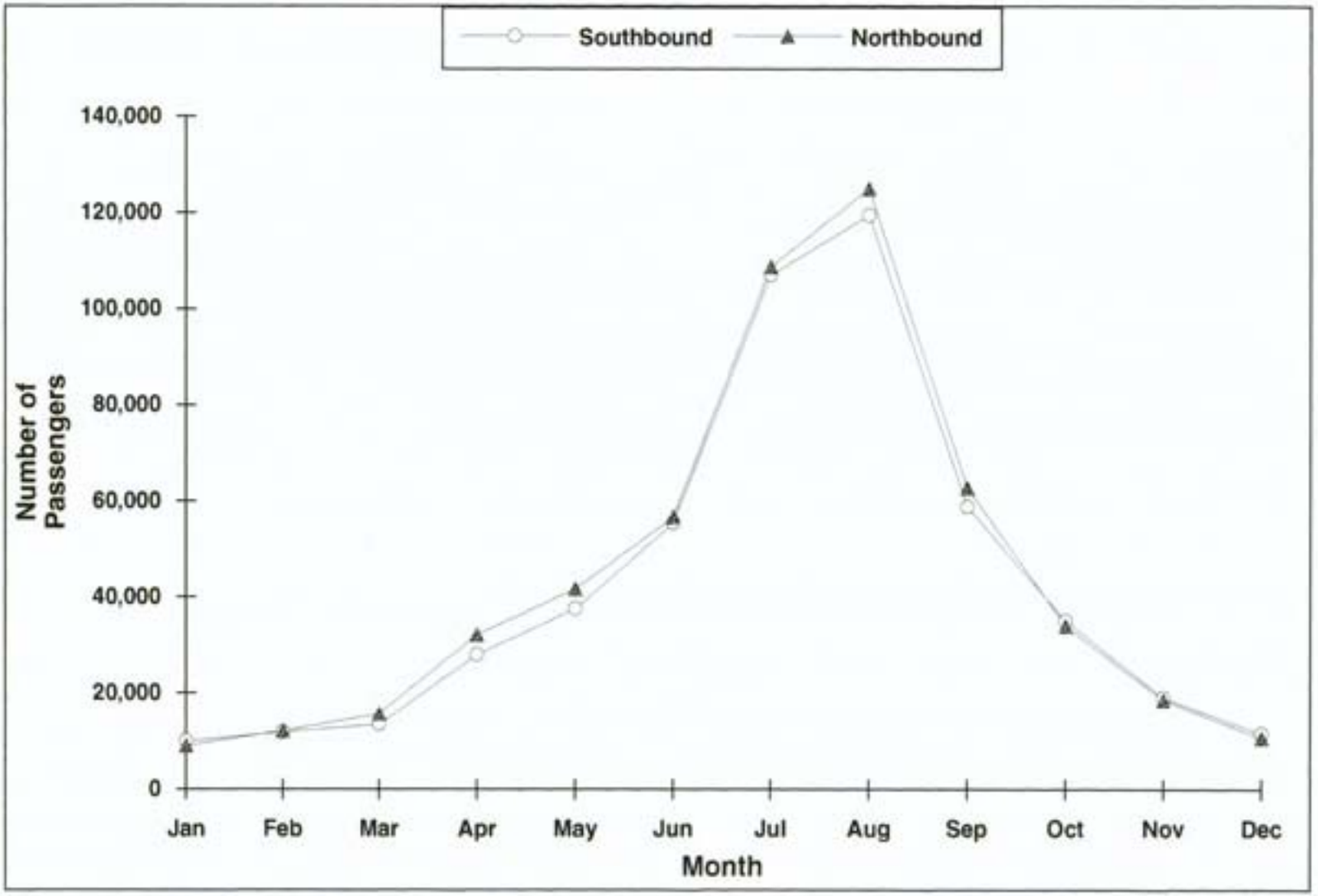
While the bulk of support for visitor attractions at the ferry terminals will derive from passengers who use the ferry, it is anticipated that a high-quality entertainment experience will also appeal to the general population residing within a reasonable driving distance, including the many nearby shore towns as well as the Greater Philadelphia-New Jersey-Delaware-Baltimore region (a region which is also the primary source of tourist visitation—seasonal residents and excursionists—to the shore resort district). As presented in **Table 5**, some 9.5 million people currently live in the broad area defined, 806,000 within the local, or primary, market area within 50

Table 4

MONTHLY DISTRIBUTION OF VEHICLES AND PASSENGERS CARRIED BY THE CAPE MAY-LEWES FERRY 1992

Month	Vehicles		Passengers	
	Number	Percent of Total	Number	Percent of Total
January	8,245	2. 3%	19,135	1. 9%
February	9,953	2. 8	24,089	2. 4
March	12,579	3. 5	29,294	2. 9
April	22,980	6. 5	59,763	5. 9
May	30,392	8. 5	76,486	7. 5
June	37,568	10. 5	107,796	10. 6
July	66,432	18. 6	214,385	21. 1
August	73,702	20. 7	243,411	23. 9
September	41,886	11. 8	115,498	11. 4
October	27,165	7. 6	67,377	6. 6
November	15,851	4. 4	37,746	3. 7
December	9,714	2. 7	22,379	2. 2
Total	356,467	100. 0%	1,017,359	100. 0%

Source: Delaware River and Bay Authority and Harrison Price Company.



Source: Delaware River and Bay Authority.

Figure 4

MONTHLY DISTRIBUTION OF PASSENGER TRAFFIC ON THE CAPE MAY-LEWES FERRY 1992

Table 5

POPULATION TRENDS IN THE LEWES-CAPE MAY REGION 1990-1999

Year	Total Population 1/ (thousands) Primary Market (0-50 miles)	Secondary Market (50-100 miles)	Total
1990 Census	771	8,486	9,257
1994 Estimate	806	8,727	9,533
1999 Projection	853	9,032	9,885
Average Annual Rate of Change			
1990-1994	1. 1%	0. 7%	0. 7%
1994-1999	1. 1	0. 7	0. 7

1/ As measured from Cape May.

Source: Urban Decision Systems, Inc. and Harrison Price Company.

miles and 8.7 million within 50 to 100 miles (refer to Figure 1). Throughout the region, population is slowly growing and is expected to reach a total of 9.9 million by 1999.

Age characteristics of the regional resident market area are delineated in **Table 6**. Children and teens under 18 years of age comprise roughly one-fourth of the total population, while senior citizens 65 years or age or older represent 14 percent of the total. Median age is calculated at 34.6 years, slightly older than the national average of 33.4 years. A current income profile for the region is contained in **Table 7** and indicates that 38 percent of all households report incomes in excess of $50,000 per year, while 14 percent report less than $20,000 per year. Median income is $34,500 annually, or about 4 percent higher than the national median of $33,200. On the basis of these data, the regional market may be described as relatively mature and moderately affluent.

Summary of Market Support

Table 8 summarizes ferry passenger and regional resident market support available to the proposed terminal attractions, using 1999 as the base planning year. Interpolating from WRT projections for ferry traffic as discussed earlier, total annual ferry passenger volume in 1999 is estimated at 1.2 million. Given a seven-month operating schedule for the attractions complex, this figure has been reduced by a factor of 15 percent to account for ridership occurring outside the operating season, for a net ferry passenger market of slightly more than 1 million. The regional resident market, meanwhile, will total 9.9 million people as previously described. A sizable base of support is thus evident.

Table 6

AGE DISTRIBUTION OF THE
LEWES-CAPE MAY REGIONAL POPULATION
1994

Age Group	Total Population 1/ Primary Market (0-50 miles)	Secondary Market (50-100 miles)	Total
Child			
Less Than 5 Years	61,793	682,279	744,072
6-13 Years	96,476	1,040,953	1,137,429
Subtotal	158,269	1,723,232	1,881,501
Teen (14-17 years)	39,813	413,497	453,310
Adult			
18-24 Years	74,367	841,237	915,604
25-64 Years	415,176	4,532,694	4,947,870
65 or More Years	118,336	1,216,289	1,334,625
Subtotal	607,879	6,590,220	7,198,099
Total	805,961	8,726,949	9,532,910
	Percent Distribution		
Child			
Less Than 5 Years	7.7%	7.8%	7.8%
6-13 Years	12.0	11.9	11.9
Subtotal	19.7%	19.7%	19.7%
Teen (14-17 years)	4.9	4.8	4.8
Adult			
18-24 Years	9.2	9.6	9.6
25-64 Years	51.5	51.9	51.9
65 or More Years	14.7	14.0	14.0
Subtotal	75.4%	75.5%	75.5%
Total	100.0%	100.0%	100.0%

1/ As measured from Cape May.

Source: Urban Decision Systems, Inc., and Harrison Price Company.

Table 7

HOUSEHOLD INCOME DISTRIBUTION IN THE
LEWES-CAPE MAY REGION
1994

Income Group	Total Households 1/ Primary Market (0-50 miles)	Secondary Market (50-100 miles)	Total
Less Than $10,000	34,622	362,433	397,055
$10,000-$19,999	48,118	405,056	453,174
$20,000-$34,999	71,139	658,015	729,154
$35,000-$49,999	57,848	597,946	655,794
$50,000-$74,999	54,974	679,518	734,492
$75,000 or More	36,679	581,502	618,181
Total	303,380	3,284,470	3,587,850
	Percent Distribution		
Less Than $10,000	11. 4%	11. 0%	11. 1%
$10,000-$19,999	15. 9	12. 3	12. 6
$20,000-$34,999	23. 4	20. 1	20. 3
$35,000-$49,999	19. 1	18. 2	18. 3
$50,000-$74,999	18. 1	20. 7	20. 5
$75,000 or More	12. 1	17. 7	17. 2
Total	100. 0%	100. 0%	100. 0%

1/ As measured from Cape May.

Source: Urban Decision Systems, Inc., and Harrison Price Company.

Table 8

MARKET SUPPORT AVAILABLE TO CAPE MAY-LEWES FERRY TERMINAL ATTRACTIONS 1994 and 1999

Market Segment	Market Size (thousands) 1994	1999
Ferry Passengers		
Annual Total	1,067	1,218
Less: November-March (at 15 percent)	160	183
Net Seasonal Market Support	907	1,035
Regional Resident Population		
Primary (0-50 miles)	806	853
Secondary (50-100 miles)	8,727	9,032
Total	9,533	9,885

Source: Delaware River and Bay Authority, Wallace Roberts & Todd, Urban Decision Systems, Inc., and Harrison Price Company.

Section 4

CONCEPT RECOMMENDATIONS AND ATTENDANCE PLANNING GUIDELINES

The preceding review of the site and market environment furnishes a context for the formulation of an appropriate attractions concept for the Cape May and Lewes visitor centers. In this section of the report, ideas and opinions expressed by charrette participants are summarized, followed by an analysis of market capture and attendance achievable under the concept envisioned. Annual attendance targets are subsequently converted into basic physical planning guidelines.

ATTRACTION CONCEPT PARAMETERS

Fundamental to the rationale for strategy recommendations are a number of important conceptual and economic objectives. These goals are subsequently set forth and lead to a preliminary definition of attraction scope and content.

Development Objectives

The following goals are integral to the planning process for the proposed ferry terminal attractions:

- To create entertainment experiences that reflect the unique heritage and natural environment of the Cape May-Lewes region.

- To provide 60 to 90 minutes of entertainment value that will appeal to passengers waiting to board the ferry as well as the general public looking for an interesting diversion while in the area.

- To enhance dining and shopping opportunities at the ferry terminals as a means of improving service to visitors and increasing revenues to DRBA.

- To create a viable attraction at both ends of the ferry route, while taking into account the relative scope of development appropriate in each instance given site characteristics and criteria for economic success.

- To conceive facilities consistent with a general capital budget on the order of $20 million (1994 value).

- To create an entertainment "package" that will generate enough revenue to cover operating costs and, preferably, an operating surplus that can help to offset deficits in ferry transport operations.

- To develop attractions that will have a favorable impact on the local economy, including new employment opportunities and increased sales tax receipts.

Recommended Development Strategy

In light of the foregoing objectives, especially economic goals, a central underlying strategy issue emerges that affects concept definition. Namely, visitor centers of more or less the same scope at both Cape May and Lewes may appear superficially fair and desirable in order to distribute residual benefits equitably in a bi-state context; however, HPC strongly recommends against this approach for the following reasons:

- For both attractions to be self-sufficient, an admission charge would have to be levied at each location. Given that the cost of ferry passage is not inconsequential—currently amounting to $18 per vehicle and driver plus $4.50 for each accompanying adult passenger on a one-way basis (a total of $45 for two adults round-trip, for example)—visitor propensity to spend on more than one ancillary entertainment opportunity will likely be very limited. While a discounted, two-attraction ticket might offset price resistance to some degree, it will probably not be adequate to ensure the viability of both sites.

- Splitting the entertainment experience into two parts separated by a wide expanse of water (70 minutes in ferry transit time) spreads capital resources too thinly and compromises the "critical mass" required to seize public attention. Moreover, it forces the two locations into a competitive posture—in

tandem with the aforementioned price issue, inevitable visitor confusion about which site offers the best entertainment value will cause a lopsided response to one site versus the other. This point is especially pertinent in the context of repeat attendance—visitors may be willing to sample both attractions once, but will tend to choose between one or the other on subsequent visits.

- There are recognizable economies of scale in operating costs if a consolidated approach is adopted. As one important item, a single and larger attraction can operate efficiently with fewer personnel than the combined requirements of two separate attractions.

With respect to the foregoing, it is recommended that initial capital resources of approximately $20 million for attractions be unevenly allocated between the two ferry terminals, with a significant portion of the budget devoted to a major attraction fulfilling critical mass requirements at one site and the remaining budget devoted to the other site, which would function in a supporting and non-competitive role.

Discussions during the charrette with respect to site characteristics suggest that the Cape May terminal has the best potential for the major, high-profile attraction. More land area is available in this location vis-a vis Lewes, which will assist in providing adequate buffers protecting adjacent environmentally sensitive lands and waters. Cape May also benefits from greater distance from residential areas, thus minimizing possible conflicts due to increased auto traffic, noise, and so on in the vicinity. Accessibility from the greater regional market is also better via the Garden State Parkway and connecting Atlantic City Expressway. The Lewes terminal, in contrast, offers excellent potential for a smaller, more sedate attraction that respects the surrounding residential environment while offering ferry passengers and other visitors a comfortable and appealing ambiance for casual, low-key entertainment.

Illustrative Concepts

Based on the aforementioned development strategy, three concept alternatives were briefly explored during the charrette, two of which apply to the Cape May site and the third to the Lewes site. These alternatives, described below, are illustrated in a series of sketches prepared by design consultant Michael Lee that appear in the report **Appendix**. It is cautioned that these guidelines are illustrative and tentative

only—more comprehensive "story-boarding" by a qualified show designer should be undertaken as soon as possible. The show designer's work would ideally begin in advance of architectural planning to establish the attraction theme and identify featured entertainment components, with later refinements carried out in close coordination with the project architect to ensure that the entertainment program is effectively accommodated and enhanced by facility design.

Themed Entertainment Center (Cape May). The first, and preferred, concept for the Cape May terminal is a themed entertainment center drawing on the history and lore of the Cape May-Lewes region. The overall character of the visitor center might evoke an 18th century seaport village, as illustrated in Appendix **Figure 5**, in a "living history" ambiance. The featured entertainment component would be a special-format film or special effects presentation of 20 to 30 minutes' duration, such as the following:

- A theater experience in the mold of the outstanding "Spirit Lodge" at Vancouver's Expo '86 (see Appendix **Figure 6**) or the new "Mystery Lodge" at Knott's Berry Farm in Southern California, which would relate the natural environment and history of the region from a Native American point of view.

- A large-screen 3-D film presenting a dramatic account of "Disasters at Sea," including a pirate attack (see Appendix **Figure 7**), a hurricane, or a collision in fog-bound waters.

- A large-screen 3-D film treating the many "Myths of the Sea" (see Appendix **Figure 8**), such as ship-devouring dragons, mermaids and the realm of King Neptune, and the Lost Continent of Atlantis.

In addition to the theater presentation, visitors would enjoy dining and shopping in the heavily themed village environment, with retail offerings encompassing an appealing variety of theme-related merchandise. Food and merchandise facilities should be accessible to all visitors to the terminal, including people who do not patronize the entertainment attraction.

Environmental Showcase (Cape May). A second concept possibility for Cape May would employ an environmental theme. The featured exhibit might be a stunning presentation of model whales such as found at the Monterey Bay Aquarium in California (see Appendix **Figure 9**), a walk-through aquarium tank similar to the "Shark Encounter" attractions at the Sea World parks, or a special-format film on whales and whaling. Ancillary exhibits would treat estuarine systems and wildlife, bird migration, and other ecology-oriented topics. Again, an array of themed food service and retail merchandise would also be included.

Theme Restaurant and Visitor Welcome Center (Lewes). For the Lewes ferry terminal, a full-service, ocean-view restaurant (see Appendix **Figure 10**) is envisioned as the signature attraction, with other major components including a gift shop, visitor welcome center dispensing tourist information and travel assistance, and a symbolic theme exhibit (see Appendix **Figure 11**). With respect to the latter, the WRT report described restoration efforts now under way on the historic *HMS De Braak*, currently housed at the adjacent Cape Henlopen State Park. It was suggested that the remains of the ship be moved to the Lewes ferry terminal visitor center, where restoration work could continue in view of the public and thus provide a fascinating and informative glimpse into the techniques and procedures used to restore the ship. People who regularly travel on the ferry would be able to follow progress over time. The thousands of artifacts salvaged from the vessel, meanwhile, furnish ample material for accompanying interpretive exhibits.

POTENTIAL MARKET CAPTURE AND ATTENDANCE

Attendance volume achieved by a recreation attraction is a function of several interrelated variables, including market size and socioeconomic characteristics, the quality and scope of development, location, the length of the operating season, pricing policy vis-a-vis entertainment value offered, extent of direct competition in the marketplace, management efficiency, and the effectiveness of the marketing and promotion program. Site and market factors evaluated in this report are generally very favorable and suggest that, given the appeal of the envisioned concept, expert management, and adequate promotion, the proposed visitor centers are capable of having an appreciable impact on the market. Subsequent paragraphs assess the attendance outlook.

Experience of Similar Attractions

To establish guidelines for realistic attendance targets, it is instructive to review the experience of selected comparable attractions. **Table 9** highlights the operating characteristics of a representative existing visitor centers, all of which are water-oriented and utilize a maritime or marine life theme. Attendance volume, as indicated, ranges from a low of 100,000 visitors per year at the small and remotely located Columbia River Maritime Museum in Oregon to an aggregate high of nearly 1.8 million at the three sites comprising the North Carolina Aquarium. Most facilities listed charge an admission fee, ranging from a nominal $1 adult at the Hoover Dam Visitor Center in Nevada to as much as $11.50 adult at the Maritime Center of Norwalk, Connecticut.

Market capture rates for a sample of these attractions are calculated in **Table 10**. As indicated, two methods of expressing market penetration have been shown. For the first group of facilities, visitor center patronage is measured against total visitation to the recreation area in question and can be seen to range from just less than 8 percent at Golden Pond Visitor Center at Land Between the Lakes in Kentucky to nearly 12 percent at the Hatteras Island visitor center at Cape Hatteras National Seashore in North Carolina. For the second group of facilities, market capture is expressed as combined penetration of resident and tourist markets available in each instance and ranges from a low of 2.4 percent at the Mote Marine Laboratory in Florida to a high of more than 6 percent at Oregon's Hatfield Marine Science Center.

Attendance Targets for the Cape May Attraction

In light of the foregoing sample of comparable experience, an illustrative range of market capture and attendance for the major visitor attraction at the Cape May ferry terminal is presented in **Table 11**. The following specific assumptions are integral to the projections:

- That facilities will developed to high standards of exhibitry, show programming, and aesthetic amenities.

Table 9

OPERATING CHARACTERISTICS OF SELECTED COMPARABLE ATTRACTIONS
1994

Attraction	Adult Admission Price	1993 Attendance (thousands)	Description
North Carolina Aquarium			
• Pine Knoll Shores	$2.00	646	Aquarium, interpretive center
• Roanoke Island	Free	589	Aquarium, interpretive center
• Fort Fisher	Free	523	Aquarium, interpretive center
Hoover Dam Visitor Center (Boulder City, NV)	$1.00	730	Museum, interpretive center
Cape Hatteras Nat'l Seashore			
• Hatteras Island Visitor Ctr	Free	250	Museum, interpretive center
• Bodie Island Visitor Ctr	Free	150	Museum, interpretive center
• Ocracoke Island Visitor Ctr	Free	150	Museum, interpretive center
Birch Aquarium (La Jolla, CA)	$6.50	500	Marine research center, aquarium
Maritime Center of Norwalk (Norwalk, CT)	$11.50	470	Maritime museum, aquarium
Virginia Marine Science Center (Virginia Beach, VA)	$4.75	328	Aquarium, marine science center
Hatfield Marine Science Center (Newport, OR)	Free	280	Marine research center, aquarium
Mote Marine Laboratory & Aquarium (Sarasota, FL)	$6.00	250	Marine research center, aquarium
Golden Pond Visitor Center (Golden Pond, KY)	$2.50	185	Interpretive center for TVA
Columbia River Maritime Museum (Astoria, OR)	$5.00	100	Maritime museum, aquarium

Source: Harrison Price Company.

Table 10

MARKET CAPTURE RATES OF SELECTED VISITOR CENTERS
1992-93

Attraction	Annual Attendance (thousands)	Market Size (thousands) Resident 1/	Tourist	Total	Market Capture Rate 2/
Expressed As Percent of Visitors Destined to Area:					
Cape Hatteras Nat'l Seashore					
• Hatteras Island	250	...	...	2,099	11. 9%
• Bodie Island	150	...	...	2,099	7. 1
• Ocracoke Island	150	...	...	2,099	7. 1
Hoover Dam-Lake Mead	730	...	...	8,445	8. 6
Golden Pond-Land Between the Lakes	185	...	...	2,329	7. 9
Expressed As Percent of Resident/Tourist Market Size:					
Hatfield Marine Science Ctr	280	2,456	2,000	4,456	6. 3%
Virginia Marine Science Ctr	328	1,531	4,000	5,531	5. 9
Birch Aquarium	500	2,651	14,500	17,151	2. 9
Mote Marine Laboratory	250	2,845	7,500	10,345	2. 4

1/ Population within 50 to 75 miles.
2/ Total attendance divided by total market size.

Source: Harrison Price Company.

Table 11

ESTIMATED MARKET CAPTURE AND ATTENDANCE FOR A VISITOR ATTRACTION AT THE CAPE MAY FERRY TERMINAL
Stabilized Year

	Performance Range		
	Low	Probable	High
Estimated Market Capture Rate			
Ferry Passengers	30. 0%	33. 0%	35. 0%
Regional Resident Population	1. 0	1. 5	2. 0
Total Annual Attendance 1/ (thousands)			
Ferry Passengers	311	342	362
Regional Resident Population	99	148	198
Total	409	490	560
Imputed Gross Capture of Regional Resident Market	4. 1%	5. 0%	5. 7%

1/ Based on estimated 1999 market size as shown in Table 8.

Source: Harrison Price Company.

- That the attraction will be adequately promoted, including close liaison with local and state tourist promotion agencies.

- That the entertainment program will incorporate periodic change necessary to stimulate an ongoing cycle of repeat visitation. Experience of other attractions plainly demonstrates that it is relatively easy to draw visitors the first time around but very difficult to keep them coming back without regular injections of fresh program content (and related capital investment).

- That a moderate admission price consistent with encouraging broad public response will be charged.

- That the physical capacity of combined interior and exterior public spaces will be sufficient to accommodate heavy summer peaks in visitation.

- That a concerted effort will be made to generate off-season patronage through a carefully conceived program of temporary exhibits and special presentations (festivals, holiday celebrations, and the like).

Given the above assumptions and other considerations cited in this report, Table 11 estimates that capture of the ferry passenger segment of the market will range from 30 to 35 percent, while capture of the regional resident market at large is projected at 1 to 2 percent. Based on market size estimates for 1999 previously shown in Table 8, these capture rates translate into a potential absolute attendance volume of 409,000 as a minimum objective and 560,000 as a maximum goal. The mid-range, or probable, estimate calls for roughly 490,000 visitors. The imputed gross market capture rate is 4.1 percent to 5.7 percent of the regional resident market, or at the higher end of the range for comparable attractions (refer to the second group of facilities listed in Table 10). Allowing that ferry passengers constitute a largely captive market (that is, they are already destined to the site and readily motivated to enjoy entertainment that will fill otherwise tiresome waiting time), overall capture rates of the indicated magnitude are considered reasonable and attainable.

The foregoing represent stabilized targets. Attendance during the first couple of years will likely exceed these figures due to publicity about the "rebirth" of the ferry terminal, which will arouse public curiosity. Beyond stabilization, experience at most

visitor attractions suggests modest increases in attendance over time in accordance with market growth and periodic reinvestments that expand and/or change the offering and create new incentives to attend.

ILLUSTRATIVE PHYSICAL PLANNING GUIDELINES

An analysis of probable patterns of attendance is necessary to establish physical sizing parameters for the Cape May attraction. Attendance models just developed are converted into demand for basic visitor facilities and services in the paragraphs to follow.

Design Day

Except for parking, it is neither economical nor necessary to plan a physical plant to accommodate absolute peaks in attendance. Rather, a good balance is achieved if facilities are planned for the "design day," a term referring to the average of attendance on the top 15 to 20 days of the year. The result is a facility large enough to handle the heavy volume of visitors on the highest days, albeit with considerable crowding on occasion, but at the same time, the facility is not so large as to appear empty during off-season slack periods.

Table 12 calculates design day parameters for Cape May. For planning purposes, it is assumed that the peak month, which will probably be August, will account for 25 percent of annual volume, a figure based on recent experience in ferry ridership (refer to Table 4). Average weekly volume during the peak month will therefore amount to some 122,500 visitors under the mid-range attendance assumption. Experience at most recreation attractions further suggests that the average high day, or design day (in this case the typical Saturday in August) will be equivalent to 20 to 25 percent of the peak week. Using the midpoint of 23 percent, approximately 6,400 people can be expected on design day. Based on the envisioned 60- to 90-minute average visitor stay time and further assuming a 12-hour daily operating schedule during the peak season (9 am to 9 pm, for example), an average peak on-site crowd on the order of 1,300 persons, representing 20 percent of the design day total, is estimated under the probable performance scenario. The capacity requirement under the low visitation estimate is roughly 1,100 persons, while the requirement under the high estimate rises to about 1,450 persons.

Table 12

DESIGN DAY PLANNING GUIDELINES FOR A VISITOR ATTRACTION AT THE CAPE MAY FERRY TERMINAL
Stabilized Year

	Performance Range		
	Low	Probable	High
Estimated Annual Attendance 1/	409,000	490,000	560,000
Estimated Peak Month Attendance (at 25 percent)	102,250	122,500	140,000
Average Weekly Attendance During Peak Month (at 4.43 weeks)	23,081	27,652	31,603
Design Day Attendance 2/ (at 23 percent of peak week)	5,309	6,360	7,269
Peak On-Site Attendance 3/ (at 20 percent of design day)	1,062	1,272	1,454
Entertainment Area Required (at 30 square feet per on-site visitor) 4/	31,852	38,160	43,612
Rounded to	32,000	38,000	44,000

1/ From Table 11.
2/ Expected average attendance on the typical weekend day during the peak month.
3/ Assumes a 12-hour operating schedule during peak attendance periods and an average visitor length of stay of about one hour.
4/ Includes reception, exhibit galleries, theater(s), general circulation, and food and merchandise sales space; excludes "back of house" support functions.

Source: Harrison Price Company.

Net Public Area Requirements

An accepted planning ratio for public spaces at visitor centers, museums, and similar attractions is 30 to 50 square feet of net area per on-site visitor. Net public area includes reception lobby, exhibit galleries, theaters, food and merchandise facilities, general circulation, outdoor exhibit areas, and any other spaces open to the public. All "back of house" support functions (administrative offices, employee lounges, equipment service areas, storage, and so on) are excluded. Of the 30 to 50 square feet, about half is occupied by the exhibitry or other hardware itself and the remainder represents viewing and circulation room. Depending on the attendance scenario, Table 12 shows that between 32,000 and 44,000 square feet of net public area will be required at Cape May.

For the initial redevelopment, adoption of the mid-range estimate of about 38,000 square feet will satisfy "critical mass" objectives and help to ensure visitor comfort and enjoyment during periods of high attendance.

Supportable Food Service Area

Based on recreation industry experience for attractions of comparable average visitor stay time, visitor expenditures on food and beverages at the Cape May attraction are projected to average $1.25 per capita at stabilization. A similar expenditure is considered reasonable for other ferry passengers who do not visit the attraction, but enjoy a meal or refreshments at either the Cape May or Lewes terminals. When multiplied by projected annual attendance volume at the Cape May attraction as well as other ferry riders, total gross food and beverage sales will amount to a stabilized range of $1.6 million to $1.8 million per year (constant 1994 dollars), as shown in **Table 13**. A reasonable sales turnover rate—allowing for a mix of full-service and convenience food operations—would be between $250 and $350 per square foot, yielding a requirement for 4,900 to 6,800 square feet of food service area at the mid-range planning benchmark. For the initial development, restaurant/snack stand area of 5,700 square feet is recommended, with 2,000 square feet allocated to Cape May (fast food or self-service cafe) and 3,700 square feet to Lewes (full-service restaurant of roughly 150 seats).

Table 13

SUPPORTABLE FOOD SERVICE AREA AT THE LEWES AND CAPE MAY FERRY TERMINALS
Stabilized Year

	Performance Range		
	Low	Probable	High
Estimated Annual Patronage (thousands)			
Cape May Visitor Attraction 1/	409	490	560
Other Ferry Passengers 2/	907	876	856
Estimated Per Capita Expenditure on Food and Beverages 3/			
Cape May Visitor Attraction	<----------	$1.25	---------->
Other Ferry Passengers	<----------	1.25	---------->
Total Gross Food and Beverage Sales (thousands) 3/			
Cape May Visitor Attraction	$511	$613	$700
Other Ferry Passengers	1,134	1,095	1,070
Total	$1,645	$1,708	$1,770
Supportable Food and Beverage Service Area (square feet)			
At $250 Per Square Foot	6,580	6,830	7,080
At $300 Per Square Foot	5,483	5,692	5,900
At $350 Per Square Foot	4,700	4,879	5,057
Suggested Food Service Area 4/			
Cape May Terminal	<----------	2,000	---------->
Lewes Terminal	<----------	3,700	---------->
Total	<----------	5,700	---------->

1/ From Table 11.
2/ Total 1999 annual ferry passengers (see Table 11) less passengers visiting Cape May attraction.
3/ In constant 1994 dollars.
4/ Includes kitchen and on-site storage; excludes warehouse.

Source: Harrison Price Company.

Supportable Merchandise Sales Area

Again considering recreation industry standards, merchandise spending by visitors to the Cape May attraction is estimated at an average of $2.00 per capita. Retail spending by other ferry passengers is expected to be modest, with the average probably on the order of 75 cents per capita. Using the same methodology as described above for food service, **Table 14** shows that total supportable retail space is calculated at between 3,600 and 4,700 square feet on the mid-range performance model. An initial allocation of 4,100 square feet is recommended, 2,700 square feet at the Cape May visitor center and 1,400 square feet at the Lewes visitor center.

Table 14

SUPPORTABLE MERCHANDISE SALES AREA AT THE LEWES AND CAPE MAY FERRY TERMINALS
Stabilized Year

	Performance Range		
	Low	Probable	High
Estimated Annual Patronage (thousands)			
Cape May Visitor Attraction 1/	409	490	560
Other Ferry Passengers 2/	907	876	856
Estimated Per Capita Expenditure on Merchandise 3/			
Cape May Visitor Attraction	<----------	$2.00	---------->
Other Ferry Passengers	<----------	0.75	---------->
Total Gross Merchandise Sales 3/ (thousands)			
Cape May Visitor Attraction	$818	$980	$1,120
Other Ferry Passengers	680	657	642
Total	$1,498	$1,637	$1,762
Supportable Merchandise Sales Area (square feet)			
At $350 Per Square Foot	4,281	4,677	5,034
At $400 Per Square Foot	3,746	4,093	4,405
At $450 Per Square Foot	3,329	3,638	3,916
Suggested Sales Area 4/			
Cape May Terminal	<----------	2,700	---------->
Lewes Terminal	<----------	1,400	---------->
Total	<----------	4,100	---------->

1/ From Table 11.
2/ Total 1999 annual ferry passengers (see Table 11) less passengers visiting Cape May attraction.
3/ In constant 1994 dollars.
4/ Includes on-site storage; excludes warehouse.

Source: Harrison Price Company.

Section 5

PRELIMINARY FINANCIAL ANALYSIS

The financial implications of the Cape May and Lewes ferry terminal visitor centers are assessed in this section of the report, including estimated development costs, operating revenues, operating expenses, and residual operating balance. This analysis is based on the stated objective of achieving operational self-sufficiency and therefore necessarily incorporates assumptions independently formulated by HPC. Every effort has been made to ensure a conservative, realistic appraisal, but it should be understood that key assumptions are subject to change and/or refinement as economic planning reaches a more definitive stage. All amounts are expressed in constant 1994 dollars.

ESTIMATED CAPITAL REQUIREMENTS

Based on the mid-range sizing guidelines set forth in Section 4 of this report, and reiterating that the latter have been prepared without benefit of formal show design and architectural input, order-of-magnitude estimates of required capital investment for the Cape May and Lewes visitor centers are presented in **Table 15** and **Table 16**, respectively. Unit cost factors employed have been drawn from recent experience for comparable projects and, in accordance with development objectives cited earlier, assume high-quality construction and site enhancements that will create a competitive project and an inviting public image. Built into cost estimates are allocations for basic infrastructure (utilities and so on) and design fees.

Cape May Visitor Center

For Cape May, an initial capital budget of some $11.2 million is preliminarily estimated for core entertainment and visitor service facilities (Table 15), including media production costs for the featured theater component, exhibitry, and all furnishings and fixtures. Added to this sum is an estimated $4.7 million for various site enhancements, landscaping, and parking as set forth in the prior WRT planning studies. It should be noted that the WRT estimates for site improvements were developed in conjunction with a visitor center concept different from that outlined in

Table 15

ILLUSTRATIVE SPACE ALLOCATIONS AND CAPITAL BUDGET FOR THE CAPE MAY FERRY TERMINAL VISITOR ATTRACTION (Constant 1994 Dollars)

Project Component	Estimated Area 1/ (square feet)	Estimated Unit Cost 2/	Total Cost (thousands)
VISITOR ATTRACTION DEVELOPMENT			
Entry and Reception Lobby	2,000	$150	$300
Entertainment Facilities			
Basic Structure	31,300	125	3,913
Exhibitry and Theater FFE	[15,000]	400	6,000
Subtotal	33,300		$9,913
Food and Merchandise Sales Space	4,700	200	940
Total	38,000		$11,153
RELATED SITE IMPROVEMENTS 3/			
Waterfront Edge Stabilization and Boardwalk Promenade	14,400	$50	$720
Upper Level Promenade	27,500	16	440
Visitor Parking	84,000	6	504
Access Roads	48,000	8	400
Natural Area Enhancement/Pond	522,720	allow	1,800
Other Landscape Elements	n/a	allow	500
Subtotal	696,620		$4,364
Project Fees (at 7.5 percent)	...		327
Total	696,620		$4,691
Grand Total	734,620		$15,844

n/a means not applicable.
1/ Based on "probable" performance estimate.
2/ Includes allowances for design fees.
3/ Estimates prepared by Wallace Roberts & Todd.

Source: Wallace Roberts & Todd and Harrison Price Company.

Table 16

ILLUSTRATIVE SPACE ALLOCATIONS AND CAPITAL BUDGET FOR THE LEWES FERRY TERMINAL VISITOR CENTER (Constant 1994 Dollars)

Project Component	Estimated Area 1/ (square feet)	Estimated Unit Cost 2/	Total Cost (thousands)
VISITOR CENTER DEVELOPMENT			
Entry Complex and Visitor Welcome Center	4,000	$150	$600
Theme Exhibit	5,000	300	1,500
Food and Merchandise Sales Space	5,100	200	1,020
Total	9,100		$3,120
RELATED SITE IMPROVEMENTS 3/			
Recreational Pier	n/a	allow	$120
Promenade	22,500	16	360
Visitor Parking Renovation	98,400	3	328
Entrance Drive	n/a	allow	200
Cape Henlopen Signage and Road Improvements	n/a	allow	1,500
Landscape Elements, Park Gateway	n/a	allow	500
Park/Ferry Overflow Parking	28,200	6	169
Subtotal	149,100		$3,177
Project Fees (at 7.5 percent)	...		238
Total	149,100		$3,415
Grand Total	158,200		$6,535

n/a means not applicable.
1/ Based on "probable" performance estimate.
2/ Includes allowances for design fees.
3/ Estimates prepared by Wallace Roberts & Todd.

Source: Wallace Roberts & Todd and Harrison Price Company.

this report and thus may not be fully applicable to the entertainment program envisioned here; because certain basic improvements will be necessary under any conceptual program, they have been included as a general indication of the likely magnitude of such costs. Overall, then, the capital budget requirement for the Cape May visitor attraction complex comes to $15.8 million.

Lewes Visitor Center

An aggregate initial capital budget of $6.5 million is estimated for the Lewes visitor center (Table 16). This figure includes $3.1 million for the featured restaurant, visitor welcome center, and theme exhibit, plus another $3.4 million in site enhancements, again as drawn from WRT planning studies and intended only for general planning purposes.

Combined Development Costs

In total, some $22.4 million in combined capital expense is estimated for the two ferry terminal attractions. Allowing for refinements that may reduce some cost items as more definitive show design and architectural studies are undertaken, this budget is in keeping with the stated capital limit of $20 million for initial development and will enable creation of high-quality attractions able to meet attendance and revenue objectives.

ESTIMATED OPERATING REVENUES

Operating revenue at Cape May will be derived from admission tickets, food and beverage sales, and merchandise sales. It is assumed that free admission would be the policy at Lewes, which is primarily geared to visitor services and has no major entertainment draw that would justify an entrance fee (the *De Braak* restoration project or an alternative theme exhibit would function as a crowd-generator rather than a source of revenue). The Lewes visitor center, however, will realize considerable revenue from food service and retail operations. It is further assumed that all facilities and attractions will be operated by DRBA as opposed to outside concessionaires.

Cape May Admissions Income

Prevailing ticket prices for comparable attractions were set forth earlier in Table 9. In light of that experience and the envisioned scope of the Cape May entertainment program, HPC suggests an adult ticket price of $5.00, which will represent an excellent value that will contrast favorably with other attractions in the seaside resort area (see Table 2). Scaled-down prices would be offered to children under about 12 years of age and to senior citizens. At existing commercial attractions, net per capita admission receipts, or "yield," from admissions commonly ranges between 70 and 75 percent of the adult price after allowance for attendance mix between adults and children, group discounts, and a certain incidence of complimentary admissions. Yield at Cape May is estimated at 75 percent, or $3.75 per capita as shown in **Table 17**, given a sizable adult (over age 12) component in the visitor mix and the assumption that the moderate entry fee will eliminate the need for heavy discounting in order to meet attendance goals. Total annual gross admissions revenue, therefore, will amount to $1.8 million as a stabilized, mid-range objective.

Food and Merchandise Sales

The previous section of the report noted that visitor spending on food and beverages at Cape May and Lewes is projected to average $1.25 per capita. Mid-range total gross food sales are accordingly $1.7 million per year at stabilization. In addition, merchandise sales were projected at $2.00 per capita for Cape May attraction visitors and 75 cents per capita for other ferry passengers, for overall gross merchandise revenues of $1.6 million on the mid-range performance model.

Aggregate Operating Revenues

As Table 17 indicates, the preceding itemization of operating revenue totals a combined average of $7.00 per capita for Cape May attraction visitors under the probable attendance scenario and $2.00 per capita for other visitors to the terminals. Aggregate gross revenue thus comes to roughly $5.2 million per year at stabilization. The low attendance target implies total gross revenue of $4.7 million, while the high model calls for some $5.6 million.

Table 17

PRELIMINARY ESTIMATE OF OPERATING REVENUES FOR THE CAPE MAY-LEWES FERRY TERMINAL ATTRACTIONS
Stabilized Year
(Constant 1994 Dollars)

	Performance Range		
	Low	Probable	High
Estimated Per Capita Revenue From Cape May Attraction Visitors			
Admissions 1/	$3.75	$3.75	$3.75
Food and Beverages	1.25	1.25	1.25
Merchandise Sales	2.00	2.00	2.00
Total	$7.00	$7.00	$7.00
Estimated Per Capita Revenue From Other Ferry Passengers 2/			
Food and Beverages	$1.25	$1.25	$1.25
Merchandise	0.75	0.75	0.75
Total	$2.00	$2.00	$2.00
Total Gross Revenue From Cape May Attraction Visitors (thousands) 3/			
Admissions	$1,534	$1,838	$2,100
Food and Beverages	511	613	700
Merchandise	818	980	1,120
Total	$2,863	$3,430	$3,920
Total Gross Revenue From Other Ferry Passengers (thousands) 2/			
Food and Beverages	$1,134	$1,095	$1,070
Merchandise	680	657	642
Total	$1,814	$1,752	$1,712
Combined Gross Revenues (thousands)			
Admissions	$1,534	$1,838	$2,100
Food and Beverages	1,645	1,708	1,770
Merchandise	1,498	1,637	1,762
Total	$4,677	$5,183	$5,632

1/ Based on an adult admission fee of $5.00 at an average yield of 75 percent.
2/ From Tables 13 and 14.
3/ Based on estimated annual attendance as shown in Table 11.

Source: Harrison Price Company.

ESTIMATED OPERATING EXPENSES

The estimated operating budget required to support the Cape May and Lewes visitor attractions is presented in **Table 18**. As shown, the cost of food and merchandise goods sold, totaling $1.4 million per year under the mid-range planning assumption, represents the largest single budget item, accounting for some 30 percent of estimated aggregate operating expenses. Costs for operating labor and benefits are next in significance at $1.3 million, followed by a marketing and promotion budget of $777,000. The latter budget will provide for brochure distribution, print and billboard advertising, and possibly some radio and television spots. After adding various other expenses, the table reveals combined operating costs to amount to $4.7 million on the mid-range model, equivalent to an average ratio of $6.72 per Cape May attraction visitor, which is consistent with experience at comparable attractions. Total expenses of $4.4 million are estimated under the low performance assumption ($7.45 per capita) and $5.0 million ($6.27 per capita) under the high performance scenario.

It should be noted that the preceding budget is based on the recommended "theme entertainment center" concept for Cape May and is not necessarily indicative of costs under other concepts. For example, the budget incorporates a modest allocation for animal care and feed on the assumption that some live animals (such as captive waterfowl) may be included in outdoor exhibits. If a larger aquarium is developed as envisioned under the "environmental showcase" option for Cape May, this expense item would require substantial upward adjustment. Still other concepts may entail other specific expenses not reflected in Table 18.

NET OPERATING BALANCE

The aforementioned operating expense projections have been deducted from previously cited revenue estimates in **Table 19**. As shown, the Cape May and Lewes visitor centers generate a moderate surplus under all performance benchmarks, ranging from net income of $307,000 annually under the low target to $622,000 per year under the high target; the mid-range model calls for an annual operating surplus of $475,000. Given adherence to the scope and quality of development envisaged in this report, with a strong entertainment magnet at the Cape May terminal, the goal of economic self-sufficiency appears readily attainable.

Table 18

PRELIMINARY ESTIMATE OF OPERATING EXPENSES FOR THE CAPE MAY-LEWES FERRY TERMINAL ATTRACTIONS
Stabilized Year
(Constant 1994 Dollars)

Expense Category	Percent of Total Gross Revenue	Performance Range (thousands) Low	Probable	High
Cost of Goods Sold				
Food and Beverages 1/	n/a	$576	$598	$620
Merchandise 2/	n/a	749	819	881
General and Administrative 3/	5%	234	259	282
Operating Labor and Benefits	25	1,169	1,296	1,408
Marketing and Promotion 4/	15	777	777	777
Utilities	4	187	207	225
Maintenance and Repairs	3	140	155	169
Animal Care and Feed 5/	1	47	52	56
Theater/Other Shows	3	140	155	169
Operating Supplies	1	47	52	56
Insurance	1.5	70	78	84
Miscellaneous and Contingency	5	234	259	282
Total	63.5%	$4,370	$4,708	$5,010
Average Per Cape May Attraction Visitor 6/	. . .	$7.45	$6.72	$6.27

n/a means not applicable.
1/ At 35 percent of total gross food and beverage sales.
2/ At 50 percent of total gross merchandise sales.
3/ Includes management salaries, legal and accounting services, travel, and other administrative overhead.
4/ At 15 percent of total gross revenue under the probable performance assumption, held constant under low and high performance assumptions.
5/ Includes aquarium chemicals, cleaning supplies, specimen replacement, and similar costs.
6/ Calculation excludes cost of goods sold.

Source: Harrison Price Company.

Table 19

PRELIMINARY ESTIMATE OF NET OPERATING INCOME FOR THE CAPE MAY-LEWES FERRY TERMINAL ATTRACTIONS
Stabilized Year
(Constant 1994 Dollars)

	Performance Range (thousands)		
	Low	Probable	High
Estimated Total Gross Revenues 1/	$4,677	$5,183	$5,632
Estimated Total Operating Expenses 2/	4,370	4,708	5,010
Net Operating Balance	$307	$475	$622
Operating Balance As Percent Of Total Gross Revenues	7%	9%	11%

1/ From Table 17.
2/ From Table 18.

Source: Harrison Price Company.

APPENDIX

Figure 5

CONCEPTUAL ILLUSTRATION OF THE
CAPE MAY VISITOR COMPLEX (Seaport Village)

Source: Michael V. Lee Design

Figure 8

ILLUSTRATIVE FEATURED ATTRACTION
AT THE CAPE MAY VISITOR COMPLEX
Special Effects Film Presentation ("Spirit Lodge")

Source: Michael V. Lee Design

Figure 7

ILLUSTRATIVE FEATURED ATTRACTION
AT THE CAPE MAY VISITOR COMPLEX
3-D Film Presentation (Disasters at Sea/Pirate Attack)

Source: Michael V. Lee Design

Figure 8

ILLUSTRATIVE FEATURED ATTRACTION
AT THE CAPE MAY VISITOR COMPLEX
3-D Film Presentation (Myths of the Sea)

Source: Michael V. Lee Design

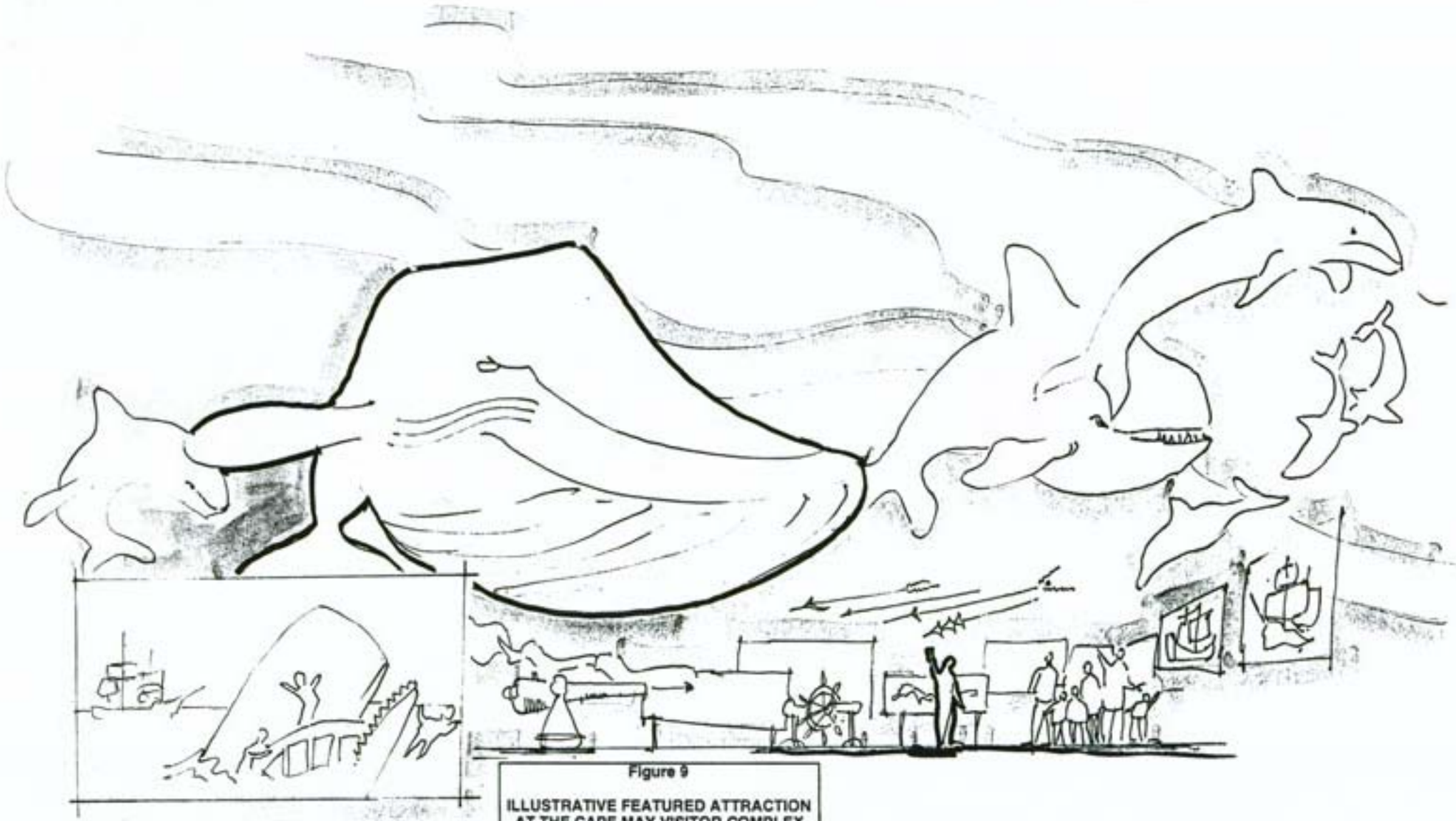


Figure 9

ILLUSTRATIVE FEATURED ATTRACTION AT THE CAPE MAY VISITOR COMPLEX
Showcase Exhibit (Whales/Whaling)

Source: Michael V. Lee Design

Figure 10

ILLUSTRATIVE OCEAN-VIEW
RESTAURANT AT THE
LEWES VISITOR COMPLEX

Source: Michael V. Lee Design

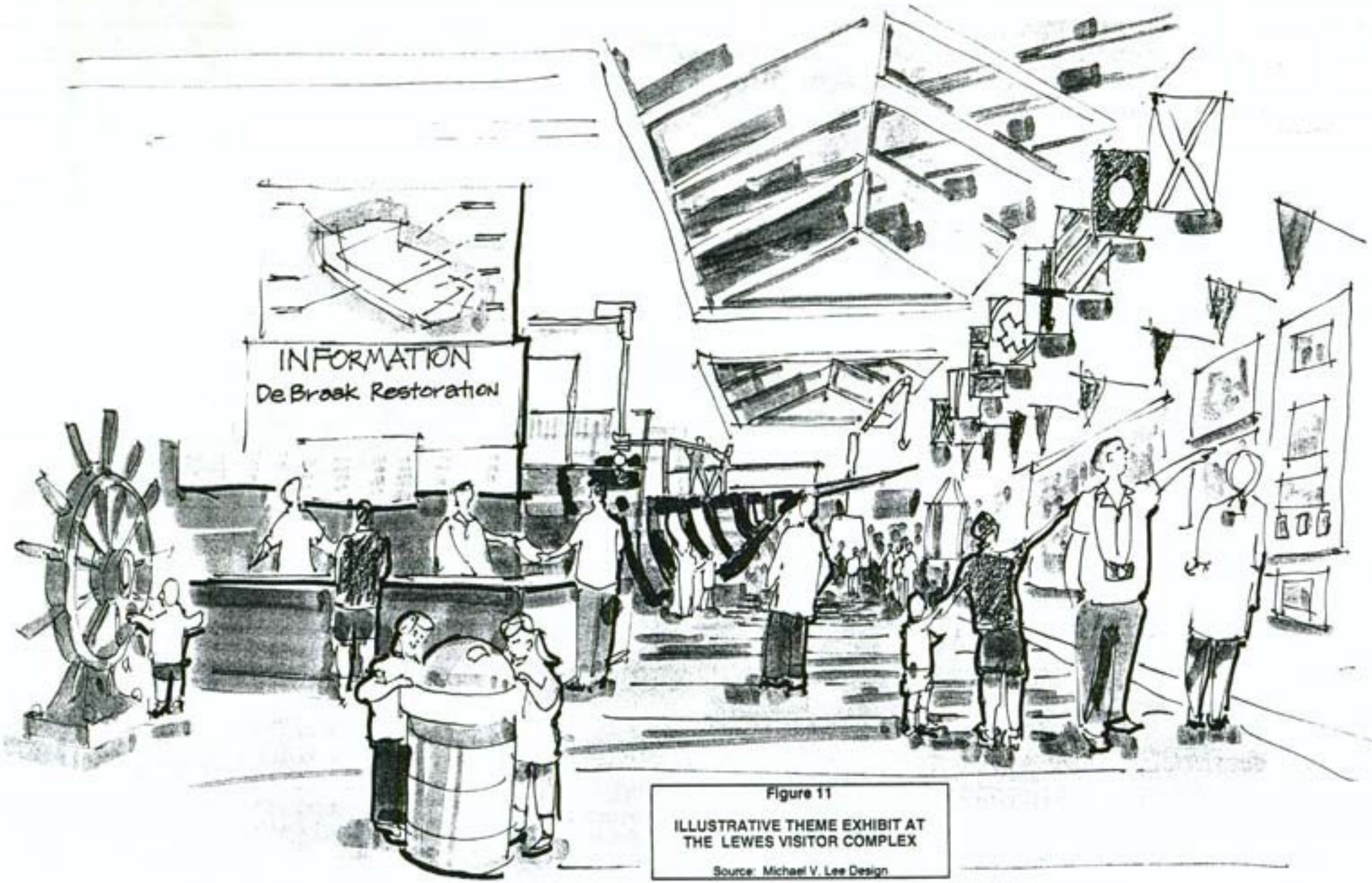


Figure 11

ILLUSTRATIVE THEME EXHIBIT AT THE LEWES VISITOR COMPLEX

Source: Michael V. Lee Design