

Project Report



Maine's Boat Building Industry: Obstacles & Opportunities

For: Maine Built Boats
5 Clifford Road
Edgecomb, Maine 04556

January 9, 2007

From: Planning Decisions, Inc.
22 Cottage Road, P.O. Box 2414
South Portland, ME 04116-2414

TABLE OF CONTENTS

- I. What is the Boat Building Industry in Maine?..... p. 1
- II. Economic Impact of the Boat Building Industry.....p. 11
- III. Obstacles & Opportunities: the Keys to Growthp. 15
- IV. Recommendationsp. 22

I. What is the Boat Building Industry in Maine?

Background

No industry so captures the combination of Maine's traditional heritage and future potential as boat building. From the first European fishermen who landed on Maine's shores to dry their catch and repair their simple vessels 500 years ago to the high tech, composite formed and electronically wired mega-yachts now under construction, Maine has combined a tradition of independence and craftsmanship with a forward-looking commitment to innovative design, product research and personalized customer service.

At the same time, the equally unique combination of natural beauty, diversity of shoreline and sheltered waters makes Maine's 3,000-mile coastline and scattering of islands one of the truly premier locations on the planet to enjoy boating. Both residents and visitors from around the globe enjoy sailing and power boating from Kittery to Calais.

These two facts—the state's long tradition of boatbuilding and the world-class character of its boating environment—combine to give Maine a natural competitive advantage in the boat building and marine related industries. The purpose of this report is twofold:

1. to assess the current state of the industry—to measure its current size and structure; and
2. to assess both the obstacles to its growth and the actions that would best enhance its development.

The report draws on previous reports—most notably Professor Charles Colgan's 2002 investigation of the marine trades in Maine¹—on government statistics drawn both from the Maine Department of Labor and the U.S. Bureau of the Census and from interviews with a wide range of participants in the industry, including boat builders, marina operators, boat dealers and brokers, educators, government policy makers and industry leaders.

The Boat Building Industry in Maine

a. definitions

In measuring and analyzing national, state and local economies, the U.S. Department of Commerce and the U.S. Department of Labor classify business activity according to what is called the North American Industry Classification System (NAICS).² All businesses are grouped by what they make or do and assigned a NAICS code.

¹ Charles S. Colgan, Ph.D. [A Profile of Marine Trades in Maine](#) prepared for the Maine Marine Trades Association, January 2002.

² U.S. Bureau of the Census <http://www.census.gov/epcd/www/naics.html>.

The businesses that make up the boat building industry are classified under NAICS code 336612. It includes “establishments that are *primarily* engaged in building boats.” The code defines boats as “watercraft not built in shipyards and typically of the type suitable or intended for personal use.” Two points here deserve emphasis, the first regarding the term “shipyard” and the second regarding the term “primarily.”

For the purposes of this report, shipyard is defined to mean the Bath Iron Works shipyard in Bath Maine (BIW) and the Portsmouth-Kittery Naval Shipyard in Kittery Maine (PKSNY). Both of these operations work almost exclusively for the U.S. Department of Defense. For that reason, we do not include these businesses in this study.

We will, however, include two other NAICS sectors. Maine’s boat building industry includes a wide variety of businesses. Most combine the actual manufacture of boats with repair and storage. Many build boats for both personal and commercial use. Some offer seasonal mooring rental; some operate charter touring services. Depending on how an establishment’s “primary” activity is defined, it might be classified as a marina (NAICS code 713930) defined as establishments “engaged in operating docking and/or storage facilities for pleasure craft owners, with or without one or more related activities such as retailing fuel and marine supplies; and repairing, maintaining, or renting pleasure boats.”³ A Maine boat builder could also be classified under NAICS Code 8114902, boat repair. In addition, many marinas and boat builders offer fuel sales, marine supplies, boat brokerage and sales services, seasonal maintenance and cleaning services. Some have restaurants and even overnight accommodations to serve visiting boaters.

In short, Maine’s “boat building” industry (more broadly its marine trades related industry) defies simple categorization. This report, therefore, includes those businesses involved in the creation, maintenance and repair of boats even if they are not recorded as having the “manufacture of boats” as their “primary” activity. It includes all three NAICS codes listed above:

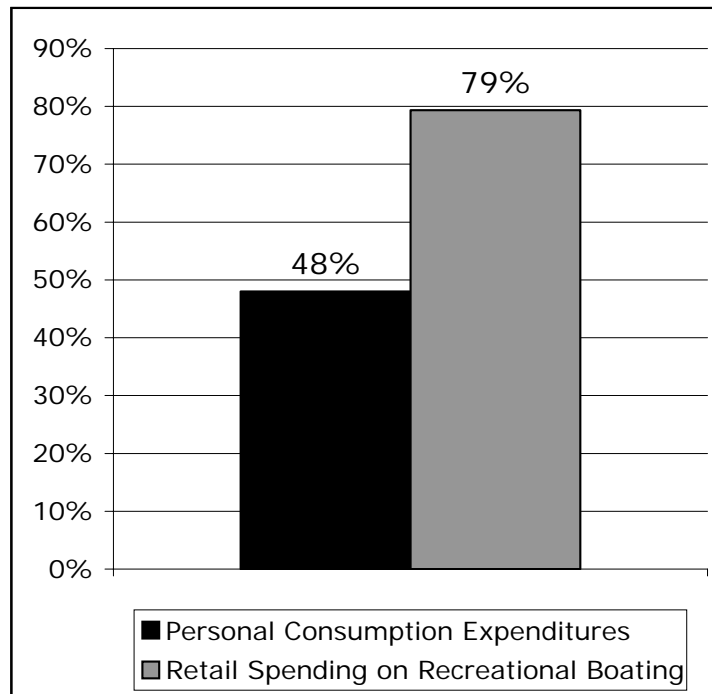
- ✓ NAICS 336611: businesses that manufacture commercial fishing and tug boats as well as pleasure boats;
- ✓ NAICS 8114902: businesses that repair boats; as well as
- ✓ NAICS 713930: marinas that store and repair and rehabilitate boats.

Clearly the problems and opportunities facing these different sectors of the boat building industry will not be the same. Clearly policy recommendations will have to distinguish between those related strictly to manufacturing and those related to other marine related activities. Nevertheless, because all of these businesses exist largely as a result of their shared cultural and natural environments, because they all share the same need for skilled labor and creative marketing and because so many of these businesses engage in all or several of these activities to diversify their incomes, all will be included here under the umbrella of Maine’s boat building industry.

³ *Ibid.*

Perhaps the best reason to consider boat building in its broader context is the relatively greater rate of spending growth for boats than for total consumption as a whole. Between 1997 and 2004, total consumer spending on new and used boats and motors, new boat trailers and associated boat-related spending such as for fuel, maintenance, insurance, finance and docking fees increased 79% compared to an increase of only 48% for total personal consumption expenditure.⁴

Figure 1
Growth of Total Consumer Spending and Spending on Recreational Boating, 1997-2004



Sources: National Marine Manufacturers Association (NMMA) 2004 Recreational Boating Statistical Abstract, Table 5.3, <http://www.nmma.org/facts/boatingstats/2004/>, and U.S. Department of Commerce, Bureau of Economic Analysis National Income and Product Accounts, Table 1.1.5, <http://www.bea.gov/bea/dn/nipaweb/TableView.asp#Mid>.

b. measures of the industry in Maine

In seeking to obtain dollar value measures of the boat building industry in Maine, we must walk the line between timeliness and accuracy. The most up-to-date information on any industry comes from the Department of Labor employment surveys. Figures from this source are available, on an annual basis for 2005 and for the first quarter of 2006.

⁴ National Marine Manufacturers Association (NMMA) 2004 Recreational Boating Statistical Abstract, Table 5.3, <http://www.nmma.org/facts/boatingstats/2004/>, and U.S. Department of Commerce, Bureau of Economic Analysis National Income and Product Accounts, Table 1.1.5, <http://www.bea.gov/bea/dn/nipaweb/TableView.asp#Mid>.

Unfortunately, the employer surveys from which these data come do not include any information on the sales these firms make and are thus of limited value in estimating the market size of an industry. The most detailed data on the sales magnitude of any industry come from the Economic Census conducted by the U.S. Department of Commerce, Bureau of the Census every five years. The most recent for which data are available is the 2002 census. It provides information on the number of businesses in each sector, the number of people they employ and the value of sales the establishments make. For Maine, however, sales figures for the boat building industry are not reported because of rules preventing the disclosure or ready estimation of the sales figures of individual firms.

Estimating the current value of Maine's boat building industry, therefore, involves estimating industry sales data using national payroll to sales ratios. Their results are listed in Table 1 below. These figures represent the best estimate of the current size of the boat building industry in Maine. They should be treated as a rough order of magnitude estimate with respect to sales but do reflect actual reported totals for establishments, employment and payroll.

Table 1
Size of the Boat Building Industry, Maine, 2006

NAICS code	Description	Establishments	Sales	Employed	Payroll
336612	Boat Building	73	\$260,000.000	1,600	\$65,000.000
8114902	Boat Repair	39	\$40,000.000	500	\$13,000.000
713930	Marinas	85	\$55,000.000	400	\$15,000.000
Grand Total		197	\$355,000.000	2,500	\$93,000.000

Source: U.S. Department of Commerce, Bureau of the Census 2002 Economic Census. <http://www.census.gov/epcd/www/econ02.html>. Maine Department of Labor Covered Employment by Industry, annual average, 2005 and data provided directly by the Department. Sales figures are estimated using payroll to sales ratios obtained from national totals reported in the 2002 economic census. This is the same methodology used by Colgan in his report for the Maine Marine Trades Association.

In 2006, the boat building industry in Maine encompassed approximately 200 business establishments.⁵ These businesses make sales of approximately \$355 million, employ approximately 2,500 people and provide a payroll of over \$90 million.

It should be noted here that this sales estimate of \$355 million differs substantially from the figure of \$600 million frequently cited by industry sources. That figure comes from Colgan's 2002 study for the Maine Marine Trades Association (MMTA). It is larger than the figure cited here for four reasons. First, the Colgan study included \$126 million in retail sales of boat dealers. That sector is not included here because it is essentially a retail trade operation rather than a Maine production operation. Second, Colgan estimated sales using national payroll to sales ratios derived from the 1997 Economic Census. This study uses ratios derived from the 2002 Economic Census that had not yet been published when the Colgan report was written. Third, figures for marina and boat repair sales in this report are derived from the Maine totals reported in the 2002 Census rather than figures

⁵ It is interesting to note here that the current membership of the Maine Marine Trades Association is 194.

extrapolated from U.S. averages from the 1997 census as was done in the Colgan study. Finally, sales of Maine's boat builders vary widely from year to year. One or two major projects can change a yard's annual sales by up to 50%. One yard owner interviewed as part of this project indicated that his workforce had varied between 40 and 65 over the course of the past five years. Another cited a variation in employment ranging from 80 to over 100 based on variations in the number of production orders

In short, the \$355 million sales total and 2,500 employment total represents the best estimate of the magnitude of the complex industry described above that can be obtained short of a comprehensive industry survey. Table 2 shows how the boat building industry compares to a selection of other Maine industries.

Table 2
Comparison of Boat Building to Other Maine Industries

NAICS code	Description	Establishments	Sales	Employed	Payroll
3 sectors	Boat Building	197	\$355,000.000	2,500	\$93,000.000
Cm'I & non-profit	Total Biotech	48	\$317,000.000	2,800	\$121,000.000
23	Cm'I Printing	176	\$305,000.000	2,500	\$82,000.000
332	Fabricated Metals	261	\$715,000.000	4,700	\$180,000.000
321	Wood Products	252	\$1,080,000.000	6,600	\$200,000.000

Source: U.S. Department of Commerce, Bureau of the Census 2002 Economic Census.
<http://www.census.gov/epcd/www/econ02.html>.

Interestingly, Maine's boat building industry is larger by sales value than the state's entire biotech industry (including private companies such as IDEXX⁶ as well as non-profit research institutions such as the Jackson Lab) and the state's entire commercial printing industry while employing approximately the same number of workers as these industries. Boat building is approximately one half the size of the state's fabricated metals industry (and provides a significant demand to that industry through all manner of specialized metal products used on boats). Finally, boat building is approximately one third the size of the state's wood products industry. In short, boat building is a significant contributor to the state's economy.

These totals, while indicating the overall magnitude of the industry in Maine, do not capture its diversity in size and technology. The following sections attempt to bring this diversity into clearer focus.

⁶ Total annual sales for IDEXX exceeds \$500 million, but only a portion of those sales come from Maine establishments.

c. *distribution of boat builders by size*

Table 3 provides a picture of the 73 firms that the Maine Department of Labor classified as boat builders as of March 2006.

Table 3
Distribution of Boat Building Industry by Employment Size, Maine, 2006

Size by Employment	# Firms	Employment	% Firms	% Employment
1-4	33	84	45%	5%
5-9	18	123	25%	8%
10-49	14	243	19%	15%
50+	8	1,162	11%	72%
Total	73	1,612	100%	100%

Source: Maine Department of Labor, Quarterly Employment Survey.

At the small end of the scale, nearly half of Maine's boat builders (45%) employ fewer than 5 people. Together these firms provide 84 jobs, only 5% of the industry total. At the other end of the scale, only 8 Maine establishments employ 50 or more people. These enterprises comprise only 11% of all firms but provide over 70% of all jobs in the industry. In short, the Maine boat building industry is characterized by a vast difference in scale of operations.

It is instructive to compare Maine's size distribution to that of the U.S. as a whole.

Table 4
Distribution of Boat Building Industry by Employment Size, Maine & U.S.

Size by Employment	% Firms ME	% Firms U.S.	% Jobs ME	% Jobs U.S.
1-4	45%	45%	5%	2%
5-9	25%	14%	8%	2%
10-49	19%	14%	15%	11%
50+	11%	27%	72%	85%
Total	100%	100%	100%	100%

Source: U.S. Bureau of the Census Economic Census 2002.

The U.S. boat building industry displays an even greater disparity between small and large enterprises. Firms in the 1 to 4 employee-size category make up 45% of all firms in the U.S. as a whole (the same as in Maine). But for the U.S. these firms account for only 2% of total industry employment compared to 5% in Maine.

At the other end of the scale, firms in the 50+ employee-size category make up 27% of all firms (compared to only 11% in Maine) and provide fully 85% of all the jobs (compared to 72% in Maine). One reason for this difference is that Maine is not home to any of the truly

huge mass production boat builders. According to the U.S. Census, 16 boat builders in the U.S. employed 500 or more people.⁷ None of these is located in Maine.

More important is the fact that Maine is over represented in the mid-size category. One quarter of Maine’s boat builders falls into the 5 to 9 employee-size category compared to 14% for the U.S. Nineteen percent of Maine’s firms fall into the 10 to 49 employee-size category compared to 14% for the U.S. Table 5 gives a picture of the “average” Maine boat builder at each of these employee-size categories.

Table 5
Indices of Average Boat Builder by Employment Size, Maine, 2006

Size by Employment	Avg. Employment	Avg. Payroll	Avg. Sales
1-4	2.5	\$26,600	\$270,000
5-9	7	\$31,700	\$870,000
10-49	17	\$34,300	\$2,380,000
50+	145	\$43,600	\$25,310,000
Total	22	\$40,400	\$3,570,000

Source: Maine Department of Labor, Quarterly Employment Survey.

The “average” small Maine boat builder has sales of approximately \$270,000 and pays 2.5 people just under \$27,000 per year. As employment size increases, so does the average wage. Larger firms pay higher wages. It should be noted here that many of the owners of small Maine boat builders frequently pay themselves little or no salary in order to keep the operation alive. In other works, the low payroll in small operations does not necessarily reflect a preference or ability to pay lower wages, but rather is an indication of the precarious nature of many of these operations.

The most notable fact evident in Table 5 is the remarkable jump between the 10 to 49 employee-size category and the 50+ employee-size category, a nearly 10 fold increase in employment size and a more than 10 fold increase in sales.

To examine the implications of this size structure for Maine’s boat building industry, Planning Decisions obtained company specific employment data from the Maine Department of Labor for the second quarter of 2006 and the second quarter of 2000. Table 6 summarizes these data.

⁷ U.S. Census Bureau 2002 Economic Census: Boatbuilding Table 4 Industry Statistics by Employment Size.

Table 6
Job Growth by Size of Firm, 2000 and 2006

Q2 2006 estab. size	# Firms	Q2 2000 status				Employment Change
		in smaller category	in same category	in larger category	did not exist	
1-4	10	N.A.	4	5	1	-17
5-9	15	2	10	1	2	15
10-49	16	0	16	0	0	22
50+	11	4	7	N.A.	0	259
Total	52					279

Source: Maine Department of Labor unpublished data.

For the second quarter of 2006, the Maine Department of Labor provided firm specific employment information for 52 boat building firms accounting for 1,813 jobs. Of these, 10 were in the 1 to 4 employee-size category. In the second quarter of 2000, one of these firms did not exist, five were in a larger size category (all five were in the 5 to 9 category) and 4 were in the same size category. Over the six-year period, these 10 firms accounted for a net loss of 17 jobs.

At the other extreme, 11 firms were in the 50+ size category. They accounted for 1,343 jobs. All 11 of these firms existed in quarter two of 2000, seven remaining in the same 50+ size category and 4 moving up from the 10 to 49 size category. Together these firms accounted for a net increase of 259 jobs over the period, fully 93% of the total of 279 jobs gained by the 52 firms together.

In short, these longitudinal data reinforce the conclusion that Maine's best hope for making boat building a growth industry lies in helping mid-sized builders grow into the 50+ size category and nurturing those already there to keep growing.

One effect of Maine's over-representation in the mid-sized business category and under-representation in the large-sized business category is a generally less profitable cost structure. While no detailed survey of industry finances is available, extrapolations from data provided by the 2002 Economic Census and contained in the IMPLAN Pro 2004 estimated cost structure for boat building in Maine provide some general conclusions. Table 7 presents the data.

Table 7
Cost Comparison of Maine & U.S. Boatbuilding Industry

Cost Category	Maine	U.S.
Gross Sales	<u>100%</u>	<u>100%</u>
less Cost of Purchases	55%	54%
less Labor	25%	21%
less Facility Costs	5%	3%
<u>less Other Operating</u>	<u>7%</u>	<u>7%</u>
Net Profit	8%	15%

Sources: U.S. Census Bureau 2002 Economic Census: Boatbuilding, IMPLAN
 Pro production function for boat building in Maine.

The most striking fact about Table 7 is that labor and facilities costs (mortgage interest or rent, property taxes and insurance, depreciation, i.e. the cost of maintaining the physical facilities where operations occur) constitute a greater share of total revenue in Maine than for the U.S. as a whole. This reflects both the high demand for the skilled labor needed to produce quality products and the high cost of owning coastal Maine property. It also reflects the more financially precarious nature of small businesses that have not reached the level at which they can achieve maximum efficiency. Ironically, this fact points to the need to pay even more for labor so as to build an even more skilled workforce that will be able to more than proportionally increase value added so that even labor that is earning more in absolute terms takes a declining share of total sales.

This cost structure also points to the need to address the problem of rising coastal land values. Many Maine boat yards, like many Maine farms, face pressures to sell their land for residential development. At the same time, as such residential development occurs around them, they are, again like Maine farmers, pressured by their neighbors to change their traditional practices in ways to reduce hours of operation and noise, change employee parking and boat and materials transport arrangements and monitor paint, chemicals and other materials use. All of these facts call for consideration of including boat building as a marine related activity under the "current use" provisions of the property tax laws.

In many ways, the mid-sized firms hold the key to the future of Maine's boat building industry. If they can cross the threshold into the 50+ employee-size category, Maine's industry will grow. If they struggle or fall by the wayside (as many are at risk of doing), the industry will not realize its promise. As will be clear through the balance of this report, these mid-sized firms represent the destiny of Maine's boatbuilding industry. These firms, like the Maine boat building industry as a whole, are on the cusp. Like adolescents, they are struggling to reach the physical, mental, financial and psychological point of mature stability. They hold great promise, but are in precarious positions. Finding ways to nurture and strengthen them is the central challenge facing this industry in Maine.

d. distribution of boat builders by product and technology

In addition to divisions by employee size, Maine's boat builders exhibit an enormous diversity of activities and technologies. Few, if any, just "make" boats. Most make, repair, transport, store, service, fuel, equip and often resell boats. Several offer charter cruises. Some sponsor racing and other boat related activities. Some make replicas of classic, century old racing yachts. Another makes state of the art prototypes for the Navy. One is restoring a replica of a 17th century sailing vessel. Another is making a one-of-a-kind mega yacht incorporating both the rarest of woods and the newest of carbon fiber composites. Another makes steel tugs and ferries for ports and commercial haulers all over the globe. Some produce a regular line of boats sold through a national dealer network. Others produce and sell boats one at a time based solely on word of mouth marketing. Some are new businesses, formed in the 21st century. At least one has been in continuous operation in the same family since the beginning of the 19th century. Most are located along the coast, but several have inland facilities. And all have close ties to a network of material and hardware suppliers and technical support businesses across the state.

Maine's boat builders are in some ways like Maine's farmers. They manage a diverse portfolio of income sources to help offset the natural seasonal fluctuations inherent in the Northeast. Having storage capacity helps generate service and repair work that, in turn, helps maintain a steady payroll throughout the year. Having a close working relationships with nearby marinas helps boat builders without direct access to the water pick up and deliver their products. In a similar fashion, having off-site storage space enables marinas to generate additional income to help offset the cost of maintaining expensive coastal property.

Maine's boat builders are equally diverse in their production technologies. Boat builders are distinguished primarily by the material and technologies they use for hull construction. One of the goals of this project was to delineate more clearly exactly how many builders use each technique. However, the difficulty of collecting responses from all members of the industry makes a definitive listing impossible at this time. Of the 20 boat builders interviewed as part of this project, one operates primarily in metal, four primarily in fiberglass, five exclusively in wood and the remainder produce both wood and wood-fiberglass composites. Three use the most advanced infusion process for fabricating the composite materials that form their hulls. One of the continuing activities of Maine's marine related trade associations (Maine Marine Trades Association and Maine Built Boats) should be to continue the effort begun here and the effort that is to be undertaken by the Department of Labor Business Visitation Program (BVP) to build a more comprehensive database of the production technologies and capacities of their members. Recognizing the time required of busy small business managers to obtain this information, the associations should gather as much information as possible from company websites, from data already gathered in the MMTA's wage survey and data available from online sources such as The Maine Port Authority (www.maineports.com), maineharbors.com and Dozier's Waterway Guide.

II. The Economic Impact of the Boat Building Industry

Background

The direct economic impact of Maine's boat building industry reported in Table 1 above does not constitute the total impact of the industry on the state of Maine. Each segment of the industry purchases a wide variety of goods and services to design, build, restore, repair, transport, store and maintain boats. These purchases represent sales to other businesses, many located in Maine. Boat builders purchase lumber, fuel and machinery. These suppliers, in turn, send orders to their suppliers, pay insurance, utilities, taxes etc. etc. All of these purchases back down the supply chain from the original activity of the boat building industry are called the **indirect** effects of the industry.

As a result of these direct and indirect effects, households throughout the economy earn incomes and make consumption purchases. Sales and repairs of boats become income directly to boat yard workers and then indirectly to workers at lumberyard, machine shops, the grocery store, the electric company and so on. These workers, in turn, pay their rent and mortgages, buy their groceries, pay their taxes, go to the movies and engage in whatever other economic transactions their budgets and tastes allow. These consumption effects of both the direct and indirect impacts are called the **induced** effect of the boat building industry.

In sum, the total economic impact of the boat building industry on the state of Maine is made up of three components:

1. The **direct** effects; these are the final sales of the industries directly involved in the boat building industry; these effects are the ones caused by the businesses listed in Table 1 above—the \$355 million in sales, the 2,500 jobs and the \$93 million in income earned;
2. The **indirect** effects; these are the purchases made by industries down the supply chain that can be attributed to the direct sales of the boat building industry—the lumber, machine tool metal products, resin etc; and
3. The **induced** effects; these are the household consumption expenditures that can be attributed to the direct *and* indirect effects of the boat building industry.

Figure 1 illustrates these linkages for Maine's boat building industry

Figure 1
Industries Linked to Maine's Boat Builders



Image Sources (Clockwise): www.schooner.org, www.rlnr.fsu.edu, www.jasperengine.com, www.cod.edu, www.aswc.umaine.edu, www.equisit.com, www.arcadimagic.com, www.maine.gov, www.bonaboccon.oastaging.com, www.boatssupplies.com, www.yardarm.com, www.350boattransport.com, www.hepdeniayachting.com; center: www.pagetraditionalboats.com; www.westsea.com

Adding it All Up: The Economic Impact of Maine's Boat Building Industry

Attempting to measure all these effects individually would be virtually impossible. The web of economic inter-connection is so complex, and spending, like the ripple in a pond, moves so quickly from the point of original impact, that the only way to estimate the sum of all these linkages is to use an input-output model explicitly designed to capture those interconnections.

As part of the process by which it gathers the data to prepare the numbers that comprise the Gross National Product and other national income accounts, the U.S. Department of Commerce gathers vast amounts of information on inter-industry purchases. With these data, it creates a national input-output table that distributes the entire output of the economy into a vast matrix that links the sales of each industry to the purchases of all other industries.⁸

To make these national data more useful for state and local purposes, a number of private companies create input-output tables adjusted to the particular industrial structure and pattern of the inter-industry purchases of each state. The IMPLAN Pro model is one such

⁸ See Bureau of Economic Analysis [National Input-Output Table](http://www.bea.doc.gov/beahome.html) for more information. <http://www.bea.doc.gov/beahome.html>.

model. It was originally developed at the University of Minnesota for the U.S. Forest Service and has since been spun off as a proprietary product sold and serviced by the Minnesota IMPLAN Group (MIG).⁹

Planning Decisions, Inc. used the sales and employment data for the Maine boat building industry listed in Table 1 above as inputs into the IMPLAN model. Using these data as the direct impact, the model calculated the consequent indirect and induced impacts to arrive at an estimate of the total income and employment impact of the boat building industry in Maine. Table 8 presents the model results.

Table 8
Total Economic Impact of the Boat Building Industry on the State of Maine

Industrial Sector	Sales (\$ million)	Employees	Income (\$ million)
Direct Impact of Boat Building	\$355	2,500	\$93
Indirect Impact	\$ 67	550	\$20
Induced Impact	\$120	1,450	\$47
Total Impact	\$543	4,500	\$160

Source: IMPLAN Pro model run by Planning Decisions.

These results illustrate the total impact of the boat building industry on the state of Maine. Its total sales impact amounts to nearly \$550 million. In addition, it supports approximately 4,500 employees earning incomes of over \$160 million.

Taxes Generated: The Fiscal Impact of Maine’s Boat Building Industry

Finally, all of these effects—direct, indirect and induced—wherever they may occur, have a fiscal impact on state and local governments in Maine. Some portion of the transactions included in the above analysis become sales, income, property, gas and other tax revenues to Maine governments. Based on current tax structures and rates this total amounted to nearly \$25 million. Table 9 summarizes the data.

⁹ See Minnesota IMPLAN Group, Inc. for more information. <http://www.implan.com/index.html>.

Table 9
Fiscal Impact of the Maine Boat Building Industry

Tax Category	Amount
State Government	\$15,500,000
General Sales and Use	\$5,700,000
Selective Sales Taxes	\$500,000
Individual Income	\$4,500,000
Corporation Net Income	\$2,700,000
Death, Gift & Other	\$2,100,000
Local Government	\$8,600,000
Property Taxes	\$8,200,000
Excise & Other Taxes	\$400,000
Total Tax Revenue	\$24,100,000

Source: IMPLAN Pro model run by Planning Decisions and application of average rates to income earned by total impact

All impacts included, the boat building industry generates approximately \$24 million in revenue to Maine state and local governments. This includes nearly \$9 million to local governments, the vast majority in the form of property taxes. It also includes approximately \$15 million paid to the state government in general and selective sales taxes such as the gas tax and personal and corporate income taxes as well as estate, gift and other taxes.

Significant Linkages: Boat Building as an Engine for Growth

The report recently released by the Brookings Institution, Charting Maine’s Future, cites boat building as one of Maine’s emerging industry clusters, groupings of businesses that hold great promise for growth but today are “thin.”¹⁰ This characterization of the boat building industry is certainly true. It is closely linked to:

- ✓ Tourism;
- ✓ Marine products wholesalers;
- ✓ The full range of construction trades—carpentry, plumbing, electrical, metal working, design and particularly systems engineering;
- ✓ Metal manufacturing;
- ✓ Forestry and wood products manufacturing;
- ✓ Composites manufacturing; and
- ✓ University R&D.

Because of these nascent relationships, significant growth in boat building will have a widespread impact on the larger Maine economy far beyond the direct supply chain relationships estimated in the IMPLAN model.

¹⁰ The Brookings Institution Charting Maine’s Future: An Action Plan for Promoting Sustainable Prosperity and Quality Places, October 2006, p. 8, 38.

III. Obstacles & Opportunities: Prospects for the Future

While the boat building industry in Maine holds great promise, it faces serious obstacles to fulfilling that promise. These obstacles are of two sorts: Industry wide obstacles and those that apply to businesses of a specific size.

Industry wide obstacles

Three obstacles to the growth of boat building in Maine apply to all members of the industry—those relating to labor, those relating to the business climate and those relating to marketing.

✓ *Labor force*

Virtually every industry participant interviewed as part of this project—boat builder, marina operator, educator and trade association manager cited problems in finding and maintaining a sufficient number of qualified and even qualifiable workers. Several businesses use employment services and have had workers from as far away as Mississippi and Louisiana. Another cited searching for a diesel mechanic for six months and eventually hiring someone from Georgia. At the extreme, one employer said he could triple his work force if he could find people with the skills he needs. Virtually all boat builders recognize that they must compete with one another for workers (thus assuring an upward pressure on wage rates) and “steal” from the construction trades.

In this regard, Maine’s boat builders are no different than Maine metal manufacturers, Maine construction operators and Maine hospitals. All face difficulties in recruiting trained workers. One additional problem faced by Maine’s boat builders is the concentration of much of the industry in relatively isolated peninsulas in Mid-Coast and Downeast Maine. The vast majority of builders interviewed as part of this study said that the average age of their workers was in the mid 40’s. This is not a problem today, but represents a challenge for the future of the industry. Housing costs are quite high in areas near Maine’s boatyards and marinas and social life is highly focused on tourism and retirees, hardly a congenial atmosphere for attracting, highly skilled and motivated young workers. One employer cited the example of losing a talented young worker after a year. “He loved boat building,” the owner said, “but he got tired of driving 90 minutes to Portland every time he wanted to hang out with or meet new friends.”

Two separate but related problems cited in interviews was the decline in respect for “working with your hands” and an absence of basic work skills and attitudes. Many boat builders cited a general perception that “there is no future in manufacturing,” that “you have to go to college to get ahead.” They disputed the validity of those assertions but felt that their presence in high schools, the media and in general public perception made it more difficult to get bright young people to consider a career in boat building. Secondly, several builders cited a perceived decline in basic work habits—the willingness to show up on time, work hard, be part of a team and learn from more senior workers. One builder cited the example of hiring a new worker who spent a day learning the operation, seeing

what was expected, starting to do some basic training and then never showing up again; not saying, “No, thank you” or “I quit,” just never showing up again.

While builders did cite specific skills for which they had great demand—mechanics, fiberglass applicators, systems integrators—virtually all said that they were prepared to provide extensive, on-the-job training. What they most needed was not so much specific skills but more a general interest in production work and a willingness to learn. Virtually every boat builder interviewed said that the major reason they were in Maine was the quality of their work force. They said they depended on their teams to produce quality products. They grew their teams by directing senior members to work with and develop promising younger team members. This allocation of time was really their most significant investment, as if not more important than their investment in materials and equipment.

With regard to specific skills, most cited the absence of locally available short term, knowledge and skill specific training. Their need was less the absence of people with specific degrees than the absence of convenient ways to upgrade the skills of existing employees in ways that did not cost the employers a great deal of time away from work and did not cost the employees a great deal in tuition and travel time.

✓ *Business Climate*

The second major category of obstacles faced by Maine’s boat building industry concerns a collection of topics that is best summarized as business climate. They deal largely with regulations and taxes.

Most of Maine’s boat builders are traditional operations that have been conducting business in the same place for years. As the materials they use have changed and as the regulations, particularly environmental regulations, surrounding their use have become more rigorous and more complex, these traditional operations have come under increasing scrutiny. These changes have increased the financial and administrative cost of doing business and threaten to do so even more in the future. These potential future costs could represent a significant obstacle to future growth, particularly for small operators.

A second obstacle facing the industry is the rising cost and changing nature of waterfront land. Most Maine boat builders, as noted above, combine construction with repair, maintenance, service, storage and transport services to diversify their revenue sources. All of these services require access to the water. At the same time, these uses of the waterfront face the continuing pressure of the constantly growing demand for residential uses of waterfront land. Again, as is the case for many Maine farmers, their greatest financial asset is land valued as house lots not land valued for its current use. While this may provide collateral value in the short run, it represents a long-term threat to the industry. And this threat is not just financial. It is also social. Boat building, while sometimes quaint in appearance on a picturesque harbor, is essentially a manufacturing activity, with workers creating commuter traffic, with hours of operation, noises and

materials handling that are often incompatible with the residential nature those who pay a premium for coastal property wish to create. In a word, boat building too often comes to be seen as an undesirable neighbor whose activities must be increasingly regulated.

Both the financial and social obstacles to boat building as it now exists point to the need to consider more explicit land use regulations designed to foster boat building in specific locations and for consideration of boat building as a “water dependent” activity with respect to “current use” treatment for property tax purposes.

Finally, Maine boat builders face a serious obstacle in the sales tax. Table 10 lists Maine’s sales tax and those of other boat building states.

Table 10
Relative Sales Tax Rates, January 2006

State	State Rate	Maximum Local Rate
California	7.25%	2.65%
Connecticut	6.00%	0.00%
Florida	6.00%	1.50%
Louisiana	4.00%	6.25%
Maine	5.00%	0.00%
Massachusetts	5.00%	0.00%
Mississippi	7.50%	0.25%
New Hampshire	0.00%	0.00%
Rhode Island*	7.00%	0.00%
South Carolina	7.00%	0.00%
Virginia	4.00%	1.00%
Washington	6.50%	2.40%

Source: Federation of Tax Administrators <http://www.taxadmin.org/fta/rate/sales.html>. Rhode Island exempts the sale of new or used boats. Rhode Island Department of Administration, Division of Taxation. <http://www.tax.ri.gov/info/synopsis2004/SYNOPSIS%2004.htm#2>.

Among competitive ship building states, only Louisiana, North Carolina and Virginia have lower state rates than Maine, and each of those states also have local option sales taxes. Thus, Maine does not suffer any major competitive disadvantage with respect to the sales tax. It does, however, suffer by comparison to “tax free” New Hampshire and to Rhode Island which charges no sales tax on the sale of new or used boats. While Maine yards are unlikely to relocate because of this disadvantage, marinas and repair operations along the southern Maine coast do lose business to competitors across the Piscataqua and potential Maine boat buyers will seriously consider alternatives in Rhode Island whenever a comparable boat is available.

Even more importantly, is the very fact of the sales tax and the constant threat of a federal “luxury” tax that could severely impact boat building. While “money is no object” to many clients of Maine’s boat yards, that bromide applies to voluntary choices owners make to ensure that their boats live up to their dreams not to involuntary expenses imposed on them that add nothing to the quality of the boat. Five percent of very large numbers is a significant consideration for those who don’t “have” to buy a boat. In short, concern about possible fiscal obstacles is a constant concern of boat builders and thus one to which Maine policy makers should be attentive.

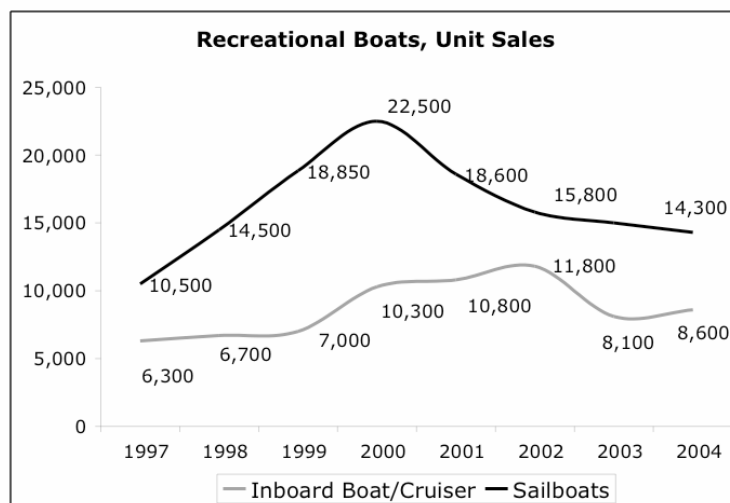
✓ *Marketing*

The third industry-wide obstacle to the growth of Maine’s boat building industry concerns marketing, or, more precisely, the absence of a coherent effort to build Maine as a brand name synonymous with world-class boat building. Because boat building has been such a strong presence in Maine for so long, and because so many of Maine’s boat buying customers have come here for so long, the idea that Maine does not already enjoy a competitive advantage seems alien. However, if Maine’s boat building industry is to grow beyond its current customer base...and maintain the loyalty of that base, it must move beyond the purely individualized marketing that it has undertaken in the past.

Three facts highlight Maine’s need to broaden its view of the market: the more rapid growth of the powerboat market; the more rapid growth of regions outside the northeastern U.S. and the weakness of the dollar compared to other currencies, particularly the Euro.

Figure 2 highlights the changing pattern of boat sales in the U.S. over recent years.

Figure 2
Patterns of Recreational Boat Sales, U.S. 1997 to 2004



Source: National Marine Manufacturers Association (NMMA) 2004 Recreational Boating Statistical Abstract. Table 3.1, <http://www.nmma.org/facts/boatingstats/2004/>.

The number of sailboats sold in the U.S. increased sharply through the late 1990's and has fallen sharply since then, dropping from a peak of 22,500 units in 2000 to 14,300 in 2004. The number of inboard cruisers sold exhibited a similar but less dramatic pattern, reaching a peak of 11,800 units in 2002, dropping to 8,100 units in 2003 and recovering to 8,600 units in 2004.

Considering the value of sales, however, a somewhat different pattern emerges. Since 2000—the crest of the high-tech bubble of the late 1990's—the number of both inboard cruisers and sailboats sold in the U.S. has declined, but the value of powerboat sales increased from \$2.9 billion to \$3.3 billion and the average price per boat increased by 37% to nearly \$390,000. For sailboats, on the other hand, both the total number of units sold and the overall value of sales fell between 2000 and 2004. The increase in the average price per sailboat was not enough to offset the declining number of units sold. While Maine produces both power boats and sail boats, those builders concentrating exclusively on sailboats face an increasingly limited market. Table 11 illustrates this pattern.

Table 11
Patterns of Recreational Boat Sales, U.S. 2000 and 2004

Type	2000	2004
Inboard Boat/Cruiser		
units sold	10,300	8,600
sales value (\$ m.)	\$2,926	\$3,335
avg. per boat	\$284,000	\$388,000
Sailboats		
units sold	22,500	14,300
sales value (\$ m.)	\$761	\$603
avg. per boat	\$33,800	\$42,200

Source: National Marine Manufacturers Association (NMMA) 2004 Recreational Boating Statistical Abstract. Table 3.1, <http://www.nmma.org/facts/boatingstats/2004/>.

The second reason for Maine boat builders to concentrate on expanding their markets is the more rapid growth of recreational boat sales in regions outside the northeastern U.S. Table 12 illustrates the trend.

Table 12
Recreational Power Boat Sales, U.S. 2003 and 2004

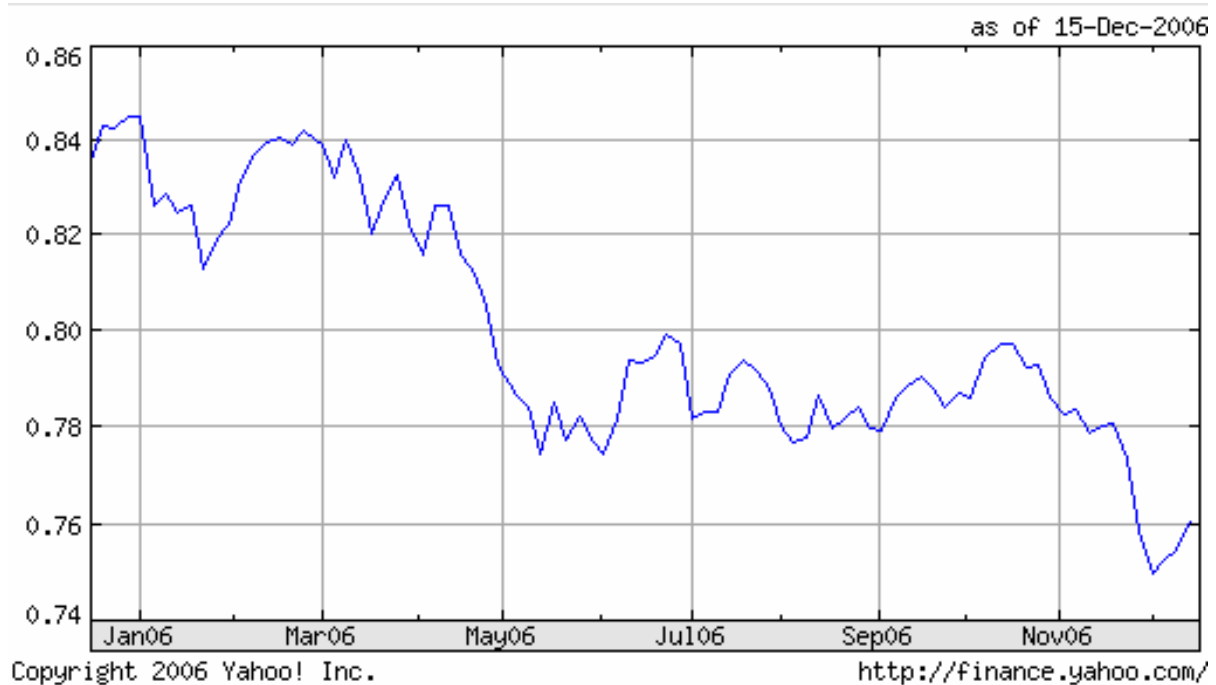
Region	Share of 2004 Sales	% increase over 2003
Northeast	14%	2%
Mid Atlantic	15%	21%
Gulf	24%	19%
Pacific	16%	11%

Source: National Marine Manufacturers Association (NMMA) 2004 Recreational Boating Statistical Abstract. Table 5.7, <http://www.nmma.org/facts/boatingstats/2004/>.

In 2004, northeastern states (Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey and Pennsylvania) accounted for 14% of all recreational power boat sales in the U.S. But their increase in sales over the previous year was only 2%. This was far less than the growth of the remaining coastal regions.

Finally, the recent weakness of the dollar combined with the increasing backlog of orders among European boat builders presents Maine builders an opportunity to expand international sales. Figure 3 illustrates the increasing competitive advantage U.S. builders have gained over the past year because of the decline in the value of the U.S. dollar. A million dollar Maine yacht that would have cost a European buyer 840,000 Euros in January 2006 would, in December, have cost only 760,000 Euros, a savings of over 10%. This fact combined with production backlogs at many European shipyards highlights the opportunity Maine builders could exploit.

Figure 3
Value of Dollar in Euros, 2006



Together, these facts point to the opportunities available to Maine boat builders if they actively seek new customers in other regions of the U.S. and in Europe.

Obstacles for small and mid-sized boat builders

As noted in Tables 3 and 4 above, the most significant fact about the structure of Maine's boat building industry is its concentration of mid-sized businesses, firms in the 5 to 50 employee size category. The most striking fact to emerge from interviewing a selection of the owner/operators of a selection of these firms is the enormous demands on management. Most of Maine's boat builders are struggling small businesses. From 7:00 AM

till 4:00 PM their owners are production managers. From 4:00 to 6:00, they are human resource managers; from 6:00 to 8:00, financial managers; from 8:00 to 10:00 marketing managers, print advertisers and web designers. Then on weekends, they are customer relations managers. As is true with all growing businesses, boat builders pass a threshold from relatively small, one or two projects a year businesses that are as much artisanal as production oriented to larger operations with greater division of labor, higher overhead costs and greater demand for management. At the same time, the uncertainty of the ongoing flow of work makes revenue extremely volatile. This, in turn, makes it difficult to build the history of profitable financial statements needed to attract equity investments.

In short, the heart of Maine's boat building industry is at a significant cusp in the growth cycle. If they successfully pass this critical "take off" point to self-sustaining growth, the industry may well achieve the success so many hold out for it. If, on the other hand, they continue to struggle in the hand to mouth mode to which so many have become accustomed, the industry may, again like farming, succumb to the pressures of aging owners with no succession plan and the growing temptation of conversion of facilities to residential development.

In particular, Maine's mid-sized boat builders face the obstacles of:

- ✓ Strategic Planning
 - They need a better understanding of their business's current financial structure and of its potential growth path;
 - They need a better understanding of business planning;
 - Many with owners rapidly approaching retirement age need better succession planning;
 - They need a better knowledge of how to make a pitch to investors.

- ✓ Marketing
 - They need a better knowledge of the entire range of marketing activities; they need to move beyond just thinking about what magazine ads to place and what shows to attend to a consideration of the concepts of distribution channels, sales representation, brokerage services, cooperative relationships with marinas and tourist destinations;
 - They need a better knowledge of the appropriate level and type of marketing for their individual business goals and of how such a marketing strategy can be developed;
 - They need a access to basic technical assistance in image design, print and web site preparation, the operation of the yacht brokerage business, mechanics and nature of boat shows.

In short, Maine's mid-sized boat builders need access to practical, short term, on site management training.

IV. Recommendations

Acknowledging the current structure of Maine's boat building industry and the obstacles to its growth noted above, industry members in cooperation with their trade associations and state government should undertake four steps to improve their vitality and prospects for growth:

1. Strengthen and regularize the industry's information base;
2. Undertake a systematic industry marketing campaign;
3. Provide on going, easily available business and financial management assistance to small and mid sized members with a commitment to growth; and
4. Improve the quality of the labor force.

1. Strengthen and regularize the industry's information base

Maine's boat building industry is composed of several hundred businesses that are engaged in a variety of operations involved in designing, building, repairing, transporting, storing, servicing, fueling, outfitting, selling and reselling boats. Several offer charter cruises. Some sponsor racing and other boat related activities. They are closely related both to Maine's tourist industry and to Maine's fishing, lumber, composites and fabricated metals industries. They are represented by the Maine Marine Trades Association (MMTA) that focuses on labor training and environmental regulations and Maine Built Boats (MBB) that focuses on marketing.

These businesses are widely scattered geographically and widely divergent in size and technology. Most cooperate closely as the need arises, but none has a clear sense of the magnitude and inter-reliance of the industry as a whole.

The first best step the industry could take to improve its business health is to have a better idea of its own structure and convey that idea loud and clear to state policy makers and the general public. The first step toward better health is a check up. And a check up involves taking a lot of measurements and comparing them to standards of good health.

Much of this information is already available in a variety of sources. The MMTA does a survey of wages every two years; The Maine Port Authority (Maineports.com) and the Maine Waterway Guide (Maineports.com) gather and maintain information on harbor and yard capacities (including some production, storage and hoist capacities); the Maine Department of Labor is undertaking a Business Visitation Program (BVP) to gather information on boat builders and related businesses and Maine Built Boats sent a survey to its members as part of this project.

If this information was integrated into a single, easily accessible source, it could serve:

- ✓ Boat owners seeking to use Maine facilities;
- ✓ Potential boat buyers interested in seeing what Maine has to offer;
- ✓ Boat builders seeking to coordinate their operations with others that have water access, storage or other needed facilities; and

- ✓ Educators seeking to design and deliver the most appropriate education and training programs.

Perhaps most importantly, if this information was used by an industry association to establish “best practice” benchmarks based on confidential, industry-wide surveys, it could become a basis for individual firms to evaluate their performance and set new goals.

Recognizing the limited time available to business managers, this information should be gathered first from existing sources and added to only as part of an industry wide effort headed by respected members.

2. Undertake a systematic industry marketing campaign

Most Mainers like to think they live in the most beautiful place on earth, and they presume that everyone else knows it. While Maine does enjoy a general reputation for quality products and a quality labor force, that reputation does not extend world wide, or even nation wide, for boats. Maine has the potential to build a strong brand for boats beyond its current customer base, but doing so requires effort—articulation of a clear strategy and the money and time to realize it.

At the same time, Maine’s most successful boat builders already have built strong brand names and images for themselves. And these are quite distinct one from another. A “Maine” brand cannot simply be layered over the Hinckley brand, or the Sabre brand, or any other well recognized Maine brand. The “Maine” brand, rather, must be at a deeper level, one that applies to all builders who claim Maine as home. Therefore this “Maine” marketing must be managed carefully so as not to dilute or confuse existing marketing efforts. At the same time, “Maine” marketing must serve the critical mid-sized businesses who may not now have elaborate marketing efforts. Just as “Maine” marketing must not counter act the marketing efforts of existing Maine companies, so it cannot become the marketing for smaller Maine companies. It must walk the path of promoting the state rather than any individual business. It must involve the following activities:

- ✓ Brand building for the Maine industry as a whole;
- ✓ Marketing education for small and mid sized members;
- ✓ Technical assistance for marketing activities, delivered on site and in a way to best accommodate the limited time of the owner/operators of mid-sized businesses;
- ✓ Systematic evaluation of each type of marketing activity (print, web, show, event, sales representation, charter cruises, brokerage relationships) and an effort to explain how each could serve each member.

3. Provide ongoing, easily available business and financial management assistance to small and mid sized members with a commitment to growth

As noted several times in this report, the key to the growth of Maine’s boat building industry is the passage of its mid-sized businesses from their precarious, on the cusp, financial health to a level characterized by a more secure backlog of orders, a more

efficient management structure and a clear strategy for continued growth. The most significant factor that could ensure successful transition through this critical growth phase is practical management assistance to owner/operators.

In many ways, the Clean Harbors program run by the Maine Marine Trades Association offers a model for management training. Instead of having the Maine Department of Environmental Protection enforce its regulations on each member individually, the MMTA helps the DEP achieve its goals by offering training programs for members on environmental regulations and current best practices methods of meeting them. The MMTA is helping the industry meet its environmental obligations in a less adversarial way than might otherwise be the case.

A similarly structured management training program partnering interested firms with appropriate educators or business mentors could provide valuable assistance to boat builders now struggling to keep their businesses running and often at a loss for transforming their general ideas for growth into formal, bankable, business plans.

4. Improve the quality of the labor force

Finally, Maine's boat building industry will achieve substantial growth only if it can attract a steady supply of skilled workers. While the industry has current shortages in many specific skills, its more important need is to communicate to young people entering the labor force that they can pursue a personally satisfying and financially rewarding career in boat building. The industry needs to bring this message to local high school guidance counselors to counteract the current "conventional wisdom" that only those with a college education can get ahead.

All the boat builders interviewed as part of this project said that the most important source of training for their workers was on-the-job training. They said that the most important qualification for new workers was a desire to work with his/her hands, a willingness to work as part of a team, a commitment to producing a quality product.

In short, the pre-skill attitudes toward work were a more significant issue for Maine's boat builders than any particular skill shortage. To the extent that industry associations can promote the attractiveness of boat building as a career, it will help address this need.

Regarding more specific training, the most important factor for most builders interviewed was time and local access. Because most of Maine's boat builders are relatively small operations, freeing any worker to attend training programs has a major impact on daily production operations. Regardless of tuition costs and travel time, the opportunity cost of absent workers is significant for Maine's boat builders. Hence, the most effective way of increasing the skills of Maine's boat builders is by increasing the range of basic technical on site training.

Finally, industry needs to strengthen the scholarship programs at Maine's existing boatbuilding schools, both the Boat School at the Marine Technology Center of Washington County Community College and The Landing School in Arundel as well as the composite training center proposed by Southern Maine Community College for the Brunswick Naval Air Station. Making it easier for Maine students to attend these schools and making it easier for them to offer off site classes in conjunction with industry partners would go a long way toward increasing the desirability of boat building as an attractive career for Maine high school graduates.