

## **Appendix H**

# **UPDATE OF THE ECONOMIC BENEFITS OF THE DISTRICT'S WATERWAYS IN BREVARD COUNTY**

## TABLE OF CONTENTS

Section	Page
I INTRODUCTION .....	H-1
Summary of Findings.....	H-2
The Intracoastal Waterway .....	H-3
The Intracoastal Waterway in Brevard County .....	H-4
II SUMMARY OF FINDINGS OF THE ORIGINAL ANALYSIS .....	H-5
III UPDATED ECONOMIC BENEFITS OF THE WATERWAYS .....	H-7
Economic Benefits Under Current Existing Conditions.....	H-7
Marine-Related Business Activity .....	H-7
Economic Benefits Generated by Marine-Related Businesses.....	H-12
Purchases of Non-Marine-Related Items .....	H-13
Economic Benefits Generated by Purchases of Non-Marine-Related Items ..	H-14
Combined Economic Benefits .....	H-15
Economic Benefits Assuming a Cessation of Maintenance .....	H-18
Expected Marine-Related Business Volume .....	H-18
Economic Benefits Generated by Marine-Related Businesses.....	H-20
Expected Purchases of Non-Marine-Related Items .....	H-20
Economic Benefits Generated by Purchases of Non-Marine-Related Items ..	H-21
Combined Economic Benefits .....	H-21
Economic Benefits Assuming a Higher State of Maintenance .....	H-22
Expected Marine-Related Business Volume .....	H-22
Economic Benefits Generated by Marine-Related Business .....	H-23
Economic Benefits Generated by Purchases of Non-Marine-Related Items ..	H-25
Combined Economic Benefits .....	H-26
The Impact of the 2007-2009 U.S. Economic Recession .....	H-26
Estimating Gross Sales Assuming That the Recession Did Not Occur .....	H-27
Economic Benefits Generated by Marine-Related Business .....	H-31
Purchases of Non-Marine-Related Items .....	H-32
Economic Benefits Generated by Purchases of Non-Marine-Related Items ..	H-33
Combined Economic Benefits .....	H-33

## LIST OF TABLES

<b>Number</b>		<b>Page</b>
H-1	Summary of Total Economic Benefits of the Waterways in Brevard County.....	H-3
H-2	Summary of 2002 Total Economic Benefits of the Waterways in Brevard County, as Presented in the Original Analysis.....	H-5
H-3	Total Direct Marine-Related Business Volume in Brevard County, Aggregated by Business Type, 2002 and 2009.....	H-8
H-4	Distribution of Direct Marine-Related Business Revenue by Business Type and Business Activities.....	H-9
H-5	Total Updated Direct Marine-Related Business Revenue by Business .....	H-11
H-6	Summary of Economic Benefits of Marine-Related Businesses in Brevard County, Under Current Existing Conditions.....	H-13
H-7	Summary of Economic Benefits of Non-Marine-Related Items Purchased by Boaters in Brevard County, Under Current Existing Conditions.....	H-15
H-8	Summary of Total Economic Benefits of the Waterways in Brevard County, Under Current Existing Conditions.....	H-16
H-9	Total Marine-Related Business Revenue by Business Type, Distributed by Business Activity, Assuming Three-Foot Vessel Draft Restrictions on the Waterways.....	H-19
H-10	Summary of Economic Benefits of Marine-Related Businesses in Brevard County, Assuming Vessel Draft Restrictions of Three Feet.....	H-20
H-11	Summary of Economic Benefits of Non-Marine-Related Items Purchased by Boaters in Brevard County, Assuming Vessel Draft Restrictions of Three Feet.....	H-21
H-12	Summary of Total Economic Benefits of the Waterways in Brevard County, Assuming Vessel Draft Restrictions of Three Feet.....	H-22
H-13	Total Marine-Related Business Revenue by Business Type, Distributed by Business Activity, Assuming 12-Foot Vessel Draft Restrictions on the Waterways.....	H-24

**LIST OF TABLES (cont'd)**

<b>Number</b>	<b>Page</b>
H-14 Summary of Economic Benefits of Marine-Related Businesses in Brevard County, Assuming Vessel Draft Restrictions of 12 Feet .....	H-25
H-15 Summary of Economic Benefits of Non-Marine-Related Items Purchased by Boaters in Brevard County, Assuming Vessel Draft Restrictions of 12 Feet .....	H-25
H-16 Summary of Total Economic Benefits of the Waterways in Brevard County, Assuming Vessel Draft Restrictions of 12 Feet.....	H-26
H-17 Total Marine-Related Business Volume in Brevard County, Aggregated by Business Type, 2002 and 2009, Assuming the 2007-2009 U.S. Economic Recession Did Not Occur .....	H-29
H-18 Total Marine-Related Business Revenue by Business Type, Distributed by Business Activity, Assuming the 2007-2009 U.S. Economic Recession Did Not Occur.....	H-30
H-19 Summary of Economic Benefit of Marine-Related Businesses in Brevard County, Assuming the 2007-2009 U.S. Economic Recession Did Not Occur.....	H-31
H-20 Summary of Economic Benefits of Non-Marine-Related Items Purchased by Boaters in Brevard County, Assuming the 2007-2009 U.S. Economic Recession Did Not Occur.....	H-33
H-21 Summary of Total Economic Benefits of the Waterways in Brevard County, Assuming the 2007-2009 U.S. Economic Recession Did Not Occur.....	H-34

**LIST OF FIGURES**

<b>Number</b>	<b>Page</b>
H-1 Brevard County, FDOR Reported Gross Sales of Kind Code 28, 1986 Through 2009.....	H-27

## I. INTRODUCTION

The economic benefits of marine-related activities on the Florida Inland Navigation District's (the District) Waterways in Brevard County were estimated in *An Economic Analysis of the District's Waterways in Brevard County*, dated February 2003 (referred to as the original analysis). Benefits were estimated for existing conditions and two Waterways maintenance scenarios, one assuming a cessation of maintenance and another assuming a higher state of maintenance. The purpose of this analysis is to update the economic benefits of the Waterways in Brevard County, as presented in the original analysis, to current values using industry accepted methods. The impact of the 2007-2009 U.S. economic recession on marine-related businesses in the county are also estimated. In addition, fuel taxes and sales tax revenues attributable to activities associated with the Waterways, which were not estimated in the original analysis, are estimated in this analysis. For the purpose of this report, the District's Waterways (the Waterways) are defined as all navigable waterways within the District's boundaries, including the Intracoastal Waterway and all waterways that are physically connected to it.

The purpose of the original analysis was twofold: (1) to identify and quantify the total economic benefit of the Waterways in the county; and (2) to estimate the influence of the Waterways on property values in the county. The original analysis included an explanation of economic benefits, a literature review of economic benefits of marine activities in Florida and in other states, an explanation of the methods used in estimating economic benefits, details of the data collection and manipulation required for the analysis, quantification of direct marine-related business purchases, and estimation of the economic benefits of the Waterways under existing conditions, assuming a cessation of maintenance, and assuming a higher state of maintenance. For this updated analysis, the estimation of the influence of the Waterways on property values in the county will not be addressed.

As the local sponsor of the Waterways, the District shares in the responsibility for the operation and maintenance of the Waterways. With reduced federal funding, the local sponsors of the nation's inland navigation systems are being required to shoulder a larger portion of the maintenance costs. The District has made a decision not to let the Waterways deteriorate by deferring maintenance projects and has elected instead to fund this budgetary shortfall. To meet these responsibilities, the District may invest up to \$800 million in maintaining and operating the

Waterways over the next 50 years. With such a large potential investment, the District needs to inform the general public as well as federal, state, and local public officials regarding the economic importance of expending these monies to meet the new needs of the Waterways. This update is intended to address that need.

This analysis is divided into three sections: (1) this introduction; (2) a summary of the findings of the original analysis; and (3) the update of the economic benefits of the Waterways under four scenarios. Section I includes an introduction to the report, a summary of the findings, and a description of the Intracoastal Waterway in Brevard County.

Section II summarizes the findings of the original analysis as presented in *An Economic Analysis of the District's Waterways in Brevard County*, dated February 2003. Economic benefits are estimated for each of the three scenarios evaluated: (1) prior existing conditions (at the time of the original analysis in 2002); (2) assuming a cessation of maintenance; and (3) assuming a higher state of maintenance. The benefits are presented as measured by changes in business volume, personal income, and jobs.

Section III presents the methodology and findings of the update of the economic benefits of the Waterways. Updated impacts for four scenarios are presented: (1) current existing conditions (which have been affected by the recession); (2) assuming a cessation of maintenance; (3) assuming a higher state of maintenance; and (4) assuming that the 2007-2009 U.S. economic recession did not occur. Impacts are measured as changes in business volume, personal income, jobs, and tax revenues.

## **Summary of Findings**

A summary of the findings of the economic benefits of the four scenarios evaluated are presented in Table H-1. Current updated benefits in 2010 dollars include \$580.2 million in business volume, \$122.3 million in personal income, 3,652 jobs, and \$21.5 million in tax revenues. Compared to the findings in the original analysis, this is a decrease of \$270.2 million in business volume, \$138.6 million in personal income, and 3,730 jobs. The decrease in benefits is primarily due to decreased spending on marine-related activities in response to the 2007-2009 U.S. economic recession. Tax revenues were not estimated in the original analysis. The economic benefits of the Waterways assuming decreased maintenance of the Waterways include \$176.9 million in business volume, \$43.0 million in personal income, 1,234 jobs, and

\$9.75 million in tax revenues. This is a 55 to 70 percent decrease in benefits compared to existing conditions. The economic benefits of the Waterways assuming a higher state of maintenance of the Waterways include \$601.6 million in business volume, \$127.2 million in personal income, 3,813 jobs, and \$22.5 million in tax revenues. This is an approximately five percent increase in benefits compared to existing conditions. If the 2007-2009 U.S. economic recession had not occurred, economic benefits of the Waterways in 2009 would have been approximately \$1.516 billion in business volume, \$319.3 million in personal income, 9,588 jobs, and \$53.2 million in tax revenues. In other words, the recession reduced the benefits of the Waterways in Brevard County by \$935.5 million in business volume, \$197 million in personal income, 5,936 jobs, and \$31.7 million in tax revenues.

**Table H-1. Summary of Total Economic Benefits of the Waterways in Brevard County**

Activity	Business Volume (Millions)				Personal Income (Millions)				Employment			
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total
Current Existing Impacts	\$425.70	\$89.48	\$65.05	<b>\$580.23</b>	\$73.44	\$28.66	\$20.15	<b>\$122.26</b>	2,322	735	595	<b>3,652</b>
Three-Foot Draft Restriction Impacts	\$134.77	\$19.16	\$22.92	<b>\$176.85</b>	\$29.53	\$6.34	\$7.10	<b>\$42.97</b>	864	161	210	<b>1,234</b>
Twelve-Foot Draft Restriction Impacts	\$441.59	\$92.33	\$67.69	<b>\$601.61</b>	\$76.69	\$29.55	\$20.97	<b>\$127.21</b>	2,435	759	619	<b>3,813</b>
Impacts Assuming No Recession	\$1,109.03	\$236.82	\$169.86	<b>\$1,515.72</b>	\$190.81	\$75.83	\$52.63	<b>\$319.27</b>	6,091	1,944	1,554	<b>9,588</b>

### The Intracoastal Waterway

The Intracoastal Waterway is a 2,640-mile federally and locally maintained system of natural waterbodies and connecting canals paralleling the Atlantic and Gulf coasts of the United States that encompasses the Atlantic Intracoastal Waterway (AIWW) and the Gulf Intracoastal Waterway (GIWW). The purpose of the waterway is to provide a protected environment for vessels moving coastwise, particularly shallow-draft commercial and recreational vessels.

The Gulf Intracoastal Waterway is a 1,100-mile channel between Brownsville, Texas, and St. Marks, Florida, south of Tallahassee. The channel is 150 feet wide and 12 feet deep and runs mainly behind barrier beaches.

The Atlantic Intracoastal Waterway is a 1,391-mile channel between Trenton, New Jersey, and Miami, Florida. A southward extension from Miami to Key West was authorized but never constructed. The channels from Trenton to St. Johns River in Florida, on which Jacksonville is located, are 12 feet deep, 90 feet wide through land areas, and generally 150 or 300 feet wide in open water areas. The section from the Georgia-Florida line to St. Johns River

is 125 feet wide. The channel south from St. Johns River was constructed as an independent project under the title *Intracoastal Waterway, Jacksonville to Miami, Florida*. An early authorization called for a 12-foot by 125-foot channel throughout, but was modified to a 10-foot depth from Fort Pierce south to Miami. The project, which was completed in its modified form in 1965, is 370 miles long and follows coastal rivers and lagoons past numerous tourism-oriented communities.

### **The Intracoastal Waterway in Brevard County**

The Intracoastal Waterway extends about 71 miles through Brevard County. The waterway enters the county from the north in Mosquito Lagoon at Mile 864, north of the John F. Kennedy Space Center. The waterway then heads east through the one-mile Haulover Canal to Indian River. The waterway continues south in a dredged channel in the Indian River past the communities of Titusville, Cocoa, Merritt Island, Melbourne, and Palm Bay to Indian River County and Sebastian Inlet. Near the City of Cocoa, the Canaveral Barge Canal, at Mile 984, allows access from the waterway across Merritt Island to Banana River, then past Port Canaveral to offshore access via Canaveral Inlet. Banana River lies east of, and is connected to, the Intracoastal Waterway on its northern end through the Canaveral Barge Canal and on its southern end at its confluence with Indian River at Dragon Point (Mile 914). Banana River allows offshore access through the Canaveral Barge Canal. The Sebastian Inlet, at the Brevard/Indian River counties line, is the other offshore access point for boaters in Brevard County.



## II. SUMMARY OF FINDINGS OF THE ORIGINAL ANALYSIS

Under existing conditions, the original analysis estimated that the 407 marine-related businesses in Brevard County generated direct sales of \$565.8 million in 2002. A regional economic impact model (IMPLAN) was used to estimate the direct, indirect, and induced (total) benefits of the marine businesses. The total benefits of marine-related businesses in 2002 were estimated as \$771.2 million in business sales, \$247.7 million in personal income, and 6,909 jobs. The direct business volume benefits from the original analysis, as presented in Table H-2, were adjusted to reflect the same basis as the direct business volume benefits presented in the updated analysis. In the original analyses conducted before 2007, only the margined portion (that portion that remains in the region to generate indirect and induced benefits) of the retail and wholesale trade business volume was reported in the final report. Subsequent to 2007, the total direct business volume benefit, including the portion that “leaks out” of the local economy, was reported. This change in method of reporting did not impact the indirect or induced business volume or the personal income or employment benefits.

**Table H-2. Summary of 2002 Total Economic Benefits of the Waterways in Brevard County, as Presented in the Original Analysis**

Waterway Maintenance Scenario	Business Volume (Millions)				Personal Income (Millions)				Employment			
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total
2002 Total Existing Impacts	\$638.23	\$98.30	\$113.88	<b>\$850.41</b>	\$180.57	\$36.94	\$43.31	<b>\$260.82</b>	4,773	1,058	1,551	<b>7,382</b>
2002 Three-Foot Draft Restriction Impacts	\$206.90	\$30.07	\$29.61	<b>\$266.58</b>	\$44.94	\$11.58	\$11.24	<b>\$67.76</b>	1,497	327	405	<b>2,229</b>
2002 Twelve-Foot Draft Restriction Impacts	\$658.59	\$103.78	\$117.85	<b>\$880.22</b>	\$186.13	\$38.97	\$44.80	<b>\$269.90</b>	4,940	1,114	1,605	<b>7,659</b>

Non-marine-related businesses also were shown to benefit from marine activities in the county. Boaters in the county purchased a total of \$75.9 million in gasoline, food, drinks, and ice for consumption on the county’s Waterways. These non-marine-related purchases resulted in a total benefit of \$79.2 million in business activity, \$13.1 million in personal income, and 473 jobs. The economic benefits of the Waterways under existing conditions (the benefit of marine-related businesses and purchases by recreational boaters) totaled \$850.4 million in business volume, \$260.8 million in personal income, and 7,382 jobs (see Table 2). Tax revenues attributable to the Waterways were not estimated in the original analysis.

Marine-related businesses in Brevard County were estimated to generate direct sales of \$154.6 million in 2002, assuming cessation of maintenance of the Waterways. The total benefit of marine businesses in 2002 under this scenario was estimated as \$207.5 million in business sales, \$57.9 million in personal income, and 1,872 jobs. In addition, boaters in the county purchased a total of \$56.9 million in gasoline, food, drinks, and ice for consumption on the county's Waterways. These non-marine-related purchases resulted in a total benefit of \$59.1 million in business activity, \$9.8 million in personal income, and 357 jobs. The total combined economic benefits of the Waterways assuming three-foot vessel draft restrictions, as presented in the original analysis, were \$266.6 million in business volume, \$67.8 million in personal income, and 2,229 jobs.

In the original analysis it was estimated that in 2002, marine-related businesses in Brevard County would generate direct sales of \$588.5 million if vessel draft restrictions were increased to 12 feet MLW. The total benefit of marine-related business under this scenario was estimated as \$801 million in business sales, \$256.8 million in personal income, and 7,186 jobs. Boaters were estimated to purchase a total of \$75.9 million in gasoline, food, drinks, and ice for consumption on the county's Waterways, which resulted in a total benefit of \$79.2 million in business activity, \$13.1 million in personal income, and 473 jobs. The total combined economic benefits of the Waterways, assuming 12-foot vessel draft restrictions, totaled \$880.2 million in business volume, \$269.9 million in personal income, and 7,659 jobs.

### **III. UPDATED ECONOMIC BENEFITS OF THE WATERWAYS**

#### **Economic Benefits Under Current Existing Conditions**

##### **Marine-Related Business Activity**

The original analysis stated that total direct business sales (as calculated from the survey-adjusted database of marine-related businesses) were estimated at \$565.8 million. The data presented in the original analysis that outlined the direct impact of marine-related businesses in Brevard County were updated to current values using the estimated increase in gross sales as recorded by the Florida Department of Revenue (FDOR) Kind Code 28. FDOR classifies businesses by type and reports the gross sales receipts and sales tax collections for each business type. Business types are classified as Kind Codes. Kind Code 28 consists of *Motorboats, Yachts, Marine Parts, Accessories, and Boat Dealers*. According to FDOR, in 2002, the year that the original analysis was conducted, the firms classified as Kind Code 28 reported \$107.7 million in gross retail sales. In 2009, the latest year that data is available, Kind Code 28 firms reported total gross sales of \$72.7 million. This constitutes a decrease of 48 percent in gross sales over the seven-year period. The percent change in reported Kind Code 28 gross sales was applied to the direct marine-related business activity (obtained from the original analysis) to estimate the direct current impact of marine-related businesses.

Table H-3 presents the 2002 and updated 2009 marine-related business volume, aggregated by business type. As a result of the recession, total marine-related business activity is estimated to have decreased from \$565.8 million in 2002 to \$381.7 million in 2009.

The original analysis included the distribution of business volume for each marine-related business type and is reproduced here as Table H-4. For this analysis, the business activity distribution (Table H-4) for each business type was applied to the 2009 updated marine-related business volume (Table H-3) to quantify the updated dollar value of sales of each business type generated by each type of activity. For instance, as illustrated in Table H-4, on average 76.6 percent of the business volume generated by a boat dealer would actually be retail trade, 0.7 percent would be used boat sales, 4.5 percent would be wholesale trade, and 18.13 percent would be financing activities. Applying the percent distribution by business type and activity in

**Table H-3. Total Direct Marine-Related Business Volume in Brevard County,  
Aggregated by Business Type, 2002 and 2009**

<b>Business Type</b>	<b>2002</b>	<b>2009</b>
	<b>Total Marine Business Volume</b>	<b>Total Marine Business Volume</b>
Boat Dealers	\$13,491,330	\$9,101,524
Yacht Brokers	\$8,578,462	\$5,787,204
Marinas	\$36,352,527	\$24,524,149
Boat Yards	\$4,160,000	\$2,806,420
Canvas Products/Upholstery	\$6,092,855	\$4,110,363
Boat Repairs	\$8,766,227	\$5,913,874
Outboard Repairs	\$22,774,779	\$15,364,326
Marine Equipment/Electronics	\$8,625,063	\$5,818,642
Marine Construction	\$21,690,921	\$14,633,134
Tackle/Dive Equipment	\$15,210,509	\$10,261,317
Marine/Sporting Goods Retail	\$29,014,944	\$19,574,068
Boat Manufacturer	\$302,940,000	\$204,369,446
Equipment Manufacturer	\$27,392,784	\$18,479,726
Engineering/Surveyors	\$2,013,293	\$1,358,208
Government	\$4,115,000	\$2,776,062
Insurance	\$733,056	\$494,534
Business/Personal Services	\$800,730	\$540,189
Storage	\$73,800	\$49,787
Boating Services	\$5,308,312	\$3,581,095
Auto/Cycle Dealers	\$4,392,850	\$2,963,505
Auto Repair	\$52,800	\$35,620
Camp/Resort/Lodging	\$903,000	\$609,182
Restaurant/Seafood Market	\$31,732,543	\$21,407,415
Miscellaneous Retail/Other	\$3,910,680	\$2,638,224
Charter Boats/Rentals	\$6,674,173	\$4,502,532
<b>Total</b>	<b>\$565,800,638</b>	<b>\$381,700,545</b>

**Table H-4. Distribution of Direct Marine-Related Business Revenue by Business Type and Business Activities**

Business Type	Business Activities									
	Percent Construction	Percent Transportation	Percent Retail Trade	Percent Boat Sales	Percent Manufacturing	Percent Wholesale	Percent Finance	Percent Service	Percent	Percent
Boat Dealers	0.00%	0.00%	76.64%	0.70%	0.00%	4.53%	18.13%	0.00%	0.00%	0.00%
Yacht Brokers	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Marinas	0.00%	0.00%	50.49%	0.68%	0.00%	3.28%	0.00%	0.00%	0.00%	45.55%
Boat Yards	0.00%	0.00%	0.00%	0.00%	50.00%	0.00%	0.00%	0.00%	0.00%	50.00%
Canvas Products/Upholstery	0.00%	0.00%	56.51%	0.00%	41.66%	0.00%	0.00%	0.00%	0.00%	1.83%
Boat Repairs	2.17%	0.00%	1.28%	0.00%	25.94%	0.00%	0.00%	0.00%	0.00%	70.61%
Outboard Repairs	0.63%	0.31%	5.42%	0.00%	6.88%	1.66%	0.00%	0.00%	0.00%	85.11%
Marine Equipment/Electronics	0.00%	0.00%	45.28%	0.00%	4.01%	37.11%	0.00%	0.00%	0.00%	13.60%
Marine Construction	95.34%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.66%
Tackle/Dive Equipment	0.00%	0.00%	98.48%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.52%
Marine/Sporting Goods Retail	0.00%	0.00%	76.96%	1.71%	1.81%	5.92%	2.46%	0.00%	0.00%	11.14%
Boat Manufacturer	0.00%	0.04%	0.00%	0.02%	99.86%	0.04%	0.00%	0.00%	0.00%	0.02%
Equipment Manufacturer	0.00%	0.00%	2.69%	0.00%	68.15%	23.90%	0.00%	0.00%	0.00%	5.25%
Engineering/Surveyors	0.00%	0.00%	0.00%	0.00%	44.88%	0.00%	0.00%	0.00%	0.00%	55.12%
Government	0.00%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	75.00%
Insurance	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	29.24%	0.00%	0.00%	70.76%
Business/Personal Services	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
Storage	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
Boating Services	0.72%	25.86%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	73.42%
Auto/Cycle Dealers	0.00%	0.00%	75.00%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Auto Repair	0.00%	0.00%	5.00%	0.00%	2.00%	0.00%	0.00%	0.00%	0.00%	93.00%
Camp/Resort/Lodging	0.00%	0.00%	9.50%	0.00%	0.50%	0.00%	0.00%	0.00%	0.00%	90.00%
Restaurant/Seafood Market	0.00%	0.00%	16.50%	0.00%	0.00%	61.11%	0.00%	0.00%	0.00%	22.39%
Miscellaneous Retail/Other	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Charter Boats/Rentals	0.00%	31.54%	2.41%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	66.05%
<b>Total</b>	<b>3.72%</b>	<b>0.83%</b>	<b>15.57%</b>	<b>1.87%</b>	<b>58.58%</b>	<b>5.86%</b>	<b>0.62%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>12.96%</b>

Table H-4 to the 2009 updated marine-related business volume of \$381.7 million in Table H-3 results in the summary of updated business volume distributed by business activity, as presented in Table H-5.

The values presented in Table H-5 are the total business volume of marine-related businesses. For instance, the \$59.4 million in retail sales, the \$7.2 million in used boat sales, and the \$22.4 million in wholesale sales are the amounts that consumers paid (consumer prices) to businesses to purchase goods, rather than the total economic benefit of the retail sector. Regional impact models are developed using producer prices. In order to use the values in Table H-5 in a regional impact model, the consumer prices must be converted to producer prices. This is done within the model using margins that represent the difference between producer prices and consumer prices. When a product is purchased at the retail level, the consumer is paying for the manufacturing, distribution, transportation, and marketing of the product. For instance, if a consumer pays \$100 for an item, he may be paying \$50 for the manufacture of the product, \$5 for the transportation of the product to the wholesaler, \$15 to the wholesaler for his services, \$5 to transport the item to the retailer, and only \$25 to the retailer. If the manufacturer and wholesaler are located outside of the economy being evaluated, then only the retail portion or the retail margin (\$25) will result in an economic benefit to the local economy; the remaining portion of the sale (\$75) will “leak” out of the economy and actually result in economic benefits in another economy.

To illustrate, when a boat dealer in Brevard County sells a boat and motor for \$30,000, that total amount would appear in the marine-related database used in this analysis and in the gross retail sales as reported in FDOR’s Kind Code 28. But only a portion of the \$30,000, the retail margin (which for boat and automobile dealers is approximately 15 to 18 percent of the purchase price), will remain in the local economy and generate benefits. The boat dealer will use most of the proceeds from the sale to pay the manufacturer for the boat and motor. Because the boat and motor will probably be manufactured outside of the county, most of the proceeds of the sale will immediately leave the local economy. The money remaining after the retailer pays the manufacturer is the retail margin, which is used to pay for items such as wages, rent, utilities, business services, and retained profits. Only the retail margin, 15 to 18 percent of the purchase price in the case of boat dealers, will result in economic stimulus to the local economy. All retail

**Table H-5. Total Updated Direct Marine-Related Business Revenue by Business**

Business Type	Total Marine Business Volume	Construction Volume	Transportation Volume	Retail Trade Volume	Used Boat Sales Volume	Manufacturing Volume	Wholesale Trade Volume	Finance Volume	Service Volume
Boat Dealers	\$9,101,524	\$0	\$0	\$6,975,083	\$63,832	\$0	\$412,521	\$1,650,087	\$0
Yacht Brokers	\$5,787,204	\$0	\$0	\$0	\$5,787,204	\$0	\$0	\$0	\$0
Marinas	\$24,524,149	\$0	\$0	\$12,381,187	\$167,957	\$0	\$803,357	\$0	\$11,171,646
Boat Yards	\$2,806,420	\$0	\$0	\$0	\$0	\$1,403,210	\$0	\$0	\$1,403,210
Canvas Products/Upholstery	\$4,110,363	\$0	\$0	\$2,322,837	\$0	\$1,712,361	\$0	\$0	\$75,174
Boat Repairs	\$5,913,874	\$128,286	\$0	\$75,837	\$0	\$1,533,821	\$0	\$0	\$4,175,927
Outboard Repairs	\$15,364,326	\$96,108	\$48,053	\$832,435	\$0	\$1,057,197	\$254,689	\$0	\$13,075,841
Marine Equipment/Electronics	\$5,818,642	\$0	\$0	\$2,634,437	\$0	\$233,446	\$2,159,375	\$0	\$791,381
Marine Construction	\$14,633,134	\$13,951,799	\$0	\$0	\$0	\$0	\$0	\$0	\$681,333
Tackle/Dive Equipment	\$10,261,317	\$0	\$0	\$10,105,152	\$0	\$0	\$0	\$0	\$156,154
Marine/Sporting Goods Retail	\$19,574,068	\$0	\$0	\$15,063,533	\$334,877	\$353,640	\$1,159,361	\$481,145	\$2,181,511
Boat Manufacturer	\$204,369,446	\$0	\$0	\$0	\$35,843	\$204,082,701	\$71,686	\$71,686	\$35,843
Equipment Manufacturer	\$18,479,726	\$0	\$0	\$497,959	\$0	\$12,594,296	\$4,416,751	\$0	\$970,721
Engineering/Surveyors	\$1,358,208	\$0	\$0	\$0	\$0	\$609,609	\$0	\$0	\$748,599
Government	\$2,776,062	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,082,047
Insurance	\$494,534	\$0	\$0	\$0	\$0	\$0	\$0	\$144,601	\$349,934
Business/Personal Services	\$540,189	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$540,189
Storage	\$49,787	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$49,787
Boating Services	\$3,581,095	\$25,919	\$925,973	\$0	\$0	\$0	\$0	\$0	\$2,629,203
Auto/Cycle Dealers	\$2,963,505	\$0	\$0	\$2,222,629	\$740,875	\$0	\$0	\$0	\$0
Auto Repair	\$35,620	\$0	\$0	\$1,781	\$0	\$712	\$0	\$0	\$33,127
Camp/Resort/Lodging	\$609,182	\$0	\$0	\$57,872	\$0	\$3,046	\$0	\$0	\$548,264
Restaurant/Seafood Market	\$21,407,415	\$0	\$0	\$3,531,913	\$0	\$0	\$13,082,137	\$0	\$4,793,365
Miscellaneous Retail/Other	\$2,638,224	\$0	\$0	\$2,638,224	\$0	\$0	\$0	\$0	\$0
Charter Boats/Rentals	\$4,502,532	\$0	\$1,420,161	\$108,418	\$0	\$0	\$0	\$0	\$2,973,951
<b>Total</b>	<b>\$381,700,545</b>	<b>\$14,202,112</b>	<b>\$3,159,889</b>	<b>\$59,449,298</b>	<b>\$7,130,588</b>	<b>\$223,584,041</b>	<b>\$22,359,877</b>	<b>\$2,347,518</b>	<b>\$49,467,204</b>

and wholesale trade activity must be margined in this manner to accurately estimate the benefit to the county's economy.

### **Economic Benefits Generated by Marine-Related Businesses**

The 2009 updated estimates of direct marine-related business activity in the county were used in conjunction with the IMPLAN regional economic impact model to estimate the total (direct, indirect, and induced) benefits of the District's Waterways in Brevard County. The benefits were measured as changes in business volume, personal income, employment, and tax revenues. As illustrated in Table H-6, sales to consumers (by marine-related businesses in Brevard County) generate a total of over \$541.8 million in business volume (sales), \$114 million in personal income (wages), and 3,451 jobs. State and local tax revenues were estimated at \$17.5 million. Tax revenues were not presented in Table H-6, by business activity, because tax revenues generated by many of the individual business activities are fairly small, especially those generated by indirect and induced impacts, and as a result of rounding to two decimal places in the table, would have been displayed as zeros.

**Table H-6. Summary of Economic Benefits of Marine-Related Businesses in Brevard County, Under Current Existing Conditions**

<b>Business Activity</b>	<b>Business Volume (Sales) (Millions of Dollars)</b>				<b>Personal Income (Wages) (Millions of Dollars)</b>				<b>Employment (Jobs)</b>			
	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Total</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Total</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Total</b>
Construction	14.72	4.18	4.25	23.15	5.03	1.58	1.31	7.92	110	33	39	182
Manufacturing	230.06	63.90	33.72	327.67	32.82	20.22	10.45	63.49	1,011	514	308	1,833
Transportation	3.26	0.41	1.23	4.90	1.73	0.17	0.38	2.28	28	4	11	44
Wholesale Trade	23.50	1.33	1.98	26.81	2.69	0.42	0.61	3.72	99	12	18	128
Retail Trade	69.98	4.71	7.28	81.96	9.97	1.47	2.26	13.69	435	41	67	542
Finance	2.42	0.70	0.72	3.83	0.90	0.22	0.22	1.34	18	6	7	30
Services	51.07	10.93	11.50	73.50	14.53	3.49	3.56	21.59	490	96	105	691
<b>Total</b>	<b>395.00</b>	<b>86.15</b>	<b>60.66</b>	<b>541.82</b>	<b>67.67</b>	<b>27.57</b>	<b>18.80</b>	<b>114.03</b>	<b>2,191</b>	<b>706</b>	<b>555</b>	<b>3,451</b>

The \$541.8 million in total business volume generated by marine-related businesses is distributed as a direct benefit of \$395 million, an indirect benefit of \$86.2 million, and an induced benefit of \$60.7 million. The \$114 million in personal income includes a direct benefit of over \$67.7 million and indirect and induced benefits of \$46.4 million. The 3,451 man-years of employment generated by marine-related businesses include 2,191 direct jobs, 706 indirect jobs,



and 555 induced jobs. The \$17.5 million in state and local tax revenues includes \$8.3 million generated by direct benefits, \$5.0 million generated by indirect benefits, and \$4.2 million generated by induced benefits.

Over half of the total economic benefits are generated by the manufacturing sector, including \$327.7 million in business sales, \$63.5 million in personal income, and nearly 1,833 jobs. The second largest benefits are generated by the service industry, with \$73.5 million in sales, \$21.6 million in personal income, and 691 jobs.

### **Purchases of Non-Marine-Related Items**

The direct economic benefits generated by marine-related businesses, as estimated above, do not take into account purchases by recreational boaters and fishermen who purchase non-marine-related items for consumption while using the Waterways. These impacts primarily include the purchase of gas for boats and vehicles and the purchase of food, drinks, and ice consumed during boating and fishing trips.

To estimate the economic benefits of non-marine-related items purchased from businesses not located on the Waterways, a randomly generated sample of 2,880 registered boat owners within the District, including 240 boat owners residing in Brevard County, was drawn from the Florida Department of Highway Safety and Motor Vehicles boat owner registration database and sent a questionnaire to determine their boating related spending and use patterns. A total of 784 completed questionnaires were returned by boaters residing within the District's boundaries, of which 31 indicated that they no longer own a boat, 122 indicated that they did not use their boat at all, or did not use their boat on the District's Waterways in the past 12 months, and 11 did not respond to certain questions, resulting in a total of 620 questionnaires with usable data. Brevard County boat owners returned a total of 63 completed questionnaires, of which two indicated that they no longer own a boat, nine indicated that they did not use their boat at all, or did not use their boat on the District's Waterways in the past 12 months, and one did not respond to certain questions, resulting in a total of 51 questionnaires with usable data.

Results from the usable surveys were entered into a database and queried by boat size to determine frequency of use in Brevard County and spending patterns for such items as gas, food, drinks, ice, bait, hoist/launch, and other items. Respondents were also asked to differentiate the location of the purchase of these items as being either from establishments located on the

Waterways or from establishments not located on the Waterways. This was intended to prevent double counting, because purchases made on the Waterways would have been included in the estimated marine-related business benefits presented in the previous section. To ensure adequate response in each boat size classification, the responses from Flagler, Volusia, and Brevard counties were combined when estimating the average number of trips on the Waterways that each boater takes per year and the average expenditures per trip for each boat size class.

These expenditures per trip, which were distributed by boat size, were applied to the number of registered pleasure boats in each boat size class in Brevard County. The number of trips taken per year, by boat size, as obtained from the survey of boat owners, was applied to the total expenditures per trip for each boat size class. The total expenditures for each boat size class were then summed to estimate the total expenditures for the county. The total expenditures on non-marine-related items at establishments not located on the Waterways include \$20.6 million for gasoline and \$10.3 million for food, drinks, and ice.

The regional impact model used in this analysis to estimate the total economic benefits margined the retail sales of gasoline, food, drinks, and ice to estimate the portion of sales that would be produced and distributed by companies located in Brevard County. This was accomplished by distributing the food, drinks, and ice expenditures to various commodities that would tend to be consumed on a boating or fishing trip.

### **Economic Benefits Generated by Purchases of Non-Marine-Related Items**

The \$30.9 million in retail purchases (\$20.6 million for gasoline sales and \$10.3 million for food, drinks, and ice) by recreational boaters from establishments not located on the Waterways were estimated to generate total economic benefits of \$38.4 million in business volume, \$8.2 million in personal income, 201 jobs, and \$4.4 million in tax revenues. As illustrated in Table H-7, the sales generated by these purchases include \$30.7 million in direct benefits and \$7.7 million in indirect and induced benefits. The total personal income includes \$5.8 million in direct benefits and \$1.5 million in indirect and induced benefits. The 201 jobs include 131 direct jobs, 29 indirect jobs, and 40 induced jobs. State and local tax revenues include \$3.6 million generated by direct activities, \$0.16 million generated by indirect activities, and \$0.61 million generated by induced activities. The \$3.6 million in tax revenues generated by direct activities includes \$2.2 million in fuel taxes generated by the sale of \$20.6 million in

gasoline. The fuel tax revenues were estimated outside of the IMPLAN model and were based on the amount of gasoline sold, assuming an average price of \$2.70 per gallon, and the prevailing fuel tax per gallon. The Brevard County fuel tax in 2010 was \$0.286 per gallon, including \$0.16 per gallon in state levied taxes and \$0.126 per gallon in locally levied taxes. The state levied taxes include \$0.12 per gallon in retail sales tax. To avoid double counting of gasoline retail sales taxes that are included in the fuel tax, the sales taxes generated by direct activities estimated in the IMPLAN model were not incorporated into the tax revenue estimate.

**Table H-7. Summary of Economic Benefits of Non-Marine-Related Items Purchased by Boaters in Brevard County, Under Current Existing Conditions**

Activity	Economic Impacts			
	Direct	Indirect	Induced	Total
Business Volume (Millions)	\$30.69	\$3.32	\$4.39	<b>\$38.40</b>
Personal Income (Millions)	\$5.78	\$1.09	\$1.36	<b>\$8.23</b>
Employment	131	29	40	<b>201</b>
Tax Revenues (Millions)	\$3.59	\$0.16	\$0.61	<b>\$4.36</b>

### Combined Economic Benefits

The total economic benefits of the Waterways include the benefits generated by marine-related businesses in Brevard County (presented in Table H-6) and the purchase of non-marine-related items for consumption on the Waterways (presented in Table H-7). A summary of these benefits is presented in Table H-8. Total benefits consist of \$580.2 million in business volume, \$122.3 million in personal income, 3,652 jobs, and \$21.8 million in tax revenue. Total business volume benefits consist of \$425.7 million in direct sales and over \$154.5 million in indirect and induced sales. Total personal income benefits consist of \$73.4 million in direct wages and \$48.8 million in indirect and induced wages. Total employment benefits consist of 2,322 direct jobs and 1,330 indirect and induced jobs. State and local tax revenues include \$11.9 million generated by direct activities, \$5.2 million generated by indirect activities, and \$4.8 million generated by induced activities. The \$11.9 million generated by direct activity includes \$2.2 million in fuel taxes generated by gasoline sales.

These benefits represent about a 32 percent decrease from the values presented in the original analysis in business volume, a 53 percent decrease in personal income, and a 51 percent

decrease in employment. The decrease is mainly due to the overall decrease in economic activity resulting from the 2007-2009 U.S. economic recession. The overall marine-related economy, or the direct benefit, was estimated to have decreased by 33 percent, based on FDOR tax data.

**Table H-8. Summary of Total Economic Benefits of the Waterways in Brevard County, Under Current Existing Conditions**

Activity	Total Economic Impacts			
	Direct	Indirect	Induced	Total
Business Volume (Millions)	\$425.70	\$89.48	\$65.05	<b>\$580.23</b>
Personal Income (Millions)	\$73.44	\$28.66	\$20.15	<b>\$122.26</b>
Employment	2,322	735	595	<b>3,652</b>
Tax Revenues (Millions)	\$11.88	\$5.17	\$4.78	<b>\$21.83</b>

As can be seen, when the current benefits are compared to the benefits from the original analysis, the percent decreases in personal income and employment benefits are greater than the percent decrease in business volume benefits. This is due to several factors, namely inflation and updates to the IMPLAN model software. Business volume and personal income benefits are presented in current values. The values in the original analysis are presented in 2002 dollars and the values in the current analysis are presented in 2010 dollars. The influence of inflation between the two periods was not included. The inflation rate, as measured by the Consumer Price Index (CPI) for all wage earners, from 2002 to 2010 was 21.2 percent. In other words, all other factors being held constant, the reported business output would have had to increase by approximately 21.2 percent, from 2002 to 2010, in order to maintain the same personal income and employment levels as reported in 2002. In addition, the total compensation costs for all civilian employees increased 25.7 percent over the same time period. In other words, employee compensation increased at a faster rate than inflation to the point that, in 2010, employees were paid approximately 25.7 percent more than they were paid in 2002. Therefore, business output and personal income would have to increase by 25.7 percent just to maintain the 2002 employment level. Another reason for the disparity between changes in business volume and employment is the change in output per person. For instance, from 2002 to 2010, output per person in the manufacturing industry experienced a 31.1 percent increase. This increase includes the 25.7 percent increase in employee compensation, indicating that adjusted for increasing

employee compensation, output per employee increased by about 5.4 percent from 2002 to 2010. In other words, in the amount of time it took an employee to produce \$1.00 of output in 2002, approximately \$1.31 of output could be produced in 2010, with increased employee compensation accounting for about \$0.257 of that increased output.

The IMPLAN model is periodically updated to increase the accuracy of estimating economic benefits associated with indirect and induced activities. Each update results in slight changes to how the direct impacts are distributed to industry sectors in the model and how the indirect and induced benefits are estimated. Since the conduct of many of the original analyses, the IMPLAN model has been updated several times; therefore, the impact of each update cannot be traced through the results of each analysis. In general, the latest update had the greatest impact on the method of calculating benefits. One update to the model included adjusting the number of sectors evaluated in the model. Previous versions of IMPLAN included 509 sectors or industries to which direct impacts could be assigned. The updated version of the software includes 440 sectors or industries. As result, several industry sectors in the older version were combined, or industries were divided between two or more of the sectors in the updated version. Consequently, the direct impacts in the current analysis had to be assigned to the new sectors. In most instances, the assignments were straightforward because the industry or sector did not change between the two versions. However, for some direct impacts, the assignment to industries in the updated version of IMPLAN required the direct impacts to be assigned to sectors that differed, by varying degrees, to the sectors used in the older versions of IMPLAN. As a result, the indirect and induced benefits, as calculated by the new version of IMPLAN, could differ from the benefits developed using the old version of the model.

In addition, the economic multipliers used to generate total economic benefits have been decreasing over time, due in part to increased imports. The total economic benefit of an action is a function of the direct benefit and the total effect multiplier. Due to an increase in the importation of goods and services into the U.S., the multiplier effect may have decreased since the conduct of the original analyses. When domestic income rises, consumers typically purchase more goods and services, some of which are imports. The purchase of imports lowers the demand for U.S. goods and services and allows money to “leak out” of the economy, resulting in fewer “rounds” of spending and thereby less indirect and induced benefits.

For instance, in Duval County, the output multiplier for the IMPLAN Sector “Boat Building” decreased from 1.88 in 2001 to 1.52 in 2008, a decrease of 19 percent, due to changes in the structure of the economy. This decrease is primarily due to the change in imports over this time period. On the other hand, in Broward County, for which the original analysis was conducted more recently, the change in the output multiplier for the Boat Building sector increased from 1.65 in 2006 to 1.7 in 2008, an increase of three percent.

### **Economic Benefits Assuming a Cessation of Maintenance**

If maintenance of the Waterways in Brevard County was to cease, it is believed that shoaling would eventually result in an effective vessel draft limitation of three feet. This, in turn, would result in a reduction of marine-related business generated by vessels drafting in excess of three feet.

### **Expected Marine-Related Business Volume**

The original analysis estimated total marine-related business volume assuming three-foot draft restrictions (as calculated from the survey-adjusted database of marine-related businesses) at \$154.6 million. For this analysis, total business volume assuming three-foot draft restrictions was updated to current values by applying the percent of business sales, by business type, that are expected to be retained under the three-foot draft scenario (as obtained from the original analysis) to the 2009 updated current total business volume as presented in Table H-3. The resulting updated total business volume, by business type, was distributed to individual business activities using the distribution established in the original analysis.

Table H-9 presents the total 2009 marine-related business volume for each business type, the percent of existing business that would be retained if vessel drafts were limited to three feet MLW on the Waterways (as presented in the original analysis), and the resulting total business volume that would be retained with three feet of vessel draft, distributed by business activity.

As can be seen from Table H-9, 27.5 percent of all business activity would be retained by marine-related businesses if vessel drafts were limited to three feet MLW. Total marine-related business revenue is expected to be \$105 million if vessel drafts were reduced to three feet MLW, a reduction of \$276.7 million from the \$381.7 million in current business activity.

**Table H-9. Total Marine-Related Business Revenue by Business Type, Distributed by Business Activity, Assuming Three-Foot Vessel Draft Restrictions on the Waterways**

Business Type	Total Marine										
	Total Existing Marine Business Volume	Percent of Business to Remain	Business Volume With 3' Drafts	Construction Volume	Transportation Volume	Retail Trade Volume	Used Boat Sales Volume	Manufacturing Volume	Wholesale Trade Volume	Finance Volume	Service Volume
Boat Dealers	\$9,101,524	86.40%	\$7,863,960	\$0	\$0	\$6,034,525	\$58,524	\$0	\$354,181	\$1,416,727	\$0
Yacht Brokers	\$5,787,204	29.29%	\$1,694,824	\$0	\$0	\$0	\$1,694,825	\$0	\$0	\$0	\$0
Marinas	\$24,524,149	50.10%	\$12,286,454	\$0	\$0	\$7,425,423	\$35,685	\$0	\$654,960	\$0	\$4,170,392
Boat Yards	\$2,806,420	0.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Canvas Products/Upholstery	\$4,110,363	83.21%	\$3,420,279	\$0	\$0	\$1,905,408	\$0	\$1,461,484	\$0	\$0	\$53,387
Boat Repairs	\$5,913,874	69.80%	\$4,128,042	\$101,434	\$0	\$37,158	\$0	\$1,077,804	\$0	\$0	\$2,911,647
Outboard Repairs	\$15,364,326	53.48%	\$8,216,485	\$55,139	\$27,570	\$445,658	\$0	\$587,245	\$150,818	\$0	\$6,950,058
Marine Equipment/Electronics	\$5,818,642	84.72%	\$4,929,796	\$0	\$0	\$2,301,375	\$0	\$210,152	\$1,760,743	\$0	\$657,527
Marine Construction	\$14,633,134	86.72%	\$12,689,666	\$12,129,239	\$0	\$0	\$0	\$0	\$0	\$0	\$560,427
Tackle/Dive Equipment	\$10,261,317	71.78%	\$7,365,597	\$0	\$0	\$7,242,082	\$0	\$0	\$0	\$0	\$123,514
Marine/Sporting Goods Retail	\$19,574,068	44.33%	\$8,676,769	\$0	\$0	\$6,575,364	\$231,043	\$170,823	\$593,314	\$80,624	\$1,025,599
Boat Manufacturer	\$204,369,446	0.50%	\$1,012,213	\$0	\$0	\$0	\$16,876	\$877,205	\$33,752	\$33,752	\$16,876
Equipment Manufacturer	\$18,479,726	58.39%	\$10,790,958	\$0	\$0	\$33,752	\$0	\$7,422,189	\$2,811,967	\$0	\$289,712
Engineering/Surveyors	\$1,358,208	90.79%	\$1,233,116	\$0	\$0	\$267,090	\$0	\$0	\$0	\$0	\$664,120
Government	\$2,776,062	100.00%	\$2,776,062	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,082,047
Insurance	\$494,534	92.92%	\$459,541	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$32,786
Business/Personal Services	\$540,189	55.00%	\$297,104	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$297,104
Storage	\$49,787	100.00%	\$49,787	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$49,787
Boating Services	\$3,581,095	73.68%	\$2,638,647	\$12,839	\$798,040	\$0	\$0	\$0	\$0	\$0	\$1,827,769
Auto/Cycle Dealers	\$2,963,505	100.00%	\$2,963,505	\$0	\$0	\$2,222,629	\$740,877	\$0	\$0	\$0	\$0
Auto Repair	\$35,620	53.00%	\$18,879	\$0	\$0	\$943	\$0	\$378	\$0	\$0	\$17,557
Camp/Resort/Lodging	\$609,182	100.00%	\$609,182	\$0	\$0	\$57,872	\$0	\$3,046	\$0	\$0	\$17,557
Restaurant/Seafood Market	\$21,407,415	25.36%	\$5,429,529	\$0	\$0	\$1,076,156	\$0	\$0	\$3,348,819	\$0	\$548,264
Miscellaneous Retail/Other	\$2,638,224	54.74%	\$2,140,793	\$0	\$0	\$2,140,794	\$0	\$0	\$0	\$0	\$1,004,559
Charter Boats/Rentals	\$4,502,532	72.96%	\$3,285,153	\$0	\$1,148,938	\$79,618	\$0	\$0	\$0	\$0	\$0
<b>Total</b>	<b>\$381,700,545</b>	<b>27.50%</b>	<b>\$104,976,342</b>	<b>\$12,298,651</b>	<b>\$2,702,315</b>	<b>\$37,812,095</b>	<b>\$2,777,831</b>	<b>\$12,379,322</b>	<b>\$9,708,555</b>	<b>\$1,667,859</b>	<b>\$25,629,733</b>

### Economic Benefits Generated by Marine-Related Businesses

Assuming vessel draft restrictions of three feet MLW on the Waterways, the \$105 million of marine-related business revenue in Brevard County would be expected to generate total benefits of \$144.6 million in business volume (sales), \$35.8 million in personal income (wages), and 1,064 jobs (Table H-10). State and local tax revenues are estimated at \$6.1 million. The \$144.6 million in business volume expected to be generated by marine-related business includes a total direct benefit of \$109.3 million and combined indirect and induced benefits of \$35.4 million. The \$35.8 million in personal income includes a direct benefit of \$24.5 million and combined indirect and induced benefits of \$11.3 million. The 1,064 jobs generated by marine-related businesses include 754 direct jobs, 135 indirect jobs, and 175 induced jobs. State and local tax revenues are estimated to be distributed as \$4.0 million generated by direct activities, \$0.8 million generated by indirect activities, and \$1.3 million generated by induced activities.

Comparing current economic benefits to economic benefits expected to occur if vessel drafts were restricted to three feet MLW indicates that the county would realize a total decrease in business volume of \$397.2 million, a decrease in personal income of \$78.2 million, a decrease of 2,388 jobs, and a decrease of \$11.3 million in tax revenues.

**Table H-10. Summary of Economic Benefits of Marine-Related Businesses in Brevard County, Assuming Vessel Draft Restrictions of Three Feet**

Business Activity	Business Volume (Sales) (Millions of Dollars)				Personal Income (Wages) (Millions of Dollars)				Employment (Jobs)			
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total
Construction	12.75	3.62	3.69	20.06	4.37	1.37	1.14	6.87	95	29	34	158
Manufacturing	12.71	3.01	2.17	17.89	2.50	0.92	0.67	4.09	67	22	20	108
Transportation	2.79	0.34	1.07	4.19	1.52	0.14	0.33	1.99	25	4	10	38
Wholesale Trade	10.20	0.56	0.84	11.60	1.14	0.18	0.26	1.58	41	5	8	53
Retail Trade	42.66	2.83	4.45	49.94	6.11	0.88	1.38	8.37	265	25	41	330
Finance	1.72	0.50	0.51	2.72	0.64	0.16	0.16	0.96	13	4	5	22
Services	26.45	5.42	6.37	38.23	8.23	1.74	1.97	11.95	248	48	58	354
<b>Total</b>	<b>109.28</b>	<b>16.26</b>	<b>19.10</b>	<b>144.64</b>	<b>24.51</b>	<b>5.39</b>	<b>5.92</b>	<b>35.81</b>	<b>754</b>	<b>135</b>	<b>175</b>	<b>1,064</b>

### Expected Purchases of Non-Marine-Related Items

Vessel draft restrictions of three feet MLW will impact the sale of non-marine-related items to recreational boaters and fishermen. The extent of this impact was estimated based on the survey of registered boat owners in Brevard County and the distribution of registered vessels



by size. The current sales of non-marine-related items to recreational boaters were estimated at \$30.9 million (\$20.6 million for gasoline sales and \$10.3 million for food, drink, and ice). Vessel draft restrictions of three feet will prevent larger vessels from utilizing the Waterways. As a result, retail sales of non-marine-related items from businesses not located on the Waterways are expected to drop to \$25.7 million (including \$19.3 million for gasoline sales and \$6.4 million in food, drink, and ice sales), a reduction of \$5.2 million from existing conditions.

### **Economic Benefits Generated by Purchases of Non-Marine-Related Items**

As illustrated in Table H-11, the expected \$25.7 million in retail sales of gas, food, drinks, and ice to recreational boaters from businesses not located on the Waterways would generate benefits of \$32.2 million in business volume, \$7.2 million in personal income, 170 jobs, and \$3.6 million in tax revenues. Compared to existing conditions, this is a reduction of about \$6.2 million in business volume, \$1.1 million in personal income, 30 jobs, and \$0.7 million in tax revenues. Tax revenues generated under this scenario include \$2.0 million in fuel taxes distributed as \$1.1 million in state levied taxes and \$0.9 million in locally levied taxes.

**Table H-11. Summary of Economic Benefits of Non-Marine-Related Items Purchased by Boaters in Brevard County, Assuming Vessel Draft Restrictions of Three Feet**

Activity	Economic Impacts			
	Direct	Indirect	Induced	Total
Business Volume (Millions)	\$25.49	\$2.90	\$3.82	<b>\$32.21</b>
Personal Income (Millions)	\$5.02	\$0.95	\$1.18	<b>\$7.16</b>
Employment	110	25	35	<b>170</b>
Tax Revenues (Millions)	\$3.22	\$0.14	\$0.26	<b>\$3.63</b>

### **Combined Economic Benefits**

The total combined economic benefits expected to be generated with three-foot vessel draft restrictions on the Waterways by marine-related businesses and from the purchases of non-marine-related items from businesses not located on the Waterways are presented in Table H-12. The combined benefits include \$176.9 million in business volume, \$42.3 million in personal income, 1,234 jobs, and \$9.75 million in tax revenues. The \$9.75 million in state and local tax revenues includes \$2.0 million in fuel taxes generated by gasoline sales to boaters. These benefits are a reduction of over \$403.4 million in business volume, \$79.3 million in personal

income, 2,418 jobs, and \$11.8 million in tax revenues compared to existing conditions on the Waterways and account for 55 to 70 percent of the existing benefits of the Waterways.

**Table H-12. Summary of Total Economic Benefits of the Waterways in Brevard County, Assuming Vessel Draft Restrictions of Three Feet**

Activity	Total Economic Impacts			
	Direct	Indirect	Induced	Total
Business Volume (Millions)	\$134.77	\$19.16	\$22.92	<b>\$176.85</b>
Personal Income (Millions)	\$29.53	\$6.34	\$7.10	<b>\$42.97</b>
Employment	864	161	210	<b>1,234</b>
Tax Revenues (Millions)	\$7.26	\$0.91	\$1.58	<b>\$9.75</b>

### **Economic Benefits Assuming a Higher State of Maintenance**

The full implementation of the District’s Dredge Material Management Plan would result in a higher state of maintenance of the Waterways and an increase in vessel draft restrictions in Brevard County to 12 feet MLW. This increase in draft allowance would permit deeper draft vessels to fully utilize the Waterways in Brevard County. This, in turn, would increase the business volume of marine-related businesses in the county. The sale of non-marine-related items by businesses not located on the Waterways would not experience a significant impact under this maintenance scenario because deepening the Waterways would result in increased use by deeper draft vessels (drafting between 6.5 to 12 feet) that are typically stored in the water and tend not to be trailered. Owners of those vessels typically do not purchase many items from businesses not located on the Waterways, but rather purchase almost all of their supplies from businesses with waterway access.

### **Expected Marine-Related Business Volume**

The original analysis estimated total marine-related business volume assuming 12-foot draft restrictions (as calculated from the survey-adjusted database of marine-related businesses) at \$588.5 million. Total business volume assuming 12-foot draft restrictions was updated to current values by applying the expected percent increase in business sales, by business type, under the 12-foot draft scenario (as obtained from the original analysis) to the updated current total business volume as presented in Table H-3. The resulting updated total business volume,

by business type, was distributed to individual business activities using the distribution established in the original analysis.

Table H-13 presents the total 2009 marine-related business volume for each business type, the expected percent increase in existing business that would result if vessel drafts were increased to 12 feet MLW on the Waterways (as presented in the original analysis), the resulting total business volume assuming 12-foot vessel drafts, and the business volume assuming 12-foot vessel drafts distributed by business activity.

As can be seen from the table, business activity would be expected to increase by four percent if vessel drafts were increased to 12 feet MLW. Total marine-related business revenue is expected to be \$397 million, an increase of \$15.3 million from the \$381.7 million in existing business activity.

#### **Economic Benefits Generated by Marine-Related Business**

If maintenance of the Waterways was increased to reflect the full implementation of the District's Dredge Material Management Plan, resulting in increased vessel drafts to 12 feet MLW, marine-related businesses in the county would be expected to generate a total of \$563.2 million in business volume, \$118.9 million in personal income, and 3,612 jobs (Table H-14). State and local tax revenues were estimated at \$18.5 million. The sales expected to be generated by marine-related businesses under this scenario include a direct benefit of nearly \$410.9 million and combined indirect and induced benefits of \$152.3 million. The total personal income generated under this maintenance scenario includes a direct benefit of nearly \$70.9 million and combined indirect and induced benefits of \$48.1 million. Total employment benefits include 2,304 direct jobs, 730 indirect jobs, and 579 induced jobs. The \$18.5 million in state and local tax revenues includes \$8.9 million generated by direct benefits, \$5.2 million generated by indirect benefits, and \$4.4 million generated by induced benefits.

**Table H-13. Total Marine-Related Business Revenue by Business Type, Distributed by Business Activity, Assuming 12-Foot Vessel Draft Restrictions on the Waterways**

Business Type	Total Existing Marine Business Volume		Percent Increase in Business	Total Marine Business Volume With 10' Drafts		Construction Volume	Transportation Volume	Retail Trade Volume	Used Boat Sales Volume	Manufacturing Volume	Wholesale Trade Volume	Finance Volume	Service Volume
	Volume	Volume		Volume	Volume								
Boat Dealers	\$9,101,524	\$9,101,524	0.00%	\$0	\$0	\$0	\$6,975,083	\$0	\$63,832	\$0	\$412,521	\$1,650,087	\$0
Yacht Brokers	\$5,787,204	\$5,952,553	2.86%	\$0	\$0	\$0	\$0	\$0	\$5,952,553	\$0	\$0	\$0	\$0
Marinas	\$24,524,149	\$27,840,681	13.52%	\$0	\$0	\$0	\$13,510,948	\$0	\$201,299	\$0	\$843,575	\$0	\$13,284,855
Boat Yards	\$2,806,420	\$3,648,346	30.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$1,824,173	\$0	\$0	\$1,824,173
Canvas Products/Upholstery	\$4,110,363	\$4,375,722	6.48%	\$0	\$0	\$0	\$2,480,555	\$0	\$0	\$1,808,834	\$0	\$0	\$0
Boat Repairs	\$5,913,874	\$6,217,050	5.13%	\$133,409	\$0	\$0	\$85,514	\$0	\$0	\$1,612,161	\$0	\$0	\$4,385,963
Outboard Repairs	\$15,364,326	\$18,710,665	21.78%	\$114,454	\$57,223	\$0	\$1,020,198	\$0	\$0	\$1,259,005	\$303,304	\$0	\$15,956,466
Marine Equipment/Electronics	\$5,818,642	\$6,176,301	6.15%	\$0	\$0	\$0	\$2,792,640	\$0	\$0	\$250,915	\$2,250,126	\$0	\$882,618
Marine Construction	\$14,633,134	\$14,633,134	0.00%	\$13,951,799	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$681,333
Tackle/Dive Equipment	\$10,261,317	\$10,393,845	1.29%	\$0	\$0	\$0	\$10,232,869	\$0	\$0	\$0	\$0	\$0	\$160,960
Marine/Sporting Goods Retail	\$19,574,068	\$22,244,819	13.64%	\$0	\$0	\$0	\$16,807,933	\$0	\$373,497	\$615,988	\$1,495,172	\$534,500	\$2,417,726
Boat Manufacturer	\$204,369,446	\$204,369,446	0.00%	\$0	\$71,686	\$0	\$0	\$0	\$55,843	\$204,082,701	\$71,686	\$0	\$55,843
Equipment Manufacturer	\$18,479,726	\$21,749,060	17.69%	\$0	\$0	\$0	\$565,094	\$0	\$0	\$15,122,015	\$4,777,687	\$0	\$1,284,266
Engineering/Surveyors	\$1,358,208	\$1,399,905	3.07%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Government	\$2,776,062	\$2,776,062	0.00%	\$0	\$694,016	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Insurance	\$494,534	\$529,528	7.08%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$152,446	\$0
Business/Personal Services	\$540,189	\$543,970	0.70%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Storage	\$49,787	\$53,936	8.33%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$543,969
Boating Services	\$3,581,095	\$3,932,595	9.82%	\$27,255	\$973,687	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,931,653
Auto/Cycle Dealers	\$2,963,505	\$2,963,505	0.00%	\$0	\$0	\$0	\$2,222,629	\$0	\$740,875	\$0	\$0	\$0	\$0
Auto Repair	\$35,620	\$43,456	22.00%	\$0	\$0	\$0	\$2,174	\$0	\$0	\$868	\$0	\$0	\$0
Camp/Resort/Lodging	\$609,182	\$639,641	5.00%	\$0	\$0	\$0	\$60,680	\$0	\$0	\$3,284	\$0	\$0	\$40,414
Restaurant/Seafood Market	\$21,407,415	\$21,407,415	0.00%	\$0	\$0	\$0	\$3,531,913	\$0	\$0	\$0	\$13,082,137	\$0	\$575,677
Miscellaneous Retail/Other	\$2,638,224	\$2,656,440	0.69%	\$0	\$0	\$0	\$2,656,441	\$0	\$0	\$0	\$0	\$0	\$0
Charter Boats/Rentals	\$4,502,532	\$4,674,835	3.83%	\$0	\$1,458,550	\$0	\$113,884	\$0	\$0	\$0	\$0	\$0	\$3,102,406
<b>Total</b>	<b>\$381,700,545</b>	<b>\$397,034,435</b>	<b>4.02%</b>	<b>\$14,226,917</b>	<b>\$3,255,162</b>	<b>\$63,058,555</b>	<b>\$7,367,899</b>	<b>\$227,203,091</b>	<b>\$2,408,719</b>	<b>\$23,236,208</b>	<b>\$56,277,855</b>		

**Table H-14. Summary of Economic Benefits of Marine-Related Businesses in Brevard County, Assuming Vessel Draft Restrictions of 12 Feet**

Business Activity	Business Volume (Sales) (Millions of Dollars)				Personal Income (Wages) (Millions of Dollars)				Employment (Jobs)			
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total
Construction	14.75	4.19	4.25	23.19	5.03	1.58	1.32	7.93	110	33	39	182
Manufacturing	233.77	64.77	34.35	332.89	33.54	20.49	10.64	64.68	1,029	520	314	1,864
Transportation	3.36	0.43	1.26	5.04	1.77	0.18	0.39	2.33	29	5	12	45
Wholesale Trade	24.42	1.38	2.06	27.86	2.79	0.44	0.64	3.87	102	12	19	133
Retail Trade	74.02	5.04	7.75	86.80	10.59	1.57	2.40	14.56	465	44	71	579
Finance	2.48	0.72	0.73	3.93	0.92	0.23	0.23	1.38	18	6	7	31
Services	58.10	12.48	12.91	83.49	16.25	3.98	4.00	24.24	550	110	118	778
<b>Total</b>	<b>410.90</b>	<b>89.00</b>	<b>63.30</b>	<b>563.21</b>	<b>70.91</b>	<b>28.46</b>	<b>19.61</b>	<b>118.98</b>	<b>2,304</b>	<b>730</b>	<b>579</b>	<b>3,612</b>

Comparing current total economic benefits to expected benefits assuming a higher state of maintenance reveals that the county would realize an increase of \$21.4 million in business volume, \$4.95 million in personal income, 161 jobs, and \$1.0 million in tax revenues.

**Economic Benefits Generated by Purchases of Non-Marine-Related Items**

This maintenance scenario should not significantly impact the sale of non-marine-related items by businesses that are not located on the Waterways. These benefits should be equivalent to those under current Waterways conditions. Under this assumption, retail sales of non-marine-related items should generate total economic activity equal to \$38.4 million in business volume, \$8.2 million in personal income, and 201 jobs (Table H- 15). The \$4.4 million in tax revenues generated under this scenario includes \$2.2 million in fuel taxes distributed as \$1.2 million in state levied taxes and \$1.0 million in locally levied taxes.

**Table H-15. Summary of Economic Benefits of Non-Marine-Related Items Purchased by Boaters in Brevard County, Assuming Vessel Draft Restrictions of 12 Feet**

Activity	Economic Impacts			
	Direct	Indirect	Induced	Total
Business Volume (Millions)	\$30.69	\$3.32	\$4.39	<b>\$38.40</b>
Personal Income (Millions)	\$5.78	\$1.09	\$1.36	<b>\$8.23</b>
Employment	131	29	40	<b>201</b>
Tax Revenues (Millions)	\$3.59	\$0.16	\$0.61	<b>\$4.36</b>

### Combined Economic Benefits

The combined total benefits of marine-related businesses and purchases of non-marine-related items from businesses not located on the Waterways under this scenario are presented in Table H-16. Combined benefits include \$601.6 million in business volume, \$127.2 million in personal income, 3,813 jobs, and \$22.5 million in tax revenues. State and local tax revenues include \$2.2 million in fuel taxes generated by gasoline sales to boaters. These benefits are an increase of \$21.4 million in business volume, \$5.0 million in personal income, 161 jobs, and \$1.0 million in tax revenues compared to current existing conditions on the Waterways.

**Table H-16. Summary of Total Economic Benefits of the Waterways in Brevard County, Assuming Vessel Draft Restrictions of 12 Feet**

Activity	Total Economic Impacts			
	Direct	Indirect	Induced	Total
Business Volume (Millions)	\$441.59	\$92.33	\$67.69	<b>\$601.61</b>
Personal Income (Millions)	\$76.69	\$29.55	\$20.97	<b>\$127.21</b>
Employment	2,435	759	619	<b>3,813</b>
Tax Revenues (Millions)	\$12.53	\$5.31	\$4.66	<b>\$22.50</b>

The combined business volume generated from the Waterways assuming 12-foot vessel draft restrictions includes a direct benefit of \$441.6 million, an indirect benefit of \$92.3 million, and an induced benefit of \$67.7 million. Combined personal income generated under this scenario consists of \$76.7 million in direct benefits, \$29.6 million in indirect benefits, and \$21.0 million in induced benefits. Combined employment includes 2,435 direct jobs, 759 indirect jobs, and 619 induced jobs. State and local tax revenues include \$12.5 million generated by direct activities, \$5.3 million generated by indirect activities, and \$4.7 million generated by induced activities. The \$12.5 million in tax revenues generated by direct activity includes \$2.2 million in fuel taxes.

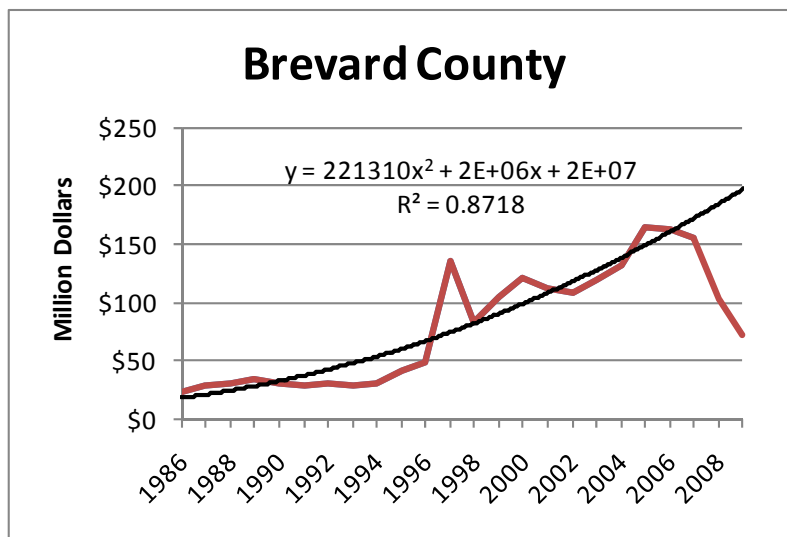
### The Impact of the 2007-2009 U.S. Economic Recession

In December 2007, the U.S. economy entered a recession that would last 18 months, until June 2009, the longest recession since World War II. The impact of the recession was evident in the FDOR recorded gross sales throughout Florida and in the marine industries as measured by Kind Code 28. The downturn in the economy, as evidenced in the decrease in total gross sales in

the State in general and specifically in the decrease in gross sales in Kind Code 28, indicated a need to estimate the impact of the recession on marine-related businesses. To estimate the impact of the recession, the trend in gross sales of Kind Code 28 established over the 20-year period prior to the onset of the recession was used to estimate the theoretical gross sales in Brevard County had the recession not occurred and gross sales had continued to increase at the rates experienced over the previous 20-year period. These gross sales, assuming the recession did not occur, were used to estimate the non-recession change in direct sales in the county and the total economic benefits of the Waterways assuming no recession. These values were compared to the estimated total economic benefits based on the change in actual reported gross sales for Kind Code 28 in 2009 to estimate the total impact of the recession on marine-related business in the county.

**Estimating Gross Sales Assuming That the Recession Did Not Occur**

Figure H-1 graphically illustrates the gross sales for Kind Code 28 for Brevard County from 1986 through 2009. Gross sales peaked in 2005 at \$164.1 million, declined slightly to \$163 million in 2006 and declined significantly to \$72.7 million in 2009.



**Figure H-1. Brevard County, FDOR Reported Gross Sales of Kind Code 28, 1986 Through 2009**

The black line on the graph is the trend line exhibited by the gross sales for Kind Code 28 from 1986 to 2007. The trend line is based on the following polynomial equation:

$$Y = 221310x^2 + 2E+6x + 2E+07$$

Where:

Y = expected value

x = known value (year, expressed as year for which expected value is being estimated minus the base year of 1986)

E+ = times 10 raised to the power following the “+” sign

With an R<sup>2</sup> value of 0.8718.

The R<sup>2</sup> value explains how well the regression line, or equation, approximates the known data points. The closer the R<sup>2</sup> value is to 1, the higher the correlation of the trend line is to the data.

The polynomial equation presented above was used to estimate the gross retail sales for Kind Code 28 for the county for 2009 assuming that the recession did not occur. Excluding the impact of the recession, gross sales in 2009 should have trended at \$195.5 million, 169 percent greater than actual reported sales. In other words, the recession reduced marine-related gross sales, as reported to FDOR, by \$122.8 million in 2009.

The gross sales reported in Kind Code 28 in the year that the original analysis was conducted (2002) was compared to the estimated theoretical gross sales in the county if the recession had not occurred to calculate the percent change between the two values. This percent change was applied to the direct marine-related business activity (as presented in the original analysis) to estimate the direct current impact of marine-related businesses if the recession had not occurred. As illustrated in Table H-17, if the recession had not occurred, total direct marine-related business sales would have increased from \$565.8 million in 2002 to \$1.03 billion in 2009. The updated Table H-17 data were combined with the distribution of marine revenues by type (as obtained from the original analysis and presented in Table H-4 in this report) to develop updated estimates of total non-recession marine-related business revenues (see Table H-18). These updated values were input into the IMPLAN regional economic impact model to estimate the total (direct, indirect, and induced) benefits of the District’s Waterways in Brevard County measured as increases in business volume, personal income, employment, and tax revenues.



**Table H-17. Total Marine-Related Business Volume in Brevard County,  
Aggregated by Business Type, 2002 and 2009,  
Assuming the 2007-2009 U.S. Economic Recession Did Not Occur**

<b>Business Type</b>	<b>2002 Total Marine Business Volume</b>	<b>2009 Total Marine Business Volume</b>
Boat Dealers	\$13,491,330	\$24,482,928
Yacht Brokers	\$8,578,462	\$15,567,470
Marinas	\$36,352,527	\$65,969,501
Boat Yards	\$4,160,000	\$7,549,217
Canvas Products/Upholstery	\$6,092,855	\$11,056,800
Boat Repairs	\$8,766,227	\$15,908,210
Outboard Repairs	\$22,774,779	\$41,329,749
Marine Equipment/Electronics	\$8,625,063	\$15,652,037
Marine Construction	\$21,690,921	\$39,362,855
Tackle/Dive Equipment	\$15,210,509	\$27,602,749
Marine/Sporting Goods Retail	\$29,014,944	\$52,653,874
Boat Manufacturer	\$302,940,000	\$549,749,973
Equipment Manufacturer	\$27,392,784	\$49,710,115
Engineering/Surveyors	\$2,013,293	\$3,653,554
Government	\$4,115,000	\$7,467,555
Insurance	\$733,056	\$1,330,288
Business/Personal Services	\$800,730	\$1,453,097
Storage	\$73,800	\$133,926
Boating Services	\$5,308,312	\$9,633,077
Auto/Cycle Dealers	\$4,392,850	\$7,971,774
Auto Repair	\$52,800	\$95,817
Camp/Resort/Lodging	\$903,000	\$1,638,688
Restaurant/Seafood Market	\$31,732,543	\$57,585,544
Miscellaneous Retail/Other	\$3,910,680	\$7,096,772
Charter Boats/Rentals	\$6,674,173	\$12,111,726
<b>Total</b>	<b>\$565,800,638</b>	<b>\$1,026,767,298</b>

**Table H-18. Total Marine-Related Business Revenue by Business Type, Distributed by Business Activity, Assuming the 2007-2009 U.S. Economic Recession Did Not Occur**

Business Type	Total Marine Business Volume										Service Volume
	Construction Volume	Transportation Volume	Retail Trade Volume	Used Boat Sales Volume	Manufacturing Volume	Wholesale Trade Volume	Finance Volume				
Boat Dealers	\$24,482,928	\$0	\$18,762,843	\$171,707	\$0	\$1,109,673	\$4,438,702	\$0	\$0	\$0	\$0
Yacht Brokers	\$15,567,470	\$0	\$0	\$15,567,470	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Marinas	\$65,969,501	\$0	\$33,305,160	\$451,803	\$0	\$2,161,016	\$0	\$0	\$0	\$0	\$30,051,518
Boat Yards	\$7,549,217	\$0	\$0	\$0	\$3,774,609	\$0	\$0	\$0	\$0	\$0	\$3,774,609
Canvas Products/Upholstery	\$11,056,800	\$0	\$6,248,387	\$0	\$4,606,220	\$0	\$0	\$0	\$0	\$0	\$202,217
Boat Repairs	\$15,908,210	\$345,088	\$204,001	\$0	\$4,125,950	\$0	\$0	\$0	\$0	\$0	\$11,233,165
Outboard Repairs	\$41,329,749	\$258,528	\$2,239,236	\$129,262	\$2,843,841	\$685,108	\$0	\$0	\$0	\$0	\$35,173,767
Marine Equipment/Electronics	\$15,652,037	\$0	\$7,086,586	\$0	\$627,966	\$5,808,678	\$0	\$0	\$0	\$0	\$2,128,799
Marine Construction	\$39,362,855	\$37,530,077	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,832,772
Tackle/Dive Equipment	\$27,602,749	\$0	\$27,182,668	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$420,050
Marine/Sporting Goods Retail	\$52,653,874	\$0	\$40,520,622	\$900,812	\$951,285	\$3,118,660	\$1,294,270	\$5,868,223			
Boat Manufacturer	\$549,749,973	\$0	\$192,835	\$96,416	\$548,978,633	\$192,835	\$192,835	\$96,416			\$96,416
Equipment Manufacturer	\$49,710,115	\$0	\$1,339,500	\$0	\$33,878,419	\$11,880,976	\$0	\$0	\$0	\$0	\$2,611,222
Engineering/Surveyors	\$3,653,554	\$0	\$0	\$0	\$1,639,837	\$0	\$0	\$0	\$0	\$0	\$2,013,717
Government	\$7,467,555	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,600,666
Insurance	\$1,330,288	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$941,315
Business/Personal Services	\$1,453,097	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,453,097
Storage	\$133,926	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$133,926
Boating Services	\$9,633,077	\$69,721	\$2,490,850	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,072,506
Auto/Cycle Dealers	\$7,971,774	\$0	\$5,978,829	\$1,992,941	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Auto Repair	\$95,817	\$0	\$4,791	\$0	\$1,916	\$0	\$0	\$0	\$0	\$0	\$89,110
Camp/Resort/Lodging	\$1,638,688	\$0	\$155,675	\$0	\$8,193	\$0	\$0	\$0	\$0	\$0	\$1,474,819
Restaurant/Seafood Market	\$57,585,544	\$0	\$9,500,781	\$0	\$0	\$35,190,704	\$0	\$0	\$0	\$0	\$12,894,063
Miscellaneous Retail/Other	\$7,096,772	\$0	\$7,096,772	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Charter Boats/Rentals	\$12,111,726	\$0	\$291,643	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,999,873
<b>Total</b>	<b>\$1,026,767,298</b>	<b>\$38,203,415</b>	<b>\$159,917,494</b>	<b>\$19,181,147</b>	<b>\$601,436,870</b>	<b>\$60,147,650</b>	<b>\$6,314,781</b>	<b>\$133,065,850</b>			

If the recession had not occurred, business activity would have been 169 percent greater than estimated for 2009. Total marine-related business revenue, assuming no recession, would have been approximately \$1.03 billion in 2009, an increase of \$645.1 million from the \$381.7 million in current business activity.

### **Economic Benefits Generated by Marine-Related Business**

If the recession had not occurred and spending patterns for marine-related goods and services had continued on the trend established over the previous 20-year period, marine-related businesses in the county would be expected to generate a total of \$1.46 billion in business volume, \$306.7 million in personal income, and 9,284 jobs (Table H-19). State and local tax revenues would have been \$47 million. This is an increase of \$195.7 million in business volume, \$192.7 million in personal income, 5,832 jobs, and \$29.5 million in tax revenues compared to estimated existing conditions. The sales expected to be generated by marine-related businesses under this scenario include a direct benefit of \$1.06 billion and combined indirect and induced benefits of \$394.9 million. The total personal income generated under this maintenance scenario includes a direct benefit of \$182 million and combined indirect and induced benefits of over \$124.7 million. Total employment benefits include 5,892 direct jobs, 1,899 indirect jobs, and 1,492 induced jobs. The \$47 million in state and local tax revenues includes \$22.3 million generated by direct benefits, \$13.5 million generated by indirect benefits, and \$11.2 million generated by induced benefits.

**Table H-19. Summary of Economic Benefits of Marine-Related Businesses in Brevard County, Assuming the 2007-2009 U.S. Economic Recession Did Not Occur**

<b>Business Activity</b>	<b>Business Volume (Sales) (Millions of Dollars)</b>				<b>Personal Income (Wages) (Millions of Dollars)</b>				<b>Employment (Jobs)</b>			
	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Total</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Total</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Total</b>
Construction	39.61	11.25	11.42	62.28	13.53	4.24	3.54	21.31	295	89	105	489
Manufacturing	618.86	171.88	90.70	881.43	88.27	54.40	28.11	170.78	2,720	1,383	829	4,932
Transportation	8.76	1.10	3.30	13.17	4.65	0.45	1.02	6.13	76	12	30	118
Wholesale Trade	63.22	3.58	5.32	72.11	7.23	1.13	1.65	10.01	265	31	49	345
Retail Trade	188.23	12.66	19.59	220.48	26.81	3.94	6.07	36.82	1,169	110	179	1,459
Finance	6.51	1.88	1.93	10.31	2.42	0.60	0.60	3.62	48	16	18	82
Services	137.37	29.41	30.93	197.71	39.09	9.39	9.58	58.07	1,319	258	283	1,860
<b>Total</b>	<b>1,062.55</b>	<b>231.75</b>	<b>163.18</b>	<b>1,457.49</b>	<b>182.01</b>	<b>74.16</b>	<b>50.56</b>	<b>306.74</b>	<b>5,892</b>	<b>1,899</b>	<b>1,492</b>	<b>9,284</b>

### **Purchases of Non-Marine-Related Items**

The survey of registered boat owners conducted as part of this analysis included questions concerning the impact that the recession had on the number of boating trips taken over the previous 12-month period and the amount spent on each boating trip. Review of the responses concerning the amount of money boaters would have spent per boating trip, had the recession not occurred, revealed that the question may not have been answered in a consistent manner. It appears that the question was answered in one of four ways: (1) reporting the additional amount (above the amount actually spent) that would have been spent on the average trip had the recession not occurred (which was the intent of the question); (2) reporting the additional amount (above the amount actually spent) that would have been spent on all trips for the entire previous 12-month period had the recession not occurred; (3) reporting the total amount (including the amount actually spent) that would have been spent on the average trip if the recession had not occurred; (4) reporting the total amount (including the amount actually spent) that would have been spent on all trips for the entire previous 12-month period had the recession not occurred. Because of the inconsistent manner in which the question was answered, the recession-related expenditure data was not used in the analysis. The impact of the recession was based solely on the number of additional trips that would have occurred without the recession.

To ensure adequate response in each boat size classification, the responses from Flagler, Volusia, and Brevard counties were combined when estimating the average impact of the recession on number of trips of each boat size class. The average number of additional trips that boaters would have taken, by boat size, were added to the number of trips per year that were taken, to obtain the total number of trips, per boater, per year had the recession not occurred. The total number of trips per boater was applied to the number of registered pleasure boats in each boat size class in Brevard County that used the Waterways over the past 12 months to estimate the total number of trips on the Waterways per year. The total number of trips on the Waterways per year was applied to the total expenditures per trip for each boat size class. The total expenditures, assuming that the recession had not occurred, of non-marine items at establishments not located on the Waterways include \$31.7 million for gasoline and \$15.1 million for food, drinks, and ice.

### **Economic Benefits Generated by Purchases of Non-Marine-Related Items**

As illustrated in Table H-20, the expected \$46.8 million in retail sales of gas, food, drinks, and ice to recreational boaters from businesses not located on the Waterways would generate benefits of \$58.2 million in business volume, \$12.5 million in personal income, and 305 jobs. State and local tax revenues would have been \$6.2 million, including \$5.5 million generated by direct activities that includes \$3.6 million in fuel taxes. Compared to existing conditions, these benefits would have been an increase of about \$19.8 million in business volume, \$4.3 million in personal income, 104 jobs, and \$1.8 million in tax revenues.

**Table H-20. Summary of Economic Benefits of Non-Marine-Related Items Purchased by Boaters in Brevard County, Assuming the 2007-2009 U.S. Economic Recession Did Not Occur**

<b>Activity</b>	<b>Economic Impacts</b>			
	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Total</b>
Business Volume (Millions)	\$46.48	\$5.07	\$6.68	<b>\$58.23</b>
Personal Income (Millions)	\$8.80	\$1.66	\$2.07	<b>\$12.53</b>
Employment	199	44	61	<b>305</b>
Tax Revenues (Millions)	\$5.49	\$0.25	\$0.46	<b>\$6.20</b>

### **Combined Economic Benefits**

The combined total benefits of marine-related businesses and purchases of non-marine-related items from businesses not located on the Waterways under the “No Recession” scenario are presented in Table H-21. Combined benefits would have included \$1.52 billion in business volume, \$319.3 million in personal income, 9,588 jobs, and \$53.2 million in state and local tax revenues. State and local tax revenues would have included \$3.6 million in fuel taxes generated by the sale of gasoline. This is a difference of \$935.5 million in business volume, \$197 million in personal income, 5,936 jobs, and \$31.4 million in tax revenues compared to current existing conditions on the Waterways.

**Table H-21. Summary of Total Economic Benefits of the Waterways in Brevard County, Assuming the 2007-2009 U.S. Economic Recession Did Not Occur**

<b>Activity</b>	<b>Total Economic Impacts</b>			
	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Total</b>
Business Volume (Millions)	\$1,109.03	\$236.82	\$169.86	<b>\$1,515.72</b>
Personal Income (Millions)	\$190.81	\$75.83	\$52.63	<b>\$319.27</b>
Employment	6,091	1,944	1,554	<b>9,588</b>
Tax Revenues (Millions)	\$27.79	\$13.71	\$11.69	<b>\$53.19</b>