

February 2003

Executive Summary

AN ECONOMIC ANALYSIS OF THE DISTRICT'S WATERWAYS IN FLAGLER COUNTY

Submitted to



Florida Inland Navigation District
Jupiter, Florida



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GEC Project No. 22805105C

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Jupiter, Florida

Submitted by

G.E.C., Inc.
Baton Rouge, Louisiana

Engineering Economics Transportation Technology Social Analysis Environmental Planning

P.O. Box 84010 Baton Rouge, Louisiana 70884-4010 (225) 612-3000 Fax (225) 612-3016
9357 Interline Avenue Baton Rouge, Louisiana 70809-1910

TABLE OF CONTENTS

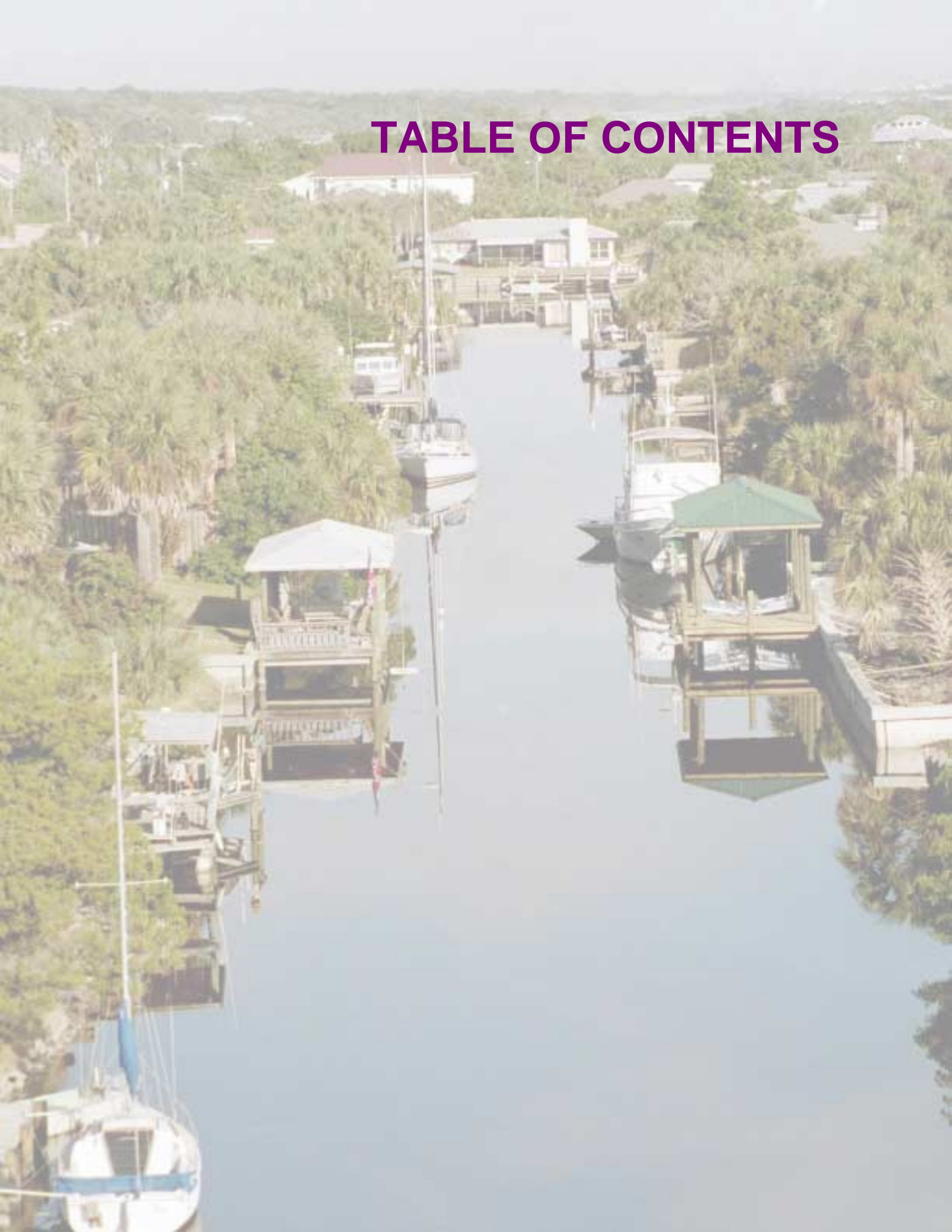


TABLE OF CONTENTS

| Section | Page |
|---|-------------|
| Introduction and Summary of Findings | 1 |
| Background | 2 |
| The Intracoastal Waterway in Flagler County..... | 3 |
| The Economic Impact of Marine Related Business in Flagler County | 3 |
| Identifying and Quantifying Current Marine Related Business Volume | 4 |
| Characteristics of Marine Related Business..... | 4 |
| Current Purchases of Non-Marine Related Items..... | 5 |
| Characteristics of Recreational Boaters | 7 |
| Current Economic Impact of Marine Related Activities | 8 |
| Economic Impact of a Cessation of Waterways Maintenance | 9 |
| Economic Impact of an Increase in Waterways Maintenance..... | 9 |
| The Impact of the Waterways on Property Values in Flagler County | 10 |
| Current Impact of the Waterways on Property Values..... | 10 |
| Residential Property | 10 |
| Other Residential Property..... | 12 |
| Commercial Property | 13 |
| Total Current Impacts to Property Values | 13 |
| Changes in Property Values Due to a Cessation of Waterways Maintenance | 14 |
| Residential Property | 14 |
| Other Residential Property..... | 15 |
| Commercial Property | 15 |
| Total Impact to Property Values of a Cessation of Waterways Maintenance..... | 16 |
| Changes in Property Values Due to Increased Waterways Maintenance..... | 16 |
| Residential Property | 16 |
| Commercial Property | 17 |
| Total Impact to Property Values of Increased Waterways Maintenance..... | 17 |

TABLE OF CONTENTS (cont'd)

| Section | Page |
|---|-------------|
| Summary | 18 |
| Current Impacts | 18 |
| Impacts of a Cessation of Waterways Maintenance | 18 |
| Impacts of Increased Waterways Maintenance | 18 |

LIST OF TABLES

| Table Number | | Page |
|---------------------|--|-------------|
| 1 | Summary of Total Economic Impacts Attributable to the Waterways..... | 9 |
| 2 | Summary of Total Economic Impacts Attributable to the Waterways Assuming Vessel Draft Restrictions of Three Feet..... | 9 |
| 3 | Summary of Total Economic Impacts Attributable to the Waterways Assuming Vessel Draft Restrictions of 12 Feet | 10 |

LIST OF FIGURES

| Figure Number | | Page |
|----------------------|--|-------------|
| 1 | Location of Marine Related Businesses in Flagler County, by Business Type..... | 6 |

EXECUTIVE SUMMARY



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INTRODUCTION AND SUMMARY OF FINDINGS

The purpose of this report is twofold: (1) to identify and quantify the total economic impact of the waterways operated, maintained, or within the boundaries of the Florida Inland Navigation District (the District) in Flagler County; and (2) to estimate the influence of the waterways on property values in the county. For the purpose of this report, the District's waterways include the Intracoastal Waterway and all waterways that are physically connected to them. The expected impacts to the Flagler County economy and to property values for three waterway conditions were evaluated: (1) existing conditions; (2) cessation of maintenance of the waterways (resulting in vessel draft restrictions of three feet MLW on the waterways); and (3) increased maintenance of the waterways (resulting in vessel draft restrictions of 12 feet MLW). This analysis also addresses the influence that the waterways have had on the construction of larger, more expensive homes on the waterways.

The results of the analysis are summarized below:

- Impacts of the waterways under existing conditions:
 - \$133 million in business volume
 - \$46 million in personal income
 - 1,116 jobs
 - \$163 to \$185 million in property values
- Expected impacts of the waterways assuming a cessation of waterways maintenance:
 - Decrease of \$118 million in business volume
 - Decrease of \$42 million in personal income
 - Decrease of 991 jobs
 - Decrease of \$82 million in property values
- Expected impacts of the waterways assuming an increase in waterways maintenance:
 - Increase of \$6 million in business volume
 - Increase of \$2 million in personal income
 - Increase of 55 jobs
 - Increase of less than \$500,000 in property values

Background

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. For example, studies have shown that maintenance of the Atlantic Intracoastal Waterway Project in Florida requires expenditures of \$7.8 million each year while federal funding remains at \$3.2 million per year. The District has made a decision not to allow the waterways to deteriorate by deferring maintenance projects and has elected to fund this budgetary shortfall. This investment by the District may total up to \$230 million over the 50-year planning period of the waterway. With such a large potential investment, the District needs to educate the general public as well as federal, state, and local public officials of the economic importance of expending these monies to meet the needs of the waterways.



Maintaining the waterways within the District's 11-county area to allow the continuation of recreational boating activities will cost an estimated \$7.8 million annually



The waterways in Flagler County primarily serve the over 3,700 recreational boaters in the county.

between Trenton, New Jersey, and Miami, Florida. The Florida segment, which was completed in 1965, is 370 miles long and follows coastal rivers and lagoons past numerous tourism-oriented communities.

The waterway from the Florida/Georgia border to Miami was constructed and is maintained by the Jacksonville District Corps of Engineers in cooperation with the Florida Inland Navigation District, the local sponsor for the

waterway. Continued maintenance dredging is required because the channel is subject to sedimentation from upland erosion and coastal sediment migration through ocean inlets. A Long

Range Dredged Material Management Plan for meeting dredged material management requirements over the next 50 years has been developed and is presently being implemented.

The Intracoastal Waterway in Flagler County

The Intracoastal Waterway extends about 19 miles through Flagler County. The waterway enters the county near Mile 796, just north of the Marineland Oceanarium. From Marineland, the waterway extends about 15 miles along a land-cut section of the waterway. The first several miles of the land-cut section is fairly desolate, with forests and marshland lining its banks. About five miles into the county is the community of Palm Coast, a planned residential community with an extensive network of canals that allow residents access to the waterway. Proceeding south, the waterway extends past the communities of Beverly Beach and Flagler Beach before entering Volusia County. Two bridges traverse the waterway in Flagler County, at Palm Coast and Flagler Beach, allowing vehicular access between the mainland and the island. There is no waterway inlet allowing access to offshore waters in Flagler County. The closest inlet is Matanzas Inlet in St. Johns County, approximately two miles north of Flagler County. However, local knowledge is needed when navigating the inlet because of shoaling at the junction of the Matanzas River and the ocean. Approximately 26 miles south of Flagler County is Ponce de Leon Inlet.

THE ECONOMIC IMPACT OF MARINE RELATED BUSINESS IN FLAGLER COUNTY

In general terms, there are two types of economic impacts or benefits associated with an inland navigation system, National Economic Development (NED) benefits and Regional Economic Development (RED) benefits. Inland waterway systems have historically been evaluated to determine economic feasibility based on NED benefits, which are economic benefits to the nation and not a particular region. The purpose of this analysis is to estimate the regional benefits generated by the waterways in Flagler County.

Regional benefits can be classified as direct, indirect, induced, and total. The direct impacts of the waterways are the goods and services purchased from marine related businesses in Flagler County. Direct impacts include the initial round of spending and employment generated by business activity that is directly dependent on the waterways. Indirect impacts consist of the goods and services purchased by marine related businesses in Flagler County. These impacts are the additional “rounds” of spending that result from the initial sales by waterway-impacted businesses. Induced impacts consist of increased household purchases of goods and services (such as food, clothing, and housing) by employees of businesses directly and indirectly impacted by the waterways. In short,

navigation on the waterways results in dollars being pumped into the region that generate primary and secondary economic benefits to the area, benefits that include increased business activity (sales), personal income (wages), and employment (jobs).

Many techniques have been developed to estimate types and levels of regional economic impacts. These models are based on the understanding of a regional economy as an interdependent entity. IMPLAN is a regional impact model that enables the evaluation of the economic impact of specific activities such as retail, wholesale, manufacturing, and service sales and the construction or operation of public works projects within an economy. IMPLAN was used in this analysis to estimate the regional economic impacts of the waterway.

Identifying and Quantifying Current Marine Related Business Volume

A database of 50 marine related businesses in Flagler County was developed from various sources. These businesses were surveyed by mail and telephone to obtain information on their marine related business patterns and practices. A total of 13 completed surveys were obtained, resulting in a response rate of 26 percent.

Characteristics of Marine Related Business

Selected findings of the marine related business survey are presented below:

- About 46 percent of the businesses are located on or adjacent to the waterway.
- 39 percent are dependent on being on or adjacent to the waterway.
- The three most prominent lines of business are manufacturing, services, and retail trade.
- 80 percent of the respondents' business volume is marine or water related.
- Most marine industry firms employ fewer than four people and have annual revenues of less than \$500,000.
- 69 percent of the firms believe their revenue would decrease if vessel drafts were restricted to three feet.



Marinas on the waterways are among the 50 firms in the county that generate \$98 million in sales for marine related businesses annually

- 46 percent of the firms believe their revenue would increase if vessel drafts were 12 feet.

The 50 businesses in the database were aggregated to 12 similar business types, which were classified as generating a commercial benefit or a recreational benefit. Commercial business types were assumed to consist of boat charters/rentals. The remaining business types were classified as recreational.

The total marine related sales in Flagler County, as calculated from the survey responses, is estimated at \$98.9 million, of which only \$167,000 is expected to be commercial benefits.

The \$98.9 million in business revenue was distributed by type of activity as follows:

- \$3.3 million in construction activity
- \$36,000 in transportation activities
- \$7.5 million in retail trade
- \$679,000 in used boat sales
- \$77.7 million in manufacturing activities
- \$485,000 in wholesale trade
- \$9.8 million in service activities

The locations of the 50 businesses in the county are presented in Figure 1, color coded by business activity. Businesses conducting more than one type of activity were classified according to their predominate activity.

Current Purchases of Non-Marine Related Items

To estimate the economic impacts of non-marine related items purchased from businesses not located on the waterways, 294 recreational boaters and fishermen were interviewed on the waterway throughout Flagler County. A summary of purchasing patterns of recreational boaters who were interviewed are presented below:

- Survey respondents purchased an average of \$29.36 per day of boating at establishments not located on the waterway.
- Larger boats that are not trailered tend to spend less money at establishments not located on the waterways.
- Smaller vessels spend almost all their expenditures at establishments not located on the waterways.
- Total expenditures on non-marine items at establishments not located on the waterways include \$3.0 million for gasoline and \$2.9 million for food, drinks, and ice.



Characteristics of Recreational Boaters

Highlights of the results of the interviews of the 294 recreational boaters are presented below:

- The primary local residence of boaters:
 - Flagler County - 70 percent
 - Volusia County - 9 percent
 - St. Johns County - 6 percent
 - Putnam County - 4 percent
 - Other - 11 percent
- The primary permanent residence of the boaters:
 - Florida - 97 percent
 - Michigan - 1 percent
 - Other - 2 percent
- There was an average of 2.8 persons per boat; the most common occurrence was two persons per boat.
- 30 percent owned a second boat, and 6.5 percent owned two other boats.
- 62 percent of boaters used an outboard boat, 24 percent used an inboard, and 9 percent used “other boat” types (namely personal watercraft).
- Of the boaters who owned more than one boat, the boats that were not being used on the day of the interview were typically outboards, followed by personal watercraft.
- The length of boats owned by the boaters ranged between 6 feet and 61 feet, with most being between 16 and 26 feet.
- 55 percent of the boaters were on half-day trips, 38 percent were on full-day trips, and 7 percent were on multiple day trips.
- Fishing and pleasure boating tied as the most frequent primary purpose of the boating trip, followed distantly by other activities.
- 87 percent of the boaters intended to stay in inland waters, primarily because of the lack of ocean inlets in Flagler County.
- 13 percent of boaters launching in Flagler County intended to access offshore waters.
- 77 percent of all boats are stored at home on a trailer, 13 percent are stored at some type of commercial storage facility, and 10 percent are at a private wet slip.

- Boaters that store their boat at a commercial storage facility pay an average of \$2,622 per year.
- Boaters annually spend an average of \$983 on maintenance and \$435 on boat insurance premiums.
- 7 percent of the people interviewed had incurred damage to their boat while using the waterway in the past year.
- The most frequent type of damage was to the propeller, followed by vessel (hull) damage, then by damage to the vessel's motor or lower unit.
- The most frequent cause of damage was an unknown source or object in the water, followed by shoaling or grounding the vessel, then by hitting a submerged object.

Current Economic Impact of Marine Related Activities

The retail sales of the 50 marine related businesses in Flagler County generate a total of \$128.4 million in local business volume, \$46 million in personal income (wages), and 1,093 jobs. The greatest impacts are generated by the manufacturing activities.

The \$5.9 million in retail purchases (\$3.0 million for gasoline sales and \$2.9 million for food, drinks, and ice) by recreational boaters from establishments not located on the waterways were estimated to generate economic impacts of \$5.5 million in business volume, \$580,000 in personal income, and 23 jobs.

The current total economic impact of the waterways (marine related businesses and the purchase of non-marine related items) consist of \$133.9 million in business volume, \$46.6 million in personal income, and 1,116 jobs (Table 1).



Recreational boating activity in Flagler County contributes a total of \$133 million in sales, \$46 million in income, and 1,116 jobs to the local economy

Table 1. Summary of Total Economic Impacts Attributable to the Waterways

| Activity | Recreational Economic Impacts | | | | Commercial Economic Impacts | | | | Total Economic Impacts | | | |
|----------------------------|-------------------------------|----------|---------|---------------|-----------------------------|----------|---------|-------------|------------------------|----------|---------|-----------------|
| | Direct | Indirect | Induced | Total | Direct | Indirect | Induced | Total | Direct | Indirect | Induced | Total |
| Business Volume (Millions) | 97.17 | 19.62 | 16.99 | 133.78 | 0.16 | 0.02 | 0.03 | 0.21 | \$97.33 | \$19.64 | \$17.02 | \$133.99 |
| Personal Income (Millions) | 34.59 | 5.61 | 6.32 | 46.52 | 0.07 | 0.01 | 0.01 | 0.09 | \$34.66 | \$5.62 | \$6.33 | \$46.61 |
| Employment | 715 | 173 | 222 | 1,110 | 5 | 0 | 1 | 6 | 720 | 173 | 223 | 1,116 |

Economic Impact of a Cessation of Waterways Maintenance

If maintenance of the waterways in Flagler 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.

Based on the responses of businesses surveyed for this analysis, an average of 90.2 percent of marine related business activity would be lost if vessel drafts were limited to three feet MLW, primarily because manufacturing would nearly disappear. The largest impacts are expected in manufacturing, followed by the service sector, then by the retail trade sector, and construction.

The total economic impact expected to be generated with three-foot vessel draft restrictions on the waterways (marine related businesses and the purchases of non-marine related items) is presented in Table 2. The total impact includes \$15.1 million in business volume, \$3.9 million in personal income, and 125 jobs. *This is a reduction of \$118 million in business volume, \$42 million in personal income, and 991 jobs compared to existing conditions on the waterways.*

Table 2. Summary of Total Economic Impacts Attributable to the Waterways Assuming Vessel Draft Restrictions of Three Feet

| Activity | Recreational Economic Impacts | | | | Commercial Economic Impacts | | | | Total Economic Impacts | | | |
|----------------------------|-------------------------------|----------|---------|--------------|-----------------------------|----------|---------|-------------|------------------------|----------|---------|----------------|
| | Direct | Indirect | Induced | Total | Direct | Indirect | Induced | Total | Direct | Indirect | Induced | Total |
| Business Volume (Millions) | 11.84 | 1.79 | 1.43 | 15.06 | 0.07 | 0.01 | 0.01 | 0.09 | \$11.91 | \$1.80 | \$1.44 | \$15.15 |
| Personal Income (Millions) | 2.72 | 0.70 | 0.52 | 3.94 | 0.03 | 0.01 | 0.01 | 0.04 | \$2.75 | \$0.70 | \$0.53 | \$3.98 |
| Employment | 82 | 22 | 19 | 123 | 2 | 0 | 0 | 2 | 84 | 22 | 19 | 125 |

Economic Impact of an Increase in Waterways 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 to 12 feet MLW. This increase in draft allowance would permit deeper draft vessels to fully utilize the waterways in Flagler County.

According to marine related businesses surveyed for this analysis, increasing vessel drafts on the waterways to 12 feet MLW would result in an overall average increase in direct business sales of

5.8 percent, from the current level of \$98.9 million to \$104.7 million (a \$5.7 million increase). The increase is expected to be distributed as:

- \$198,000 in construction activity
- \$1.4 million in retail trade
- \$135,000 in used boat sales
- \$2.5 million in manufacturing
- \$92,000 in wholesale trade
- \$1.3 million in services activities.

This higher maintenance scenario should not significantly impact the sale of non-marine related items by businesses that are not located on the waterways. These impacts should be equivalent to those under current waterways conditions.

The combined total impacts (marine related businesses and purchases of non-marine related items) under this scenario are presented in Table 3. Total impacts include \$140.2 million in business volume, \$48.5 million in personal income, and 1,171 jobs. *This is an increase of \$6 million in business volume, nearly \$2 million in personal income, and 55 jobs compared to existing conditions on the waterways.*

Table 3. Summary of Total Economic Impacts Attributable to the Waterways Assuming Vessel Draft Restrictions of 12 Feet

| Activity | Recreational Economic Impacts | | | | Commercial Economic Impacts | | | | Total Economic Impacts | | | |
|----------------------------|-------------------------------|----------|---------|---------------|-----------------------------|----------|---------|--------------|------------------------|----------|---------|-----------------|
| | Direct | Indirect | Induced | Total | Direct | Indirect | Induced | Total | Direct | Indirect | Induced | Total |
| Business Volume (Millions) | 97.17 | 19.62 | 16.99 | 133.78 | 4.60 | 1.02 | 0.88 | 6.499 | \$101.77 | \$20.64 | \$17.87 | \$140.28 |
| Personal Income (Millions) | 34.58 | 5.61 | 6.32 | 46.51 | 1.39 | 0.32 | 0.28 | 1.998 | \$35.98 | \$5.93 | \$6.60 | \$48.50 |
| Employment | 715 | 173 | 222 | 1,110 | 39 | 11 | 11 | 61 | 754 | 184 | 233 | 1,171 |

THE IMPACT OF THE WATERWAYS ON PROPERTY VALUES IN FLAGLER COUNTY

The impact of the waterways on property values is evaluated to illustrate the importance of the waterways on property valuations and property tax collections. The expected impacts to property values are evaluated for existing conditions, cessation of maintenance of the waterways, and a higher state of maintenance of the waterways.

Current Impact of the Waterways on Property Values

Residential Property

The impact of the waterways in Flagler County on property values was estimated by comparing values of properties located directly on the Intracoastal Waterway to values of properties

located on waterways connected to the Intracoastal Waterway that have varying vessel draft restrictions and to properties that have no access to the waterways. The comparison focused on subdivisions having at least one property on the waterways. For this analysis, waterfront residential communities were classified as those within the town of Palm Coast and those outside of Palm Coast. Because of data availability, the analysis is conducted and presented for the two geographic areas separately.



Homes on the Intracoastal Waterways, outside of Palm Coast, have an average market value of over \$420,000, and are significantly larger and more expensive than canal front homes in Palm Coast and homes without waterway access.

Palm Coast Residential Property

Two methods were used to estimate the impact of the waterways on single family residential property values in Palm Coast. The first methodology is based on the difference in the market value per square foot of building area, including land value, between houses on the waterways versus those removed from the waterways. The current average market value is \$51.47 per square foot of building area for non-waterfront parcels and \$72.51 per square foot of building area for parcels on connecting canals, a difference of \$21.04 per square foot.

The impact of the waterways on residential property values can be estimated by multiplying the difference in property value per square foot of building area (\$21.04) by the total square feet of building area of single family residences on waterfront parcels. Using this methodology, the waterways have increased single family residential property values of the 1,918 waterfront parcels in the town of Palm Coast by approximately \$98 million.

The second method of estimating the impact of the waterways on property values assumes that if the waterways did not exist, waterfront property would have been developed

with the same size and value characteristics as existing non-waterfront parcels. The 1,918 waterfront parcels in Palm Coast include houses that average 2,443 square feet and have an average market value of \$177,190, yielding a total value of \$339.8 million. The 326 non-waterfront parcels located in waterfront subdivisions in Palm Coast include houses that average 2,226 square feet and have a market value of \$114,612. If the waterway did not exist, it is assumed that the waterfront parcels would have been developed with smaller, less expensive 2,226 square-foot-houses valued at \$114,612 per structure, similar to existing non-waterfront property. As a result, the total value of these structures would have been \$219.8 million, a reduction of \$120 million from the current \$339.8 million value.

Single Family Residential Property Outside of Palm Coast

Because of data availability, only one method could be used in evaluating the impact of the waterways to property values outside of Palm Coast. The methodology assumes that if the waterways did not exist, the number and size of parcels and houses would be the same as they currently are, but the value per square foot of building area of houses on the waterways would equal those of existing houses without waterway access.

The impact of the waterways on residential property values can be estimated by multiplying the difference in property value per square foot of building area by the total square feet of building area of waterfront houses. Parcels removed from the waterways are valued at \$80.18 per square foot, whereas those on connecting canals are valued to \$104.84, a difference of \$24.66 per square foot. Properties on the Intracoastal Waterway are valued at \$124.00 per square foot, a difference of \$43.82 per square foot compared to properties removed from the waterways. Applying the difference in per-square-foot values to the respective quantity of square feet of structure provides an estimate of the impact of the waterways on property values. This methodology results in an increase in single family residential property values outside the town of Palm Coast by approximately \$39 million.

Other Residential Property

Vacant Land

In addition to impacting developed property, the waterways also have an impact on vacant residential property in the Palm Harbor section of Palm Coast. These parcels are interspersed with the developed residential parcels and are fairly homogeneous in size. Therefore, a direct comparison between the values of vacant waterfront parcels and vacant non-waterfront parcels can be made.

There are currently 628 vacant residential waterfront parcels in Palm Coast, with an average market value of \$59,282 each. There are also 249 non-waterfront parcels with an average market value of \$19,021. If the waterways ceased to exist, the market value of the existing vacant waterfront parcels would decrease from their current value to the market value of neighboring vacant non-waterfront parcels, or a reduction of \$40,261 per parcel. Applying the \$40,261 decrease in property value per parcel to the 628 vacant parcels in Palm Coast results in a total impact of \$25.2 million.

The influence of the waterways on vacant residential parcel values in sections of Flagler County outside of Palm Coast cannot be estimated. Parcel sizes in other sections of Flagler County vary greatly, and parcel measurements are not available from the Property Appraiser's Office. Without measurements or the assumption of equally sized parcels, a comparison cannot be made between waterfront and non-waterfront parcels.

Condominiums

The 85 waterfront condominiums in Flagler County have a total appraised value of \$9.4 million. The condominiums are across from a marina that provides scenic value, and some condominium owners own boat slips in the complex. Condominium values are thus impacted somewhat by the waterways, but the amount cannot be reasonably estimated. Also within this subdivision are 65 separate, individually owned boat slips with a total appraised value of \$1.09 million, which would not exist without the District's waterways.

Commercial Property

The business income of the marinas and boatyard are totally dependent on the existence of the Intracoastal Waterway. Therefore, without the Intracoastal Waterway, the value of these parcels would decrease to the value of nearby non-waterfront parcels. Since parcel measurements are not available and there are no nearby comparable non-waterfront parcels, a reasonable estimate of this decrease cannot be made.

Total Current Impacts to Property Values

It is estimated that the waterways in Flagler County have resulted in a total increase in property values of between \$163 million and \$185 million. This total includes an increase of between \$137 million and \$159 million in residential property values and \$25 million in vacant residential land in Palm Coast. The impact of the waterways on condominiums appears to be minimal, but the value of boat slips associated with the condominium complex could be reduced by an estimated \$1 million. Because of the lack of data on the quantity of land associated with each commercial property, the impact of the waterways cannot be readily determined. However, because

of the small value of commercial property compared with the total appraised value of residential property, any impact to commercial property value would be minimal compared to the impact to residential property.

Changes in Property Values Due to a Cessation of Waterways Maintenance

If vessel drafts were restricted to three feet MLW, the value of property on the waterways would decrease. In order to estimate the impacts of reduced waterway depths, property values of parcels with access to waterways with varying vessel drafts must be compared to each other. For the purpose of this analysis, it is assumed that properties on the Intracoastal Waterway have access to a channel at least six feet deep. Vessel draft restrictions vary for canals connected to the Intracoastal Waterway. A comparison of the difference in property values on restricted draft waterways to property values on the Intracoastal Waterway illustrates part of the expected change in property value if vessel drafts were restricted to three feet MLW on the Intracoastal Waterway.

Residential Property

Palm Coast Residential Property

In Palm Coast, as in most all other areas on the waterways, there is a premium for parcels on the waterway versus parcels removed from the waterway. This premium is \$21.04 per square foot, or 29 percent higher than non-waterfront property. Any decrease in property values as a result of three-foot draft restrictions would have to be less than 29 percent, because the value of property on a restricted draft waterway should be greater than property without waterway access.

Analysis of property values in some of the District's other counties indicates that the decrease in property values would be about half of the premium paid, on a per-square-foot basis, for parcels on navigable waterways. For this analysis, it is assumed that waterfront property values in Palm Coast would decrease by 15 percent from their current value, or about half of the current premium paid for waterfront parcels. The total adjusted market value of all waterfront property in Palm Coast is estimated at \$339.8 million. If vessel drafts were restricted to three feet and waterfront property values decreased by an estimated 15 percent, the total impact to property values in Palm Coast would be \$50.9 million.

Single Family Residential Property Outside of Palm Coast

Outside of Palm Coast, the premium paid for parcels on the waterway versus parcels removed from the waterway is \$12.64 per square foot for property on connecting canals and \$23.78 per square foot for property on the Intracoastal Waterway. The reduction in property values resulting from decreased waterway maintenance was estimated at \$20.6 million by applying the expected decrease in market value to the current total square feet of building area.

The total impact of a cessation of maintenance of the District's waterways on single family residential property values in Flagler County approximately \$71 million, including \$50.9 million in Palm Coast and \$20.6 million in waterfront subdivisions outside of Palm Coast.

Other Residential Property

Vacant Land

The property values of vacant residential waterfront land in Palm Coast would be impacted similarly to the property values of single family residential property. There are no vacant parcels on restricted waterways in Palm Coast to use in a comparison, so an estimate of the impact must be made based on the same assumptions used in evaluating the expected impact to developed residential property in Palm Coast.

In Palm Coast, a premium of \$31,741 per vacant parcel (or a difference of 54 percent over parcels removed from the waterways) is paid for waterfront parcels. Analysis of property values in some of the District's other counties indicates that the decrease in property values would be about half of the premium paid, on a per-square-foot basis, for parcels on navigable waterways. For the purpose of this analysis, it is assumed that waterfront property values in Palm Coast would decrease by 27 percent from their current value, or about half of the current premium paid for waterfront parcels. The total adjusted market value of all vacant waterfront property in Palm Coast is estimated at \$37.2 million. If vessel drafts were restricted to three feet and vacant waterfront property values in Palm Coast decreased by an estimated 27 percent, the total impact to property values in Palm Coast would be \$10 million.

Condominiums

Waterfront condominium property values would not be impacted significantly by 3-foot draft restrictions because not all condominium owners have access to the waterway or participate in boating as a result of the limited supply of boat slips at the complex. The main loss in value would result from the decrease in the value of available boat slips. The value of individually owned boat slips would significantly decrease because boat slip owners would be limited in the size of boat they could keep in their slip, and smaller boats can be stored on a trailer. The amount of decrease is estimated to be between \$500,000 and \$800,000 of the total value of boat docks (\$1.09 million).

Commercial Property

The appraised value of commercial property is determined by several methods, including evaluation of the income the property generates. If maintenance of the waterways ceased, a portion of the income of the marinas and boatyard would be lost because vessels drafting in excess

of three feet would not be able to access their facilities. If the businesses continued operating, their property values would decline in tandem with their income. Marina and boatyard owners indicated that 68 percent of existing business volume would be lost under this maintenance scenario. The existing marinas and the boatyard are appraised at about \$2 million. Under the assumption that appraised commercial property values are directly impacted by business revenue, a reduction of 68 percent of business revenue at marinas and boatyards should result in a similar reduction on the appraised value of these facilities. Such a reduction in property value assumes that the property remains in its current use. However, since these businesses are not likely to continue operating after such a drastic reduction in income, the property will probably be converted to other uses, namely residential use. Because of the lack of data on the quantity of land encompassed by these businesses, the impact of reduced maintenance of the waterways cannot be estimated.

The property value of the resort, excluding the marina operations, may decline because a portion of its business may be lost. However, the decreasing draft restrictions should only have a minimal impact on the property value.

Total Impact to Property Values of a Cessation of Waterways Maintenance

If maintenance of the waterways were to cease and vessel drafts were restricted to three feet MLW, it is estimated that property values would decrease in excess of \$82 million.

Single family residential property values along the waterways could decrease by up to \$71 million, including \$50.9 million in Palm Coast and \$20.6 million outside of Palm Coast. Vacant residential land in Palm Coast is expected to experience a decline of about \$10 million in value. The impact to condominium values should be minimal, and about \$500,000 to \$800,000 in the value of boat slips associated with condominiums should be lost. Because of insufficient data, the impact to commercial property cannot be accurately estimated. The combined appraised value of these assets is \$9.2 million, any decrease in values would be less than \$9.2 million and would be minimal in comparison to the decrease expected to occur in residential property values.

Change in Property Values Due to Increased Waterways Maintenance

Residential Property

A review of nautical charts, aerial photographs, and on-the-ground reconnaissance of Flagler County indicated that there are no waterfront subdivisions or commercial parcels in Flagler County with 12 feet of water depth at MLW. Therefore, it is not possible to estimate the impact of a higher state of maintenance based on comparison of parcels within Flagler County. This does not mean that certain property values would not increase if vessel draft restrictions were increased, only that there is no method of estimating what that increase would be using the available data. It is

assumed that the impact, if any, would not significantly increase the total value of property in the county. This assumption is based on the limited number of properties that would be impacted by deeper channels. A deeper channel would only benefit owners of mega yachts and commercial vessels. Because of the cost of these vessels, there are only a limited number of people who can afford them. People who can afford them would also tend to reside in existing prestigious, exclusive, and expensive neighborhoods in the region. Development of this nature does not currently exist in Flagler County. Furthermore, Flagler County does not have direct access to offshore waters, and all boat traffic in Flagler County must transit through Volusia County or St. Johns County to access offshore waters. The long transit times that would be necessary for larger boats to access offshore waters would discourage the harboring of these boats in Flagler County.

The same influences that will preclude significant increases in residential single family property values in Flagler County preclude condominiums from realizing any significant gains in property values.

Commercial Property

The impact to commercial property values is assumed to be only minimal, for the same reasons given for the impact to residential property. Any increase in property values will be based on an increase in business income from seasonal traffic in transit between south Florida and northern destinations. Increasing the vessel draft restriction to 12 feet MLW on the waterway would allow larger vessels to access commercial facilities and may result in an increase in income generated by marinas and the boatyard. The income method of assessing property tax, which is used by the Property Appraiser's Office as an alternative assessment method, results in property values increasing in conjunction with business revenue. Marina and boatyard owners, surveyed during the conduct of this analysis, expect an increase in revenue of about 23.5 percent if vessels drafting up to 12 feet could access their facility. It was assumed that a proportional increase in property values would also occur. Marinas and boatyards are currently valued at \$2 million. An increase of 23.5 percent in property values resulting from an increase in business volumes would produce a \$470,000 increase in property values.

Total Impact to Property Values of Increased Waterways Maintenance

If maintenance of the waterways were to increase and vessel draft restrictions were increased to 12 feet MLW, property values in the county can be expected to increase by \$470,000.

There is no evidence that residential property values would significantly increase. Commercial property values may increase slightly, by \$470,000.

SUMMARY

Current Impacts

The current impacts of the waterways in Flagler County include \$133 million in business volume, \$46 million in personal income, 1,116 jobs, and \$163 million to \$185 million in property values. Furthermore, the waterways result in the construction of larger, more luxurious homes in the county.

Impacts of a Cessation of Waterways Maintenance

If maintenance of the waterways ceases and vessel drafts are restricted to three feet MLW, there is expected to be a reduction of \$118 million in businesses volume, \$42 million in personal income, 991 jobs, and up to \$82 million in property values.

Impacts of Increased Waterways Maintenance

If maintenance of the waterways increased and vessel drafts were increased to 12 feet MLW, there is expected to be an increase of \$6 million in business volume, \$2 million in personal income, 55 jobs, and \$470,000 in property values.