A Process for Public Boating Access Investment Decisions

Fish and Wildlife Research Institute

Socioeconomic Assessment

Florida Fish and Wildlife Conservation Commission

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Introduction

The principal purpose of this process model is to assist the Florida Fish and Wildlife Conservation Commission in determining where to add or recondition/restore boat ramps (both freshwater and saltwater). The process is based on the "Florida Boating Access Facilities Inventory and Economic Study" (2009). Present inventories of public access launch lanes and their associated restrooms and parking areas are combined with the results of the Random Utility Model (RUM) of consumer choice and a forecast model for county level boating demand to the year 2025. For the year 2025 , projections of the following are calculated: (1) launch congestion(launches per lane) (2) restroom congestion (launches per restroom, (3) parking congestion (launches per square foot of parking, (4) percent change in demand from present to 2025, and (5) consumer surplus. Items (1), (4) and (5) are used to rank order counties on their need for boating access, while items (2), (3),(4), and (5)are used to rank order counties and their need for ramp site reconditioning/restoration. The process model can be used to assist with the following types of investment decisions.

1. Investment decisions which consider freshwater exclusively.
2. Investment decisions which consider saltwater exclusively.
3. Investment decisions which consider saltwater and freshwater together.
4. Investment decisions for new boat ramps.
5. Investment decisions for reconditioning/restoration of existing ramps.
6. Investment decisions identifying launch sites for possible closure.

Estimates of Future Demand

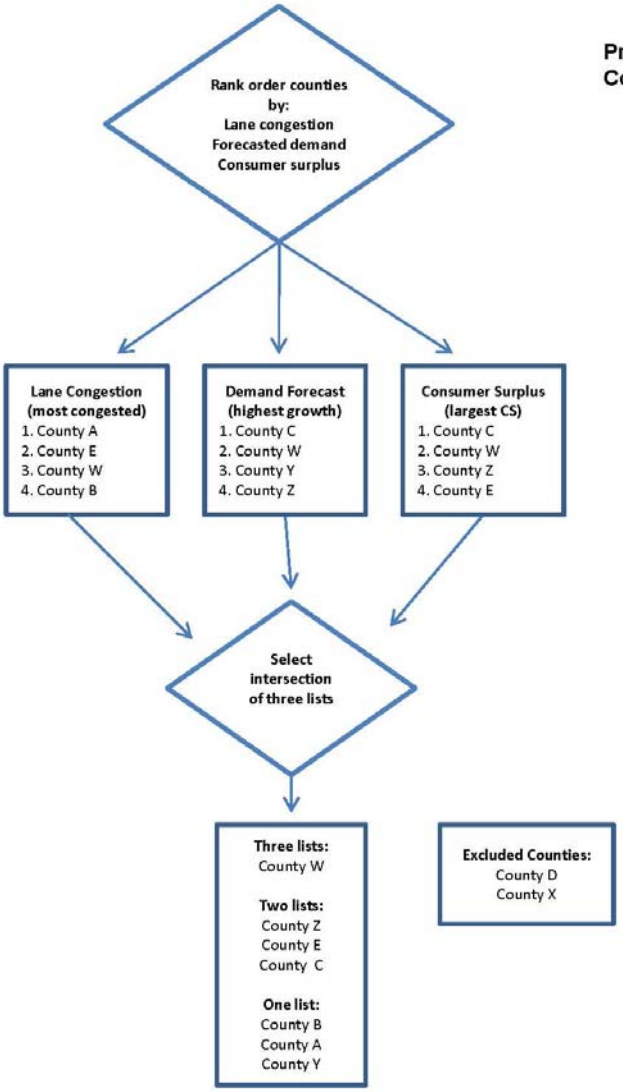
The Random Utility Model, based on boater's choice of access point (boat ramp) and water site destination, is used to determine the factors important to selecting launch points. The model established that many factors are significant to the boater's decision and include items such as boater demographics, travel distance, number of launch lanes, size of parking lot and the presence or absence of restrooms.

A forecast of demographic changes, provided by the Bureau of Economic and Business Research, University of Florida, is used to tie future boating demand to the year 2025 and is based on present-day boating choices and boater demographics provided by the RUM results. When these two results are combined, it is possible to project future boating demand to the year 2025 by county.

Several trends emerge from the projected launches. First, many counties, over most of the years examined, experience growth in launches. However, some counties are forecasted to experience declines. The declines are most pronounced by year 2025 when about half the counties are projected to experience a decline in launches while half are projected to experience an increase. The forecasted declines are due to shifts in the demographic composition of counties – typically declines in white, non-Hispanic males age 35-65 and in increases in both black, non-Hispanic and Hispanic males age 35-65.

Capital Budget Projections

Capital budget projections are accomplished by using cost estimates for land acquisition and ramp construction and tying these estimates to projected demand and present ramp infrastructure. Assuming the desire is to maintain access capacity at 2006 levels (baseline) then capital investments for fresh and saltwater access statewide would fall in a range from $68 million and $111 million over the next 15 years. The estimate is based on FWC and Florida DEP sources and assumes the average boat lane costs approximately $100,000 to design, permit and construct and require between 1.5 and 2.5 acres of property. Property cost is by far the most expensive component of ramp development and these costs vary greatly by water type (salt or fresh) and region.

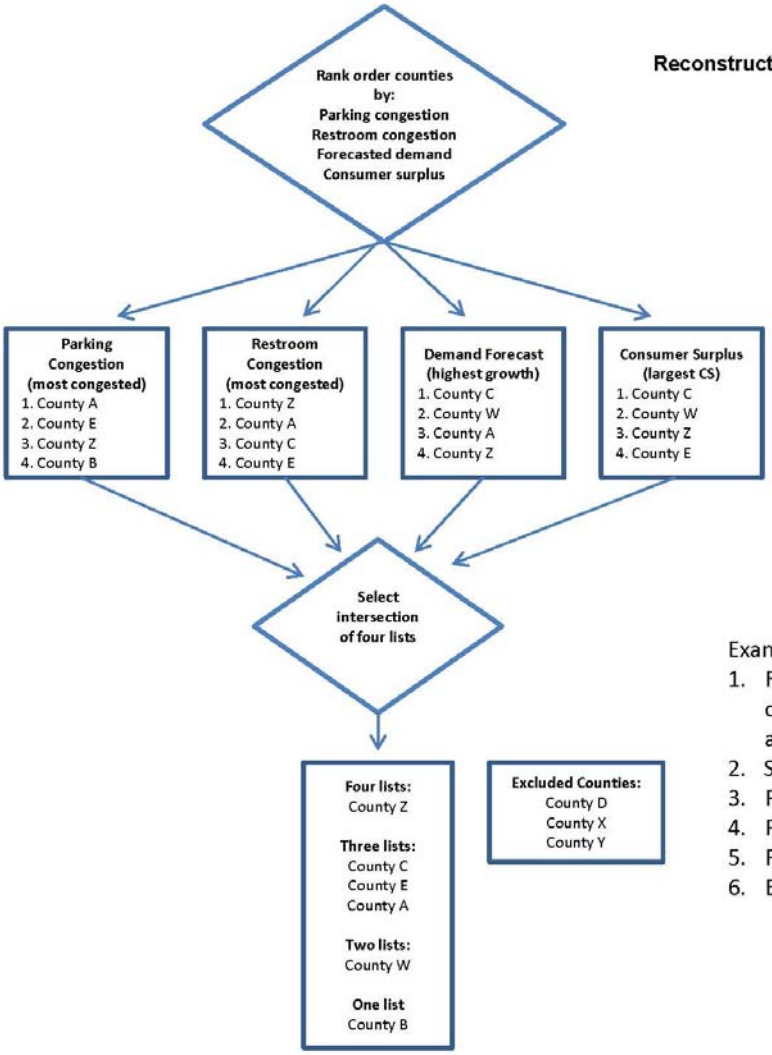


Process Flowchart – New Construction

Counties:
- County A
- County B
- County C
- County D
- County E
- County W
- County X
- County Y
- County Z

Example of decision process:

1. Rank order the counties by lane congestion, demand and CS and form three lists.
2. Select counties by list intersections.
3. Form list of three intersections (highest priority).
4. Form list of two intersection (high priority).
5. Form list of one intersection (priority).
6. Balance of counties are low priority.

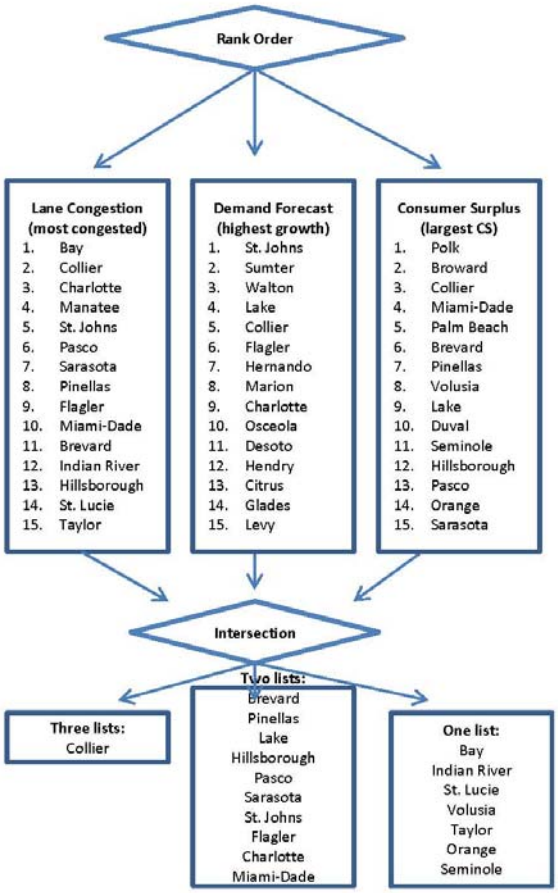


Reconstruction/Restoration

Counties:
- County A
- County B
- County C
- County D
- County E
- County W
- County X
- County Y
- County Z

Example of decision process:

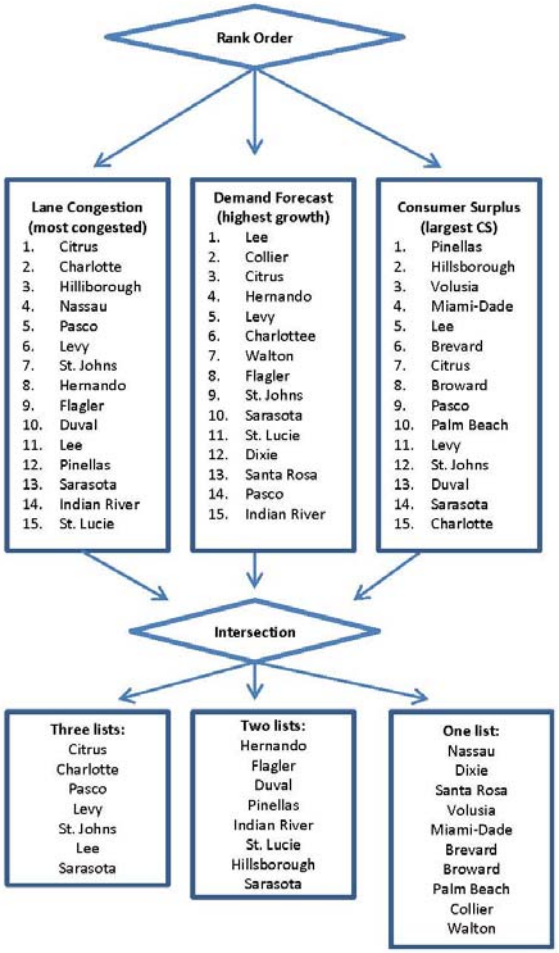
1. Rank order the counties by parking and restroom congestion, forecasted demand and CS and form four lists.
2. Select counties by list intersections.
3. Form list of four intersections (highest priority)
4. Form list of three intersections (high priority)
5. Form list of two intersections (priority)
6. Balance of counties are low priority.



All Freshwater Access Counties

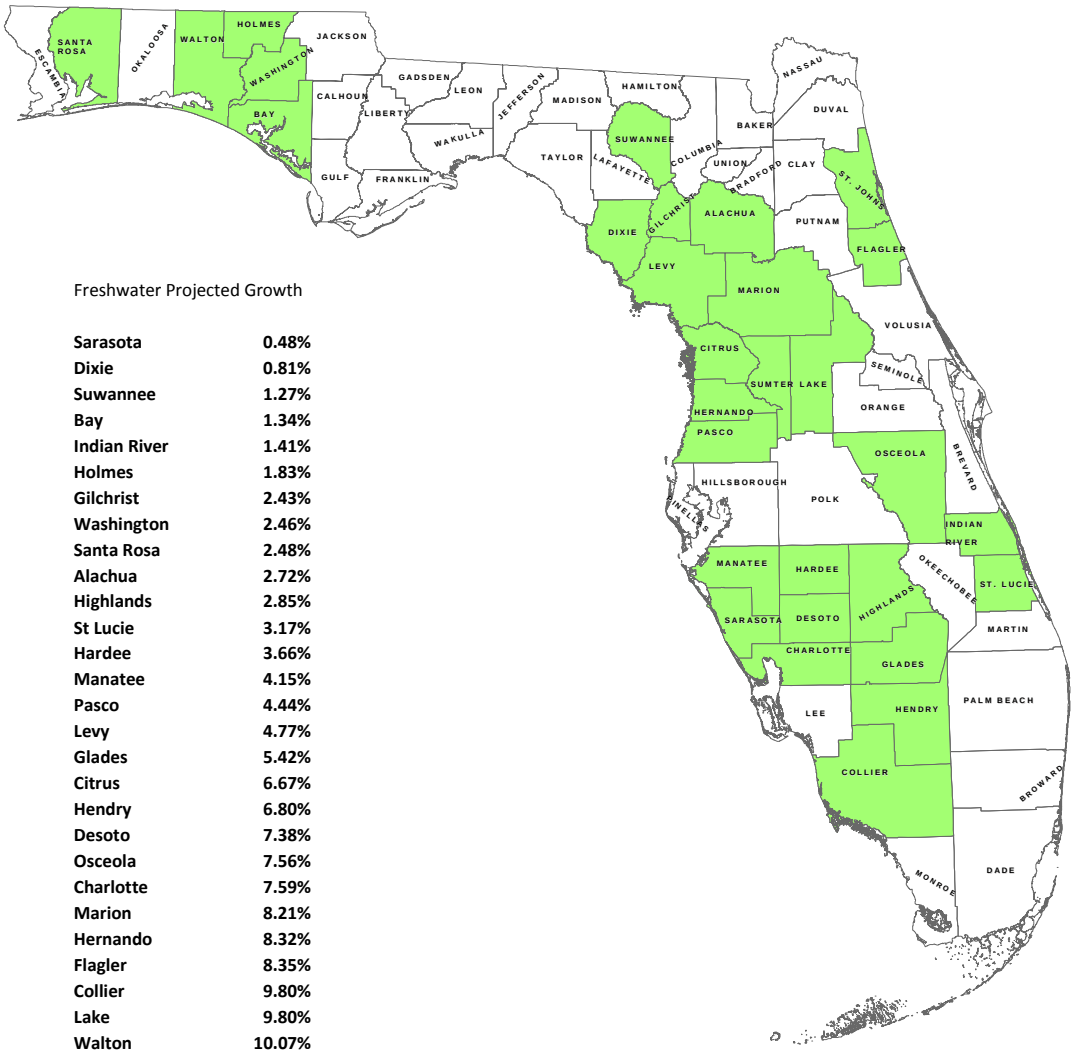
Three Lists = Highest Priority
Two Lists = High Priority
One List = Priority

All Marine Access Counties:



Three Lists = Highest Priority
Two Lists = High Priority
One List = Priority

Percent Change in Demand from Present to 2025 - Freshwater Growth



Freshwater Projected Growth

Sarasota	**0.48%**
Dixie	**0.81%**
Suwannee	**1.27%**
Bay	**1.34%**
Indian River	**1.41%**
Holmes	**1.83%**
Gilchrist	**2.43%**
Washington	**2.46%**
Santa Rosa	**2.48%**
Alachua	**2.72%**
Highlands	**2.85%**
St Lucie	**3.17%**
Hardee	**3.66%**
Manatee	**4.15%**
Pasco	**4.44%**
Levy	**4.77%**
Glades	**5.42%**
Citrus	**6.67%**
Hendry	**6.80%**
Desoto	**7.38%**
Osceola	**7.56%**
Charlotte	**7.59%**
Marion	**8.21%**
Hernando	**8.32%**
Flagler	**8.35%**
Collier	**9.80%**
Lake	**9.80%**
Walton	**10.07%**
Sumter	**10.96%**
St Johns	**16.94%**

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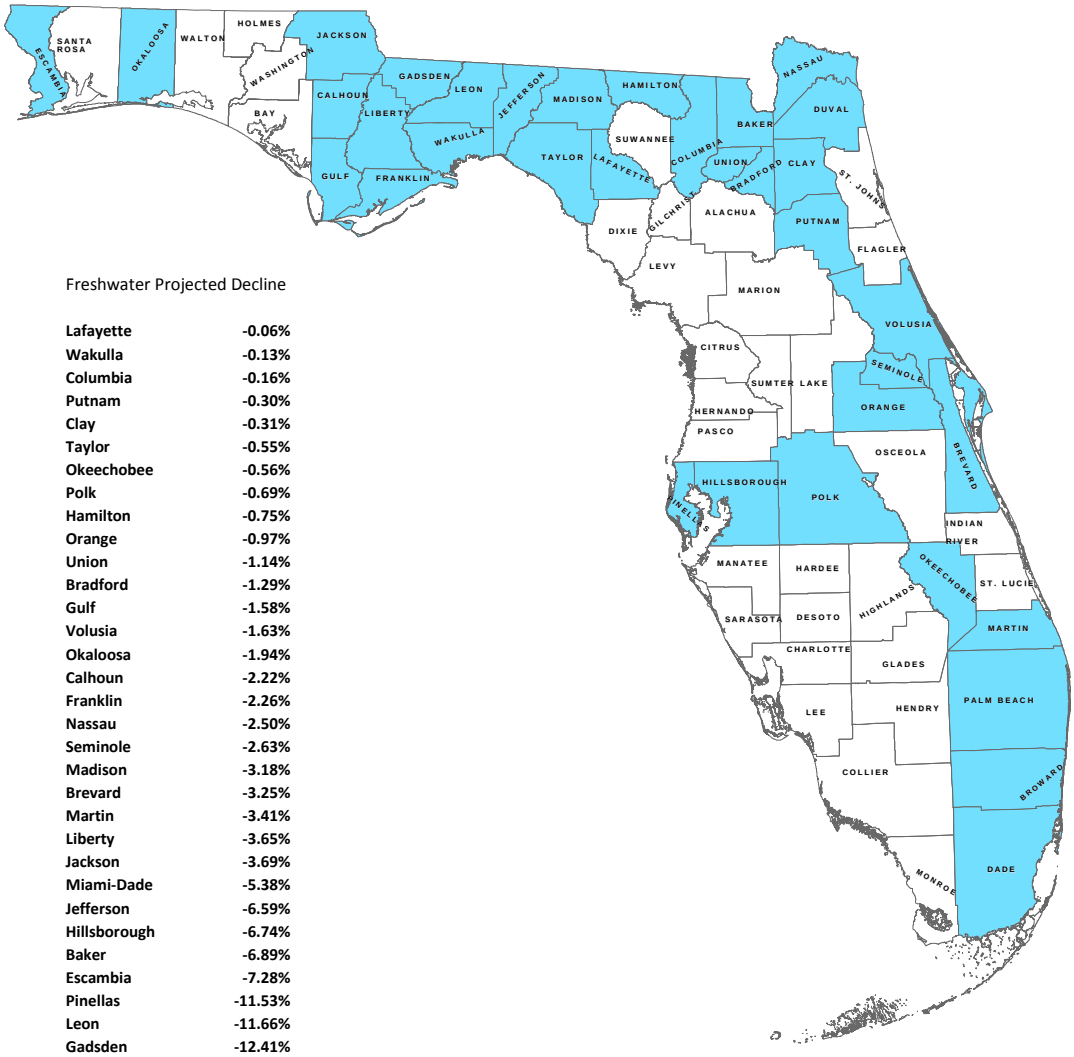
Percent Change in Demand from Present to 2025 - Freshwater Decline



Freshwater Projected Decline

Lafayette	**-0.06%**
Wakulla	**-0.13%**
Columbia	**-0.16%**
Putnam	**-0.30%**
Clay	**-0.31%**
Taylor	**-0.55%**
Okeechobee	**-0.56%**
Polk	**-0.69%**
Hamilton	**-0.75%**
Orange	**-0.97%**
Union	**-1.14%**
Bradford	**-1.29%**
Gulf	**-1.58%**
Volusia	**-1.63%**
Okaloosa	**-1.94%**
Calhoun	**-2.22%**
Franklin	**-2.26%**
Nassau	**-2.50%**
Seminole	**-2.63%**
Madison	**-3.18%**
Brevard	**-3.25%**
Martin	**-3.41%**
Liberty	**-3.65%**
Jackson	**-3.69%**
Miami-Dade	**-5.38%**
Jefferson	**-6.59%**
Hillsborough	**-6.74%**
Baker	**-6.89%**
Escambia	**-7.28%**
Pinellas	**-11.53%**
Leon	**-11.66%**
Gadsden	**-12.41%**
Palm Beach	**-13.36%**
Broward	**-20.16%**
Duval	**-22.36%**

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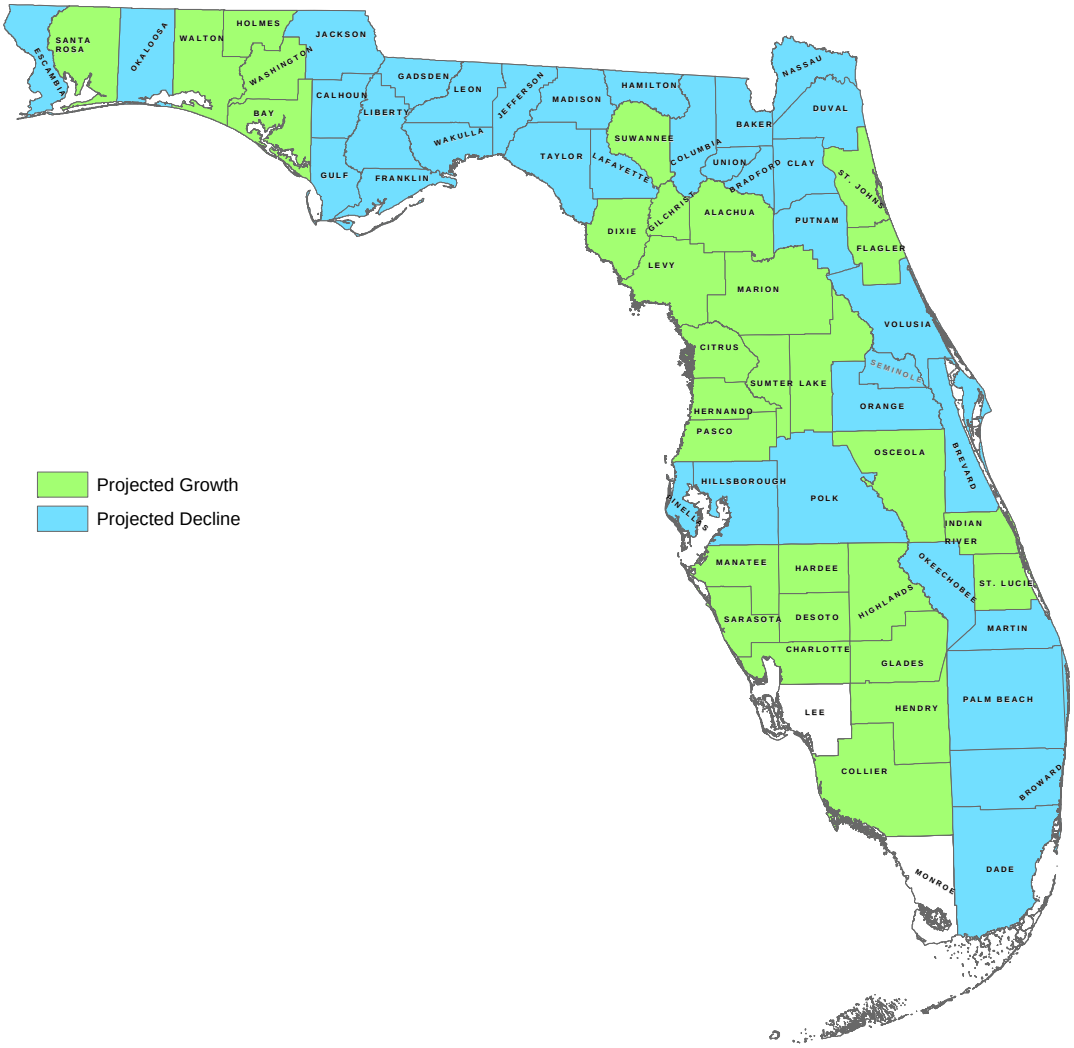
Change in Demand
from Present to 2025 - Freshwater



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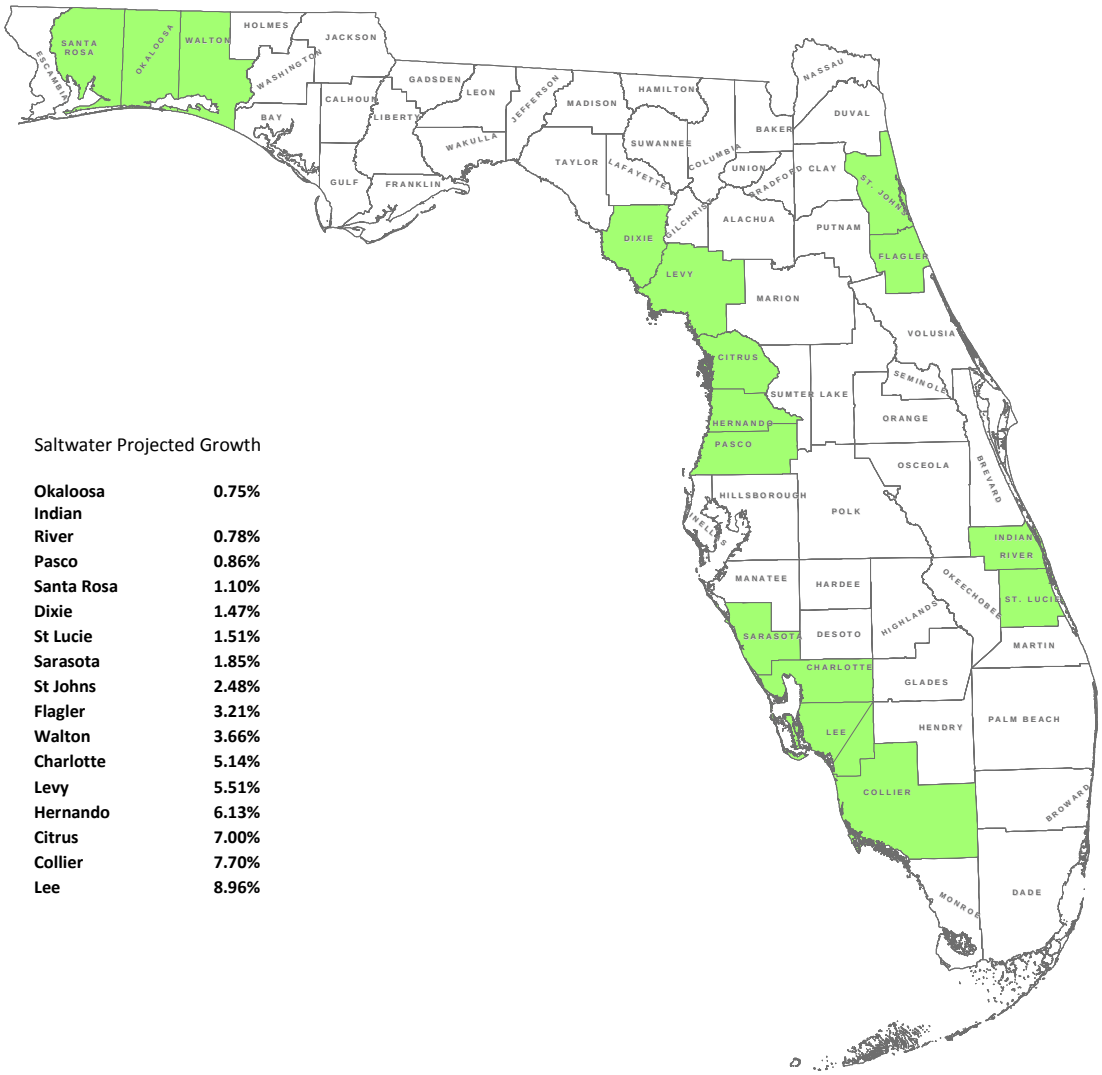
Percent Change in Demand from Present to 2025 - Saltwater Growth



Saltwater Projected Growth

Okaloosa	**0.75%**
Indian River	**0.78%**
Pasco	**0.86%**
Santa Rosa	**1.10%**
Dixie	**1.47%**
St Lucie	**1.51%**
Sarasota	**1.85%**
St Johns	**2.48%**
Flagler	**3.21%**
Walton	**3.66%**
Charlotte	**5.14%**
Levy	**5.51%**
Hernando	**6.13%**
Citrus	**7.00%**
Collier	**7.70%**
Lee	**8.96%**

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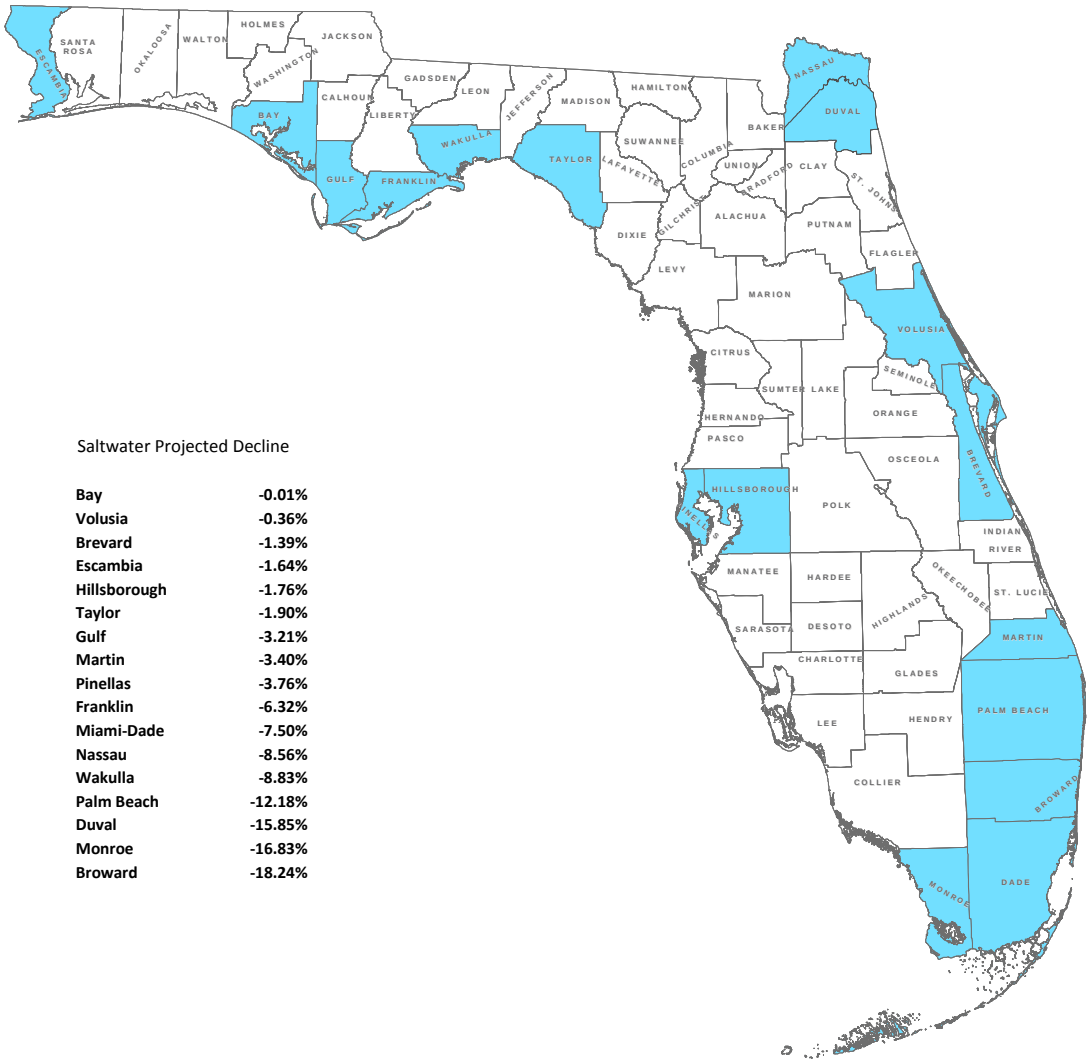
Percent Change in Demand from Present to 2025 - Saltwater Decline



Saltwater Projected Decline

Bay	**-0.01%**
Volusia	**-0.36%**
Brevard	**-1.39%**
Escambia	**-1.64%**
Hillsborough	**-1.76%**
Taylor	**-1.90%**
Gulf	**-3.21%**
Martin	**-3.40%**
Pinellas	**-3.76%**
Franklin	**-6.32%**
Miami-Dade	**-7.50%**
Nassau	**-8.56%**
Wakulla	**-8.83%**
Palm Beach	**-12.18%**
Duval	**-15.85%**
Monroe	**-16.83%**
Broward	**-18.24%**

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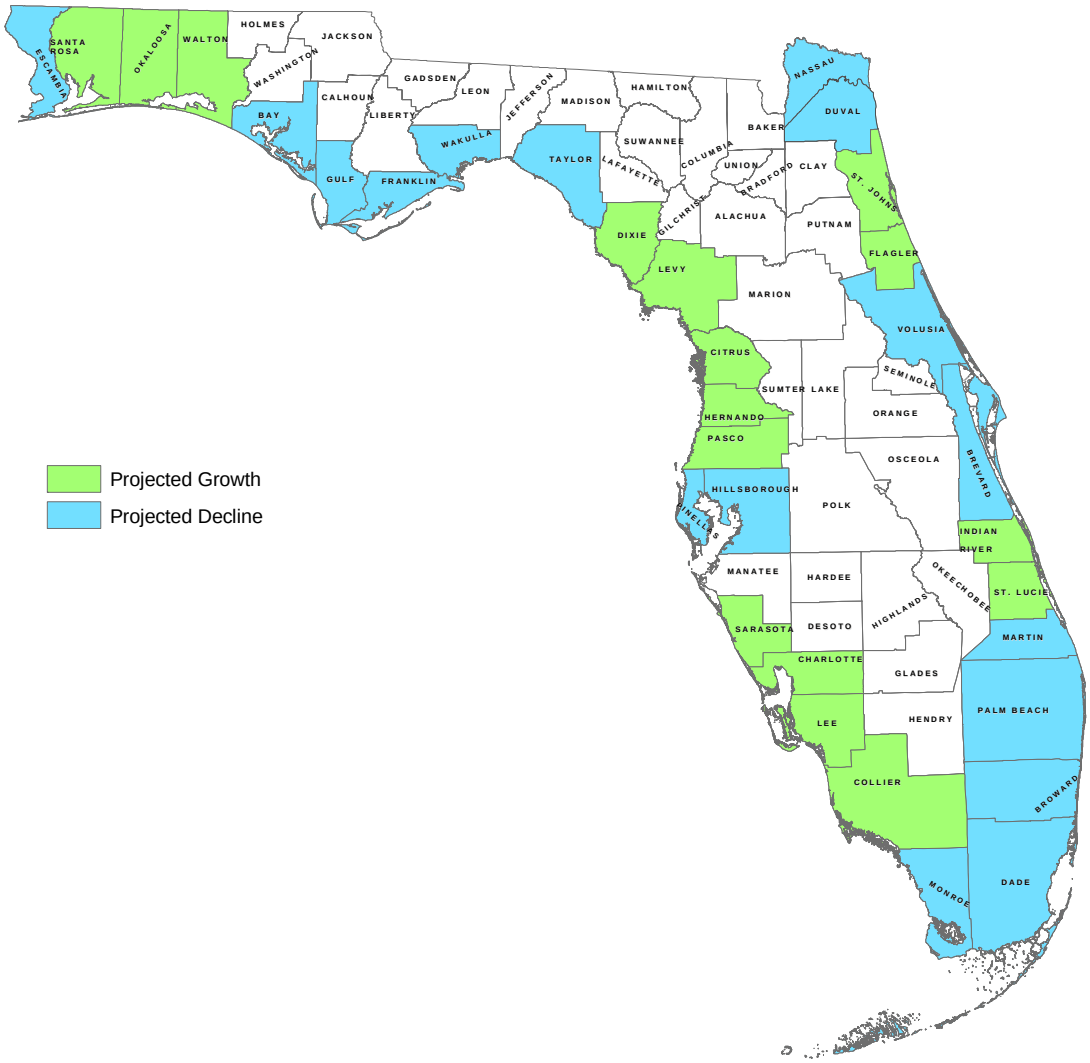
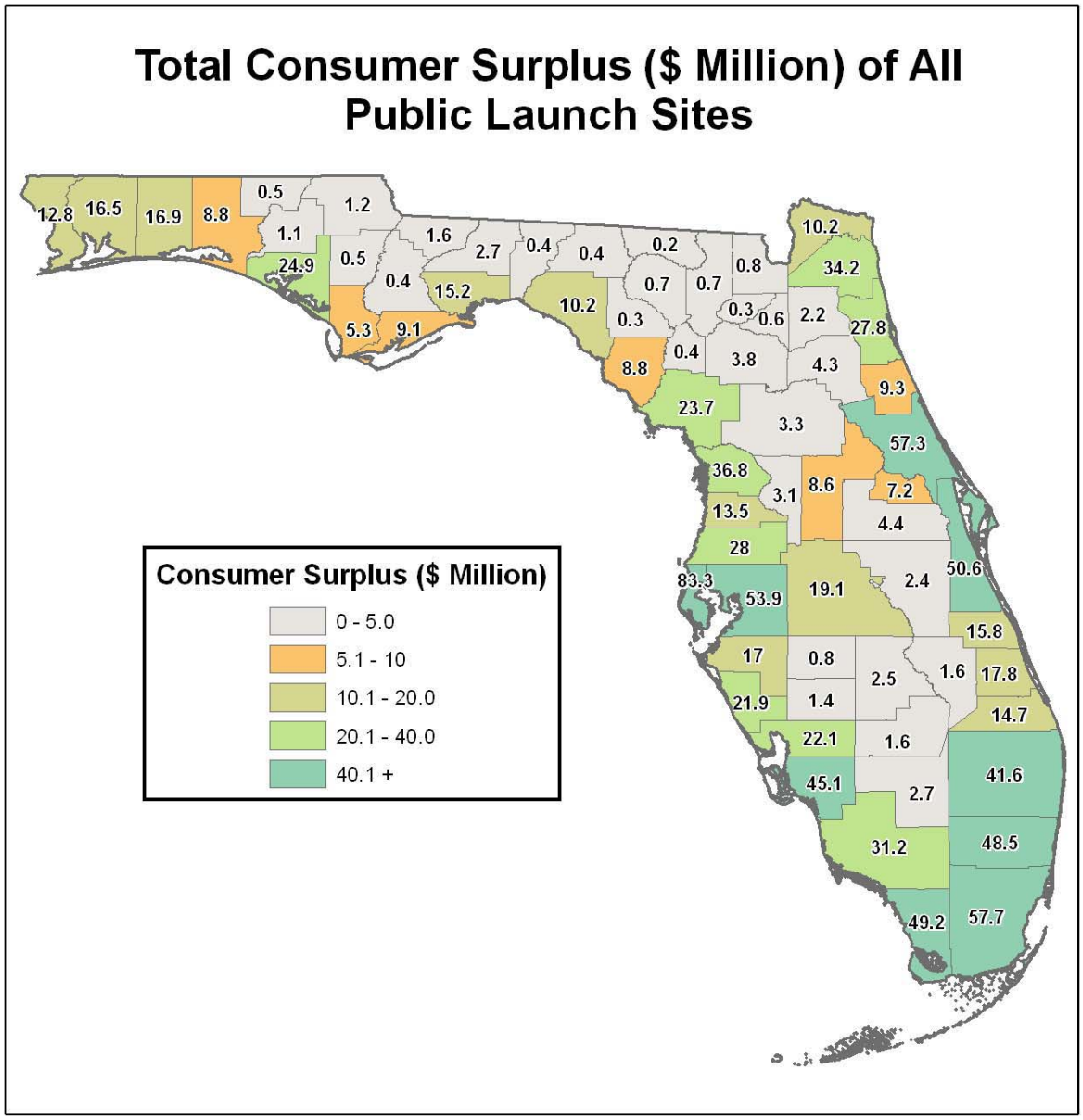
Percent Change in Demand from Present to 2025 - Saltwater




Total Consumer Surplus ($ Million) of All Public Launch Sites
Consumer Surplus ($ Million)
0 - 5.0
5.1 - 10
10.1 - 20.0
20.1 - 40.0
40.1 +
12.8
16.5
16.9
8.8
0.5
1.2
1.1
24.9
0.5
1.6
2.7
0.4
0.4
0.2
0.8
10.2
34.2
0.4
15.2
0.7
0.7
5.3
9.1
10.2
0.3
0.3
0.6
2.2
27.8
0.4
3.8
4.3
8.8
9.3
23.7
3.3
57.3
36.8
3.1
8.6
7.2
13.5
4.4
28
83.3
53.9
19.1
2.4
50.6
15.8
17
0.8
2.5
1.6
17.8
21.9
1.4
14.7
22.1
1.6
45.1
2.7
41.6
31.2
48.5
49.2
57.7

Results of Process Analysis: (Ranking, Lower and Upper Bound Capital Cost Projections Through 2025 and Percent Change in Demand Through 2025)

$0 Indicates Diminishing Demand

Freshwater

County	Priority	Lower Bound	Upper Bound	Percent Change in Demand
Collier	Highest Priority	$232,827	$355,368	+9.80

County	Priority	Lower Bound	Upper Bound	Percent Change in Demand
Pinellas	High	$0	$0	-11.53
Hillsborough	High	$0	$0	-6.74
Miami-Dade	High	$0	$0	-5.38
Brevard	High	$0	$0	-3.25
St. Johns	High	$2,389,141	$3,914,124	+16.94
Lake	High	$8,333,494	$13,235,550	+9.80
Flagler	High	$588,972	$964,912	+8.35
Charlotte	High	$250,616	$387,315	+7.59
Pasco	High	$268,622	$415,143	+4.44
Sarasota	High	$23,715	$36,651	+0.48

County	Priority	Lower Bound	Upper Bound	Percent Change in Demand
Volusia	Priority	$0	$0	-5.38
Seminole	Priority	$0	$0	-2.63
Orange	Priority	$0	$0	-0.97
Taylor	Priority	$0	$0	-0.55
St. Lucie	Priority	$349,794	$555,556	+3.97
Indian River	Priority	$96,020	$152,503	+1.41
Bay	Priority	$9,382	$14,744	+1.34

Marine (Saltwater)

County	Priority	Lower Bound	Upper Bound	Percent Change in Demand
Lee	Highest Priority	$12,636,630	$20,702,565	+8.96
Citrus	Highest Priority	$4,279,795	$7,011,578	+7.00
Levy	Highest Priority	$3,234,928	$5,299,776	+5.51
Charlotte	Highest Priority	$1,810,221	$2,965,682	+5.14
St. Johns	Highest Priority	$3,079,508	$5,087,883	+2.48
Sarasota	Highest Priority	$1,347,004	$2,206,794	+1.85
Pasco	Highest Priority	$486,741	$797,426	+0.86

County	Priority	Lower Bound	Upper Bound	Percent Change in Demand
Duval	High Priority	$0	$0	-15.85
Pinellas	High Priority	$0	$0	-3.76
Hillsborough	High Priority	$0	$0	-1.76
Hernando	High Priority	$2,450,094	$4,013,985	+6.13
Flagler	High Priority	$1,770,961	$2,925,936	+3.21
St. Lucie	High Priority	$1,260,219	$2,073,263	+1.51
Indian River	High Priority	$603,710	$993,201	+0.78

County	Priority	Lower Bound	Upper Bound	Percent Change in Demand
Broward	Priority	$0	$0	-18.24
Palm Beach	Priority	$0	$0	-12.18
Nassau	Priority	$0	$0	-8.56
Miami-Dade	Priority	$0	$0	-7.50
Brevard	Priority	$0	$0	-1.39
Volusia	Priority	$0	$0	-0.36
Collier	Priority	$5,431,879	$8,899,035	+7.70
Walton	Priority	$1,663,536	$2,709,187	+3.66
Dixie	Priority	$644,653	$1,049,864	+1.47
Santa Rosa	Priority	$1,041,821	$1,696,681	+1.10

Lee County Case Studies

The case study approach may be used to assist the decision maker in reaching a conclusion regarding boat ramps based on different scenarios. Provided below are examples of case studies from Lee County, Florida .

Add public access to a new site (Ostego Drive).

In this first case policy makers wish to evaluate the benefits of adding an additional ramp to the set of ramps already available in the county. A ramp presently exists on Ostego Drive, but is not operational due to a regulatory constraint. The question becomes **is the expense and time required by the county to successfully challenge the regulatory constraint a good investment of public funds?** Using the Random Utility Model, it is possible to calculate the per trip value provided by opening this ramp and, by extension, the total value for all boaters dependent on ramp access in Lee County. To calculate the per trip additional value with the opening of this ram, each surveyed boater's choice set was recomputed by adding the new site, its characteristics, and the individual's specific travel costs to this site. The Random Utility Model generated value added to all trailered boating trips for the additional ramp site was estimated to be $0.86 per trip to Lee County. For the 588,000 countywide boat trips using a trailer and launching from public access points, this action would translate into a total annual value of $505,680 for boaters dependent on Lee County ramp access. Assuming that this action would be indefinite, it could be viewed as a perpetuity with a 3 % annual discount rate and the sum net present value of $16,856,000. This value would assume constant boater participation rates and ramp choices over time. If policy makers believe this sum is greater than the cost of litigating the regulatory constraint, then the action would make economic sense.

Increase the average parking size at Pine Island Commercial Marina and Bokeelia Boat Ramp and Cottages by 50% (i.e., 50% more parking)

In addition to adding or removing sites, policy makers might wish to enhance a site's features. In the case of ramps at Pine Island Marina and Bokeelia Boat Ramp and Cottages, policy makers would like to know **if a significant increase in their parking areas is a worthwhile investment.** One of the significant Random Utility Model variables is average parking size meaning this variable can be evaluated for marginal changes (increases or decreases in size). By increasing the value of this variable by 50% and using the estimated Random Utility Model the value of this policy change was estimated to be $0.26 and $0.99 per trip to boaters dependent on Lee County ramps for Pine Island Marina and Bokeelia Boat Ramp and Cottages respectively. Overall, for the 588,000 countywide boat trips using a trailer and launching from a public access point, this action would translate into a total annual value of $153,000 and $882,000 for boaters using Lee County ramps due to added parking at Pine Island Marina and Bokeelia Boat Ramp and Cottages respectively. Assuming that this action of purchasing the land needed for the parking lot expansion would be indefinite, it could be viewed as a perpetuity with a 3% annual discount rate and would equal the sum net present value of $5,100,000 and $19,404,000 for Pine Island Marina and Bokeelia Boat Ramp and Cottages respectively. If policy makers believe this sum is greater

than the cost of purchasing and preparing the parking lot expansion, then the action would make economic sense.

Site Suitability

This approach to boating access site suitability has two elements, environmental/geographic conditions and economics. The emphasis of this approach is on incorporating economic information and data to build on the screening criteria employed through the boat facility siting plan method promulgated by FWC and endorsed by the Department of Community Affairs.

The Lee County Manatee Protection Plan (MMP) includes a marine facilities siting element (MFSE) that prescribes a method for determining site suitability for new boating facilities as well for the expansion, rehabilitation and reconfiguration of existing sites. For Lee County, the results of the screening method suggest both sites are “preferred” and are appropriate for development.