

CITY OF TYBEE ISLAND

TOURISM CARRYING CAPACITY

COMMUNITY INDICATORS

PREPARED 11/10 FOR THE HIGHWAY 80 CHALLENGE & WAVE ECOLOGY STUDY

CARRYING CAPACITY = P X A X T

P FACTOR = POPULATION

A FACTOR = AFFLUENCE & ECONOMICS

T FACTOR = TECHNOLOGY & SERVICES INCREASING THE CARRYING CAPACITY WITH TECHNOLOGY

Indicator	Capacity Limit (Quantitative)	Capacity Limit (Qualitative)	Current Capacity (Peak Tourism)	Notes																												
▼ Residential Population Demographics - P Factor																																
Age Profile (2000 Census)	-NA- Population level in 2000 = 3,716	Carrying Capacity for population defined by a variety of factors related to economic affluence and the technologies around the built environment. Current annual population levels are within the current infrastructure capacity of the Island.	-NA-	<table border="0"> <tr> <td>Median Age</td> <td>46.9</td> </tr> <tr> <td>Under 5</td> <td>102 3.0%</td> </tr> <tr> <td>5-9 years</td> <td>127 3.7%</td> </tr> <tr> <td>10-14 years</td> <td>144 4.2%</td> </tr> <tr> <td>15-19 years</td> <td>146 4.3%</td> </tr> <tr> <td>20-24 years</td> <td>133 3.9%</td> </tr> <tr> <td>25-34 years</td> <td>353 10.4%</td> </tr> <tr> <td>35-44 years</td> <td>557 16.4%</td> </tr> <tr> <td>45-54 years</td> <td>696 20.5%</td> </tr> <tr> <td>55-59 years</td> <td>260 7.7%</td> </tr> <tr> <td>60-64 years</td> <td>247 7.3%</td> </tr> <tr> <td>64-74 years</td> <td>355 10.5%</td> </tr> <tr> <td>75-84 years</td> <td>199 5.9%</td> </tr> <tr> <td>85 years and over</td> <td>73 2.2%*</td> </tr> </table>	Median Age	46.9	Under 5	102 3.0%	5-9 years	127 3.7%	10-14 years	144 4.2%	15-19 years	146 4.3%	20-24 years	133 3.9%	25-34 years	353 10.4%	35-44 years	557 16.4%	45-54 years	696 20.5%	55-59 years	260 7.7%	60-64 years	247 7.3%	64-74 years	355 10.5%	75-84 years	199 5.9%	85 years and over	73 2.2%*
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Race (2000 Census)	-NA-	While race and carrying capacity are not directly linked, understanding the economic variables and cultural variables linked to a population race and ethnicity may be important in determining future services, private partnerships, etc.	-NA-	<table border="0"> <tr> <td>White</td> <td>95.9%</td> </tr> <tr> <td>African American</td> <td>1.9%</td> </tr> <tr> <td>American Indian</td> <td>0.6%</td> </tr> <tr> <td>Asian</td> <td>0.9%</td> </tr> <tr> <td>Other</td> <td>0.1%</td> </tr> <tr> <td>Two or More</td> <td>0.7%*</td> </tr> </table>	White	95.9%	African American	1.9%	American Indian	0.6%	Asian	0.9%	Other	0.1%	Two or More	0.7%*																
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Household and Age (2000 Census)	-NA-	Carrying Capacity relates to household age in interesting ways. Linkages for emergency services, as well as the economic viability and sustainability of the housing industry gain a clearer picture when we know the age demographics of Tybee Island.	-NA-	<table border="0"> <tr> <td>Hholds w/ individ under 18</td> <td>294</td> <td>18.8%</td> </tr> <tr> <td>Hholds w/ individ 65+</td> <td>388</td> <td>24.7%*</td> </tr> </table>	Hholds w/ individ under 18	294	18.8%	Hholds w/ individ 65+	388	24.7%*																						
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Age Profile	-?-	-?-	-?-	Further data collection and research on the demographics of the tourist population will help define possible technological innovations that can expand the carrying capacity for Tybee Island during peak tourist times.
Tourist Product Type (ex. Eco-tourism)	-?-	-?-	-?-	Further data collection and research on the demographics of the tourist population will help define possible technological innovations that can expand the carrying capacity for Tybee Island during peak tourist
▼ Economic Profile - A Factor				
Class of Workers	-NA-	-NA-	-NA-	Private wage & salary workers 1,155 66% Gov. workers 349 20% Self-employed 245 14%
Occupations	-NA-	-NA-	-NA-	Employed Civilian Pop. 16 years and over Management / Professional 731 41.8% Service 360 20.6% Sales / Office 313 71.9% Farming / Fishing 0 0 Construction / Maintenance 198 11.3% Production / Transport Goods 147 8.4%
Economic Engines	-NA-	3 NAICS Code Sectors with 20+ employees numbers Retail Trade 59 Real Estate/Rental 23 Accommodation & Food Service 322***	-?- Understanding the impact of carrying capacity on these largest industries for the Island is significant and may assist in shaping policies that can mitigate issues resulting in decreased revenues	3 NAICS Code Sectors with 20+ employees Retail Trade = \$5,848,000/year \$786,000 payroll Real Estate/Rental = \$3,457,000/year \$501,000 payroll Accom. & Food Service = \$16,540,000/year \$4,791,000 payroll
Median Household Income	-NA-	-NA-	-NA-	49,741
Poverty Levels	-NA-	-NA-	-NA-	50 families 5.3% of population 332 Individuals 10% of population
Median Family Income	-NA-	-NA-	-NA-	58,462

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Monthly Mortgage Costs as a Percentage of Household Income in 1999	-NA-	Understanding the burden of the community housing market on citizens can create a clearer economic profile that may reveal future concerns related to affordability of an annual population.	-NA-	Less than 15 percent 36.6% 15-19 percent 13.7% 20-24 percent 11.6% 25-29 percent 8.8% 30-34 percent 7.3% 35 + percent 20.3% Not computed 1.5%*
Gross Rent as a Percentage of Household Income in 1999	-NA-	Understanding the burden of the community housing market on citizens can create a clearer economic profile that may reveal future concerns related to affordability of an annual population.	-NA-	Less than 15 percent 22.1% 15-19 percent 13.2% 20-24 percent 6.1% 25-29 percent 7.2% 30-34 percent 8.7% 35 + percent 29.9% Not computed 12.8%*
▼ Mobility - T Factor				
Highway 80 Corridor	12,000 vehicles per day per direction (Estimation based on similar roadways. Transportation study may assist in gaining clearer number.)	-NA-	-NA-	Based on available traffic count data 23 days between Jan 2010 and July 2010 the roadway capacity was exceeded. These occurred mainly on Friday, Saturday and Sunday. Hourly traffic counts for Labor Day weekend revealed that while the capacity was breached, no hourly rates exceeded roadway capacity.
Highway 80 Corridor Flooding (Roadway flooding affects transportation connectivity at 9.2ft MSLW.)**	09/24/09 - 10/24/10 = 27 Days above 9.0 feet 11 Days above 9.2 feet	-NA-	-NA-	Flooding occurred in eight out of the 13 months. Roadway capacity is completely severed at 10 feet. The Flooding Model can be accessed by clicking here .
Butler Avenue	-?-	-?-	-?-	Requires transportation infrastructure capacity study due to the many variables for the four-lane section (i.e. entrance / exit points, stop lights and other congestion technologies, pedestrian crosswalks, etc.)
Marina	7 Private marinas located along the full Highway 80 Tybee Island region. No day passes. 0 Public Marinas.	Marketing available services at these marinas, as well as forming partnerships may assist in providing alternative transportation modes and increase the tourist product provided by Tybee Island.	-NA-	Marina map can be located by clicking here .
Mass Transit (Bus Transport)	None currently to the Island or inter-Island.	-NA-	-NA-	CAT Proposed Shuttle Service can be accessed by clicking here .
Bicycle Corridor	Capacity for connectivity currently being explored in the Highway 80 Bridges Study by CORE MPO.	-NA-	-NA-	Extensive network on Tybee Island and on McQueen's Trail. Disconnection points at both the Lazaretto Creek and The Bull River Bridges. More information provided by clicking here .

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Annual Population Vehicle Availability (2000 U.S. Census)	0 car = 109 (6.9% of population) 1 car = 608 (38.5% of population) 2 car = 642 (40.6% of population) 3 + car = 221 (14% of population)*	-NA-	-NA-	Understanding the population demographics without vehicle access remains critical for an area such as Tybee Island with only one modality source.
Public Parking	2,121 Spaces Approx. 500 Spaces Business District			
Alternative Inter-Island Transport				Several forms currently exist and could be utilized formally through public/private partnership during peak times to alleviate automobile travel. Pedi-cab service on call from 10am-midnight full island service (Pirate Pedi-cab). Tybee Island Crab Cab taxi service.
▼ Solid Waste - T Factor				
Municipal Solid Waste	-?- 2010 = 4,386 Tons/year (projected in Tybee Island Solid Waste Plan) 2006 = 6.39lbs/day/person (GA 2006 Solid Waste Management Plan) (In Comparison: The average American throws away 4.39 lbs/day/person which is still viewed globally as a high number.)	-?-	-?-	Waste Pro private contract: solid waste shipped and landfilled beyond municipal borders. Waste Characterization of Material Disposed (2006 GA Solid Waste Management Plan...results for Chatham County) Paper 33% Plastic 18% Glass 4 % Metal 7% Organic 26% C&D 6 % Inorganic 6 % TOTAL: 100 %
Municipal Recycling	-?-	-?-	-?-	Waste Pro private contract: recycling shipped and processed beyond municipal borders. Gathering further data can help to reveal the capacity level and highlight policy options to manage the tourist seasonal peak needs.
Composting Yard Debris & Organic Matter	-?-	-?-	-?-	Monthly pick up through Waste Pro (third party manager) and taken to Green Space, Inc. in Ridgeland S.C. Yard waste dropped of at Public Works Facility is chipped into mulch and used in municipal projects, as well as available to the public.
▼ Water / Wastewater- T Factor				

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Drinking/Potable Water	-?- EPD Drinking Water Permit #025-0027 Avg. limit/year = 0.960MGD Avg. limit/month = 1.6MDG	-NA-	According to EPA estimations this services aprox. 10,000 persons.	State restrictions currently ban an increase on permit consumption due to salt water intrusion. Requires further research on current consumption levels.
Wastewater	-?- Tybee Island WPCP EPD Permit #GA0020061 Avg. limit/month = 1.0MGD	-NA-	According to EPA estimations this services aprox. 10,000 persons.	Requires further research on current discharge levels to determine if the allotted capacity is already being met.
▼ Fuel Sourcing - T Factor				
Electricity Supplier: Georgia Power / IP Savannah Mill (Coal supplied from Scott's Branch Mountain Kentucky)	-?-	-NA-	-?-	Requires further study to gain numbers from GA Power on total usage.
House Heating Fuel (2000 U.S. Census)	Utility gas 33 2.1% Bottled, tank, or LP gas 153 9.7% Electricity 1,358 85.9% Fuel oil, kerosene, etc. 22 2.4% Solar 0 0% No fuel used 14 0.9%*	-NA-	-NA-	Data released with the 2010 U.S. Census may provide a more current picture. Data may also be located through partnerships with Georgia Power.
▼ Food Supply - T Factor				
IGA	-?-	-?-	-?-	Understanding their food sales record over a period of one year will help gain a clearer picture on the rate of usage and the peak demand times. Online grocery order and home delivery available. Business is partnered with vacation property managers on Tybee Island.
Tybee Island Community Garden	-?-	-?-	-?-	Currently structured as a private community garden with plots available for a fee. No outside sales of produce (market) at this time. No animal husbandry.
▼ Housing - T Factor				
Housing Units	2,695 Total Units Owner Occupied 1,078 Units Renter Occupied 490 Units Vacant Housing / Rental 1,128 Units	-NA-	-NA-	According to the Tybee Island Comprehensive Plan (2008) the Island is close to reaching build-out capacity. Understanding the existing units in relationship to the future land use plan clearly denotes a carrying capacity for Tybee Island with relation to housing.

Indicator	Capacity Limit (Quantitative)	Capacity Limit (Qualitative)	Current Capacity (Peak Tourism)	Notes
Year Structure Built	-NA-	1999-2000 311 19.7% 1995-1998 461 29.2% 1990-1994 304 19.2% 1980-1989 247 15.6% 1970-1979 156 9.9% 1969 or earlier 101 6.4%*	-NA-	Upon release of the 2010 Census data a clearer picture on new construction and units may be revealed and may assist in understanding any area for future structural growth.
▼ Emergency Management / Public Safety				

* SOURCE: 2000 U.S. CENSUS

* * SOURCE: CHATHAM COUNTY COASTAL FLOODING MODEL

* **SOURCE: 2002 U.S. ECONOMIC CENSUS