



Project Report

The Economic Impact of
the 29576 Zip Code – Murrells Inlet/Garden City Beach, SC

Economic Activity and Marsh Valuation
Calendar Year 2012

Impact Area: Georgetown and Horry Counties, SC

Prepared by the CCU Center for Economic and Community Development

July 2013

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Prepared for and funded by: Murrells Inlet 2020 of Georgetown County, SC through a special grant from the Frances P. Bunnelle Foundation

Research assistance has been provided by Monika Bednarzak, Travis Bleidt, Theresa Crouse, Tessa Deneen, and Kevin Griffin.

THE ECONOMIC IMPACT OF THE 29576 ZIP CODE ON THE GRAND STRAND

EXECUTIVE SUMMARY

This study quantifies the economic impact of the 29576 zip code on the counties of Georgetown and Horry – the Grand Strand. The salt marsh inlet of the Atlantic Ocean has shaped much of the economy and culture of the region; therefore, an important aspect of the study is the measurement of the economic value of the marsh, a principal component of the economics of Inlet dredging. The 29576 zip code has seen tremendous population increase and economic growth in the last two decades as retiring baby boomers have moved from more northern states and more general economic activity has increased throughout the region. A new and growing hospital, new schools, and new housing developments have transformed the landscape in just ten years. This growth presents new opportunities and challenges, and this study provides insightful analysis of the changing economic conditions. The information presented can be used to inform decisions affecting the economic conditions and cultural integrity of the region.

The key findings of the study include¹:

- The economic value of the salt marsh exceeds \$720 million, and includes the impact on real estate values, restaurant sales, the value of boating, channel navigability, and other tourism activity. This is a conservative valuation, since it is difficult to quantify certain activities, such as the value of recreational and commercial fishing, fish harvests and related commercial activity.
- The cultural importance of the salt marsh is reflected in SC Department of Natural Resources commercial fish catch records. Ninety-eight percent of all spot documented in the state is caught in or around Murrells Inlet, 30 percent of all flounder, and 23 percent of all snapper.
- The Marsh increases residential real estate valuations of properties on the Marsh by at least \$194 million in the aggregate.
- Visitor spending in the 29576 zip code in 2012 exceeded \$497 million, and of this we attribute fifty percent or \$249 million directly or indirectly to the draw of the Marsh.
- Restaurant sales in the 29576 zip code exceeded \$112 million in 2012, and of this, thirty-nine percent or just over \$44 million were generated by restaurants on or across from the Marsh.
- Over \$785 million of personal income was earned by residents of the 29576 zip code in 2011.
- In 2011, approximately 11,000 residents of the 29576 zip code were employed, with an unemployment rate of 4.9 percent, one of the lowest in the Southeast.

¹ Slight differences in reported values in the executive summary and tables may exist due to rounding.

- Retail sales taxes, hospitality fees, and accommodations taxes for the counties of Horry and Georgetown generated a total of \$27.4 million from the 29576 zip code.
- An estimated 4.9 million visitors helped generate total retail sales activity of \$1.2 billion, which directly employed 15,100 people. The 29576 zip code provides many jobs for people outside the zip code.

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General Limiting Conditions

All reasonable effort has been made to ensure that data in this study reflect the most precise, appropriate, and timely information available, and they are assumed to be dependable. This study is based on estimates, assumptions and additional information reviewed and evaluated by the CCU Center for Economic and Community Development. This report is based on information that was available as of March 2013 or as noted in the report, and the CCU Center has not made any other revision of its study effort from the time of such date. The Center makes no guarantee that any of the estimated values or outcomes in this study will in fact be accomplished.

Statement of Scope

The economic impact will be measured for Horry and Georgetown Counties, the two counties in which Murrells Inlet and the 29576 zip code are situated. This study analyzes the economic impact of the salt marsh on land values, tourism activity, and the broader economy. The study attempts to isolate the economic contribution of the 29576 zip code to the larger Grand Strand economy.

1. INTRODUCTION

The 29576 zip code is home to Murrells Inlet and Garden City Beach, in the two counties of Georgetown and Horry in South Carolina. The region covers approximately thirty-seven square miles from the Atlantic Ocean west to the Intracoastal Waterway and from Blackmoor, Indigo Creek, and Indian Wells golf courses south to and including Brookgreen Gardens and Huntington Beach State Park. The sky rise hotels of Myrtle Beach give way to coastal homes, live oaks, and the marsh water more commonly associated with the low country region of southern South Carolina.



There are no incorporated municipalities in the 29576 zip code, and the economic activity is split unevenly across two counties. For these reasons fiscal and economic impacts of the region have not been widely produced. The census provides readily available data at the state, county, and metro levels, but estimates for smaller regions require much time and effort. As part of the greater Grand Strand region, the 29576 zip code has seen tremendous population and economic growth in the last two decades as retiring baby boomers have moved from more northern states and more general economic activity has increased throughout the region. A new and growing hospital, new schools, and new housing developments have transformed the landscape in just ten years. This growth presents new opportunities and challenges, and this study provides insightful analysis of the changing economic conditions. The information presented can be used to inform decisions affecting the economic conditions and cultural integrity of the region.

This study quantifies the economic impact of the 29576 zip code on the counties of Georgetown and Horry – the Grand Strand. The salt marsh inlet of the Atlantic Ocean has shaped much of the economy and culture of the region; therefore, an important aspect of the study is the measurement of the economic value of the marsh. The marsh and surrounding preserved green space offer a unique cultural experience to visitors and residents alike. The culture and heritage contribute to the economics of the

region, attracting millions of visitors each year to the well-known restaurants, golf courses, nature preserves, fishing waters, and beaches. The next section provides a detailed discussion of the economic impact methodology applied. Those familiar with input-output modeling may want to skip ahead to section three which quantifies and discusses the basic economic components of population, income and employment in the 29576 zip code. Section four presents the marsh valuation. Section five discusses the impact from tourism in general, including specific analysis of vacation accommodations, visitor spending, and golf. Section six concludes.

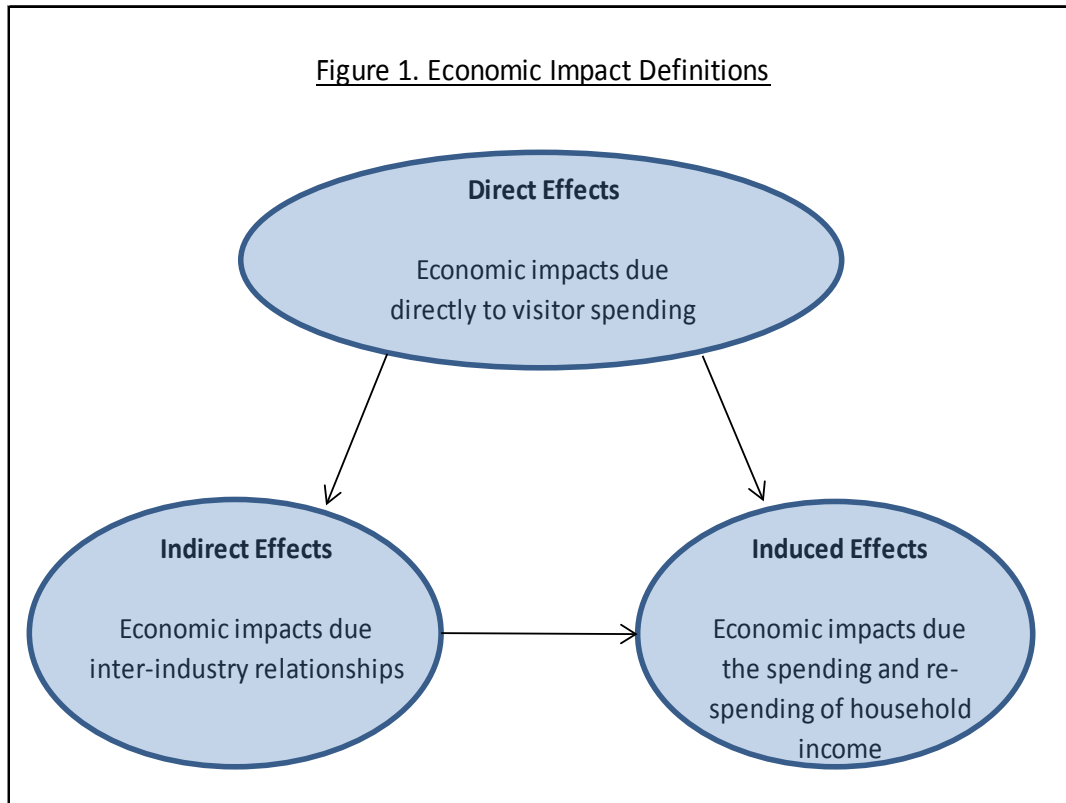
2. INPUT-OUTPUT MODELS

Economic impact analysis relies on the framework of input-output modeling and economic base theory. According to the theory, an exogenous impact on the local economy, such as a pre-determined level of spending from a new project or from an existing project that can be assumed to be exogenous, will generally be larger than the level of direct spending from the project itself, unless the project drives other similar spending out of the region. Due to inter-industry linkages in the economic system, spending from one sector requires inputs from other sectors and income from one sector will be spent in other sectors. The ultimate final impact of such an exogenous impact is thus considered to have a multiplier effect. Economic modeling systems, such as IMPLAN, estimate the total impact in a particular region. An input-output model is a technique for quantifying interactions between industries (sectors) within an economy. A transactions matrix (table) reflects the value of goods and services exchanged between sectors of the economy. The transactions matrix quantifies three general economic accounts of a local economy: producing industries, final demand, and value added. Algebraic manipulation of the underlying values of the transactions table allows calculation of the multipliers used to estimate the total impact of a change in one industry on all other industries within the local economy.

Economic Multipliers

Economic multipliers represent quantitative summaries of changes that occur in economic activity due to a one-unit direct change in spending from some proposed or existing activity. As an example, one could model the direct spending from Waccamaw Community Hospital in Murrells Inlet, and new construction projects for the hospital as an exogenous shock to the region, or one could model the impact of visitor spending in order to capture the relative economic importance of the tourism industry. The total economic impact is the summation of this direct expenditure and the *indirect* and *induced* expenditures occurring as a result of this direct expenditure. Indirect expenditures include spending by contract service providers that takes place in order for the direct activity to be carried out. As an example, expenditures that a linen service company would make in order to fulfill its contracted service obligations for Waccamaw Community Hospital would be considered indirect expenditures, over and above the direct expenditures from the hospital. Induced expenditures include spending from the employees of the direct and indirect firms, also referred to as household spending. The rationale for the

economic multiplier thus results from the generally larger total impact of all three rounds of spending: direct, indirect, and induced.



Source: Schunk (2010), Figure 1.

Multipliers can be distinguished between three types; Type I, Type II, and Type SAM. Type I multipliers simply analyze the relationship between the direct and indirect impacts. This type is useful because it can be completed quickly by simply dividing the sum of the direct and indirect impacts by the direct impact; however it is not as accurate or as thorough as the other two types. Type I is also useful for its ability to summarize the strength of the regions *leakages*. Leakages must be addressed when performing extensive impact studies because expenditures that are made out of the region being studied cannot be included in the estimation of the economic impact at the local level. A business or industry can only be included in the study if it is indeed functionally integrated with the regional economy. In spite of this, certain adjustments must be made to the raw data inputted into the IMPLAN Program. Type II multipliers include direct and indirect impacts, as well as induced impacts. This type of multiplier is especially helpful for public officials involved in creating certain development policies. By analyzing the relationship between the Type I and Type II multipliers, analysts can capture the effects of household spending and determine patterns in consumer demand. Finally, Type SAM multipliers again capture direct, indirect and induced impacts but further account for such factors as commuting, social security,

income taxes, and savings by households, some of which does not make its way into the local economy. This study employs the Type SAM multipliers as reported by IMPLAN.

IMPLAN

IMPLAN is an economic modeling software system, complete with a comprehensive economic database for estimating local economic impacts of many types of projects. IMPLAN's database comprises demographic statistics, industry prices, production ratios, and final demand estimates adjusted for specific regional characteristics and allows the modeler to input and analyze information previously obtained from surveys, budgets, or other sources. The IMPLAN database used for the current study was updated in 2006 for Horry and Georgetown counties. The impact on the final estimates due to changes in prices should be minimal in our case because of the negative impact of the recession on asset prices and wages and incomes compared with the upward pressure on consumer prices resulting from inflation.

The IMPLAN model incorporates estimates of the direct effects in order to compute estimates of the economic impact across three measures of economic activity: economic output, employment, and labor income. Economic output is an aggregate measure of total spending in the economy resulting from the initial direct expenditure. It includes all expenditures on goods and services made by businesses and consumers (direct + indirect + induced expenditures). Employment measures the number of full-time equivalent jobs associated with the economic impact (direct + indirect + induced jobs). Labor income represents total employee compensation, and includes all salary and wage income and benefits. Figure 2 summarizes the three measures.

Figure 2. Economic Impact Metrics

- **Economic Output:** All-inclusive measure of total spending impact in the local economy, also equals total revenues to local businesses.
- **Employment:** Total number of jobs in the local economy associated with the impact.
- **Labor Income:** Represents total employee compensation associated with the impact, including wages, salaries, and benefits

Source: Schunk (2010), Figure 2.

3. THE 29576 ZIP CODE – MURRELLS INLET AND THE MARSH ECONOMY

Land and Water



The central, defining feature of the 29576 zip code is the actual ocean inlet from which Murrells Inlet gets its name. The Marsh brings together the two distinct residential communities of Murrells Inlet and Garden City Beach. The photo above shows homes on the point of Garden City Beach, located directly across the Marsh from the restaurants of Murrells Inlet. Only boaters of the Marsh waters realize how close the communities actually are and how they are connected by the Marsh. Traveling by boat, Garden City Beach is only a short ride across the water.

The physical features of the Marsh change each day with the tide. At high tide, the Marsh can look like a calm pool, while at low tide the grasses are the more prevalent feature, highlighting the many creeks that boaters travel in and around the Marsh and also out of the Marsh to the Atlantic Ocean.

Outdoor Life

The 29576 zip code is host to a variety of outdoor activities. Seven of the nation's best golf courses are located in the area. In Horry County these include: Indian Wells, Indigo Creek, International Club, and TPC Myrtle Beach. The Georgetown County courses include: Wachesaw East and Wachesaw Plantation. Blackmoor Golf Course is located on the line, situated across both counties.

Commercial fishing is an important part of the culture and economy of the area. A fleet of independent commercial fishing boats anchors in the Marsh behind the restaurants and fishes the waters of the Gulf Stream for local and regional customers. Deep sea tournaments launch regularly from the Marsh, and inshore fishing is also a popular activity.

There are 2,802 registered boats in the 29576 zip code. These boats range from small jon boats popular for harvesting oysters in the Marsh, to recreational boats for water sports, freshwater fishing or saltwater fishing, to well-appointed yachts. Murrells Inlet is host to two very active public boat launch facilities accommodating freshwater and saltwater navigation. Boaters can be seen regularly navigating the waters of the Intracoastal Waterway/Waccamaw River from the public boat launch adjacent to Wacca Wache Marina, or the Marsh and Atlantic Ocean from the public boat launch adjacent to Belin United Methodist Church any time of year.

The Georgetown County side of the 29576 zip code has been preserved and carefully developed with nature tourists, hikers, and bicyclists in mind. The Marsh Walk connects many of the restaurants centered on one-half mile of the Marsh, and the Jetty View Walk is in the plans for the southern end of the Marsh behind Hot Fish Club and Morse Landing Park. A hiking and biking trail runs for three miles through the wooded area from the south end of Murrells Inlet proper to the 2,500 acre Huntington Beach State Park.

Murrells Inlet and Garden City Beach have attracted many retirees in the recent decade, a trend that should continue as more of the baby boom generation prepare for retirement. The impact on the area is evidenced by the recent expansion of the Georgetown Hospital System with the addition in 2002 of the new Waccamaw Community Hospital located in Murrells Inlet, pictured below. The four-story, 236,000 square feet, 167-bed facility was designed to accommodate the growth of the region, and is already in the middle of another expansion.



The 29576 zip code is among the fastest growing local communities of the Grand Strand. Horry County was one of the fastest growing counties in the nation from 2000 to 2010, and the 29576 zip code population grew at nearly twice the rate of Horry County. See the Table 1 below for a comparison of demographic statistics.

Table 1.a. Demographic Comparison

Category	29576 Zip Code	Horry County	Georgetown County
Land Area (Sq. Mi.)	37.9	1,134	814
Population (2010)	25,020	269,291	60,158
Population Density (Persons/Sq.Mi.)	660	238	73
Population Growth (2000-2010)*	46%	37%	8%
Per Capita Income (2011)	\$31,388	\$24,531	\$24,517
Median Value Own-Occ Housing (2007-2011)	\$232,500	\$170,600	\$170,500
Percent of Population Age 65+	30%	17.7%	20.7%

*Other sources show different rates of growth. We use the Census TIGER database files to calculate growth rates. We could not replicate other sources' rates.

Table 1.b. Within Zip Code Comparison

Category	29576 Zip Code	29576 Georgetown	29576 Horry
Land Area (Sq. Mi.)	37.9	20.5	17.4
Population (2010)	25,020	7,865	17,155
Population Density (Persons/Sq.Mi.)	660	383	987
Population Growth (2000-2010)	46%	35%	52%
Per Capita Income (2011)	\$31,388	\$36,092	\$29,231
Median Value Own-Occ Housing (2007-2011)	\$232,500	-	-
Percent of Population Age 65+	30%	31%	26%

Employment of the residents of the 29576 zip code is significant to the two-county region of the Grand Strand. The unemployment rate as of 2011 for the 29576 zip code, 4.9 percent, is significantly lower than that of either Georgetown or Horry counties, 10.9 percent and 11.5 percent respectively. See Table 2 below.

Table 2. Employment and Unemployment Comparison

Category	29576	Horry County	Georgetown County	29576 Horry	29576 Georgetown
Population (2010)	25,020	269,291	60,158	17,155	7,865
Employment (2011)	10,936	114,643	26,621	7,227	3,709
Unemployed	564	14,895	3,259	***	***
Unemployment Rate	4.9%	11.5%	10.9%	***	***

***Data on unemployment was unavailable at the Census Block Group level.

The residents of 29576 earn more income than the typical resident of either Georgetown County or Horry County. Annual per capita income in the 29576 zip code was \$31,388 in 2011. This compares to \$24,517 for Georgetown County and \$24,531 for Horry County. The divide among the 29576 across the two counties is also significant. The Georgetown side of 29576 had a per capita income of \$36,092 in 2011 compared with \$29,231 for the Horry side. In the aggregate, the 29576 zip code residents earned \$785.3 million in 2011.

Table 3. Income Comparison

Category	29576	29576 Horry	29576 Georgetown
Aggregate Income (\$Millions)	\$785.3	\$501.5	\$283.9
Per Capita Income	\$31,388	\$29,231	\$36,092
Percent of income from 29576		7.6%	19.2%
Percent of population from 29576		6.4%	13.1%

We also are able to measure the total of the total retail sales activity of the 29576 zip code. For 2012, we estimate total gross retail sales in the 29576 zip code of \$1.2 billion. Of this, we estimate \$945 million were generated in the Horry County side and \$297 million in the Georgetown County side. Because of differences in tax rates and qualified taxable expenditures, Horry County receives more tax revenue per dollar of activity than Georgetown County. For example, Horry County has levied two separate local option sales taxes while Georgetown County has levied none. Additionally the hospitality fee in Horry County is levied at a rate of 2.5 percent on accommodations and tourist activities, while Georgetown County levies its hospitality fee at a rate of 2.0 percent and only on prepared food and drinks for immediate consumption. See Table 4 below for estimates of revenue generated for each county from the 29576 zip code.

Table 4.a. Retail Sales Activity and County Tax Revenue*

Category	29576	Horry County	Georgetown County
Gross Retail Sales FY 2012 (\$Billions)	\$1.200	\$8.8	\$1.4
Net Taxable Sales (\$Billions)	\$0.688	\$5.2	\$0.544
	\$18.2	\$157.4	\$5.4
Sales Tax (3% Horry, 1% Georgetown)	Million	Million	Million
	\$7.1	\$37.6	\$2.0
Hospitality Fee**	Million	Million	Million

*Estimations from Net Taxable Sales only, exemptions not applied. Do not use for budgeting purposes.

** 2.5% unincorporated Horry on Accommodations and Tourist Activities

**2.0% Georgetown only on prepared food and drinks for immediate consumption

Table 4.b. Within Zip Code Retail Sales Activity and County Tax Revenue*

Category	29576	29576-Horry	29576-Georgetown
Gross Retail Sales FY 2012 (\$Billions)	\$1.200	\$0.945	\$0.297
Net Taxable Sales (\$Billions)	\$0.688	\$0.567	\$0.121
		\$17 Million	\$1.2 Million
Sales Tax (3% Horry, 1% Georgetown)			
		\$5.7 Million	\$1.3 Million
Hospitality Fee*			

*Estimations from Net Taxable Sales only, exemptions not applied. Do not use for budgeting purposes.

** 2.5% unincorporated Horry on Accommodations and Tourist Activities

**2.0% Georgetown only on prepared food and drinks for immediate consumption

4. ECONOMIC VALUE OF THE SALT MARSH

Measuring the Value of an Amenity

The Atlantic Ocean feeds the marsh waters forming the geographic feature known as Murrells Inlet, supporting a unique cultural and economic environment widely recognizable to residents and visitors alike. The Marsh, as it is commonly called, is surrounded by both commercial and residential properties and is itself a major tourist attraction. Tourists and local residents patronize the local restaurants, enjoy the public marsh access (via the Marshwalk, Morse Park and Huntington Beach State Park), boat in the waters, stay in the vacation properties, shop in the retail stores, and support other businesses along the Marsh. Consequently, these businesses generate jobs, income, and tax revenue.

Because of its natural beauty and access to the Ocean, living on the Marsh is valuable to many residents; therefore, we anticipate that the value of homes on the Marsh would be significantly higher than the value of similar homes away from the Marsh. The difference in value, which can be ascertained from the difference in average sales prices, reflects the value that residents place on the Marsh.

The Marsh has been a popular restaurant destination for decades. These restaurants provide not only exceptional food with a local flavor, but they provide visitors some of the best public access vantage points for taking in the beautiful scenery of the Marsh. Beach visitors and golfers from across the Grand Strand often frequent the restaurants of the Marsh to take in the view and unique, relaxing atmosphere.

Finally, the Marsh is a recreational amenity used by both commercial and private boat owners, fishermen, and eco-tourists. The inlet is one of only three points along the Grand Strand where boaters can easily access the waters of the Atlantic Ocean; the others are in Little River and Georgetown. Many homes on the Marsh have a slip for boats and the Inlet has one of the busiest boat landings in the state. We will attempt to estimate that value of boating in the Marsh. The value of commercial and recreational fishing is of cultural significance to the region. We report relevant information from South Carolina's Department of Natural Resources, but the economic value is small relative to the overall activity of the region. Nevertheless, the cultural impact of the saltwater marsh is evident from the data reported. Ninety-eight percent of all spot (992 pounds locally) documented in the state is caught in or around Murrells Inlet, 30 percent of all flounder (1,896 pounds locally), and 23 percent of all snapper (2,265 pounds out of 9,673 pounds in the state).

Determining the economic value of a natural or man-made amenity such as the Marsh can be more or less challenging depending on the level of market activity tied to the amenity. In the case of the Marsh of Murrells Inlet, substantial, measurable market activity exists from which we can derive an *implicit* value. By observing characteristics and market prices paid for various commercial transactions, we are able to infer the perceived value a particular individual assigns to his or her use or benefit received from the amenity. With enough observable transactions we can assign an aggregate value to the amenity.

Methodology

The main goal of this analysis is to estimate the value of the Marsh in the 29576 zip code. The value of the Marsh is reflected in four important and measurable ways:

- 1- It generates revenue from businesses that operate on or near the Marsh
- 2- It increases the value of homes that are located on the Marsh
- 3- It serves as an access point for boats to the Atlantic Ocean
- 4- It attracts tourists to the area

Results

Restaurants

Our first goal is to estimate the revenue generated by the businesses that are located on the Marsh. At this time, we will only focus on revenue generated by restaurants. Restaurants are a prevalent form of independent commercial activity associated with the Marsh. Other types of businesses contribute significantly to the economy of the Marsh; however, estimating their impact would require confidential information from each establishment, an unreasonable expectation for our study. We acquired a comprehensive list of approximately ninety-five percent of the restaurants in the 29576 zip code, a total of ninety-four restaurants in our sample. We worked with a local restaurant operator and industry expert, David McMillan, managing partner of Druken Jack's restaurant to estimate the total sales revenue of restaurants in the 29576 zip code and account for differences in size and location.

The estimated total revenue in 2012 dollars generated by all restaurants in the 29576 zip code is \$112.4 million. We classified twenty-five restaurants, twenty-seven percent, as Marsh restaurants based on their proximity to the Marsh. For example, this includes all of the Marshwalk restaurants as well as restaurants on or near the Marsh that are not part of the Marshwalk such as Sara J's, Lee's Inlet Kitchen, Flo's, Nance's, or Gulfstream Café. These twenty-five Marsh restaurants generated an estimated \$44.1 million, thirty-nine percent of the restaurant revenue generated in the zip code. Of the twenty-five Marsh restaurants, twenty-three are in Georgetown County and two are in Horry County. Ninety percent of the revenue from Marsh restaurants is generated in Georgetown County.

To estimate the market value impact of the Marsh on the restaurants we have to calculate the present value of the net return from sales over an infinite time horizon. To determine this net return we obtained information published by NYU's Stern School of Business and Value Line. From this information we determine that a twenty percent margin of earnings before interest and taxes (EBIT) is a reasonable assumption for restaurants on the Marsh. We use a standard discount rate of 7.5%, which is based on an average return from a one year treasury bill and adjusted for business risk, and, therefore, a discount factor of 1.075. We estimate the present market value of the Marsh restaurants to be \$117.5

million. This assumes that the real value of sales remains the same or that sales will rise at the same rate as inflation.

Property Values

We obtained individual transaction level data identified with unique tax map sequence (TMS) numbers for the 29576 zip code in Georgetown and Horry counties. SiteTech Systems, a local real estate analytics firm, maintains a database of millions of current and historical real estate transactions with hundreds of unique identifying features on every transaction including geographical information, financial transactions characteristics and physical building characteristics. Using ArcGIS spatial analytics web server software we were able to query all transactions in the 29576 zip code in the last two years. Accordingly, the average price of a real property transaction in the 29576 zip code within the last two years was \$238,725. The average price of a transaction on the Marsh during the same period was \$457,377, and the average price of away from the Marsh was \$229,654. From this simple analysis we find that, on average, real property transactions on the Marsh have a sales price that is \$227,723 higher than transactions not on the Marsh.

The above analysis includes residential and commercial transactions. The non-commercial transactions on the Marsh within the last two years are exclusively single-family homes, but transactions off the Marsh include condominiums, agricultural plots, and vacant lots. In order to make a more accurate comparison between the values of homes on the Marsh and homes away from the Marsh, we focus only on the sales of single-family homes away from the Marsh in the last two years. The average price of single-family homes away from the Marsh in the 29576 zip code was \$270,037 in the last two years. Therefore, the difference between the value of homes on the marsh and away from the Marsh is \$187,340.

We were able to identify all of the non-commercial transactions on the Marsh dating back to 1900. We estimate there are 1,037 non-commercial properties on the Marsh. Using the estimated Marsh premium of \$187,340, we estimate the Marsh adds \$194,271,580 in value to residential property values. This calculation does not account for the fact that houses on the Marsh tend to be larger, on average, than houses away from the Marsh. However, it can be argued that the benefit of living next to the Marsh attracts wealthier homebuyers who are willing to invest in a larger home; therefore, we can ignore the facts that homes on the Marsh are larger.

The careful reader may observe that the value of the marsh as determined in this analysis ignores the value to properties not located on the marsh but benefiting from the accessibility of the marsh. In order to determine this value, we must obtain property-specific information for transactions across the Grand Strand, controlling for differences in school quality, other nearby amenities, and factors that may detract from property values, such as congestion and the condition of adjacent properties. The data requirement for this analysis is beyond the scope of this study; however, future studies could attempt to estimate the effect of the Marsh on properties off the Marsh but within close proximity. Therefore, we believe our estimate is a low estimate of the Marsh value.

Boating

We can estimate the Marsh's value to boaters from records of the number of registered boats and information on the market value of boats. "The South Carolina Five Coastal County Boat Ramp Study" dated June 2007 by Zande-Jon Guerry Taylor, P.E., Inc stated that "Murrells Inlet is the most popular boat ramp in the combined Horry/Georgetown area and one of the top five busiest in the entire South Carolina Coastal Area." We obtained boat license counts for the 29576 zip code from the county administrator's office in Horry County and from the Auditor's office in Georgetown County. There are 2,802 registered boats in the 29576 zip code. Of the total, 1,282 are registered on the Horry County side and 1,520 are registered on the Georgetown County side. This is an interesting result in itself, since the 29576 population of Horry is much greater than that of Georgetown, reflecting a difference in the typical resident on the Georgetown side compared with the Horry side.

We estimate that at least half of the boat owners, or 1,401, use the landing on the Marsh since it provides the only access point to the Atlantic Ocean within 30 miles. The other closest access points are in Georgetown and Little River. According to a study by Zande-Jon Guerry Taylor, P.E., sixty percent of boat ramp users in Georgetown County come from outside of the county. We estimate that half of these come from Horry County and the remainder from other counties or states. Combining this information with the boat registration records from the 29576 zip code and our previous assumptions, we estimate there are 3,503 effective boaters using the marsh for their full boating needs. This does not mean that only 3,503 boaters use the marsh in a given year. This is an estimate of boats fully devoted to the marsh usage, for marsh valuation purposes. To determine an average boat value, we referenced a report in Bloomberg Magazine, "Some 95 percent of owners have boats 26 feet or an average cost of \$18,000, according to Ellen Hopkins at the National Marine Manufacturers Association." We have adjusted these numbers to the local market using a random sampling of boats offered for sale on www.craigslist.org and ebay.com. Boats in the local market average closer to 19' in length and have a median value of \$10,000 and range from small jon boats to large deep sea craft. Using these conservative estimates of value, we determine that the Marsh is worth at least \$35,025,00 to boat owners collectively.

Visitors

Finally, the Marsh is a major tourist attraction. Thousands of tourists stay at hotels and vacation homes near the Marsh every year. In addition to generating revenue for restaurants, which we have already estimated, tourists in the 29576 zip code spend money on lodging, retail, and entertainment. The CCU Center for Economic and Community Development has studied visitor spending across the Grand Strand and has published various reports on its impact. Applying a similar methodology used in previous studies of visitor spending on the Grand Strand, we utilize information on retail sales, accommodations tax revenue, and hospitality fees to estimate visitor spending in the 29576 zip code. We cannot determine a precise value associated only to the Marsh; however, we can infer that a certain proportion of visitor activity is attributable to the Marsh.

We estimate the value of gross retail sales in the 29576 zip code using county retail sales activity reported by the SC Department of Revenue and population, employment, and tax collection information available from the Census, Bureau of Labor Statistics, and the SC Department of Parks, Recreation, and

Tourism. We also were aided by the analysis of collections provided to us by Horry and Georgetown county administrative offices. We estimate total gross retail sales for the 29576 zip code in 2012 at \$1.2 billion. Of this, we estimate \$497 million can be attributed to visitor spending. To determine how much of this visitor spending is dependent on the Marsh, we must consider the tourist activities available in the 29576 zip code. In addition to the Marsh, the Atlantic Ocean of Garden City Beach draws a considerable volume of tourism activity. It is difficult to determine the impact the Marsh has on Garden City Beach, but the Marsh is a very visible and usable feature all along Garden City Beach, as is evident from the Atlantic Avenue causeway spanning the Marsh. This feature sets Garden City Beach apart from the beaches of Myrtle Beach, so that the Marsh is a complementary characteristic of the ocean at Garden City Beach. We think it is conservative to estimate as much as fifty percent of the visitor spending in the 29576 zip code can be tied directly or indirectly to the Marsh. We estimate \$249 million of visitor spending can be attributed to the draw of the Marsh. From this figure, we estimate that 4.9 million tourists visit the 29576 zip code each year to dine in the restaurants, golf, relax on the beaches, tour the state park and gardens, shop, and more.

Finally, the economic activity directly attributable to the Marsh generates economic benefits across other sectors of the local economy. This activity supports other jobs, income growth, and household formation. To estimate this additional value attributable to the Marsh we estimate the impact of visitor spending already attributed to the Marsh. Conservative economic models suggest a reasonable economic output multiplier of 1.5 for activity associated with visitor spending. This suggests tourism activity associated with the Marsh generates an additional \$124.5 million of activity in the 29576 zip code.

Table 5 below summarizes our estimates for the value of the Marsh. The value of the Marsh is at least \$720.4 million. The results of this estimation could inform future discussions on the economics of marsh dredging. Maintaining the value of the Marsh depends in part on the navigability and water quality, both features which can be enhanced by dredging.

Table 5. Marsh Valuation Summary

Component	Value
Value for Residential Real-Estate	\$194.3 Million
Value for Restaurants	\$117.5 Million
Value for Boat Ownership	\$ 35.1 Million
Value for Local Tourism	\$249.0 Million
Economic Impact of Tourism	\$124.5 Million

5. TOURISM AND THE 29576 ECONOMY

Room Accommodations in the 29576

Similar to the methodology used to estimate visitor spending, we estimate room accommodation revenue in the 29576 zip code using reported accommodations tax revenue for Georgetown and Horry counties and aggregate analysis of tax receipts provided by administrators with both counties. We also factor economic activity variation across the counties as reported by the Census and Bureau of Labor Statistics. We are aware of the recent judgment allowing the SC Department of Revenue's to collect unpaid accommodations taxes from vacation rental by owner properties as far back as ten years, and this type of property is very prevalent in the 29576 zip code. However, at this time we have no way of knowing the impact of the unreported activity; therefore, our analysis should provide a very conservative estimate of the accommodations revenue generated.

County-wide state accommodations tax collections from Georgetown County in fiscal year 2012 totaled \$1.4 million for reported room sales totaling \$72.1 million. County-wide state collections for Horry County totaled \$11.5 million for reported room sales totaling \$574.7 million. Do not confuse these figures with the local figures we will discuss below. The state of South Carolina collects accommodations revenue at the county level and reports this through the Department of Revenue by county. Each county may assess its own fees in addition to the state assessment. It is these local assessments that are the subject of our analysis. Horry County collection activity shows that twenty-seven percent of reported activity comes from the unincorporated areas in Horry County, and of this approximately forty percent is estimated to come from the 29576 zip code in Horry. Thus we estimate that 10.8 percent or \$1.2 million in tax revenue for the state comes from the 29576 zip code in Horry on reported accommodations revenue of \$62.1 million. Local tax revenue for Horry County, generated from the 2.5 percent local accommodations tax, totaled \$1.6 million in fiscal year 2012.

For Georgetown County we can make use of the results of a room inventory survey conducted by the Georgetown County Chamber of Commerce. From the survey, we have obtained aggregate zip code level room inventories, suggesting 25.6 percent of rooms available are located in the 29576 zip code. As a check on the reliability of the survey, we know that 31.4 percent of the 29576 zip code population resides in Georgetown County. However, casual observation suggests that commercial activity, and accommodations inventory in particular, is significantly more concentrated on the Horry County side. We think it is reasonable to assume 25 percent of the accommodations activity in Georgetown County comes from the 29576 zip code, the majority coming from Pawleys Island, and a smaller share from the City of Georgetown. Twenty-five percent of fiscal year 2012 accommodations revenue reported in Georgetown County totals \$18.0 million. Local accommodations tax revenue received in Georgetown County, assessed at a rate of 3.0 percent, would be \$541,000 from this level of activity. In total the 29576 zip code generates \$80.1 million of activity and \$2.14 million in tax revenue from accommodations for the two counties combined. See Table 6 for a summary.

Table 6. Accommodations Activity Summary

Location	Accommodations Revenue	Local Accommodations Tax Revenue
Georgetown County	\$72.1 million	\$1.4 million
Horry County	\$574.7 million	\$11.5 million
29576	\$80.1 million	\$2.1 million
29576-Georgetown	\$18.0 million	\$0.5 million
29576-Horry	\$62.1 million	\$1.6 million

The Restaurant Industry in the 29576

We acquired a comprehensive list of approximately ninety-five percent of the restaurants in the 29576 zip code, a total of ninety-four restaurants in our sample. The restaurant revenue estimation has already been discussed in Section 4. The estimated total revenue in 2012 dollars generated by all restaurants in the 29576 zip code is \$112.4 million, \$63.7 million in Georgetown County and \$48.6 million in Horry County. One purpose of the study was to demonstrate the importance of the Marsh to the economies of Georgetown County and Horry County, and this was provided with the analysis in Section 4.

Golf in the 29576

Across the Grand Strand, golf is a significant tourist draw. The seven courses in the 29576 zip code are among the best in the country, and the proximity to the restaurants of the Marsh creates a complementary relationship that keeps workers busy even in the off-season. Golf has helped spread out the tourism weeks to as early as March in the spring and as late as November in the late fall. This has benefited many of the businesses along the Marsh and throughout the 29576 zip code.

From information the SC Department of Revenue provides on collections from the five percent admission tax assessed on golf course green fees, we can estimate annual green fee sales for the aggregate of courses in the 29576 zip code. We estimate the seven courses combined generated over \$8 million in 2012 on green fees alone. We have made no attempt to estimate admissions tax revenue generated in the 29576 zip code. Many of the tourism attractions in the 29576 zip code would be exempt from the admission tax. Examples of establishments that would be required to collect this fee include amusement parks, nightclubs charging a cover charge, theaters, college and professional sporting events and water slides. Examples of exempt establishments include boats charging a fee for pleasure fishing, excursion, sight-seeing, or private charter, and most non-profit sponsored events or attractions. For a complete list of covered and exempt attractions, see the information provided by the SC Department of Revenue, accessible via this link: <http://www.sctax.org/publications/admissguid99.html>.

6. THE ECONOMIC IMPACT OF 29576

There are various ways to approach estimation of the economic impact of an activity or an institution, let alone an entire zip code. The above analysis measures various types of activity that contribute to this economic impact. Yet, it leaves out much as well. In the aggregate, we have tried to capture the effect of the larger types of activity prevalent in the 29576 zip code. Since the major source of economic activity is tourism, our last stage of analysis will measure the overall economic impact of retail activity and real estate sales activity, the most prevalent forms of annual economic activity associated with tourism. This does ignore other important sectors, most notably construction and healthcare, both significant sectors in the region. Construction activity suffered tremendously with the financial crisis that began in late 2007 and 2008, but it has been recovering in 2012. The impact of construction should continue to grow throughout the next several years as the baby boom generation continues to reach retirement. The impact of healthcare in the 29576 zip code could be the subject of an entirely separate study. Waccamaw Community Hospital opened in Murrells Inlet in 2002. The hospital is one of two in the Georgetown Hospital System, and with 167 beds it is already larger than its parent hospital (131 beds) according to this metric.

Retail Impact

Using IMPLAN and the reported value of retail sales in fiscal year 2012 for the 29576 zip code, \$1.2 billion, we estimate the number of jobs that exist as a result. According to our estimate, 15,100 employees would be needed to generate this level of retail sales activity. This number is greater than the total employment in the 29576 zip code. This means that the 29576 zip code brings workers in from outside the zip code to produce its retail activity. This is what we would expect. In addition to the 15,100 workers directly employed in the retail sector, an additional 5,565 workers are employed in firms supporting this activity and in unrelated businesses supporting the demand of households earning income directly or indirectly from the retail activity. It is also important to note that Bureau of Labor Statistics data on employment does not account for self-employed people. The 29576 zip code has a significant proportion of self-employment relative to the nation as a whole; however, we have no reliable method to account for these individuals.

The employees providing the retail activity earned \$355 million. An additional \$181 million was earned by employees in industries supporting the retail activity and in other industries supporting the demand of households earning income directly or indirectly from the retail activity. See Table 7 for a detailed breakdown of the direct, indirect, and induced benefits of the retail activity.

Table 7. Economic Impact of Retail Spending in the 29576

	Output	Employment	Labor Income
Total Direct	\$1.2 billion	15,100	\$0.356 billion
Total Indirect	\$0.27 billion	2,717	\$0.09 billion
Total Induced	\$0.28 billion	2,849	\$0.09 billion
Sum	\$1.75 billion	20,665	\$0.54 billion

7. CONCLUSION

Murrells Inlet and the 29576 zip code has seen tremendous population and economic growth in the last two decades as retiring baby boomers have moved from more northern states and more general economic activity has increased. This study has quantified much of the 29576 zip code's economic impact on the counties of Georgetown and Horry and can be used to inform decisions affecting the economic conditions and cultural integrity of the region. The salt marsh inlet of the Atlantic Ocean has shaped much of this economy and culture; therefore, an important aspect of the study was the measurement of the economic value of the marsh. We estimate the value of the Marsh exceeds \$720 million, including the impact on residential real estate, restaurant sales, boating, and other tourism activity. We remind stakeholders and policymakers that this conservative valuation does not include certain activities difficult to quantify, such as the value of recreational and commercial fishing and fish harvests and related commercial activity, significant cultural and economic aspects of the region.