FAU
CENTER FOR URBAN & ENVIRONMENTAL SOLUTIONS
Florida Atlantic University

ABACOA, FL

SOCIO-ECONOMIC COMMUNITY PROFILE

FAU Center for Urban and Environmental Solutions

Socio-Economic Community Profile

Abacoa, FL

2016

FAU Center for Urban and Environmental Solutions

Prepared by:

John L. Renne, Ph.D., AICP

Director and Associate Professor
Center for Urban & Environmental Solutions (CUES)
School of Urban and Regional Planning
Florida Atlantic University
Boca Raton, Florida

Amanda Kerns
Undergraduate Research Assistant
Center for Urban & Environmental Solutions (CUES)

Rayan H. Alhawiti
Graduate Research Assistant
Center for Urban & Environmental Solutions (CUES)

2016

Table of Contents

List of Tables

List of Figures

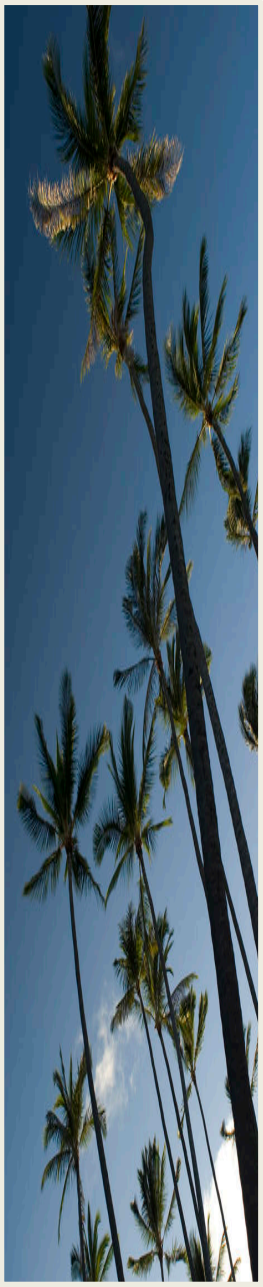
1. Executive Summary

The neighborhood of Abacoa, located in Palm Beach County Florida, is a planned, mixed-use development covering roughly three square miles in the Town of Jupiter. Plans for the neighborhood began in the early 1990s. Developers looked to Traditional Neighborhood Design, New Urbanist, and SmartGrowth principles in order to create a community where residents could live, work and play. Today, Abacoa boasts close to 10,000 residents and over 4,000 housing units. Multiple commercial centers, schools, and parks are scattered throughout the 17 different neighborhoods.

Traditional Neighborhood Design, New Urbanist, and SmartGrowth principles are characterized by compact development that offers a variety of housing options within walking distance, or short travel times, to areas with a wide mix of uses including retail and entertainment, jobs, and schools. Another key characteristic is the inclusion of walkable, pedestrian and bicycle friendly streets and easy access to public transit. It is widely assumed that neighborhoods that develop or exists within these guidelines have a strong effect on the travel and trip-generating behaviors of their residents.

A future research project will examine the Abacoa neighborhood's ability capture trips internally, both work and otherwise. Additionally, research will be conducted to identify and measure attitudes and behaviors of both residents and non-residents utilizing the mix of uses within the area. Analysis of comparable, traditionally designed communities will be conducted in order identify the differences in travel behavior among residents in relation to the built environment and mix of uses.

This analysis examines specific demographic, transit, and economic data in order to gain insight to the current socio-economic characteristics of Abacoa residents. Currently, the neighborhood is made up of a predominantly white, highly educated population with higher than average earning and spending capacity. Similarly, housing prices are higher than the Town of Jupiter and Palm Beach County as whole. While residents of Abacoa do tend to walk and bike more than those of Palm Beach County, the data also indicated that residents tended to drive to work alone at a higher rate than the County and State. The following report goes into detail to provide a snapshot of the demographic make-up and economic characteristics of the Abacoa community.



2. Introduction

Abacoa is a master-planned, mixed-use community consisting of 17 different neighborhoods and multiple commercial and recreational facilities. The development, designed and planned based on Traditional Neighborhood Development and SmartGrowth principles, broke ground in 1997 and has grown to 4,829 housing units and an estimated 2015 population of 10,563.

This analysis will provide an overview of the unique population and socioeconomic characteristics of the residents of Abacoa in comparison with the surrounding area, including Jupiter and Palm Beach County as a whole.

Table 1: Summary of Data

2014 Population[i]	Median HH Income[i]	Median Age[ii]	Housing Units[ii]	Land Area[ii]
9,588	**100,677**	**36.8**	**4,829**	**3.29 mi^2**

[i]Source: U.S. Census Bureau, Census 2010 Summary 1 Profile. Esri Forecasts 2014 and 2019. Household Income Profile: 1-mile & 3-mile Radius

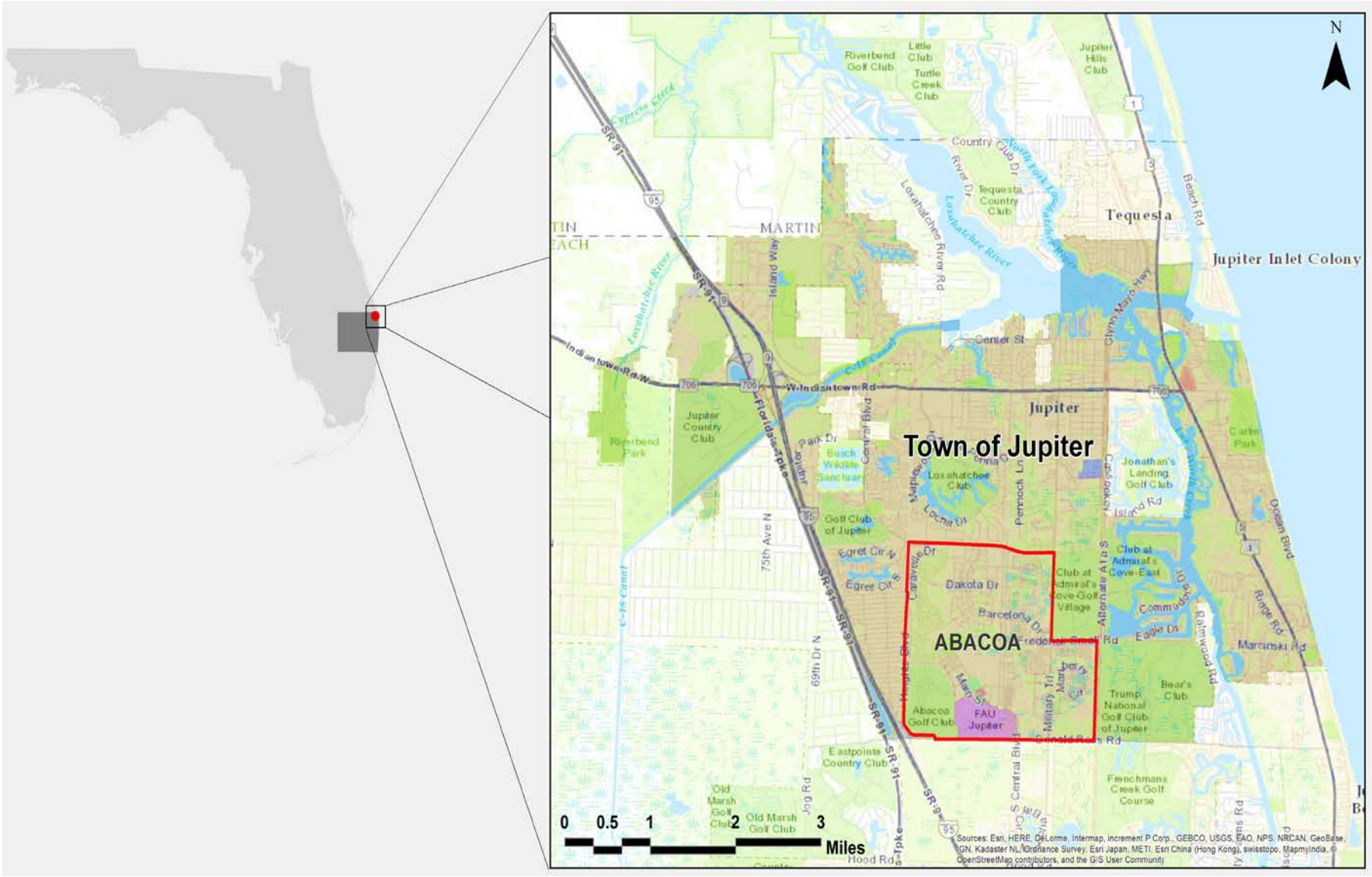
[ii]Source: U.S. Census, Census 2010 Summary File 1. Esri Forecasts for 2015 & 2020. Community Profile: Abacoa Boundary

2.1. Location:

Abacoa is located in the Town of Jupiter in northern Palm Beach County. The 3.29 square mile development sits just east of Interstate 95. Bound by Heights Boulevard to the west and Old Dixie Highway to the east, the neighborhood is centrally located between the major east-west corridor of Donald Ross Road to the south and secondary corridor Indian Creek Parkway to the north (**Figure 1**).

Location Map

Figure 1: Abacoa, FL Location Map



2.2. Data Overview:

In order to gain the best insight to the population characteristics and travel behavior of Abacoa residents, and to make the most appropriate comparisons to the area surrounding Abacoa, specific data sets were chosen. Palm Beach County Census Tract 2.15 (Figure 3) was used in order to analyze commute and travel patterns among workers. Finally, the real estate analysis was conducted utilizing the 33458 zip code (Figure 4) in which Abacoa is located. The following section will discuss the comparison data selected as well as display maps of data set boundaries.

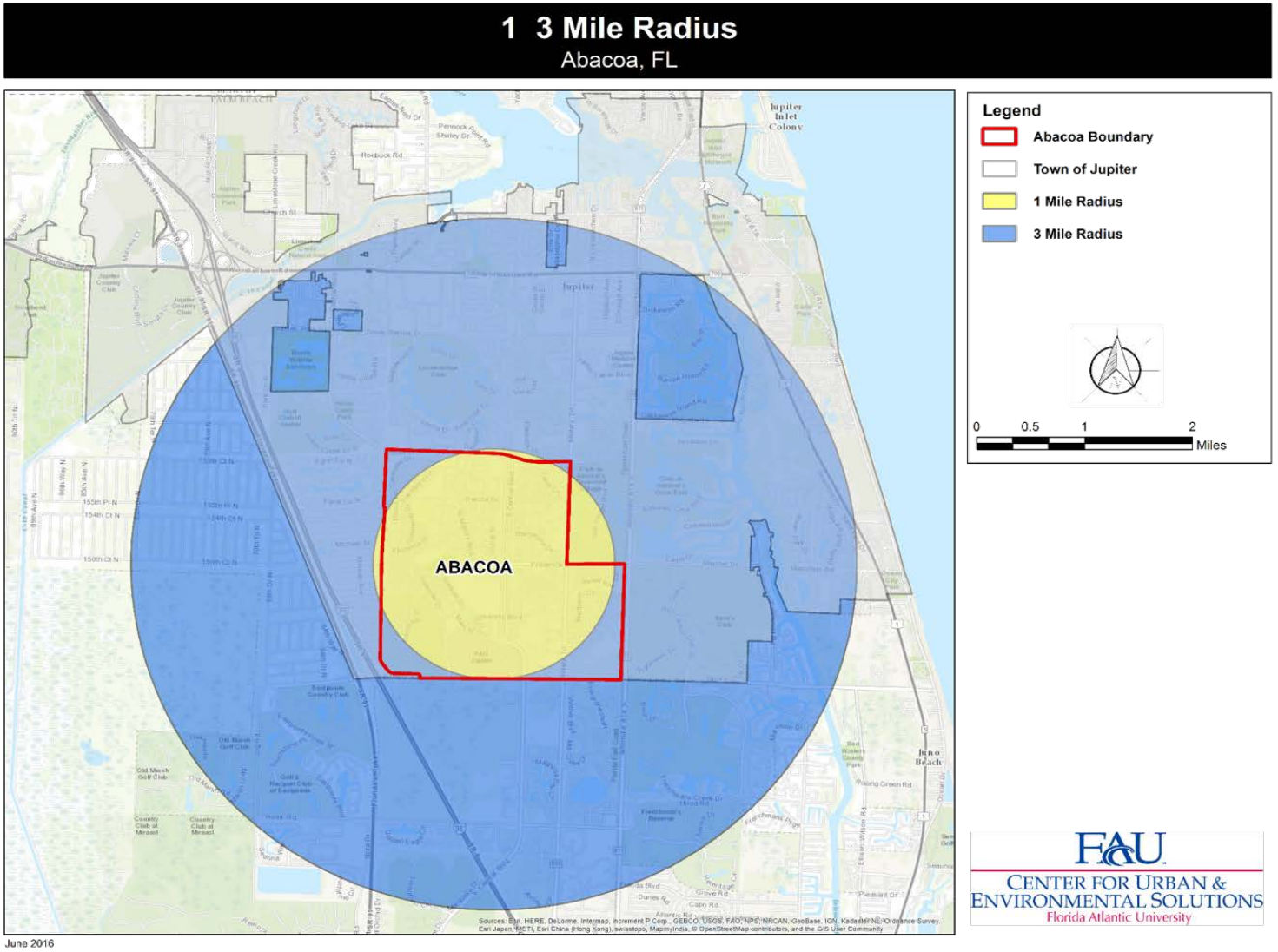
Comparison Data

The first set of data utilized ESRI Geographic Information Systems (GIS) Businesses Analyst Forecasts, 2015-2020 and U.S. Census Bureau, Summary 1 data from 2010. In addition to Palm Beach County Data, the reports were based off of the specific boundary of Abacoa, bound by Indian Creek Parkway to the north and Dixie Highway to the east, with the exception of Cove-West Golf Village, which follows Military Trail south, and is cutoff eastbound by Frederick Small Road. Heights Boulevard binds Abacoa to the west followed by Donald Ross Road to the south (Figure 1). The Palm Beach County data was compared to these specific boundaries in the employment, population growth, educational attainment, and real estate sections of this report.

Because of the specific design nature of Abacoa, this analysis also utilized comparison data based on 1-mile and 3-mile radiuses from the center of the Abacoa development (Figure 2). These reports were also constructed using ESRI Business Analyst and 2010 Census Summary 1 data, but are based on 2014-2019 Forecasts. These reports were used to analyze consumer behavior and additional population characteristics such as race, age, and household income. In sections where data was compared at the county level, the 2015-2020 county level forecasts were utilized.

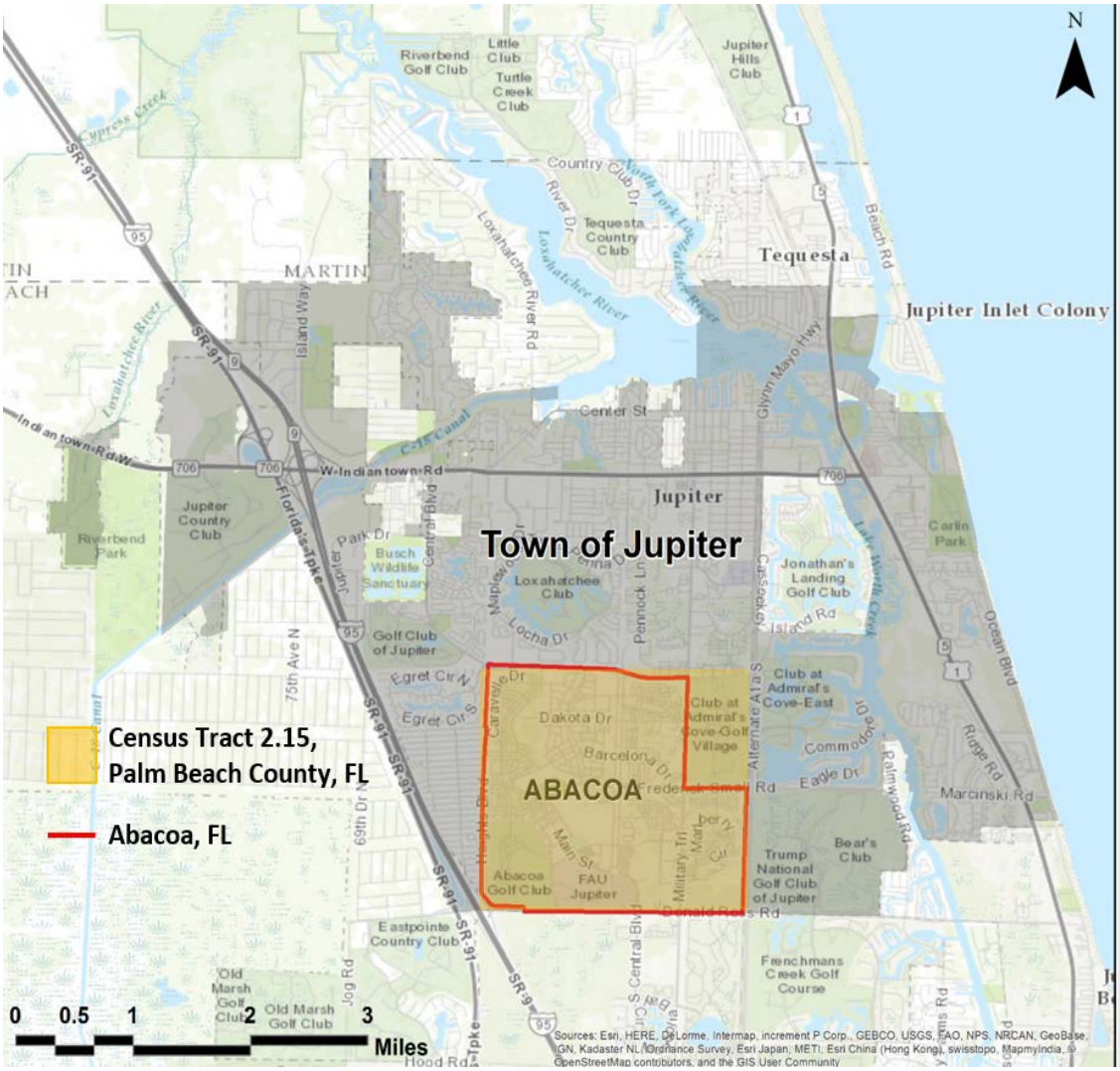
Comparative Data Boundaries

Figure 2: 1-Mile & 3-Mile Comparative Data Boundaries



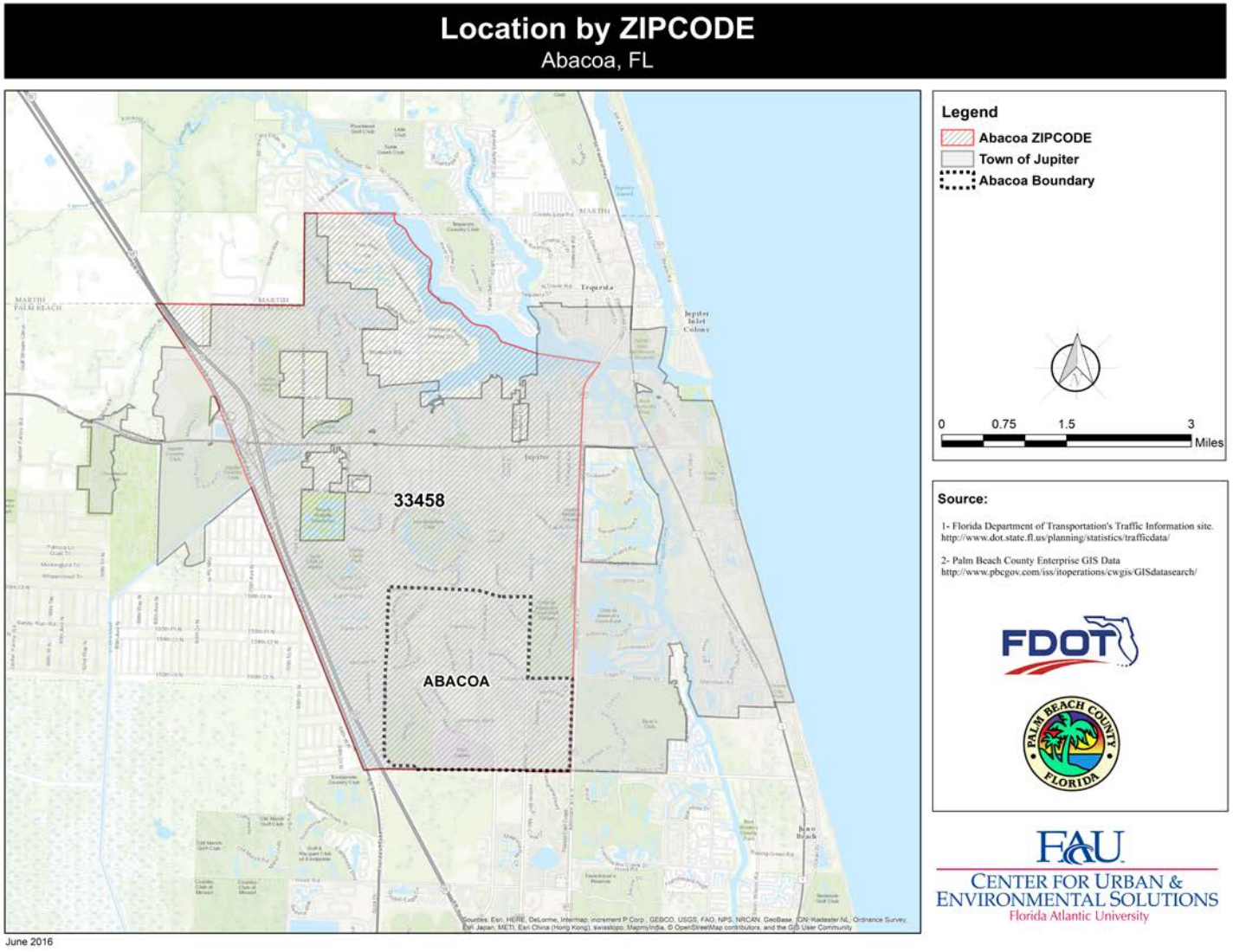
Additional Data Boundaries

Figure 3:Census Tract 2.15, Abacoa, Palm Beach, FL



Zip Code Map

Figure 4: Zip Code Map, Abacoa, FL



3. Population Characteristics

Because Abacoa was a planned development starting in a relatively wooded and unpopulated area, the population grew significantly between 2000 and 2010, jumping from 1,355 residents to 9,214. The population is characterized by higher than average household incomes with over half of the population making $100,000 a year or more. The neighborhood is predominately white, at 91.4%, and have achieved higher educational attainment than the county as a whole.

As suggested by the higher than average incomes, Abacoa residents possess higher spending potential across all categories, according to the Bureau of Labor and Statistics and spend significantly more on investments, retail goods, entertainment, and dining than the area immediately surrounding Abacoa.

The population is evenly split between males and females overall, however the particular sexes do dominate specific age groups as shown in the figures below.

This section details specific aspects of the Abacoa neighborhood residents compared to the surrounding area and the county level including income, race, age, education, population growth, and consumer behavior characteristics.

3.1. Income:

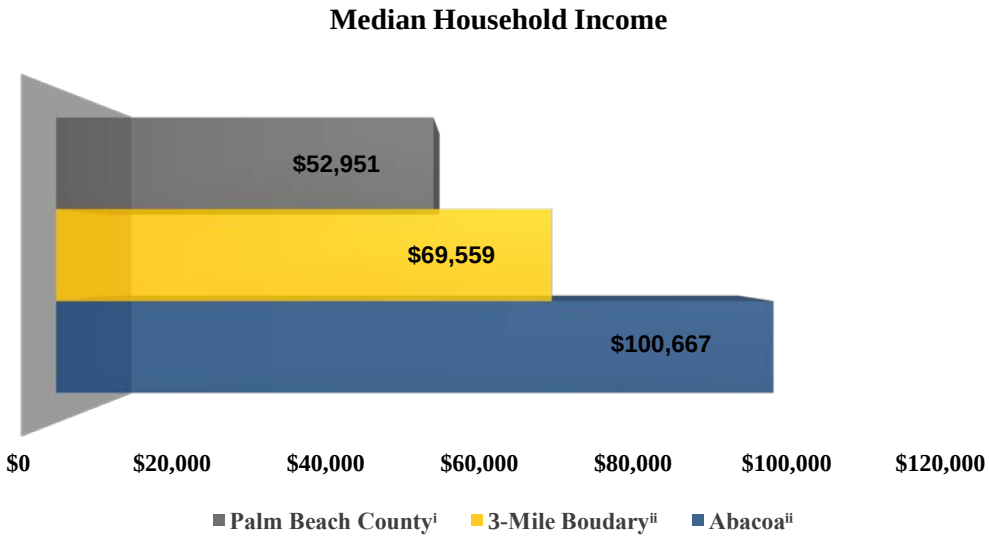
The median household income for Abacoa in 2014 was $100,667, a rate 53% higher than Palm Beach County. Additionally, the per capita income was $51,744, almost $20,000 more than Palm Beach County at $33,096.

This high concentration of wealth declines within 3 miles of Abacoa. In this boundary the median household income was $69, 559. While the amount is much higher than the rest of Palm Beach County, it is still significantly less than Abacoa.

51% of households made over $100K in 2014. These trends are expected to grow through 2019.

3.2. Median Household Income

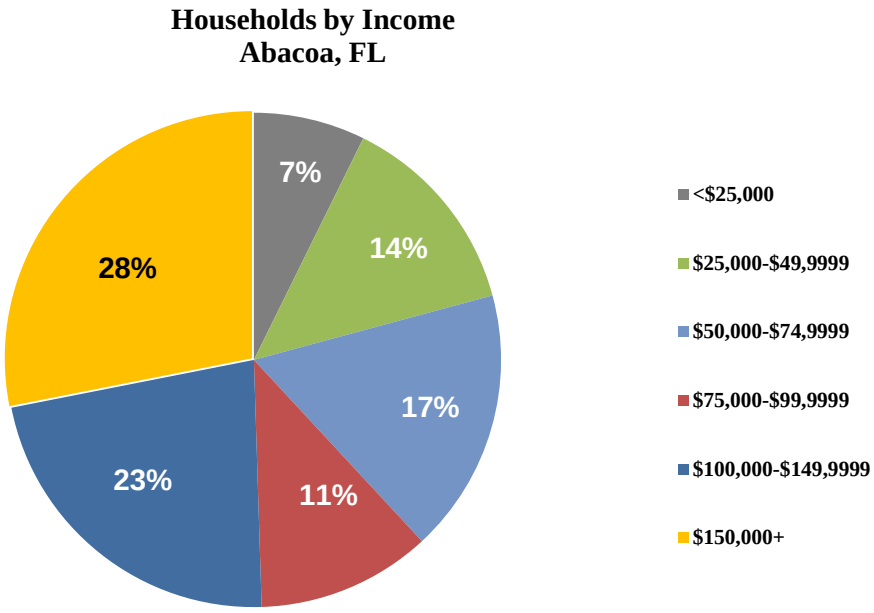
Figure 5: Comparative Median Household Income Graph



[i]Source: U.S. Census Bureau, Census 2010 Summary 1 Profile. Esri Forecasts 2015 and 2020. Household Income Profile: Palm Beach County
[ii]Source: U.S. Census Bureau, Census 2010 Summary 1 Profile. Esri Forecasts 2014 and 2019. Household Income Profile: 1-mile & 3-mile Radius

Households by Income

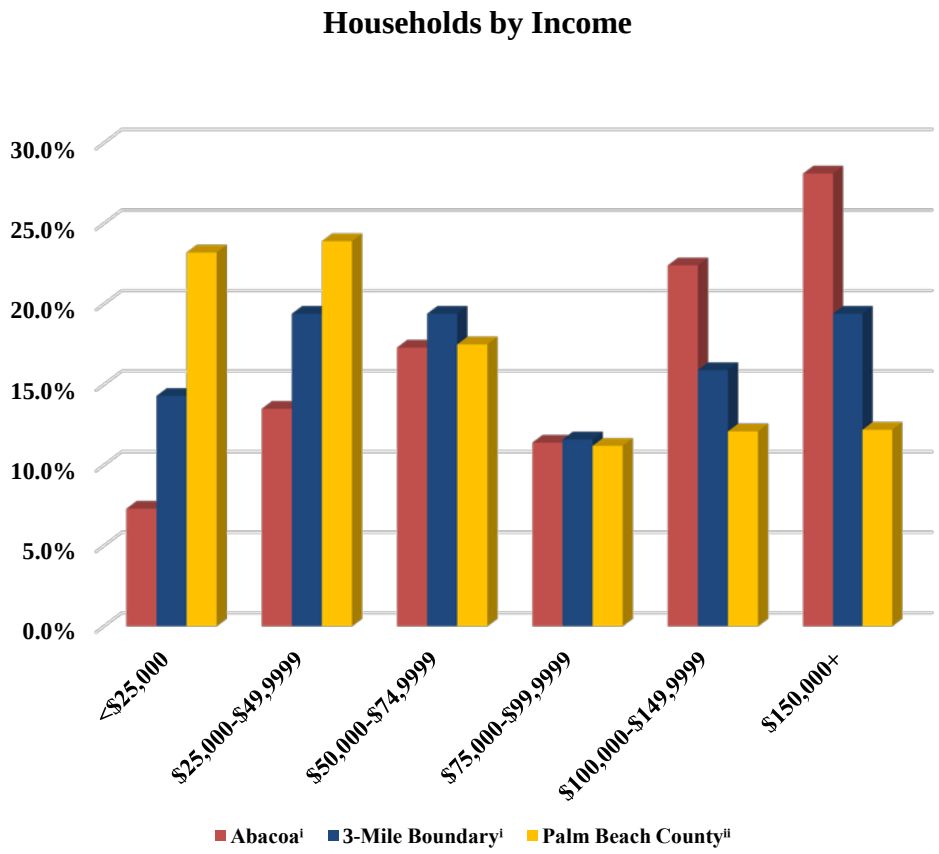
Figure 6: Household by Income: Abacoa, FL, 2014



Source: U.S. Census Bureau, Census 2010 Summary 1 Profile. Esri Forecasts 2014 and 2019. Household Income Profile: 1-mile radius

Household Income

Figure 7: Comparative Households by Income Graph



[i]Source: U.S. Census Bureau, Census 2010 Summary 1 Profile. Esri Forecasts 2014 and 2019. Household Income Profile: 1-mile & 3-mile Radius
[ii]Source: U.S. Census Bureau, Census 2010 Summary 1 Profile. Esri Forecasts 2015 and 2020. Household Income Profile: Palm Beach County

Population by Race:

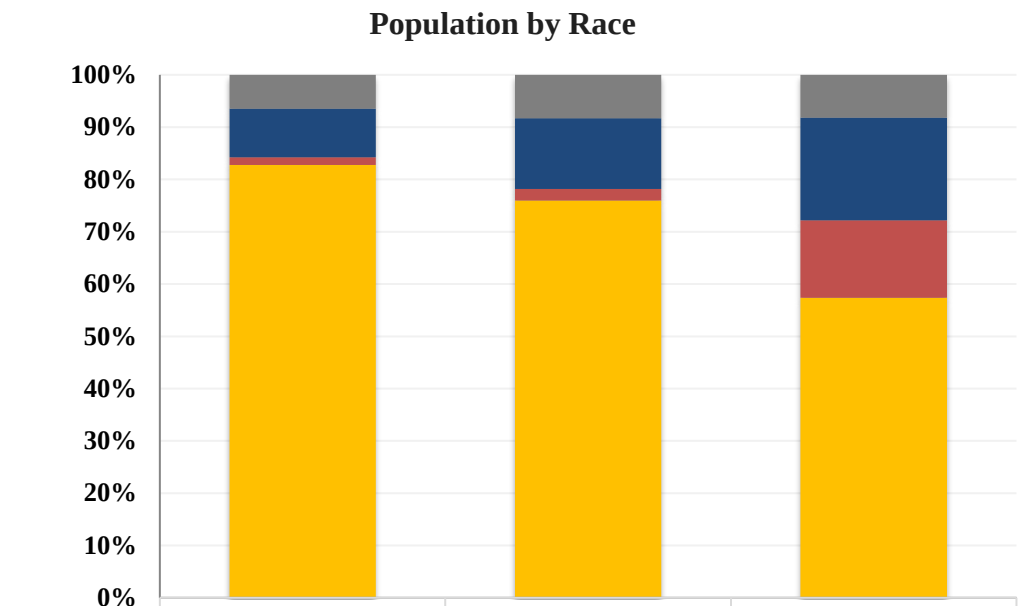
The heart of the Abacoa development is predominately white at 91.4% of the population. Within 3 miles the concentration remains high at 88.0%, compared to Palm Beach County at 71.4%. At the neighborhood and 3-mile boundary levels, persons with Hispanic origin are the next predominant group. Unlike the County, Abacoa does not have a large African-American Population.

Table 2: Total Population

Abacoa[i]	3-Mile Radius[i]	Palm Beach County[ii]
9,588	63,741	1,368,031

[i]Source: U.S. Census Bureau, Census 2010 Summary 1 Profile. Esri Forecasts 2014 and 2019. Household Income Profile: 1-mile & 3-mile Radius
[ii]Source: U.S. Census Bureau, Census 2010 Summary 1 Profile. Esri Forecasts 2015 and 2020. Community Profile: Palm Beach County

Figure 8: Comparative Population by Race Graph



	Abacoa[i]	3-Mile Radius[i]	Palm Beach County[ii]
All Other Races	7.1%	9.6%	10.2%
Hispanic Origin	10.3%	15.7%	24.4%
Black Alone	1.6%	2.5%	18.5%
White Alone	91.4%	88.0%	71.4%

[i]Source: U.S. Census Bureau, Census 2010 Summary 1 Profile. Esri Forecasts 2014 and 2019. Household Income Profile: 1-mile & 3-mile Radius
[ii]Source: U.S. Census Bureau, Census 2010 Summary 1 Profile. Esri Forecasts 2015 and 2020. Community Profile: Palm Beach County

Population

Table 3: Population by Race, Abacoa, FL 2014

.Race	Abacoa[i]
White Alone	91.4%
Black Alone	1.6%
American Indian Alone	0.3%
Asian Alone	3.3%
Pacific Islander Alone	0.1%
Some Other Race Alone	0.9%
Two or More Races	2.5%
Hispanic Origin	10.3%

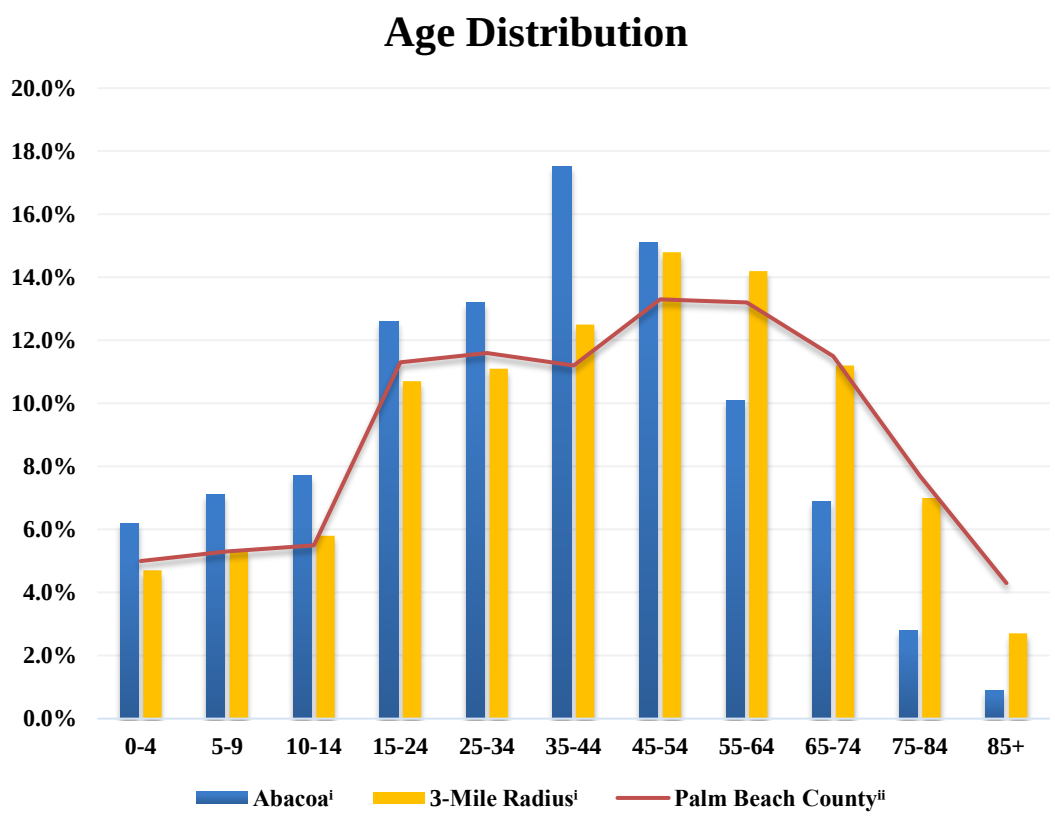
[i]*Source: U.S. Census Bureau, Census 2010 Summary 1 Profile. Esri Forecasts 2014 and 2019. Household Income Profile: 1-mile & 3-mile Radius*

3.4. Population by Age:

Within Abacoa, 33% of the population is between 35 and 54 years old. Those numbers become more evenly divided among the age brackets at the 3-mile level. The most notable difference in age distribution between the study areas is the significantly smaller amount of individuals 65 and older in Abacoa. At the 3-mile and county levels, at least 20% of the population is over the age of 65, while only 10.6% of Abacoa residents are 65 or older.

Age Distribution

Figure 9: Comparative Age Distribution Graph



[i]Source: U.S. Census Bureau, Census 2010 Summary 1 Profile. Esri Forecasts 2014 and 2019. Household Income Profile: 1-mile & 3-mile Radius

[ii]Source: U.S. Census Bureau, Census 2010 Summary 1 Profile. Esri Forecasts 2015 and 2020. Community Profile: Palm Beach County

Age by Sex

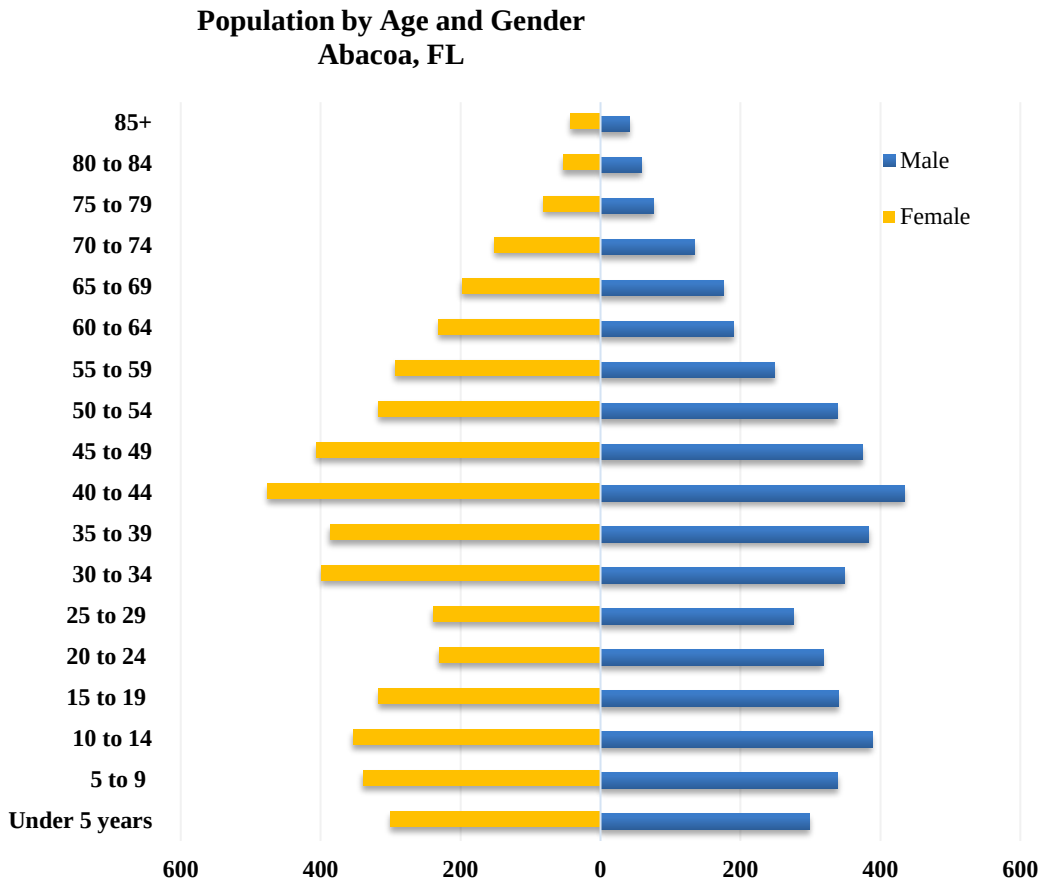
While the population is almost half male and half female overall, there is a higher concentration of women between 40 and 49. Males dominate between the ages of 20 and 29.

Table 4: Gender Distribution Table

Gender	Number [1]	Percent[1]
Male	4,762	49.6%
Female	4,826	50.3
Total	9,588	

[1]Source: U.S. Census Bureau, Census 2010 Summary 1 Profile. Esri Forecasts 2014 and 2019. Age by Sex Profile: 1-mile

Figure 10: Population by Age and Gender: Abacoa, FL

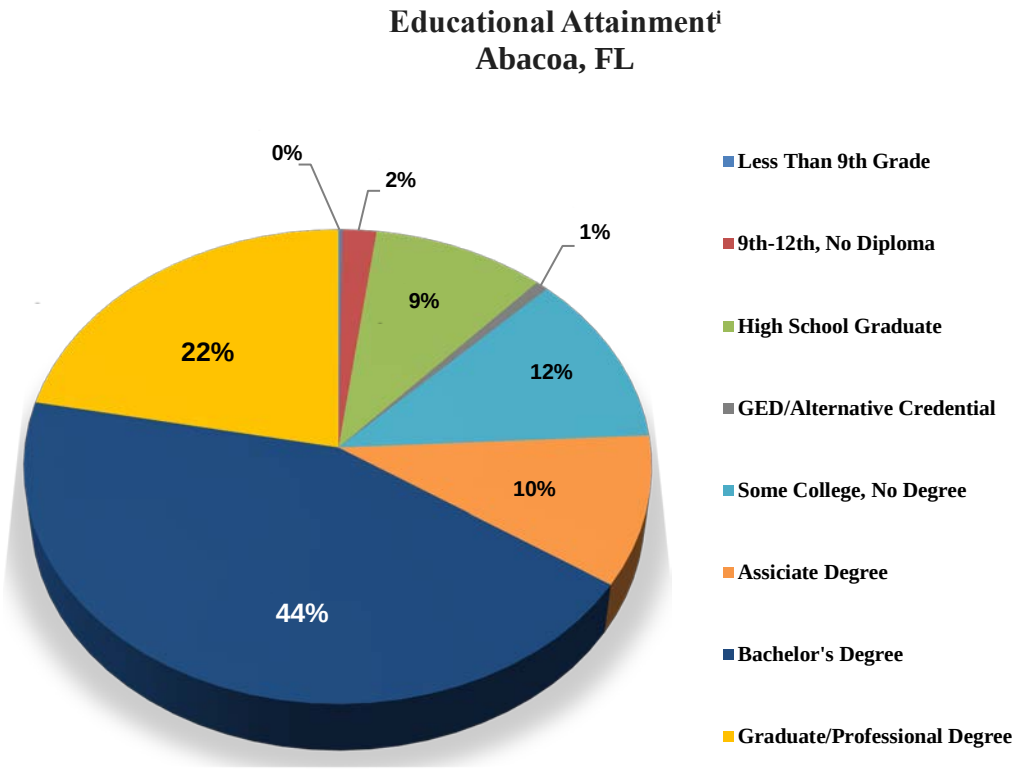


[1]Source: U.S. Census Bureau, Census 2010 Summary 1 Profile. Esri Forecasts 2014 and 2019. Age by Sex Profile: 1-mile

3.5. Educational Attainment:

Abacoa boasts a higher concentration of educational attainment than Palm Beach County. 66% of Abacoa's population have a bachelor's degree or higher, a rate two times higher than Palm Beach County at 34%.

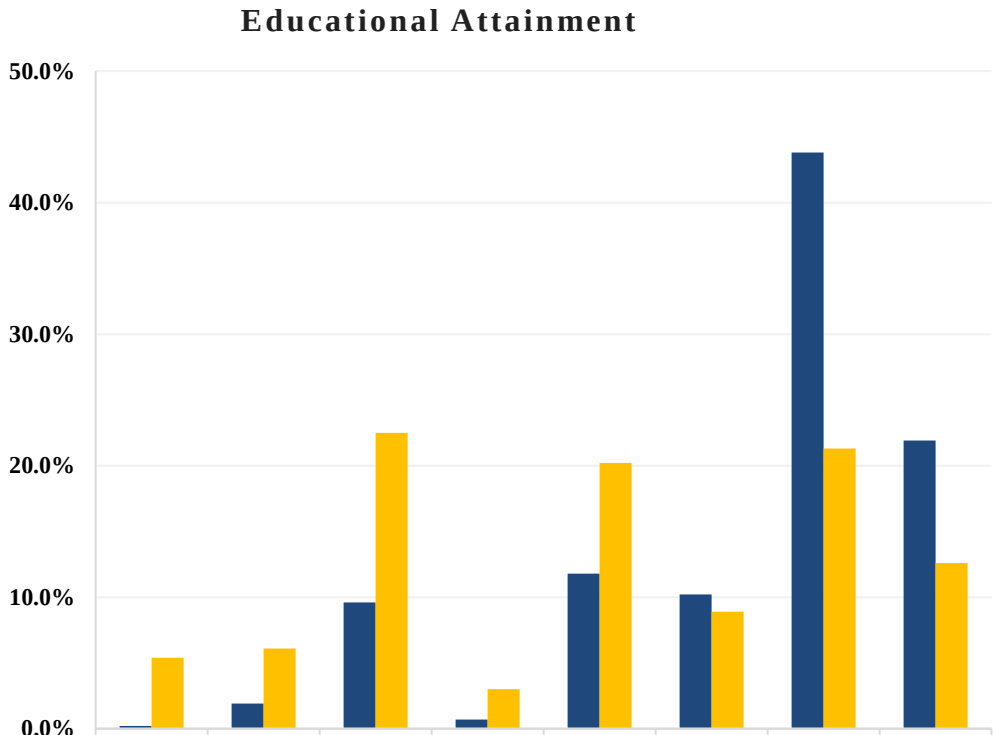
Figure 11: Educational Attainment, Abacoa, FL, 2014



[i]*Source: U.S. Census, Census 2010 Summary File 1. Esri Forecasts for 2015 & 2020. Community Profile: Abacoa Boundary*

Educational Attainment

Figure 12: Comparative Educational Attainment Graph



	Less Than 9th Grade	9th-12th, No Diploma	High School Graduate	GED/Alternative Credential	Some College, No Degree	Assiciate Degree	Bachelor's Degree	Graduate/Professional Degree
Abacoa[i]	0.2%	1.9%	9.6%	0.7%	11.8%	10.2%	43.8%	21.9%
Palm Beach County[ii]	5.4%	6.1%	22.5%	3.0%	20.2%	8.9%	21.3%	12.6%

[i]Source: U.S. Census, Census 2010 Summary File 1. Esri Forecasts for 2015 & 2020. Community Profile: Abacoa Boundary
[ii]Source: U.S. Census, Census 2010 Summary File 1. Esri Forecasts for 2015 & 2020. Community Profile: Palm Beach County

3.6.Population Growth over Time:

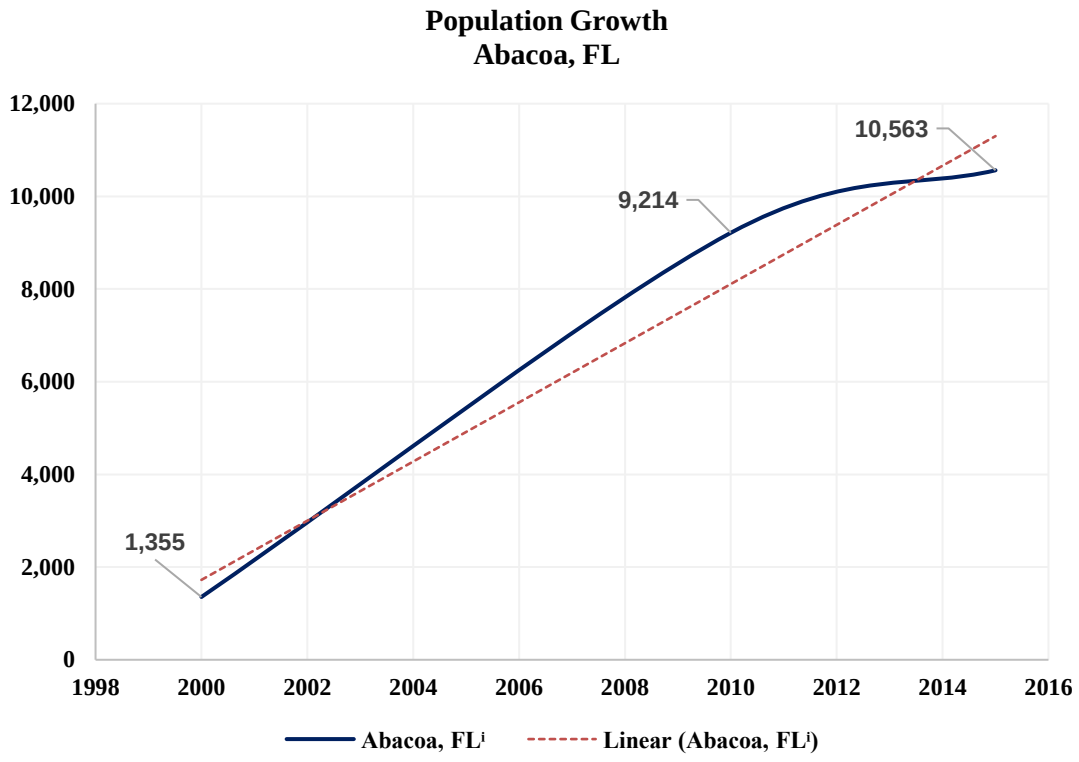
Prior to 1997, the area where Abacoa is located was mostly vacant, wooded property owned by John D. MacArthur. Over the past two decades, since the land was sold, the area has been almost completely built-out to include residential, commercial, institutional, and recreational uses. Between 2000 and 2010 the population increased by 7,859 residents and is projected to increase annually by 2.13% between 2015 and 2020.

Table 5: Population over time, Abacoa FL, 2015

	2000	2010	2015
Abacoa[i]	1,355	9,214	10,563

[i]Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri Forecasts for 2015 & 2020. Community Profile: Abacoa Boundary

Figure 13: Population Growth Graph, Abacoa, FL 2015



[i]Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri Forecasts for 2015 & 2020. Community Profile: Abacoa Boundary

3.7. Consumer Behavior:

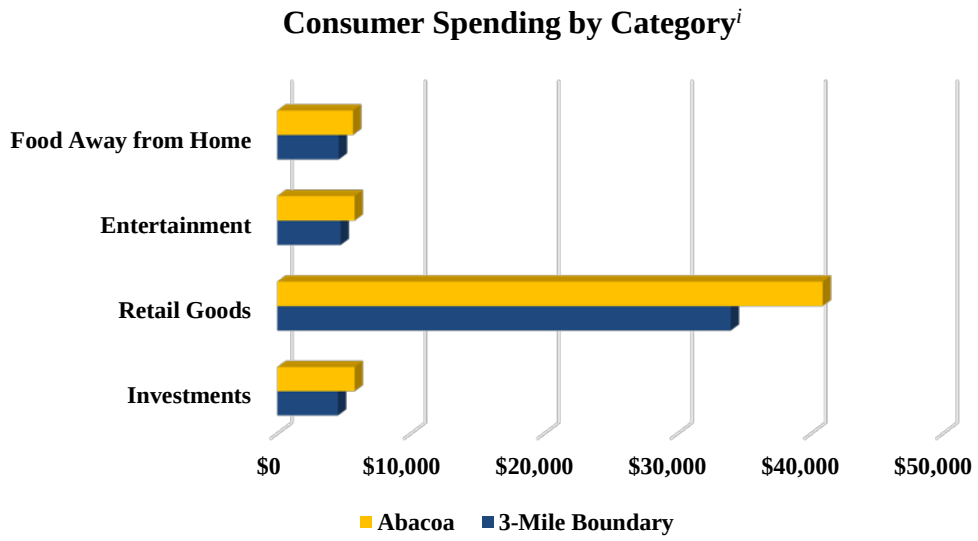
As determined by data from the Bureau of Labor and Statistics and analysis by ESRI Business Analyst, residents of Abacoa have significantly higher spending potential than the residents within just 3 miles of the neighborhood. In addition to a median discretionary income roughly 27% higher than the immediate surrounding area, residents spend sufficiently higher percentages on dining, entertainment, retail goods and investing.

Table 6: Disposable Income

	Abacoa[i]	3-Mile Boundary[i]
Median disposable Income	$80,076	$58,626
Average Disposable Income	$95,487	$80,586

[i]*Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri Forecasts 2014 & 2019. Market Profile: Abacoa and 3-mile boundary*

Figure 14: Consumer Spending by Category



[i]*Source: U.S. Census Bureau, Census 2010 Summary File 1. ESRI Forecasts 2014 & 2019. Market Profile: Abacoa and 3-mile boundary*

Consumer Behavior

Table 7: Difference in Spending Power by Percentage

	3-Mile Boundary[i]	Abacoa[i]	% of Difference (Abacoa)[i]
Investments	$4,542	$5,792	+22%
Retail Goods	$33,979	$40,874	+17%
Entertainment	$4,743	$5,790	+18%
Food Away from Home	$4,608	$5,667	+19%

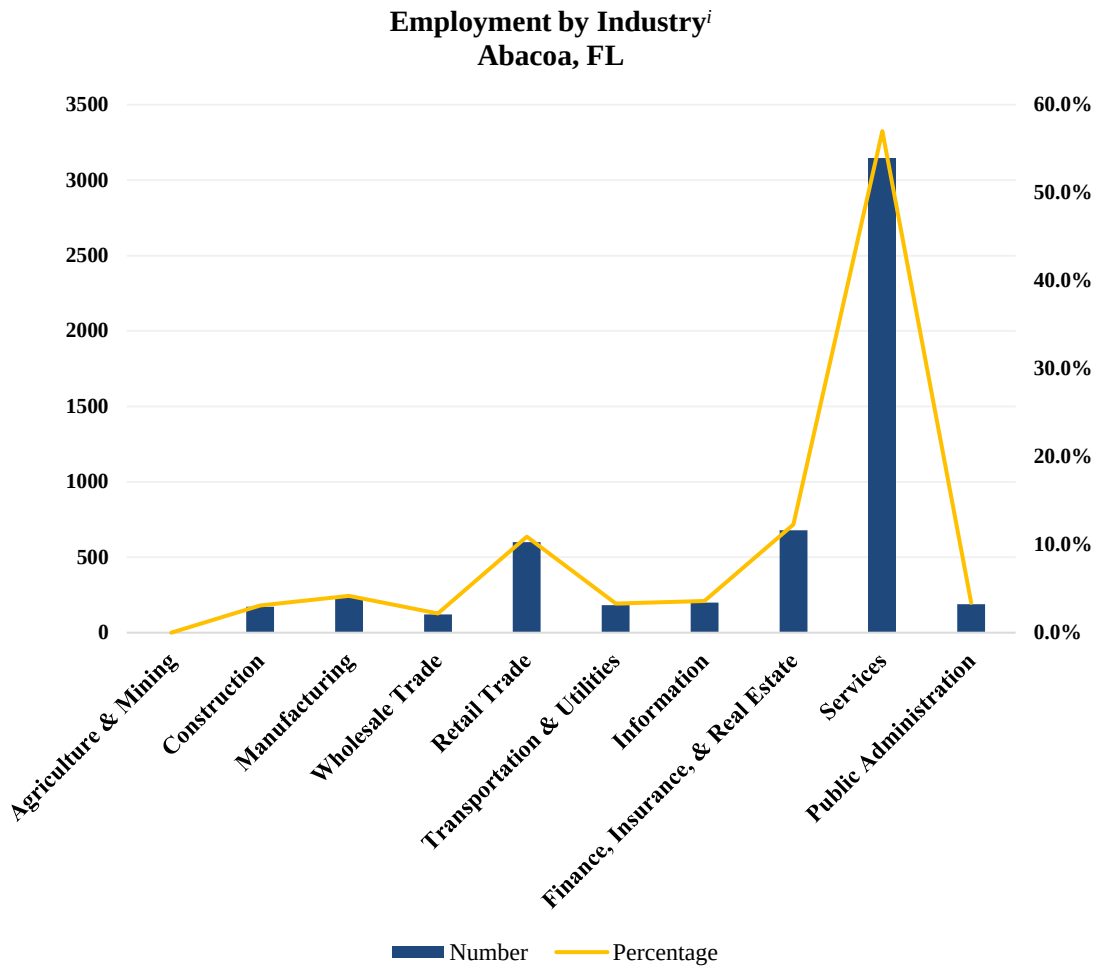
[i]*Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri Forecasts 2014 & 2019. Market Profile: Abacoa and 3-mile boundary*

4. Employment Snapshot

The Abacoa neighborhood contains a majority of residents that maintain jobs in the service-based industry. This characteristic is reflective of the county, however, the next largest employment segment in Abacoa is the finance, insurance, and real estate industry at 12.3%. The second largest industry in Palm Beach County is retail trade.

This characteristic is also in a report from the Palm Beach County Business Development Board that listed the top 100 employers in Palm Beach County. The report was divided among service and goods producing industries. In the service producing category the Town of Jupiter appeared three times with Jupiter Medical Center, G4S Secure Solutions, and The Scripps Research Institute, located in Abacoa, employing over 3,500 people.

Figure 15: Comparative Employment by Industry Graph



[i]Source: U.S. Census 2010 Summary File 1. Esri Forecasts for 2015 & 2020. Community Profile: Abacoa and Palm Beach County. Employed Population

Employment Industry

Table 8: Employment by Industry

	Abacoa[i]		Palm Beach County[i]	
Industry	**Number**	**Percent**	**Number**	**Percent**
Agriculture & Mining	0	0.0%	6,918	1.1%
Construction	171	3.1%	43,397	6.9%
Manufacturing	232	4.2%	25,787	4.1%
Wholesale Trade	121	2.2%	16,352	2.6%
Retail Trade	601	10.9%	86,165	13.7%
Transportation & Utilities	182	3.3%	27,673	4.4%
Information	199	3.6%	11,321	1.8%
Finance, Insurance, & Real Estate	679	12.3%	52,831	8.4%
Services	3,144	57.0%	334,596	53.2%
Public Administration	188	3.4%	23,900	3.8%
Total	**5,517**	**100%**	**628,940**	**100%**

[i] *Source: U.S. Census 2010 Summary File 1. Esri Forecasts for 2015 & 2020. Community Profile: Abacoa and Palm Beach County. Employed Population*

Table 9: Top Employers in Jupiter, FL

Top Employers in Jupiter[1]

Company	Approximate Employees	Product
Goods Producing		
Walgreens Distribution	600	Pharmaceutical
Power Systems Mfg., LLC (PSM)	450	Turbine Parts
Florida Turbine Technologies	180	Gas Turbine
GE Healthcare	150	Medical Equipment
Service Producing		
Jupiter Medical Center	2,195	Healthcare
G4S Secure Solutions, USA	1,100	Security
The Scripps Research Institute	600	Life Sciences

[1] *Data from Palm Beach County Business Development Board, Top 100 Employers in the County by Goods and Services Produced*

5. Transportation Overview

This transportation overview analyzes a variety of aspects of the transit related opportunities and weaknesses of Abacoa in comparison to the surrounding 3-mile radius and Palm Beach County as a whole. Table 10 displays comparison transit related data from a recently launched website, AllTransit™[2]. This service examines transit related aspects of local and regional data in order to determine the performance of services and in relation to job opportunities in the area.

This section also examines modes of travel used and the time is takes residents to travel to work. Compared to Palm Beach County, 10% more of Abacoa residents drive alone to work. And while fewer Abacoa residents use public transit, more choose to walk or bike to work than residents within 3 miles and within Palm Beach County.

GIS maps include traffic counts of the major roads connected to the Abacoa neighborhood, as well as local bus stops, recent pedestrian crashes, and the internal trip capture Abacoa holds over residents that both work and live in the neighborhood.

Table 10: AllTransit™ Comparative Data

	AllTransit™ Performance Score	*Average Transit Trips per Week within ½ Mile*	*Average Transit Routes within ½ Mile*	*Average Jobs Accessible in 30min Trip*	*Total Commuters*	*Commuters Use Transit*
Abacoa[n]	**3.1**	**131**	**1**	**12,028**	**825**	**1.45%**
Jupiter, FL	**1.5**	**50**	**1**	**3,173**	**26,007**	**0.18%**
Palm Beach County	**3.6**	**248**	**2**	**28,610**	**557,156**	**2.04%**
South Florida Region[+]	**5.1**	**988**	**4**	**106,311**	**1,894,758**	**4.00%**

Source: AllTransit™
[n]AllTransit™ data for Abacoa based on Census Block Group: 120990002151
[+]South Florida Region data come from Core Based Statistical Area of Miami-Fort Lauderdale- West Palm Beach, FL

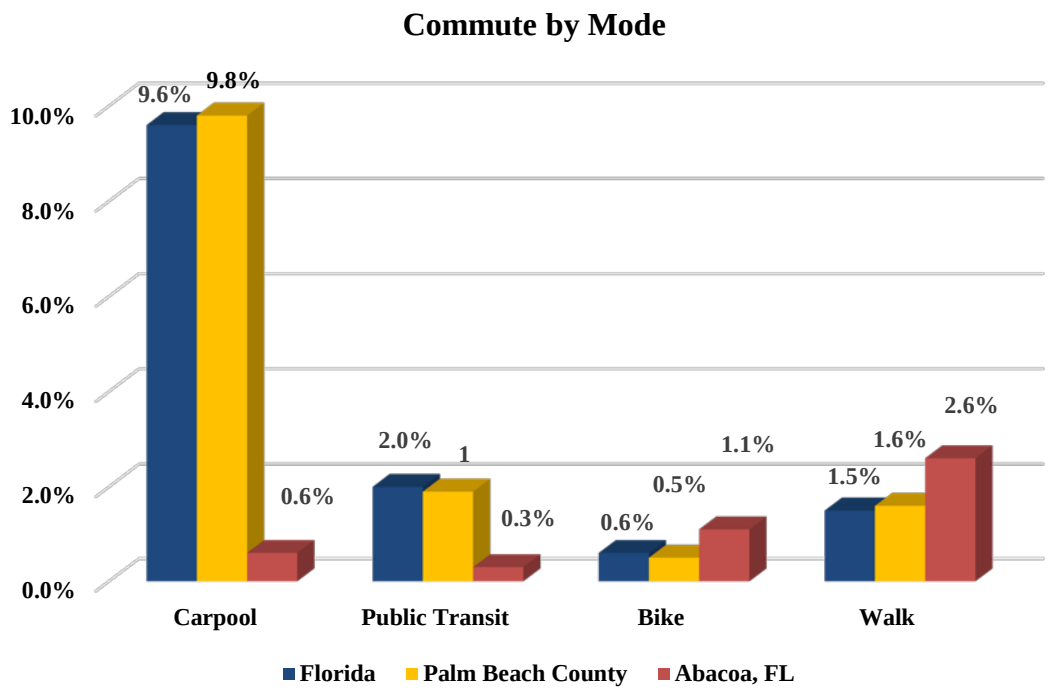
[2] *AllTransit™ combines existing General Transit Feed Specification data with new data with new data from the Center for Neighborhood Technology in order analyze the quality of transit available in regions across the country. Methodology in appendix*

Table 11: Percent of Commuters Driving Alone

	Abacoa[i]	Palm Beach County[i]	Florida[i]
Total Commuters	4,096	591,057	8,228,557
Percent Driving Alone	88.9%	78.8%	79.6%

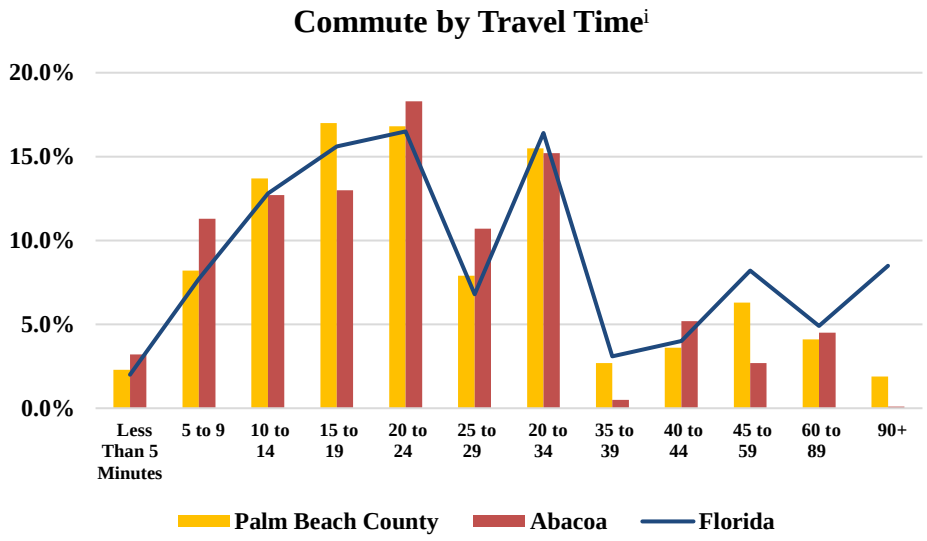
[i]*Source: U.S. Census Bureau, 2010-2014 ACS 5-year Estimates. Means of Transportation to Work*

Figure 16: Commute by Mode



[i]*Source: U.S. Census Bureau, 2010-2014 ACS 5-year Estimates. Means of Transportation to Work*

Figure 17: Commute by Travel Time (Minutes)



[i]*Source: U.S. Census Bureau, 2010-2014 ACS 5-year Estimates. Travel Time to Work*

Figure 18: Average Daily Traffic Counts Map, Abacoa, FL

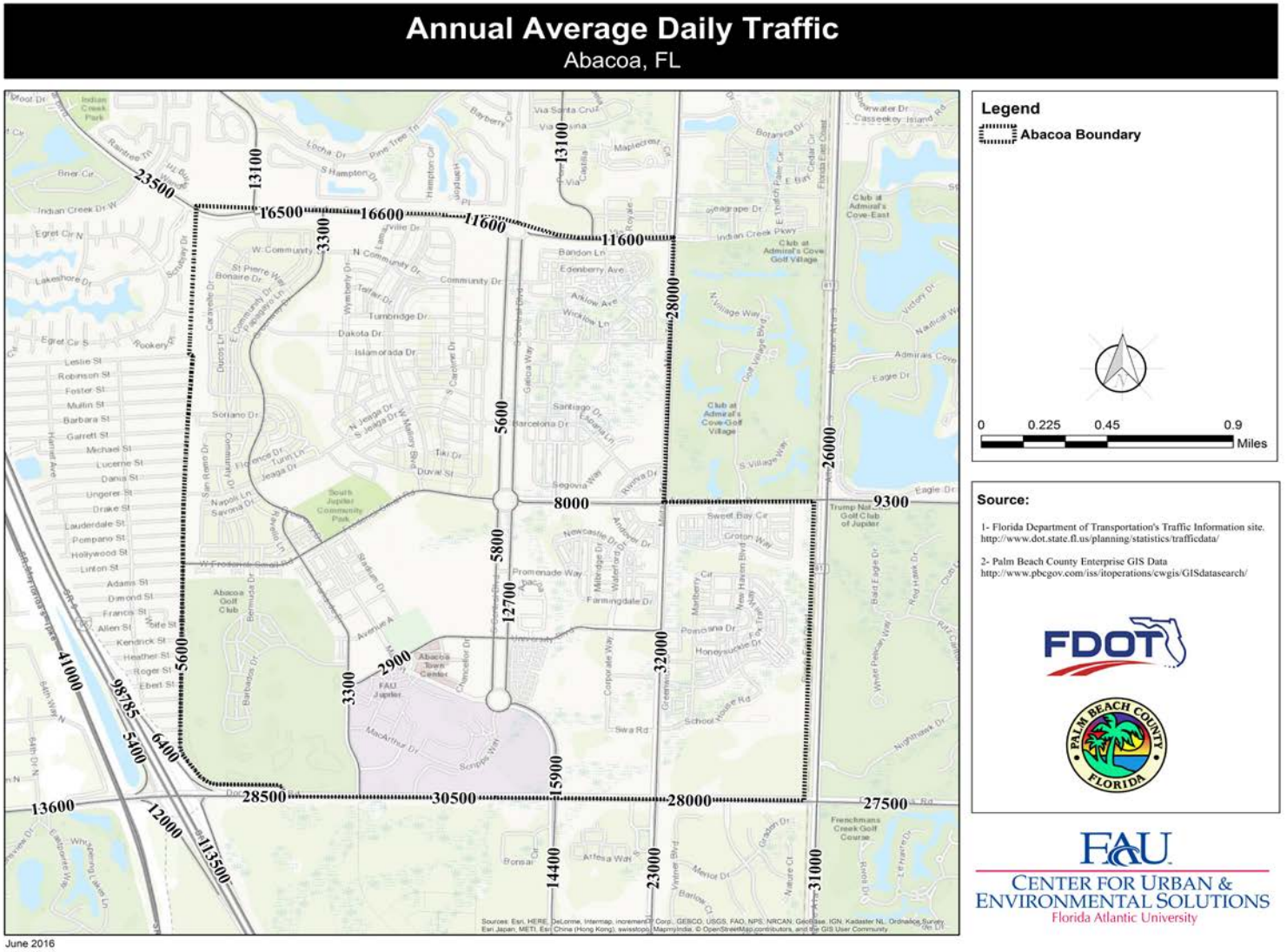


Figure 20: Bus Stop Location Map, Abacoa, FL

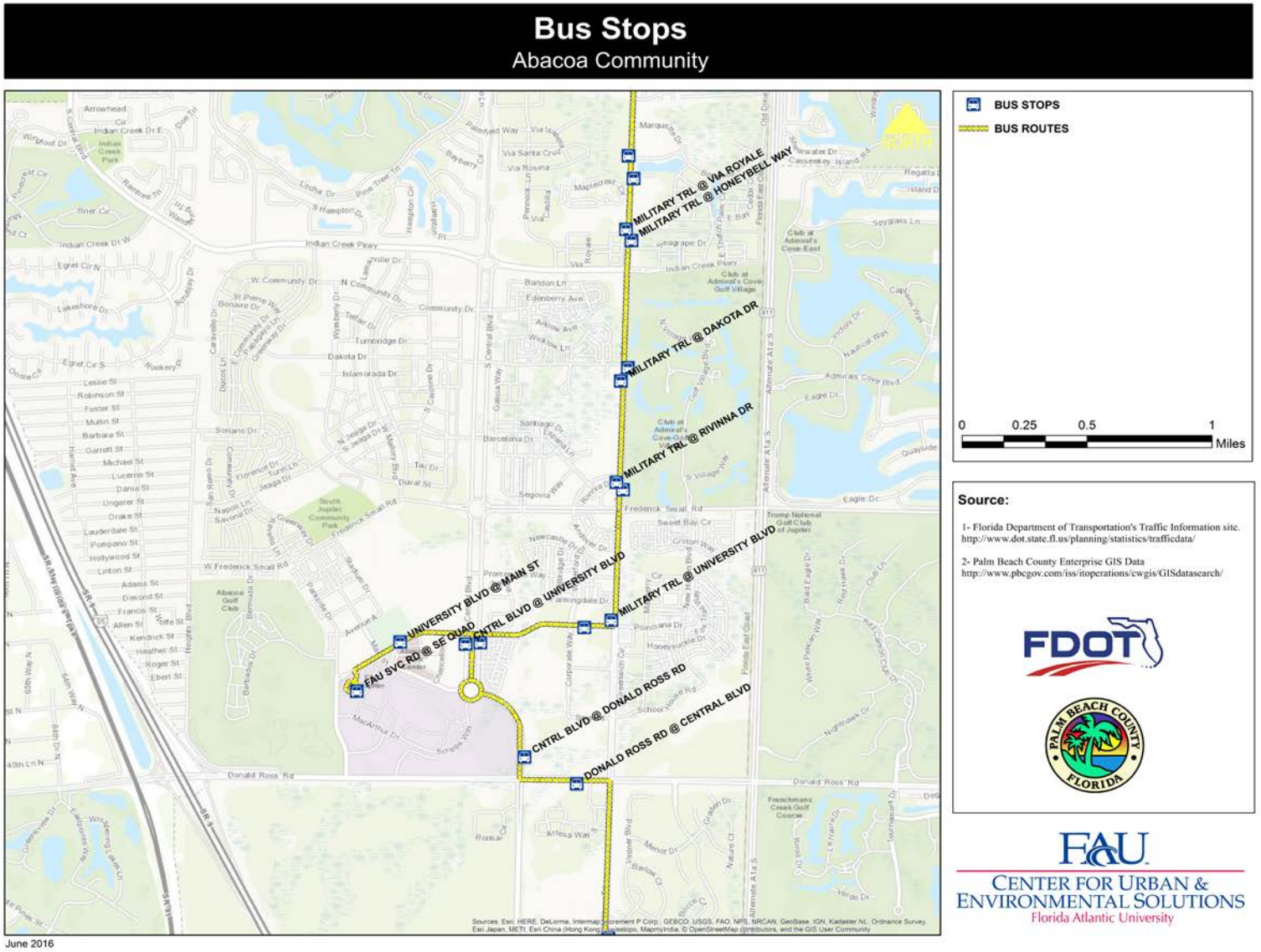


Figure 22: Pedestrian Involved Crashes, Abacoa, FL

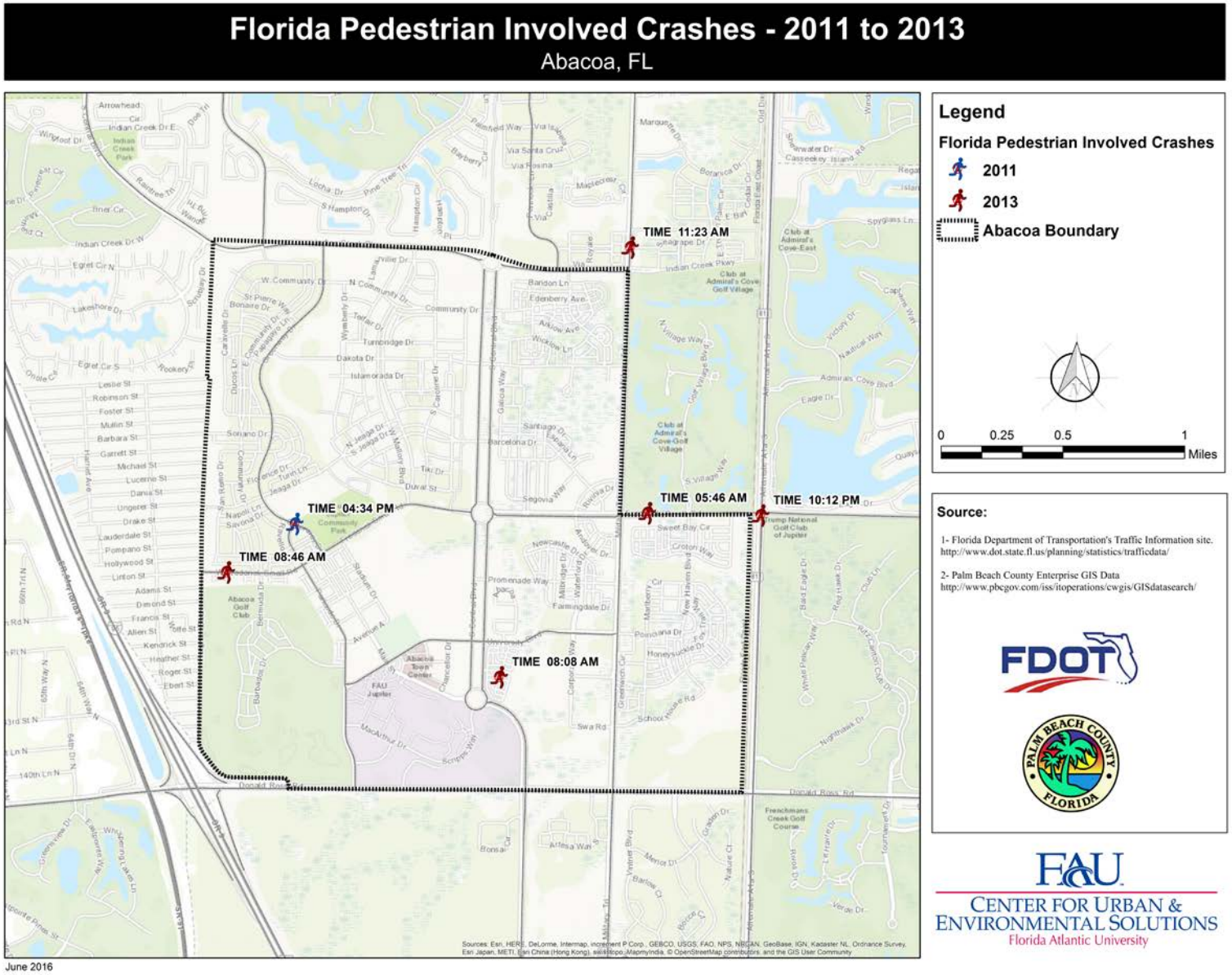
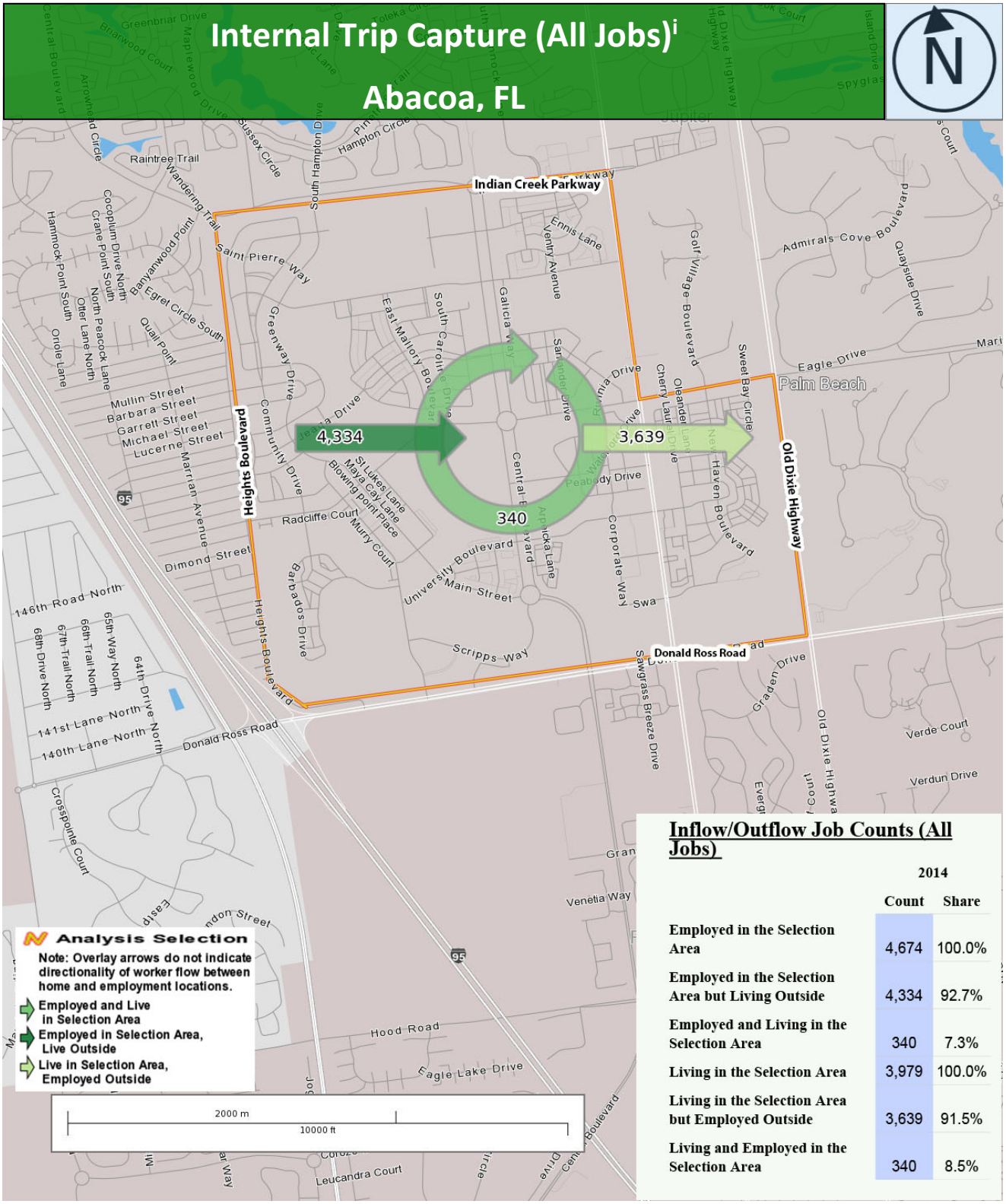


Figure 23: Internal Trip Capture, All Jobs, Abacoa, FL



Inflow/Outflow Job Counts (All Jobs)

	2014 Count	2014 Share
Employed in the Selection Area	4,674	100.0%
Employed in the Selection Area but Living Outside	4,334	92.7%
Employed and Living in the Selection Area	340	7.3%
Living in the Selection Area	3,979	100.0%
Living in the Selection Area but Employed Outside	3,639	91.5%
Living and Employed in the Selection Area	340	8.5%

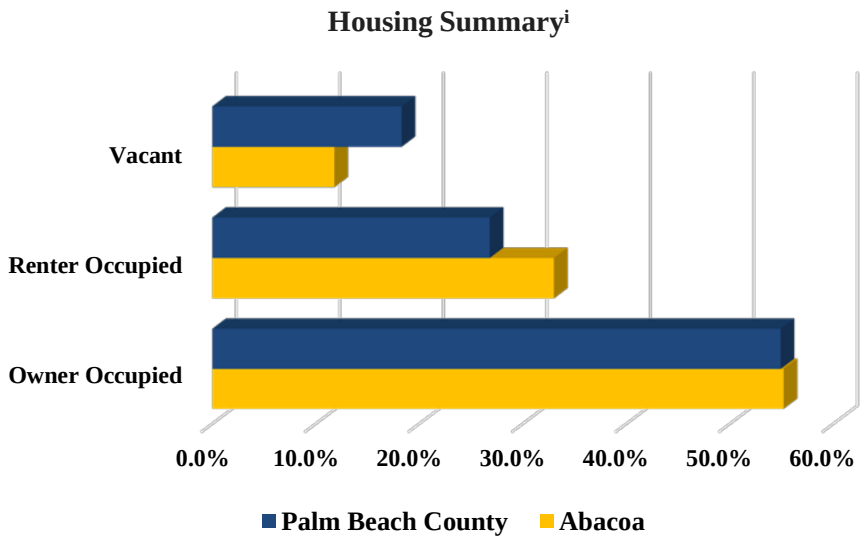
[i] *Source: U.S. Census Bureau, 2010-2014 ACS 5-year Estimates. Travel Time to Work*

6. Real Estate Snapshot

Similar to the population growth of Abacoa, the growth in housing units is related to the consistent construction of the master-planned development the late 1990's. Between 2000 and 2010 the number of housing units grew by 4,120. While the owner occupied rate in Abacoa in comparable to the County, the neighborhood has a much lower vacancy rate and a higher rate of renter-occupied housing.

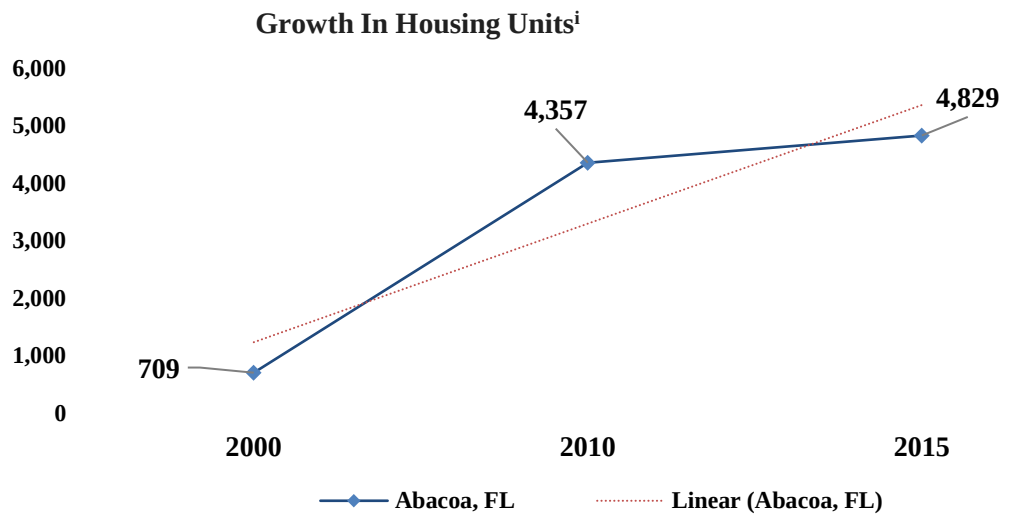
Analyses of median sales prices for this comparison was conducted comparing the 33458 zip code in which Abacoa is located to the Town of Jupiter and Palm Beach County. The zip code is the smallest unit of geography that we were able to obtain data from Redfin or Zillow, which shows longitudinal trends in home values. The home values in the zip code of 33458 tend to be lower than in Jupiter, but significantly higher than the county.

Figure 24: Housing Occupation Summary



[i]*Source: U.S. Census 2010 Summary File 1. Esri Forecasts for 2015 & 2020.Housing Profile: Abacoa and Palm Beach County.*

Figure 25: Growth in Housing Units



[i]*Source: U.S. Census 2010 Summary File 1. Esri Forecasts for 2015 & 2020.Housing Profile: Abacoa and Palm Beach County.*

Figure 26: Median Sales Price, All Residential

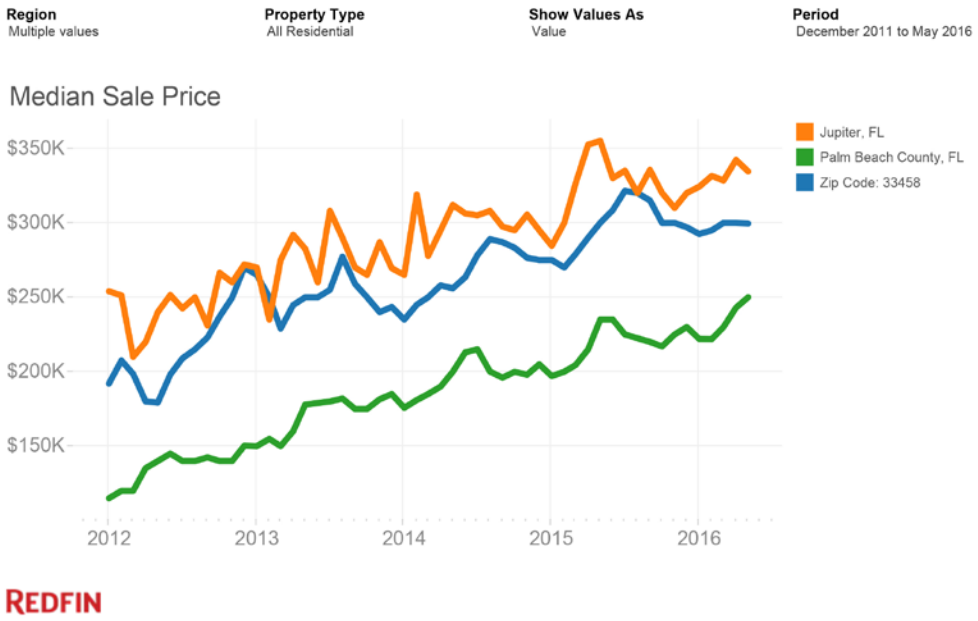


Figure 27: Median Sales Price, Single Family Residential

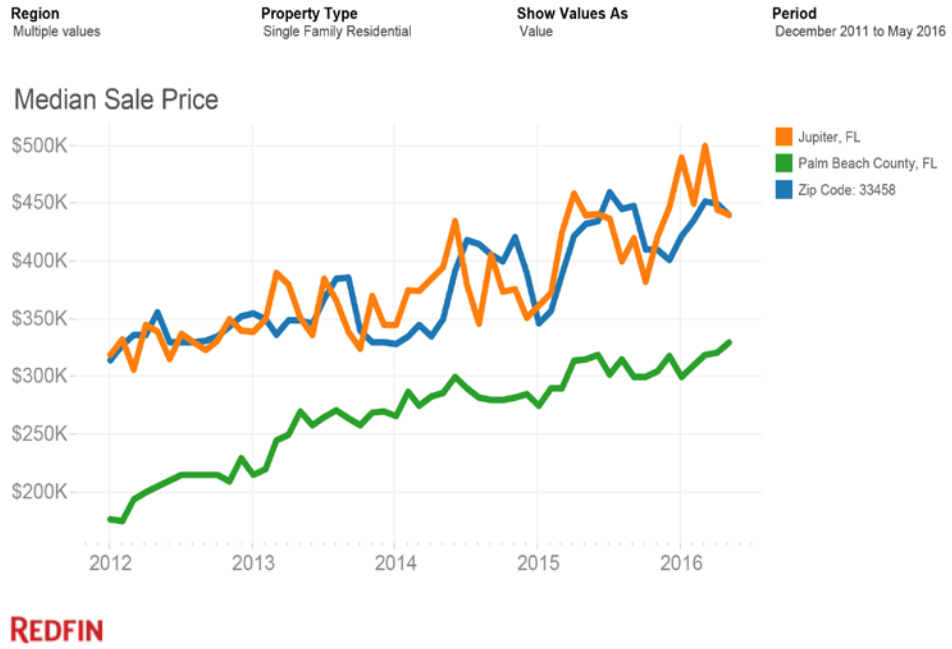
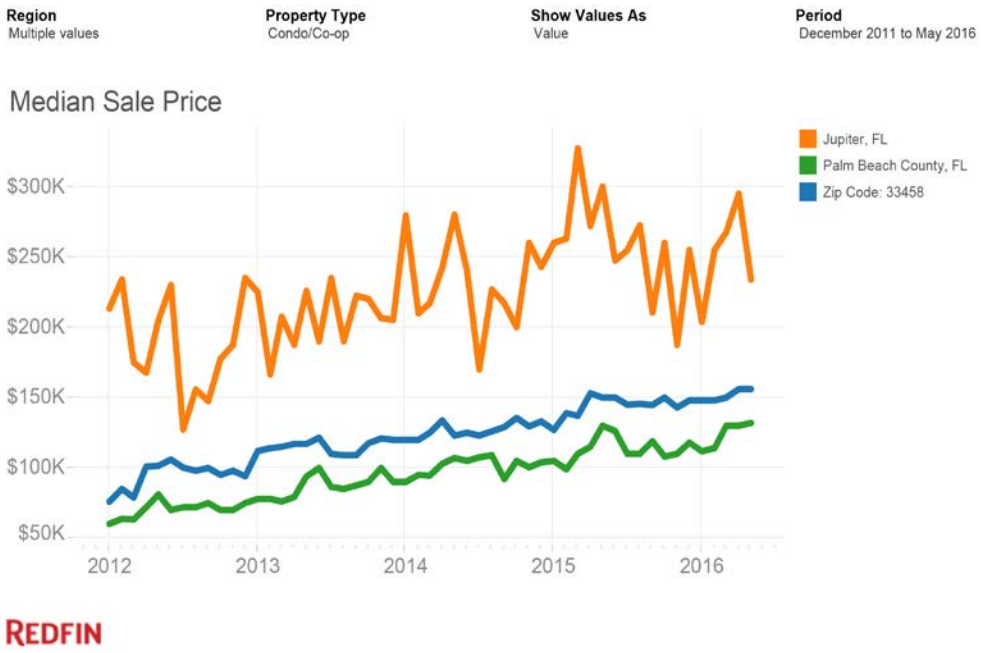


Figure 28: Median Sales Price, Condo/Co-op



7. Reference List

- AllTransit. (2016). Retrieved June 25, 2016, from http://alltransit.cnt.org.
- Bliss, L. (2016, April 19). All Aboard the Best Transit Database Yet. Retrieved July 3, 2016, from http://www.citylab.com/commute/2016/04/an-exhaustive-and-accessible-transit-database-has-finally-arrived/478770/
- History of Abacoa. (2016). Retrieved July 9, 2016, from http://www.abacoa.com/History
- United States Census Bureau. (n.d.). OnTheMap help and documentation. Retrieved June 25, 2016, from: http://lehd.ces.census.gov/applications/help/onthemap.html#!what_is_onthemap

Municipality: Jupiter, FL

Traditional measures of housing affordability ignore transportation costs. Typically a household's second-largest expenditure, transportation costs are largely a function of the characteristics of the neighborhood in which a household chooses to live. Location Matters. Compact and dynamic neighborhoods with walkable streets and high access to jobs, transit, and a wide variety of businesses are more efficient, affordable, and sustainable.

The statistics below are modeled for the Regional Typical Household. Income: $48,148 Commuters: 1.18 Household Size: 2.77 (Miami-Fort Lauderdale-West Palm Beach, FL)

Map of Transportation Costs % Income

Location Efficient Areas

< 8% | 8-12% | 12-15% | 15-18% | 18-22% | 22-26% | 26-29% | 29% +

Location Efficiency Metrics

Places that are compact, close to jobs and services, with a variety of transportation choices, allow people to spend less time, energy, and money on transportation.

0% Percent of location efficient neighborhoods

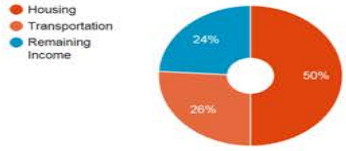
Neighborhood Characteristic Scores (1-10)

As compared to neighborhoods in all 955 U.S. regions in the Index

Job Access	Transit Access	Compact Neighborhood
3.5	1.9	5.4
Low access to jobs	Car-dependent with very limited or no access to public transportation	Moderate density and walkable

Average Housing + Transportation Costs % Income

Factoring in both housing *and* transportation costs provides a more comprehensive way of thinking about the cost of housing and true affordability.



Transportation Costs

In dispersed areas, people need to own more vehicles and rely upon driving them farther distances which also drives up the cost of living.

$12,469 Annual Transportation Costs

1.73 Autos Per Household

22,588 Average Household VMT

2% Transit Ridership % of Workers

27 Annual Transit Trips

9.10 Tonnes Annual Greenhouse Gas per Household

H+T Metrics

Affordability

Housing + Transportation Costs % Income:	76%
Housing Costs % Income:	50%
Transportation Costs % Income:	26%

Demographics

Block Groups:	34
Households:	23,172
Population:	55,532

Household Transportation Model Outputs

Autos per Household:	1.73
Annual Vehicle Miles Traveled per Household :	22,588
Transit Ridership % of Workers:	2%
Annual Transportation Cost:	$12,469
Annual Auto Ownership Cost:	$7,692
Annual VMT Cost:	$4,740
Annual Transit Cost:	$36
Annual Transit Trips:	27

Housing Costs

Average Monthly Housing Cost:	$2,018
Median Selected Monthly Owner Costs:	$2,180
Median Gross Monthly Rent:	$1,261
Percent Owner Occupied Housing Units:	73%
Percent Renter Occupied Housing Unit:	27%

Greenhouse Gas from Household Auto Use

Annual GHG per Household:	9.10 Tonnes
Annual GHG per Acre:	23.28 Tonnes

Environmental Characteristics

Residential Density 2010:	5.69 HHs/Res. Acre
Gross Household Density:	1.69 HH/Acre
Regional Household Intensity:	12,003 HH/mile²
Percent Single Family Detached Households:	50%
Employment Access Index:	12,103 Jobs/mi²
Employment Mix Index (0-100):	63
Transit Connectivity Index (0-100):	0
Transit Access Shed:	4 km²
Jobs Accessible in 30 Minute Transit Ride:	3,653
Average Available Transit Trips per Week:	57
Average Block Perimeter:	1,263 Meters
Average Block Size :	15 Acres
Intersection Density:	104 /mi²

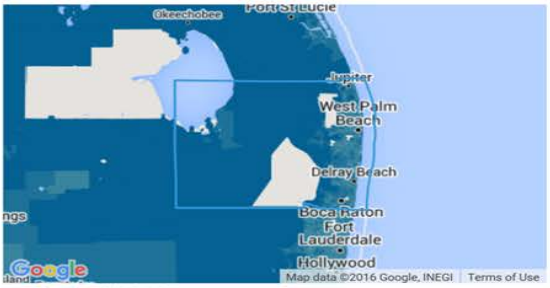
H+T® Fact Sheet
TRUE AFFORDABILITY AND LOCATION EFFICIENCY

County: Palm Beach, FL

Traditional measures of housing affordability ignore transportation costs. Typically a household's second-largest expenditure, transportation costs are largely a function of the characteristics of the neighborhood in which a household chooses to live. Location Matters. Compact and dynamic neighborhoods with walkable streets and high access to jobs, transit, and a wide variety of businesses are more efficient, affordable, and sustainable.

The statistics below are modeled for the Regional Typical Household. Income: $48,148 Commuters: 1.18 Household Size: 2.77 (Miami-Fort Lauderdale-West Palm Beach, FL)

Map of Transportation Costs % Income



Location Efficient Areas

< 8% | 8-12% | 12-15% | 15-18% | 18-22% | 22-26% | 26-29% | 29% +

Location Efficiency Metrics

Places that are compact, close to jobs and services, with a variety of transportation choices, allow people to spend less time, energy, and money on transportation.

0% Percent of location efficient neighborhoods

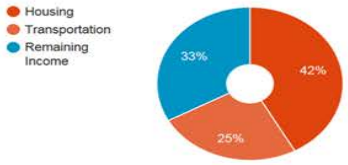
Neighborhood Characteristic Scores (1-10)

As compared to neighborhoods in all 955 U.S. regions in the Index

Job Access	Transit Access	Compact Neighborhood
3.7	2.9	1.5
Low access to jobs	Car-dependent with limited access to public transportation	Very low density and limited walkability

Average Housing + Transportation Costs % Income

Factoring in both housing *and* transportation costs provides a more comprehensive way of thinking about the cost of housing and true affordability.



Transportation Costs

In dispersed areas, people need to own more vehicles and rely upon driving them farther distances which also drives up the cost of living.

$12,041 Annual Transportation Costs

1.71 Autos Per Household

20,888 Average Household VMT

H+T Metrics

Affordability

Housing + Transportation Costs % Income:	67%
Housing Costs % Income:	42%
Transportation Costs % Income:	25%

Demographics

Block Groups:	884
Households:	526,007
Population:	1,339,221

Household Transportation Model Outputs

Autos per Household:	1.71
Annual Vehicle Miles Traveled per Household :	20,888
Transit Ridership % of Workers:	3%
Annual Transportation Cost:	$12,041
Annual Auto Ownership Cost:	$7,599
Annual VMT Cost:	$4,384
Annual Transit Cost:	$59
Annual Transit Trips:	45

Housing Costs

Average Monthly Housing Cost:	$1,700
Median Selected Monthly Owner Costs:	$1,802
Median Gross Monthly Rent:	$1,036
Percent Owner Occupied Housing Units:	71%
Percent Renter Occupied Housing Unit:	29%

Greenhouse Gas from Household Auto Use

Annual GHG per Household:	8.26 Tonnes
Annual GHG per Acre:	22.43 Tonnes

Environmental Characteristics

Residential Density 2010:	1.75 HHs/Res. Acre
Gross Household Density:	0.42 HH/Acre
Regional Household Intensity:	18,768 HH/mile²
Percent Single Family Detached Households:	50%
Employment Access Index:	19,162 Jobs/mi²
Employment Mix Index (0-100):	63
Transit Connectivity Index (0-100):	3
Transit Access Shed:	45 km²
Jobs Accessible in 30 Minute Transit Ride:	55,535
Average Available Transit Trips per Week:	132
Average Block Perimeter:	6,776 Meters
Average Block Size :	23 Acres
Intersection Density:	23 /mi²

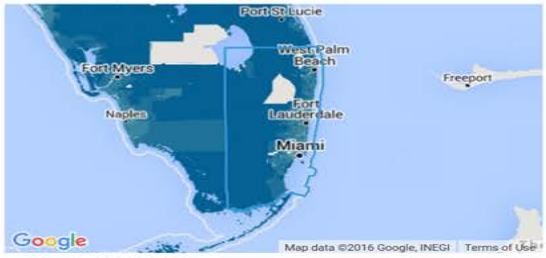
H+T® Fact Sheet
TRUE AFFORDABILITY AND LOCATION EFFICIENCY

CBSA: Miami-Fort Lauderdale-West Palm Beach, FL

Traditional measures of housing affordability ignore transportation costs. Typically a household's second-largest expenditure, transportation costs are largely a function of the characteristics of the neighborhood in which a household chooses to live. Location Matters. Compact and dynamic neighborhoods with walkable streets and high access to jobs, transit, and a wide variety of businesses are more efficient, affordable, and sustainable.

The statistics below are modeled for the Regional Typical Household. Income: $48,148 Commuters: 1.18 Household Size: 2.77 (Miami-Fort Lauderdale-West Palm Beach, FL)

Map of Transportation Costs % Income



Location Efficient Areas

< 8% | 8-12% | 12-15% | 15-18% | 18-22% | 22-26% | 26-29% | 29% +

Location Efficiency Metrics

Places that are compact, close to jobs and services, with a variety of transportation choices, allow people to spend less time, energy, and money on transportation.

0% Percent of location efficient neighborhoods

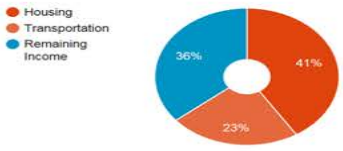
Neighborhood Characteristic Scores (1-10)

As compared to neighborhoods in all 955 U.S. regions in the Index

Job Access	Transit Access	Compact Neighborhood
5	4	1.8
Moderate access to jobs	Moderate access to public transportation	Very low density and limited walkability

Average Housing + Transportation Costs % Income

Factoring in both housing *and* transportation costs provides a more comprehensive way of thinking about the cost of housing and true affordability.



Transportation Costs

In dispersed areas, people need to own more vehicles and rely upon driving them farther distances which also drives up the cost of living.

$11,268 Annual Transportation Costs

1.61 Autos Per Household

18,965 Average Household VMT

6% Transit Ridership % of Workers

83 Annual Transit Trips

7.83 Tonnes Annual Greenhouse Gas per Household

H+T Metrics

Affordability

Housing + Transportation Costs % Income:	64%
Housing Costs % Income:	41%
Transportation Costs % Income:	23%

Demographics

Block Groups:	3,416
Households:	2,017,496
Population:	5,673,185

Household Transportation Model Outputs

Autos per Household:	1.61
Annual Vehicle Miles Traveled per Household :	18,965
Transit Ridership % of Workers:	6%
Annual Transportation Cost:	$11,268
Annual Auto Ownership Cost:	$7,165
Annual VMT Cost:	$3,991
Annual Transit Cost:	$111
Annual Transit Trips:	83

Environmental Characteristics

Residential Density 2010:	2.27 HHs/Res. Acre
Gross Household Density:	0.62 HH/Acre
Regional Household Intensity:	28,074 HH/mile²
Percent Single Family Detached Households:	46%
Employment Access Index:	33,494 Jobs/mi²
Employment Mix Index (0-100):	64
Transit Connectivity Index (0-100):	6
Transit Access Shed:	81 km²
Jobs Accessible in 30 Minute Transit Ride:	114,847
Average Available Transit Trips per Week:	231
Average Block Perimeter:	6,793 Meters
Average Block Size :	14 Acres
Intersection Density:	36 /mi²

Housing Costs

Average Monthly Housing Cost:	$1,645
Median Selected Monthly Owner Costs:	$1,776
Median Gross Monthly Rent:	$1,061
Percent Owner Occupied Housing Units:	63%
Percent Renter Occupied Housing Unit:	37%

Greenhouse Gas from Household Auto Use

Annual GHG per Household:	7.83 Tonnes
Annual GHG per Acre:	37.01 Tonnes

H+T® Fact Sheet
TRUE AFFORDABILITY AND LOCATION EFFICIENCY

Source: Center for Neighborhood Technology

Appendix

AllTransit™ Methods

AllTransit Database & Web Tool

AllTransit is a broad and comprehensive transit database designed to comply with the General Transit Feed Specification (GTFS) in which transit data are developed and assembled by CNT. It includes the location of stops and routes, and the type and frequency of service for all scheduled bus, rail, and ferry service in metropolitan regions over 100,000 in population.

Publicly available GTFS data was gathered, all remaining agencies were contacted to enquire about the availability of GTFS. 102 agencies shared the data with us. For the 305 agencies without GTFS data, we compiled route maps and schedules from their website and/or made phone calls to agencies to get the information. These maps and schedules served as reference to recreate the routes on a simple user-friendly online tool (AllTransit Data Builder) that CNT created.

The previous version of the AllTransit dataset was developed to provide a robust measure of transit access for CNT's ground-breaking Housing and Transportation Affordability (H+T®) Index. We updated and expanded the dataset, and built a more robust and user friendly map-based website devoted solely to AllTransit. It reports measures of transit and its impact for all regions with scheduled transit service and a population of over 100,000.

Geographic Level and Data Availability

AllTransit data was constructed at the Census block group level. Currently 371 Metropolitan and Micropolitan Areas in the United States, also known as Core Based Statistical Areas (CBSAs), defined by the Office of Management and Budget in 2013 with more than 100,000 population and scheduled transit service are included. Smaller regions with readily available GTFS data are also included. CBSAs in Puerto Rico are not included due to insufficient data.

Data Sources

1. 2010-2014 American Community Survey 5-year Estimate (2014 ACS) – an ongoing U.S. Census survey that generates data on housing characteristic, transportation use, community demographics, income, and employment.
2. U.S. Census TIGER/Line Files – geographical features such as roads, railroads, and rivers, as well as legal and statistical geographic areas.
3. U.S. Census Longitudinal Employment-Household Dynamics (LEHD) Origin-Destination Employment Statistics (LODES) – detailed spatial distributions of workers' employment and characteristic detail on age, earnings, industry distributions, and local workforce indicators. LODES data built on 2014 Census data are used here.

4. AllTransit – a 2015 database of General Transit Feed Specification (GTFS) data developed by the Center for Neighborhood Technology, including bus, rail, and ferry service for both transit agencies that report their GTFS data publicly and those derived by CNT staff for agencies that do not.
5. Low-Income Housing Tax Credit Program – a database maintained by US Department of Housing and Urban Development with information on affordable housing locations.
6. U.S. Department of Agriculture – National Farmers Market Directory

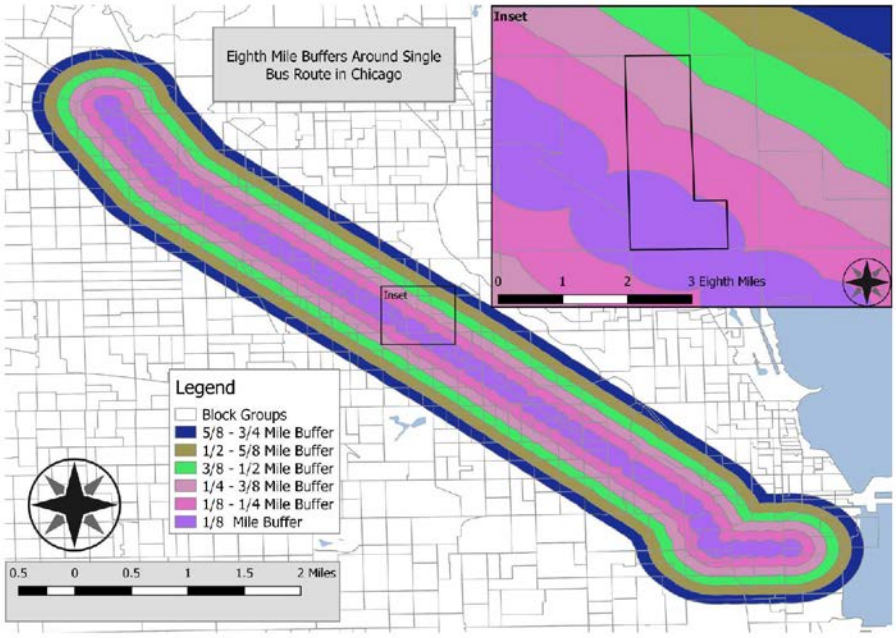
Calculations and Definitions

1. **Transit Stop** – A transit stop is defined from the AllTransit GTFS data. An individual stop is derived from the GTFS stop file (defined here) and has a few nuances that are worth pointing out.
    a. If a transit route has stops on either side a street, for example an east bound bus on one side and a west bound bus on the other, that counts as two stops because transit service in both directions provides value.
    b. Some transit agencies define unique stops for each route using the same location. In this case we would count each unique stop, for example where two bus lines intersect and share a stop this may be coded as one stop for some agencies, but two for others.
    c. The distinction between a station and a stop is ignored for the purposes of this website.
2. **Transit Route** – A transit route is defined as a set of all stops that are used on a single directional route and is derived from the GTFS route file (defined here). Each transit agency codes things slightly differently, and the direction is not always available, for example if an elevated rail line runs into a loop (as in the Brown Line in Chicago); where the route begins and ends is not well defined, so there may not be a direction defined for such a route. However, the most important use for the Transit Route in the website is for calculating frequency of servicer and the lack of consistency of the direction of a route does not affect the overall total trips per week, since we sum that over all directions.
3. **Near Transit –** A ½ mile buffer around each transit stop is the geography of calculation for all "near transit" metrics. Jobs, workers, commuters, households, and population characteristics within all the buffers is summed to calculate the near transit values.
4. **Near High Frequency Transit** – A ½ mile buffer around stops on routes with average headways of 15 minutes or less is calculated and data is aggregated to the sum of all such buffers. Household and population characteristics are summed to obtain these calculations.
5. **Transit Shed** – The Transit Access Shed (TAS) is defined as a geographic area accessible within 30 minutes by public transportation. For each transit stop, all stops that can be reached within 30 minutes were identified. One transfer within 1/4 mile of a stop was allowed, and all transfers were padded with 10 minutes of walking and/or waiting. The stops reachable within 30 minutes were based on the minimum travel time between the two stops, allowing the inclusion of more distant stops that are reachable within 30 minutes via express service. For each origination stop, a quarter-mile buffer was created around the destination stops. Based on the location of the originating stop, the access shed was then aggregated for each stop to the block group by including stops that were

within the block group or within a quarter of a mile of its boundary. Finally, the accessible area or Transit Access Shed is calculated by summing the areas of the quarter-mile buffers around every stop that is within 30 minutes as defined above. In order to assign a value to a Census block group, the Transit Access Shed for all stops within walking distance (a quarter mile) of the block group are merged into one grand shed. This area is then assigned as the block group's Transit Access Shed. Jobs, workers, and households data within the each block group's TAS is proportionally summed to it.

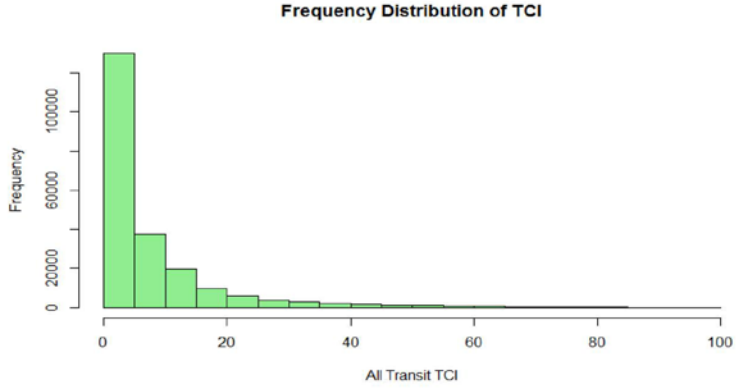
6. **Transit Trips Per Week** – Using the transit routes within a ½ mile of a block group the total number is aggregated by summing the total number of trips per week for every such route. Note that by using the route rather than the stops we avoid double and triple counting stops on the same route that serve the block group.
7. **Transit Connectivity Index (TCI)** – The TCI is an index from 0-100 that is scaled by the number of transit trips the average household in a block group can access by walking each week. The TCI is a measure of how connected the average household member is to the availability of a transit ride. This is a placed-based measure that is derived by examining the proximity of all transit routes, and the area covered by each route at different distances. This is accomplished by using a series of six one eighth mile buffers around each route, and calculating the fraction of land area covered by each buffer for a given block group. The map below shows this for a bus route in Chicago. The highlighted block group in the inset has approximately 1/3 coverage from the first eighth mile buffer, approximately 1/3 coverage from the 1/8-1/4 mile buffer, and a little less from the 1/4-3/8 mile buffer, with a very small fraction covered by the 3/8-1/2 mile buffer. Then we add up all the trips per week for each buffer for each route and obtain the frequency of service for the average location in the block group, for a given distance. We take a weighted sum of these six distances to create an overall statistic on how well the average household in the given block group is served each week. This is done separately for bus, and then again for all other transit modes (streetcar, light rail, commuter rail, ferry, etc.). The weights for this weighted sum are determined by using an ordinary least square fit to the percent of people using transit for their journey to work, controlling for the households (using people per household, household income, and commuters per household) and other locational variables (average block size, fraction of renter dwelling units, fraction of single family homes, and transit access shed).

Figure 1: Eighth Mile buffers Around the Stops on the CTA 56 Bus Inbound Route



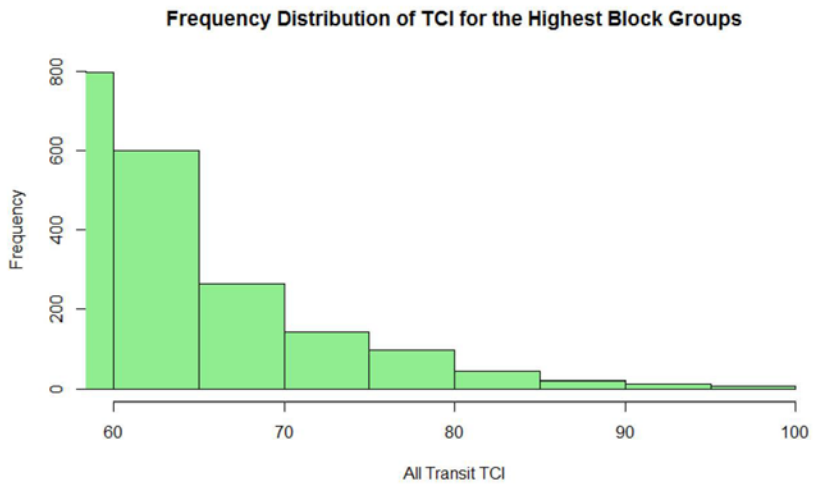
Once this weighted sum is made for every block group in the USA we create an index that ranges from zero to 100, where the value of zero is assigned to block groups that have no connectivity to transit and 100 is given to the best block group in the country. Therefore, his index is a relative rating of how well connected to transit, or "can I walk out the front door and get a bus or train," for every block group. The graphs below show the value of the frequency distribution of TCI for all block groups in the USA, Figure 3 shows this magnified for only the highest values of TCI, and shows just how rare it is in the USA to have these very high values of transit availability.

Figure 2: TCI Frequency Distribution for All Block Groups



Appendix

Figure 3: TCI Frequency Distribution for Block Groups with High Value of TCI



All Transit Performance Score – This scores the overall quality of transit as it pertains to actual use of transit. It combines with the TCI, described above, that measures "can I get transit" with the Jobs Accessible in 30 Minute Transit Ride, which measures "what can I get to once I am on transit," and combines them in a way that is reflective of what fraction of people use transit for a given type of trip – their journey to work – answering the question "how should I get to work." In order to determine how to combine these two measures, like the TCI, we use an ordinary least square fit using these two variables as well as the same control variables, for the households (people per household, household income, and commuters per household) and other locational variables (average block size, fraction of renter dwelling units, fraction of single family homes, and transit access shed size). Once this weighted sum is made for every block group in the USA we create an index that ranges from zero to 100, where the value of zero is assigned to block groups that have no connectivity to transit and 100 is given to the highest value block group in the country. Figure 4 shows the frequency distribution for the percent of commuters using transit for their journey to work. Figure 5 shows the frequency distribution of this intermediate index for all block groups in the USA, Figure 6 shows this magnified for only the highest values of the intermediate index, and again shows how rare it is in the USA to have these very high values of transit quality.

Appendix

Figure 4: Percent Journey to Work by Transit Frequency Distribution for All Block Groups

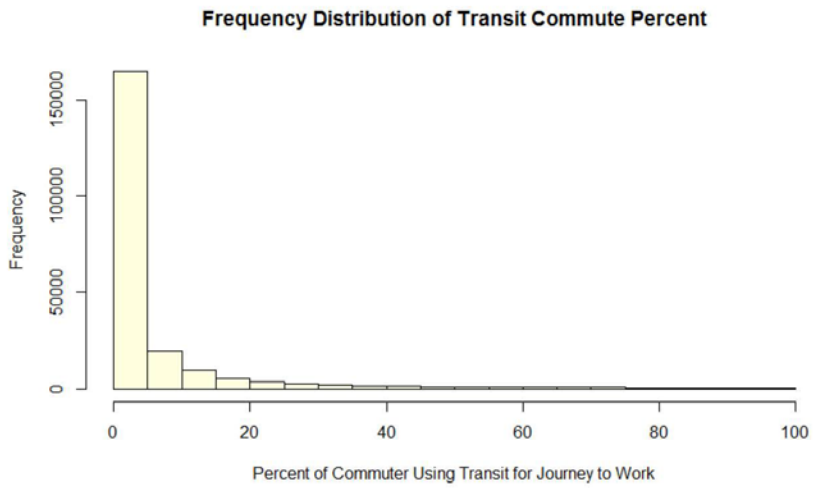
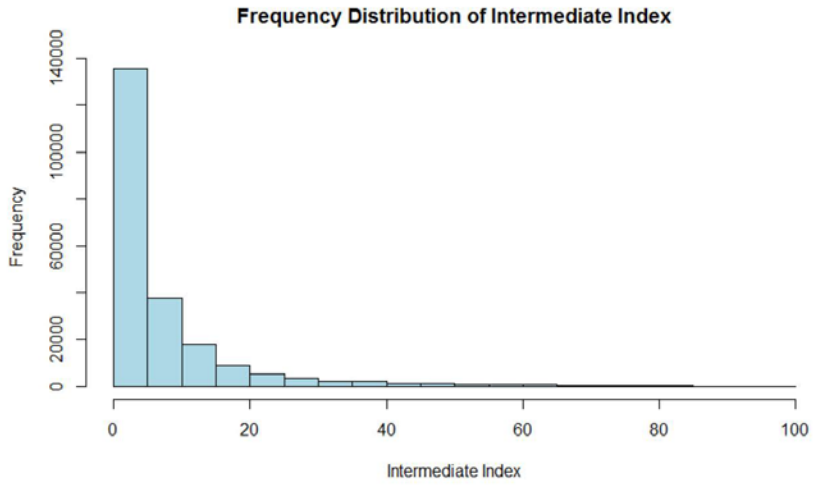
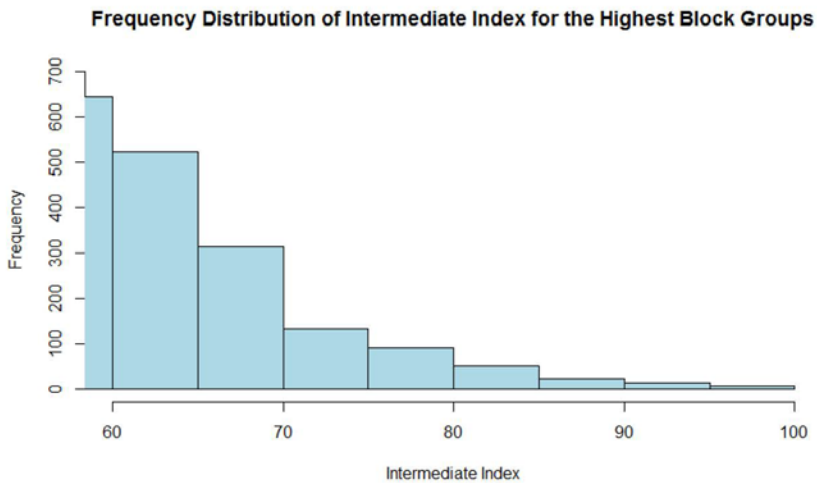


Figure 5: Intermediate Index TCI Frequency Distribution for All Block Groups



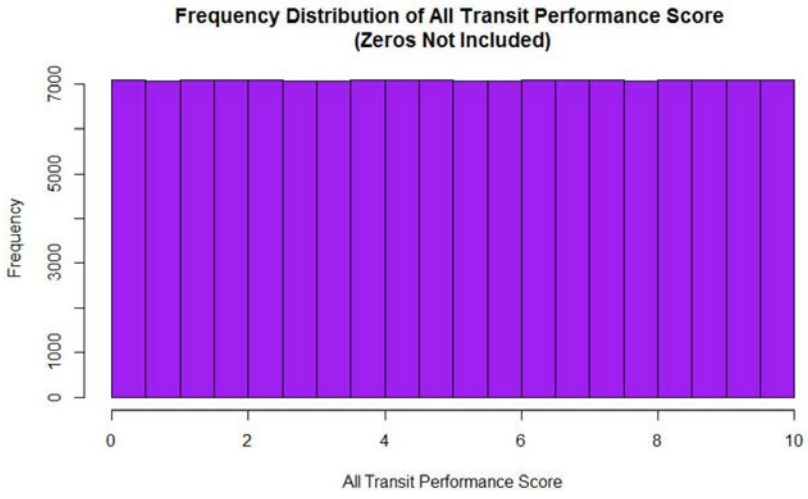
Appendix

Figure 6: Intermediate Index TCI Frequency Distribution for the Highest Value Block Groups



The All Transit Performance Score is calculated by ranking for all block groups from highest to lowest, using the this intermediate index, then rescaling this rank value so that the highest ranking block group is given 10.0 and the lowest are given 0 (there are many with value = 0), making the score a number between 0 and 10 which essentially is the percentile for the block group (divided by 10). Figure 7 shows the frequency distribution for the All Transit Performance Score.

Figure 7: All Transit Performance Score Frequency Distribution for All Block Groups



Appendix

Metrics – Calculation & Data Source Overview

Metric	Calculation	Data Source
	Jobs	
Jobs accessible in 30 minute transit ride	Jobs data aggregated to the Transit Access Shed, weighted by households	Longitudinal Employer-Household Dynamics, 2014
Workers accessible in 30 minute transit ride	Workers data aggregated to the Transit Access Shed, weighted by households	Longitudinal Employer-Household Dynamics, 2014
Jobs near transit	Jobs data aggregated to ½ mile around transit	Longitudinal Employer-Household Dynamics, 2014; AllTransit Data
Workers near transit	Workers data aggregated to ½ mile around transit	Longitudinal Employer-Household Dynamics, 2014; AllTransit Data
Commuters near transit	Commuters data aggregated to ½ mile around transit	American Community Survey 5-year Estimate (2014 ACS); AllTransit Data
Total Commuters	Sum of commuters in selected geography	American Community Survey 5-year Estimate (2014 ACS)
	Economy	
Customer Households Accessible in 30 minute transit ride	Households data aggregated to the Transit Access Shed	American Community Survey 5-year Estimate (2014 ACS)
Transportation Costs	Transportation costs as a percent of income for regional typical household for block groups within ½ mile of transit - calculated from the H+T Index	CNT's Housing + Transportation Affordability Index, American Community Survey 5-year Estimate (2014 ACS) ; AllTransit Data
	Health	
Walkable neighborhoods	Census block sizes aggregated to ½ mile around transit	U.S. Census TIGER/Line Files, 2014
Commute by bicycle	Bicycle commuters aggregated to ½ mile around transit	American Community Survey 5-year Estimate (2014 ACS) ; AllTransit Data
Commute by walking	Commuters by walking data aggregated to ½ mile around transit	American Community Survey 5-year Estimate (2014 ACS) ; AllTransit Data
Farmers markets near transit	Farmers market locations aggregated to ½ mile around transit	U.S. Department of Agriculture: National Farmers Market Directory, 2015 ; AllTransit Data
Farmers markets accessible in 30 minute transit ride	The count of all farmers markets within the Transit Access Shed	U.S. Department of Agriculture: National Farmers Market Directory, 2015 ; AllTransit Data
	Equity	
Population near transit	Population data aggregated to ½ mile around transit	American Community Survey 5-year Estimate (2014 ACS) ; AllTransit Data
Households near transit	Household data aggregated to ½ mile around transit	American Community Survey 5-year Estimate (2014 ACS) ; AllTransit Data
Population near high frequency transit	Population data aggregated to ½ mile around high frequency transit	American Community Survey 5-year Estimate (2014 ACS) ; AllTransit Data
Households near high frequency transit	Household data aggregated to ½ mile around high frequency transit	American Community Survey 5-year Estimate (2014 ACS) ; AllTransit Data
LIHTC buildings near transit	Total low-income housing building locations aggregated to ½ mile around transit	US Department of Housing and Urban Development - LIHTC Database, 2013; AllTransit Data
LIHTC units near transit	Total low-income housing unit locations aggregated to ½ mile around transit	US Department of Housing and Urban Development - LIHTC Database, 2013; AllTransit Data
	Transit Quality	
AllTransit Performance Score	Overall transit score for a neighborhood that includes measures of transit quality, the jobs that can be reached in a 30 minute transit ride, compared to the number of people using transit for commuting	AllTransit Data
Transit Connectivity Index	Sum of buses/trains per week scaled by overlap of 1/8 mile rings about every stop that intersects the block group	AllTransit Data

Transit Trips per week	Total trips possible within the block group and ½ mile of its border	AllTransit Data
Transit Access Shed	Total area that transit riders from the block group can access in 30 minutes with 1 or no transfers for all the transit stations within a ¼ mile of the block group	AllTransit Data
Mobility		
Transit Routes within ½ mile	Total transit routes available within the block group and ½ mile of its border	AllTransit Data
High Frequency Transit Routes within ½ mile	Total high frequency transit routes available within the block group and ½ mile of its border	AllTransit Data
Transit Stops within ½ mile	Total transit stops available within the block group and ½ mile of its border	AllTransit Data
Bikeshare locations near transit	Total bikeshare locations aggregated to ½ mile around transit	AllTransit Data
Carshare locations near transit	Total carshare locations aggregated to ½ mile around transit	AllTransit Data
Carshare vehicles near transit	Total carshare vehicles aggregated to ½ mile around transit	AllTransit Data

Source: AllTransit™ Helpdesk, http://alltransit.cnt.org/