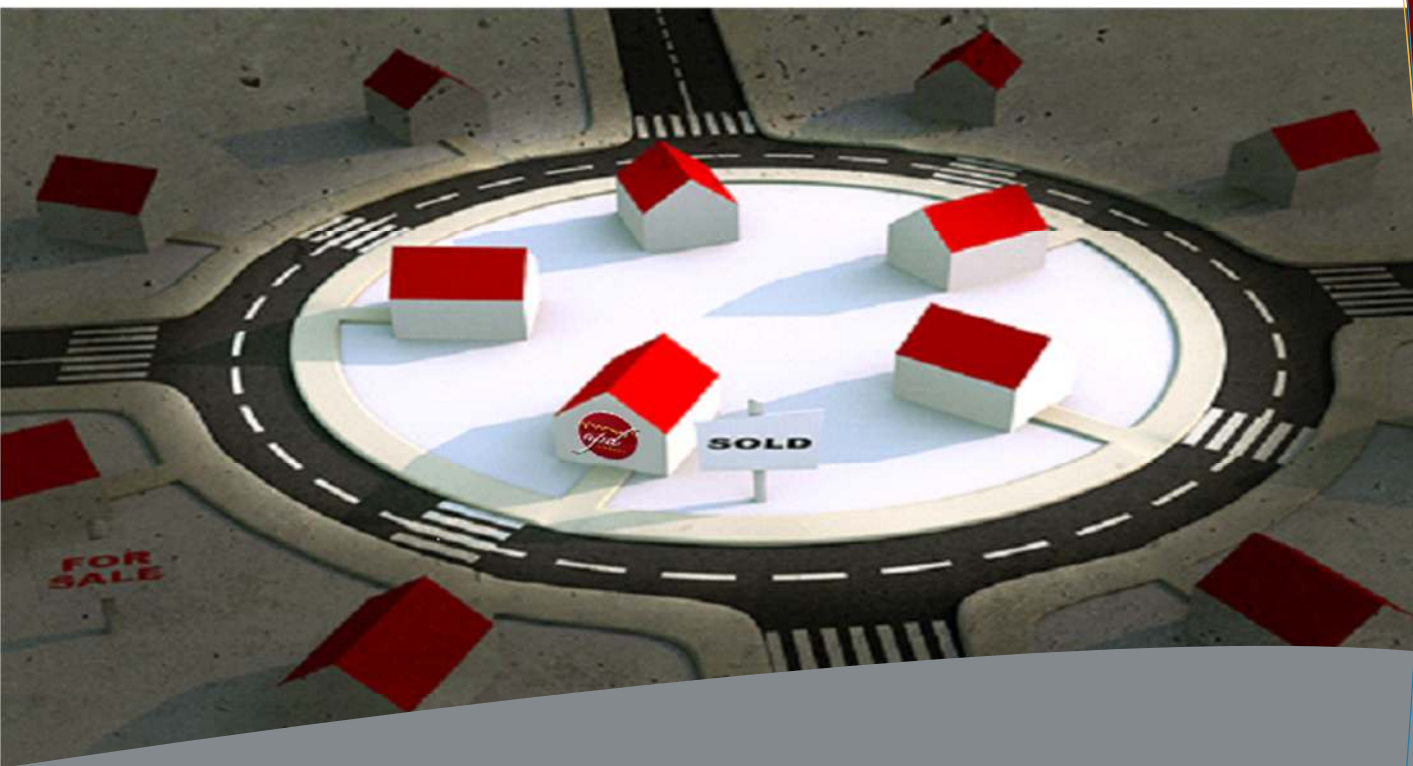


TUNICA COUNTY WORKFORCE TRENDS AND HOUSING DEMAND ANALYSIS

A Comprehensive Study by APD Solutions



Presented to:

Tunica County, Mississippi

June 20, 2014

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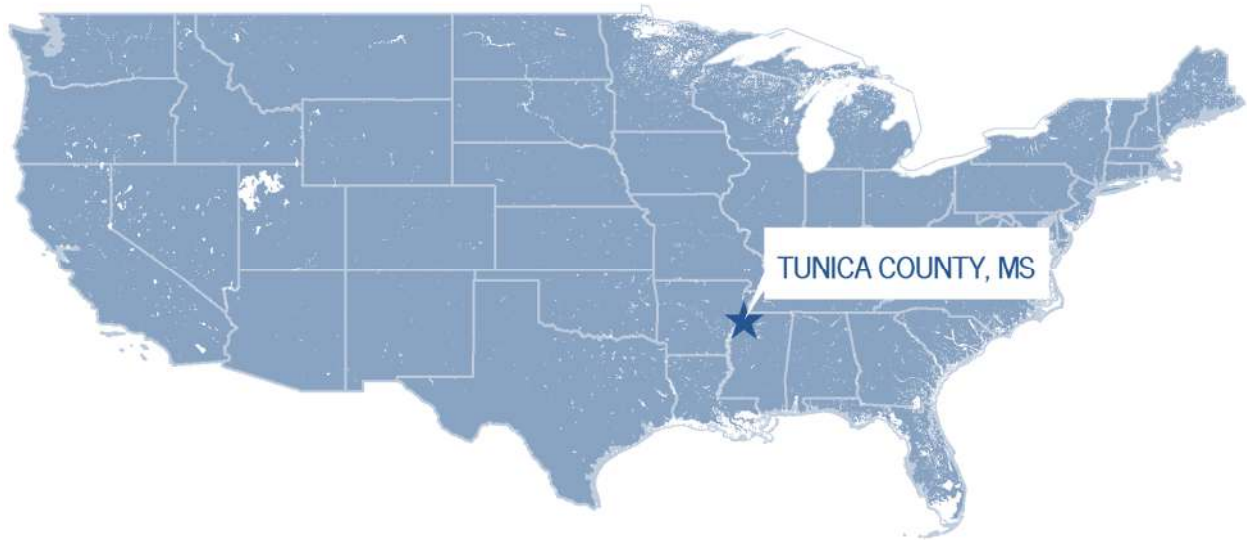
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Introduction

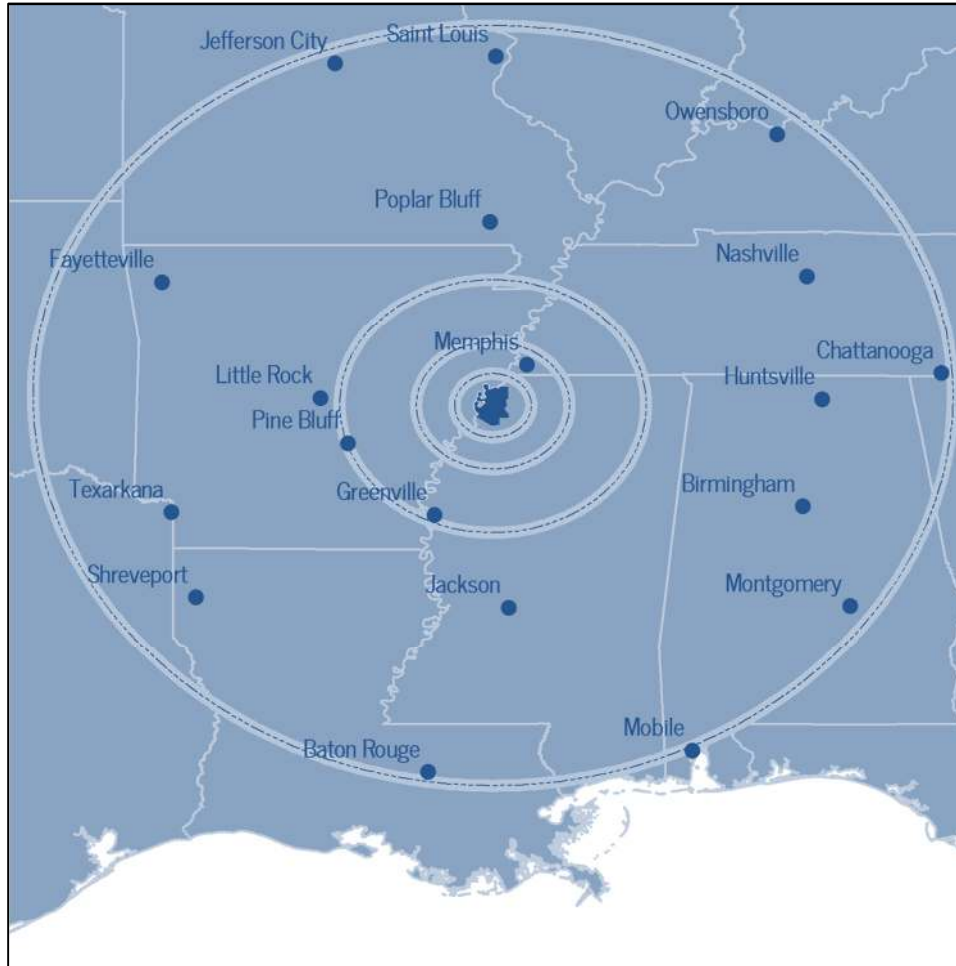
Tunica County is located in the northwestern part of Mississippi, with an estimated population of 10,560 in 2013 (Tunica County Chamber of Commerce). Named after the Tunica Native American tribe who lived in the area for many centuries, Tunica County is well-known today for its world-class casino resorts, and is one of the top six areas in the United States in total revenues from gaming activities (American Gaming Association). Its county seat is the town of Tunica, located near the center of the county, while the resort and casino area is located in the county's northernmost section.



Tunica County boasts nine world-class casinos, combining to average more than 50,000 visitors a day and up to 10 million visitors annually. According to the Tunica Convention and Visitors Bureau and the Tunica County Chamber of Commerce, the county's gaming industry has directly or indirectly created 15,000 jobs in the region since gambling was legalized there in 1991. Despite this major economic impact on the area, a 2005 survey of Tunica gaming operators suggested that only 21% of casino employees working in the County also live there (Wadley Donovan Group). There is also a very limited number of housing units in the County relative to the number of jobs located there. This represents an extreme unmet need for affordable and desirable housing located within Tunica County.

APD Solutions (APDS) was contacted to assist Tunica County, MS with a number of tasks in early 2013 relevant to the goals of bringing increased investment and population into Tunica County. Several visits and meetings with Tunica County officials took place following this initial contact, culminating in a contract between Tunica and APDS in May 2013.

Major urban areas and cities within 25, 50, 100, 200, and 300 mile radii of Tunica County



Program Background

Tunica County leadership has emphasized that the creation of new housing units through new development is among the county's most pressing needs. There is great potential demand for housing within Tunica County that is now being met almost entirely by housing in other counties, while the supply of new housing has consistently remained at zero in recent decades. This represents a great untapped opportunity not only for helping Tunica County workers to live within Tunica, but for economic development and sources of new tax revenues as well. Attracting even a small percentage of the approximately 9,000 workers in the Tunica resort area to live in new housing within the county will result in increased economic activity in Tunica, with more money being spent in the area by local residents, leading to the generation of added economic activity and demand for local goods and services removed from the gaming industry. New housing for Tunica resort area workers can also reduce their costs of living and

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improve quality of life, cutting down transportation costs and long commutes that cause mental fatigue and stress.

Situation

Taking a wide view of the Tunica resort area, Downtown Memphis, TN is 35-40 minutes away by car to the northeast, with some of Memphis' outer southwestern suburbs just 25 minutes from the area. The Memphis metropolitan area is home to a population of 1.3 million people, and has seen steady growth in recent decades, with a 12.7% increase in population from 1990 to 2000 and 16.6% growth from 2000 to 2010 (U.S. Census Bureau). A significant amount of population growth from the Memphis metropolitan area has been shifting southward into DeSoto and Tate counties in Mississippi in recent years, to areas south of the City of Memphis and just east of Tunica County. This southward development pressure suggests that there might be potential from untapped housing demand in Tunica County not only from local gaming industry workers, but also from general trends of population growth and movement in the Memphis metropolitan area, with increased numbers of residents moving into outer suburbs and hinterlands. The Wadley Donovan Group cites taxes, crime, and increasing living costs as some of the reasons that many Memphis residents are moving south through the Memphis metropolitan area and to areas immediately outside of it.

Accessibility and Connectivity

Tunica County is home to an airport with an 8,500 foot runway that is now landing Boeing 737's. Memphis International Airport, 30 miles to the north, boasts nine major airlines, three commuter airlines and 300-plus daily passenger flights. U.S. Highway 61, running north and south by the casino area, connects with Interstate 40 twenty miles north of Tunica, and Interstate Highway 55 is located 18 miles east of U.S. Highway 61. The Tunica casino resort area is connected to Interstate 55 via the recently built Interstate 69 connection, and this connection is expected to connect to U.S. Highway 78 by 2016, providing more direct road access to urban centers to the southeast such as Birmingham and Atlanta.

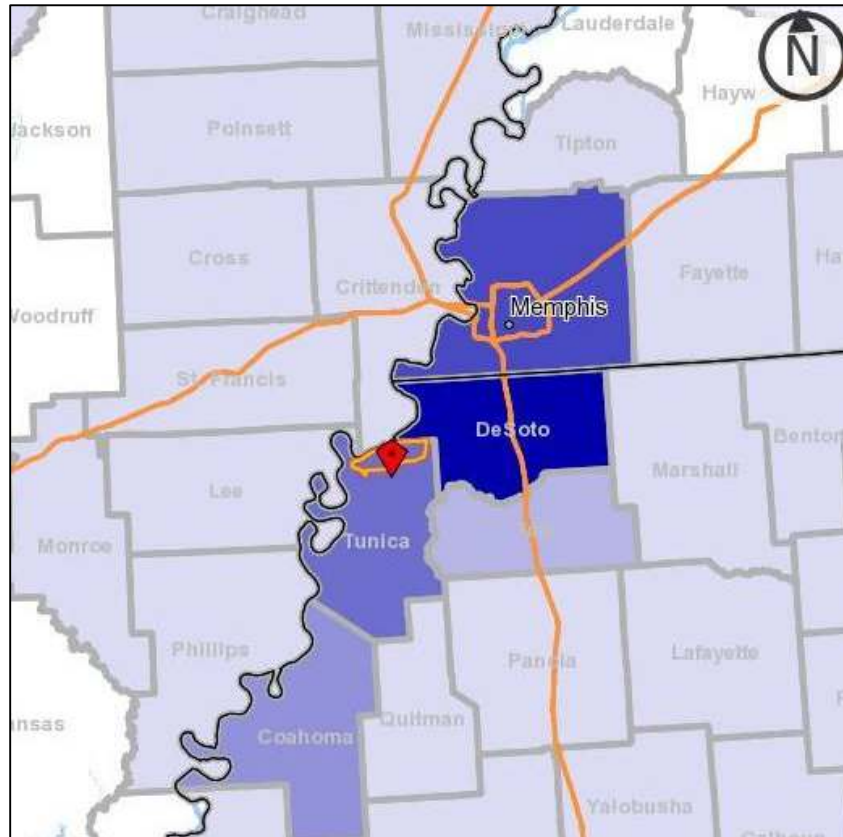
Target Market Definition

The target market for the proposed development in Tunica County will not be a set geographic area analyzed in its totality or broken down into particular market segments-- instead our intention is to primarily target existing and future workers in the Tunica resort area. For this reason, it will be necessary to pin down the characteristics of the population of workers in the Tunica resort area, as they are spread out across many different counties, with substantial populations in three states. While it is likely that new housing development in Tunica will attract some future residents that do not work in the area, it is expected that they will be



relatively few in number. Though the number of people working in the Tunica resort area is substantial, these workers make up an extremely small percentage of these counties, and will not be represented in any meaningful way by the combined demographics and economic metrics of these communities.

Counties Where Tunica Resorts CDP Workers Live



This map shows counties where individuals working in Tunica Resorts CDP, also known as Robinsonville, live, with darkest shades of blue representing the most people. (Source: U.S. Census Bureau, Center for Economic Studies)

It is helpful to know the likely current locations of potential targeted future residents of new Tunica County developments. The U.S. Census Bureau’s Center for Economic Studies provides detailed information about the locations where workers in the Tunica resort area (Tunica Resorts Census Designated Place (CDP)) live. Tunica Resorts CDP was previously known as Robinsonville, and is still known by that name to most locals. However, this place will be referred to as Tunica Resorts CDP or the “Tunica resort area” for the remainder of this report. The following tables include lists of the top 10 Counties and Places (Cities, CDPs, etc.) where workers in Tunica Resorts CDP live:

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Top 10 Places where Tunica resort area workers live, 2011 (9,094 total)		
All Places (Cities, CDPs, etc.)	Count	Share
Memphis, TN	1,579	17.4%
Horn Lake, MS	911	10.0%
Southaven, MS	690	7.6%
Clarksdale, MS	491	5.4%
Tunica Resorts CDP, MS	335	3.7%
Hernando, MS	229	2.5%
Senatobia, MS	148	1.6%
Lynchburg CDP, MS	134	1.5%
Helena-West Helena, AR	123	1.4%
Olive Branch, MS	123	1.4%

Source: U.S. Census Bureau, Center for Economic Studies

Top 10 Counties where Tunica resort area workers live, 2011		
All Counties	Count	Share
DeSoto County, MS	2,760	30.3%
Shelby County, TN	1,839	20.2%
Tunica County, MS	1,489	16.4%
Coahoma County, MS	865	9.5%
Tate County, MS	474	5.2%
Panola County, MS	301	3.3%
Quitman County, MS	287	3.2%
Phillips County, AR	173	1.9%
Tallahatchie County, MS	75	0.8%
Marshall County, MS	70	0.8%

Source: U.S. Census Bureau, Center for Economic Studies

In later sections, the characteristics of households in DeSoto County, Mississippi and Shelby County, Tennessee, which are collectively home to 50.5% of all Tunica Resorts CDP workers, and 60.4% of all Tunica County CDP workers who do not live in Tunica County, will be closely examined. This analysis will include the weighting of U.S. Census Bureau data from these counties based on known information about the workers in Tunica Resorts CDP. For the purposes of analyzing the 39.6% of Tunica Resorts CDP workers who live in counties other than the three mentioned above, typically more rural in their character, Coahoma County, Mississippi, where about a quarter of these remaining workers live, will serve as a benchmark for analysis.

The centers of each of the top 4 Places where Tunica Resorts CDP workers live are all 25 to 55 minute drives from the Tunica resort area without traffic. One major advantage that new housing in Tunica County can provide to resort area workers is the convenience of a shorter commute, along with reduced transportation costs. According to the Federal Highway Administration, American households living in auto dependent locations spend on average about 25% of their income on transportation costs, so the ability to cut down those commutes for resort area workers can represent a major improvement in residents quality-of-life, and even a boon to the Tunica economy, as it leaves more money in households' pockets to both save and spend locally. Tunica County and its surrounding areas are highly auto dependent, with 94% of Tunica County residents who work driving to get to their workplace.

In addition to the untapped housing demand resulting from the large number of workers in Tunica's resort area and gaming industry, another supplemental population that we expect to draw demand from is the population of workers at the Feuer Powertrain and Wilhelm Schulz GMBH plants in the county, both relatively new facilities. The Feuer Powertrain plant is on



schedule to begin manufacturing of automobile crankshafts later in 2014, and employ 300 people at salaries around \$40,000. The Schulz plant, opened in 2011, is already employing at least 200 people at salaries around \$32,000. According to news reports dating from 2011, it was expected to employ 500 people by 2015. In the absence of recent press reiterating the figure of 500 people to be employed at the Schulz plant, this report will assume the more conservative number of 200. These two manufacturing facilities therefore represent a total of 500 workers who will not be accounted for in the data presented in this report from sources such as the US. Census Bureau, but who we will make a point of incorporating into our analysis.

General Demand Analysis

The most central finding indicating a wealth of unmet potential demand for housing in Tunica County is the fact that the vast majority of the county’s labor force—people that are employed within Tunica— live outside it. This is true in regard to both the Tunica resort area and the county as a whole, and 78.7% of all jobs, 9,094, in Tunica County are located in the Tunica Resorts CDP where the casino and gaming businesses are all located. Below is a list of the number of employees at each of the nine Tunica casinos, according to information from the Tunica Convention and Visitors Bureau and the Tunica County Chamber of Commerce.

Tunica Casinos and Number of Employees (including hotel workers)	
Harrah’s Casino Tunica*: 1,779	Hollywood Casino and Hotel: 574
Gold Strike Casino Resort: 1,383	Resorts Tunica Casino: 510
Horseshoe Casino Tunica: 1,241	Tunica Roadhouse Casino & Hotel: 481
Sam’s Town Hotel and Gambling Hall: 850	Bally’s Casino: 465
Fitzgerald’s Casino & Hotel Tunica: 777	Total Casino Employment: 8,060

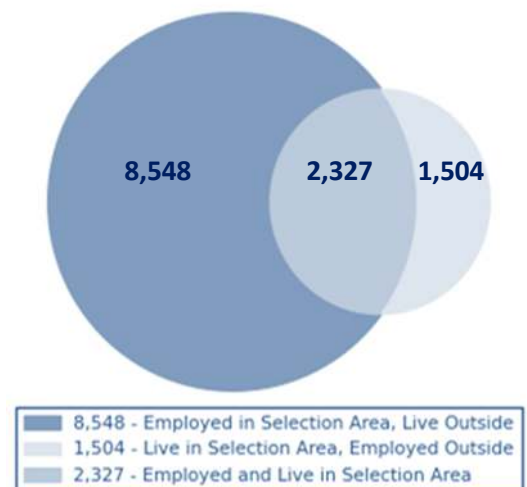
Source: Tunica Convention and Visitors Bureau and the Tunica County Chamber of Commerce.

*Harrah’s Casino Tunica has recently closed but is likely to reopen under new ownership.

According to the U.S. Census Bureau data, 78.6% of Tunica County’s labor force lives outside of the County. The following chart, generated by the U.S. Census Bureau’s OnTheMap site, illustrates that, based on data from 2011, 8,548 individuals are employed in Tunica County but live elsewhere, while only 2,836 individuals both work and live in Tunica.

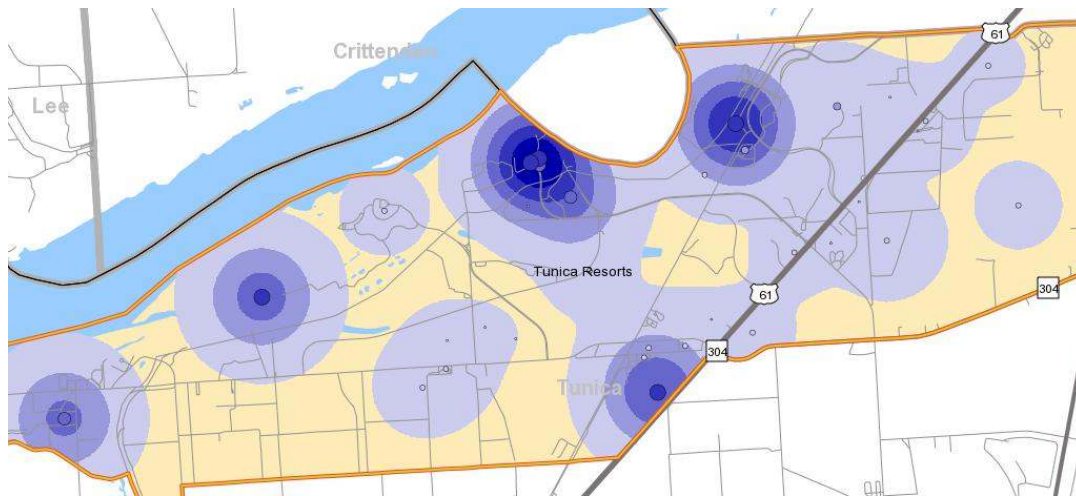
When looking more specifically at workers in the Tunica Resorts CDP, only 16.4% of workers there live in Tunica County (U.S. Census Bureau, 2011). A report by the Wadley Donovan Group

Inflow/Outflow Job Counts in 2011



based on extensive interviews with gaming operators in Tunica found similarly that 21% of persons working in that industry live in Tunica County. The map below illustrates the locations and density of jobs within Tunica Resorts CDP.

Job Locations in Tunica Resorts CDP Heat Map

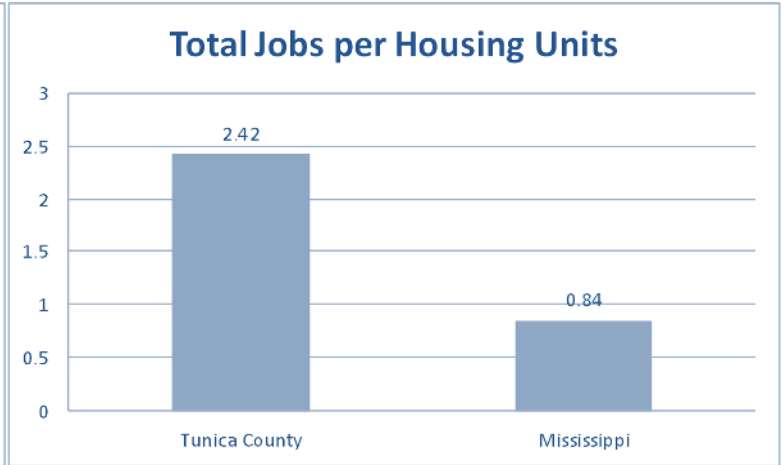
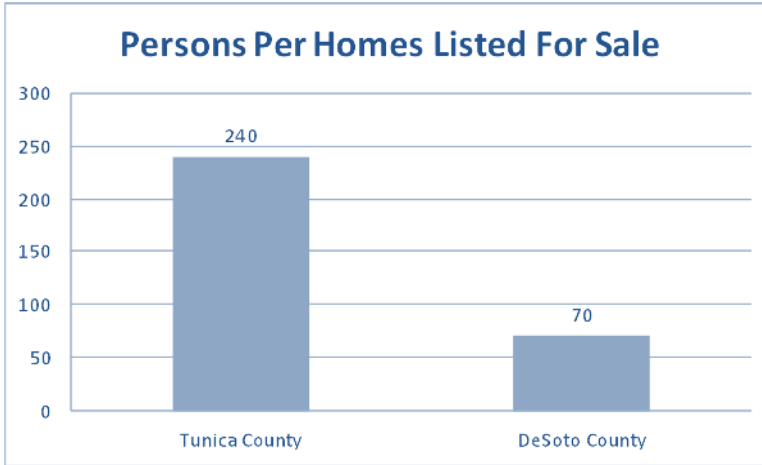


The locations of jobs in Tunica Resorts CDP (Source: U.S. Census Bureau, Center for Economic Studies). The darkest four dots each represent 831-2,025 jobs, and 78.7% of all jobs in Tunica are located within this area.

As just one illustration of the low housing supply in Tunica County relative to its population, there were a total of 43 homes offered for sale with the Mississippi Multiple Listing Service in the three zip codes that roughly make up Tunica County on June 5, 2014. With an estimated 2013 population of 10,560 in the County (U.S. Census Bureau), this is a ratio of 240 persons for each home on the market for sale. For the sake of comparison, there are 70 persons for every home listed for sale in nearby DeSoto County (approximated by zip codes), the county with the largest number of Tunica Resort CDP workers, a ratio 3.4 times less of that in Tunica.

The Wadley Donovan Group's Tunica Labor Market Assessment argues that not only is there massive untapped demand for housing in Tunica County from those working in the gaming industry, but that Tunica county is poised to attract populations from the growth of Memphis's south exurbs if it begins to supply new housing, as well as to attract new business and industry.

Another illustration of the low housing supply in Tunica County can be demonstrated by a simple count of the number of housing units in the County compared to the number of jobs there. Based on 2011 data from the 5-year American Community Survey and the U.S. Census Bureau Center for Economic Studies, Tunica County was home to 11,548 jobs and 4,773 housing units, a ratio of 2.42 jobs per housing unit, while the state of Mississippi was home to 1,064,095 jobs and 1,266,417 housing units, for a ratio of 0.84, almost three times less.



Demographic Characteristics

The U.S. Census Bureau has detailed information about the composition of the labor force working in Tunica Resorts CDP in terms of individuals, but inferences about households to which these individuals belong lack direct data to draw from. While only 47% of employed individuals living in the Tunica Resorts CDP work in the Tunica Resorts CDP as of 2011, this is more than can be found in any other census-designated unit of significant size, and the overall demographics of workers in Tunica Resorts CDP are very close to those living there. This makes statistical information from Tunica Resorts CDP residents potentially useful in inferring information about some characteristics of households containing the Tunica Resorts CDP worker population. However, it is also necessary to be cautious with this data, as small CDPs carry significant margin of errors in the American Community Survey. Tunica Resorts CDP data can be supplemented by data from the entire county. Here is information about household sizes in Tunica Resorts CDP and Tunica County from the 2010 Census:

Average Household Size of Tunica Resorts and Tunica County residents			
	All Units	Renter-Occupied Unit	Owner-Occupied Unit
Tunica Resorts - 2010 Census	2.26	2.20	2.65
Tunica County - 2010 Census	2.72	2.65	2.81

Employed Workers and Households in Tunica County, 2010-2012 5-year ACS data			
	Employed Workers	Total Households	Employed Workers per Household
2008-2012 ACS	4,170	4,081	1.02
2007-2011 ACS	4,182	3,992	1.05
2006-2010 ACS	4,575	4,039	1.13

Potentially relevant to our analysis is information above showing a near 1:1 ratio of employed workers and households in Tunica County. As Tunica County's demographic makeup is more similar to that of Tunica Resorts CDP workers than other counties with large numbers of Tunica Resorts CDP workers, this can help us in analysis when comparing data on workers (most Tunica Resorts CDP data) with that of households (most County level data). Because data is limited regarding workers in the Tunica resort area, we will use employed worker and household data interchangeably going forward. The adjacent table contains information about the characteristics of Tunica Resorts CDP workers, as taken from the U.S. Census Bureau's Center for Economic Studies:

As shown in the table above, the median worker in Tunica Resorts CDP is earning somewhere between \$1,251 to \$3,333 per

month (or between \$15,012 and \$39,996 when expressed in an annualized form). Further information from the U.S. Census Bureau's Local Employment Dynamics site breaks down the monthly wages of "stable" (jobs that lasted the entire quarter measured) Tunica County jobs in the NAICS Accommodations and Food Services sector (who make up the vast majority of the Tunica Resorts CDP workers and are small in number in the rest of the county) by demographics, with crosstabs for age and gender. This can be effectively used as information

Selected Demographic Characteristics of Tunica Resorts CDP workers	
	Tunica Resorts CDP
Number of workers	
2005 estimate	12,638
2008 estimate	10,503
2011 estimate	9,094
Change, 2005-2008	-16.9%
Change, 2008-2011	-13.4%
2011 Workers by Age (%)	
29 or younger	18.6%
30 to 54	64.4%
55 or older	17.0%
2011 Workers by Earnings (\$)	
\$1,250 per month or less	23.9%
\$1,251 to \$3,333 per month	58.3%
More than \$3,333 per month	17.7%
2011 Workers by Industry Sector	
Accommodation and Food Services	90.2%
Other	9.8%
2011 Workers by Race/Ethnicity	
White	37.8%
African American	58.3%
Asian	2.7%
All other	1.3%
Hispanic origin	2.3%
2011 Worker Educational Attainment	
Less than high school	14.9%
High school graduate	28.3%
Some college	27.4%
Bachelor's or advanced degree	10.8%
2011 Worker Sex	
Male	46.4%
Female	53.6%



regarding Tunica Resorts CDP workers. Here, these median stable job wages are expressed as an annualized figure based on a three-quarter average:

Income Information on Tunica County Accomodation and Food Services stable* job wages for workers, based on 3-quarter average (3Q-2013, 4Q-2012, 1Q-2013)						
	All Jobs		Male		Female	
	Total Jobs (% of category)	Annualized Wage	Total Jobs (% of category)	Annualized Wage	Total Jobs (% of category)	Annualized Wage
All	7,717	\$ 29,544	3,494	\$ 32,760	4,223	\$ 26,700
14-18	0.2%	\$ 8,352	0.0%	\$ 9,540	0.4%	\$ 7,326
19-21	1.8%	\$ 13,848	1.8%	\$ 16,308	1.7%	\$ 11,688
22-24	4.3%	\$ 16,932	3.6%	\$ 18,366	4.8%	\$ 15,966
25-34	22.2%	\$ 23,442	20.0%	\$ 25,554	24.0%	\$ 21,870
35-44	30.6%	\$ 32,022	31.4%	\$ 35,166	29.9%	\$ 29,172
45-54	23.1%	\$ 33,072	23.4%	\$ 36,492	22.9%	\$ 29,946
55-64	14.6%	\$ 33,768	15.3%	\$ 37,368	13.9%	\$ 30,342
65-99	3.3%	\$ 31,104	4.5%	\$ 33,432	2.3%	\$ 27,576

Source: U.S. Census Bureau, Center for Economic Studies. *stable jobs are defined as jobs that are held on both the first and last day of a given quarter with the same employer

Based on the distribution of these percentages, new housing should be largely targeted at householders ages 25 to 64, who make up 90.4% of the jobholders in Tunica Resorts CDP, and make up nearly all households including adult decision makers. That entire age range will make up our potential population of renters, while we will focus on the 35 to 54 age range in regard to potential new single family home purchasers. We are excluding the 25 to 34 and 55 to 64 age ranges for potential new single family home purchasers because householders within the 35 to 54 age range are the largest portion of the population with the highest overall household incomes, and are by far the most likely age range to have children, often wanting to move up from renting to owner occupancy in order to gain space for their family. Householders within the 35 to 54 age range are also most likely to be willing to take on a standard 30-year fixed rate mortgage and to be able to make a necessary down payment. The 55 to 64 age range are likely to be more settled in their housing decisions, and more focused on aging-in-place options.

Average household incomes in Tunica County are actually below these annualized figures of jobs of individuals working in Tunica Resorts CDP, and despite the average household size being larger than one person, it should not be assumed that the average household income of the target population will necessarily be higher than these figures, as we already have data showing a near 1:1 ratio of employed workers and households among Tunica County residents (Tunica County's overall demographics are closer to Tunica Resorts CDP workers than any other counties including large resident populations of Tunica Resorts CDP workers) and there are



many individuals, including children, adults, and retirees, that are not part of the labor force or are unemployed.

Existing Housing Characteristics

There is limited housing in the close vicinity of the Tunica resort area, as measured in the 2010 U.S. Census within the Tunica Resorts CDP. There are a total of 1,054 housing units in that area, 19.7% of which are vacant. Most of these vacant units are believed to be outdated, substandard, or abandoned multifamily units. Among 846 occupied housing units, 13.1% are owner occupied, while the remaining 86.9% are renter-occupied. 50.7% of households living in Tunica Resorts CDP are families, with 50.1% of family households containing children less than 18 years of age, and 49.9% of family households including married couples. A family is defined by the U.S. Census Bureau as “a group of two people or more (one of whom is the householder) related by birth, marriage, or adoption and residing together,” while a household is defined as “all the people who occupy a housing unit.” Among nonfamily households, 75.8% of them consist of individuals living alone. 30.4% of total Tunica Resorts CDP resident households contain individuals who are under 18 years of age, while 11.1% contain individuals above 65. The average family household in Tunica Resorts CDP is made up of 3.05 individuals, while the average nonfamily household is made up of 1.45 individuals. Based on a June 5, 2014 examination of Multiple Listing Service home listings in the three zip codes that match up approximately with the boundaries of Tunica County (38664, 38676, and 38626), the median list price of a Tunica County home for sale is \$47,747.50 and the mean price is \$108,009.

Some multi-family apartment complexes found in Tunica County include the River Pointe, Cypress Lakes, Riverchase, and Plantation Apartments, consisting of 152, 160, 92, and 160 units respectively. Several other apartment complexes in Tunica County have unknown numbers of units, including Kirby Road Estates, Shady Lane, and Gardens of Canal Park. Among available information, the apartments in these complexes range from 700 sq. ft. 1-bedroom apartments to 1,264 sq. ft. 3-bedroom apartments. There is significant variation in the affordability of these apartments, with the more expensive complexes charging more for their cheapest units than the more affordable complexes charge for their most expensive ones. No apartments in these complexes charge more than \$865 dollars for monthly rent. The following table contains available information about these apartment complexes.



Existing Apartment Complexes in Tunica County, MS (Not a Comprehensive List)			
	Total Units	Units Size (sq. ft.)	Rent
River Pointe	152	805 to 1250	\$595 to \$865
Cypress Lakes	160	733 to 1123	\$615 to \$765
Kirby Road Estates	unknown	852 to 1264	\$367 to \$504
Riverchase	92	700 to 950	\$519 to \$589
Plantation	160	700 to 1150	\$575 to \$775
Shady Lane	unknown	unknown	\$440 to \$490
Gardens of Canal Park	unknown	750 to 1150	\$485 to \$720

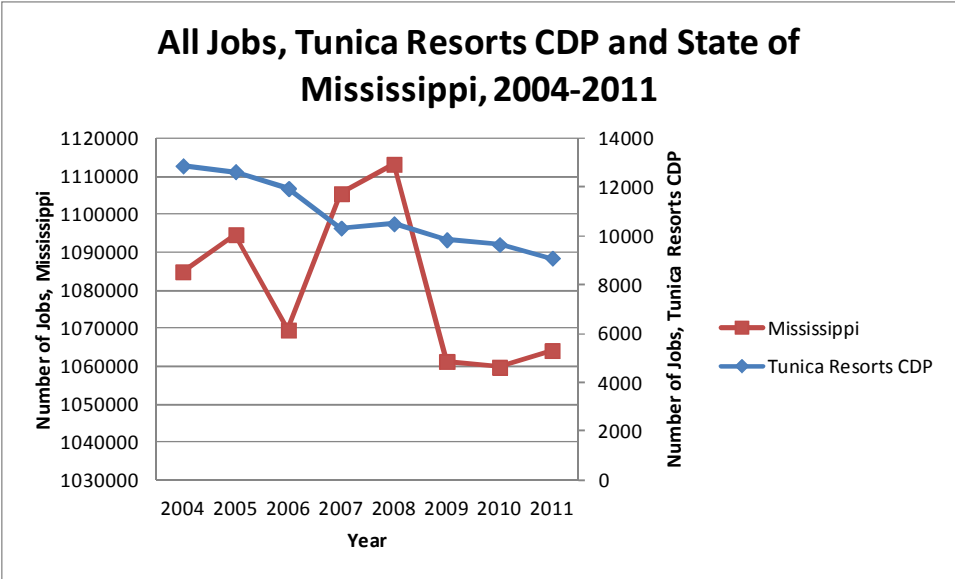
Source: homes.com, apartmentratings.com, forrent.com and correspondence with apartment management.

Economic Conditions

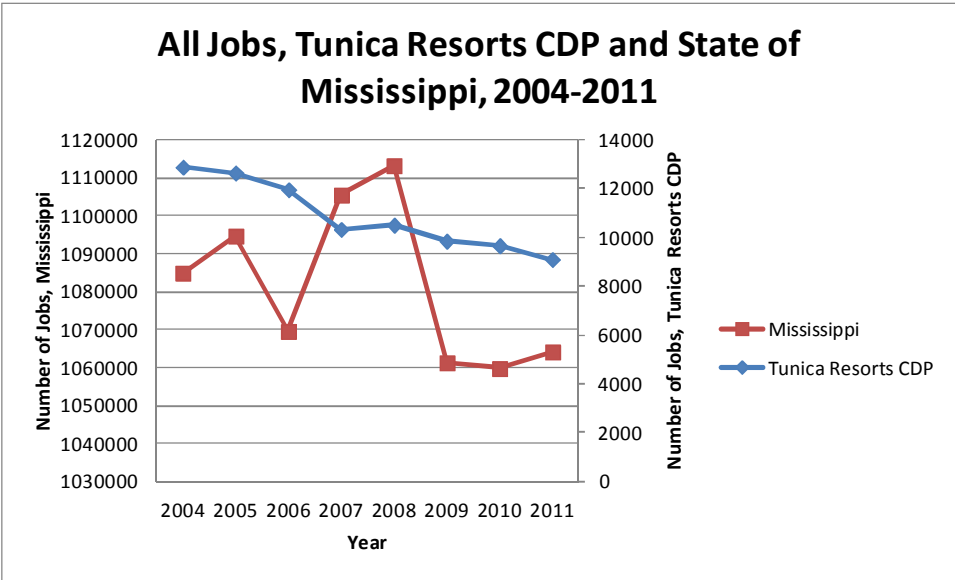
As illustrated in the chart below, there has been a steady decline in the number of jobs in the Tunica Resorts CDP and an almost identical decline in the county as a whole. However, this local trend was not as visibly affected by the 2008 financial crisis and subsequent recession as the state of Mississippi, which has seen abrupt ups and downs, including a loss of about 50,000 jobs in 2008 and 2009, and a drop in jobs from 2005 to 2006 which reflects the impact of Hurricane Katrina.

Without additional information to go on, a fair and conservative assumption is that Tunica Resorts CDP will likely continue to lose some jobs, but at a similarly steady rate, somewhat more indifferent to the broader economic cycle. It is worth noting that while the number of jobs in the Tunica Resorts CDP has been comparatively resistant to macroeconomic forces, it has still seen a much steeper overall decline than the broader state economy. From 2004 to 2011 the number of jobs in Tunica Resorts CDP declined 29%, while in Mississippi it declined only 2%. Part of this drop in Tunica Resorts CDP includes the closure of two casinos in recent years, undoubtedly influenced by the 2008 financial crisis and subsequent recession. It likely also represents increased competition from other casinos and gaming areas in the South, changes in consumer preferences regarding gaming activities, and in some years, gaming industry employers reducing hours for their employees while not dramatically cutting the number of jobs. The data does seem to point to an idea that consumer demand for gaming activities is somewhat inelastic given its lack of any major drop in 2008 and 2009, a time when many Americans, both locally and nationally, lost significant amounts of income and wealth. The graphs below use two x-axes with different values, in order to emphasize the similarities and differences in the shape and direction of the job trends, rather than the magnitude.





Source: U.S. Census Bureau, Center for Economic Studies.



Source: U.S. Census Bureau, Center for Economic Studies.

Housing Supply Analysis and Construction Activity

We have conducted research but not found concrete information regarding new/recent residential construction in Tunica County in the form of permit information or other data. However, we can take a look at the residential units that currently exist in the county according the U.S. Census. According to the 2010 Census, there were 4,803 housing units total in Tunica County, of which 81.8% were occupied and 18.2% were vacant, similar to the 19.7% in Tunica Resorts CDP. This vacancy rate is 18.9% in rental units, and only 2.0% in owner-occupied units,



and local officials and residents state multi-family instances of vacancy are indicative of undesirable, outdated, and abandoned multifamily housing in the county, and not a lack of demand. Of 3,927 occupied housing units in Tunica County, 44.6% were owner occupied, and 55.4% renter occupied. The 2008-2012 American Community Survey breaks down number of units by structure as well. 55.2% of all units in the county are located in single family residences, and another 28.7% of units are located in apartment buildings with five or more units. 16.1% of units are located in mobile homes. 10.8% of units are zero or 1-bedroom units such as studio and efficiency apartments or single room occupancy units, 36.2% are 2-bedroom units, 42.5% are 3 bedroom units, and 10.5% have 4 bedrooms or more. Among renters, the median gross rent is \$684, with 90.4% of renter households in the county paying between \$300 and \$999 on a monthly basis. The median renter household in Tunica County is paying somewhere between 30% and 35% of their household income on gross rent.

Estimating Effective Housing Demand – Gathering The Data

The most important and clear evidence that there is vast untapped demand for new quality housing in Tunica County is the 7,605 workers in the Tunica resort area who live outside the county (U.S. Census Bureau, Center for Economic Studies, 2011), along with the lack of new or adequate supply of housing anywhere in the vicinity. Many of these individuals and the households they belong to would presumably like to live at a more convenient distance to their workplaces, and to lower their transportation costs, which according to the Federal Highway Administration, make up 25% of American households' incomes in car dependent areas such as this one on average. According to the 2008-2012 American Community Survey, 94% of workers living in Tunica County drive, whether alone or in a carpool, as the primary means of transportation to their workplace.

According to Tunica County officials, there has been almost no new housing constructed in the county in the last twenty years. Additionally, there is an anecdotal perception that a large proportion of housing units that do exist in Tunica County are either unsuitable, undesirable or in poor condition, particularly in the case of multi-family apartments.

While in a typical demand study, housing demand is driven by increases in households, need to replace obsolete units, shifts in housing tenure, or changes in household income, the anticipated reasons for demand here are somewhat different and reflect the limited supply of housing near the Tunica resort area, and demand that is, as a result, being fulfilled in other counties. Of those four drivers, the main one we will be concerned with is shifts in housing tenure, as we want to attempt to pinpoint the effective demand among current renters in Tunica and surrounding counties for potential “move up” new home purchases in Tunica County.

To examine the segmentation of incomes by age groups, information cross referencing household incomes, age groups, housing tenure information and more will be examined. This will be done for suburban DeSoto County, MS, urban Shelby County, TN, and also rural Coahoma County, which will be used as a baseline of analysis for the workers residing in all counties except DeSoto, Shelby and Tunica. This will also be done for Tunica County, but only for the purpose of locating potential “move-up” homebuyers who are currently renting in the county. Residents of Tunica County already renting there will not be targeted in our analysis to determine renters—the potential renter population will be drawn from the 83.6% of Tunica Resorts CDP workers (7,605) who live in other counties, along with employees of the Feuer and Schulz plants. Our target population for both potential homebuyers and renters will also include 500 workers at Tunica manufacturing plants whose locations are unknown—without further public information we will assume their geographic distribution among different counties is similar to Tunica Resorts CDP workers as of 2011. This makes for an initial target population of potential renters of 8,105.

The following section will illustrate the raw data taken from the American Community Survey for DeSoto, Shelby, Coahoma, and Tunica Counties that will serve as a starting point for our analysis, and explain the process and assumptions in regard to how that data is being modeled in relation to data from the U.S Census Bureau’s Center for Economic Studies regarding Tunica Resorts CDP and Tunica County. All this information will ultimately be utilized to try to ascertain effective demand for new single- and multi-family housing in Tunica County, and then to estimate the proportions of the households making up that potential demand that could bear different price points in regards to annual monthly housing costs.

DeSoto County, Mississippi – Existing Data

Following is some base data regarding all DeSoto County, Mississippi households, based on data from the 2008-2012 American Community Survey. This data, as well as corresponding data for Shelby County, TN, Coahoma County, MS, and Tunica County, will be presented and used in conjunction with data regarding Tunica Resorts CDP workers and Feuer/Schulz plant workers in order to estimate effective demand for new owner- and renter-occupied housing in Tunica County.



DeSoto County Owner vs. Renter Households by Household Income				
Income Band	Owner Occupied	Renter Occupied	Total Households	Percent of County Households
2008-2012 American Community Survey				
Less than \$5,000	49.5%	50.5%	1,269	2.2%
\$5,000 to \$9,999	46.4%	53.6%	1,030	1.8%
\$10,000 to \$14,999	56.4%	43.6%	1,815	3.1%
\$15,000 to \$19,999	51.2%	48.8%	2,808	4.8%
\$20,000 to \$24,999	63.1%	36.9%	2,637	4.5%
\$25,000 to \$34,999	66.2%	33.8%	5,335	9.2%
\$35,000 to \$49,999	69.2%	30.8%	8,697	15.0%
\$50,000 to \$74,999	76.3%	23.7%	12,697	21.9%
\$75,000 to \$99,999	89.2%	10.8%	9,087	15.7%
\$100,000 to \$149,999	92.6%	7.4%	8,920	15.4%
\$150,000 or more	82.3%	17.7%	3,762	6.5%
Total Households	75.7%	24.3%	58,057	100.0%

De Soto County Owner vs. Renter Households by Householder Age				
Age Group	Owner Occupied	Renter Occupied	Total Households	Percent of County Households
2008-2012 American Community Survey				
15 to 24 years	26.3%	73.7%	1,658	2.9%
25 to 34 years	55.4%	44.6%	10,241	17.8%
35 to 44 years	74.1%	25.9%	13,493	23.5%
45 to 54 years	85.3%	14.7%	12,686	22.1%
55 to 59 years	86.6%	13.4%	4,958	8.6%
60 to 64 years	86.8%	13.2%	4,285	7.4%
65 to 74 years	88.4%	11.6%	6,370	11.1%
75 to 84 years	88.9%	11.1%	3,000	5.2%
85 years and over	83.9%	16.1%	827	1.4%
Total Households	76.4%	23.6%	57,518	100.0%

DeSoto County, Mississippi – Modeling The Data

According to the U.S. Census Bureau Center for Economic Studies, DeSoto County is home to 2,760 Tunica Resorts CDP workers as of 2011. Based on additional data, we can weight American Community Survey data about households and householders in DeSoto County to create estimates of the characteristics of these 2,760 workers and their households. Here is



some of the known data about Tunica Resort CDP and Tunica County Accommodation and Food Service workers that can be used to weight the county-level ACS data:

Selected Demographic Characteristics of Tunica Resorts CDP workers (2011)	
	Tunica Resorts
Number of workers	9,094
Workers by Age (%)	
29 or younger	18.6%
30 to 54	64.4%
55 or older	17.0%
2011 Workers by Annual Earnings (\$)	
\$15,000 or less	23.9%
\$15,000 to \$40,000	58.3%
More than \$40,000	17.7%

Age Breakdown of Tunica County Accommodations and Food Services workers	
	Total Jobs (% of category)
All	7,717
14-18	0.2%
19-21	1.8%
22-24	4.3%
25-34	22.2%
35-44	30.6%
45-54	23.1%
55-64	14.6%
65-99	3.3%

We will estimate the current housing tenure of Tunica Resorts CDP workers living in DeSoto County, by weighting DeSoto figures for both income by tenure and age by tenure by the above information. Because the Tunica Resorts CDP income band information is much less granular than the county information from the American Community Survey, we will weight multiple bands on the county information together. For the purposes of making the income ranges match up, we break up the \$35,000 to \$49,999 category into two parts, simply assigning one third of the households in the \$35,000 to \$39,999 band, and two thirds to the \$40,000 to \$49,999 band.

The graphic below illustrates the merging of income categories from the DeSoto data to match the information about the Tunica Area workers, and the derived linear weights to be applied back onto those categories (determined by Tunica Resorts CDP worker percentage divided by DeSoto County household percentage). This process will be used throughout this section when different sets of information are synthesized and the categories do not match perfectly.



DeSoto County Income Band	% of County Households	DeSoto Household	Income Band	Tunica Resorts Workers	Weight Given
Less than \$5,000	2.2%	7.1%	\$15,000 or less	23.9%	3.37
\$5,000 to \$9,999	1.8%				
\$10,000 to \$14,999	3.1%	23.6%	\$15,000 to \$40,000	58.3%	2.47
\$15,000 to \$19,999	4.8%				
\$20,000 to \$24,999	4.5%				
\$25,000 to \$34,999	9.2%	69.4%	More than \$40,000	17.7%	0.26
\$35,000 to \$49,999	15.0%				
\$50,000 to \$74,999	21.9%				
\$75,000 to \$99,999	15.7%				
\$100,000 to \$149,999	15.4%				
\$150,000 or more	6.5%				

Merging income categories and creating weights to model Tenure by Income data for DeSoto County residents.

When we complete this weighting and transformation of the DeSoto County, we get the following results:

Tunica Resorts workers residing in DeSoto County - Imputed Tenure by Income				
Income Band	Imputed Owner Occupied	Imputed Renter Occupied	Total Imputed Worker Households	Imputed % of Worker Households
Less than \$5,000	101	103	203	7.4%
\$5,000 to \$9,999	77	89	165	6.0%
\$10,000 to \$14,999	164	127	291	10.5%
\$15,000 to \$19,999	169	161	330	12.0%
\$20,000 to \$24,999	196	114	310	11.2%
\$25,000 to \$34,999	415	212	628	22.7%
\$35,000 to \$49,999	287	128	414	15.0%
\$50,000 to \$74,999	118	37	154	5.6%
\$75,000 to \$99,999	98	12	110	4.0%
\$100,000 to \$149,999	100	8	108	3.9%
\$150,000 or more	38	8	46	1.7%
Total Households	1,762	998	2,760	100.0%

Tunica Resorts workers residing in DeSoto County - Imputed Tenure by Age				
Age Group	Imputed Owner Occupied	Imputed Renter Occupied	Total Imputed Worker Households	Imputed % of Worker Households
15 to 24 years	46	128	174	6.3%
25 to 34 years	339	273	612	22.2%
35 to 44 years	625	219	844	30.6%
45 to 54 years	544	93	637	23.1%
55 to 59 years	187	29	216	7.8%
60 to 64 years	162	25	187	6.8%
65 to 74 years	50	7	57	2.1%
75 to 84 years	24	3	27	1.0%
85 years and over	6	1	7	0.3%
Total Households	1,982	778	2,760	100.0%

In terms of the imputed results of numbers of renter vs. owner households, we expect the Imputed Tenure by Income table to more accurately estimate than the Imputed Tenure by Age table because incomes tend to be heavily related to housing tenures and both vary highly from place to place, while age distributions within the U.S. only tend to vary slightly. As a result, we will use the estimates of numbers of renters vs. owners from the Imputed Tenure by Income table rather than the Imputed Tenure by Age table. However, as we go forward, we will use some of the ratios and distributions from the second table to assist in modeling our data as well.

Shelby, Tunica, and Coahoma/rural Counties – Existing Data and Modeling the Data

The previous section described relevant data about DeSoto County residents and households, as well as our efforts to model estimated Tunica County CDP workers residing in DeSoto County by weighting County data based on available information about these workers. We use the same process to examine the characteristics of relevant data from Shelby, Tunica, and Coahoma counties, and to model our estimates of Tunica County CDP workers living in those areas (and other rural counties in addition to Coahoma).

The tables containing the data and modeled populations discussed above can be found in the appendix of this study, while the next section will estimate the characteristics of workers at Tunica County's Feuer Powertrain and Wilhelm Schulz GMBH plants, the final piece that will allow us to model our complete potential populations of renters and homebuyers.



Feuer Powertrain and Wilhelm Schulz GMBH Workers

After estimating various characteristics of Tunica Resorts CDP workers living in DeSoto, Shelby, Tunica, and Coahoma/rural counties, we have one additional population to add to our model. In order to put the finishing touches on estimates of worker/household populations for the purpose of estimating effective demand for new housing in Tunica County, it will also be necessary to add the estimated 500 combined workers at the Feuer Powertrain and Wilhelm Schulz GMBH plants, including 200 workers at estimated \$32,000 annual salaries and 300 workers at \$40,000 annual salaries. We start by assigning these 500 workers (and an estimated 410 when removing Tunica County residents) to an Imputed Tenure by Income table based on the overall distributions found across the 3 or 4 counties when weighted by the proportions of Tunica Resorts CDP workers found in them, and we find the following:

Feuer and Schulz plant workers residing in DeSoto, Shelby and Coahoma/rural counties - Imputed Tenure by Income				
Income Band	Imputed Owner Occupied	Imputed Renter Occupied	Total Imputed Worker Households	Imputed % of Worker Households
Less than \$5,000	0	0	0	0.0%
\$5,000 to \$9,999	0	0	0	0.0%
\$10,000 to \$14,999	0	0	0	0.0%
\$15,000 to \$19,999	0	0	0	0.0%
\$20,000 to \$24,999	0	0	0	0.0%
\$25,000 to \$34,999	98	66	164	40.0%
\$35,000 to \$49,999	156	90	246	60.0%
\$50,000 to \$74,999	0	0	0	0.0%
\$75,000 to \$99,999	0	0	0	0.0%
\$100,000 to \$149,999	0	0	0	0.0%
\$150,000 or more	0	0	0	0.0%
Total Households	254	156	410	100.0%

Feuer and Schulz plant workers residing in DeSoto, Shelby, Tunica and Coahoma/rural counties - Imputed Tenure by Income				
Income Band	Imputed Owner Occupied	Imputed Renter Occupied	Total Imputed Worker Households	Imputed % of Worker Households
Less than \$5,000	0	0	0	0.0%
\$5,000 to \$9,999	0	0	0	0.0%
\$10,000 to \$14,999	0	0	0	0.0%
\$15,000 to \$19,999	0	0	0	0.0%
\$20,000 to \$24,999	0	0	0	0.0%
\$25,000 to \$34,999	113	87	200	40.0%
\$35,000 to \$49,999	187	113	300	60.0%
\$50,000 to \$74,999	0	0	0	0.0%
\$75,000 to \$99,999	0	0	0	0.0%
\$100,000 to \$149,999	0	0	0	0.0%
\$150,000 or more	0	0	0	0.0%
Total Households	300	200	500	100.0%

Next, we estimate the Imputed Tenure by Age table of the 500 plant workers based on the proportion of Tunica Resorts CDP workers residing in each county, and the number of renters and owner-occupiers determined in the previous two tables:

Feuer and Schulz plant workers residing in DeSoto, Shelby, and Coahoma/rural counties - Imputed Tenure by Age				
Age Group	Imputed Owner Occupied	Imputed Renter Occupied	Total Imputed Worker Households	Imputed % of Worker Households
15 to 24 years	5	19	24	5.8%
25 to 34 years	38	50	87	21.3%
35 to 44 years	77	48	125	30.6%
45 to 54 years	74	23	98	23.8%
55 to 59 years	26	8	34	8.3%
60 to 64 years	22	6	28	6.8%
65 to 74 years	7	1	8	2.0%
75 to 84 years	4	1	5	1.1%
85 years and over	1	0	2	0.4%
Total Households	254	156	410	100.0%



Feuer and Schulz workers residing in DeSoto, Shelby, Tunica, and Coahoma/rural counties - Imputed Tenure by Age				
Age Group	Imputed Owner Occupied	Imputed Renter Occupied	Total Imputed Worker Households	Imputed % of Worker Households
15 to 24 years	6	23	29	5.8%
25 to 34 years	42	64	106	21.2%
35 to 44 years	95	59	153	30.7%
45 to 54 years	87	32	119	23.8%
55 to 59 years	30	11	41	8.1%
60 to 64 years	26	9	35	6.9%
65 to 74 years	9	1	10	2.0%
75 to 84 years	5	1	6	1.2%
85 years and over	1	0	2	0.3%
Total Households	300	200	500	100.0%

Now that there are corresponding Tenure by Income and Tenure by Age tables for DeSoto, Shelby, Tunica, and Coahoma/rural counties as well as Feuer/Schulz plant workers, we can combine and sum the contents of these tables in order to estimate our populations of potential renters and homebuyers.

Effective Rental Housing Demand

In order to first estimate effective demand for renters among Tunica Resort CDP workers, we will rule out existing homeowners, who we do not expect to contain a substantial number of households who will “move down” to renting in Tunica County or elsewhere, and we also rule out renters already living in Tunica County. We do recognize there are reasons that current homeowners might potentially “move down” to rental housing, such as the breakup of a family or household, a job change, relocation, foreclosure, or a loss of income. We are also ruling out householder ages below 25 and above 64 years. Though it is not inconceivable that workers of these ages might chose to live in newly built apartments in Tunica County, they are not expected to be significant in number. When we combine our imputed tables for DeSoto, Shelby, and Coahoma/rural counties, and our corresponding estimated table for Feuer/Schulz plant workers, we find the following (we are still including those age groups we will later exclude in calculating effective demand in these following tables):

Tunica County CDP workers residing in DeSoto, Shelby and Coahoma/rural counties, plus Feuer/Schulz plant workers - Imputed Tenure by Income				
Income Band	Imputed Owner Occupied	Imputed Renter Occupied	Total Imputed Worker Households	Imputed % of Worker Households
Less than \$5,000	191	325	516	6.4%
\$5,000 to \$9,999	194	381	574	7.2%
\$10,000 to \$14,999	349	378	727	9.1%
\$15,000 to \$19,999	487	614	1,100	13.7%
\$20,000 to \$24,999	518	393	911	11.4%
\$25,000 to \$34,999	1036	790	1,826	22.8%
\$35,000 to \$49,999	804	481	1,285	16.0%
\$50,000 to \$74,999	297	124	421	5.3%
\$75,000 to \$99,999	227	45	273	3.4%
\$100,000 to \$149,999	215	25	241	3.0%
\$150,000 or more	123	18	140	1.7%
Total Households	4,441	3,574	8,015	100.0%

Tunica County CDP workers residing in DeSoto, Shelby and Coahoma/rural counties plus Feuer/Schulz plant workers - Imputed Tenure by Age				
Age Group	Imputed Owner Occupied	Imputed Renter Occupied	Total Imputed Worker Households	Imputed % of Worker Households
15 to 24 years	81	421	502	6.3%
25 to 34 years	684	1,090	1,774	22.1%
35 to 44 years	1,395	1,055	2,450	30.6%
45 to 54 years	1,336	517	1,853	23.1%
55 to 59 years	476	165	641	8.0%
60 to 64 years	392	139	530	6.6%
65 to 74 years	123	28	150	1.9%
75 to 84 years	75	11	86	1.1%
85 years and over	21	8	28	0.4%
Total Households	4,582	3,433	8,015	100.0%

As explained before, for our estimate of total renter vs. owner across all income and age brackets, we are using the imputed figure from the Tenure by Income table showing an estimate 3,574 worker households renting across all income bands, not including Tunica County residents. We are removing the 15-24 and 65 and above age groups. Since these age groups total to 13.63%, we are applying this percentage back to the 3,574 figure, subtracting 13.63% of



3,574, or 487. This results in an estimate of 3,087 current working renters working in the Tunica Resorts CDP or in the Feuer or Schulz plants between the ages of 25 and 64 at all income levels. The next step is to examine these 3,087 worker households based on estimated income levels and match these income bands with potential monthly rental rates, which will be done in the “price points” section of the report.

Effective Owner-Occupied Housing Demand

To estimate homeowner demand, we will examine current renters making up the Tunica County CDP workforce in De Soto, Shelby, Coahoma and other rural counties, as well as those currently renting within Tunica County. We recognize that there may be current homeowners who work in the Tunica Resorts CDP or at the Feuer or Schulz plants who may purchase a new home to be closer to their workplace or for a variety of other reasons, but we expect this to be uncommon, and do not incorporate this possibility into our model.

Tunica County CDP workers residing in DeSoto, Shelby, Tunica, and Coahoma/rural counties, plus Feuer/Schulz plant workers - Imputed Tenure by Income				
Income Band	Imputed Owner Occupied	Imputed Renter Occupied	Total Imputed Worker Households	Imputed % of Worker Households
Less than \$5,000	203	413	616	6.4%
\$5,000 to \$9,999	240	434	674	7.0%
\$10,000 to \$14,999	388	496	883	9.2%
\$15,000 to \$19,999	535	713	1,249	13.0%
\$20,000 to \$24,999	563	558	1,121	11.7%
\$25,000 to \$34,999	1,191	1,046	2,237	23.3%
\$35,000 to \$49,999	966	603	1,569	16.4%
\$50,000 to \$74,999	352	150	502	5.2%
\$75,000 to \$99,999	263	50	312	3.3%
\$100,000 to \$149,999	247	28	275	2.9%
\$150,000 or more	137	18	155	1.6%
Total Households	5,085	4,509	9,594	100.0%



Tunica County CDP workers residing in DeSoto, Shelby, Tunica, and Coahoma/rural counties plus Feuer/Schulz plant workers - Imputed Tenure by Age				
Age Group	Imputed Owner Occupied	Imputed Renter Occupied	Total Imputed Worker Households	Imputed % of Worker Households
15 to 24 years	97	504	601	6.3%
25 to 34 years	738	1,384	2,123	22.1%
35 to 44 years	1,656	1,277	2,933	30.6%
45 to 54 years	1,523	695	2,218	23.1%
55 to 59 years	522	234	757	7.9%
60 to 64 years	450	195	645	6.7%
65 to 74 years	149	31	180	1.9%
75 to 84 years	90	17	107	1.1%
85 years and over	23	8	30	0.3%
Total Households	5,249	4,345	9,594	100.0%

For our estimate of total renter vs. owner across all income and age brackets, we utilize the imputed figure from the Tenure by Income table showing an estimate 4,509 worker households across all income bands. As explained previously, we are removing the 15-24, 25-34, 55-59, 60-64, and 65 and above age groups. The 35 to 54 year old householder range makes up our potential homeowner population for a number of reasons, including the highest overall household incomes, the need for space due to large numbers of households with children, and large numbers of job changes, and willingness to take out long-term mortgages. Since these age groups total to 54.6%, we apply this percentage back to the 4,509 figure, subtracting 2,463. This results in an estimate of 2,046 current working renters working in the Tunica Resorts CDP or the Feuer/Schulz plants between the ages of 35 and 54 at all income levels. The next step is to examine these worker households based on estimated income levels and match these income bands with potential monthly estimated housing obligations, which is done in the following section.

Price Points

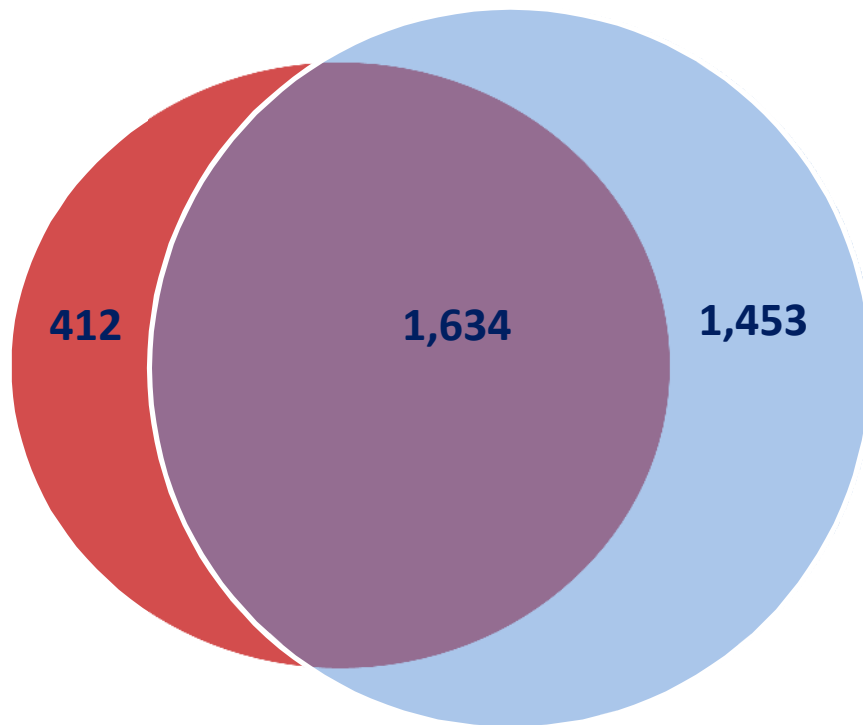
We will need to line up income segments with estimated housing costs, in the form of rental rates for multi-family units, and in the form of estimated principle-and-interest 30-year fixed rate mortgage payments (plus real estate taxes, home-owner’s insurance, and private mortgage insurance (PMI)), associating units to potential resident households only when the monthly housing cost is 30% or less of their estimated monthly incomes. We must first generate one final estimate in which we approximate the income distribution of our 3,087 potential renters and 2,046 potential homebuyers.



There is significant overlap among these potential populations, as illustrated in the following Venn diagram. A Venn diagram illustrates the way multiple populations overlap. The 412 imputed worker households in the potential buyer population but not the potential renter population represent renters living in Tunica County. The 1,453 worker households within the potential renter population but not the potential buyer population are renters living outside of Tunica County with worker households at ages of 25-34 and 55-64.

Potential Buyer Population (2,046)

Potential Renter Population (3,087)



A Venn diagram illustrating our two final modeled populations. Sizes of circles and joined area have no connection to the number of people they represent.

While this removal of certain worker households by age ranges probably does affect the income distribution somewhat, the information available from the Census regarding income by age has very broad age categories, and at this point, it was decided that using the overall estimated income distribution of our worker population was the more conservative approach rather than complicate our model further.

Based on this analysis conducted for the 3,087 potential renters, we find the following:

Estimated Effective Rental Demand				
Household Income Band	Imputed Renter Occupied	Imputed % of Worker Households	Maximum Monthly Rent (based on <30 rent/income)	Cumulative # of Potential Renter Worker Households by Price Range
Less than \$5,000	281	9.1%	\$0 to \$125	3,087
\$5,000 to \$9,999	329	10.7%	\$125 to \$250	2,806
\$10,000 to \$14,999	327	10.6%	\$250 to \$375	2,478
\$15,000 to \$19,999	530	17.2%	\$375 to \$500	2,151
\$20,000 to \$24,999	340	11.0%	\$500 to \$625	1,621
\$25,000 to \$34,999	682	22.1%	\$625 to \$875	1,281
\$35,000 to \$49,999	415	13.5%	\$875 to \$1250	599
\$50,000 to \$74,999	107	3.5%	\$1250 to \$1875	183
\$75,000 to \$99,999	39	1.3%	\$1875 to \$2500	76
\$100,000 to \$149,999	22	0.7%	\$2500 to \$3750	37
\$150,000 or more	15	0.5%	\$3750 to ?	15
Total Households	3,087	100.0%		

The above table illustrates our estimates of the total distribution of Tunica Resorts CDP / Feuer / Schulz worker households residing outside of Tunica County and currently renting. The income bands above are associated with a corresponding range of maximum monthly rent rates, based on a maximum 30% ratio of housing cost to household income. It should be recognized that in reality, 72% of Tunica County households making \$20,000 to \$34,999 spend more than 30% of their household incomes on housing costs, while 89% of Tunica households making less than \$20,000 do (2002-2012 American Community Survey). Conversely, only 0.9% of households making \$35,000 and more spend more than 30% of their income on housing. In the rightmost column above, a figure of the estimated total households in this population that could afford each particular rent range is shown, based on the 30% housing cost/household income ratio. Based on the monthly rental ranges found at existing multifamily complexes in Tunica County, this income distribution suggests the need for a mix of 1-, 2-, and 3-bedroom apartments.

When we conduct a corresponding breakdown for our 2,046 potential homebuyers, as we did for the potential renters, we find the following:



Estimated Effective Owner-Occupied Housing Demand					
Household Income Band	Imputed Renter Occupied	Imputed % of Worker Households	Maximum Monthly Housing Cost (based on <30 DTI)	Implied Maximum Home Value Range Based on Cost	Cumulative # of Potential Renter Worker Households by Price Range
Less than \$5,000	187	9.2%	\$0 to \$125	\$0 to \$18,588	2,046
\$5,000 to \$9,999	197	9.6%	\$125 to \$250	\$18,588 to \$37,176	1,859
\$10,000 to \$14,999	225	11.0%	\$250 to \$375	\$37,176 to \$55,764	1,662
\$15,000 to \$19,999	324	15.8%	\$375 to \$500	\$55,764 to \$74,352	1,437
\$20,000 to \$24,999	253	12.4%	\$500 to \$625	\$75,352 to 92,941	1,113
\$25,000 to \$34,999	475	23.2%	\$625 to \$875	\$92,941 to \$130,117	860
\$35,000 to \$49,999	273	13.4%	\$875 to \$1250	\$130,117 to \$185,881	385
\$50,000 to \$74,999	68	3.3%	\$1250 to \$1875	\$185,881 to \$278,821	112
\$75,000 to \$99,999	22	1.1%	\$1875 to \$2500	\$278,821 to \$371,762	44
\$100,000 to \$149,999	13	0.6%	\$2500 to \$3750	\$371,762 to \$557,643	21
\$150,000 or more	8	0.4%	\$3750 to ?	\$557,654 to ?	8
Total Households	2,046	100.0%			

As we did in the case of our potential renter population, we have associated maximum monthly housing costs with the various estimated income ranges, with a monthly housing cost this time including mortgage payments, monthly homeowners insurance and property tax payments in escrow, and PMI premiums. The assumptions built into these payment calculations include a 5% down payment, a 30-year fixed rate mortgage at a 4.29% interest rate, 66.29 millage property tax based on 15% of sales price, homeowner’s insurance annual premium at 0.35% of home sales price, and monthly PMI at \$30 for every \$100,000 of the sale price.

It is important to recognize that the connection between these housing cost for potential homebuyers and household incomes are much more tenuous than those for renters, as housing costs for homebuyers can vary wildly based on the borrower’s credit, wealth (affecting the size of a possible down payment, and therefore the mortgage amount and payment), and potential future changes in mortgage interest rates. Additionally, there may be local peculiarities affecting homeowners insurance that may cause it to be more or less expensive than our estimate.

In the following table, the housing costs are broken down into their constituent parts:



Annual Household Income	Minimum Monthly Housing Cost (Based on <30% DTI*)	Components of Total Monthly Housing Obligation				Imputed Mortgage Amount	Home Sale Price (based on 95% LTVR**)
		Monthly Principle + Interest	Monthly Taxes	Monthly Insurance	Monthly PMI		
\$5,000	\$125.00	\$91.88	\$16.26	\$5.71	\$11.74	\$ 18,588.11	\$ 19,566.43
\$10,000	\$250.00	\$183.76	\$32.52	\$11.41	\$23.48	\$ 37,176.21	\$ 39,132.86
\$15,000	\$375.00	\$275.63	\$48.79	\$17.12	\$35.22	\$ 55,764.32	\$ 58,699.28
\$20,000	\$500.00	\$367.51	\$65.05	\$22.83	\$46.96	\$ 74,352.42	\$ 78,265.71
\$25,000	\$625.00	\$459.39	\$81.31	\$28.53	\$58.70	\$ 92,940.53	\$ 97,832.14
\$35,000	\$875.00	\$643.15	\$113.84	\$39.95	\$82.18	\$ 130,116.74	\$ 136,964.99
\$50,000	\$1,250.00	\$918.78	\$162.62	\$57.07	\$117.40	\$ 185,881.06	\$ 195,664.28
\$75,000	\$1,875.00	\$1,378.17	\$243.93	\$85.60	\$176.10	\$ 278,821.59	\$ 293,496.41
\$100,000	\$2,500.00	\$1,837.56	\$325.24	\$114.14	\$234.80	\$ 371,762.12	\$ 391,328.55
\$150,000	\$3,750.00	\$2,756.34	\$487.86	\$171.21	\$352.20	\$ 557,643.19	\$ 586,992.83

Based on 4.29% interest rate on 30-year fixed mortgage, 66.29 millage property tax on 15% of sale price, insurance at 0.35% of sales price, monthly PMI of \$30 per \$100,000 home value. * DTI or Debt-to-income, the percentage of household income that goes towards housing costs. **LTVR, or Loan-to-value ratio, or the ratio of a loan amount to a home's value.

Conclusion / What's Next?

Our extensive analysis of data regarding Tunica County CDP workers, Feuer and Schulz plant workers, and of the demographics of households living in counties throughout the broader commuting region, indicates a set of 3,499 households with workers from Tunica Resorts CDP and the plants who are potential renters or homebuyers for new housing to be built in Tunica County. This 3,499 includes 2,046 potential home buying households and 3,087 potential renting households. These populations live primarily in the Memphis metro area, particularly in Shelby County, TN, and DeSoto County, MS, but many also live in more rural areas such as Coahoma County, MS and many other counties in Mississippi, Tennessee, and Arkansas.

The potential renter population includes a range of income levels, but an estimated 94% of these households have annual incomes below \$50,000 and therefore should pay no more than \$1,250 a month on rent. Based on the wide variations in household sizes among Tunica County and Tunica Resorts CDP residents, demand for multifamily units will likely include a mix of 1, 2, and 3-bedroom apartments. An estimated 94% of our potential home buying set of households also have annual incomes under \$50,000, meaning that based on our assumptions, they should purchase homes at sales prices of no more than \$195,664, and that well over 50% of these 2,046 households can likely not afford homes priced at \$100,000 and above. These potential home buying and renting populations have strong incentives to move to new Tunica County housing units, primarily based around the possibility of being closer to their jobs, including benefits of reduced stress and fatigue and dramatically decreased transportation costs.

The primary reason that we anticipate strong demand for new rental and owner-occupied housing in Tunica County is the stark difference between the limited supply of housing there, in comparison to the large number of jobs and workers in the county. This disparity is so significant that it easily trumps, in our estimation, the relevance of more traditional reasons for



housing demand related to factors such as increases in area households, the need to replace obsolete units, shifts in housing tenure, or changes in household income. We do not discount the relevance of these more traditional factors altogether, and a number of them are addressed in this report. It should be recognized that the populations we are drawing data from are dynamic and ever-changing, and we consider this demand study to be time sensitive—only applicable if used in the next three or four years.

It is important to identify the assumptions made in the calculation of the figures in this report, and recognize that these are only approximations based on limited available information, as are the income level estimates for these households. It is believed by the authors of this report that the bottom line numbers resulting from this analysis, if anything, are conservative. One reason for this is the fact that our analysis suggests that only 47% and 44.6% of our two estimated initial populations of workers (the first including Tunica County and the second excluding it) are current renter households. One data point that might give one pause in regard to this figure is the fact that the estimated percentage of households renting in Tunica County and Tunica Resorts CDP are 53.9% and 78.6% respectively (American Community Survey 2008-2012), significantly higher figures than our estimates for our overall targeted worker populations. Since Tunica Resorts CDP and Tunica County have fairly similar demographics to our estimated worker population, this raises the possibility that our estimate of the number of renters may be low. However, it is also possible this higher percentage in Tunica could have more to do with the available physical stock of housing than anything else. Since only current renter households make up our estimated group of potential new renters and homebuyers in Tunica County, it is worth considering that our potential populations of renters and homebuyers might be larger than those estimated in this report.

Another source of housing demand worth considering, that was not a part of our quantitative analysis, is potential demand from Memphis metropolitan area residents who do not work in Tunica County. As illustrated in this report, the Memphis MSA has grown sizably over the past two decades, and there has been substantial population growth and migration into DeSoto County, MS, and other suburban and exurban areas south of the City of Memphis and east of Tunica County. With an increase of housing supply in Tunica County, it's likely that some of this population growth and movement will find its way into Tunica County in the near future, given housing development to absorb it. The Wadley Donovan Group's Tunica Labor Market report suggested that Tunica is poised not only to capture some residents from the Memphis metropolitan area, but also business and industries in the future, but only if investments in local housing and infrastructure improvements are made.

Determining the capture rates of our estimated populations for new multi-family rental housing and owner-occupied single-family housing developments in Tunica County requires first-hand

local knowledge and experience, which can then be applied to these broader potential populations. A capture rate is typically defined as the number of units in a project (with an allowance for normal levels of vacancy) divided by an estimate of total effective demand. In most typical situations, a capture rate is no more than 5 to 10 percent for a successful project. However, Tunica's current situation is an extreme and unusual example-- an area where little new residential product has been built in decades, where the number of housing units cannot even begin to support the worker population. Additionally, Tunica is also a place where the introduction of new housing units would represent the possibility of greatly improved convenience and reduced transportation costs for many Tunica County workers, especially in the absence of any other competitive products. This confluence of facts suggests that a project in Tunica County might be successful with a capture rate higher than 5 to 10 percent.

Some of the most potentially valuable information that can be used to estimate the true potential of this effective demand will ultimately be attained by directly engaging and speaking to Tunica County CDP and Feuer/Schulz plant workers, and ascertaining their needs and desires regarding housing and transportation, as well as access to nearby amenities and services. Interviews or focus groups conducted with Tunica Resort CDP or manufacturing plant workers could help elucidate issues such as these, and help get a better sense of the current housing conditions of workers (i.e. current rental vs. ownership status, household sizes, etc.), helping confirm or calibrate our estimates, and serving as an important informational supplement to the data contained in this report.

More detailed, local investigation of the multifamily units that do exist in Tunica County, and particularly the ones closer to the Tunica resort area, is likely to be helpful, as publicly available information is limited, and much of it is marketing-based information that may not paint a clear or unbiased picture. This research might also be done in regard to projects in parts of DeSoto County as well.

While the precise determination of the mix of single-family and multi-family units that should be added to Tunica County will require the value add of further local knowledge and expertise, this report sees no reservations whatsoever in stating that a significant amount of both types of housing can easily be supported, and should be built in Tunica County as soon as possible. The recommendation that new housing units be built in Tunica County is not merely a detached, market-based conclusion based on demographics and numbers. The benefits that new, affordable, quality housing units in Tunica County can bring will be multifaceted. More environmentally friendly commutes, increased local tax revenues and capacity for infrastructure and services, lower costs of living, local economic stimulus and induced new amenities, businesses, and jobs, and happier, more stress-free lives for current and future Tunica Residents are all outcomes that new housing will bring to Tunica County.



Appendix

Shelby, Coahoma/rural, and Tunica County Data

Shelby County, Tennessee – Existing Data

Shelby County Owner vs. Renter Households by Household Income				
Income Band	Owner Occupied	Renter Occupied	Total Households	Percent of County Households
2008-2012 American Community Survey				
Less than \$5,000	27.7%	72.3%	16,393	4.8%
\$5,000 to \$9,999	22.3%	77.7%	15,895	4.6%
\$10,000 to \$14,999	35.3%	64.7%	21,872	6.4%
\$15,000 to \$19,999	37.8%	62.2%	20,719	6.1%
\$20,000 to \$24,999	40.9%	59.1%	19,815	5.8%
\$25,000 to \$34,999	46.7%	53.3%	38,698	11.3%
\$35,000 to \$49,999	54.6%	45.4%	47,983	14.0%
\$50,000 to \$74,999	69.9%	30.1%	59,558	17.4%
\$75,000 to \$99,999	80.3%	19.7%	36,189	10.6%
\$100,000 to \$149,999	89.4%	10.6%	37,474	11.0%
\$150,000 or more	93.6%	6.4%	27,352	8.0%
Total Households	60.2%	39.8%	341,948	100.0%

Shelby County Owner vs. Renter Households by Householder Age				
Age Group	Owner Occupied	Renter Occupied	Total Households	Percent of County Households
2008-2012 American Community Survey				
15 to 24 years	8.7%	91.3%	15,692	4.6%
25 to 34 years	35.6%	64.4%	59,902	17.5%
35 to 44 years	57.1%	42.9%	66,674	19.5%
45 to 54 years	66.3%	33.7%	75,012	21.9%
55 to 59 years	72.9%	27.1%	33,837	9.9%
60 to 64 years	77.5%	22.5%	29,988	8.8%
65 to 74 years	77.7%	22.3%	33,189	9.7%
75 to 84 years	80.8%	19.2%	19,817	5.8%
85 years and over	70.9%	29.1%	7,837	2.3%
Total Households	60.2%	39.8%	341,948	100.0%

Tunica Resorts workers residing in Shelby County - Imputed Tenure by Income				
Income Band	Imputed Owner Occupied	Imputed Renter Occupied	Total Imputed Worker Households	Imputed % of Worker Households
Less than \$5,000	37	96	133	7.2%
\$5,000 to \$9,999	29	100	129	7.0%
\$10,000 to \$14,999	63	115	177	9.7%
\$15,000 to \$19,999	88	145	233	12.7%
\$20,000 to \$24,999	91	132	223	12.1%
\$25,000 to \$34,999	203	232	436	23.7%
\$35,000 to \$49,999	129	107	236	12.8%
\$50,000 to \$74,999	70	30	101	5.5%
\$75,000 to \$99,999	49	12	61	3.3%
\$100,000 to \$149,999	57	7	63	3.4%
\$150,000 or more	43	3	46	2.5%
Total Households	859	980	1,839	100.0%

Tunica Resorts workers residing in Shelby County - Imputed Tenure by Age				
Age Group	Imputed Owner Occupied	Imputed Renter Occupied	Total Imputed Worker Households	Imputed % of Worker Households
15 to 24 years	10	106	116	6.3%
25 to 34 years	145	262	408	22.2%
35 to 44 years	321	241	562	30.6%
45 to 54 years	281	143	424	23.1%
55 to 59 years	104	39	142	7.7%
60 to 64 years	98	28	126	6.9%
65 to 74 years	26	7	33	1.8%
75 to 84 years	16	4	20	1.1%
85 years and over	6	2	8	0.4%
Total Households	1,006	833	1,839	100.0%



Coahoma County, Tennessee – Existing Data

Coahoma County Owner vs. Renter Households by Household Income				
Income Band	Owner Occupied	Renter Occupied	Total Households	Percent of County Households
2008-2012 American Community Survey				
Less than \$5,000	29.9%	70.1%	713	7.7%
\$5,000 to \$9,999	31.5%	68.5%	1,113	12.0%
\$10,000 to \$14,999	47.2%	52.8%	1,027	11.1%
\$15,000 to \$19,999	42.7%	57.3%	991	10.7%
\$20,000 to \$24,999	61.0%	39.0%	698	7.5%
\$25,000 to \$34,999	53.3%	46.7%	1,105	11.9%
\$35,000 to \$49,999	59.9%	40.1%	1,323	14.3%
\$50,000 to \$74,999	65.5%	34.5%	996	10.7%
\$75,000 to \$99,999	78.9%	21.1%	607	6.5%
\$100,000 to \$149,999	84.8%	15.2%	414	4.5%
\$150,000 or more	86.5%	13.5%	289	3.1%
Total Households	54.0%	46.0%	9,276	100.0%

Coahoma County Owner vs. Renter Households by Householder Age				
Age Group	Owner Occupied	Renter Occupied	Total Households	Percent of County Households
2008-2012 American Community Survey				
15 to 24 years	11.1%	88.9%	450	4.9%
25 to 34 years	24.2%	75.8%	1,345	14.5%
35 to 44 years	40.5%	59.5%	1,682	18.1%
45 to 54 years	63.0%	37.0%	1,882	20.3%
55 to 59 years	63.7%	36.3%	1,089	11.7%
60 to 64 years	58.2%	41.8%	830	8.9%
65 to 74 years	76.3%	23.7%	1,053	11.4%
75 to 84 years	89.0%	11.0%	707	7.6%
85 years and over	67.2%	32.8%	238	2.6%
Total Households	54.0%	46.0%	9,276	100.0%



Tunica Resorts workers residing in Coahoma/rural counties - Imputed Tenure by Income				
Income Band	Imputed Owner Occupied	Imputed Renter Occupied	Total Imputed Worker Households	Imputed % of Worker Households
Less than \$5,000	54	126	180	6.0%
\$5,000 to \$9,999	88	192	280	9.3%
\$10,000 to \$14,999	122	136	259	8.6%
\$15,000 to \$19,999	229	308	537	17.9%
\$20,000 to \$24,999	231	147	378	12.6%
\$25,000 to \$34,999	319	280	599	19.9%
\$35,000 to \$49,999	233	156	389	12.9%
\$50,000 to \$74,999	109	57	166	5.5%
\$75,000 to \$99,999	80	21	101	3.4%
\$100,000 to \$149,999	59	11	69	2.3%
\$150,000 or more	42	7	48	1.6%
Total Households	1,565	1,441	3,006	100.0%

Tunica Resorts workers residing in Coahoma/rural counties - Imputed Tenure by Age				
Age Group	Imputed Owner Occupied	Imputed Renter Occupied	Total Imputed Worker Households	Imputed % of Worker Households
15 to 24 years	21	168	189	6.3%
25 to 34 years	162	505	667	22.2%
35 to 44 years	372	547	919	30.6%
45 to 54 years	437	257	694	23.1%
55 to 59 years	159	90	249	8.3%
60 to 64 years	110	79	190	6.3%
65 to 74 years	40	12	52	1.7%
75 to 84 years	31	4	35	1.2%
85 years and over	8	4	12	0.4%
Total Households	1,339	1,667	3,006	100.0%



Tunica County, Mississippi – Existing Data

Tunica County Owner vs. Renter Households by Household Income				
Income Band	Owner Occupied	Renter Occupied	Total Households	Percent of County Households
2008-2012 American Community Survey				
Less than \$5,000	11.7%	88.3%	299	7.3%
\$5,000 to \$9,999	46.3%	53.7%	300	7.4%
\$10,000 to \$14,999	24.7%	75.3%	469	11.5%
\$15,000 to \$19,999	33.0%	67.0%	273	6.7%
\$20,000 to \$24,999	21.6%	78.4%	385	9.4%
\$25,000 to \$34,999	37.2%	62.8%	690	16.9%
\$35,000 to \$49,999	56.9%	43.1%	747	18.3%
\$50,000 to \$74,999	68.0%	32.0%	437	10.7%
\$75,000 to \$99,999	89.2%	10.8%	212	5.2%
\$100,000 to \$149,999	92.0%	8.0%	187	4.6%
\$150,000 or more	95.1%	4.9%	82	2.0%
Total Households	46.1%	53.9%	4,081	100.0%

Tunica County Owner vs. Renter Households by Householder Age				
Age Group	Owner Occupied	Renter Occupied	Total Households	Percent of County Households
2008-2012 American Community Survey				
15 to 24 years	15.8%	84.2%	177	4.3%
25 to 34 years	15.3%	84.7%	826	20.2%
35 to 44 years	53.5%	46.5%	923	22.6%
45 to 54 years	50.7%	49.3%	876	21.5%
55 to 59 years	39.7%	60.3%	360	8.8%
60 to 64 years	50.3%	49.7%	356	8.7%
65 to 74 years	89.0%	11.0%	318	7.8%
75 to 84 years	72.8%	27.2%	224	5.5%
85 years and over	100.0%	0.0%	21	0.5%
Total Households	46.1%	53.9%	4,081	100.0%



Tunica County, Mississippi – Modeling The Data

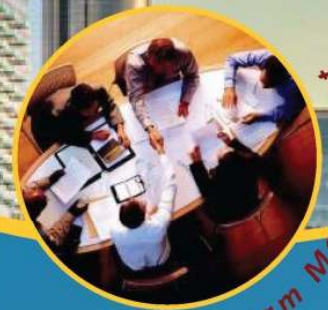
Tunica Resorts workers residing in Tunica County - Imputed Tenure by Income				
Income Band	Imputed Owner Occupied	Imputed Renter Occupied	Total Imputed Worker Households	Imputed % of Worker Households
Less than \$5,000	12	88	100	6.7%
\$5,000 to \$9,999	46	54	100	6.7%
\$10,000 to \$14,999	39	118	156	10.5%
\$15,000 to \$19,999	49	99	148	10.0%
\$20,000 to \$24,999	45	164	209	14.1%
\$25,000 to \$34,999	140	235	375	25.2%
\$35,000 to \$49,999	131	99	230	15.4%
\$50,000 to \$74,999	55	26	81	5.5%
\$75,000 to \$99,999	35	4	39	2.7%
\$100,000 to \$149,999	32	3	35	2.3%
\$150,000 or more	15	1	15	1.0%
Total Households	598	891	1,489	100.0%

Tunica Resorts workers residing in Tunica County - Imputed Tenure by Age				
Age Group	Imputed Owner Occupied	Imputed Renter Occupied	Total Imputed Worker Households	Imputed % of Worker Households
15 to 24 years	15	79	94	6.3%
25 to 34 years	50	280	330	22.2%
35 to 44 years	244	212	455	30.6%
45 to 54 years	174	169	344	23.1%
55 to 59 years	43	66	109	7.3%
60 to 64 years	54	54	108	7.3%
65 to 74 years	25	3	28	1.9%
75 to 84 years	14	5	20	1.3%
85 years and over	2	0	2	0.1%
Total Households	621	868	1,489	100.0%





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