

A. Population and Demographics

This section considers the future population growth and likely demographic characteristics of Plaquemines Parish. Supporting background data is provided in the Community Assessment and Technical Appendix. As discussed on the following pages, population growth in Plaquemines Parish will depend upon multiple factors. Population projections provided in this section are forecasts based on the community’s vision for the future and likely conditions based on existing context and knowledge. The figures provided herein should be revisited periodically and adjusted to account for unforeseen policy changes and environmental influences, such as the long term impacts of the Deepwater Horizon disaster and coastal restoration efforts.

The segment has four subsections:

- A.1. Drivers of Change
- A.2. Population Projections
- A.3. Housing Needs
- A.4. Workforce Needs
- A.5. Policy Recommendations and Action Items

1. Drivers of Change

Plaquemines Parish is a physically dynamic place. Its unique location saddling the Mississippi River as it flows into the Gulf of Mexico intrinsically ties the population to the whims of the Gulf and Mississippi waters. While years of engineering and investment have attempted to reduce uncertainty due to these factors, the livable land mass of Plaquemines Parish continues to transform after every storm. The Parish has experienced dramatic land loss since levee development in the early 20th century and most recently after Hurricane Katrina. A combination of these environmental factors and government-led policy and investment decisions will drive population growth in Plaquemines Parish moving forward. It must be noted that because of the unique natural dynamics impacting the Parish, population growth is not a guaranteed outcome and must be strategically pursued as a direct consequence of strategic coastal restoration efforts, land use decisions, and economic development pursuits.

The following factors will have the most significant influence on Plaquemines Parish:

- a. **Environmental Factors**
- b. **Land Use Limitations**
- c. **Transportation & Mobility Constraints**
- d. **Economy**
- e. **Vision for the Future**



a. Environmental Factors

In the long-term, the influences of land subsidence, coastal restoration, and climate change (global warming) will continue to significantly influence Plaquemines' population growth. These omnipresent factors, along with potential coastal storms, create a relatively high-risk environment for long-term investment, particularly from a residential investor's perspective.

Policy decisions aimed at mitigating the negative influences of environmental factors will be fundamental to population growth. In the absence of policy intervention, it is likely that the population of Plaquemines Parish will remain comparable to its current makeup – a combination of long-term residents living in Plaquemines Parish as a result of familial roots or employment opportunities associated with the New Orleans Naval Air Station Joint Reserve Base (NAS JRB), oil and gas industry, and other major employers.



Coastal restoration – The success of coastal restoration plans, as outlined in **Section E**, is critical to preventing coastal decline, marshland deterioration, and land loss. Coastal restoration and protection in the short and long-term is critical to provide a safe environment for the Parish's residents and its native wildlife.

Climate change – Climate change is a phenomenon of sustained statistical change in weather patterns and has been documented various times over millions of years of history. Scientific consensus agrees that the Earth is currently experiencing global warming with global surface temperature expected to rise 2.0 to 11.5 degrees Fahrenheit over the 21st century. This poses particular concern to coastal communities, such as Plaquemines Parish, which will face rising sea levels (anticipated at 0.18 to 0.69 meters) over the 21st century. Other possible effects include increases in tropical storms induced by warmer temperatures.

Deepwater Horizon Clean-up – The ability of private, federal, and regional leaders to effectively clean up the aftermath of the Deepwater Horizon Oil Spill will have an important influence on the residential decisions of those community members who depend on the Gulf's abundant resources for their livelihoods and recreation.

b. Land Use Limitations

Residential development and population growth is uniquely limited in Plaquemines Parish because of its unique environmental constraints. Currently just less than 3 percent of Plaquemines Parish's defined land mass is considered developable. The remaining 97 percent of land is zoned floodplain (FP district) and is not fit for future human habitation. The FP district is intended to comprise those areas that are subject to periodic inundation from stream

overflows, storms, and tidal conditions and that are not within publicly-owned hurricane protection levees and pump drainage systems.

Of the 3 percent of developable land, the Parish has established 20 zoning districts, which include provisions for single-family and multi-family residential development. Although there are some recreational residential arrangements (camps), these are typically designed for seasonal and part-time use and are not located in areas appropriate for long-term habitat.



Land use limitations are often tied to flood-prone areas

NAS JRB - The NAS JRB is the number one employer in Plaquemines Parish and one of the top employers in the state—and limiting land development surrounding the base is critical to preserving its saliency in Plaquemines Parish. The land within and surrounding the NAS JRB New Orleans is suitable for only limited future growth due to the unique impacts and needs associated with military operations, including high noise outputs, combat training operations, etc. These areas and associated limitations are referenced as the Military Influence Planning District (MIPD) and discussed in **Section J**.

Levee Improvements - Should new levee investments be developed within the Parish, there will be increased capacity to develop in these newly protected areas. Economic development and population growth in the Parish are intrinsically tied to these investments.

c. Transportation & Mobility

Transportation and mobility are important influences on population growth. The advent and rise of the automobile is directly tied to the growth of suburban communities. This relationship applies to Plaquemines Parish, which experienced its greatest growth in the mid 20th Century as people saw Plaquemines as an alternative home to the City of New Orleans (see Community Assessment). Because Plaquemines Parish has a linear form with limited areas for transportation infrastructure, the level of service provided by surface roads will have a strong influence on the future growth of the Parish.

Currently, Hwy 23 (West bank) and Hwy 39 (East bank) are the critical arteries. The Parish has planned several improvements to the transportation network (see **Section C**) that should provide additional capacity.

Ongoing improvements to the transportation network will facilitate increased mobility;



Hwy 23 is the principle transportation route on the west side of the Parish

however, because Plaquemines Parish is a peninsula, the Parish cannot significantly change existing capacity. Mobility limitations within the Parish will continue to influence people's residential choices in coming years.

d. Changes in the Economy

Ebbs and flows in the population of the Plaquemines Parish have typically been tied to industry and employment growth in the Parish. For example, Port Sulphur's population ballooned with sulphur mining but quickly declined after mining operations were terminated. Changes in the local economy, which are impacted by larger economies, will continue to influence the population change in Plaquemines for the years to come. As sectors of the economy subside and expand, the population of the Parish will likely do the same.

Workforce Housing – Providing for appropriate housing the Parish's workforce is an important part of the equation. Data indicates that a notable percentage of employees working in Plaquemines Parish currently commute from other parishes or even outside the New Orleans region (see Technical Appendix to the Community Assessment). To retain and attract these workers, it is essential that appropriate workforce housing be available in the Parish. Characteristics of appropriate housing include affordable, safe, and time competitive commutes. Because of the Parish's unique industrial mix, it may also be appropriate to consider a mix of short and long-term housing for workers.

While new employment opportunities may be pursued by those living within or outside of the Parish, the trickle-down effect into the local economy can create a more desirable living environment, attracting workers employed in other communities and retirees. More day-time visits can be equated with the need for more services, including convenience stores, restaurants, and professional offices. These increases in services benefit the resident population and, if managed properly, also improve the local quality of life. Growth in certain sectors, such as logistics and transportation, manufacturing, and mining, should be regulated sufficiently by the local development code to ensure that the safety, well-being, and health of the public is protected and that there is a net positive impact from a quality of life perspective. For example, sufficient buffers should be required between manufacturing or port facilities and residential uses.



Among the most notable economic changes that will influence Plaquemines Parish are the following:

- Overall growth of the New Orleans regional economy;
- Changes to the national energy economy – moving from non-renewable to alternative sources;
- Deepening of the Panama Canal and associated increased trade moving through the Mississippi River Corridor;
- Expansion of port facilities in Plaquemines Parish;
- Long-term influence of Horizon oil disaster on commercial and recreational fishing; and
- Ongoing expansion of operations of NAS JRB New Orleans in Belle Chasse.

These and other influences and changes in the economy are discussed in detail in **Section B Economic Development**.

Economies across the world are preparing for a new energy economy as oil and gas supplies decline. Because the Plaquemines Parish economy is highly concentrated in oil and gas and affiliated industries, changes in the energy sector will have important implications for employment and subsequent population change in the community.

e. Vision of the Community

A basic micro-economic principle influencing local population growth is that people can vote with their feet. In other words, people will typically choose to live in a community within a labor market (in this case, greater New Orleans) that best meets their needs: safety, good schools and services, low taxes, mobility, proximity to jobs, and good quality of life. Because of this, it is important that the Parish balance the needs and desires of the existing community while implementing an attractive vision for the future. This vision will increase confidence in the Parish's future security and mitigate concerns of potential residents related to coastal restoration and environmental issues.

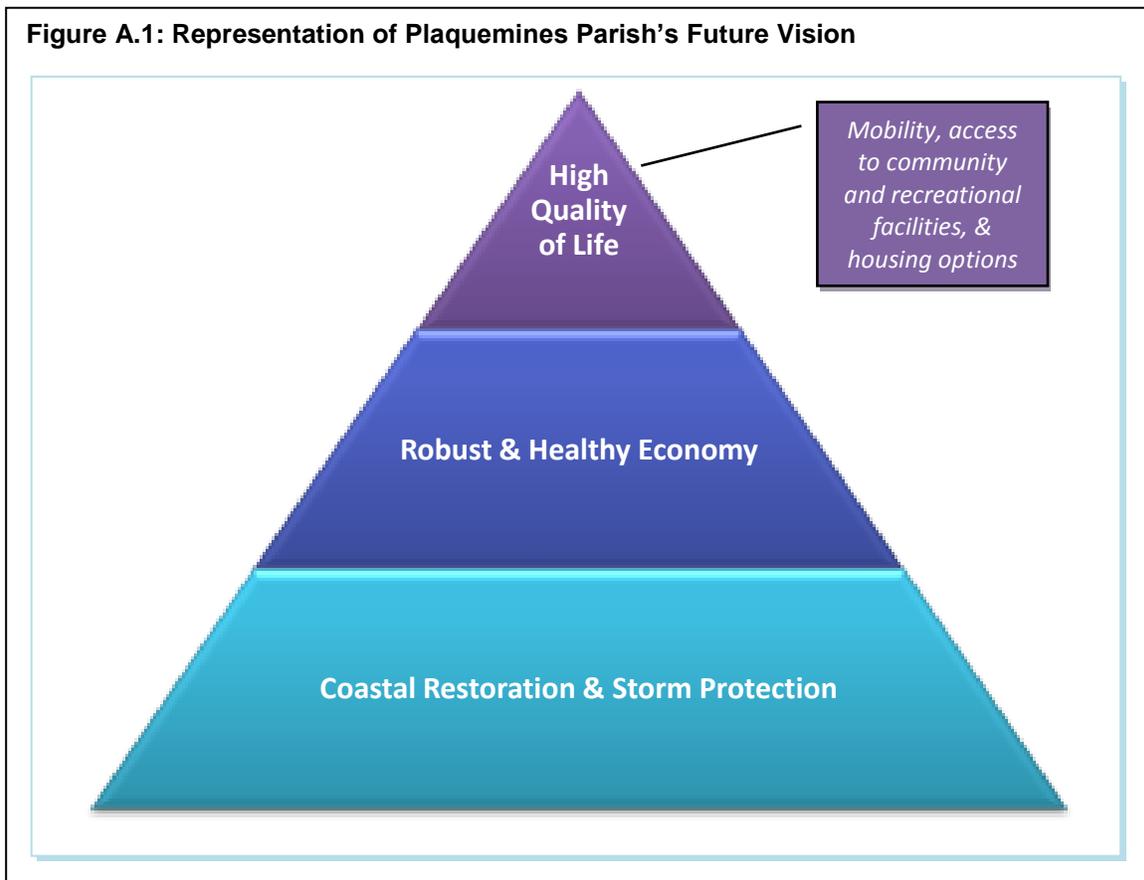
Most residents of Plaquemines Parish choose to live here because of the area's high quality of life.

An important component of the development of the Comprehensive Plan and Community Agenda is to also develop an understanding of the community's vision. This was accomplished by meeting with community stakeholders and creating an open dialogue about the Parish's future by holding public workshops, meeting regularly with a project Steering Committee, and keeping open communication channels with the public (newsletters, website, and project hotline).

The key conditions that are essential to the future of Plaquemines Parish, as identified through community input and the review of existing conditions, is depicted in **Figure A.1** below, with coastal restoration and storm protection as the core need. A robust and healthy economy is the second most important need identified, which is largely dependent upon coastal

restoration and food protection. These two conditions are essential to a high quality of life and, ultimately, a sustainable future. Despite threats posed by hurricanes and other environmental conditions, the area’s assets – including overall safety, sense of community, and access to good schools and recreational activities– make Plaquemines Parish a desirable place to live. This vision reflects the composite needs of the Plaquemines Parish community.

Aging Population - Of special concern is the growing baby boomer and subsequent retiree population. The ability to retain and attract these residents will be closely tied to the Parish’s ability to provide or support local healthcare needs, community services, mobility options for transit dependent populations, appropriate housing, and emergency evacuation services. Many of these needs that are under the purview of the Parish Government are discussed in **Section G Public Facilities and Services** and **Section C Multi-modal Transportation System**.



2. Population Projections¹

In order to develop realistic population projections, sound estimates for the preceding and base years must be developed. As discussed in the Community Assessment (see Technical

¹ Population estimates used in this section of the Comprehensive Plan have been re-evaluated relative to the data released in the 2010 Census and the estimates used herein are comparable to 2010 Census numbers.

Appendix), developing an accurate estimate of Plaquemines Parish population at the time of this Master Plan is difficult. The 2010 count of the population has not yet been released² and basing estimates on the 2000 Census count is problematic due to uncertain population changes in the Parish caused by Hurricane Katrina. Because of this, various estimates of the Plaquemines Parish population have been proposed since 2005 (see **Table A.1** and Community Assessment, Technical Appendix for more information).

Table A.1 provides estimates of the Plaquemines Parish population from 2001 to 2010 based on various sources using the 2010 Census count as the base year. The combined column reflects what is considered the most accurate estimate for each year based on available data. The 2010 estimate for Plaquemines Parish is a projection developed by LSU for the State. It is based on a comprehensive view past trends and expected changes to the state population. This figure of 22,440 is a reasonable estimate for 2010 population (see **Table A.2** and associated text for additional State projection data).³

Table A.1: Population Estimates for Plaquemines Parish, 2000 to 2010

	Estimate 1	Estimate 2	Estimate 3	Estimate 4	Combined
Census 2000	26,737	26,757	26,757		26,737
2001	26,852				26,852
2002	27,119				27,119
2003	27,644				27,644
2004	28,602				28,602
2005	28,549				28,549
2006	21,293	20,348	22,512		22,512
2007	21,353	21,539			21,539
2008	21,138	22,251			22,251
2009	20,942				20,942
2010	Not available			22,440	22,440

Source: Estimate 1: U.S Census Bureau. Annual Estimates of the Resident Population for Counties of Louisiana: April 1, 2000 to July 1, 2009. Estimate 2: State of Louisiana Office of the State Treasurer; Estimate 3: 2006 Louisiana Health and Population Survey. Estimate 4: State of Louisiana 2010-2030 population projections, recommended middle scenario projection.

a. Parish-wide Population Projections

As indicated in the Introduction Section A.1, there are various uncertainties that will influence Plaquemines Parish population change and environmental conditions and flood protection are the most significant. Because of these uncertainties, it is more difficult to project population growth. Population projections are typically developed as a function of past trends and anticipated changes that will have a notable influence on population growth or decline. This analysis accepts two different population projection approaches for Plaquemines Parish: (1) State produced projections (based on a continuation of existing trends and overall anticipated changes in the State’s demographics) and (2) Employment-driven projections (based on historic

² Local population and demographic counts from the 2010 U.S. Census are anticipated to be released beginning in February or March 2011.

³ Plaquemines Parish 2010 Census total population is 23,042.

population/jobs ratios). Sub-area population growth for Plaquemines Parish is calculated based on ratios developed as a part of a land use build-out scenario, or in other words, how much more population sub-areas of the Parish can house based on maximum allowable housing densities in residentially-supportive zoning districts.

a.1. State Produced Population Projections

The State of Louisiana commissioned Louisiana State University to produce a series of population projections for Louisiana and each of its parishes for 2010 to 2030. These projections are based on 2005 population estimates from the U.S. Census and adjusted to account for the impacts of 2005 storms (using 2007 population estimates). The projections produced by LSU provide a low, medium, and high projection for each parish and encourage nearly all parishes, including Plaquemines, to accept the medium projection moving forward. Each scenario takes into account the following:

- Rates of birth and death based on vital statistics data from 2000-2004, which are held constant between 2010 and 2030 across all three scenarios.
- Each scenario depicts a different assumption regarding migration patterns by age, race, and sex:
 - 1) **Middle Series** [2000-2005 Net Migration Scenario]: *In this scenario, the observed rate of migration between 2000-2005 is assumed to remain constant through 2030.*
 - 2) **Low Migration Series** [Half (.5) 2000-2005 Net Migration Scenario]: *In this scenario, the rate of migration through 2030 is assumed to be one-half (.5) of the 2000-2005 migration rate.*
 - 3) **High Migration Series** [One and One-Half (1.5) 2000-2005 Net Migration Scenario]: *In this scenario, the rate of migration through 2030 is assumed to be one and one-half (1.5) times that of the 2000-2005 migration rate.*⁴

These projections anticipate that between 2010 and 2020, Plaquemines Parish will be among the top five fastest growing parishes in the state, along with Livingston, St. Tammany, Ascension, and St. John the Baptist Parishes. The assumptions in the data also project that the Louisiana population, as a whole, will reach pre 2005 storm levels between 2015 and 2020.

Table A.2 shows the projected population for Plaquemines Parish, as anticipated by the State. Based on the State's guidance, it is projected that the most likely population for Plaquemines Parish in 2030 is around 29,000 people, nearly a 30 percent increase in population between 2010 and 2030. *Note: These figures do not take into account the impact that the Deepwater Horizon Disaster will have on the Plaquemines Parish and overall Louisiana population, which will likely be difficult to project in the near future.*

⁴ State of Louisiana. Louisiana Population Projections General Overview.
http://www.louisiana.gov/Explore/Population_Projections/ Accessed December 2010.

Table A.2: Population Projections for Plaquemines Parish, 2010-2030

	Medium	Low	High
2005	28,970	28,970	28,970
2010	22,440	21,240	23,560
2015	24,090	22,300	25,760
2020	25,770	23,380	28,410
2025	27,460	24,250	31,170
2030	29,130	24,970	34,050
Percent Increase 2010-2020	29.8%	17.6%	44.5%

Source: State of Louisiana, Office of Administration. Louisiana Population Projections prepared by LSU.

a.2. Employment-driven Population Projections

As discussed previously, a community’s population growth is intrinsically tied to both local and regional employment growth. People typically prefer to live in close proximity to their job in order to minimize travel time and increase quality of life.⁵ The projections in **Table A.4** provide probable population growth based on past trends and anticipated growth in the Plaquemines Parish economy. Three employment-driven population projection scenarios are provided.

Each of these scenarios assumes (based on past trends) that although the employment in Plaquemines in Parish is growing, a portion of associated job growth will be captured by existing residents, residents in other parishes in the region, and finally employees new to the region choosing to live both in Plaquemines Parish and adjacent areas. To account for this, each scenario assumes that the Parish’s historic 1.6 ratio of population to jobs (considering 1990, 2000, & 2005 figures) remains constant over the planning period.

Table A.3: Historic Ratio of Population to Jobs

	Population	Employment	Ratio
1990	25,575	15,923	1.61
2000	26,737	16,703	1.60
2005	28,549	14,632	1.60
2009	20,942	14,404	1.45
Average ratio - 1990, 2000, 2005			1.60

Source: Population - U.S. Census 1990 & 2000; 2005 & 2009 population estimates from U.S. Census Bureau; Employment: Avg. annual covered (employers subject to LA Employment Security Law), Louisiana Workforce Commission.

Note: Total employment does not include self-employed workers or military.

This 1.6 population/housing ratio is then applied to three sets of employment projections (low, medium, and high) for the Plaquemines Parish. Employment projections are discussed at

⁵ Please see the Economic Development Section of Technical Appendix for a review of Plaquemines Parish workforce commuting patterns and jobs-housing balance.

length in **Section B Economic Development**, but the following are the underlying assumptions for each scenario.

- Low Growth Projection assumes Plaquemines retains its historic percentage of regional jobs 2.8 percent over the projection period.
- The Medium Growth Projection assumes Plaquemines increases its share of regional jobs to 3.5 percent by 2018.
- The High Growth Projection assumes additional job growth by Citrus II, AMAX, and NAS JRB & local employment follows regional industry trends.

Table A.4: Employment-driven Population Projections, Plaquemines Parish

	2010	2015	2020	2025	2030
Low Growth*	22,440	25,520	25,904	26,289	26,674
Medium Growth*	22,440	25,597	26,135	26,616	27,097
High Growth**	22,440	26,303	27,449	27,830	28,413

Source: Louisiana Workforce Commission historic data and regional growth projections. JYG 2010 population estimate & projections.

*Projected population based on Plaquemines Parish historic ratio of population/jobs (1.6) applied to Louisiana Workforce Commission employment projections for New Orleans region.

The High Growth employment-driven population projection is considered the most plausible projection for the Plaquemines Parish of both state produced and employment-driven projections. This scenario projects that the population increase to 28,413 by 2030. It is used as the Parish-wide projection for sub-area projections and housing needs.

b. Sub-area Estimates & Projections

Sub-area population estimates and projections are important for anticipating and planning ahead for community services and facilities for different areas of the community.

b.1. Sub-area Estimates

Because neither an authoritative count of whole or sub-areas of the Parish population (Census 2010) will be available until 2011, sub-area estimates must be established using other methods. Most commonly, community-wide estimates are based on state or regional estimates and are often modified by local officials based on some other indicator of population, such as utility counts. These estimates are then attributed to geographic areas of a community.

Preliminary sub-area population estimates for Plaquemines are provided in the Technical Appendix to the Community Assessment. Because these estimates are based on water districts with unclear geographic boundaries, new sub-area estimates have been created by existing Council districts. This methodology bases the 2010 population estimate on the base year population projection provided by the State (created by LSU).

Methodology

A study done in 2008 by GCR estimated the number of active electric utility accounts in each Council District. Using this distribution as a proxy for population distribution suggests the

following distribution of population in each Council District for 2010 (based on LSU total 2010 medium population projection provided in **Table A.2**):

Table A.5. Sub-area Population Estimates

Council	2008	2010	
Districts	#Accounts	Est. Pop	% Total Pop
1	630	1,937	8.6%
2	1,392	4,280	19.1%
3	1,284	3,948	17.6%
4	610	1,876	8.4%
5	1,210	3,721	16.6%
6	800	2,460	11.0%
7	431	1,325	5.9%
8	290	892	4.0%
9	651	2,002	8.9%
Total	7,298	22,440	100.0%

b.2. Sub-area Projections

Geographic limitations (see Introduction of this Section) will continue to influence where Plaquemines Parish experiences future population growth. The Future Land Use (FLU) Plan, see **Section I**, identifies areas of the Parish suitable for residential, commercial and other uses moving forward. To quantify the possible impacts of future land use on population growth, a land use build-out scenario was created.⁶ A part of this analysis includes a review of all land zoned for residential development and the calculation of the total housing units possible by applying residential density allotments outlined in the Assessment to that acreage. These calculations are sorted by future land use and Council District (see **Table A.6**).

Based on these calculations, the total possible build-out population of Plaquemines Parish is estimated at 70,915 people. Build-out is not anticipated any time in the near or distant future. In fact, continuing projected employment-driven population growth rate into the distant future indicates that build-out would not be reached until well into the 22nd century. With this in mind, the most important information that the build-out scenario provides is the percent of total population within each Council District, assuming that the existing regulations are in place with little to no interference from storms, subsidence, or other unknown environmental or man-made disasters. These ratios can be applied to calculate future population growth for sub-areas.

⁶ See Section J, Future Land Use, for more detailed information on the assumptions underlying the build-out scenario.

Table A.6: Land Use Build-out Scenario for Plaquemines Parish, Potential Housing by Council District

Future Land Use	Council District									PARISH
	1	2	3	4	5	6	7	8	9	TOTAL
Agricultural	433	12		0	101	190	83	12	61	892
Business Park	-	-	-	-	-	-	-	-	-	-
Camp Communities	-	-	-	-	-	257	-	-	-	257
Resource Conservation	-	-	-	-	-	-	-	-	-	-
Industrial	-	-	-	-	-	-	-	-	-	-
Institutional Complex*				2,830						2,830
Levees and Drainage	-	-	-	-	-	-	-	-	-	-
Marine Commercial Corridor	-	-	-	-	-	-	-	-	64	64
Marine Harbor Complex	209	-	-	0	-	215	341	35	170	971
Port/Terminal	-	-		-	-	-	-	-	-	-
Residential Community	3	5,657	832	603	653	4	-	-	0	7,752
Rural Community Center	828	-	-	-	-	18	139	-	-	985
Rights-of-way			-	-	-	-	-	-	-	-
Small Community Mixed-use Node	1,731	-			0	1,098	962	1,661	706	6,157
Suburban Mixed-Use	-	925	359	172	3,174	-	-	-	-	4,630
Trans/Comm./Utilities	-	-	-	-	-	-	-	-	-	-
Water	-	-	-	-	-	-	-	-	-	-
TOTAL DWELLING UNITS	3,202	6,594	1,191	3,605	3,928	1,782	1,524	1,709	1,002	24,538
BUILD-OUT POPULATION	9,255	19,057	3,442	10,418	11,352	5,151	4,406	4,939	2,895	70,915
% Total Build-out Population	13.1%	26.9%	4.9%	14.7%	16.0%	7.3%	6.2%	7.0%	4.1%	100.0%

Source: Jacobs calculations. See Section I.

Using the population ratios from the build-out development scenario, Parish-wide population projections, and the sub-area population estimates, the anticipated population growth for each sub-area of the Parish can be forecasted for the next 20 years. Based on limited current conditions data, the planning team considers this the most sound way to project population for sub-areas without adding several conditions and assumptions about the future that will likely change. This scenario assumes that certain areas of the Parish have limited residential growth potential due to environmental and safety considerations detailed by the existing zoning and development regulations and further depicted in the Future Land Use Plan. **Table A.7** shows projected growth by planning area.

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Table A.7: Population Projections by Council District

Council District	2010	2015	2020	2025	2030	Pop Growth	% Growth 2010-2030	% of total pop 2010	% of total possible pop at build-out
1	1,937	2,441	2,591	2,640	2,717	780	40.2%	8.6%	13.1%
2	4,280	5,318	5,626	5,729	5,885	1,605	37.5%	19.1%	26.9%
3	3,948	4,135	4,191	4,210	4,238	290	7.3%	17.6%	4.9%
4	1,876	2,443	2,612	2,668	2,753	877	46.8%	8.4%	14.7%
5	3,721	4,339	4,523	4,584	4,677	956	25.7%	16.6%	16.0%
6	2,460	2,741	2,824	2,852	2,894	434	17.6%	11.0%	7.3%
7	1,325	1,565	1,636	1,660	1,696	371	28.0%	5.9%	6.2%
8	892	1,161	1,241	1,267	1,308	416	46.6%	4.0%	7.0%
9	2,002	2,160	2,206	2,222	2,246	244	12.2%	8.9%	4.1%
High Growth	22,440	26,303	27,449	27,830	28,413	5,973			

Source: Percent of total possible population at build-out - JJG, Section J of Community Agenda. High growth projection calculated previously in section under Employment-driven population growth. Pop= population

Notes on Population Projections by Council District:

Projections assume that Council Districts attract a share of total projected Parish population growth from 2010-2030 equal to their possible share of total population at build-out (see build-out table A.6). The Parish-wide population projections are based on the High Growth Scenario from employment-driven population projection.

These sub-area projections are a simplified forecast of possible population distribution. The drivers of change discussed in the Introduction and other private and public decisions will likely alter distribution across sub-areas. In particular, there are certain areas of the Parish that are less suitable for growth due to limited protection from storms or limited infrastructure. Because of that, it is likely that the increased investment risk and additional building requirements will lead to less development in some areas and more in others. The cost of elevating a home typically averages \$70,000.⁷

c. Associated Population Trends

Several other demographic and population trends⁸ associated with projected population change will have important implications for the Parish’s future. To adequately serve the changing population, these impacts will require adjustments to community services and facilities, recreational programs and facilities, land use decisions, and other public and private programs and initiatives.

⁷ Louisiana Home Elevations. <http://www.louisianahomeelevations.com/home-elevation-news.html#1143>. July 1 2010 to Dec 31 2010 archives.

⁸ See Community Assessment, Technical Appendix for more detailed data related to these trends.

Changes in Age Distribution. **Table A.8** shows projected changes in age distribution in Plaquemines Parish based on the State of Louisiana’s population projections. Most notable in this table is the projected rise in the 65+ population between 2010 and 2030 (12 percent to 16 percent of the total population). Also notable is that the 30-39 year old population is projected to increase from 12 percent to 17-18 percent of the total population from the 2010 to 2025-2030 time frame.

Table A.8: Projected Changes to Population by Age Distribution, Plaquemines Parish

Age	2005	2010	2015	2020	2025	2030
0-9	15%	12%	13%	14%	14%	13%
10-19	15%	15%	13%	12%	13%	14%
20-29	15%	14%	16%	15%	13%	12%
30-39	14%	12%	13%	16%	18%	17%
40-49	15%	15%	12%	10%	11%	14%
50-64	16%	20%	20%	19%	16%	14%
65+	10%	12%	13%	14%	15%	16%

Source: State of Louisiana, Office of Administration. Louisiana Population Projections prepared by LSU.

Of special concern is the growing baby boomer and subsequent retiree population. The Parish will need to provide or support appropriate local healthcare services and needs, general community services, mobility options for transit dependent populations, appropriate housing, and emergency evacuation services to meet the needs of this group. Most of these needs that are under the purview of the Parish Government are discussed in **Section G Public Facilities and Services** and **Section C Multi-modal Transportation System**.

Growing Ethnic Population. Data from 2000 Census to 2006 Louisiana Health and Population Survey show that there is increasing growth in the Latino population, estimated at nearly 4.5 percent of the population in 2006. Increasing growth in this population will possibly require such action items as the creation of new bilingual services such as translation services in courts and translations of citizen-oriented documents produced by the Parish.

Poverty. Recent trends indicate that while the average household income in Plaquemines Parish has returned to a healthy level since Hurricane Katrina, it is still estimated that approximately 15 percent of the Parish population in 2006 was living in poverty⁹ (see Community Assessment Technical Addendum). Although this figure is not alarming compared to adjacent parishes (13 percent in Jefferson Parish, 20 percent in St. Bernard, and 23percent in Orleans), it should not be ignored. The Parish can help tackle pervasive poverty by helping link residents with work training programs and help attract new employers to the Parish that will provide jobs appropriate to skill sets of Parish residents. In addition, the Parish can monitor total housing costs (rents or mortgage, plus associated insurance and utilities) to ensure adequate housing is provided for all members of the community.

⁹ 2006 Louisiana Health and Population Survey.

Education. Plaquemines Parish is estimated to have a slightly higher percentage of residents with less than a high school degree (17.1 percent) and a slightly lower percentage of residents with bachelors degrees or higher compared to Jefferson and Orleans Parish (St. Bernard has relatively similar statistics as Plaquemines). These differences may be an indication of the job opportunities in the Parish and residents choosing not to return to the Parish after graduation from post undergraduate programs. The Parish Government may consider addressing barriers to attracting persons with higher degrees to the Parish and should also consider partnering with Plaquemines Parish Schools to help increase the high school graduation rate.

School Enrollment. Enrollment levels at Plaquemines Parish Schools are an important indicator of how well the Parish is attracting families. Families typically require more services but also are more likely to have a longer term commitment to the community assuming the quality of life remains constant or improves. Monitoring school enrollment figures can help identify growing or new service needs and areas of the Parish that might be appropriate for targeted housing growth or other private sector investments. In October 2010, the Plaquemines Parish Schools enrollment was 3,864. This figure does not include Belle Chasse Academy, which is a charter school outside of the Plaquemines Parish School Board management. Schools are discussed in more detail in **Section G Public Facilities and Services**.

Deepwater Horizon Disaster. The short and long-term impacts of the Deepwater Horizon oil spill on the Plaquemines Parish population will not be entirely clear until more time has passed. The first major survey of Gulf Coast residents following the capping of the oil¹⁰ well indicated that over one quarter of coastal residents think they may have to move from the area because of the oil spill. In addition, many of those surveyed indicated that the oil spill had some impact on their family's physical/mental health, safety, and way of life. Most notably, the survey indicated that those with households with the lowest income levels had been "harder hit" by the disaster than others. The study included all residents within a 10 mile radius of the affected Louisiana and Mississippi coastline. The Parish can work with partners, including BP and federal and state agencies, to mitigate the impacts of the oil spill on directly impacted residents.

3. Housing Needs

Determining the housing needed in Plaquemines Parish for the planning horizon (2010 to 2030) is a function of several factors: vacancy levels of existing housing (and healthy vacancy levels in a strong market), possible replacement needs of existing units, anticipated household population growth, projected change in average household size, and temporary housing needs.

¹⁰ National Center for Disaster Preparedness. "Impact on Children and Families of the Deepwater Horizon Oil Spill: Preliminary Findings of the Coastal Population Impact Study," Research Brief 2010:8. Columbia University Mailman School of Public Health, New York. (Release date 3 Aug 2010).

a. Existing Housing

The Community Assessment (see Technical Appendix) provides a comprehensive review of the existing housing stock as of summer 2010 based on the best data available. In May 2010, there were an estimated 9,438 housing units in Plaquemines Parish. This represents just over 1,000 fewer housing units than the Parish had in 2000. The data indicate that the number of single-family housing units, mobile homes, and boat/RVs, etc. have declined over this period (largely attributed to Katrina), while there have been increases in the number of duplexes and, most notably, multi-family units.

Table A.9: Total Housing Units 2000 & May 2010 Estimate*

Unit Type	Number 2000	Percent	Number 2010	Percent
Single-family	6,153	58.7%	5,138	54.4%
Duplex	488	4.7%	611	6.5%
Multi-family	475	4.6%	1,029	10.9%
Mobile Home	3,303	31.5%	2,629	27.9%
Boat, RV, van, etc.	62	0.6%	31	0.3%
TOTAL	10,481	100%	9,438	100%

Source: U.S. Census (2000); JJG calculations based on data provided by the Census and Plaquemines Parish (2010).

*See *Community Assessment* for more information.

The U.S. Census estimates that the Parish had an average housing vacancy rate of approximately 22 percent over the three year period from 2006-2008. A healthy vacancy rate for communities is generally estimated at 5-7 percent. This vacancy rate allows for healthy movements in, out, and within the housing market without inflating or deflating the costs of housing. This housing analysis assumes that 22 percent of the housing stock is still vacant in the Parish as of 2010 and that it is all ready for occupation.

b. Household Projections

When projecting housing needs, it is important that housing needs are considered for both household and group quarters population. The household population represents those people living in traditional living environments. The group quarters population includes institutionalized (correctional institutions, nursing homes, etc.) and non-institutionalized population (college dormitories, military quarters, etc.). The 2000 Census counted 2.7 percent of the population (728 people) living in group quarters; 2.4 percent were institutionalized and 0.3 percent were non-institutionalized.

For the purposes of projecting household population, this analysis assumes a constant 2.6 percent of the population will live in group quarters through 2030. This number subtracts out 1 percent of the group quarters from 2000 for the Belle Chasse State School (one of the Parish’s group quarters populations), which closed down shortly after Katrina. (Data from the 2000 Census [see the Technical Appendix Population and Demographics Section] identifies 1.0 population in other institutionalized institutions.) This analysis assumes all of this 1 percent was accounted for by the state school.

The total household population projections are developed by subtracting 2.6 percent from the total population projected for each year.

Housing Size

The average household size for Plaquemines Parish was estimated at 2.89 in 2000. For this analysis, we assume that household size remains constant at 2.89 for the duration of the projection period.

Table A.10: Household Projections for Plaquemines Parish

	2010	2015	2020	2025	2030
Low Growth*	22,440	25,520	25,904	26,289	26,674
HH Population	21,857	24,856	25,231	25,606	25,981
HH	7,563	8,601	8,730	8,860	8,990
Medium Growth*	22,440	25,597	26,135	26,616	27,097
HH Population	21,857	24,931	25,456	25,924	26,393
HH	7,563	8,627	8,808	8,970	9,132
High Growth**	22,440	26,303	27,449	27,830	28,413
HH Population	21,857	25,619	26,735	27,107	27,674
HH	7,563	8,865	9,251	9,380	9,576

Source: JJG Employment-driven Population Projections for Plaquemines Parish.

HH=household

Household population projections assume group quarters population is a constant 2.6 percent of the population over time.

Household projections assume the average household size remains constant at 2.89 persons/household over time.

c. Projected Housing Needs

Table A.11 provides the projected housing needs for Plaquemines Parish from 2010 to 2030 based on the conditions and projections described in Sections a and b. Housing needs are calculated by multiplying the projected household size by a 1.06 ratio, which allows for a 6 percent vacancy rate. A positive difference indicates there is excess supply of housing units in the Plaquemines Parish market to accommodate projected population; no new housing is needed. A negative difference indicates there is a shortage of housing units in the Plaquemines Parish market to sustain a healthy market (6 percent vacancy rate) and to accommodate the projected population. As indicated below, it is estimated that Plaquemines Parish has a significant over-supply of housing – enough to populate the Parish’s population through at least 2015 for all three employment-driven growth projection scenarios.

Although these numbers indicate that there is a sufficient supply of housing for future growth, it is likely that some of the available housing is the wrong size and type and also in the wrong location. It is recommended that the Parish complete a comprehensive review of available housing by sub-area upon release of small area data from the U.S. Census Bureau in 2011. This data will provide a much clearer and accurate picture regarding location of vacant housing units, providing a solid base for a comprehensive housing strategy for the Parish’s future needs.

It should also be noted that these housing needs projections include housing needs that may be accommodated at NAS JRB site. See Section d below for more discussion on this topic.

Table A.11: Projected Housing Needs, Plaquemines Parish

	2010	2015	2020	2025	2030
Low Growth HH	7,563	8,601	8,730	8,860	8,990
Housing Need	8,017	9,117	9,254	9,392	9,529
Difference	1,421	321	184	46	-91
Medium Growth HH	7,563	8,627	8,808	8,970	9,132
Housing Need	8,017	9,144	9,337	9,509	9,680
Difference	1,421	294	101	-71	-242
High Growth HH	7,563	8,865	9,251	9,380	9,576
Housing Need	8,017	9,397	9,806	9,942	10,150
Difference	1,421	41	-368	-504	-712
2010 Housing Units = 9,438					

Housing need assumes a 6 percent vacancy rate across all housing need projections.

d. Housing Types

Moving forward, it is important that Plaquemines Parish plan not just for new housing but for housing that is appropriate for the changing population. The most important considerations for Plaquemines-appropriate housing are the following factors:

Growth in Baby Boomers & Generation Y. Analysts anticipate that future housing needs across the country (particularly in the next 8-10 years) will be driven by two groups: baby boomers (largely retirees and empty-nesters, born 1946-1964) and Generation Y (born 1979-1996).¹¹ Associated with these driving age groups is a nationwide trend in decreasing average household size. The U.S. Census reports that the average household size in the U.S. has decreased from 4.6 in 1900 to 2.59 in 2000. Although Plaquemines average household size is larger than the nation, 2.89 (based on 2000 Census), it will likely follow similar patterns as national trends. With these factors in mind, Plaquemines Parish will likely see a shift in housing structure demand towards smaller, lower maintenance housing.

NAS JRB Employee Housing Needs. The Parish should coordinate with the NAS JRB to ensure that the housing needs of Base employees are being met. Appropriate housing may be best provided on the military base by the NAS JRB, which is out of the purview of the Parish Government yet should be coordinated with Parish residential construction. Additionally some housing demand is likely to be met by other opportunities in adjacent communities. To strengthen the Parish’s population based it would be wise to promote housing development that is attractive to military households and families.

Workforce Housing. Plaquemines Parish’s unique economy tied to ports, logistics, oil and gas extraction, commercial and recreational fishing, and anticipated growing ecotourism

¹¹ RCLCO. September 2008. Demographics and Real Estate Market Trends. Multigenerational Symposium.

sector (see **Section B Economic Development**) calls for housing unique to the needs of these non-traditional (non 9-5) workers. The Parish should identify ways to improve and promote housing appropriate to these groups. Possible strategies to promote include employer-assisted housing and tying housing studies to the development permitting process of major industrial employers.

Housing for Seasonal, Short-term and Temporary Residents. Because of Plaquemines unique location in the Gulf area, there are many people that come to the Parish for seasonal or short-term residency. This was most notably recognized as a part of the recovery efforts for the Deepwater Horizon Oil Spill. Part of the Parish's housing strategy moving forward should be to identify appropriate forms of housing for seasonal, recreational, and short-term use. Currently, there is not a good inventory of units that fit this description or potential demand for such housing.

An ongoing challenge for residential construction in Plaquemines Parish will be developing affordable, storm resistant housing that can be affordably insured. The Parish should promote housing that meets base flood elevation recommendations.

4. Workforce Needs

The Plaquemines Parish workforce consists of Parish residents that are currently employed or otherwise actively looking for work. Typically, analysts include in this group people age 16 or older. As discussed in the Community Assessment (see Technical Appendix), Plaquemines Parish has a relatively low unemployment rate particularly in light of the ongoing economic downturn. The most recent figures pin Plaquemines Parish unemployment rate at 6.2 percent in September 2010 compared to 7.8 percent (State of Louisiana) and 9.2 percent (United States).¹²

There has been much speculation that the Deepwater Horizon Oil Spill and the offshore drilling moratorium will have adverse effects on the Parish's unemployment rate; however, the September unemployment figure does not indicate a significant change in unemployment. It is anticipated that some new replacement jobs will be needed for professional fisherman, shrimpers, etc. and other impacted workers that may no longer be able to operate due to impacts of the oil spill. This situation will require ongoing monitoring by local officials.

The presence of a qualified workforce is important for economic development purposes, particularly for attracting new and maintaining existing employers. On the flipside, it is also critical that existing residents seeking employment have access to suitable jobs that suit their skill sets and employment goals. Plaquemines Parish has the benefit of being part of a regional labor force, in which, Plaquemines Parish employers can hire workers residing in other communities in the region and residents of Plaquemines can accept jobs in other parishes in the region. Because of this cross-parish relationship, it is important that congestion in and out of

¹² Figures are seasonally adjusted.

the Parish be minimized and the Parish partners work to maintain a good balance of jobs and housing with the Parish.

In order to ensure high quality of life for Parish residents, it is important that the Parish identify workforce training needs for sectors of the economy that the Parish is targeting for growth. For example, some of the economic growth goals include port expansion, green energy technology, and ecotourism. While some of these anticipated new jobs will be filled by unemployed residents, there will likely be a need to train others or bring workers from other parts of the New Orleans region or even outside the region to fill positions. During the public visioning process, community members identified economic development and bringing in new jobs as a key priority for the future in order to grow the population base to pre-Katrina levels. Future workforce needs are discussed in more detail in **Section B Economic Development**.

5. Policy Recommendations & Action Steps

a. General Policy Recommendations

- Prepare an annual report analyzing the most recent database of utility records by geographic location to improve monitoring of shifts in population.
- Link capital investments and changes to community services to projected population distribution.
- Periodically evaluate Parish's on-demand transit options, including emergency evacuation plans, to ensure meeting the needs of the Parish.
- Integrate permit database with Parish's GIS database to provide greater opportunities to monitor the Parish's housing market and identify areas with shortages of appropriate housing.
- Monitor school enrollment figures and projections to anticipate appropriate community services and facilities to accommodate families and school-aged children.
- Ensure ongoing collaboration between development and zoning department and Economic Development to ensure interested Plaquemines Parish investors have good information about development opportunities and the Parish's unique regulatory environment.
- Ensure new housing development is consistent with the Future Land Use Plan and associated character areas.
- Identify ways to diversify employment opportunities to retain the Parish's young population – particularly in periods after high school and/or college graduation.
- Address possible barriers to attracting persons with higher degrees to the Parish.
- Coordinate future housing needs with NAS JRB to ensure appropriate in-Parish housing opportunities are available for Base employees.
- Work with partners to develop strategies designed to mitigate the impacts of the Deepwater Horizon Disaster on the overall well-being of residents, including replacement job needs.

- Monitor changes to the Parish’s ethnic populations by coordinating with community groups and identify appropriate services and programs to meet these groups’ special needs.
- Monitor total housing costs (rents or mortgage, plus associated insurance and utilities) to ensure adequate housing is provided for all members of the community.

b. Regulatory Recommendations

- Limit residential development to areas with reasonable protection from storms through appropriate zoning and development regulations.
- Require new and expanding businesses of a certain size to provide some form of housing support for workers that incentivize living in the Parish, such as down payment assistance, closing cost assistance, or group mortgage assistance.
- Request a workforce housing needs assessment for unique and large employers locating in the Parish (e.g. major industry, manufacturers).

c. Action Items

- A.1. Reevaluate and update population and housing projections upon release of 2010 Census counts from the U.S. Census Bureau.
- A.2. Develop a housing strategy for sub areas of the Parish based on new data available in 2010 Census release.
- A.3. Develop active utility account database.
- A.4. Add housing permit data to GIS database.
- A.5. Adopt and enforce federally promoted advisory base flood elevations (ABFEs) for those choosing to reside flood-prone areas of the Parish or other accepted federal standards based on coastal restoration efforts.
- A.6. Assign an existing or new staff person with the responsibility of monitoring and evaluating changing characteristics in the Parish’s population.
- A.7. Increase amount of senior-oriented facilities and ensure general accessibility for mobility-limited members of the population.
- A.8. Partner with Plaquemines Parish Schools to help increase the high school graduation rate.
- A.9. Support local festivals and events that celebrate the heritage and unique make-up of Plaquemines Parish population.
- A.10. Help tackle persistent poverty by helping link residents with work training programs and help attract new employers to the Parish that will provide jobs appropriate to skill sets of Parish residents.

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