

Hurricanes Laura & Delta Recovery

Final document

November 2020



COMMUNITY
FOUNDATION
of Southwest Louisiana

Contents

Briefing document

Full report

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Reminder: Context and objectives

Context

In August 2020, Hurricane Laura made landfall in southwestern Louisiana, causing ~\$12B in damages in LA and TX, and 27 deaths in LA. Hurricane Delta's landfall in October 2020 compounded the region's devastation with significant flooding

With over 50K housing damaged overall as of late Oct., housing recovery is anticipated to be a complex process given pre-existing employment and health issues resulting from COVID-19 and the associated economic impact

The Community Foundation of Southwest Louisiana is playing an important role for the Lake Charles community in recovering from Hurricane Laura

Objectives

- **Assess impact of Hurricanes Laura and Delta on housing** in Calcasieu Parish, including expected timeline for recovery
- **Develop a perspective on the dual effects of COVID-19 and Hurricanes Laura and Delta** and the downstream impact on the recovery approach
- **Identify options for housing recovery** in Calcasieu Parish, leveraging best practices in recovering from natural disasters and including practical steps to recovery / implications on economic development

Approach and key sources leveraged

NOT EXHAUSTIVE

<p>Stakeholder interviews</p>	<ul style="list-style-type: none"> • City of Lake Charles • Louisiana Office of Public Health • Lake Charles Housing Authority • Calcasieu Police Jury • SWLA Economic Development Alliance 	<ul style="list-style-type: none"> • Louisiana Office of Community Development • Community Foundation of SW Louisiana • Baton Rouge Area Foundation • Alliance for Positive Growth • Nellie Lutcher Neighborhood Alliance 	
<p>Data collection & analysis</p>	<p>Housing situation pre-COVID-19</p>	<ul style="list-style-type: none"> • U.S. Census Bureau • HUD • Bureau of Labor Statistics • FRED 	<ul style="list-style-type: none"> • Dept. of Homeland Security • City of Lake Charles • Greater Baton Rouge Industrial Alliance • Moody's Analytics
	<p>COVID-19 and Hurricanes Laura/Delta impact</p>	<ul style="list-style-type: none"> • U.S. Census Bureau • FEMA 	<ul style="list-style-type: none"> • Local NGOs • McKinsey Global Institute
	<p>Housing recovery</p>	<ul style="list-style-type: none"> • Case studies based on publicly available report and press search • Expert interviews 	

Selected statistics on pre-COVID and Hurricanes housing status of Calcasieu Parish



+1 - 3%

Yearly increase in housing stock per year since 2013



17%

Vacancy rate, on the rise since 2016 and 5p.p. above national average



+2%

Yearly increase in median rent since 2013



48%

Of ~23K households that rent in Calcasieu are rent burdened¹

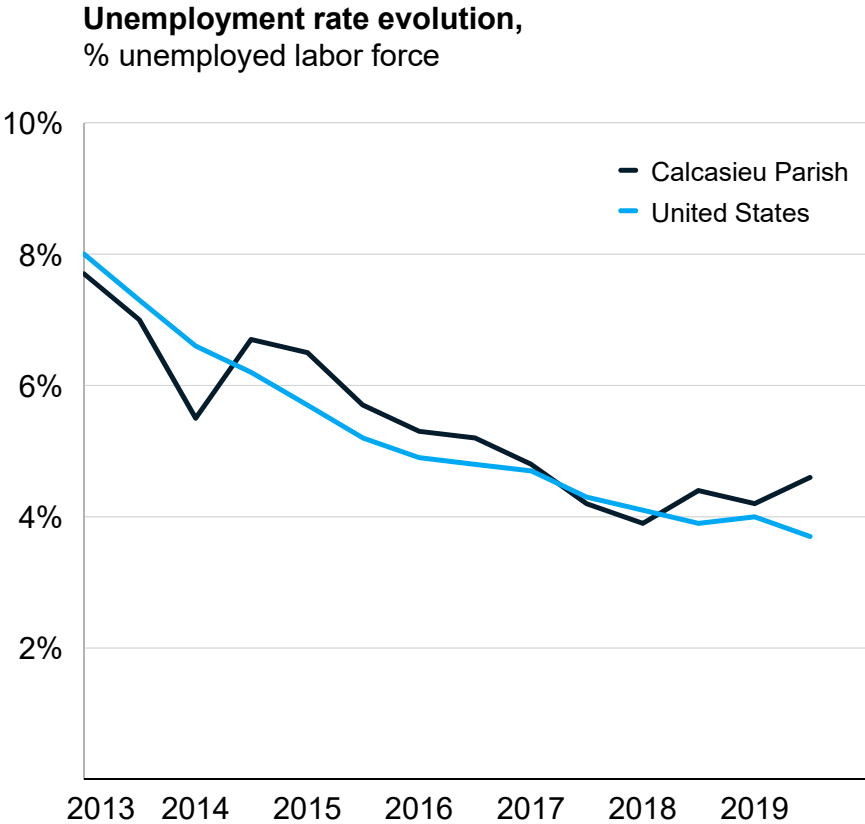
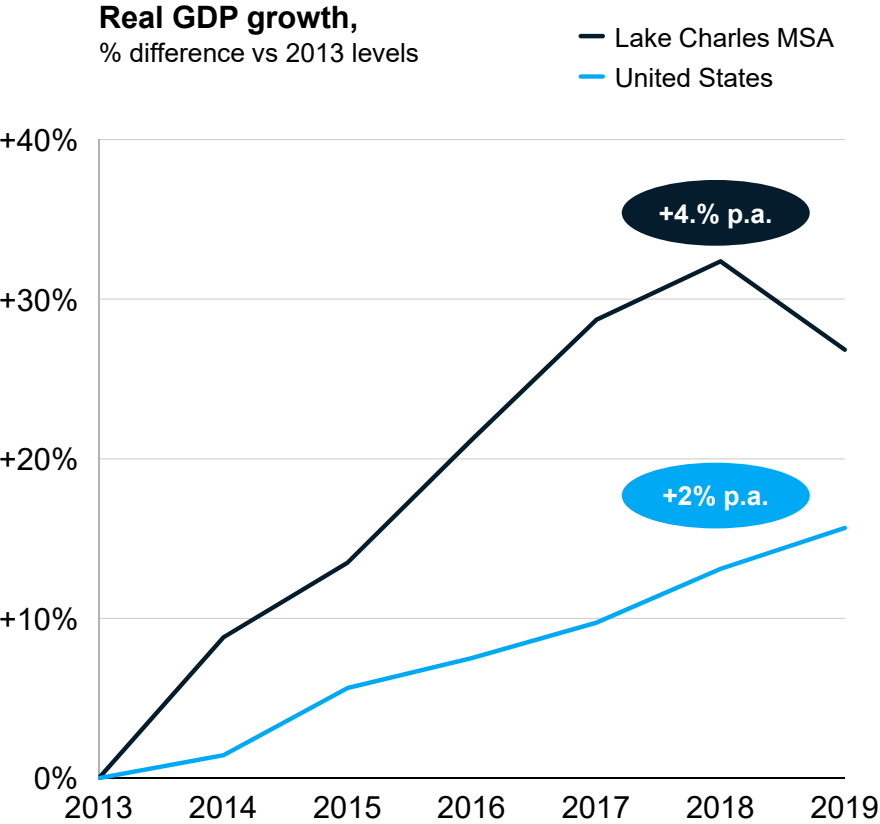


2x

Median rent (without burden) that white households vs black households can afford

1. Spending 30% or more of income on rent; ~93K housing units of which ~16K vacant and ~77K occupied; of the occupied ~51K owned and ~26K rented; of the rented data on rent as share of income for ~23K households

Starting in 2013 Calcasieu Parish and Lake Charles MSA experienced significant economic expansion, with signs of a slow down in 2019

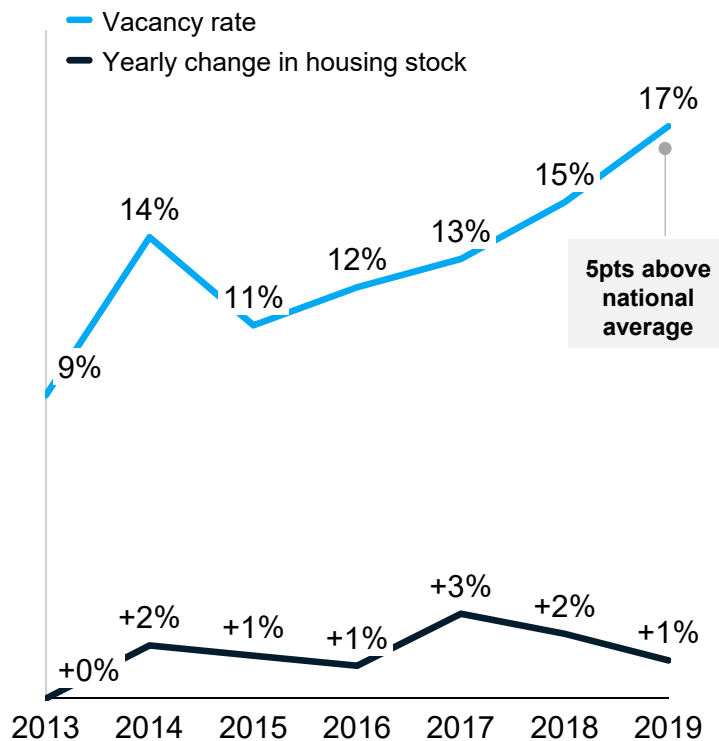


Source: US Bureau of Labor Statistics, FRED
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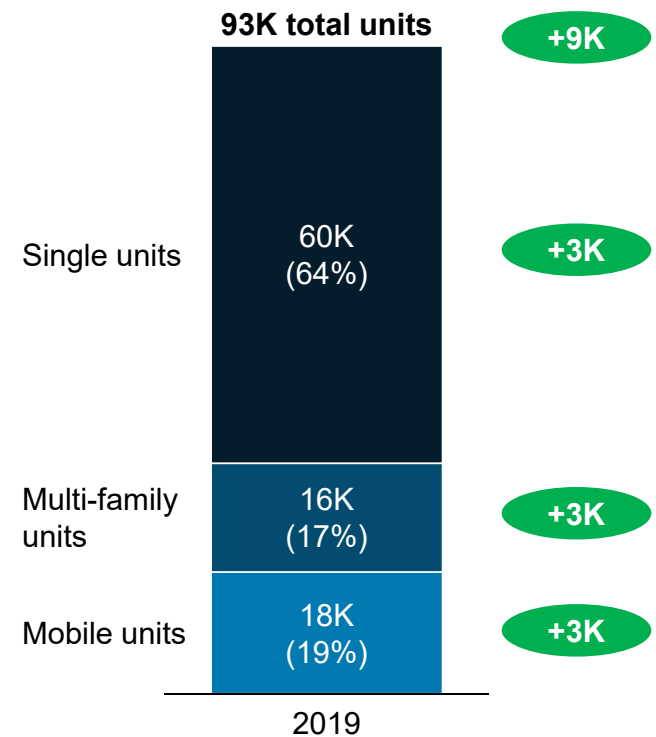
Since 2013, housing supply increased 1-3% per year with vacancy rates beginning to increase in 2016

Calcasieu Parish

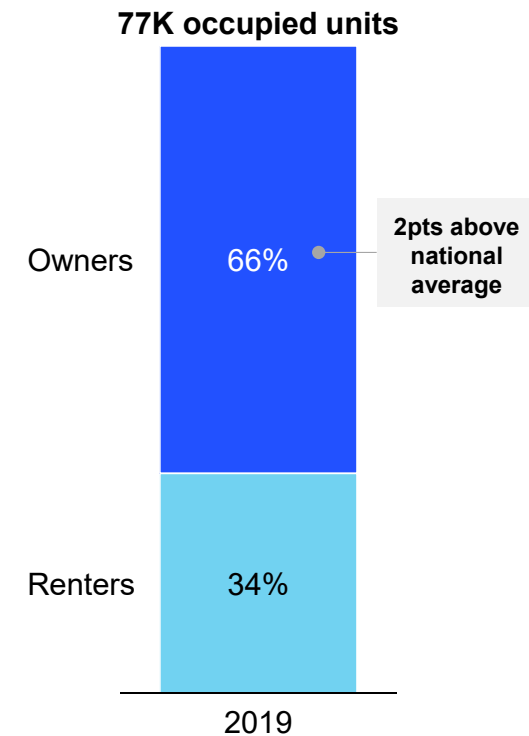
Housing stock and vacancy rate evolution



Housing stock composition



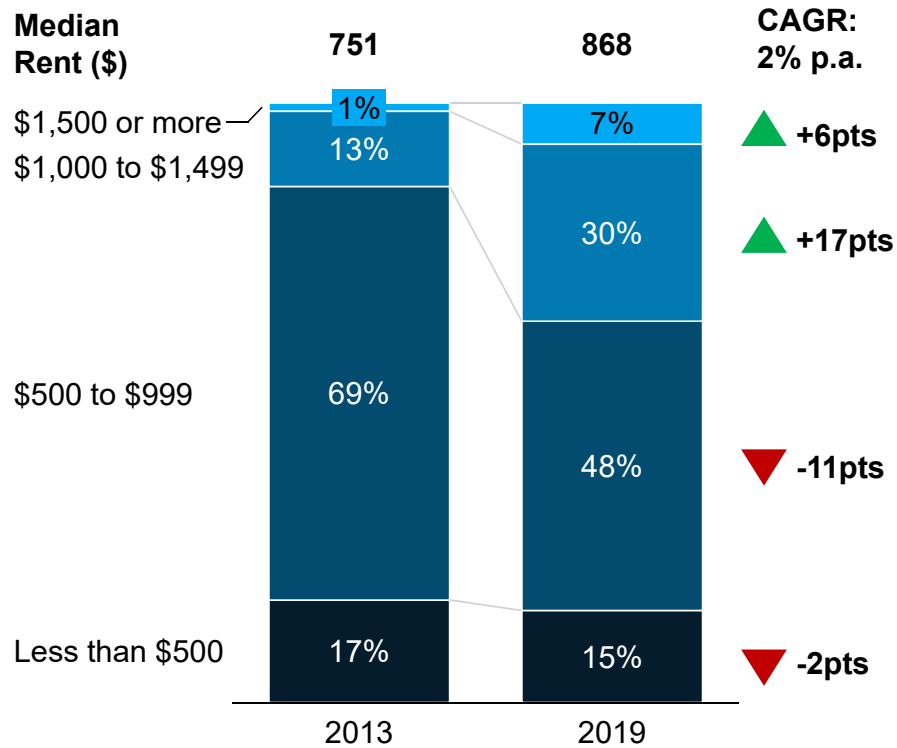
Homeownership rate



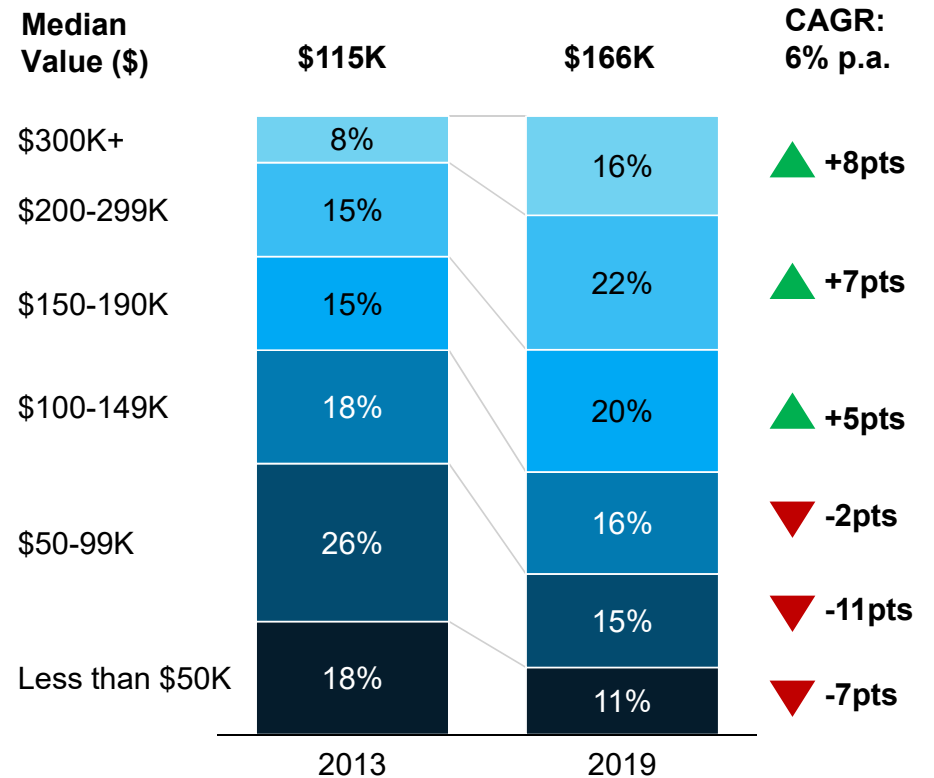
Rent levels increased 2% per year and home value increased by 6% per year since 2013

Calcasieu Parish

Evolution of rent levels



Evolution of home value

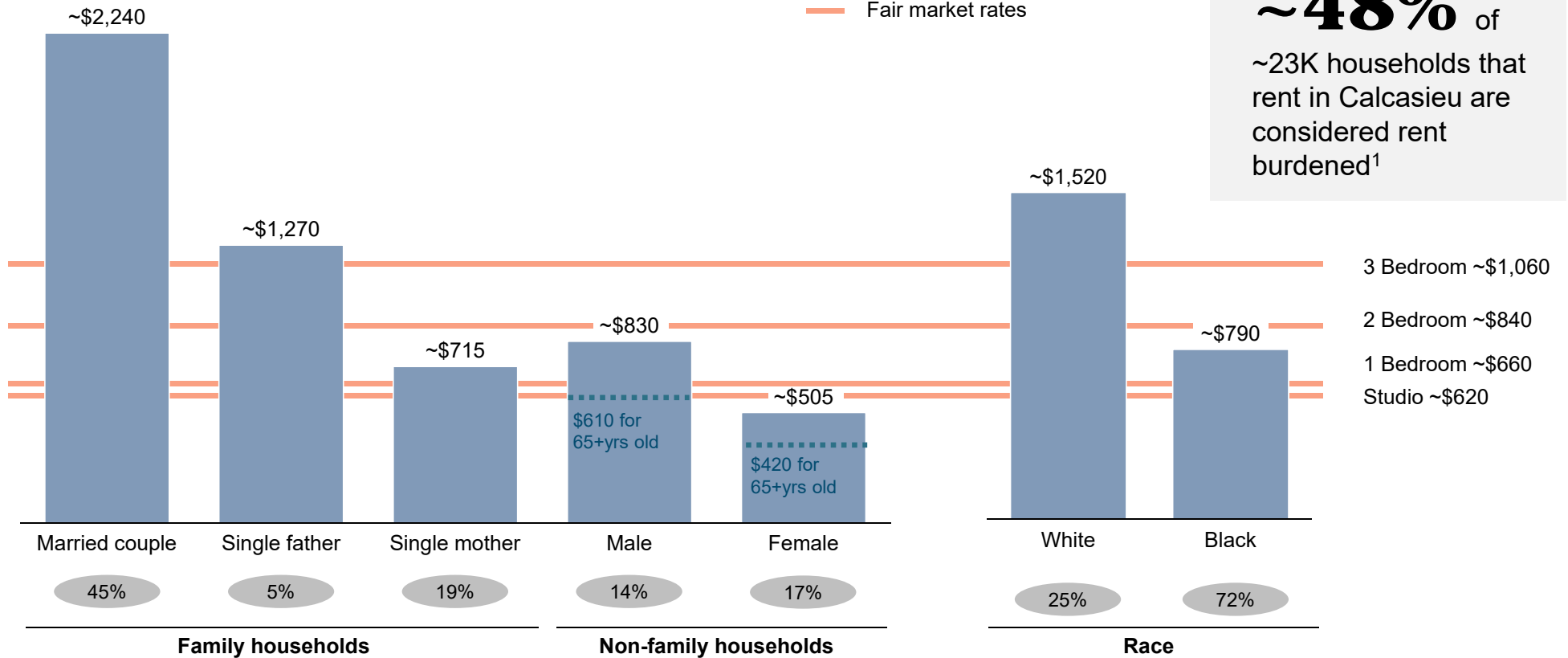


Economic and housing vulnerability disproportionately impacts minorities – in particular the women, elderly and Black communities

Calcasieu Parish

Estimated median monthly affordable rent without burden by profile, 2019

X% Share of total households
 — Fair market rates



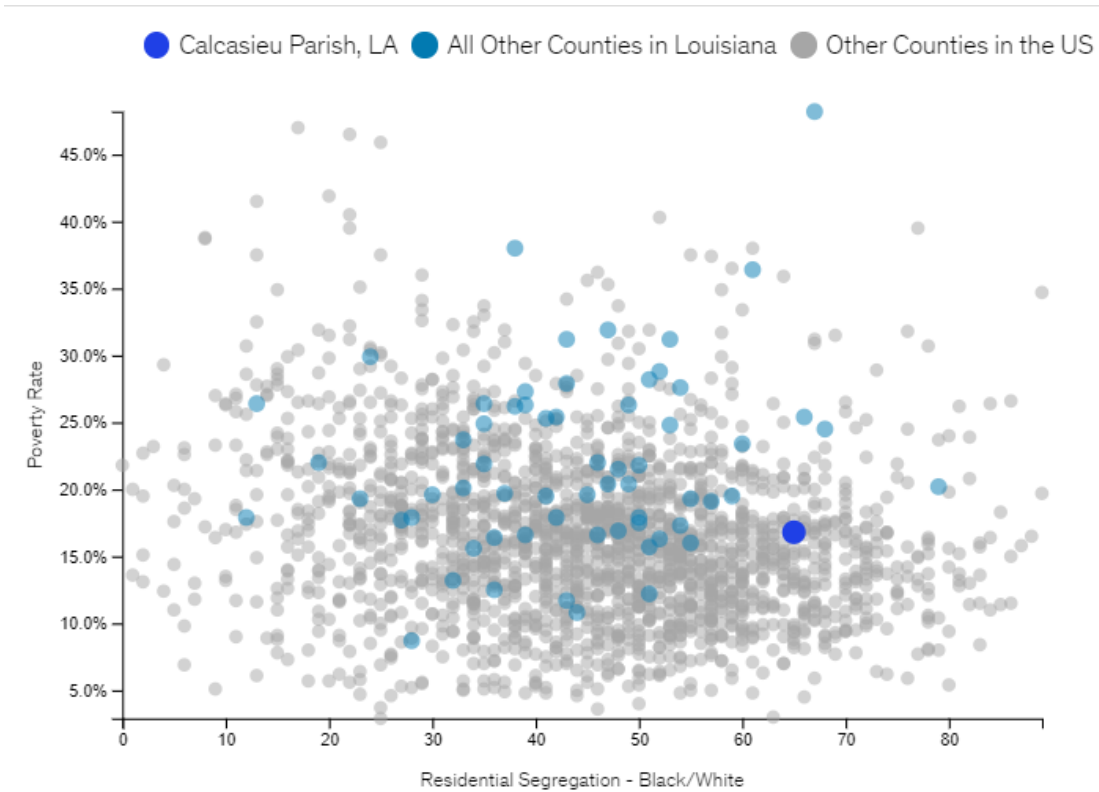
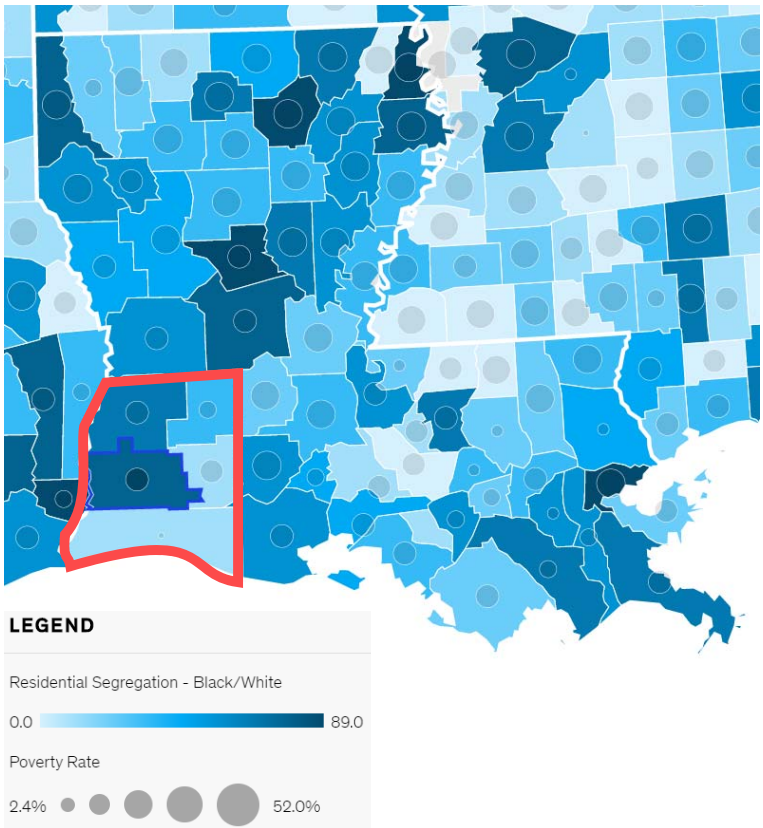
Source: US Census Bureau

Note: Householder with Section 8 Voucher pays 30% of their income on rent

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Calcasieu also displays one of the highest levels of residential segregation between Black and White communities in the US

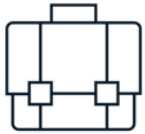
AS OF OCT 12TH, 2020



Source: US Census Bureau, MGI

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Selected statistics on impact from COVID-19 and Hurricanes Laura & Delta on housing situation in Calcasieu



~50%

jobs at risk in 2020
due to COVID-19



1.5 - 2x

increase in
rent/mortgage
delinquency
observed in June
across the state



~3 yrs

estimated to return
to pre-crisis GDP
levels from COVID
impact alone



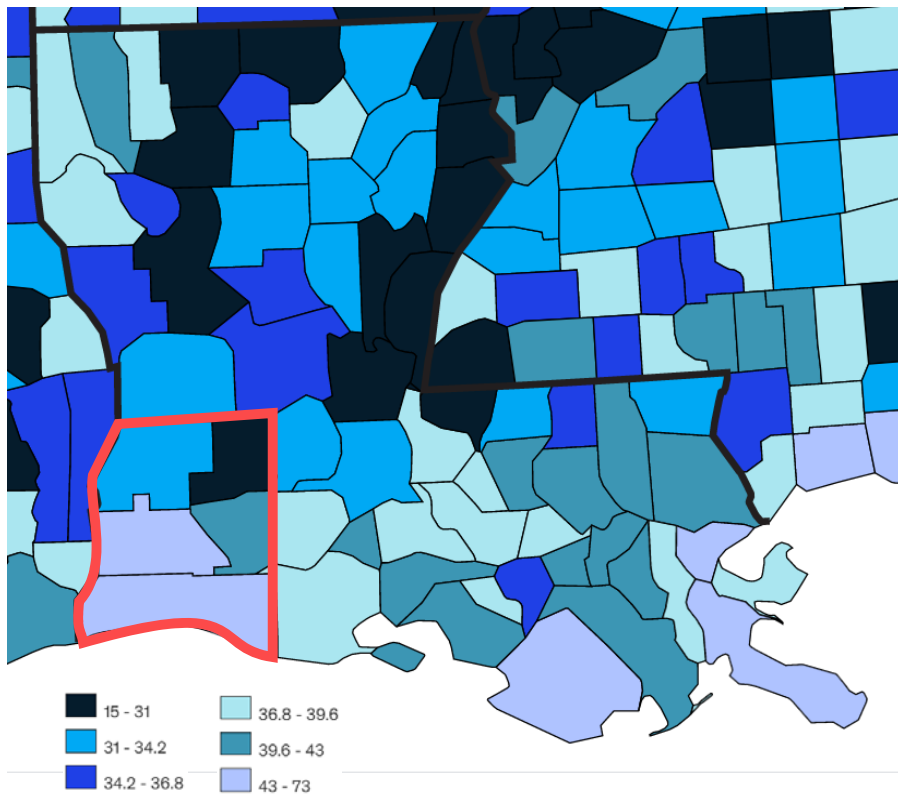
~50%

Calcasieu housing
stock damaged by
Hurricanes Laura
and Delta

Of all Louisiana parishes, Calcasieu & Cameron Parishes have the two highest shares of jobs at risk due to COVID-19

AS OF JUNE 2020

Share of jobs at risk, % all employees by parish



	Jobs at risk, K	Share of jobs at risk, % all employees
ALLEN PARISH	2.0	25%
BEAUREGARD PARISH	3.0	33%
CALCASIEU PARISH	54.8	47%
CAMERON PARISH	7.4	54%
JEFF DAVIS PARISH	3.2	37%

Source: MGI

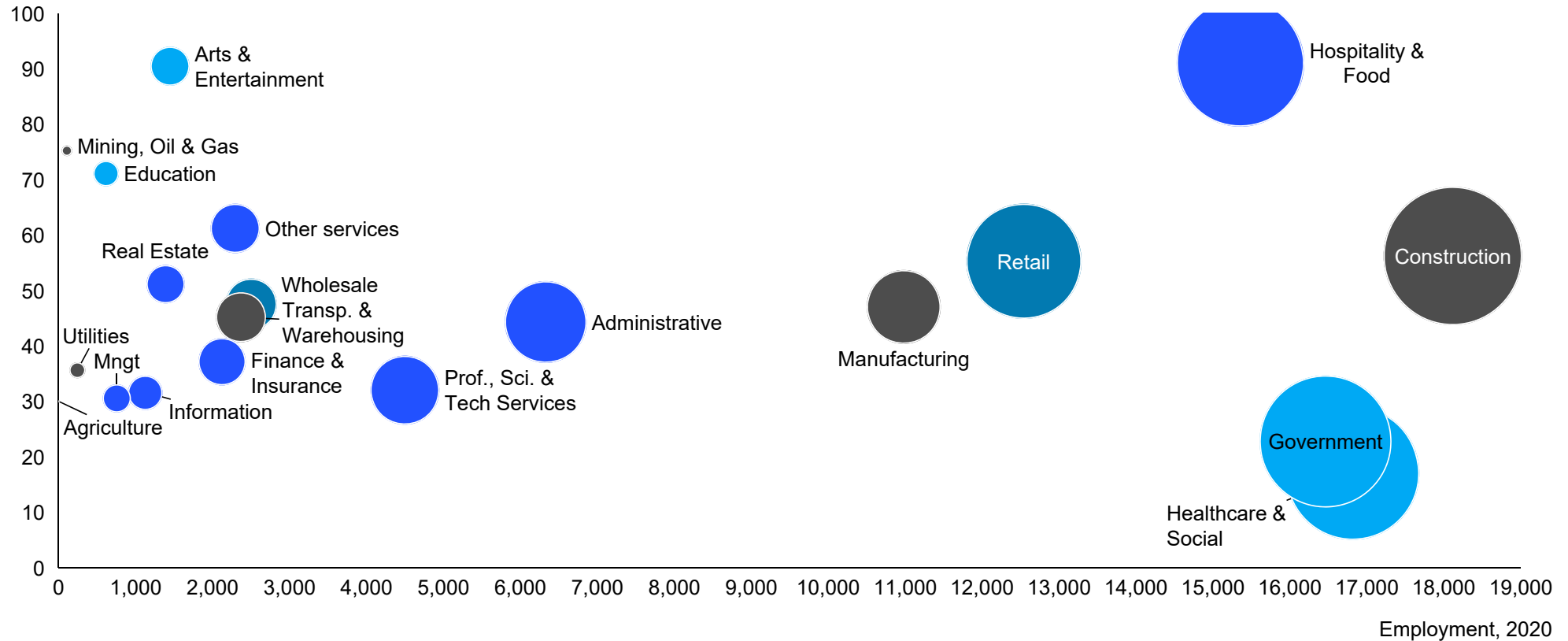
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Hospitality & Food, Construction and Retail industries are expected to account for more than 60% of total jobs at risk in Calcasieu

Calcasieu Parish

Share of jobs at risk, 2020



Source: MGI

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While extensive damage from Hurricanes Laura and Delta reduces overall “livable” supply and poses a temporary housing challenge

Calcasieu Parish

Highly preliminary estimates As of Nov 6th, 2020

(X%) Share of total damaged units

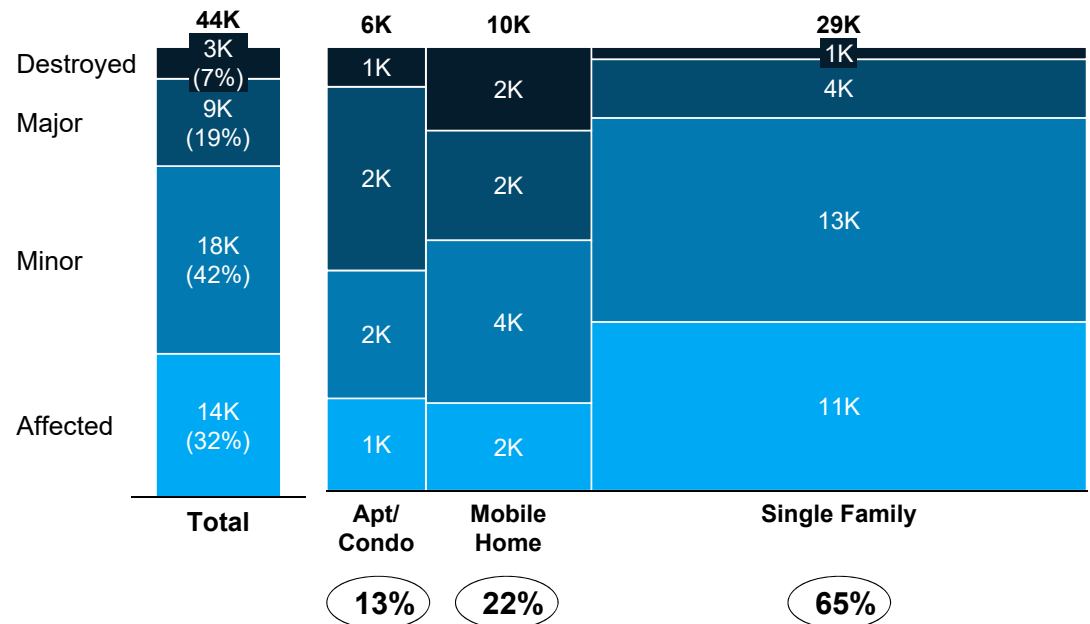
~**44K** housing units damaged in Calcasieu by Hurricane Laura and/or Delta¹

Corresponding to **nearly 50%** of total housing stock, with damage to :

~**55%** of mobile home stock

~**40%** of single family home stock and apartment/condo stock

Hurricane Laura & Delta damage by level of damage² and type of housing³

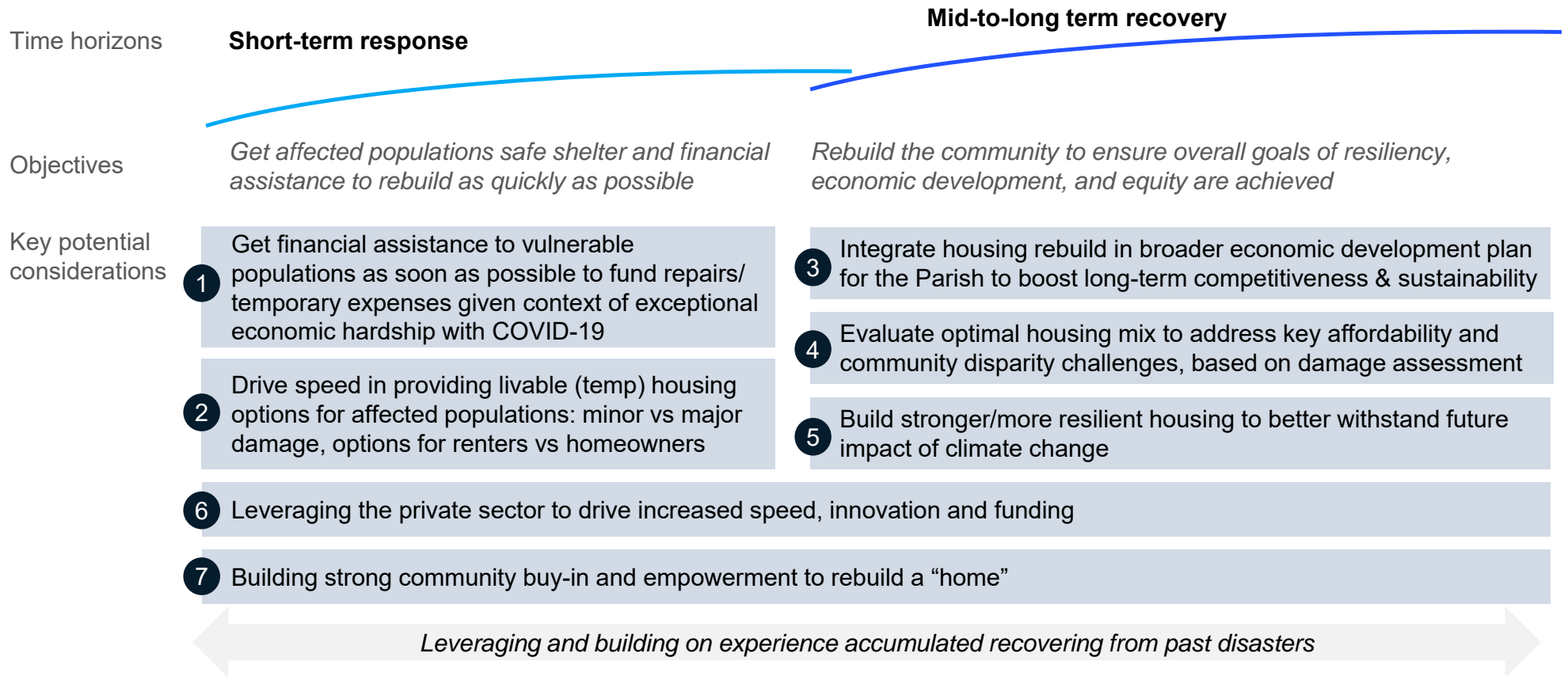


1. Estimates as 41K units damaged by Laura, and an extra 3K units damaged only by Delta. No visibility into # of units that were already damaged by Laura, and suffered additional damage from Delta

2. Destroyed – Non-Livable/total loss; Major - Non-Livable/Home with structural damage or other significant damage that requires extensive repairs; Minor – Livable/Home with repairable non-structural damage; Affected – Livable/Home considered affected if damage is mostly cosmetic

3. Assuming "single-family" correspond to "single-unit" in census data, and "apartment/condo" corresponds to "multi-family" in census data

Key resulting potential considerations for housing recovery in Calcasieu Parish following Hurricanes Laura & Delta



2 Case study: Partnering with home sharing services for emergency housing

Context

Hurricane Sandy- 2012

After the hurricane, NY Airbnb hosts offered their homes for free to help evacuees and displaced persons

Airbnb then incorporated this idea of **technological co-sharing** into its app **Open Homes**

Open Homes, an Airbnb branch, connects hosts with those in need, free of charge. These people include medical patients, relief workers, evacuees, and refugees

Initiatives

Matching services are offered to evacuees and relief workers.

- **To book**, individuals can arrange housing on Open Homes directly or through a non-profit
- **To host**, any individual meeting the hospitality standard can offer his or her home to those seeking temporary housing

Verification and Safety

- **Documentation** such as proof of employment or address needed to apply for Open Homes
- **Advanced screenings** are regularly run against those booking and hosting on Airbnb against terrorist, sanctions and other regulatory watch lists
- **Reimbursements for damage** are provided to hosts up to \$1 million for damage from guests

“A glaring need, that is, a way to connect those in need with those willing to help” ~ David Paul, Chief Meteorologist

Source: Airbnb

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Impact

50K

Temporary homes found on Open Homes

5K

Estimated cost of an evacuation



COVID-19 considerations:

Health risk likely limiting people's willingness to host individuals in their homes

2 Facilitate access to repair materials and “quality” contractors

Rationale

Sharp demand increase in construction materials, tools, and expertise due to extent of damage across the Parish

Compounded effects of Hurricanes Laura and Delta, with COVID-19 led to limited availability and rise in costs from distribution disruptions and limited supply of local contractors

Specific examples of actions

Contractors

- **Accelerate licensing process** for out of state contractors
- **Provide local housing** options for out of state construction workers
- **Waive fees** for applications and permits to rebuild damaged properties to attract contractors

Materials

- **Facilitate corporate partnerships** to:
 - Raise awareness on demand changes across volumes and items to drive more accurate local forecasting for supply
 - Set up potential CSR program or collaboration to support community recovery (e.g., merchandise donation/rebates, and financial support)

Source: NY resilience plan, press search, expert interviews, CNN

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Case studies Examples

During COVID-19, several states lifted licensing requirements for out-of-state healthcare professionals

~1,300 homes built for which permit application and permit fees could be waved through NY Build it Back program following Hurricane Sandy

Leverage example from Walmart using Katrina as an opportunity to help those in need while dramatically improving its own public image (incl. \$34M total donations to local NGOs and Walmart Associates Fund; 100+ truckloads of donated merchandise) ~ *See separate case study*

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2 Case study: Educating community members to perform some repairs

Context

India Earthquakes – 2001

Gujarat province commonly experiences cyclones, flash floods and droughts every three years and earthquakes every 30.

This earthquake was 6.9-7.9 and affected 21 of 25 state districts.

-\$3.5 B economic damage

-20,000+ deaths

- 300,000 injuries

-100,000 destroyed homes

-300,000 substantially damaged homes

Initiatives

Despite limited number of engineers and masons, **communities were empowered to rebuild their own homes** with local materials to stimulate the economy through coordination of a network of local NGOs

Demonstration houses

- Accessible, to each community to teach disaster resilience techniques for retrofit and rebuilding
- Provided to most vulnerable population once built

Expertise training network

- 5 individuals from each community trained in disaster resilient masonry by total of 25 engineers
- These five masons trained the next 5 masons, rapidly creating a network of qualified workers

Resilience awareness

Education provided on disaster resilience safety designs to meet gov. certifications & reimbursement requirements

Impact

1,270

Model houses in 90 villages

-25%

Cost savings compared to relocated homes

8,000

Trained Masons

50%

Happier than families that relocated

COVID-19 considerations:

Meetings / demonstrations would have to be mainly virtual to limit risk of outbreaks

3 Integrate housing rebuild in broader economic development plan for the Parish to boost long-term competitiveness & sustainability

Talent & Human capital

- **Demographics** – e.g., distribution across age, gender, race, socioeconomic profile
- **Education** – e.g., access and enrollment; retention and attainment; test performance
- **Workforce** – e.g., skill distribution and alignment / gaps with projected job demand; underemployment, and informal employment; wages



Firms

- **Economic cluster development** – e.g., cluster-level GDP, employment, and output contributions; location quotient; cluster level productivity; shift-share; wages
- **Firmographics** – e.g., distribution of firm age; new registrations and closures; distribution of firm size
- **Firm expansion** – e.g., distribution of firm growth rates; exports; FDI

Innovation

- **Innovation** – e.g., patents; scientific publications; R&D investment
- **Entrepreneurship** – e.g., entrepreneur density; startup density; survival rates; seed stage investment and venture capital investment

Business climate

- **Business climate** – e.g., corporate taxes; costs and time requirements for registrations and key approvals; investor incentives; regulations; governance
- **Institutional assets** – e.g., academic institutions; incubators/accelerators; research institutions; health institutions; etc.

Infrastructure

- **Physical infrastructure** – e.g., air, sea, and land transport and logistics; power; water
- **Virtual infrastructure** – e.g., broadband and mobile penetration; download speeds
- **Social infrastructure** – e.g., air quality; public transportation; traffic congestion; cost of living; green space; leisure and entertainment

3 Case study: Housing rebuild within broader economic plan

Context

Columbia Parc, LA –

St. Bernard housing complex 25% vacant and facing high poverty levels in 2005

Nearly all households evacuated following flooding from Katrina

Post disaster recovery based on holistic approach to build a vibrant neighborhood around affordable housing (1/3 subsidized low-income, 1/3 tax credit affordable, and 1/3 market rate units)

Initiatives

Infrastructure and amenities built around the units to deliver high quality of life for renters, including:

- **Health clinics** with a permanent onsite facility
- **Education pipelines** including a high quality early childhood care center and on-site charter schools
- **Recreational centers** including a playground, gym, pool, golf course and football field
- **Shopping** with on site grocery stores and other shops to provide centers for community investment
- **Public transit** and the ability to tie the neighborhoods streets into the city's transportation systems

Other key enablers

- **Job training** provided including tools for banking and homeownership
- **Crime reduction** from resident background checks, peepholes, gated parking, and reduced rent for first responders

Impact

30

Design awards including LEED certifications

685

Mixed-income units & 120 senior-housing units 100% leased

700

Temporary jobs created

100

Permanent jobs created

99%

Reduction in number of felonies over three years

0

Homicides in three years, down from 42 in five years

5 Case study: Resilience Planning to limit vulnerability – Home building techniques

Initiatives

“NY Build it Back” program created a Hurricane Strong Home test site featuring hurricane resilient features”

- **Concrete Roof Tiles** placed on a MAPEI poly-glass system with underlaid ZIP roof decking and ICP seaming and spray foam
- **Insulating concrete form** replaces wood frame for a stronger structure between stacked foam blocks
- **Reinforced concrete stairway** with TREX decking material (95% recycled wood and plastic film)
- **Helix steel formation** weaves steel within concrete outer form to reducing total reinforcing steel
- **Lightening protection** such as strike termination devices, and grounding electrode systems
- **Fiber cement siding** is resilient made from cement and wood pulp
- **Dual function flood vent**- ensures home’s air flow under house allowing flood water to pass as needed
- **Reinforced concrete closed foundation and supporting fins** elevating home 15 feet above sea level and 3 more above projected flooding

1. Estimated based on job creation and increased use of local construction materials usage (i.e., GDP generated by every \$ spent)

Source: Columbia University, Wired Magazine, NY Build it back report

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Impact

20 K

Households assisted in repairs, resiliency upgrades, rent pymt. and reimbursements

\$11

Made for every \$1 spent on resilience¹



Illustration resilient house NYC

Proposed path forward

- Kickoff 3 working groups to discuss and recommend set of prioritized initiatives, respectively along:
 - Temporary housing
 - Financial assistance
 - Community Engagement

- Leverage grant awarded to Community Foundation of SWLA to develop comprehensive Master Plan for Calcasieu Parish early 2021 – integrating goals of resiliency, economic development, and equity

- Explore leveraging FEMA ESF14 planning process

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- Housing recovery framework

Executive Summary

Observations on housing situation in Calcasieu Parish

Implications for recovery plan

Temporary housing crisis from

- i. **Extensive damage caused by back-to-back hurricanes** combining wind and flood damage (Nearly all households filed IA claims with FEMA; half of which were renters; nearly 50% of housing stock confirmed damaged incl >12% with major damage/destroyed)
- ii. **Limited congregate sheltering options** due to COVID-19 risk



~2,000 non-congregate temporary homes still needed 8 weeks after 1st disaster as estimated by local authorities – with additional challenge of finding land to put homes given number of renters affected

Level of financing, speed and innovation required to get affected populations safe shelter/rebuild and limit trauma likely to **require significant involvement from the private sector**

Pre-existing affordability challenges successively enhanced by COVID-19 and hurricanes – economic hardship increasing demand for affordable housing while hurricanes reduced livable supply – leading to increased rent burden, financial instability and homelessness (48% of households rent burdened pre-crisis; ~25% of LA adults reporting loss in income since COVID-19; 40% struggling to pay household expenses; ~50% fearing eviction/foreclosure)



Immediate priority to get financial assistance to most vulnerable groups who can't afford repairs/ relocation expenses (e.g., rent burdened, uninsured)

Mid-to-long term strategy needed for addressing affordability and equity in the housing plan to help mitigate challenges that existed before COVID-19 and Hurricanes Laura and Delta

Economic and housing vulnerability disproportionately impacting minorities – especially Black households, with residential racial segregation within the parish among the highest in the US pre-crisis

COVID-19 alone estimated to put **nearly 1 out of 2 jobs at risk** in 2020, and require **~3yrs to return to pre-crisis GDP levels**

Hurricanes could extend how long it takes GDP to recover, based on the impact of Hurricane Rita on GDP in the region



Opportunity to embed housing recovery within a **broader economic recovery plan** for the region to drive back jobs and investments to in the long run

Emotional fatigue and risk of outmigration for a community suffering from the economic impacts of COVID-19 and back-to-back hurricanes; in addition risk of constraints in contractors capable of rebuilding and needed materials potentially delaying the recovery timeline further



Critical to provide community hope to come back to a safe “home” in the long run – including by **rebuilding stronger and more resiliently** to avoid repeated damage with future disasters; and by **involving community in recovery efforts**

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+1 - 3%

Yearly increase in housing stock per since 2013



17%

Vacancy rate, on the rise since 2016 and 5p.p. above national average



+2%

Yearly increase in median rent since 2013



48%

Households in Calcasieu are rent burdened¹, incl. ALICE households

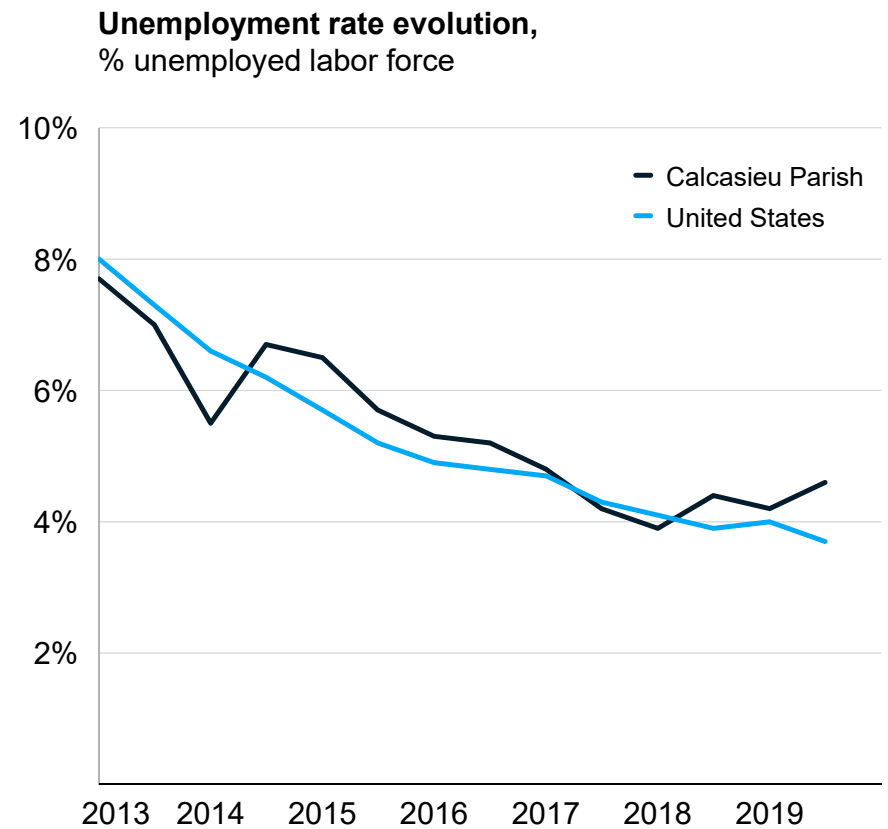
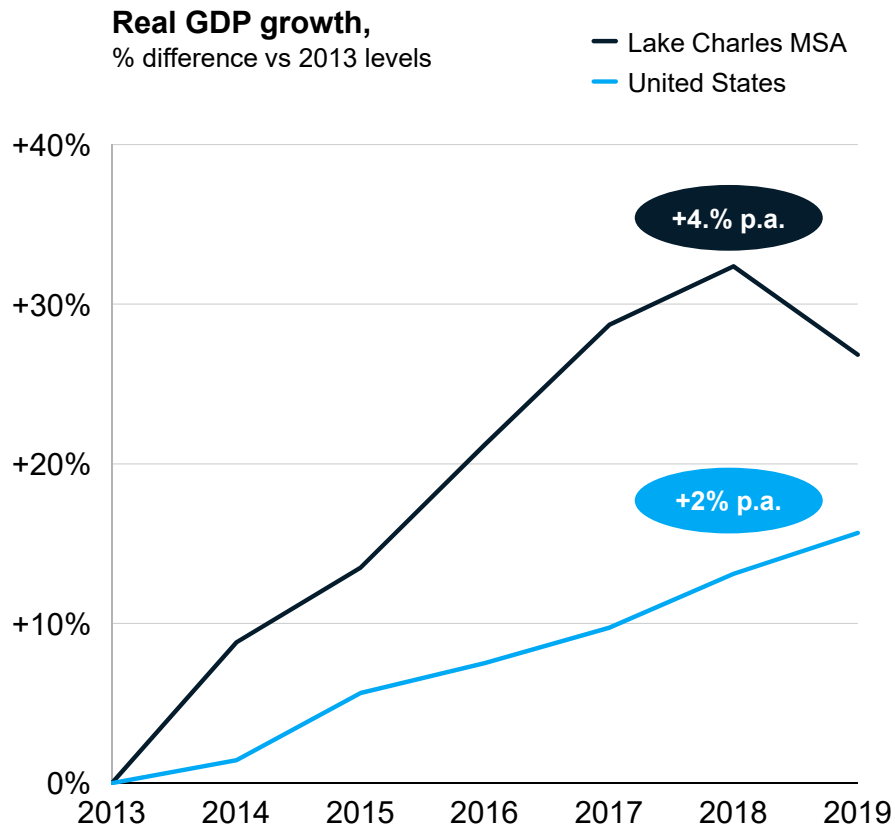


2x

Higher median affordable rent without burden for White households vs Black households

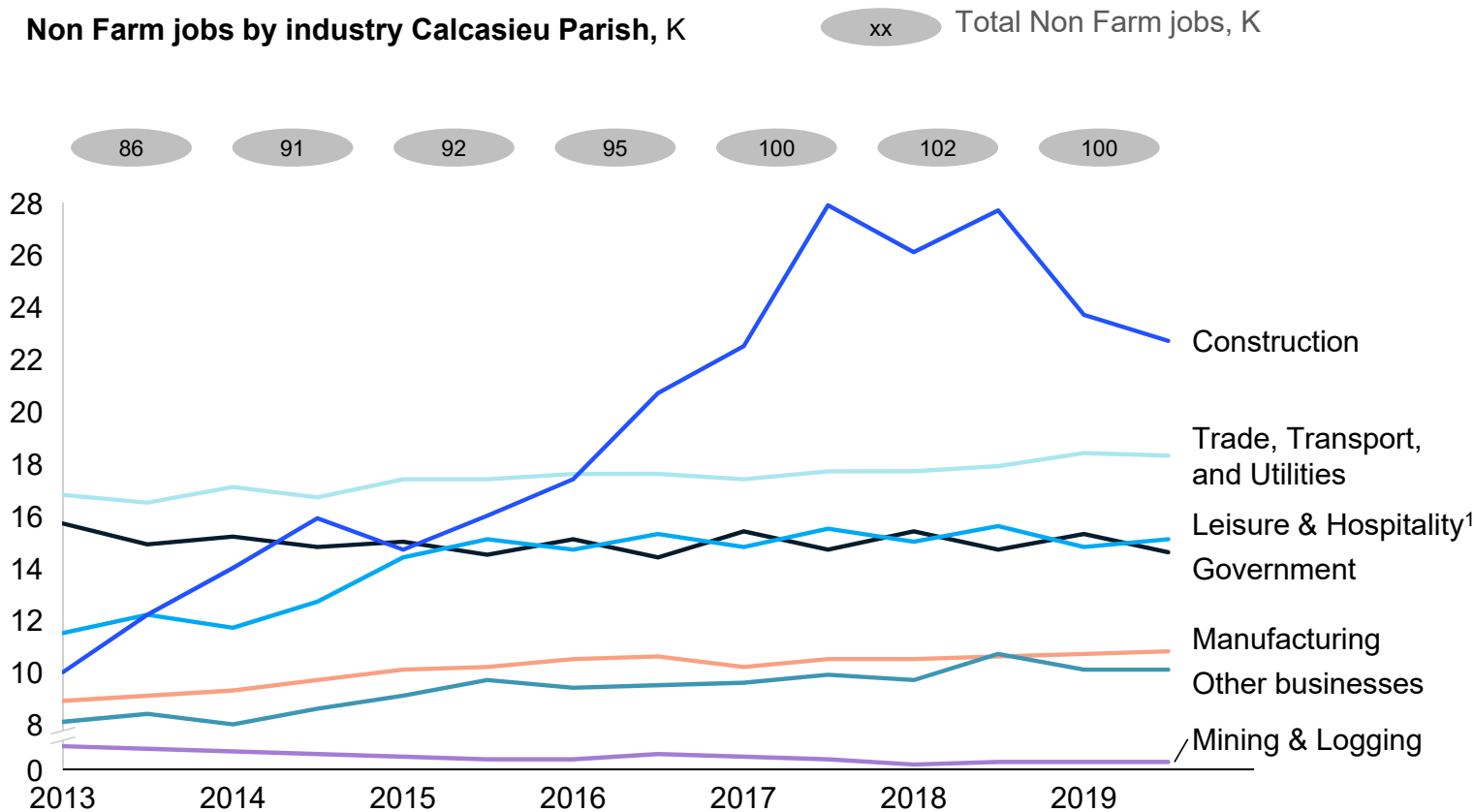
1. Spending 30% or more of income on rent

Starting in 2013 Calcasieu Parish and Lake Charles MSA experienced significant economic expansion, with signs of a slow down in 2019



Large petrochemical capital projects supporting industrial construction, and leisure & hospitality drove most of the job growth

Non Farm jobs by industry Calcasieu Parish, K



\$110B

In capital investment projects announced between 2012-2020² – mainly in the petrochemical industry and Liquefied Natural Gas (LNG) export, driving boom in construction

+25K

jobs at the peak of industrial expansion in 2018, a ~17% increase in total jobs compared to 2013

1. Arts, Entertainment, and Recreation; Accommodation and Food Services.; 2. Half completed or under way; others pending or paused

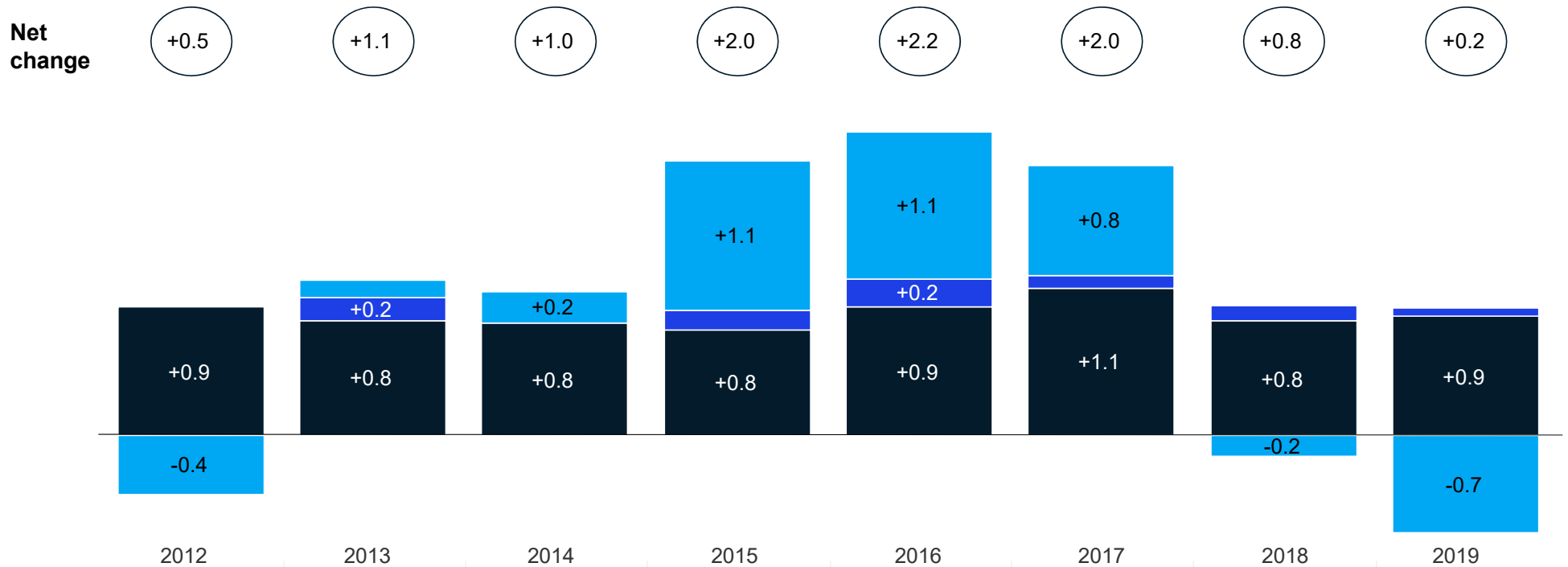
Source: US Bureau of Labor Statistics, FRED, SWLA Projects Report, Greater Baton Rouge Industrial Alliance, LC Scott

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The influx of industrial workers moving to the Lake Charles MSA doubled historical population net growth levels – most Construction jobs being temporary in nature

YoY population change in Lake Charles MSA, Thousands

- Domestic Net Migration
- International Net Migration
- Net Births



Source: Moody's Analytics, Greater Baton Rouge Industrial Alliance, JC Scott, Stakeholder interviews

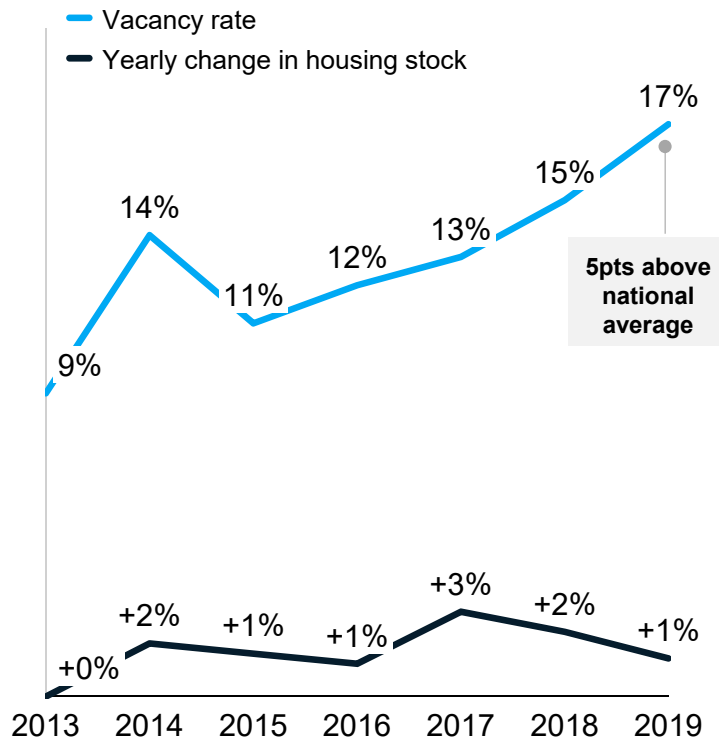
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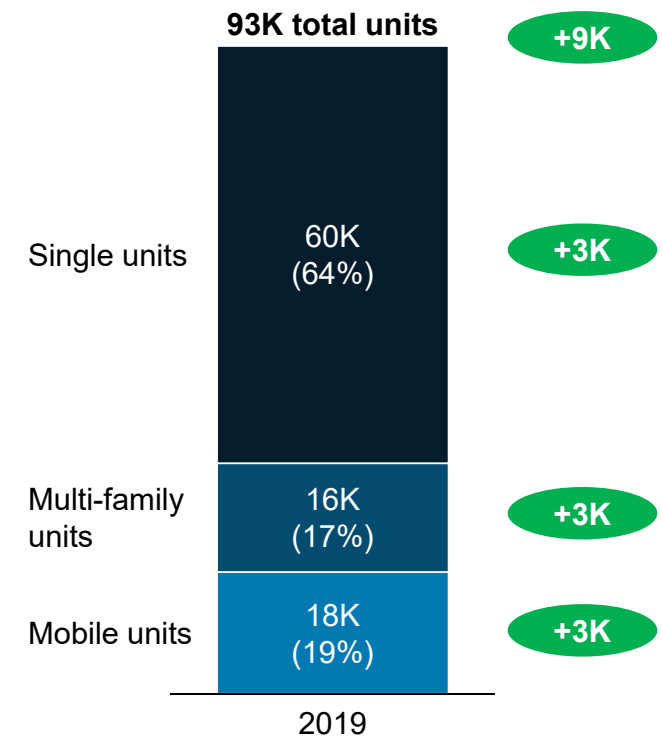
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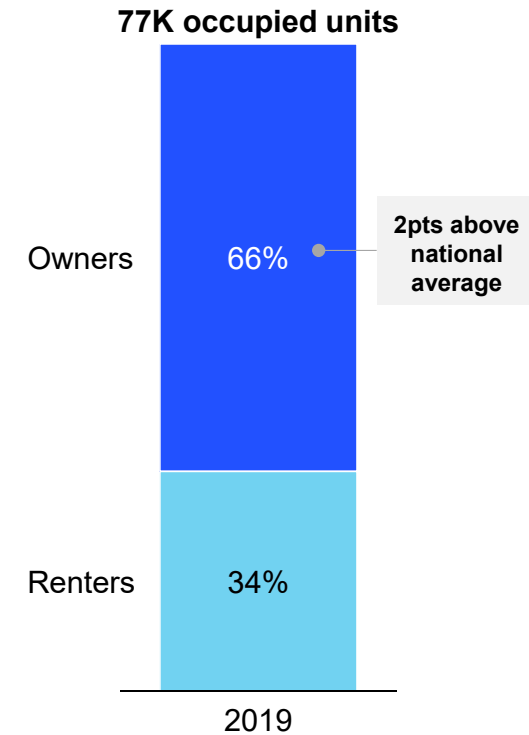
Housing stock and vacancy rate evolution



Housing stock composition



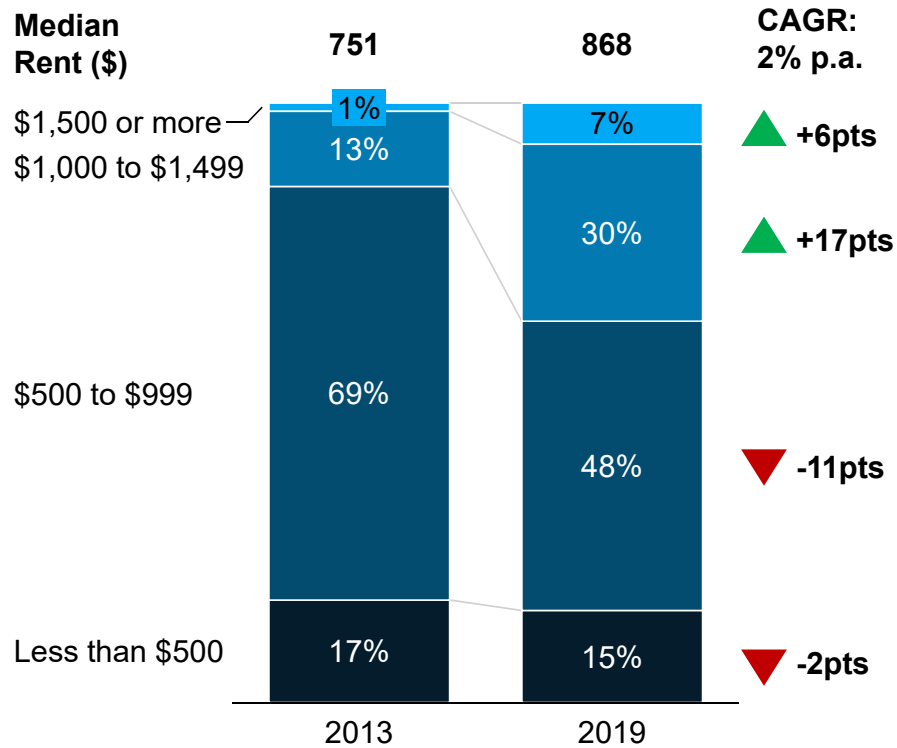
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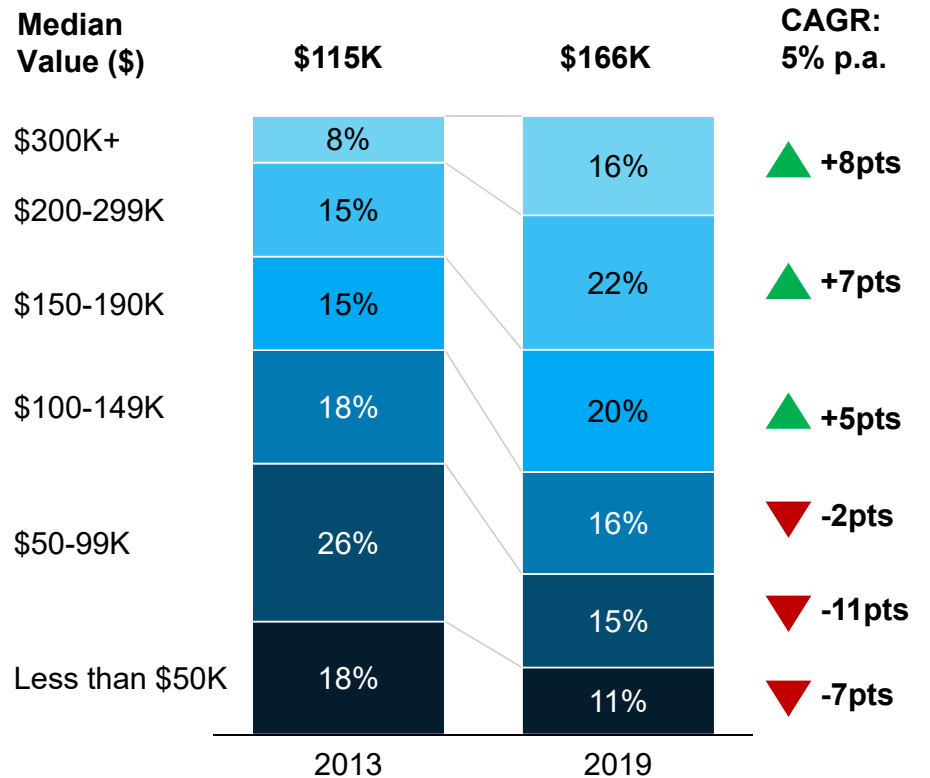
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Calcasieu Parish

Evolution of rent levels



Evolution of home value

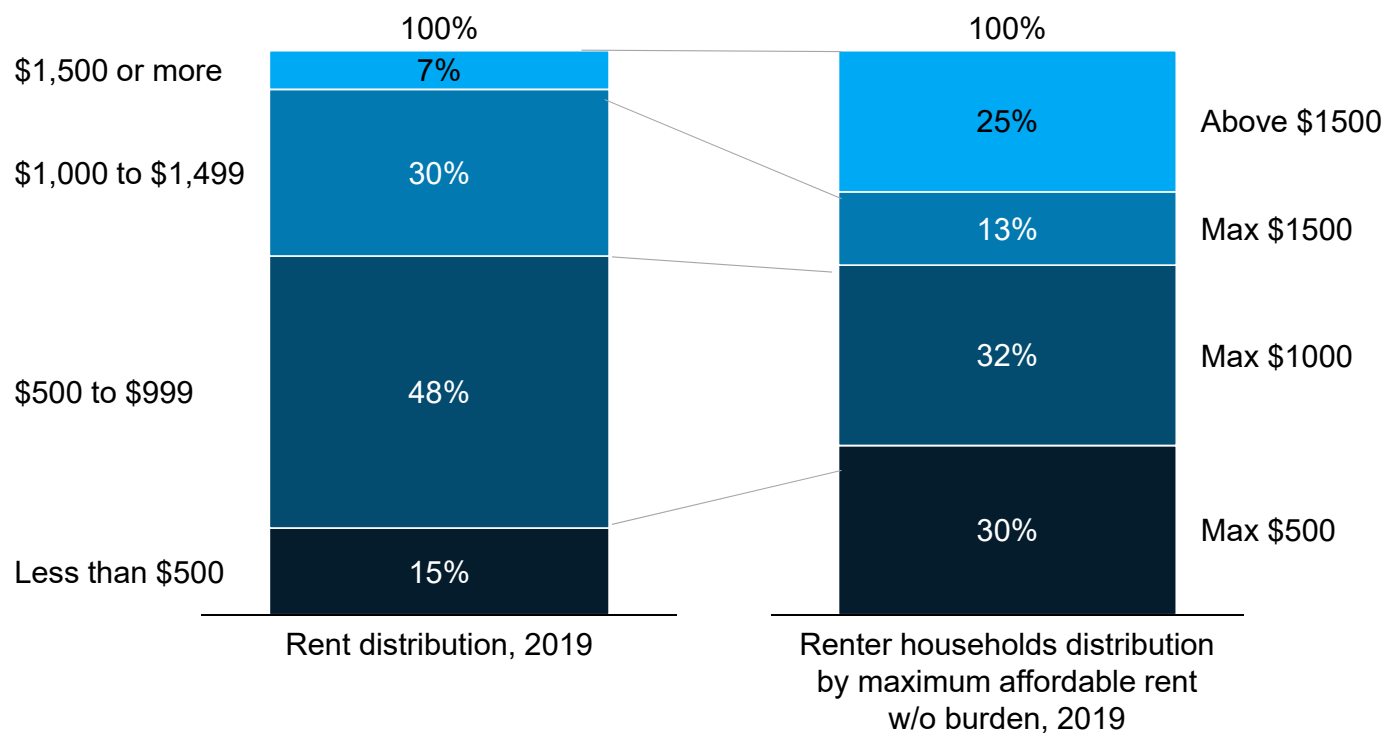


With rents increasing over the same period, ~48% of households faced rent burden¹ in 2019

Calcasieu Parish

Comparison of monthly rents and maximum affordable monthly rents w/o burden (i.e., less than 30% of income)

Preliminary estimates based on available income brackets



~11K households in Calcasieu are considered rent burdened¹ Corresponding to **~48%** of ~23K households that rent²; separately ~33% of households considered ALICE³

1. Spending more than 30% of their income on rent; 2 ~93K housing units of which ~16K vacant and ~77K occupied; of the occupied ~51K owned and ~26K rented; of the rented data on rent as share of income for ~23K households
 3. Asset Limited, Income Constrained, Employed – households that earn more than the Federal Poverty Level, but less than the basic cost of living for the parish (the ALICE Threshold, or AT as defined by LA United Way)

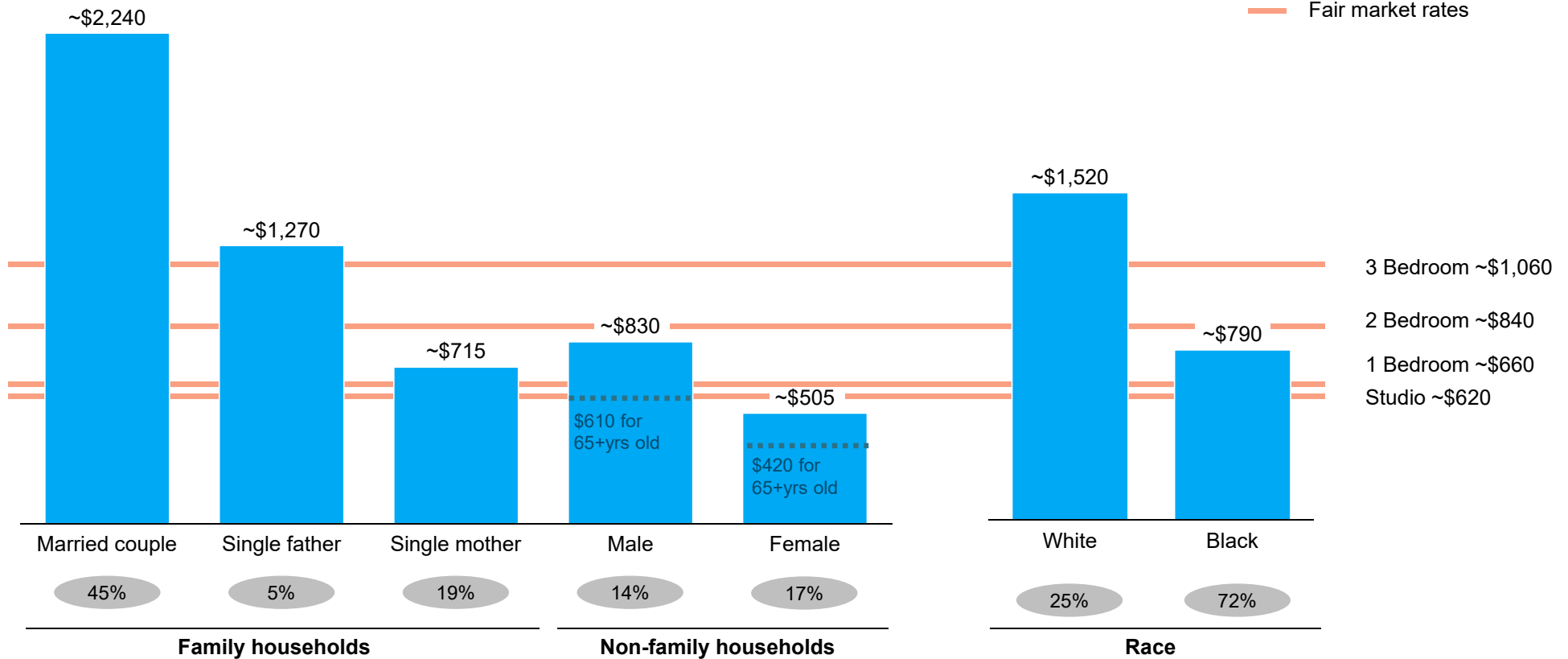
There are clear disparities between communities – women, the elderly and Black community are most likely to face rent burden

Calcasieu Parish

Estimated median monthly affordable rent without burden by profile, 2019

PRELIMINARY ESTIMATES

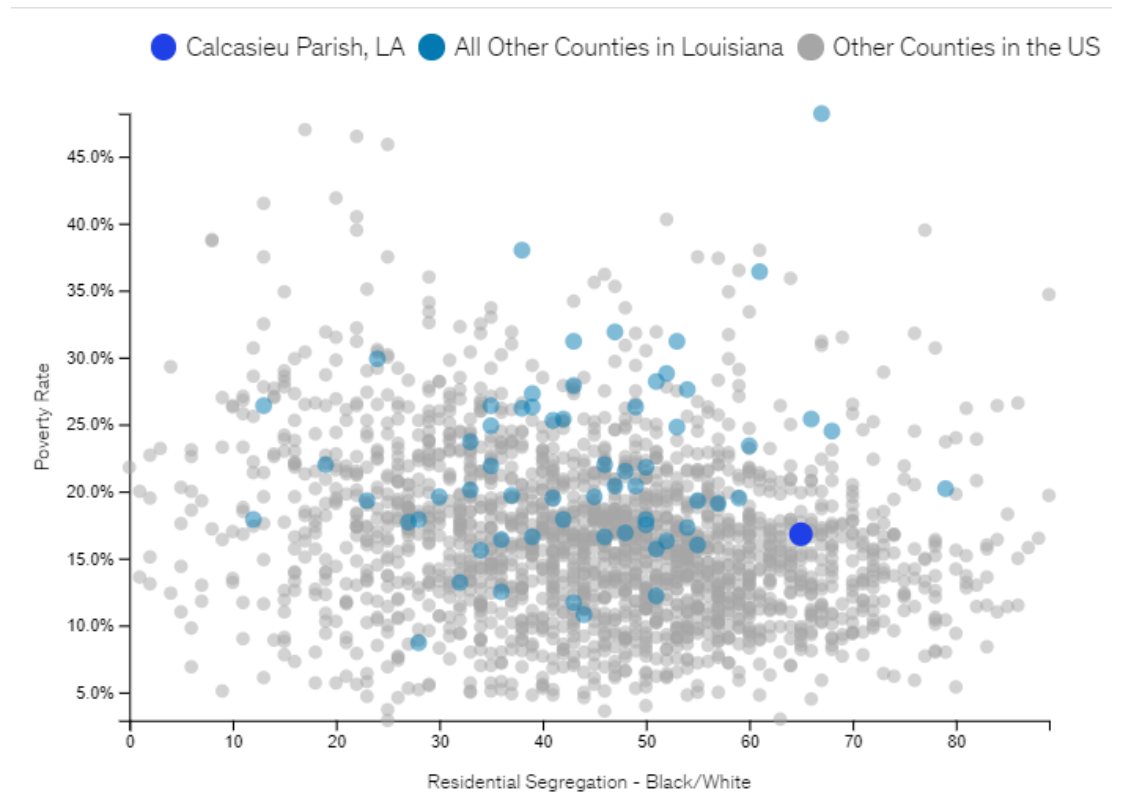
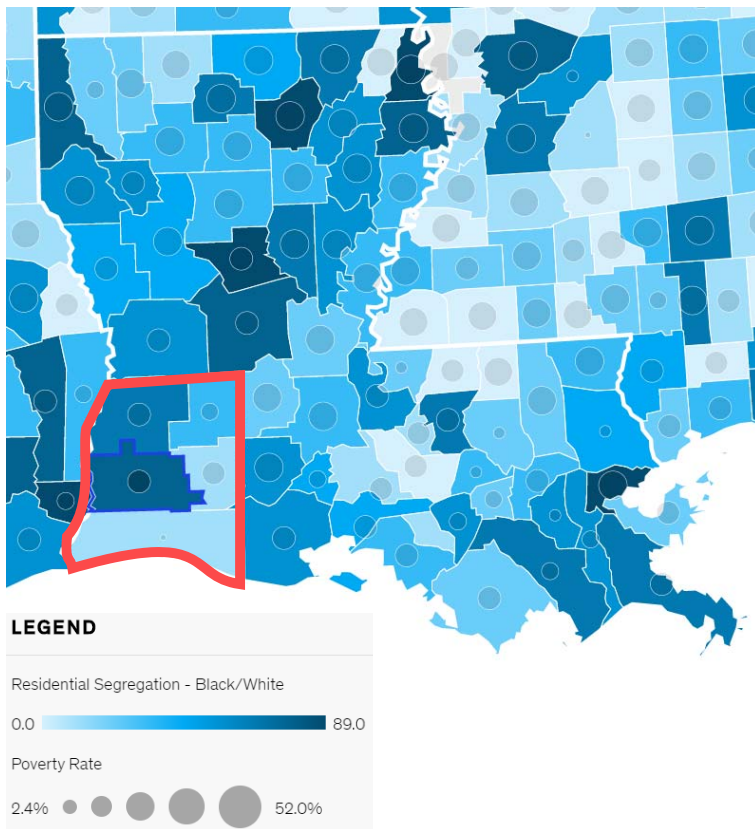
X% Share of total households
 — Fair market rates



Source: US Census Bureau Note: Householder with Section 8 Voucher pays 30% of their income on rent
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Calcasieu also displays one of the highest levels of residential segregation between Black and White communities in the US

AS OF OCT 12TH, 2020



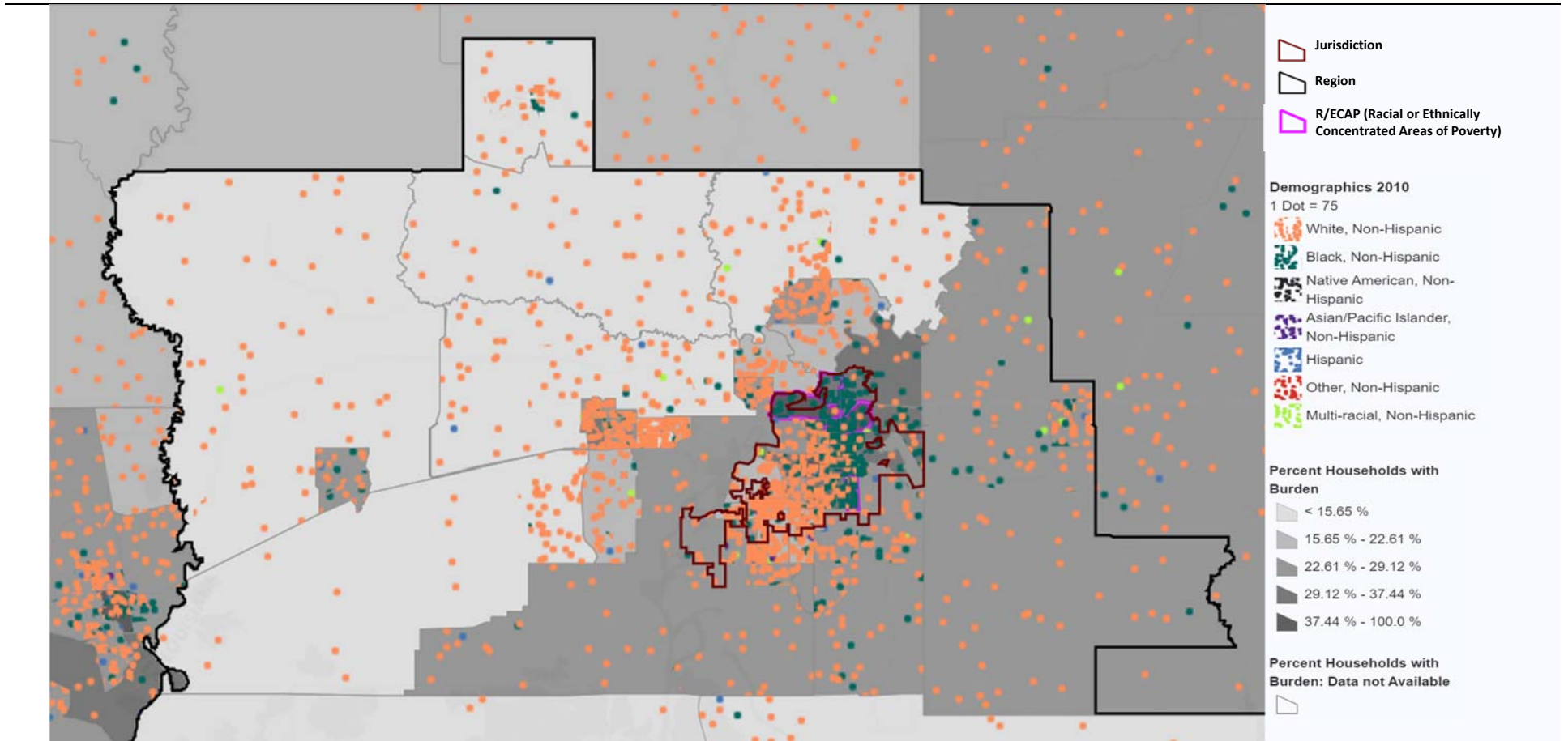
Source: US Census Bureau, MGI

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Black communities are largely concentrated around Lake Charles, in areas experiencing some of the highest shares of rent burden in the Parish



Source: HUD eGIS

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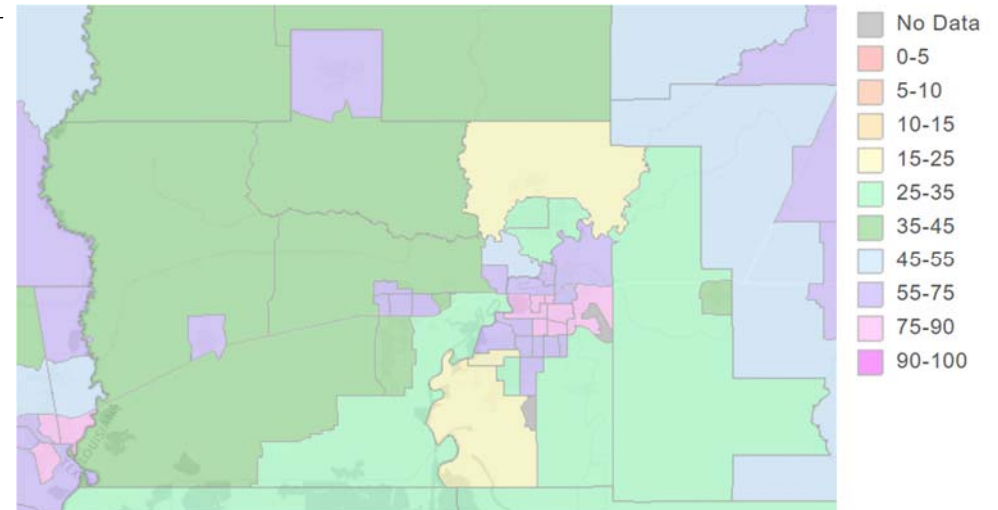
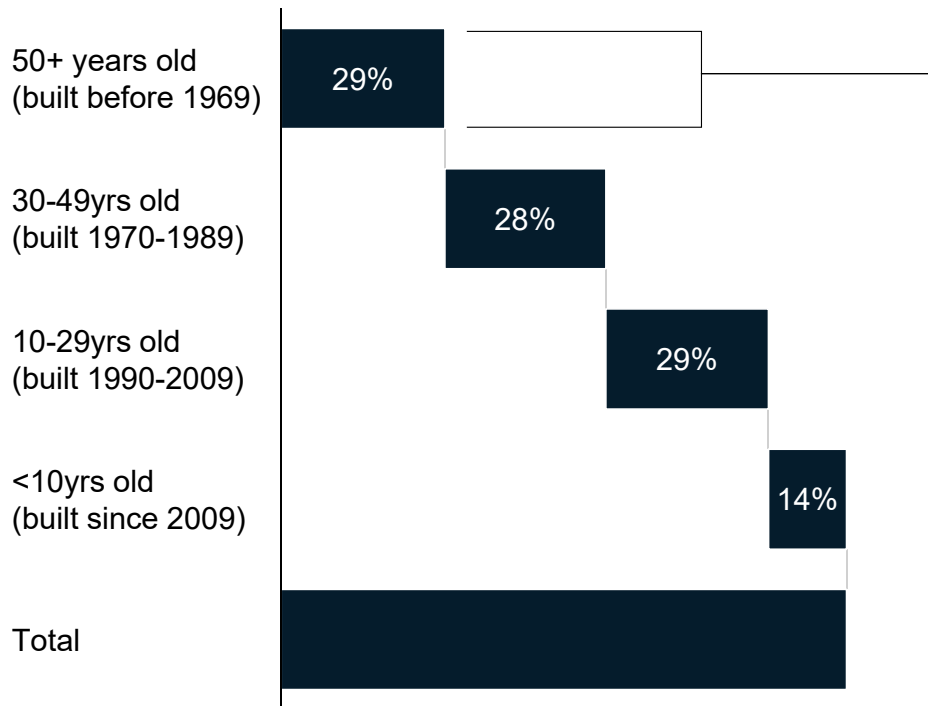
36

Within Calcasieu, the Lake Charles area holds the highest concentration of aging housing stock...

Calcasieu Parish

Cumulated share of housing stock by tenure, 2019

Share of structures built before 1970, ACS 5-year estimates, 2008-2012



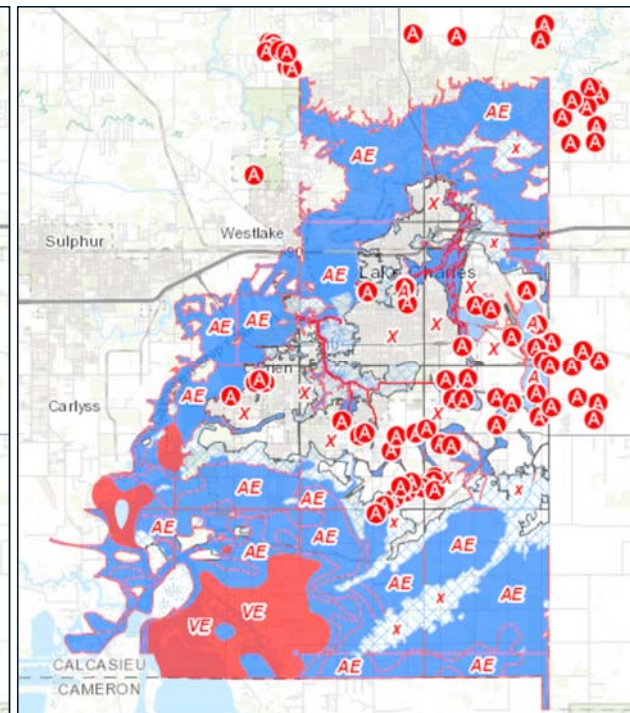
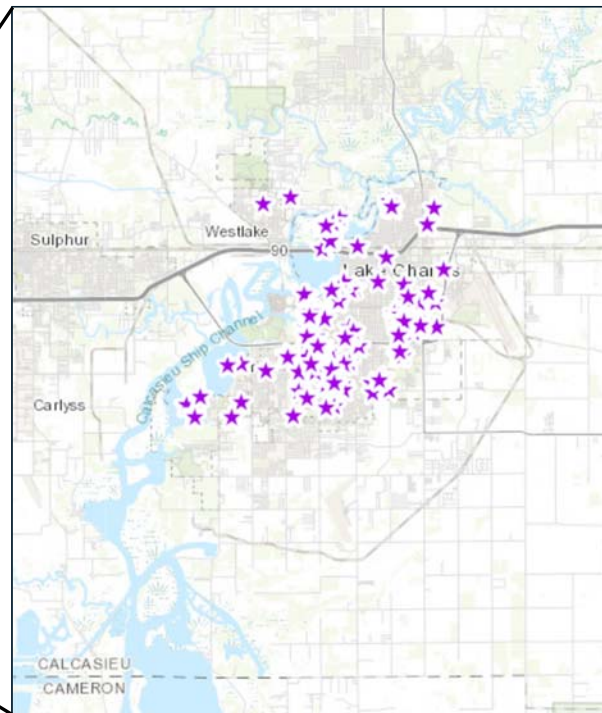
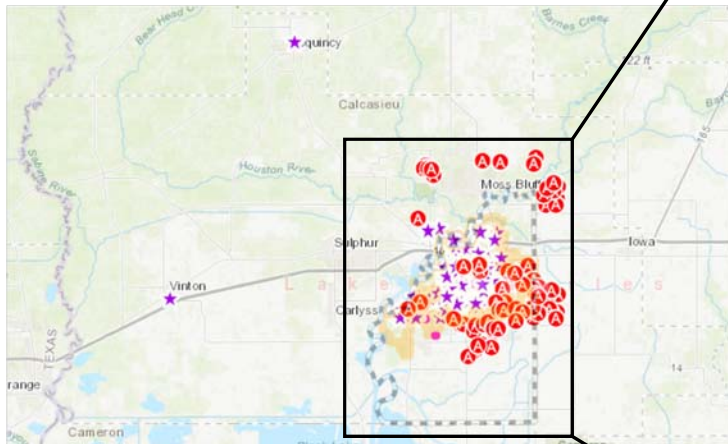
... And low income communities and Black communities tend to be disproportionately vulnerable to property damage given concentration in Lake Charles area

Calcasieu Parish

Repetitive Loss Property  Zone A B.F.E.  Flood zones 

Repetitive Loss Property

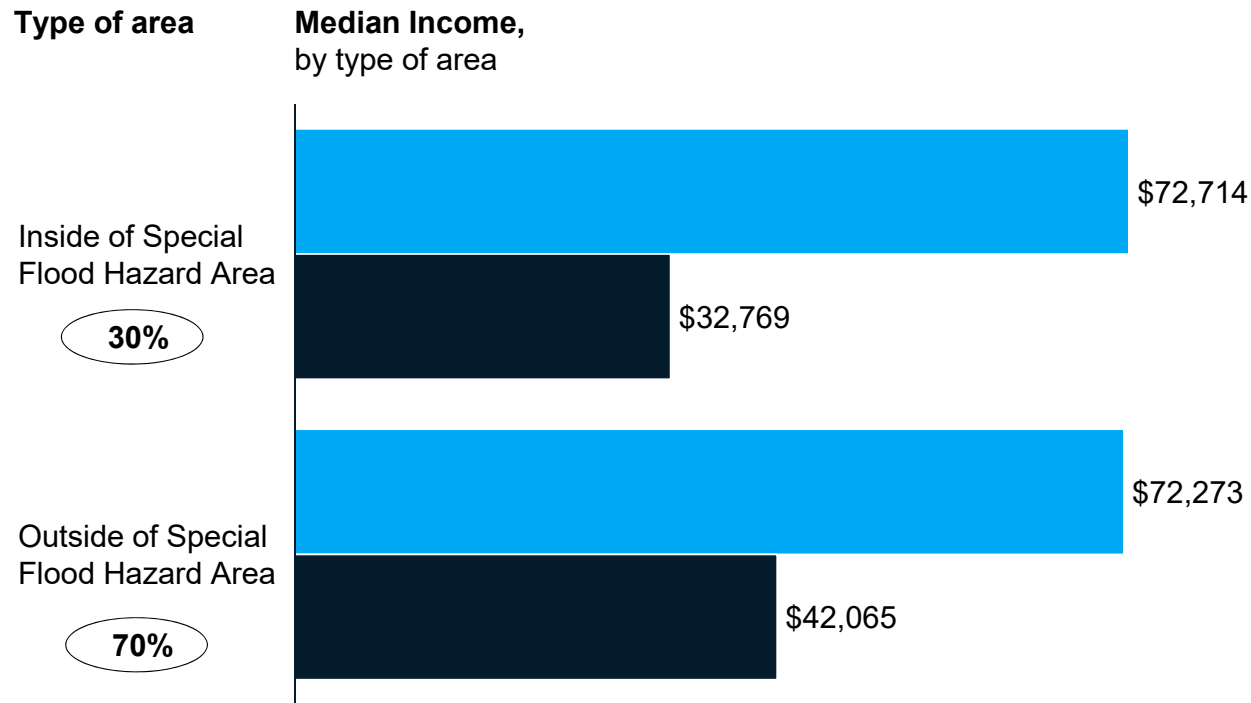
Flood Zones



Median income for Louisiana households without NFIP flood insurance is half that of households with flood insurance

Louisiana, 2018

X% Share of households ■ NFIP Policyholder ■ NFIP Non-policyholder



Source: An Affordability Framework for the National Flood Insurance Program, Department of Homeland Security, April 2018

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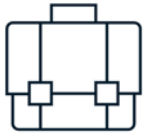
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Selected statistics on impact from COVID-19 and Hurricanes Laura & Delta on housing situation in Calcasieu



~50%

jobs at risk in 2020
due to COVID-19



1.5 - 2x

increase in
rent/mortgage
delinquency
observed in June
across the state



~3yrs

estimated to return
to pre-crisis GDP
levels from COVID
impact alone

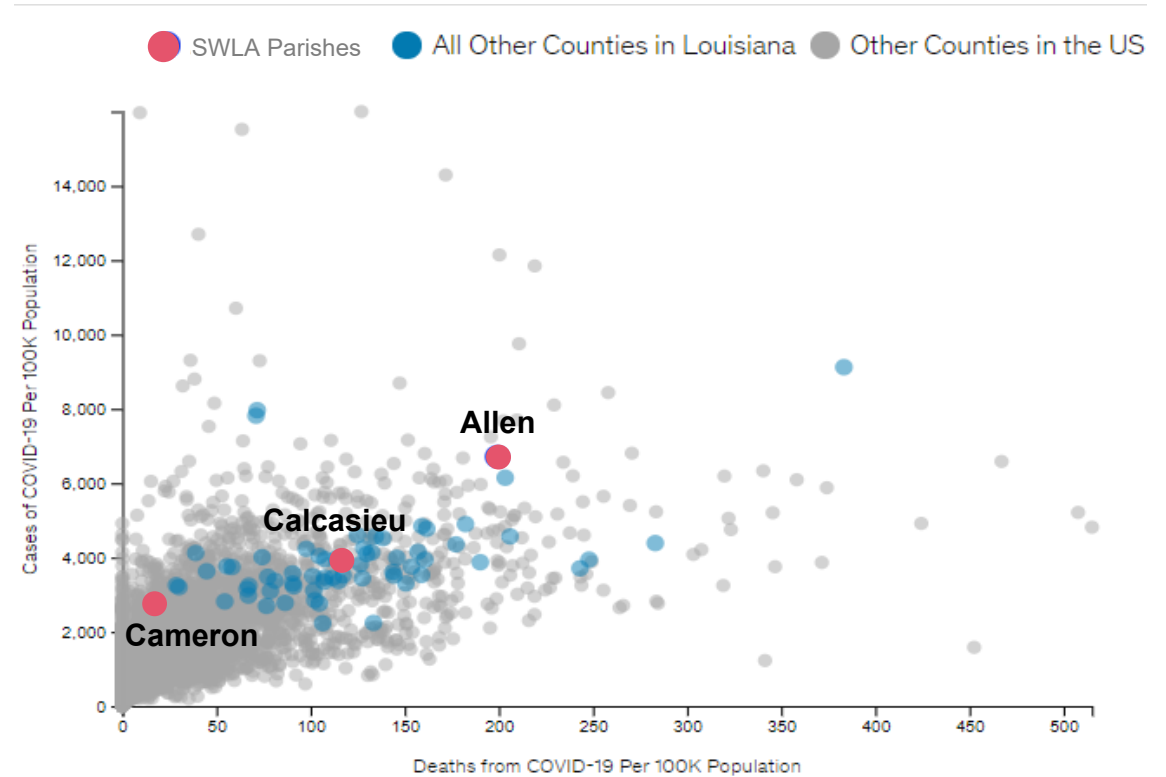
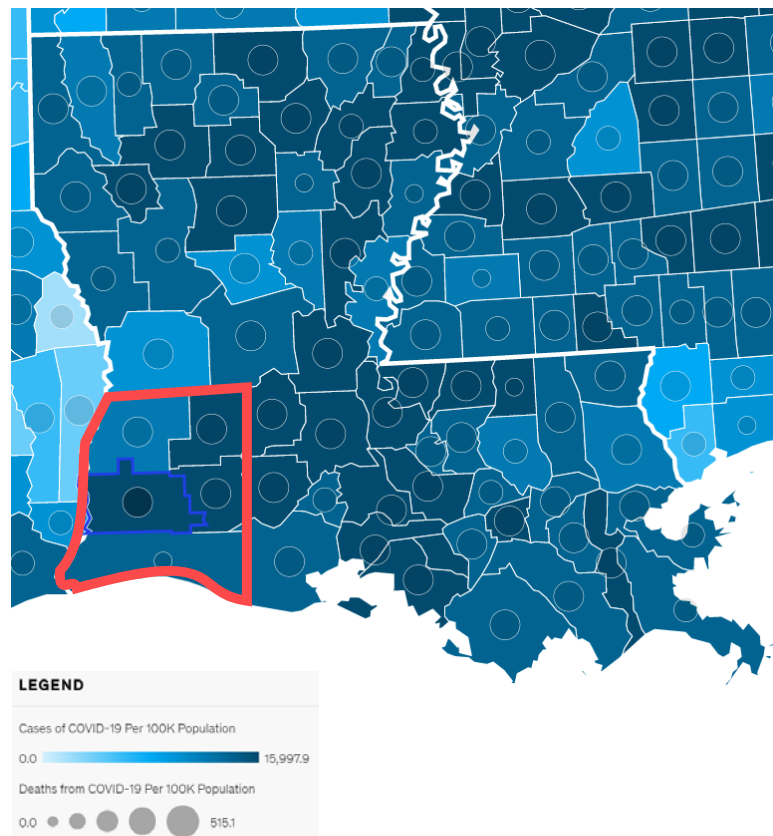


>50%

Calcasieu housing
stock damaged by
Hurricanes Laura
and Delta

Southwest Louisiana is relatively highly exposed to COVID-19 on a per capita basis, with Allen Parish most affected

AS OF OCT 12TH, 2020

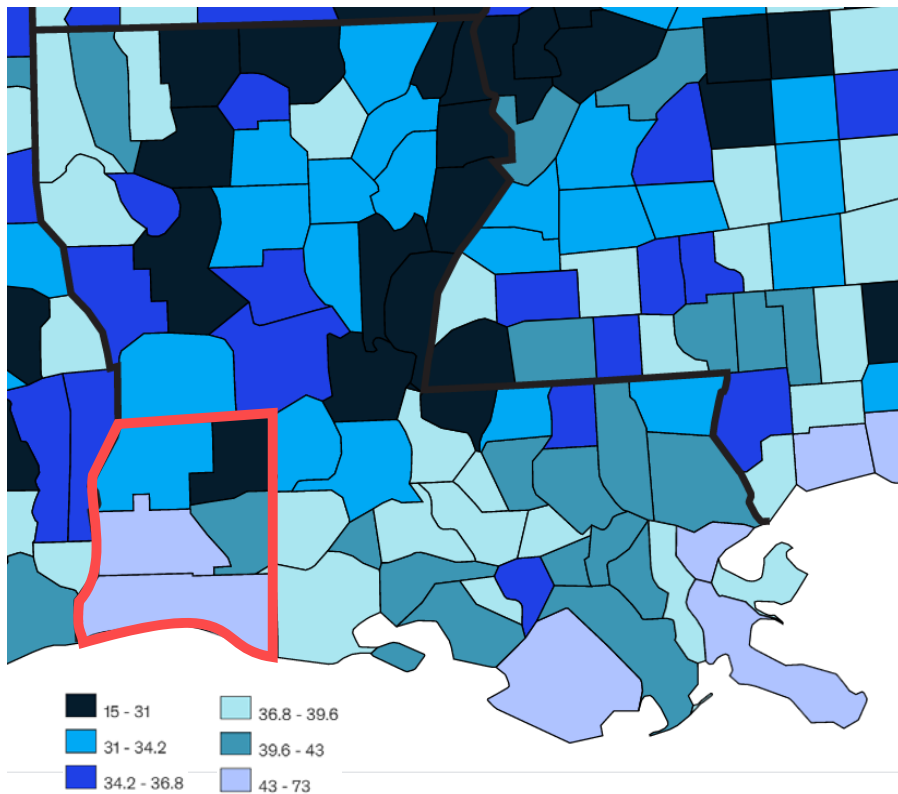


Source: Sample of de-identified submitted claims data from 5 large provider clearinghouses with claims from Commercial, Medicare Advantage and Medicaid; CMS Medicare FFS data 5% sample and Confidential and Proprietary Medicare Nursing Home Coverage; Medicare Cost Report Medicare Hospital Comparison; PFS NPI Registry; Census Data; American Community Survey; County Health Ranking; USAFacts

Of all Louisiana parishes, Calcasieu & Cameron Parishes have the two highest share of jobs at risk due to COVID-19

AS OF JUNE 2020

Share of jobs at risk, % all employees by parish



	Jobs at risk, K	Share of jobs at risk, % all employees
ALLEN PARISH	2.0	25%
BEAUREGARD PARISH	3.0	33%
CALCASIEU PARISH	54.8	47%
CAMERON PARISH	7.4	54%
JEFF DAVIS PARISH	3.2	37%

Source: MGI

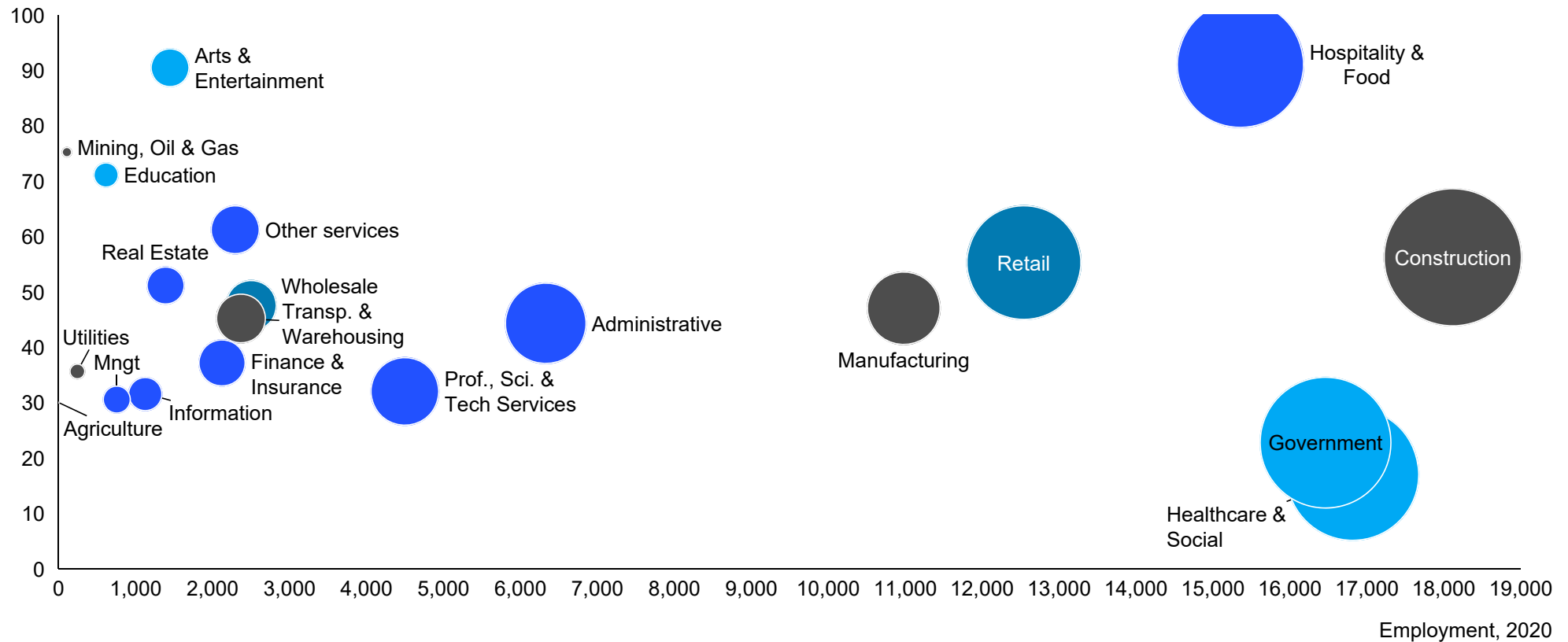
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Hospitality & Food, Construction and Retail industries are expected to account for more than 60% of total jobs at risk in Calcasieu

Calcasieu Parish

Share of jobs at risk, 2020



Source: MGI

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Households report having more limited savings to pay rent, mortgage and bills, due to employment income loss linked to COVID

COVID Pulse survey, % adults in Louisiana

25%

(10th highest in the US)

Expected loss of employment income in the next 4 weeks

12%

(1st highest in the US)

Are not current on rent/mortgage payments, or have low confidence on on-time payment for next month

40%

(3rd highest in the US)

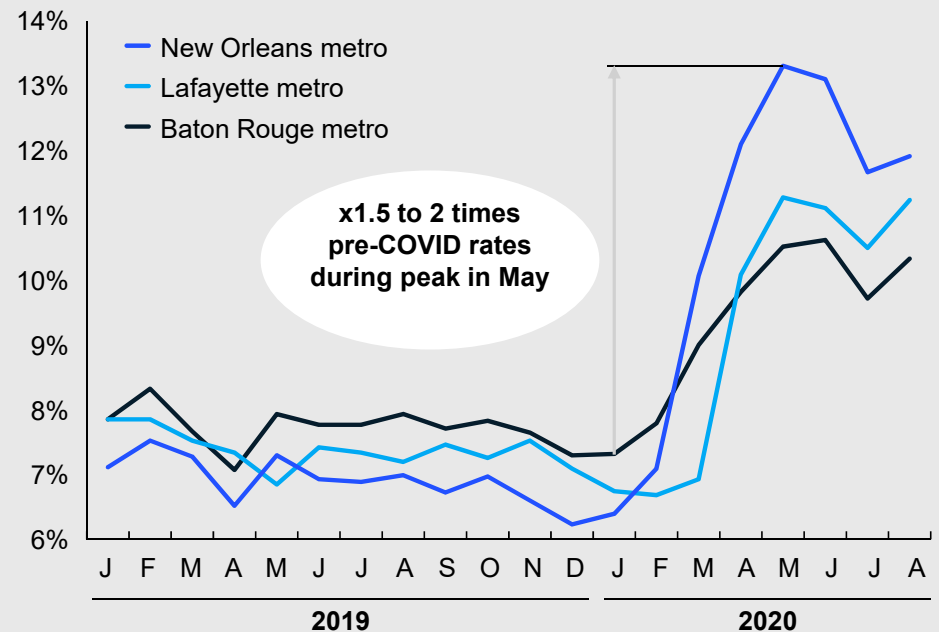
Found somewhat or very difficult to pay for usual household expenses during COVID

48%

(5th highest in the US)

Feel very or somewhat likely to face eviction or foreclosure in next 2 months

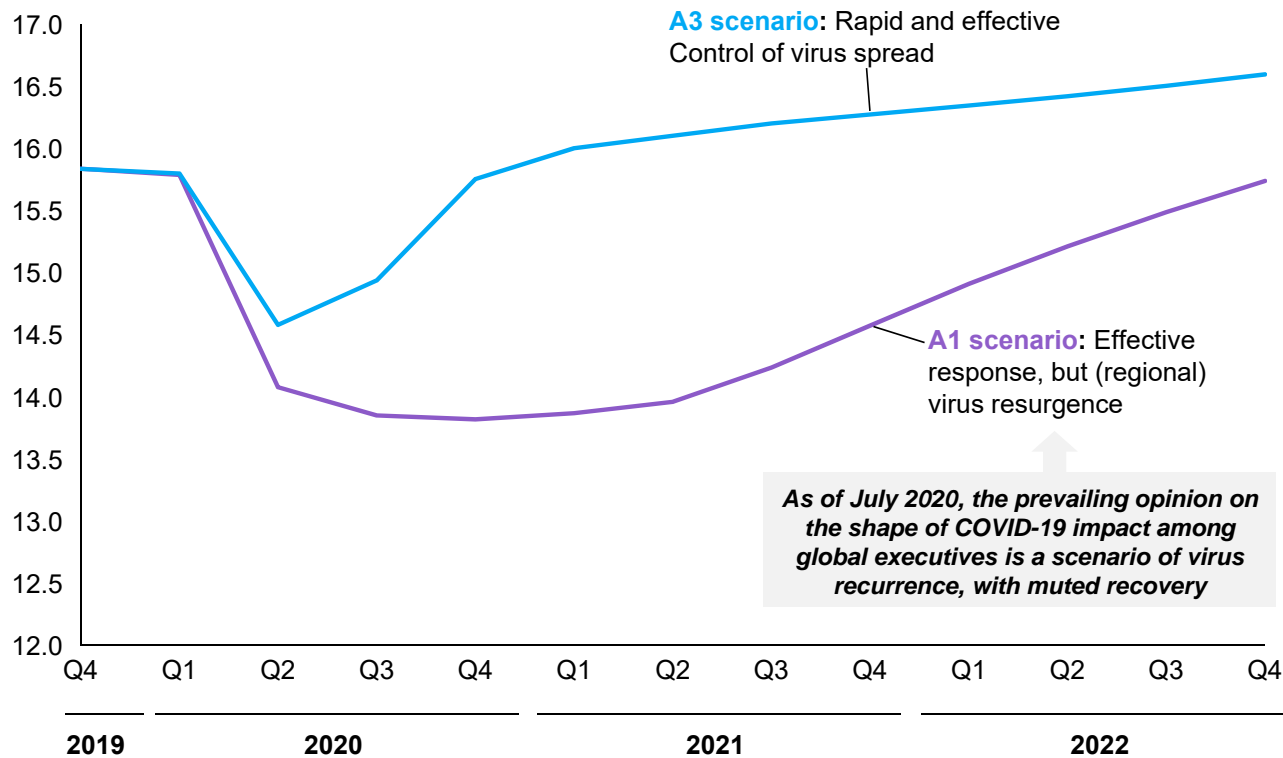
Share of home mortgage 'not current' on payments



Latest economic scenarios suggest it may take more than 3 years for Calcasieu GDP to return to pre-crisis levels

AS OF JUNE 2020

Total projected GDP for Calcasieu Parish, \$B 2012 USD equivalent



As of July 2020, the prevailing opinion on the shape of COVID-19 impact among global executives is a scenario of virus recurrence, with muted recovery

	Peak GDP decrease % change vs Q4 19	Estimated return to pre-crisis levels
A3	-8%	2021 Q1
A1	-13%	2023 Q1

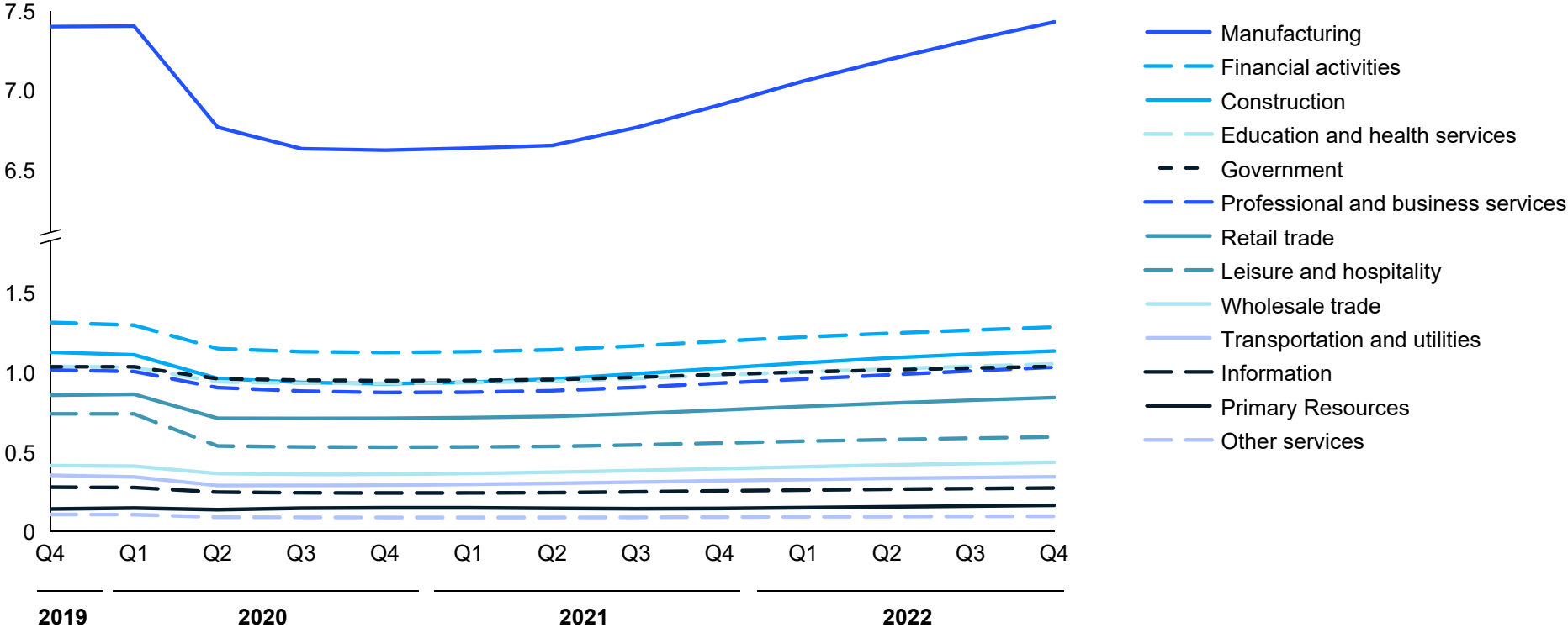
Source: MGI; McKinsey surveys of global executives

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The projected shape of recovery is primarily driven by Manufacturing, which accounted for nearly half of GDP pre-crisis

A1 SCENARIO AS OF JUNE 2020

Total projected GDP for Calcasieu Parish by industry, \$B 2012 USD equivalent



Source: MGI

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Almost all households in Calcasieu filed IA claims with FEMA for Hurricanes Laura & Delta, nearly half of which have been approved

Calcasieu Parish

Data Accessed Oct 26th, 2020

		Laura			Delta
		Total	Owners	Renters	Owners
 Individual Assistance (IA)	Total IA claims	94,020	48,788	45,232	6,318
	# IA claims approved (Approval rate)	45,325 (48%)	23,669 (49%)	21,656 (48%)	292 (5%)
	Total \$ IHP approved²	\$ 118M	\$ 63M	\$ 54M	\$ 1.4M
	Repair/Replace \$	\$ 37M	\$ 37M	\$ -	\$ 1.0M
	Rental \$	\$ 38M	\$ 10M	\$ 28M	\$ 0.3M
	ONA \$	\$ 41M	\$ 16M	\$ 25M	\$ 0.1M
	Average \$ per claim	\$2,594	\$2,681	\$2,500	\$ 4,734
 Public Assistance (PA)	Total PA grant obligated³	N/A	N/A	N/A	N/A

1. Count data from 2019 census; 2. Rounded to the closest million; 3. To date, there has been one PA grant to Louisiana with a value of \$1.9M, which was applied state-wide and not for a particular parish.

Source: FEMA, US Census Bureau

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While extensive damage from Hurricanes Laura and Delta reduces overall “livable” supply and poses a temporary housing challenge

Calcasieu Parish

Highly preliminary estimates As of Nov 6th, 2020

(X%) Share of total damaged units

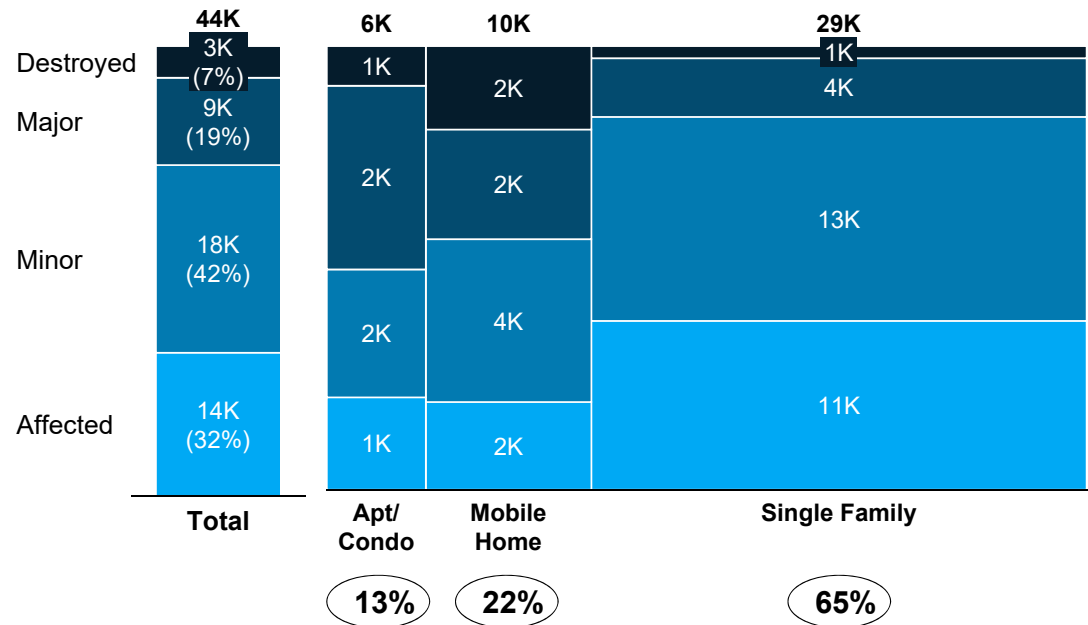
~**44K** housing units damaged in Calcasieu by Hurricane Laura and/or Delta¹

Corresponding to **nearly 50%** of total housing stock, with damage to :

~**55%** of mobile home stock

~**40%** of single family home stock and apartment/condo stock

Hurricane Laura & Delta damage by level of damage² and type of housing³



1. Estimates as 41K units damaged by Laura, and an extra 3K units damaged only by Delta. No visibility into # of units that were already damaged by Laura, and suffered additional damage from Delta

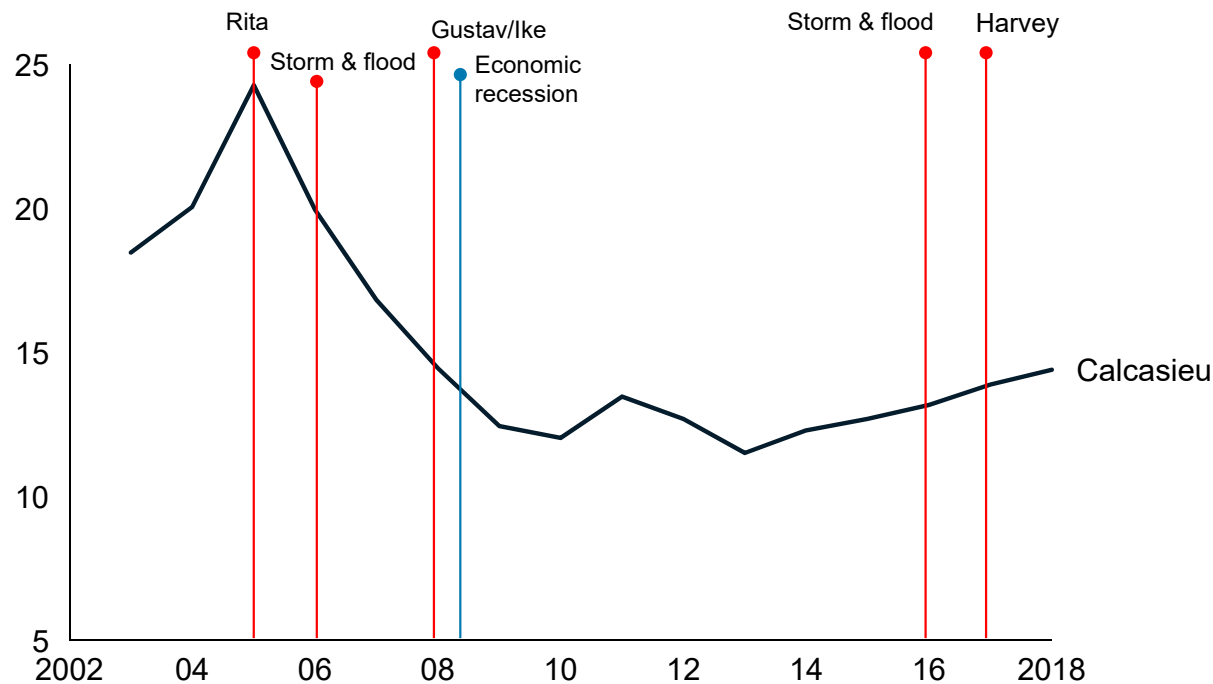
2. Destroyed – Non-Livable/total loss; Major - Non-Livable/Home with structural damage or other significant damage that requires extensive repairs; Minor – Livable/Home with repairable non-structural damage; Affected – Livable/Home considered affected if damage is mostly cosmetic

3. Assuming "single-family" correspond to "single-unit" in census data, and "apartment/condo" corresponds to "multi-family" in census data

GDP impact from Hurricane Rita in 2005 provides a reference point for potential impact from Laura & Delta

Real GDP¹, Calcasieu Parish, \$B 2012-chained US dollars

—● FEMA declared disasters for which Calcasieu was a designated county for Individual and/or Public Assistance



-18% drop in GDP
between 2005-2006 following
Hurricane Rita

**2018 GDP still only
~60% of pre-Rita
level**²— although other natural disasters and
economic crises have hit the region in the following
years

1. Definition of GDP by the IMF: "the monetary value of final goods and services . . . produced in a [region] in a given period of time," including both market (i.e. on sale) and nonmarket production (i.e. government services). Real GDP is GDP adjusted to take inflation into account.
2. Does not control for subsequent crises, i.e. 2008 economic recession.

Summary of implications of COVID-19 and Hurricanes Laura & Delta on housing

Key implications in Calcasieu Parish	Preliminary estimates COVID/Laura/Delta	Reference Katrina impact New Orleans
<p>Temporary housing crisis</p> <ul style="list-style-type: none"> Large displaced populations and limited congregate sheltering options due to COVID risk (e.g., <150 people in Alexandria mega shelter, 5K+ LC residents still in hotels across LA and TX late Oct.) Inspection and sourcing efforts slowed down (e.g., inspections following Laura interrupted by Delta, congregate options presenting higher health risks) 	<p>>50% Calcasieu housing stock damaged – incl. >12+% major/destroyed 7200+ families displaced</p>	<p>~70% New Orleans occupied housing stock damaged</p>
<p>Increase in rent burden, instability, homelessness and sanitary concerns</p> <ul style="list-style-type: none"> Housing affordability challenge expected to be magnified as job loss mounts, incomes tighten and available supply is limited due to hurricane damage – with minorities disproportionately impacted Inability to meet monthly rent or mortgage payment may lead to eventual eviction, foreclosure and homelessness Spike of “new homeless” already observed (i.e., people moving in with family members, couch-surfing or living in their car) Increase in share of population living in subpar sanitary and safety conditions (e.g., minor damage incl. water intrusion, mold) 	<p>~50% jobs at risk in 2020 ~25% LA adults reporting income drop since COVID 1.5-2x increase in rent/mortgage delinquency from COVID alone in the region +2 homeless shelters under construction since COVID</p>	<p>+78% in low-income rent burdened population 3X increase in single-family home loan delinquency 4X increase in New Orleans point-in-time homeless count</p>
<p>Risk of long term outmigration</p> <ul style="list-style-type: none"> Possible due to economic slowdown, delayed construction projects, reduction in local job prospects and emotional fatigue from back-to-back disasters In addition risk of constraints in contractors capable of rebuilding and needed materials potentially delaying the recovery timeline further 	<p><i>“Once people lay roots somewhere else, the chances of them coming back are little or nothing”¹</i></p>	<p>-25% net change in adult pop. ; -43% net change in children pop. from 2000-2010</p>
<p>Likely reduction in housing construction & home sales</p> <ul style="list-style-type: none"> Housing starts may slow, including LITHC projects, as economy falls into recession, public health crisis continues and developers may focus on more attractive high end housing projects following hurricanes Facing liquidity pressure, more owners may look to sell homes, although fewer homes likely to be sold 	<p>NA</p>	<p>-25% housing starts within 3 months -58% in single family home sales</p>
<p>Lengthy recovery</p> <ul style="list-style-type: none"> Risk of further COVID outbreaks as people focus on rebuilding vs COVID mitigation, coinciding with the start of flu season 	<p>~3yrs estimated to return to pre-crisis GDP levels – from COVID impact alone</p>	<p>~2yrs to get back to GDP levels pre-Hurricane</p>

1. Lake Charles resident

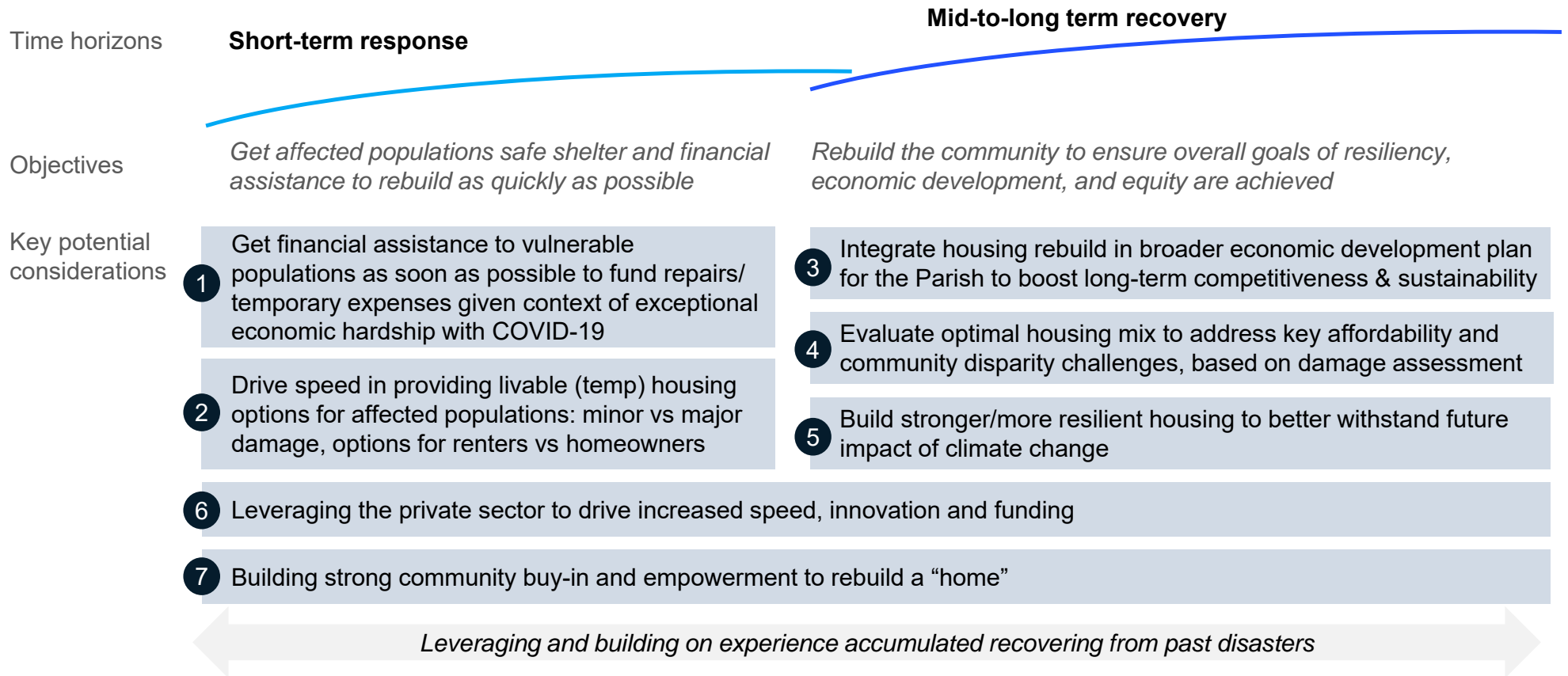
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Key potential considerations for housing recovery in Calcasieu Parish following Hurricanes Laura & Delta



Overview of resources available for each key consideration

Specific examples of actions for consideration based on Calcasieu situation assessment (not exhaustive)

Accompanying case studies giving visibility into how other communities have implemented selected actions (for inspiration)

2 Drive speed in providing livable (temp) housing options for affected populations

Rationale Temporary housing crisis from extensive back-to-back damage and limited congregate sheltering options due to COVID-19 risk: ~2K non-congregate temp homes still needed 8w post Laura; speed to find housing and/or conduct repairs critical to limit trauma; "new" homeless population also to be considered as part of temporary housing priorities (i.e., moving in with relatives/living with relatives after losing job/income due to COVID-19)

Specific examples of actions

- Major damage (>50% value)**
 - Look to extend portfolio of options available beyond traditional government-assisted housing to improve/ shorten emergency sheltering for displaced populations (e.g., 8000+ LC residents in hotels)
 - Coordinated sharing program – e.g., Citizen volunteer housing (leveraging existing home sharing services), Safe vacant apartment sharing
 - Private sector assisted housing – e.g., Vacant office space/ apartments, w. possible tax incentives, workers housing
 - Other temp options on the market sourced by local organizations/individuals – e.g., modular units, prefab, micro-units, trailers
 - Consider prioritization approach among affected population – e.g., based on vulnerability (e.g., low income, renters), based on occupation (e.g., healthcare workers and teachers), based on family type (e.g., with children), based on racial equity
- Minor damage (<50% value)**
 - Facilitate access to repair materials and/or "quality" contractors given limited availability driven by COVID and Hurricanes (incl. supply chain/distribution disruptions, limited supply of local contractors)
 - Materials - e.g., corporate partnerships to help raise awareness for level and type of demand to drive additional supply/forecasting accuracy, and/or discuss potential CSR program to support community
 - Contractors – create conditions to get more contractor capacity into local market (e.g., accelerating licensing for out of state contractors, supporting with housing of construction workers)
 - Educate community members to perform some repairs to alleviate pressure on contractors, drive quality and possibly give sense of purpose/contribution to community recovery – e.g., online resources, training ambassadors
 - Partner with VOADs – e.g., helping with repairs, involving those being housed in the construction (e.g., Habit for Humanity)
- Solutions for "economic homeless"**
 - Prioritize rebuilding 5 emergency shelters damaged by hurricanes to host growing homeless population
 - Consider approach to bring back "new homeless" to community to avoid long term outmigration – incl. swift count and destigmatization campaign, specific programs (e.g., training program to provide construction jobs during recovery)

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2 Facilitate access to repair materials and/or "quality" contractors

Rationale Sharp demand increase in construction materials, tools, and expertise due to extent of the damage across the Parish

Specific examples of actions

- Contractors**
 - Accelerate licensing contractors
 - Provide housing in LC construction workers
 - Waive fees for applic damaged properties to
- Materials**
 - Facilitate corporate t
 - Raise awareness (and type of needs local forecasting) s
 - Set up potential C3 support community donation/rebates, t

Source: NPI website (Jan. 2020) search. DOCUMENT INTENDED TO PROVIDE INSIGHT BASED ON CURRENTLY AVAILABLE INFORMATION FOR CONSIDERATION.

2 Case study: Educating community members to perform some repairs

Context India Earthquakes – 2001 Gujarat province commonly experiences cyclones, flash floods and droughts every 3 years and earthquakes every 30. This earthquake was 6.9-7.9 and affected 21 of 25 state districts. \$3.5 B economic damage -20,000+ deaths -300,000 injuries -100,000 destroyed homes -300,000 substantially damaged

Initiatives

- Despite limited number of engineers and masons, communities were empowered to rebuild their own homes with local materials to stimulate the economy through coordination of a network of local NGOs
- Demonstration houses
 - Accessible, to each community to teach disaster resilience techniques for retrofit and rebuilding
 - Provided to most vulnerable population once built
- Expertise training network
 - 5 individuals from each community trained in disaster resilient masonry by total of 25 engineers
 - These five masons trained the next 5 masons, rapidly creating a network of qualified workers
- Resilience awareness
 - Education provided on disaster resilience safety designs to meet gov. certifications & reimbursement requirements

Impact

- 1,270 Model houses in 90 villages
- 25% Cost savings compared to relocated homes
- 8,000 Trained Masons
- 50% Happier than families that relocated

COVID-19 considerations: Meetings/ demonstrations would have to be mainly virtual to limit risk of outbreaks

Source: RAND Center for Domestic and International Health Security. DOCUMENT INTENDED TO PROVIDE INSIGHT BASED ON CURRENTLY AVAILABLE INFORMATION FOR CONSIDERATION AND NOT SPECIFIC ADVICE. Draft – Confidential and Proprietary

Short-term response overview

<p>1 Get financial assistance to vulnerable populations as soon as possible to fund repairs/temporary expenses given exceptional economic hardship context</p>	<p>Provide householders assistance in working with insurance providers to get access to funds quickly in a cash-constrained context</p> <p>Leverage alternative sources to complement financing to individuals without insurance or those who are not eligible for FEMA support</p>
<p>2 Drive speed in providing temporary housing options to affected populations</p>	<p>Major damage – Explore possibility to supplement FEMA efforts on sourcing temporary housing for displaced populations</p> <p>Minor damage – Drive speed of repairs by facilitating access to repair materials, “quality” contractors, and education for community members to perform some repairs</p> <p>Other homeless (no home before Hurricanes) – Rebuild emergency shelters and address “new homelessness” challenge</p>
<p>Other key considerations</p>	<p>Prioritize rebuilding necessities that allow people to actually stay in the housing stock short-term (i.e., utilities, telecom, transit, groceries, hotels)</p> <p>Stand up support mechanisms to deal with unique trauma from back-to-back disasters combined with anxiety from COVID-19</p> <p>Establish swift and systematic dialogue/coordination between key stakeholders from the start</p>

1 Get financial assistance to vulnerable populations as soon as possible to fund repairs and temporary expenses given exceptional economic hardship

Rationale

- Significant level of economic vulnerability due to job losses from COVID-19 (e.g., ~25% population reporting reduced income; ~40% struggling to pay housing expenses) and back-to-back hurricanes damage (i.e., 95+% of HH IA claims).
- Complexity from double claims for homes affected by Laura then Delta, coupled with lack of familiarity insurance coverage for certain groups (15yrs since hurricane cat 5 Rita; recent changes to deductible policy)

Specific examples of actions

Assistance in working with insurance providers

- **Centralize comprehensive and easy-to-navigate resources** for individuals (e.g., online platform)
- **Build knowledge of community groups** and empower them to disseminate information in their neighborhood
- **Provide case management support** for home owners

Alternative sources to complement financing to individuals without insurance and FEMA support

- **Explore opportunity to repurpose Disaster Recovery dollars left over from past disasters**, on top of advocating for Congress appropriation for current ones - \$3M combined Calcasieu & Lake Charles Housing to assist most vulnerable uninsured populations (e.g., repairs, rent relief)
- **Explore possibility of having private or public partner pre-pay insurance claims** to get financial assistance to households earlier

Note: Deprioritized consideration of revolving loans to individuals (often used as source of funding for housing recovery in emerging countries) due to risk and negative past experiences in the US (e.g., recipients of SBA loans opened to homeowners post Sandy to fund repairs sooner ended up being refused access to federal grants later in the process)

1 Case study: Insurance Assistance and literacy

Context

Houston - Hurricane Harvey 2017

32% of residents affected

60% of those outside 100-year flood plain and without flood insurance

City and state set to develop systems to help individuals navigate the claim process

Initiatives

2 interactive websites where users can enter the site to choose their current housing status or what they need help with

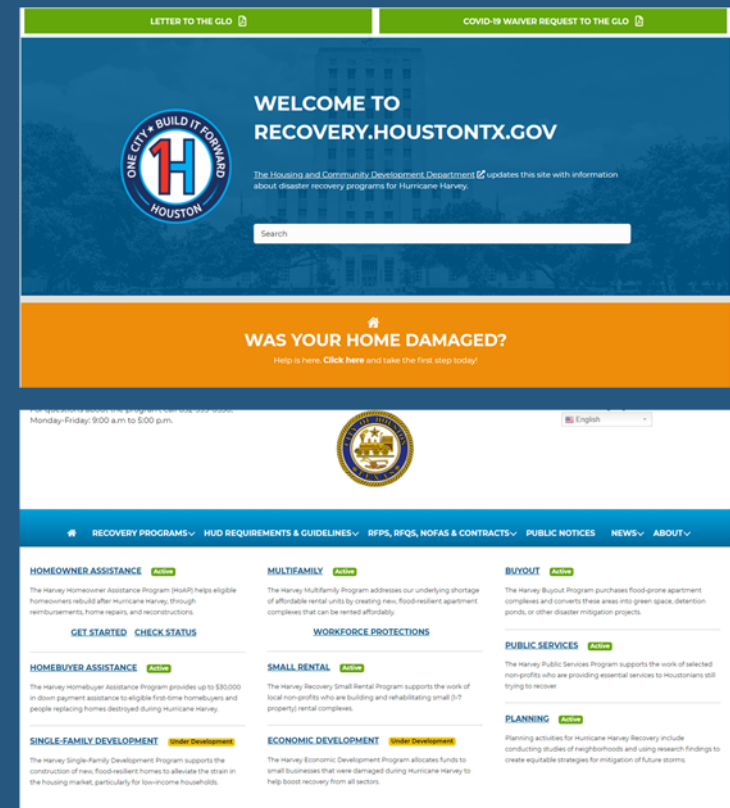
This choice will then provide appropriate Individual Assistance education and documents for reimbursement

- www.recovery.houstontx.gov
- <http://www.tdi.texas.gov>

Source: Organization websites

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Illustration



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2 Drive speed in providing livable temporary housing options for affected populations

Rationale

Temporary housing crisis from extensive back-to-back damage and limited congregate sheltering options due to COVID-19 risk; ~2K non-congregate temp. homes still needed 8w post Laura; speed to find housing and conduct repairs critical to limit trauma; “new” homeless population also to be considered as part of temporary housing priorities (i.e., moving in with relatives after losing income due to COVID-19)

Specific examples of actions

Major damage (>50% value)

Find temporary housing option ASAP for displaced populations

- **Look to extend portfolio of options available** beyond traditional government-assisted housing to improve and shorten emergency sheltering for displaced populations (e.g., 8000+ LC residents in hotels)
 - Coordinated sharing program – e.g., Citizen volunteer housing (leveraging existing home sharing services), safe vacant apartment sharing
 - Private sector assisted housing – e.g., Vacant office space/ apartments, w. possible tax incentives, workers housing
 - Other temp options on the market sourced by local organizations/individuals – e.g., modular units, prefab, micro-units, trailers
- **Consider prioritization approach among affected population** – e.g., based on vulnerability (e.g., low income, renters), based on occupation (e.g., healthcare workers and teachers), based on family type (e.g., with children), based on racial equity

Minor damage (<50% value)

Drive speed of repairs beyond funding






- **Facilitate access to repair materials and “quality” contractors** given limited availability driven by COVID and Hurricanes (incl. supply chain/distribution disruptions, limited supply of local contractors)
 - Materials - e.g., corporate partnerships to help raise awareness for level and type of demand to drive additional supply/forecasting accuracy, and/or discuss potential CSR program to support community
 - Contractors – create conditions to get more contractor capacity into local market (e.g., accelerating licensing for out of state contractors, supporting with housing of construction workers)
- **Educate community members to perform some repairs** to alleviate pressure on contractors, drive quality and possibly give sense of purpose in community recovery – e.g., online resources, training ambassadors
- **Partner with VOADs** – e.g., helping with repairs, involving those being housed in the construction (e.g., Habit for Humanity)

Solutions for “economic homeless”

- **Prioritize rebuilding 5 emergency shelters damaged** by hurricanes to host growing homeless population
- **Consider approach to bring “new homeless” back into the community to avoid long term outmigration** – incl. swift de-stigmatization campaign, specific programs (e.g., training program to provide construction jobs during recovery)

2 Possible temporary housing alternative options, on top of traditional congregate sheltering, hotels and FEMA trailers

Relative level: ● Low ● High






Housing type	Avg cost	Avg Time	Avg Size	Wind Resilience	Advantages	Disadvantages	Relevance
 <p>Mobile</p>	●	●	●	●	<ul style="list-style-type: none"> Frees up other traditional building materials Mobility 	<ul style="list-style-type: none"> Quickly depreciates because it is "personal property" Costly financing 	Mobile solutions can be quickly moved to the areas of greatest need
 <p>Shipping Container</p>	●	●	●	●	<ul style="list-style-type: none"> Frees up other traditional building materials Mobility Durability and resilience to the elements 	<ul style="list-style-type: none"> Potential loss of structural integrity with reused Harmful chemical potential Permit and codes challenges 	In case of high winds, these containers can protect from the elements
 <p>Pre-Cut Panelized</p>	●	●	●	●	<ul style="list-style-type: none"> No skills or tools needed Adjusts to uneven terrain Flat packable for shipping Well vented and insulated 	<ul style="list-style-type: none"> Cost prohibitive without emergency discount Limited economies of scale for production 	Perfect for uneven terrain, limited tools, limited expertise and no time
 <p>Tiny Homes</p>	●	●	●	●	<ul style="list-style-type: none"> Low energy use Small houses can be mobile Easier Maintenance Hurricane wind resistance 	<ul style="list-style-type: none"> Difficulty with zoning Less living space/storage Prof. expertise needed for speedy installation 	Long standing, hurricane resilient structures provide families both investment and protection
 <p>Modular</p>	●	●	●	●	<ul style="list-style-type: none"> 30-60% faster move-ins than classical housing 10-20% cost reduction Higher resale value 	<ul style="list-style-type: none"> Longer resell process Higher down payment Requires space for workers, crane and semitruck installation 	Stacking units reduce need for land to house more families

Source: Expert interviews, suppliers websites

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2 Possible temporary housing alternative options – Detailed view

Relative level
● Low ● High

Housing type	Avg cost	Avg Time	Avg Size (sq. ft)	Avg Cost/sq. ft	Best Avg Wind Resistance MPH	Illustrative suppliers	DIY
	● \$23,000	● 30 minutes	● 950	● \$50	● 100	<ul style="list-style-type: none"> FEMA Able Housing Saturday Night Foundation 	✓
	● \$30,000	● 2 weeks	● 300	● \$100	● 175	<ul style="list-style-type: none"> Flyaway homes Mobile Modular Atelier WS 	✗
	● \$45,000	● 2 hrs	● 900	● \$200	● 180	<ul style="list-style-type: none"> Ablenook FactoryOS MADI Home Ten Fold 	✓
	● \$45,000	● 3 weeks	● 250	● \$150	● 180	<ul style="list-style-type: none"> Cubicco Olson Kundig Deltec Homes Mighty Small Homes 	✓
	● \$180,000	● 3.5 months	● 1,500	● \$112	● 100	<ul style="list-style-type: none"> NYC Garrison Architects Mobile Modular Katana 	✗

Source: Expert interviews, suppliers websites

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2 Past experiences to leverage: Alternative Housing Pilot Programs

Context

Following Hurricanes Katrina/Rita, the U.S. Congress appropriated \$400M to DHS to support **alternative housing pilot programs (AHPP) in 2006 for Gulf states**, a one-time exception to the Stafford Act that legally binds FEMA to a temporary housing mission

Louisiana received \$75M in grant funds to implement the Katrina Cottages program

Initiatives

- **The Louisiana Recovery Authority** worked with two non-profits (Project Build A Future and Habitat for Humanity) and the City of Lake Charles to implement AHPP in and around Lake Charles
- Non-profit partners helped with securing the land, purchasing properties, selecting occupants, and managing the cottages

Challenges

461 cottages built in LA ~ **80** around Lake Charles

2.5 years past the original grant deadline to finalize construction (Sept 09)

Potential drivers of delays /challenges to consider for future programs:

- Working with FEMA requirements
- Shifts in the lead organization
- Finalizing contract and auditing developer
- Environmental clearance process
- Production issues (i.e., incompatible flooring, higher wind resistance steel-framed units replaced by wood frames)

2 Case study: Partnering with home sharing services for emergency housing

Context

Hurricane Sandy- 2012

After the hurricane, NY Airbnb hosts offered their homes for free to help evacuees and displaced persons

Airbnb then incorporated this idea of **technological co-sharing** into its app **Open Homes**

Open Homes, an Airbnb branch, connects hosts with those in need, free of charge. These people include medical patients, relief workers, evacuees, and refugees

Initiatives

Matching services are offered to evacuees and relief workers.

- **To book**, individuals can arrange housing on Open Homes directly or through a non-profit
- **To host**, any individual meeting the hospitality standard can offer his or her home to those seeking temporary housing

Verification and Safety

- **Documentation** such as proof of employment or address needed to apply for Open Homes
- **Advanced screenings** are regularly run against those booking and hosting on Airbnb against terrorist, sanctions and other regulatory watch lists
- **Reimbursements for damage** are provided to hosts up to \$1 million for damage from guests

“A glaring need, that is, a way to connect those in need with those willing to help” ~ David Paul, Chief Meteorologist

Source: Airbnb

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Impact

50K

Temporary homes found on Open Homes

5K

Estimated cost of an evacuation



COVID-19 considerations:

Health risk likely limiting people's willingness to host individuals in their homes

2 Case study: Partnering with VOADs

Context

Hurricane Harvey– 2017

Unprecedented severe flooding affected 13 million people and damaged or destroyed more than 200,000 homes.

Habitat for Humanity helped assess damage and formed **Habitat Hammers Back** to help families through more than 8,800 local volunteers

Part of several VOADs providing cleaning and housing support post disaster (e.g., All Hands)

Initiatives

Emergency Phase

- Cleaned out houses, helped in mold remediation
- Aided homeowners with insurance and FEMA processes

Habitat Ready Program

- Provides homeowners with family preparedness plans, and resources to put together supply kits for common hazards in their community

Sweat Equity

- Completion of a minimum of 300-500 hours of “sweat equity” required for habitat for humanity homebuyers to move into their new home

Impact

7,460

Disaster relief and recovery services delivered

243

Loans funded to fill insurance or FEMA coverage gaps

285

Home repairs completed

8

New homes built

2 Facilitate access to repair materials and “quality” contractors

Rationale

Sharp demand increase in construction materials, tools, and expertise due to extent of damage across the Parish

Compounded effects of Hurricanes Laura and Delta, with COVID-19 led to limited availability and rise in costs from distribution disruptions and limited supply of local contractors

Specific examples of actions

Contractors

- **Accelerate licensing process** for out of state contractors
- **Provide local housing** options for out of state construction workers
- **Waive fees** for applications and permits to rebuild damaged properties to attract contractors

Materials

- **Facilitate corporate partnerships** to:
 - Raise awareness on demand changes across volumes and items to drive more accurate local forecasting for supply
 - Set up potential CSR program or collaboration to support community recovery (e.g., merchandise donation/rebates, and financial support)

Source: NY resilience plan, press search, expert interviews, CNN

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Case studies Examples

During COVID-19, several states lifted licensing requirements for out-of-state healthcare professionals

~1,300 homes built for which permit application and permit fees could be waved through NY Build it Back program following Hurricane Sandy

Leverage example from Walmart using Katrina as an opportunity to help those in need while dramatically improving its own public image (incl. \$34M total donations to local NGOs and Walmart Associates Fund; 100+ truckloads of donated merchandise) ~ *See separate case study*

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2 Case study: Creating a partnership between companies and community

Context

Walmart during Hurricane Katrina -

Before Katrina, Walmart experienced public **criticism** across: employee treatment, foreign sweatshops, and expansion's impact on small business owners.

After Katrina, Walmart was only going to donate \$2M until presidential recognition led to a \$15 M donation. **The national media coverage** changed Walmart's plan.

Initiatives

Walmart contributed ~\$36.2 M USD of financial assistance. Walmart took one step further in helping with:

- **Truck dispatches (2,450)** in the Gulf States. Of these, trucks, Walmart filled 100 with donated merchandise. Other trucks helped relief supplies donated by outside community members and NGOs
- **Clothing Pallets (70)** donated to World Vision's Gifts In-Kind to help evacuees
- **Loved one location services** provided through Photo Centers. Pictures of friends and loved ones could be posted to assist in locating missing persons
- **Internet ready computers (150)** donated to shelters to help families find each other
- **Prescription refills** given free of charge in hard hit areas with mobile pharmacy establishments
- **Vacant facility donation (25)** in impacted states for relief efforts such as shelters, supply depots and food pantries

Source: Walmart website, CNN

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Impact

\$17M

Cash donations to aid emergency relief

\$7M

Raised from public contributions at Walmart

\$3M

In-kind donations of merchandise to shelters and command centers

\$9.2M

Cash assistance provided to impacted employees

"The favorable publicity [Walmart] has received is certainly worth far more than the \$25 million or so it has spent on cash contributions and in-kind donations."

~ Corporate Research Project

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66

2 Case study: Educating community members to perform some repairs

Context

India Earthquakes – 2001

Gujarat province commonly experiences cyclones, flash floods and droughts every three years and earthquakes every 30.

This earthquake was 6.9-7.9 and affected 21 of 25 state districts.

-\$3.5 B economic damage

-20,000+ deaths

- 300,000 injuries

-100,000 destroyed homes

-300,000 substantially damaged homes

Initiatives

Despite limited number of engineers and masons, **communities were empowered to rebuild their own homes** with local materials to stimulate the economy through coordination of a network of local NGOs

Demonstration houses

- Accessible, to each community to teach disaster resilience techniques for retrofit and rebuilding
- Provided to most vulnerable population once built

Expertise training network

- 5 individuals from each community trained in disaster resilient masonry by total of 25 engineers
- These five masons trained the next 5 masons, rapidly creating a network of qualified workers

Resilience awareness

Education provided on disaster resilience safety designs to meet gov. certifications & reimbursement requirements

Impact

1,270

Model houses in 90 villages

-25%

Cost savings compared to relocated homes

8,000

Trained Masons

50%

Happier than families that relocated

COVID-19 considerations:

Meetings / demonstrations would have to be mainly virtual to limit risk of outbreaks

2 Other short term potential considerations

Rationale

Other areas to address beyond direct housing needs – including rebuilding sufficient necessities to ensure people can safely stay in “livable” neighborhoods given damage to infrastructure from Hurricanes; emotional support to be provided to a community prone to exceptional emotional fatigue from back-to-back disaster combined with anxiety from COVID; need for coordination between key stakeholders to drive speed and coherence in short term response process

Specific examples of actions

Rebuild necessities required to stay in housing stock

- **Utilities** – prioritizing restoration of electricity, water, and gas to ensure livable conditions
- **Phone / Internet** – with consideration of remote education needs
- **Local groceries, transit and hotels**

Support mechanisms to deal with unique trauma from back-to-back disaster & COVID

- **Set up disaster support groups and mental health resources** to address emotional fatigue in community confronted with back-to-back disasters on top of humanitarian and economic crisis linked to COVID
- **Consider initiatives to remove constant visible reminders of damage** (e.g., designating priority landmark repairs, artistic initiatives)

Drive coordination of key stakeholders from the start

- **Involve early on to provide transparency, coherence and direction for response efforts** – ; i.e., city/parish/Foundation/other relevant non-profit organizations and private sector stakeholders such as, developers, top employers

2 Case study: Mental Health Resources in Disasters

Context

Hurricane Katrina 2005-

After the storm 11 M people were in the directly affected area and **14% were displaced** from their homes.

Substantial mental health problems occurred across all age groups.

The disaster led to **increased** incidence of **PTSD**, depression and anxiety. Previous mental health disorders exacerbated.

Initiatives

The California Disaster Mental Health Coalition provided **access to 700 professional mental health professionals to Katrina survivors**, pro bono.

Since then, this coalition has developed a mental health disaster planning project:

A Core Group was developed to coordinate mental health stakeholder organizations led by the Departments of Health Care Services, Public Health and Emergency Medical Services Authority

A framework for a statewide approach to mental health disaster was established – incl.

1. Local mental health department operations guide
2. Disaster Behavioral Health Toolkit of local jurisdictions
3. State Agency Operational Doc for disaster behavioral health

Scope

31%

Katrina survivors had anxiety or mood disorders

700

Mental health professionals volunteered

54%

Displaced children required further mental health care

COVID-19 considerations:

Leverage tele-medicine / virtual meetings with mental health professionals rather than in person

2 Case study: Early Coordination of Key Stakeholders

Context

Black Saturday Bushfires, Australia – 2009

Over 700 fires ignited across Victoria, affecting 33 communities across 25 municipalities:

- 173 deaths
- 2,133 properties destroyed
- 1,500 properties damaged
- 800+ non-farm businesses suffered direct physical damage

Initiatives

The Victorian Bushfire Reconstruction and Recovery Authority (VBRRA) was **formed 3 days after the bushfires as a dedicated coordinating authority** for recovery and rebuilding, serving the role for 2 years with tasks such as:

- Facilitating **intra-gov't decision-making** and serving as central **recovery information hub**
- **Liaising between communities, NGOs, and donors** to ensure donated goods match community needs
- Encouraging local governments and community representatives to establish **Community Recovery Committees (CRC)**
 - Key forum for recovery planning community engagement
 - Identified and prioritized, projects to address key local challenges, then submitted to VBRRA
- **Assisting in planning and securing funding for CRC projects**, and drafted *Rebuilding Together* recovery plan based on CRC priorities

Source: Victoria State Government, Victorian Bushfire Reconstruction and Recovery Authority

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Impact

33

Community Recovery Committees (CRCs) formed

~1,100

Projects identified, prioritized, and submitted by CRCs

COVID-19 considerations:

Meetings / community engagement would have to be mainly virtual to limit risk of outbreaks

2 Case study: Early Coordination of Key Stakeholders

Context

Cedar Rapids – Iowa floods, 2008

Record floods affected communities throughout the Midwest

Cedar Rapids, Iowa severely devastated:

- 31.12 ft above flood level
- 10 sq. Mile of city, or 14% of city
- Impacted 5,390 houses
- Dislocated 18,000+ residents
- Damaged 310 City facilities
- 2,500+ jobs lost

Initiatives

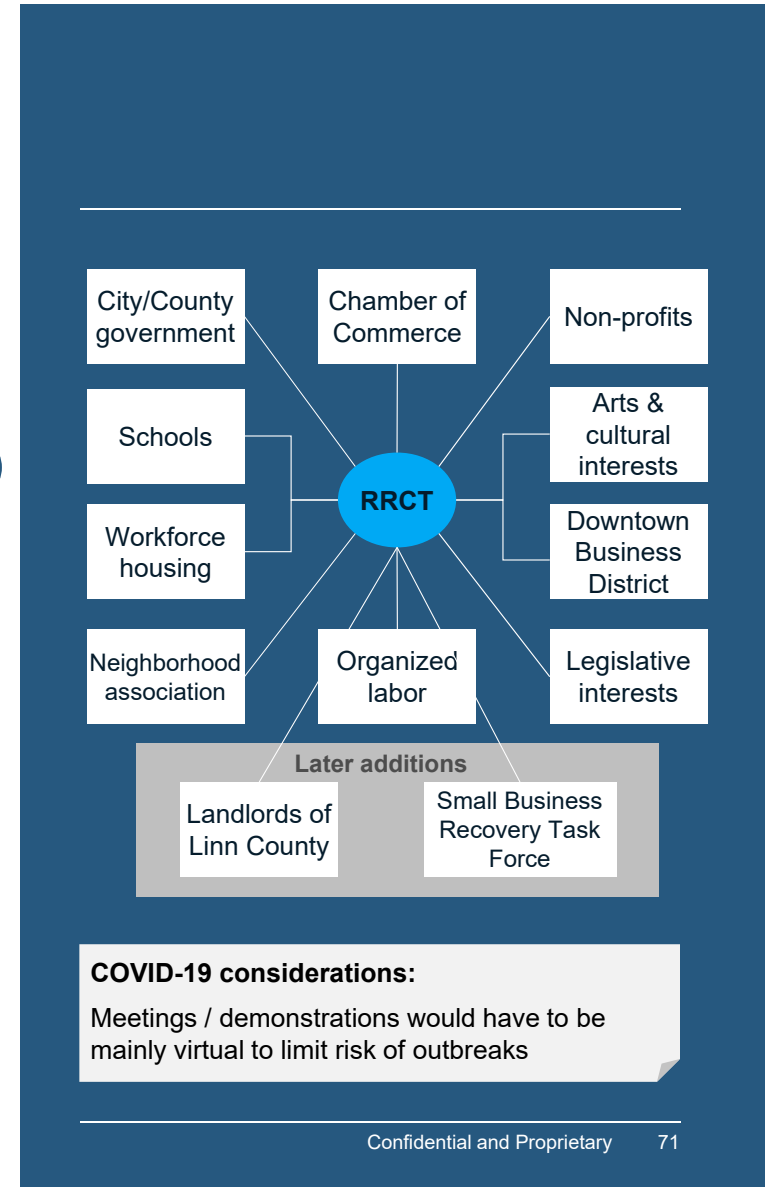
Recovery and Reinvestment Coordinating Team (RRCT)

- Formed within a week of the river's crest
- Met daily for two months, facilitating coordination between wide range of community stakeholders (*see illustration*)
- Created a centralized community website for disaster issues, with local companies helping develop and maintain the site

Replacement Housing Task Force

- Formed to review and make recs. to the RRCT about housing recovery – then put forth to the city council
- Including on safety / building code compliance, affordability, sustainability and neighborhood needs

The City coordinated with nonprofits to work with FEMA to offer temporary housing assistance



3 Integrate housing rebuild in broader economic development plan for the Parish to boost long-term competitiveness & sustainability

Rationale

Need to go beyond housing and adopt a broader economic development ambition which will anchor housing rebuild. This will help address significant economic recovery challenges brought by compounded effects of COVID-19 and Hurricanes Laura/Delta (e.g., 3+ yrs estimated recovery timeline for Calcasieu GDP from COVID only; extra impact hurricanes to be estimated)

Preliminary approach suggested

Conduct comprehensive performance diagnosis along 5 key economic dimensions

- Current industry mix, employers & competitiveness
- Talent & Human capital – incl. education
- Infrastructure - incl. housing, transportation, utilities
- Innovation – start-ups & scale-ups
- Business climate - cost/ease of doing business

Identify the clusters of target industries the region aims to cultivate to build long term competitiveness

- TBD if current cluster around petrochemical industry constitutes target vs objective to build more resilience/less consolidation in industry mix

Evaluate investments needed along key economic enablers to build target industry clusters

- Detailed mapping of investment areas within each economic lever
- Prioritized funding plan associated

Key indicators can be assessed against a mix of comparable and best practice areas (e.g., other MSAs in Louisiana and Texas)

3 Integrate housing rebuild in broader economic development plan for the Parish to boost long-term competitiveness & sustainability

Talent & Human capital

- **Demographics** – e.g., distribution across age, gender, race, socioeconomic profile
- **Education** – e.g., access and enrollment; retention and attainment; test performance
- **Workforce** – e.g., skill distribution and alignment / gaps with projected job demand; underemployment, and informal employment; wages



Firms

- **Economic cluster development** – e.g., cluster-level GDP, employment, and output contributions; location quotient; cluster level productivity; shift-share; wages
- **Firmographics** – e.g., distribution of firm age; new registrations and closures; distribution of firm size
- **Firm expansion** – e.g., distribution of firm growth rates; exports; FDI

Innovation

- **Innovation** – e.g., patents; scientific publications; R&D investment
- **Entrepreneurship** – e.g., entrepreneur density; startup density; survival rates; seed stage investment and venture capital investment

Business climate

- **Business climate** – e.g., corporate taxes; costs and time requirements for registrations and key approvals; investor incentives; regulations; governance
- **Institutional assets** – e.g., academic institutions; incubators/accelerators; research institutions; health institutions; etc.

Infrastructure

- **Physical infrastructure** – e.g., air, sea, and land transport and logistics; power; water
- **Virtual infrastructure** – e.g., broadband and mobile penetration; download speeds
- **Social infrastructure** – e.g., air quality; public transportation; traffic congestion; cost of living; green space; leisure and entertainment

3 Case study: Housing rebuild within broader economic plan

Context

Columbia Parc, LA –

St. Bernard housing complex 25% vacant and facing high poverty levels in 2005

Nearly all households evacuated following flooding from Katrina

Post disaster recovery based on holistic approach to build a vibrant neighborhood around affordable housing (1/3 subsidized low-income, 1/3 tax credit affordable, and 1/3 market rate units)

Initiatives

Infrastructure and amenities built around the units to deliver high quality of life for renters, including:

- **Health clinics** with a permanent onsite facility
- **Education pipelines** including a high quality early childhood care center and on-site charter schools
- **Recreational centers** including a playground, gym, pool, golf course and football field
- **Shopping** with on site grocery stores and other shops to provide centers for community investment
- **Public transit** and the ability to tie the neighborhoods streets into the city's transportation systems

Other key enablers

- **Job training** provided including tools for banking and homeownership
- **Crime reduction** from resident background checks, peepholes, gated parking, and reduced rent for first responders

Impact

30

Design awards including LEED certifications

685

Mixed-income units & 120 senior-housing units 100% leased

700

Temporary jobs created

100

Permanent jobs created

99%

Reduction in number of felonies over three years

0

Homicides in three years, down from 42 in five years

4 Evaluate optimal housing mix to address key affordability and community disparity challenges, based on damage assessment

Illustration of preliminary approach

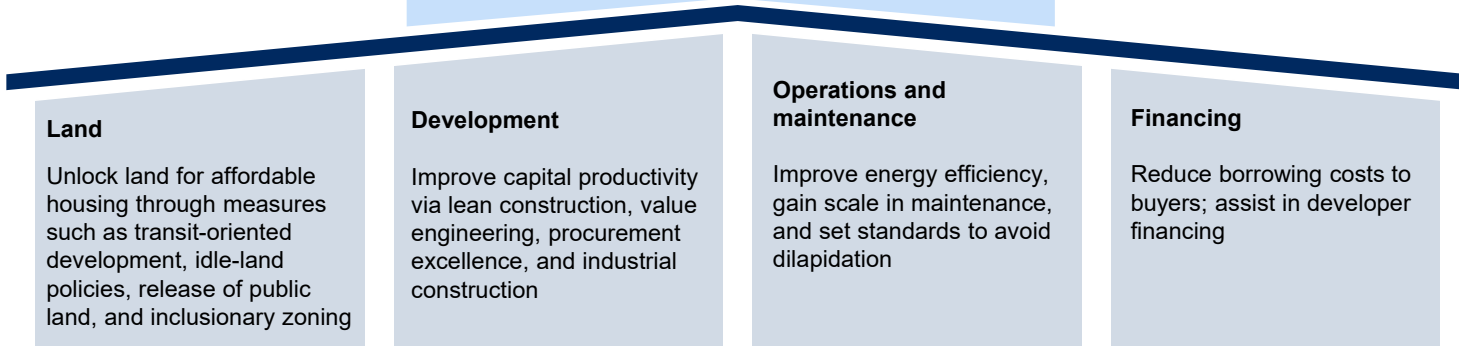
Livable supply & demand post disaster

- Conduct damage & housing stock assessment (by area, home type, HH profile, materials, etc.)
- Evaluate comprehensive demand for housing (by home type, rent/value level, etc.)

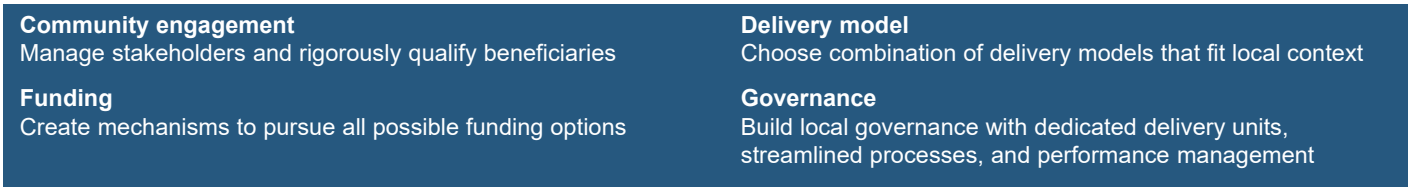
Aspirations & Targets

- Define income, equity and affordability thresholds
- Set standard unit sizes along the housing ladder
- Set targets for mix, volumes and gaps to bridge

Key Levers



Housing delivery platform



4 Case study: Providing affordable housing for teachers

Context

Bay Area, CA

- **Limited and expensive housing supply** – Bay Area one-bedroom rent is more than double the state median one-bedroom rent
- **Significant discrepancies exist in teacher salaries and rental housing cost**, with the highest-paid teachers earning just enough to afford a one-bedroom apartment
- **Teachers commute long hours or move to less-expensive states**, likely exacerbating CA's teacher shortage

Initiatives

School Districts started building affordable housing to attract and retain teachers

- **Santa Clara Unified School District** opened affordable housing dedicated to teachers in two phases by '09 – providing 72 apartments and cutting rent by more than 50% for district teachers
- **Los Angeles Unified** built 3 below-market apartment complexes, but with federal tax credits which set income restrictions on tenants and disqualified teachers
- **Funding sources** include general obligation bonds, city subsidy, low-income housing tax credit, loans, and certificates of participation sales

Impact

\$1,460 vs. \$3,500

Santa Clara Unified affordable housing monthly rent

Comparable unit monthly rent in the region

Reduced attrition by

2/3 for teachers living in Santa Clara Unified affordable housing

“It’s better for everyone – folks trying to avoid traffic, kids getting an education, school districts trying to hire and retain the very best teachers for our schools, and of course our teachers themselves – when our teachers can live in or close to the communities where they teach.”

Joe Simitian - Santa Clara County Board of Supervisors Pdt

Source: Bloomberg CityLab, County of Santa Clara Supervisor Joe Simitian District 5, EdSource

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4 Case study: Affordable housing programs – Community Land Trusts

Context

Atlanta Affordable Housing crisis

In 2017, Atlanta was the 3rd fastest growing US metro area. Atlanta's **median rent increased 70%** since 2000 but **median income only increased 48%**.

In 2016 more than **half** Atlantans were **rent burdened**.

The Atlanta Housing Authority has ~17K section 8 vouchers available, enough to **serve only 10% of low income residents**

Initiatives

The Atlanta Land Trust aims to reverse disparity with affordable housing for everyone and restoring the city's black middle class.

The Process of Land Trusting

1. The trust acquires the land and maintains ownership permanently
2. Homeowners lease long-term renewable land
3. The trust's organizations supports residents in sustaining homeownership
4. The organizations create a community promoting public policy, engagement and fundraising.
5. The homeowner will sell the home at resale-restricted and affordable pricing to another LI homebuyer. Homeowner benefits include:
 1. Home ownership
 2. Wealth Accumulation
 3. Preservation of public Investment
 4. Allows long-term residents to remain in communities despite rising costs

Source: Lincoln Institute of Land Policy, and Atlanta Land Trust

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Impact

6x

Less likely that families lose homes to foreclosure

1.4%

CLT homeowners behind on rent compared to 3.7-23.1% market rate homeowners

277+

US Community Land Trusts in 2009

79%

CLT residents are first time homebuyers

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4 Historical and ongoing forces have created challenges for Black/LatinX households in affordably accessing housing

Inheritance

Black families lose land due to heirs' property law which gives each heir a partial stake in land when a landowner dies without a will.

Because heirs' land rights are shared, they lack a clear title. In a dispute, courts may order partition by sale which often leads to land loss through auctions and predatory purchasing.



98%

Black landowners were dispossessed of 12M acres because of title issues



1/3

Southern Black land is heirs' property



76%

Black Americans do not have a will

Access to mortgage



0.08%

higher interest rate and heavier refinance fees when compared with white borrowers for Black and LatinX applicants over 30 year period.



2.7x

More likely as an African-American to be denied conventional mortgage in major Metropolitan areas

Homeownership



30%

Homeownership gap persists over time between Black and White Americans.



23%

Less value given to similar quality homes in Black neighborhoods. On average, valued at \$48,000 across the US

4 Sample strategic interventions to address barriers to racial equity related to housing

Value chain challenge

Sample strategic actions

Pricing



Innovative underwriting tools to capture non-traditional credit factors (e.g., rent payments)
Targeted credit-building / repair supports
Down-payment assistance grants or low-interest loans for first-time buyers

Product



Racial bias audit of existing lending programs
Developing consumer financial lab to identify the unique needs of communities of color
Low-cost down-payment savings solutions (e.g., affordable, high-interest savings accounts for aspiring homeowners)
Innovative origination / servicing models that lower costs and enable higher use of small dollar mortgages

Marketing & distribution



Anti-bias training for underwriters, mortgage bankers, etc.
Greater presence in communities of color (e.g., mortgage officers, physical locations)
Strategic partnerships with Black-led organizations to build trust based relationships with consumers
Community-based educational programs that aim to sustainably increase homeowners

4 Case study: Program aimed at closing the homebuying racial gap

Context

Minnesota

In 2011, Minnesota ranked among the last states in the US in evaluations of homeownership equity

In 2013, White people in Minnesota had a 77% homeownership rate vs ~25% for Black people

Initiatives

The Minnesota Housing Authority set out to address key challenges along the value chain

Pricing



Start Up program for first time homebuyers decreasing down payments and interest rates

Product



Product adjustments enable an easier road to ownership for low income families

Marketing & distribution



Propped up Black loan originators and realtors and helped show that homeownership was possible through advertising at Black-led events

Homeownership Capacity Program connect families with community resources to help them determine if homeownership is right for them at this time, understand any barriers in their way (top barrier is credit), and develop strategies to move past barriers

Impact on Black homeownership:

+35% in share of new mortgages awarded to people of color

+5pts in share of mortgage issuances to houses of color since 2011, from 11% to 16%— in line with share of people of color in Minnesota

5 **Build stronger/more resilient housing to better withstand future impact of climate change**

Rationale

Extensive damage with Laura and Delta four years after historical floods, 15 years after Rita; recent housing developments in southern parts are most vulnerable to flood risk – rebuilding post Laura & Delta offers an opportunity to build more resilient housing and infrastructure which can better withstand future natural disasters and drive sustainability

Specific examples of actions

Limit exposure

- **Limit population concentration in high exposure areas and foster growth in low exposure areas** – e.g., through voluntary relocation programs and restrictions on new buildings in vulnerable zones

Reduce vulnerability

- **Building Techniques-** Leverage top of the line innovations from architects, engineers and developers to increase building resiliency under local conditions – e.g., innovation challenge new techniques/ materials
- **Policy & Interventions-** Embed home resilience across building policies (incl. resiliency design guidelines, updated building code for wind resiliency, specific parts regulations – e.g., roofs). Motivate resilient builds and retrofits with attractive incentives programs for individuals and developers
- **Infrastructure Resilience-** Limit city wide interruptions with investment better protecting infrastructure from natural disasters (e.g., utilities, transportation, pavement, and coastlines)

Build Climate Awareness

- **Build awareness** long term on effects of climate change
- **Consider programs** to limit contribution to environmental hazards (e.g., carbon footprint)

5 Case study: Resilience Planning to limit exposure

Context

Hurricane Sandy– 2001

“Worst natural disaster ever to hit New York City” ~ Mayor Bloomberg

- 90,000 inundated buildings
- 43 deaths
- \$19 Billion dollars in damage

In response, the city developed a plan for *A Stronger, More Resilient New York*

Initiatives

NY State offered a voluntary government buyout program for homes in repetitive flood zones known as the ***NY Rising Buyout and Acquisition Program***:

- Mapped vulnerable areas using climate change projections
- Sped up buyout program; NY buyout took 1-2 years while past FEMA buyout programs often took 5 years or more
- Returned land to wetlands for coastline management

Limited new development in updated 100-year flood zones based on climate change projections

Impact

800

Homes bought out

77%

Buy-Out Participant satisfaction

70%

Participants reported money adequacy for buy out

Opportunities for improvement cited by participants

- Communicate throughout the process (Day 1 to relocation)
- Communicate in **multiple languages**
- **Speed up timeline** to prevent homeowners sinking dollars into home improvement
- Provide more assistance to find new comparable homes and access to mortgage as needed

5 Case study: Resilience Planning to limit vulnerability – Home building techniques

Initiatives

“NY Build it Back” program created a Hurricane Strong Home test site featuring hurricane resilient features”

- **Concrete Roof Tiles** placed on a MAPEI poly-glass system with underlaid ZIP roof decking and ICP seaming and spray foam
- **Insulating concrete form** replaces wood frame for a stronger structure between stacked foam blocks
- **Reinforced concrete stairway** with TREX decking material (95% recycled wood and plastic film)
- **Helix steel formation** weaves steel within concrete outer form to reducing total reinforcing steel
- **Lightening protection** such as strike termination devices, and grounding electrode systems
- **Fiber cement siding** is resilient made from cement and wood pulp
- **Dual function flood vent**- ensures home’s air flow under house allowing flood water to pass as needed
- **Reinforced concrete closed foundation and supporting fins** elevating home 15 feet above sea level and 3 more above projected flooding

1. Estimated based on job creation and increased use of local construction materials usage (i.e., GDP generated by every \$ spent)

Source: Columbia University, Wired Magazine, NY Build it back report

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Impact

20 K

Households assisted in repairs, resiliency upgrades, rent pymt. and reimbursements

\$11

Made for every \$1 spent on resilience¹



Illustration resilient house NYC

5 Case study: Resilience Planning to limit vulnerability – Policy & Incentives

Initiatives

Home resilience embedded across building policies and incentives programs

Policy for Buildings

- Shared resiliency design guidelines with engineers and architects considering project life and climate change
- Updated building code for wind resiliency
- Required green roofs (tax abated) on all new construction for commercial and residential *[not relevant for storm resiliency in Calcasieu]*
- Updated flood maps, which consider climate change projections, changed flood insurance policy coverage requirements

Incentive programs

- Encouraged resiliency measures with financial incentives for those that reach targeted requirements
 - \$1.2 billion program offered grants and loans to buildings for resiliency retrofitting costs with a cap of \$2 million per building
- Launched sales tax abatement program for resilience in industrial buildings

Source: Columbia University, Wired Magazine, NY Build it back report

DOCUMENT INTENDED TO PROVIDE INSIGHT BASED ON CURRENTLY AVAILABLE INFORMATION FOR CONSIDERATION AND NOT SPECIFIC ADVICE.

Impact

32k

Homes given
rebuilding
assistance

9k

Units rebuilt with
resiliency
measures

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5 Case study: Resilience Planning to limit vulnerability – Infrastructure

Initiatives

Infrastructure resilience in parallel of housing, spanning across coast lines, utilities and transportation

Coastal Resilience invested with initiatives like sand walls, tube dams, flood panels, and stackable barriers to building entrances

Utility services protected against interruptions

- ConEd utilities created perimeters for stations, shrink wrap for panels, high-capacity pumps, elevated controls, and individual shut down w. fiber optic wiring
- Developed real time monitoring of utilities in floods with valve control to prevent utility interruption

City planning resilience

- Planted 1 million trees, \$82 M set aside for vulnerable neighborhoods
- Converted dark pavement to light pavement
- Implemented stormwater management systems like rain gardens and vegetated areas

Source: Columbia University, Wired Magazine

DOCUMENT INTENDED TO PROVIDE INSIGHT BASED ON CURRENTLY AVAILABLE INFORMATION FOR CONSIDERATION AND NOT SPECIFIC ADVICE.

Impact

\$1.5 B

Invested in Green Infrastructure by 2030

\$3.7 B

Invested in coastal protection since 2015

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85

6 Leveraging the private sector to drive increased speed, innovation and funding

PRELIMINARY

Rationale

Extent of damage, funding and reconstruction coordination needs coupled with the speed required for rebuild calls for mobilization of both public and private actors – with clear allocation of roles based on expertise and capacity

Specific examples of actions

Rethink roles & processes among all stakeholders to drive speed and innovation

- **Rethink respective roles of key stakeholders** – e.g.,
 - Government bodies focused on funding or setting guidelines
 - NGO and private sector experts leading on gaps which public agencies do not cover (e.g., managing large volume of building permit requests, helping with matching supply & demand for housing)
- **Advocate for expedited processes** after disasters to ensure appropriate speed to recovery (incl. streamlining permit process)

Incentivize private sector to invest in affordable housing

- **Consider awarding large reconstruction projects based on design and innovation challenges** between individuals or companies to spur creativity, speed and manage costs
- **Leverage allocation of Low Income Housing Tax Credit** dollars from the Louisiana Housing Corporation for SWLA to encourage building of mixed income high quality housing
- **Negotiate affordable housing lending programs with banks**
- **Consider potential “green” investors for carbon-neutral related funding**

6 Case study: Leveraging the private sector to drive speed and innovation

Context

Los Angeles– 2016

Tens of thousands are homeless in Los Angeles

More than 1,000 people experiencing homelessness are expected to die during a given year

In November 2016, 80% of LA voters approved a \$1.2 B investment towards housing development for individuals and families experiencing homelessness

Initiatives

The Proposition HHH Challenge set \$120M towards innovative construction and financing for 1,000 new supportive housing units in just two years

Proposals from any private organization were considered based on level of innovation, achievability, scalability and costs – and required demonstration units

Six winning projects of the 1st edition were:

- 1. FlyawayHomes-** shipping container units as shared housing, backed by private investment with an ROI
- 2. Daylight Community Development-** shipping container units with private financing repaying city funds in 3 years
- 3. Restore Neighborhoods LA-** units on small lots which did not require zoning changes
- 4. Adobe and Mercy-** 360 units in 6 modular buildings with each module delivery paying off a \$5 M revolving loan
- 5. Brilliant Corners-** units built on 3 existing sites converting non-residential buildings to housing
- 6. Bridge Housing-** for young adults, families, and teens

1. Length of time a property must stay affordable under Proposition HHH

Impact

975

housing units developed in two years

\$532K

Average cost for new housing units

60% less costly

for the city in the long run – avg unit cost equivalent to \$26/night over 55 years¹ compared to \$60/night for a motel voucher

7 Building strong community buy-in and empowerment to rebuild a “home”

Rationale

The cornerstone of successful community recovery to drive widespread alignment on recommended solutions, while leveraging compounded reach from each stakeholder

Specific examples of actions

Engage community throughout the recovery process

- **Involve diverse set of community representatives in structuring decisions** affecting community, from emergency response until long term recovery
- **Anticipate and address sources of resistance** (e.g., stakeholder interviews or survey on cultural relevance of a build and pre-approval for certain areas and makes before implementation)

Drive community education

- **Launch consumer education campaign on flood insurance**
- **Launch an engagement campaign targeting insurers** (e.g., NY Sandy)
- **Educate on risks, climate change and resilience**

Drive community empowerment

- **Involve those being housed in the construction** (e.g., Common Habitat for Humanity across the US, “sweat equity” policy)

7 Case study: Building community buy-in and empowerment

Context

NY Resilience

Hurricane Sandy was the “worst natural disaster ever to hit New York City” ~Mayor Bloomberg

- 90,000 inundated buildings
- 43 deaths
- \$19 Billion dollars in damage

In response the city developed a plan for *A Stronger, More Resilient NY*

Initiatives

Community buy-in prioritized through stakeholder briefings led by government authorities

- **Public Workshops** held to address city questions and see new ideas
- **Interviews** conducted with a sample of New Yorkers **in-person**

Community Empowerment

- **“Choose my own path”** - Developed “sweat equity” with individuals able to choose contractors and sometimes helping with rebuilding homes (e.g., Habitat for Humanity)
- **Community design centers** assisted property owners developing design solutions for reconstruction and retrofit

Impact

30+

Government agencies consulted

1000+

New Yorkers briefed in person

11

Public workshops to refine the RFP

19

Community boards addressed

320+

Businesses, environmental, faith and labor orgs.

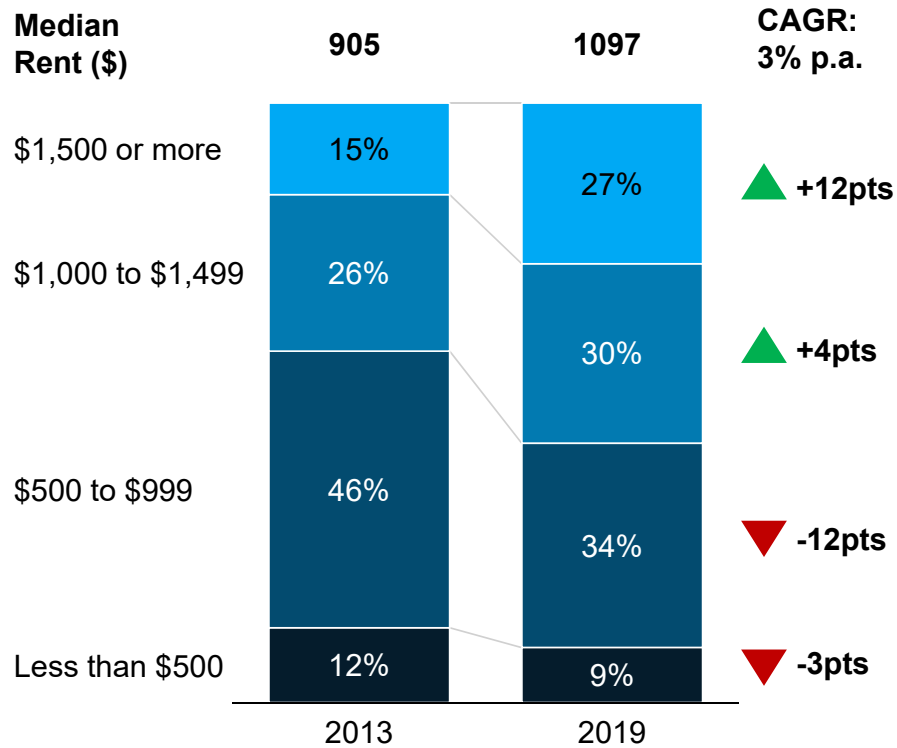
COVID-19 considerations:

Meetings / community engagement would have to be mainly virtual to limit risk of outbreaks

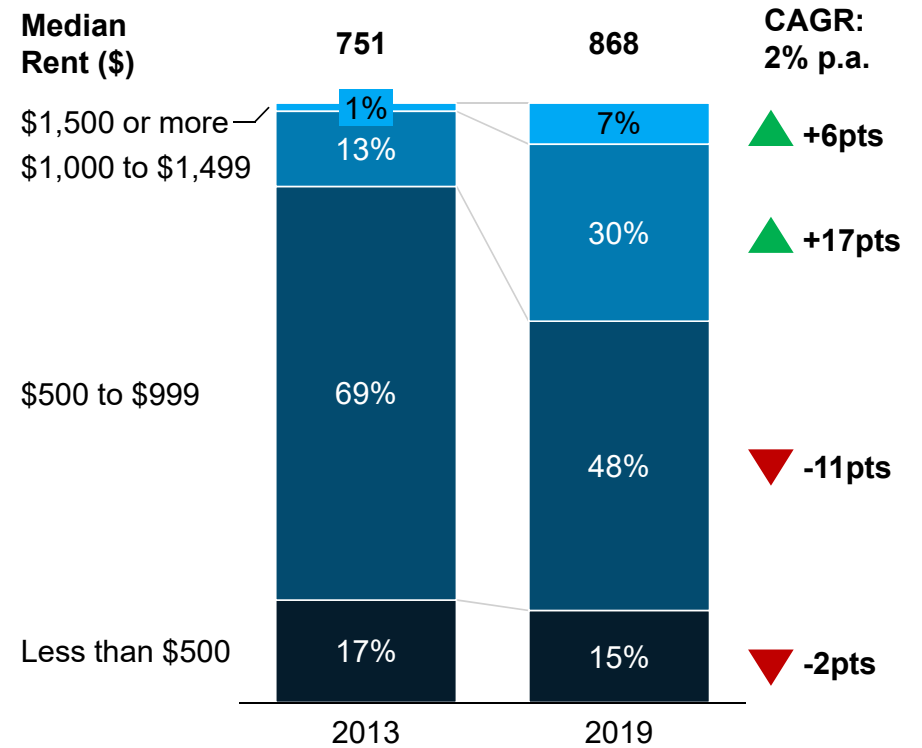
Appendix

Rent, national vs. Calcasieu comparison

Evolution of rent levels, national

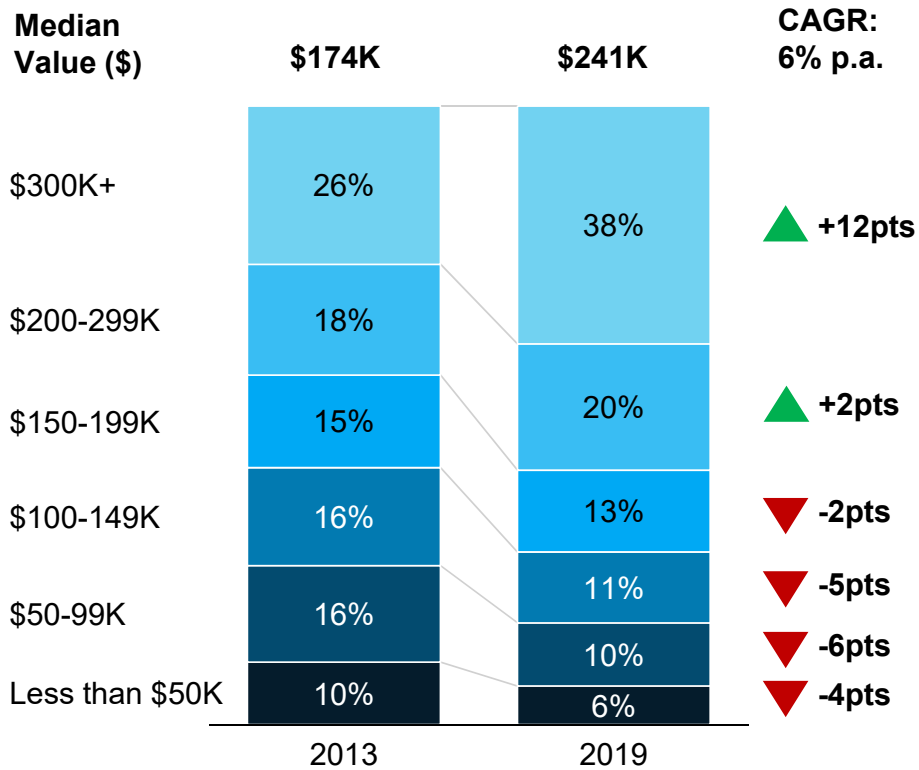


Evolution of rent levels, Calcasieu

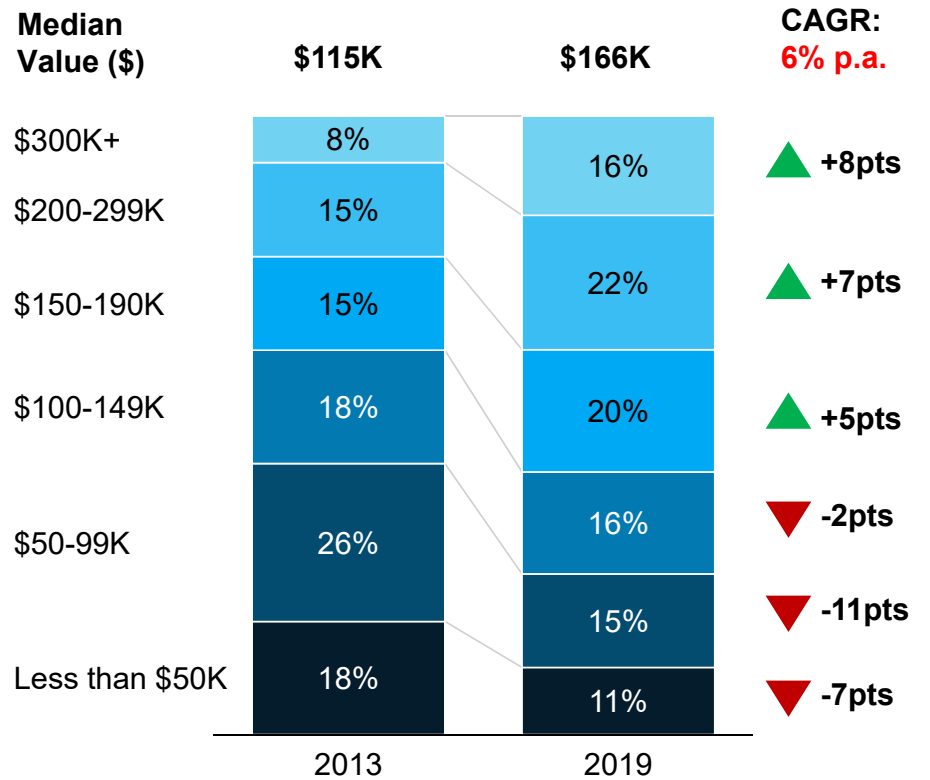


Home value, national vs. Calcasieu comparison

Evolution of home value, national



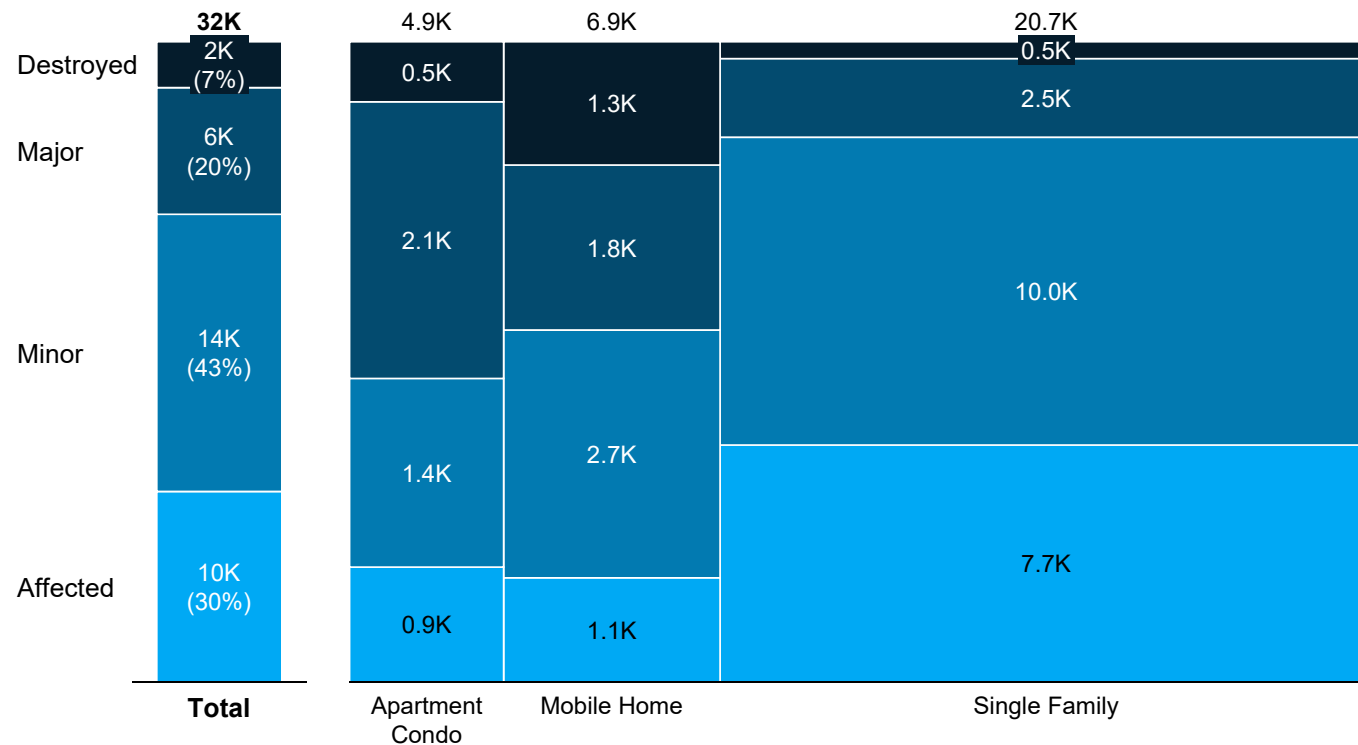
Evolution of home value, Calcasieu



Hurricane Laura & Delta damage by level of damage¹ and housing type – Lake Charles

residential units in Lake Charles, based on zip code matching

Highly preliminary estimates As of Nov 6th, 2020



1. Destroyed – Non-Livable/total loss; Major - Non-Livable/Home with structural damage or other significant damage that requires extensive repairs; Minor – Livable/Home with repairable non-structural damage; Affected – Livable/Home considered affected if damage is mostly cosmetic

Source: FEMA, local NGOs, USPS

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