



KENAN-FLAGLER
BUSINESS SCHOOL



Intrepidly Building Chatham County

Final Presentation
April 24, 2024

Meet the team who worked tirelessly to support your vision for Chatham County



Brendan Simons
FT MBA; Project Lead



Judy Koo
FT MBA; Investor Shark



Lichao Chen
FT MBA; Financial Lead



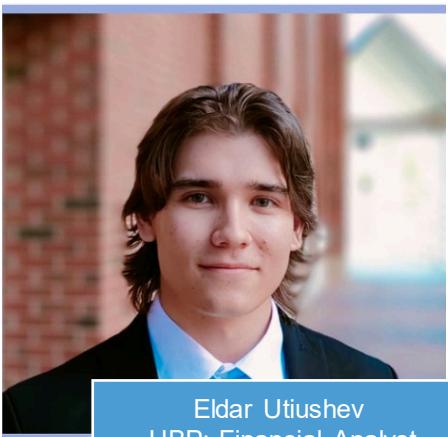
Osama Abdelrahman
FT MBA; Investor Shark



Alejandra Jaramillo
FT MBA/MEM; Marketing Lead



Eli Dykes
UBP; Marketing & Strategy



Eldar Utiushev
UBP; Financial Analyst



Anna Millar
Master of the Universe

- 1. Introduction**
- 2. Recommendation**
- 3. Factory Findings**
- 4. Risk & Mitigations**
- 5. Next Steps**
- 6. Long Term Plan**
- 7. Thank You**



The STAR team operated within the confines of the project scope below

A large white checkmark inside a white square, which is centered within a larger rounded rectangular frame.

IN SCOPE

- Current Chatham County Market Analysis
- Current North Carolina Competitor Analysis
- Identification of Alternative Funding Sources
- Factory Acquisition Viability
- Recommendation for Initial Product

A large blue X inside a white circle, which is centered within a larger rounded rectangular frame.

OUT OF SCOPE

- Identification of Alternative Production Sites
- Identification and Recommendation for land purchase
- Building Process and Management
- Marketing Campaign
- Fundraising
- Spin off non-profit or secondary business to support operations



Source: Team Analysis

The STAR team set out to answer this key question

The key question for the UNC STAR team is to assess the viability of a factory facility to produce Steel Framed Housing Units in response to the current affordability housing crisis in Chatham County.

Quantify Market Demand

Identify Investors & Alternative Funding Sources

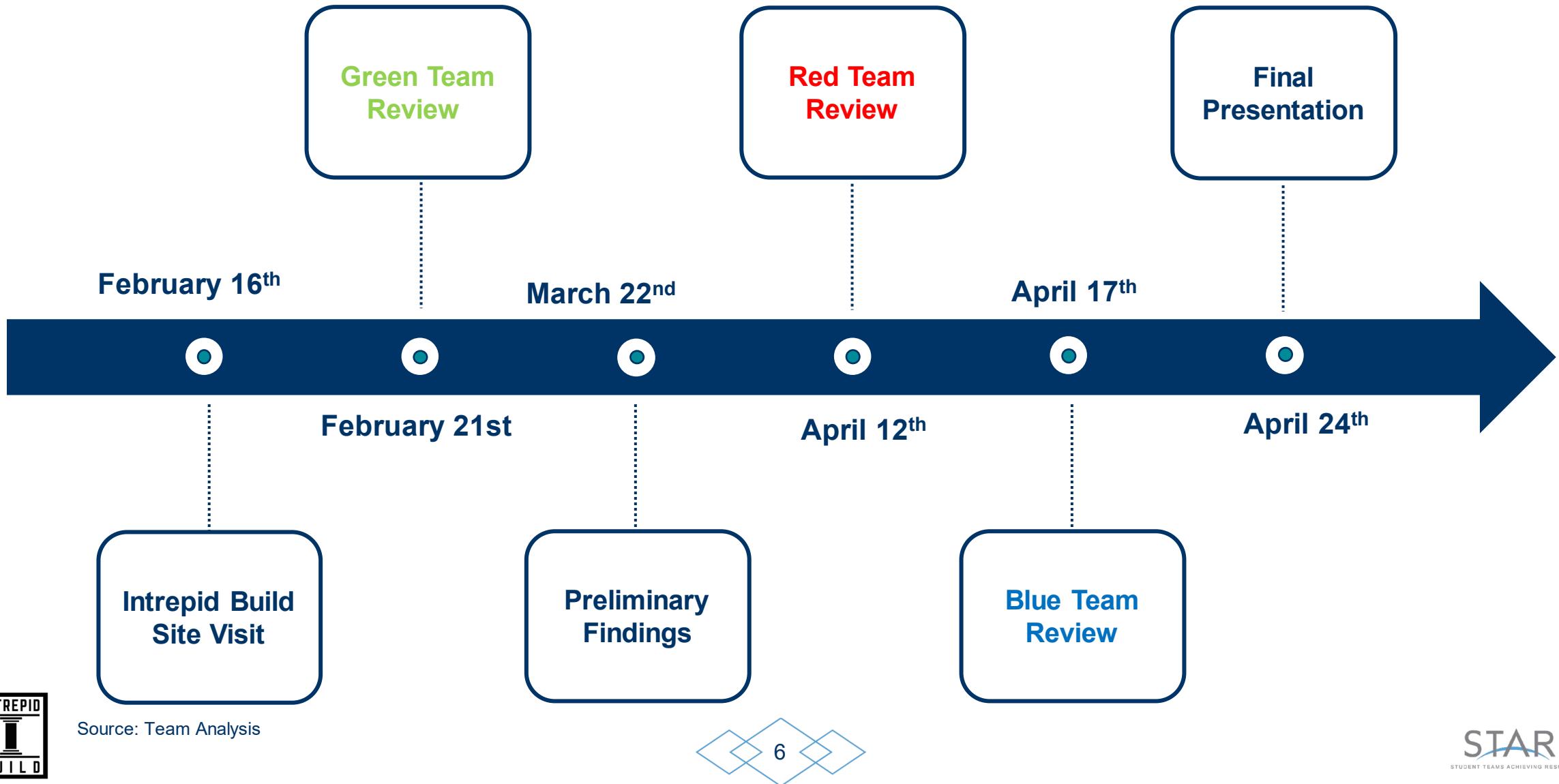
Produce Financial Model for Factory Decision

Recommend an Initial Product



Source: Team Analysis

The Intrepid Build team has adhered to the following timeline for the project



The STAR team's recommendations meet four essential criteria



GOAL

Short-term:
Increase attainable housing

Long-term:
Position Intrepid for economic growth



Sources: https://uli.org/wp-content/uploads/2012/07/TP_AffordableHousing.ashx_.pdf

The team completed extensive primary and secondary research to gain insights on the area & attainable housing

Interviews



Affordable Housing Experts, Town and County Leaders, Residents, Industry employees, Finance specialists, Venture-Capitalists/Investors, Government officials

Site Visits



Perry Road model, Intrepid Offices

Focus Groups



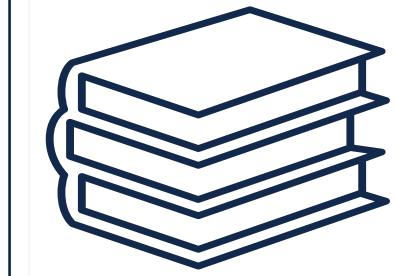
Pittsboro Mayor, Assistant County Manager, Residents, Realtor, Community Worker

Community Survey



Qualtrics survey of 4 sections with 42 questions

Secondary Research

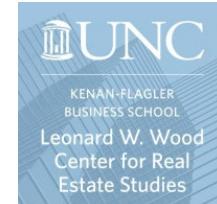


Online research, industry reports, business library

GREYSTAR™



Source: Team Analysis



Meet the industry experts we consulted throughout the course of our project



Eric Maribojoc – Affordable Housing Kenan-Flagler Business School UNC Chapel Hill



Elizabeth Beecy – 2Y Full-Time MBA Student, Former Greystar Intern



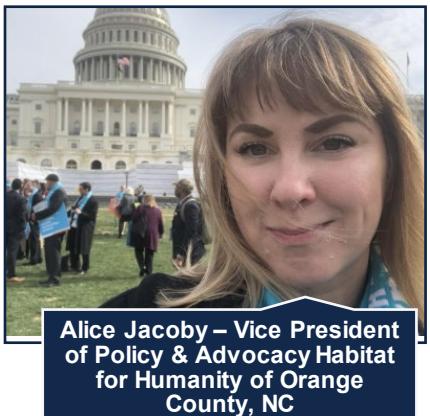
Gary Miller – Miller Financial Group Insurance & Bowmen Insurance Company



Dr. Daniel Ringel – Marketing and Artificial Intelligence Kenan-Flagler Business School UNC Chapel Hill



Dr. Norris Bruce – Marketing Kenan-Flagler Business School UNC Chapel Hill



Alice Jacoby – Vice President of Policy & Advocacy Habitat for Humanity of Orange County, NC



Jim Spaeth – Leonard W. Wood Center for Real Estate Studies Kenan-Flagler Business School UNC Chapel Hill



Anna Millar – Board of Habitat for Humanity of Orange County, NC



Tim McLoughlin – Managing Partner, Co-Founders Capital

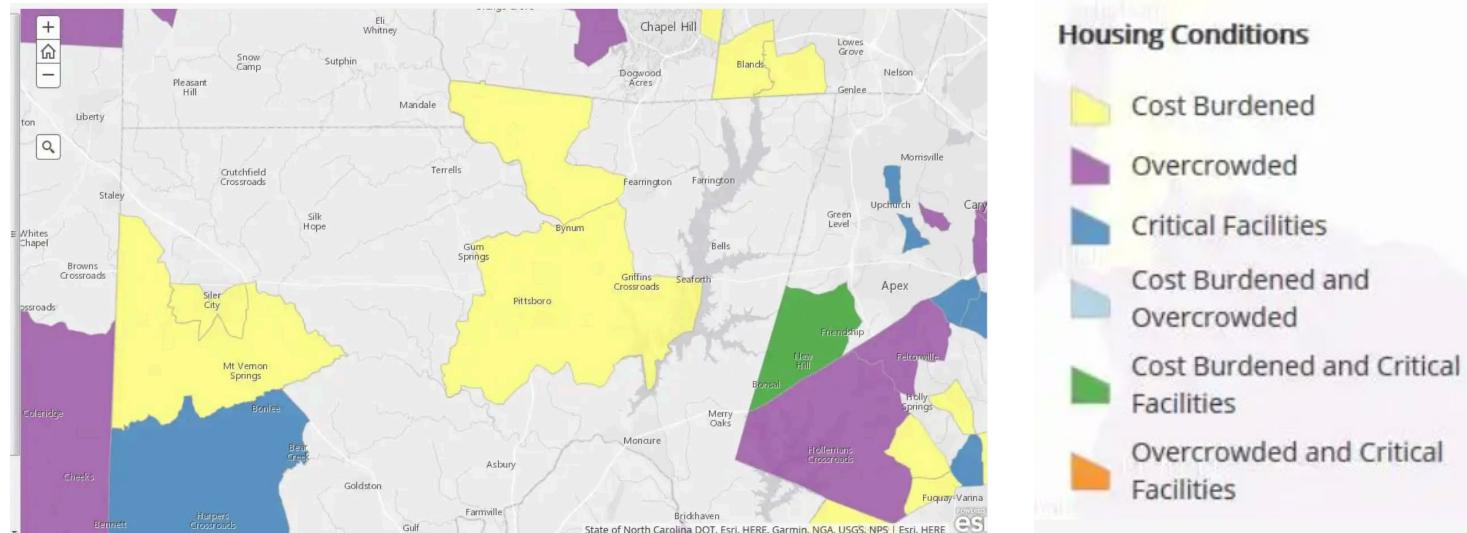
Thank You For Bringing Us On This Incredible Journey!



Source: Team Analysis



Not enough housing is being produced at the *lower end* of the market in Chatham County



~ 1,404

Households earn 30% or less of the Area Median Income (AMI)

25%

Of residents have difficulty affording their homes

\$465,000

Is the average house price w/
~78% of home sales above it

“The problem is just going to keep getting worse as Chatham grows, so I think we’re probably underestimating, if anything, the size of the problem.””

SUSAN LEVY, CHAIRPERSON OF THE CHATHAM COUNTY AFFORDABLE HOUSING COMMITTEE

Traditional development is neglecting the "Missing Middle", those within the 80% to 120% AMI

Defining Intrepid Build's Target Customer:

~80K

Residents in Chatham County

33,947 housing units
\$83k Median Income

~30.5K

Total Essential Workers

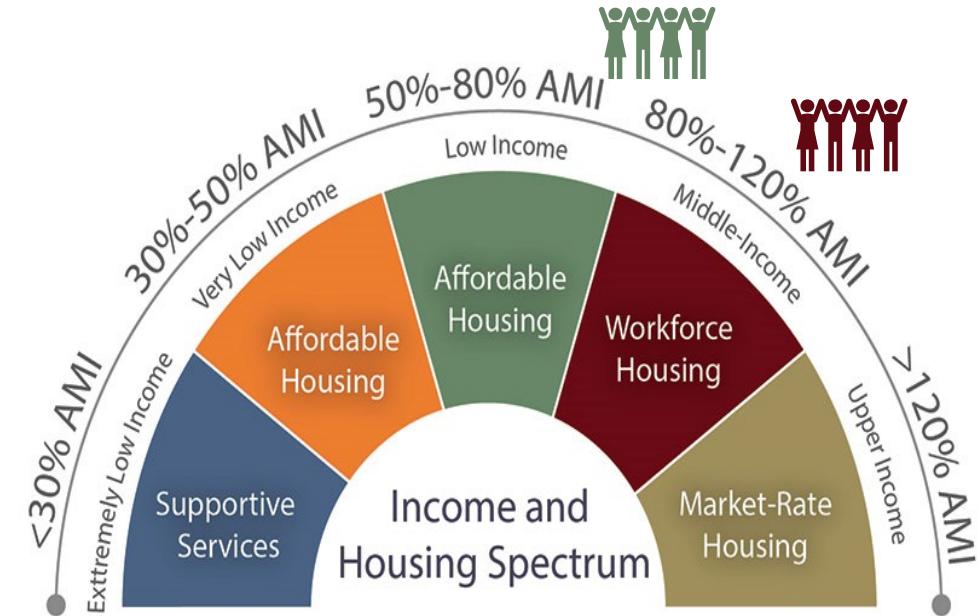
\$36k - \$68k Median Income

~24K

Total Potential Market

~79% ownership rate

Chatham County AMI is \$83k



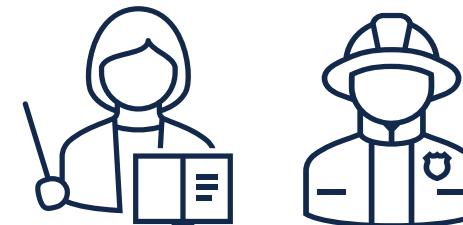
Source: NC Housing Coalition, 2023 Chatham County Data Book, Camion Associates

Only households of \$136K - \$150K combined income can afford the average house price in Chatham County

It is recommended one spends...

No More
than 30%

Gross Income



\$465,000 House Price

Monthly Mortgage Payment

\$3,384



Household Income **\$96k**

20% Down Payment **\$93k**

Interest Rate **7.9%**



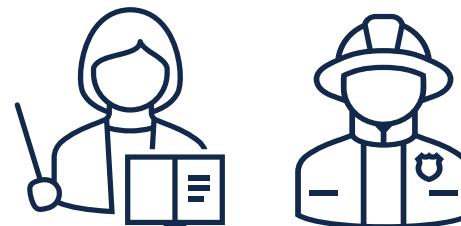
Source: Consumerfinance.gov, NC Housing Coalition

Essentials workers in Chatham County need affordable housing prices

It is recommended one spends...

No More
than 30%

Gross Income



\$200,000 House Price

Monthly Mortgage Payment

\$1,756



Household Income \$96k

20% Down Payment \$40k

Interest Rate 7.9%



Source: Consumerfinance.gov, NC Housing Coalition

Intrepid Build is well positioned to serve the "Missing Middle" with affordable housing prices

It is recommended one spends...

No More
than 30%

Gross Income



~\$325,000 House Price

Monthly Mortgage Payment

\$2,371



Household Income \$96k

20% Down Payment \$65k

Interest Rate 7.9%



Source: Consumerfinance.gov, NC Housing Coalition

- 1. Introduction**
- 2. Recommendation**
- 3. Factory Findings**
- 4. Risk & Mitigations**
- 5. Next Steps**
- 6. Long Term Plan**
- 7. Thank You**



Intrepid Build's 2028 Vision: 22 'attainable' homes and an estimated \$6M in market revenue



Expand SFH Production

\$328k per House
5x Houses per Year
\$4.9M Total Revenue

Source: Team Analysis



Partner with Habitat For Humanity

\$180k in revenue per house
6x Houses Total
1.08M Total Revenue

Intrepid Build's 2028 Vision: 22 'attainable' homes and an estimated \$6M in market revenue



Expand SFH Production

\$328k per House
5x Houses per Year
\$4.9M Total Revenue



Partner with Habitat For Humanity

\$180k in revenue per house
6x Houses Total
1.08M Total Revenue



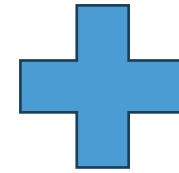
Source: Team Analysis

Intrepid Build should focus on single-family homes

1,500 – 2,000 sqft

2-3 bedrooms

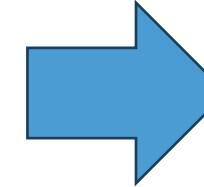
Flexible design



Developed
concept (Perry
Road)

Faster
construction

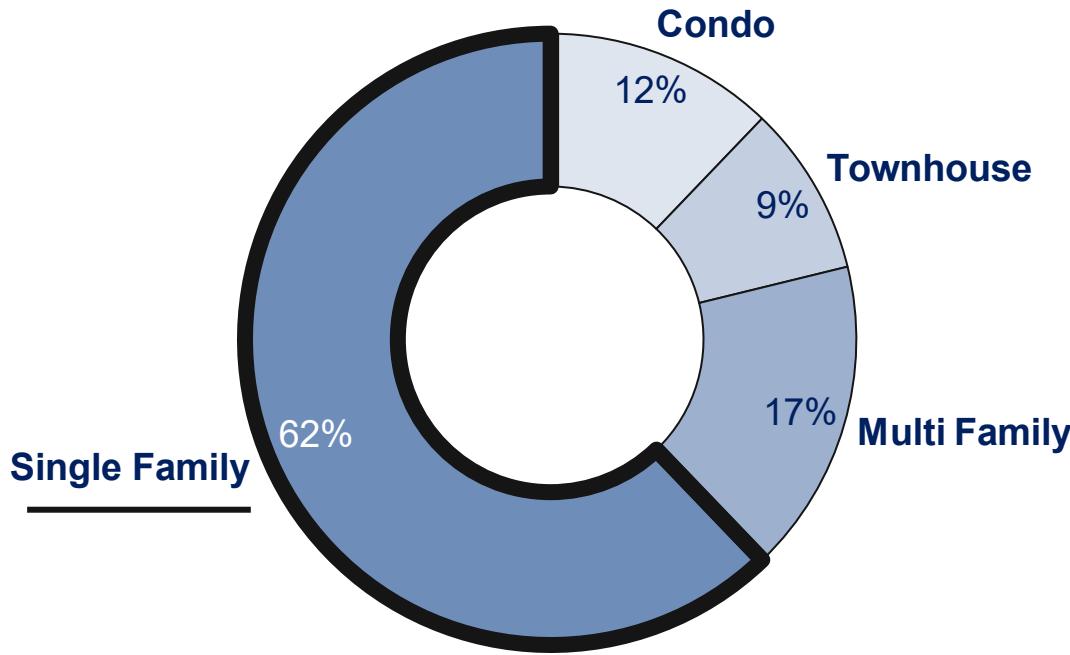
Meets Needs of
Target Market



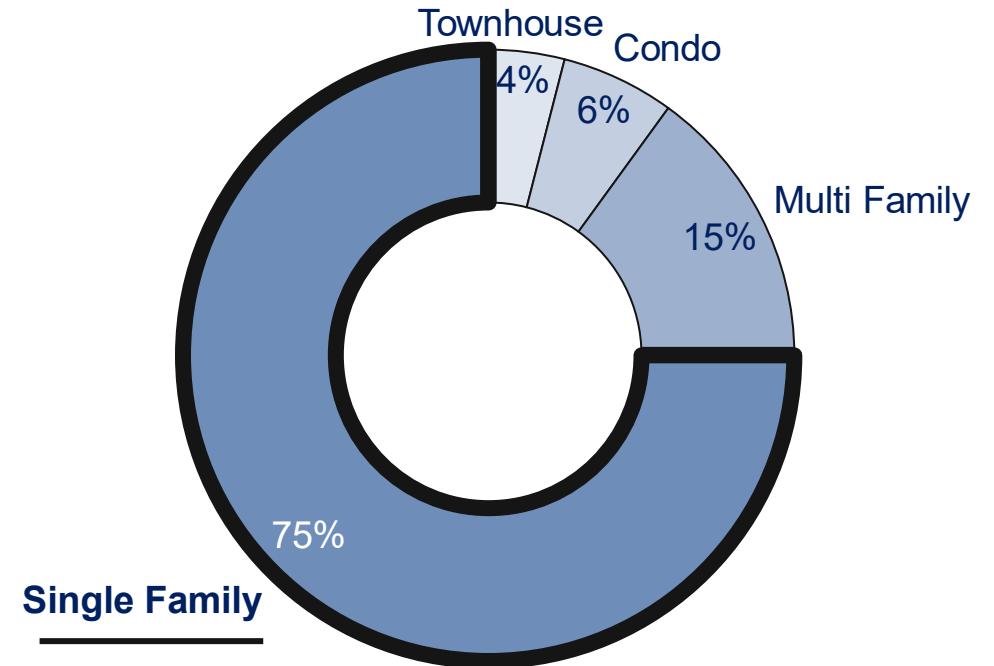
Source: Team Analysis

Single-family homes are significantly preferred to any other type of housing

Preference of home-type from Intrepid Build Market Research Survey



Housing type preference based on National Average



Source: Market Research Survey; NAHB

There are several misconceptions on the viability of steel-framed housing

Based on our research...

11%

Of individuals are familiar with steel-framed housing

59%

Of individuals are vaguely familiar with steel-framed housing

30%

Of individuals are unfamiliar with steel-framed housing

What are people saying about their conceptions of steel-framed modular homes?

- “Steel-framed houses are unattractive and will have poor resale values.”
- “I feel that the steel will rust over time and be prone to expanding and contracting with temperature changes.”



Source: Market Research Survey; Architectureanddesign.com

Intrepid Build has a proven single-family concept that needs to be marketed

According to our research...

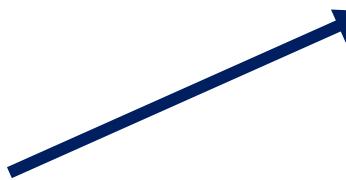
Desired house size: 1500-2000 sqft

Desired number of bedrooms: 2-3

Other desired functions:

- Basic utilities
- Energy efficient homes
- Flexible design

Intrepid Build has the ability to fulfill all the functional desires and more of Chatham's target market with their single-family steel framed modular concept!!!



Source: Team Analysis, Market Research Survey

Intrepid Build should target families with AMI between 80% to 120%

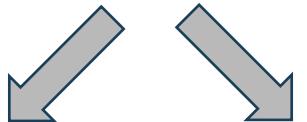
Define the market:

- Low-income households average a Chatham County AMI of 50-80% (~\$42,000)
- Middle-income households average a Chatham County AMI of 80-120% (\$66,000)
i.e. "The Missing Middle"

Demand for low-income households

37,571 Residents seeking affordable housing

21% of Renting Households



79% Homeownership Rate

7,890
Residents seeking to rent

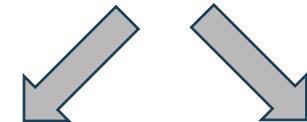
29,681

Residents seeking to own

Demand for middle-income households

30,537 Residents seeking affordable housing

21% of Renting Households



79% Homeownership Rate

6,413
Residents seeking to rent

24,124

Residents seeking to own



Source: U.S. Census, 2023 Chatham County Data Book, Chatham County Housing Trust Fund

There are three customer segments Intrepid Build should market single-family steel framed affordable homes to:

Define the customer:

- Those who have important, but not necessarily high-paying jobs
- Young professionals and workers/employees of economic development projects (e.g. VinFast with projected salaries of ~\$51,000)



The Traditionalist Teacher

- Mainly female
- 55-64 years old
- college educated
- ~\$50k median income
- willing to spend **\$2,000** monthly on housing



Source: Market Research Survey, Team Analysis



The Young Professionals

- 25-44 years of age
- college educated
- ~\$80,000 median income
- willing to spend **\$1,500** on housing



The Practical Saver

- Mainly male
- 25-54 years old
- college educated
- ~\$150k median income
- willing to spend **\$2,500** monthly on housing

Intrepid Build must use desirable language to positively influence customer perceptions of steel-framed homes

Define the language:

- 97% of home buyers search for their home online (zippia.com)
- Intrepid Build must use desirable language to capture the online customer segment

- The words “container”, “modular”, or “industrial” lead to consumers thinking that the concept is poorly built or commercially designed

- Individuals are far less likely to move into a home that is labeled “affordable” due to the stigma surrounding it

- Attractive buzz words such as “effective” or “flexible” lead to a 20% greater likelihood of moving to the next purchasing stage

Intrepid Build’s Product Name:

“High-End Steel Framed Attainable Housing”

Flexible Design. Value Driven. Effective Construction



Source: Market Research Survey; Focus Group; Mailchimp.com

Based on the success of single-family homes, Intrepid Build can also expand into multi-family housing

- Multi-family homes (duplexes) are experiencing a 3.5% compounding demand increase annually
- **23%** of Chatham County residents desire multi-family homes
- The idea of "community" is one of the biggest selling points for moving to and living in Chatham County
- Opportunity for Intrepid to offer "continuous building" services
 - Home buyers can design their initial house with the intention of potential expansion in the future



Sources: JP Morgan; Focus Group, Market Research Survey

Intrepid Build could significantly benefit from the SFH production



Visits by Consumers



Visits by Inspectors

Product

House Type:
3 bd,
1520 sqft

House Price:
\$328k/unit

Construction Cost:
\$262k/unit

Profit in 3Y

Revenue
\$5M

Net Income
\$400,000

Gross Profit Margin:
20%

Intrepid Build's 2028 Vision: 22 'attainable' homes and an estimated \$6M in market revenue



Expand SFH Production

\$328k per House
5x Houses per Year
\$4.9M Total Revenue



Partner with Habitat For Humanity

\$180k in revenue per house
6x Houses Total
1.08M Total Revenue



Source: Team Analysis

Intrepid Build should partner with Habitat for Humanity



Source: Team Analysis

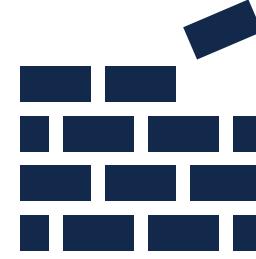
Habitat for Humanity shares the same vision...



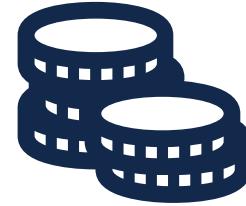
"Everyone in Orange County has a decent place to live"



Land
Development



Building



Mortgage
Financing



Source: Habitat for Humanity Orange County

... which makes them an excellent partner for Intrepid's affordable housing initiatives

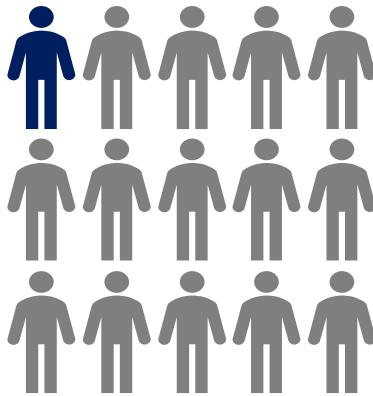
	Intrepid	Habitat for Humanity
Target AMI	50 – 120 %	30 – 80 %
House Type	SFH	SFH, Townhome, Duplex
House Size (in sq ft)	1200 sq ft	1200 – 1500 sq ft
House Size (in # of Bedrooms)	2 – 3 bedrooms	2 – 5 bedrooms (average: 3)



Source: Habitat for Humanity Orange County, Intrepid Build

Habitat for Humanity can benefit from the partnership through scaling up the production of the houses...

For each house Habitat for Humanity builds:



Average Build Time: 8 month

15 Applications

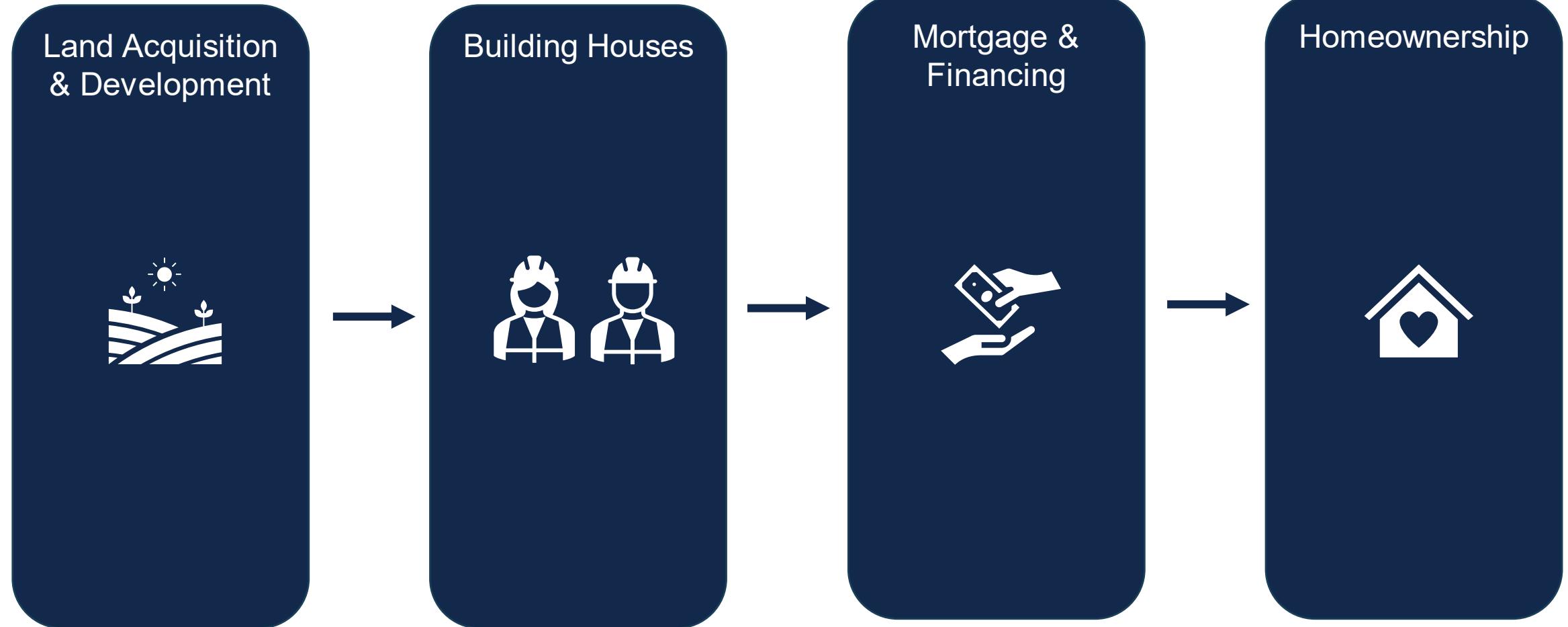
Average Total Cost: \$300k

Intrepid Build can help Habitat for Humanity build faster and cheaper to help more people



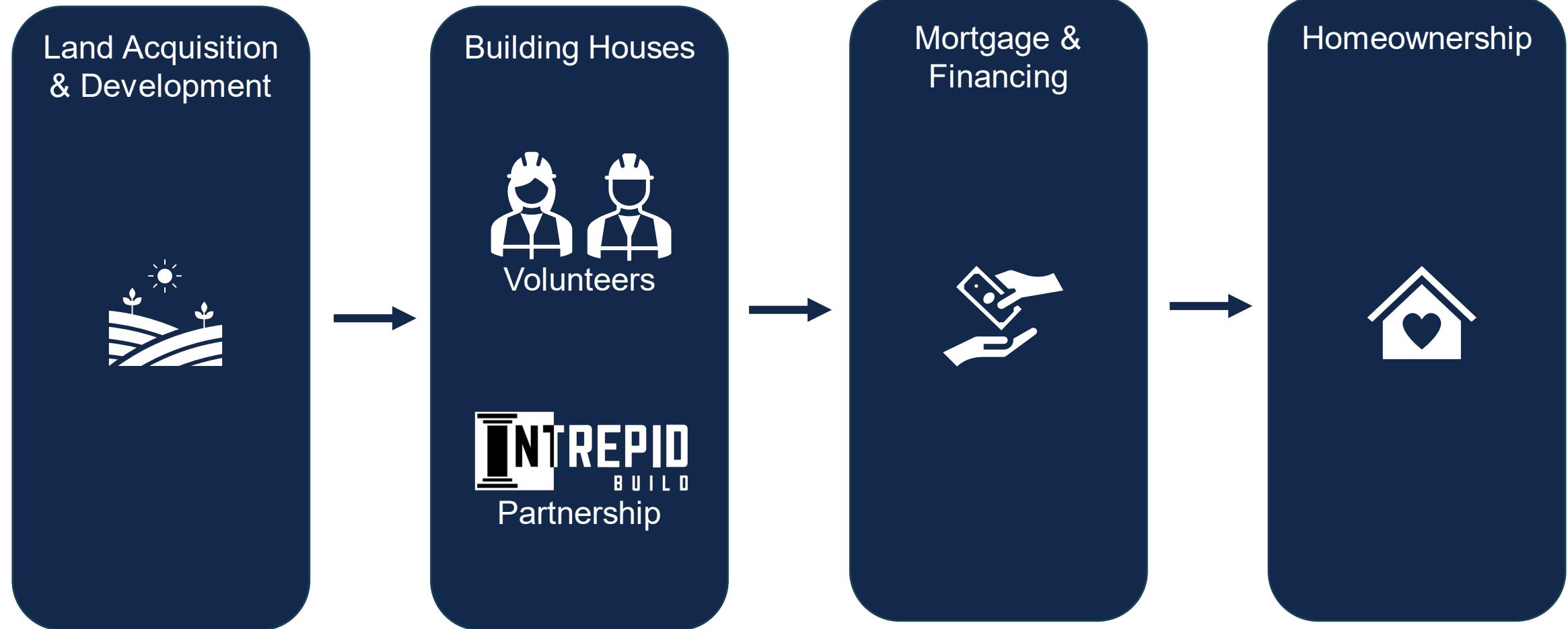
Source: Habitat for Humanity Orange County

... while Intrepid can benefit from acquiring access to distribution channel through Habitat for Humanity.



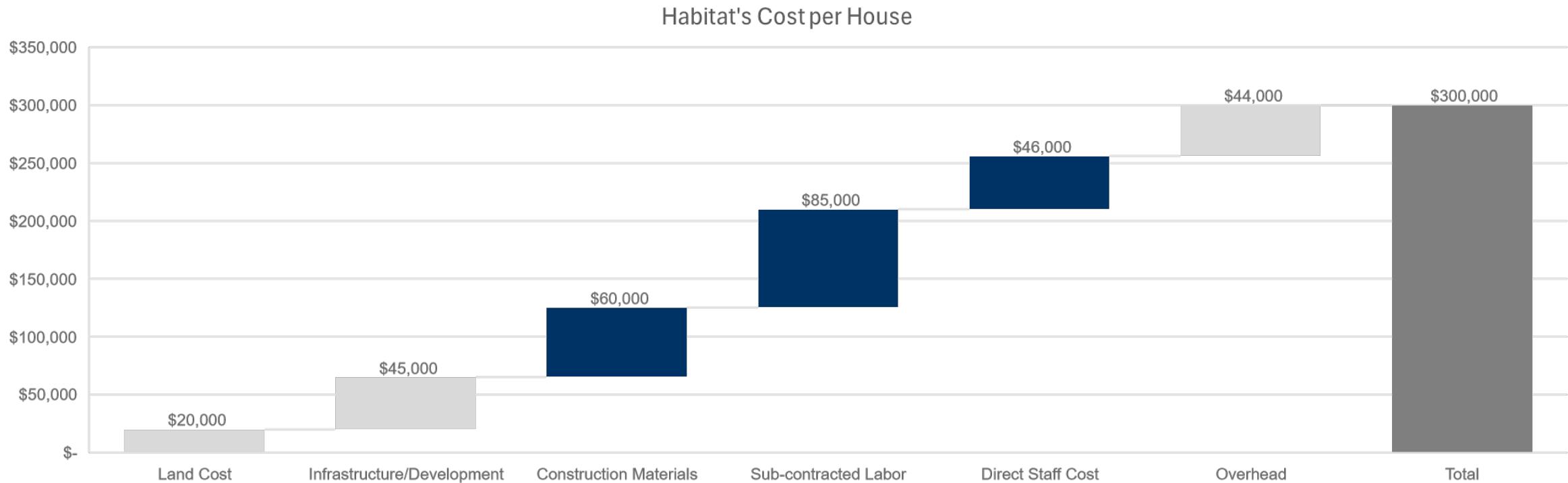
Source: Habitat for Humanity Orange County

...while Intrepid can benefit from acquiring access to distribution channel through Habitat for Humanity.



Source: Habitat for Humanity Orange County, team analysis

Intrepid needs to decrease production cost for the partnership to work



Habitat for Humanity
Construction Cost
\$191,000

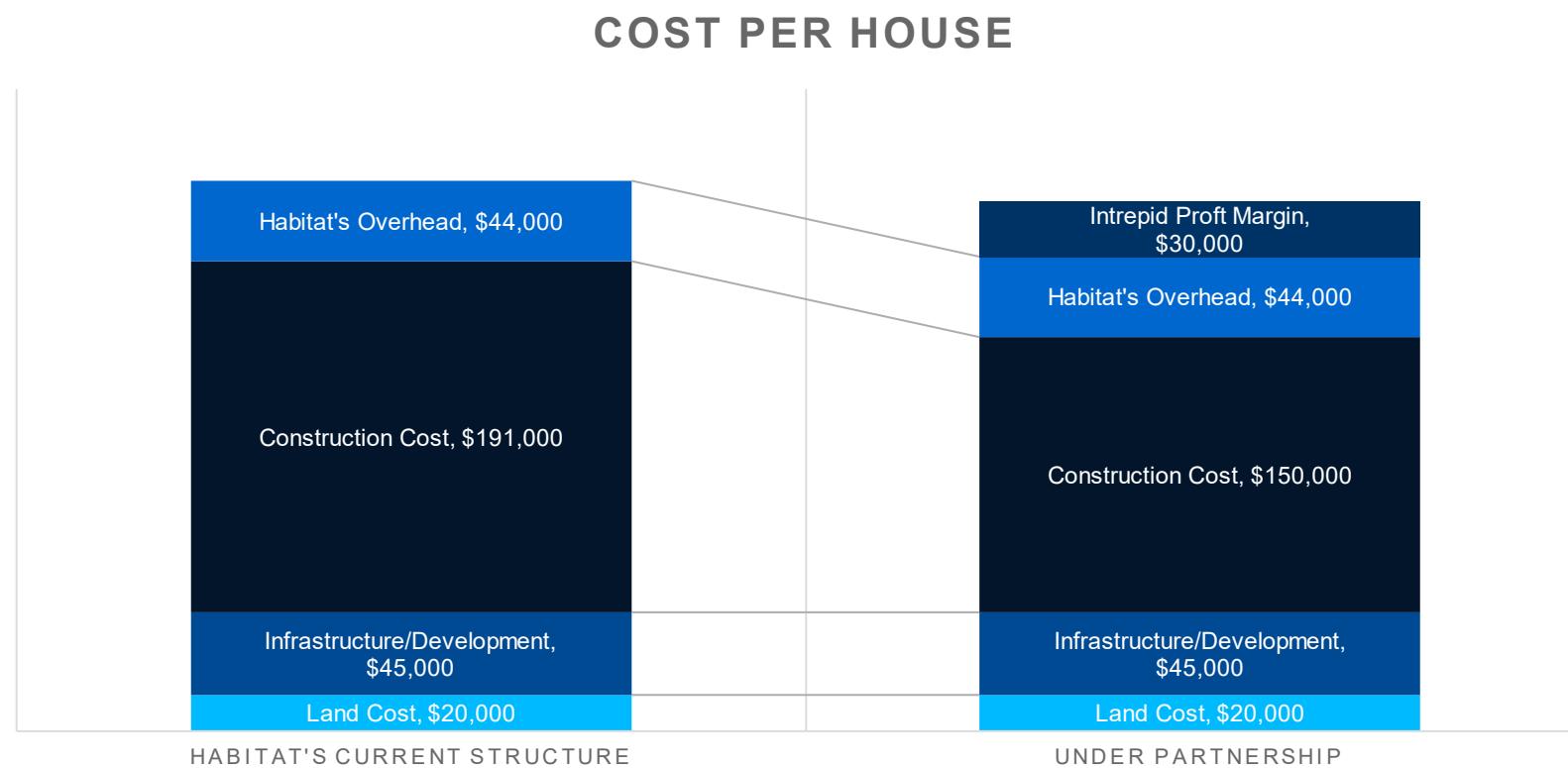


Intrepid's Perry Road Prototype
Construction Cost
\$200,000



Source: Habitat for Humanity Orange County, Intrepid Build

Intrepid can even help homes become more affordable by meeting its target production cost of \$150k...



- Total cost per house decreases by \$11k
- Intrepid can gain \$30k per house which is 20% profit margin

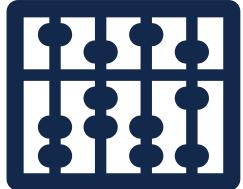


Source: Habitat for Humanity Orange County, team analysis

- 1. Introduction**
- 2. Recommendation**
- 3. Factory Findings**
- 4. Risk & Mitigations**
- 5. Next Steps**
- 6. Long Term Plan**
- 7. Thank You**



Factory purchase poses **significant** financial risk to Intrepid Build's health



Significant Capital

- **High Upfront Investment:** \$5.8 million, which could comprise lucrative opportunities and need new investors and generate interest.

Unknown Returns

- **Unverified Revenue Projections:** No historical sales data. Revenue is based on estimates and market research.
- **Unverified Cost Projections:** Robust construction experience, but the absence of historical sales data for affordable housing makes precise cost and operational projections challenging.

Market Acceptance

- **Unproven Demand:** Steel frame housing is novel in Chatham County, which may result in slower market acceptance among residents.
- **Market Share Acquisition Concerns:** No guarantee that Intrepid can secure sufficient market share due to the untested nature of the product and strong existing competition.

Expensive factory mortgage could limit Intrepid Build's future growth



Factory Cost:	\$5.4M
Installation Cost:	\$400K+
Area:	119K SF

Commercial Monthly Payment Mortgage	Down Payment (down payment 25%)	Interest rate	Monthly Payment	Total Cost of Loan
15Y Loan	\$1.35M	6.87%	\$39K	\$7.0M
15Y Loan	\$1.35M	10.5%	\$48K	\$8.7M
30Y Loan	\$1.35M	6.87%	\$29K	\$10.3M
30Y Loan	\$1.35M	10.5%	\$40K	\$14.3M



Source: commercialloandirect.com

Several assumptions went into building the financial model



Factory

Factory Cost:
\$5.4M

Factory Preparation
Cost:
\$400,000

Operations

Gross Profit Margin:
24%

Construction Cost:
\$262k/unit

Product

House Price:
\$345k/unit

House Type:
3 bd, 1520 sqft

Intrepid requires greater market influence for profitable bottom line

Break-Even Estimate

- Breakeven Point (units)

$$\frac{\text{Fixed Costs}}{\text{Price per Unit} - \text{Variable Cost per Unit}}$$

- The break-even point = 70 units for 5 years
- Annual sale volume: 15 units

Estimate Net Income

- Sale goal to meet loan repayment
- 30-year, 6.87% annual rate
- Sell 65 units every year
- 17% tax rate

Estimate Investment Return

\$5.8M Investment

\$22.4M Annual Gross Profit
\$408.3K Annual Net Income



Source: Team Analysis

Factory initiative needs more maturity to be successful

Market Prospects & Potential

Market Test: Monitor steel frame housing market demand.

Growth Momentum: Lower housing price lead to above average sale volume increase.



Capital & Experience Synergy

Operational Mastery: Develop a robust track record to inform future factory production strategies.

Capital Fortification: Establish a solid capital base, ensuring the financial resilience.



Factory Investment in Maturity

Business Model Validation: Consistent sales patterns and market stability.

Calculated Expansion: Align factory investment with proven sell data and technological integration.



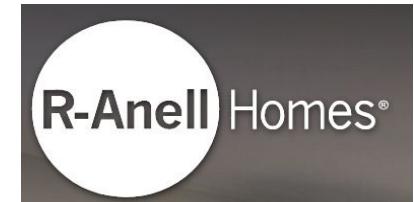
At this time, the factory initiative is *NOT* a suitable option for Intrepid Build



- 1. Introduction**
- 2. Recommendation**
- 3. Factory Findings**
- 4. Risk & Mitigations**
- 5. Next Steps**
- 6. Long Term Plan**
- 7. Thank You**

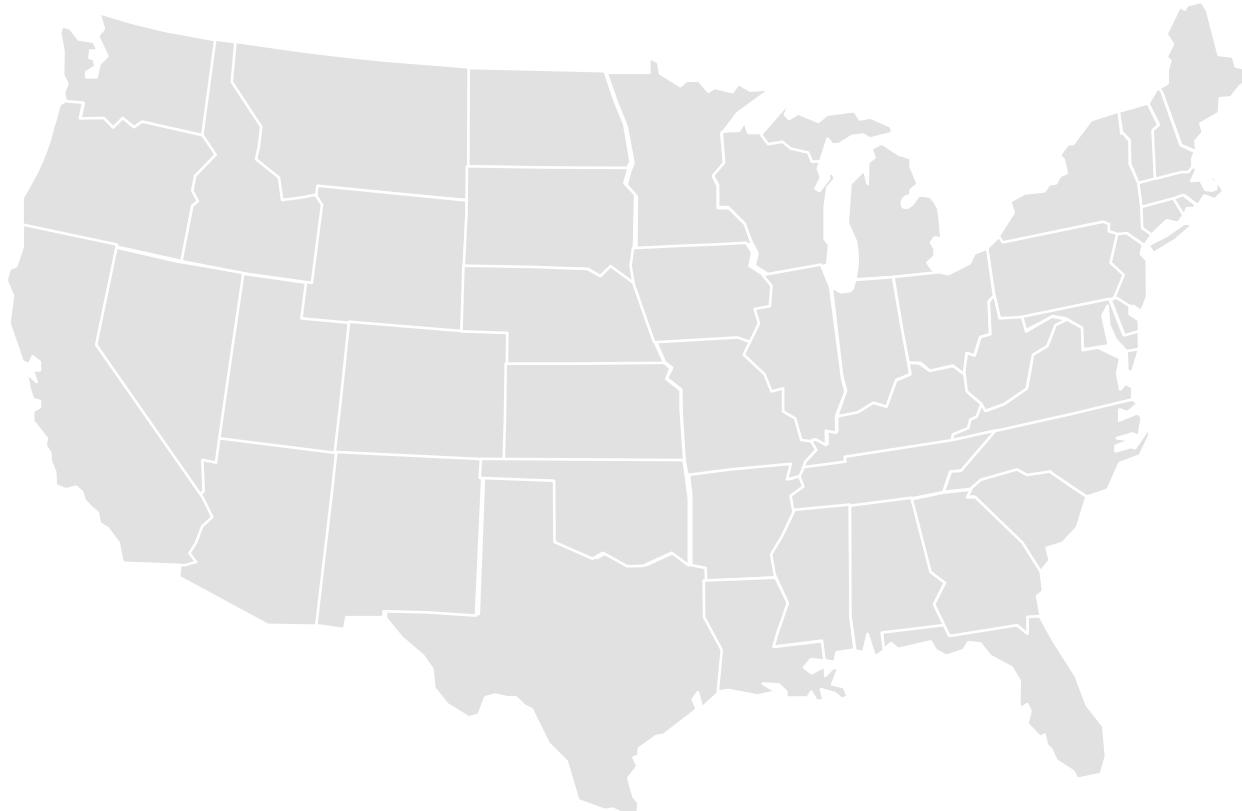


The modular home landscape locally and nationally is saturated and very competitive



Source: Team Analysis

The modular home landscape locally and nationally is saturated and very competitive



GREYSTAR™



Paul Schumacher
SCHUMACHER HOMES



Source: Team Analysis

Competitors are focusing on educating the customer, creating variety in floor plans, and affordable prices



- Greystar purchased a factory in Pennsylvania.
- Using investor decks to pitch idea and work out "kinks".
- The branding is called "LTD commodities"
- Extensive list of **floor plans** for both first-time homebuyers and couples.
- Promotes shorter construction times, energy efficiency, **stronger framework**, and **affordable** prices.
- Client has the **liberty to design** their property.
- Promotes **affordable** prices and **customizable** floor plans

Intrepid Build should use the value proposition of steel to differentiate itself in the market as a sustainable product



Source: Greystar intern interview, CCH, Suites Homes, Team Analysis

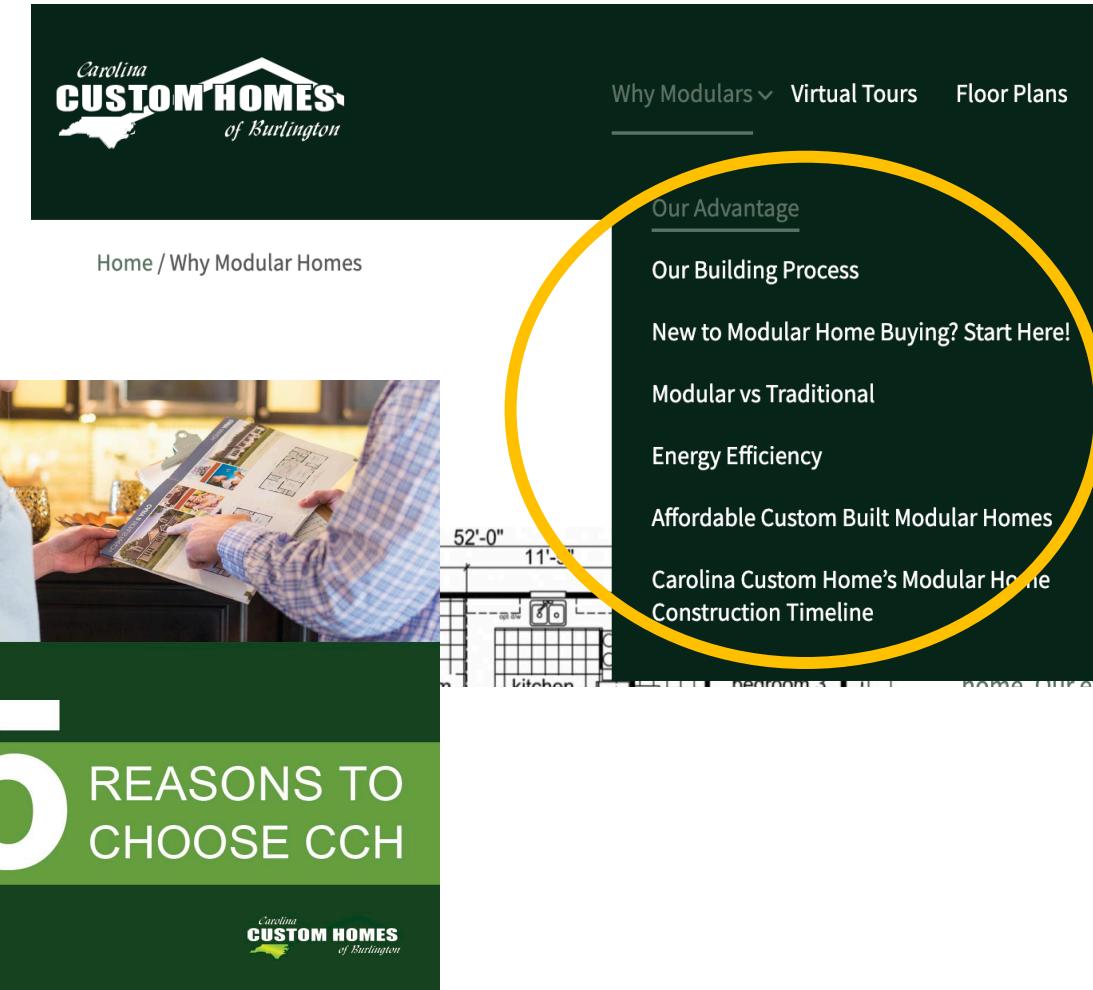
The perception of steel-framed homes varies, addressing the stigma of containers through education is key

- **Risk:**

- 97% of home buyers search for their homes online, so pictures and words matter to establish perceptions.

- **Mitigation:**

- Allocate a budget to create marketing materials such as buying guides, fact-sheets, brochures, and videos with desirable language.
- Monitor competitor language used for modular custom home construction.
- Invite community members to do site visits to learn about benefits.



Source: Zippia.com, Market Research Survey

Competitors have successfully persuaded customers to purchase Custom Modular Homes

Carolina Custom Homes of Burlington

2450 N Church St, Burlington, NC

4.3 

 Leah Hall
7 reviews · 3 photos

 4 months ago

We had a phenomenal experience building our dream home with Carolina Custom Homes. We traveled from Kannapolis, NC to Burlington (2 hours away) after I found them on YouTube. Their floor plans were phenomenal compared to other modular home companies in my area. Picking out the right floor plan, colors, and all the many details of a home can be very stressful but Jacklyn made this process very EASY for my husband and I. She took the time to show us numerous homes and make sure we found the one right for us. We were able to get all of the upgrades we wanted in our home all while staying in our price range. We could not do this anywhere else. Our home was ordered at the end of March and we were able to move in to our new home at the end of November. This was a very quick and easy process. Carolina Custom Homes did a wonderful job of communicating with us, giving us weekly updates, and answering numerous questions. They were always polite. The contractors were also very friendly and timely in completing their task. Carolina custom homes makes creating your dream home an easy process.



 Write a review

191 reviews 

⋮

"Been in our home for over 2 years now and *really starting to see the energy-efficient advantages*. We love our home and would recommend to everybody!"

Carolina Custom Homes of Burlington Google Reviews

 Jeff Whitman   Can go wrong with a home from them good built modular,everyone was nice professional and courteous to our needs awesome job !!!	 Bryson Hicks   Having Annabelle McKeown is an absolute must when buying your next home from Carolina Custom Homes of Burlington!	 Debra Carter   My husband and I were looking for new homes we met with Jacklyn and she was very informative and very patient with us and if we do end up buying from them . I... Read more
 Muriel Huyser   We had a very good experience working with Carolina Custom Homes of Burlington. Andy and everyone who worked on our home from the office sta... Read more	 Katherine Heath   This company is wonderful! Their responsiveness is unmatched, and they take the time to ensure excellent service. In particular, Shields McKeown is great t... Read more	 Robert Wood   Although we did not end up using Carolina custom homes because we needed to move now and did not have the time to wait for a build jacklyn smith was... Read more

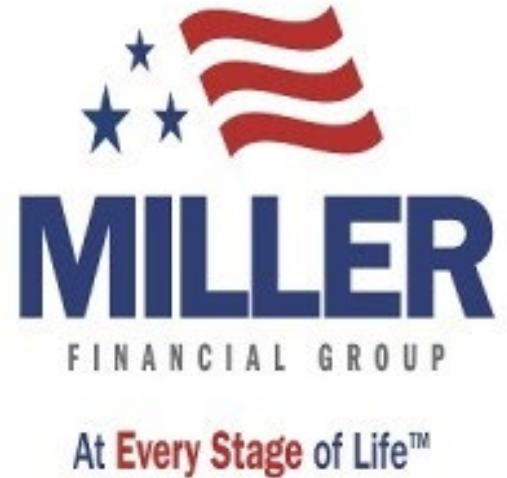


Sources: CCH Google Reviews

Insurance rates are cheaper for steel framed houses because the risk is significantly lower

Average cost (per year) to insure a home in North Carolina:

	\$200,000	\$350,000
Stick-Built	\$1,216	\$1,950
Steel-Framed	\$1,007	\$1,614



Due to the fire-resistant nature, higher durability, reduced maintenance costs, pest-resistance, and consistent building standards... steel framed homes fit a more risk averse buyer



Source: Miller Financial Group; Peak Steel



Steel Container Acquisition: Risk Assessment and Mitigation through rigorous inspection process

- **Risk:**
 - Variability in Container Condition
 - Inconsistencies in Dimensions
 - Corrosion and Rust
 - Presence of Hazardous Materials
- **Mitigation:** Implement a rigorous inspection process for each container before purchase or modification.



Strategic Cutting: 3D Modeling to Simplify Steel Container Modifications

- **Risk:** Each steel container may vary in terms of areas with additional reinforced steel, particularly around doors and windows. Cutting through these reinforced areas for windows or doors is more challenging than cutting through the standard side panels.
- **Mitigation:** Utilize 3D modeling to design each home virtually before construction begins. This ensures precision in design and alignment with client requirements.



Source: Team Analysis

Bridging Risk with Training: Enhancing Expertise for Modular Homes Construction

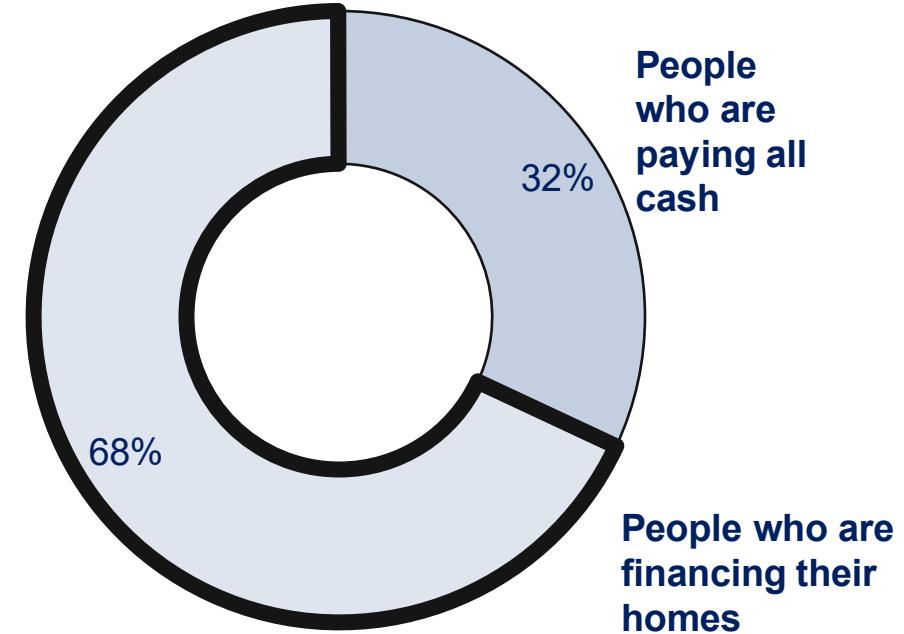
- **Risk:** High level of technical skill required to modify and construct modular homes from steel containers.
- **Mitigation:** Invest in training for staff on specific techniques related to steel container construction.



Source: Team Analysis

Managing Financing Risks for Modular Home Buyers

- **Risk:** Financial institutions may misunderstand modular homes as similar to manufactured homes, leading to challenges in financing due to different zoning and regulatory standards.
- **Mitigation:** Educate financial institutions and lenders to clarify the distinctions between modular and manufactured homes. Modular homes are constructed in factories and assembled on-site, adhering to the same building codes as site-built homes



Source: National Association of Realtors (NAR)

- 1. Introduction**
- 2. Recommendation**
- 3. Factory Findings**
- 4. Risk & Mitigations**
- 5. Next Steps**
- 6. Long Term Plan**
- 7. Thank You**



Recommended Immediate Next Steps for Intrepid to take this year

1

Blueprint Design

- **Action Item:** Finalize 3-bedroom, 2-bathroom single-family home (SFH) floor plan.
- **Details:** Ensure the design is scalable and cost-effective for mass production.

2

Cost Analysis

- **Action Item:** Complete the Bill of Materials (BOM).
- **Details:** Include all necessary materials with detailed specifications and cost estimations.

3

Customer Insights

- **Action Item:** Host focus groups with community members.
- **Details:** Gather local community insights to feed marketing material

4

Marketing Material Development

- **Action Item:** Create informative marketing content.
- **Details:** Highlight the benefits of steel-framed homes, emphasizing durability, sustainability, and cost-effectiveness.

5

Partnership with Habitat for Humanity

- **Action Item:** Establish formal collaboration terms with Orange County CEO Jennifer Player
- **Details:** Outline objectives for joint ventures, potential projects, and resource sharing.

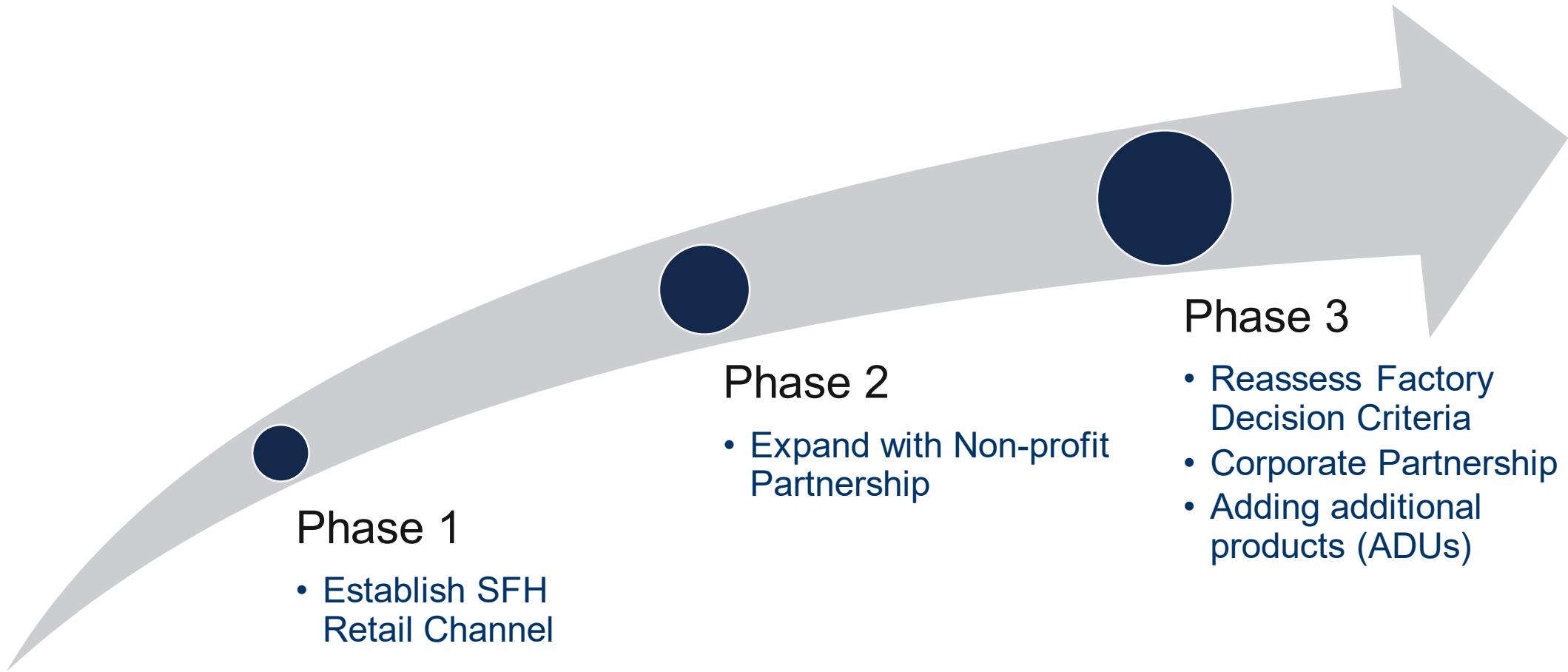


Source: Team Analysis

- 1. Introduction**
- 2. Recommendation**
- 3. Factory Findings**
- 4. Risk & Mitigations**
- 5. Next Steps**
- 6. Long Term Plan**
- 7. Thank You**



SFHs are just the beginning: Intrepid's opportunities for expanding products and sponsorships



Source: Team Analysis

Intrepid should explore corporate sponsorship opportunities to address workforce housing challenges

- **Corporate Arrivals** area substantial opportunity to collaborate on incoming workforce.
- **Proven Model:** Drawing inspiration from Disney's partnership with The Michaels Organization in Florida.
- **Intrepid** can replicate this successful model by partnering with incoming corporations to develop attainable housing solutions.



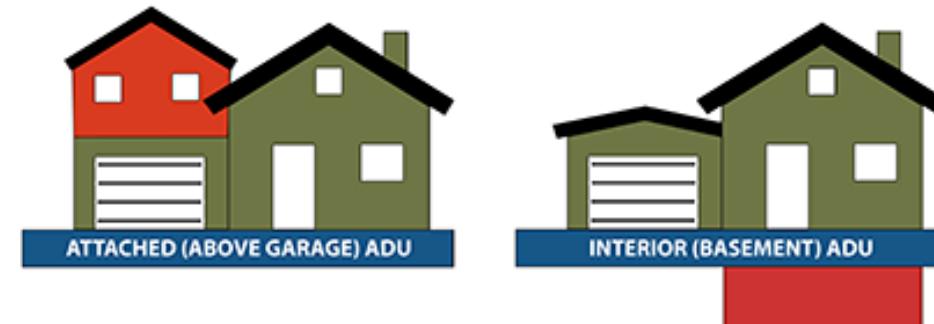
Source: <https://disneyconnect.com/>

Intrepid can expand its product line to help expand the US housing solutions with ADUs.

\$3.3B Valuation
As of 2023



\$10.6B Expected to reach
By 2030



18.6% Compound Annual
Growth Rate



INTERIOR (UPPER FLOOR) ADU

- 1. Introduction**
- 2. Recommendation**
- 3. Factory Findings**
- 4. Risk & Mitigations**
- 5. Next Steps**
- 6. Long Term Plan**
- 7. Thank You**





KENAN-FLAGLER
BUSINESS SCHOOL



Thank You





KENAN-FLAGLER
BUSINESS SCHOOL



Q&A



KENAN-FLAGLER
BUSINESS SCHOOL



Appendix



KENAN-FLAGLER
BUSINESS SCHOOL



Workstream 1

Financial Analysis

Workstream 1 Sources

- <https://privatebank.jpmorgan.com/nam/en/insights/markets-and-investing/ideas-and-insights/when-will-the-crisis-in-US-housing-affordability-end-and-how>
- <https://kenaninstitute.unc.edu/commentary/the-affordable-housing-crisis-in-2023-where-do-we-stand-and-what-are-the-solutions/>
- <https://www.nclm.org/resourcelibrary/Shared%20Documents/Housing%20Crisis%20Report.pdf>



WORKSTREAM 1: FACTORY COST

Market Price for a Standard Factory in Chatham (by Eric Maribojoc)

Estimate Name	Chatham Industrial
Building Type	Warehouse with Brick Veneer / Reinforced Concrete
Location	DURHAM, NC
	1.00
Stories Height	24.00
Floor Area (S.F.)	30,000.00
LaborType	OPN
Basement Included	No
Data Release	Year 2024 Quarter 1
Cost Per Square Foot	\$139.56
Total Building Cost	\$4,186,902.14



P&L for SFH

Intrepid Affordable Housing Project Without Facotry					
Profit and Loss					
	2025	2026	2027	2028	Total
break-even point		2.210221205	2.210221205	2.210221205	11.05
price / unit	\$327,750.00	\$327,750.00	\$327,750.00	\$327,750.00	
units sold	0	5	5	5	15
Total Income	0	\$1,638,750.00	\$1,638,750.00	\$1,638,750.00	\$4,916,250.00
Construction Cost pre Unit	\$262,200.00	\$262,200.00	\$262,200.00	\$262,200.00	
Site Preparation	\$5,000.00	\$5,000.00	\$5,000.00	\$5,000.00	
Foundation and Structural	\$28,000.00	\$28,000.00	\$28,000.00	\$28,000.00	
Framing and Exterior	\$46,480.00	\$46,480.00	\$46,480.00	\$46,480.00	
Systems Installation	\$51,000.00	\$51,000.00	\$51,000.00	\$51,000.00	
Interior and Finishing	\$57,500.00	\$57,500.00	\$57,500.00	\$57,500.00	
Additional Considerations	\$2,500.00	\$2,500.00	\$2,500.00	\$2,500.00	
Others	\$71,520.00	\$71,520.00	\$71,520.00	\$71,520.00	
Transportation cost	\$200.00	\$200.00	\$200.00	\$200.00	
Cost of Goods Sold	\$0.00	\$1,048,800.00	\$1,311,000.00	\$1,311,000.00	\$3,670,800.00
Gross Profit	\$0.00	\$589,950.00	\$327,750.00	\$327,750.00	\$1,245,450.00
Expenses					
Research and Development					
Prototyping and Design	\$200,000.00				
Sales and Marketing					
Advertising and Marketing	\$0.00	\$0.00	\$0.00	\$0.00	
Sales Commissions	\$0.00	\$0.00	\$0.00	\$0.00	
Interest Expense		\$0.00	\$0.00	\$0.00	\$0.00
Total Expenses		\$0.00	\$0.00	\$0.00	\$0.00
Earnings Before Taxes		\$589,950.00	\$327,750.00	\$327,750.00	\$1,245,450.00
Taxes Paid		\$278,587.50	\$278,587.50	\$278,587.50	\$835,762.50
Net Income		\$311,362.50	\$49,162.50	\$49,162.50	\$409,687.50



Source: Team Analysis

P&L for SFH

Intrepid Factory Housing Project							
	Profit and Loss						
	2025 - 2029						
	2024	2025	2026	2027	2028	2029	Total
break-even point		14,009,661.84	14,009,661.84	14,009,661.84	14,009,661.84	14,009,661.84	70.05
price / unit	\$345,000.00	\$345,000.00	\$345,000.00	\$345,000.00	\$345,000.00	\$345,000.00	
units sold	0	65	65	65	70	70	
Total Income	0	\$22,425,000.00	\$22,425,000.00	\$22,425,000.00	\$24,150,000.00	\$24,150,000.00	\$115,575,000.00
Factory Acquisition							
Market Price of the Factory	\$5,400,000.00						
Total Factory Building Cost	\$5,400,000.00						
Depreciation and Amortization	\$0.00	\$1,080,000.00	\$1,080,000.00	\$1,080,000.00	\$1,080,000.00	\$1,080,000.00	
Construction Cost per Unit	\$262,200.00	\$262,200.00	\$262,200.00	\$262,200.00	\$262,200.00	\$262,200.00	
Site Preparation	\$5,000.00	\$5,000.00	\$5,000.00	\$5,000.00	\$5,000.00	\$5,000.00	
Foundation and Structural	\$28,000.00	\$28,000.00	\$28,000.00	\$28,000.00	\$28,000.00	\$28,000.00	
Framing and Exterior	\$46,480.00	\$46,480.00	\$46,480.00	\$46,480.00	\$46,480.00	\$46,480.00	
Systems Installation	\$51,000.00	\$51,000.00	\$51,000.00	\$51,000.00	\$51,000.00	\$51,000.00	
Interior and Finishing	\$57,500.00	\$57,500.00	\$57,500.00	\$57,500.00	\$57,500.00	\$57,500.00	
Additional Considerations	\$2,500.00	\$2,500.00	\$2,500.00	\$2,500.00	\$2,500.00	\$2,500.00	
Others	\$71,520.00	\$71,520.00	\$71,520.00	\$71,520.00	\$71,520.00	\$71,520.00	
Transportation cost	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	
Cost of Goods Sold	\$0.00	\$17,043,000.00	\$17,043,000.00	\$17,043,000.00	\$18,354,000.00	\$18,354,000.00	
Gross Profit	\$0.00	\$4,302,000.00	\$4,302,000.00	\$4,302,000.00	\$4,716,000.00	\$4,716,000.00	\$22,338,000.00
Expenses							
Research and Development (R&D)							
Prototyping and Design	\$400,000.00						
R&D Equipment Depreciation		\$80,000.00	\$80,000.00	\$80,000.00	\$80,000.00	\$80,000.00	
Sales and Marketing							
Advertising and Marketing		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Sales Commissions		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
General and Administrative							
Office Expenses		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Insurance		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Manufacturing Overhead							
equipment maintenance		\$500.00	\$500.00	\$500.00	\$500.00	\$500.00	
utilities		\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	
Interest Expense		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Total Expenses		\$81,500.00	\$81,500.00	\$81,500.00	\$81,500.00	\$81,500.00	
Earnings Before Taxes (EBT)		\$4,220,500.00	\$4,220,500.00	\$4,220,500.00	\$4,634,500.00	\$4,634,500.00	
Taxes Paid		\$3,812,250.00	\$3,812,250.00	\$3,812,250.00	\$4,105,500.00	\$4,105,500.00	
Net Income		\$408,250.00	\$408,250.00	\$408,250.00	\$529,000.00	\$529,000.00	\$2,282,750.00



KENAN-FLAGLER
BUSINESS SCHOOL



Workstream 2

Market Research

Workstream 2 Sources Part 1

- <https://ncvfd.com/pre-employment-package.html>
- <https://www.bls.gov/oes/current/oes332011.htm#nat>
- <https://businessnc.com/vinfasts-path-to-ride-ev-market-to-transform-n-c-s-economy-not-always-fast/#:~:text=Annual%20salaries%20are%20slated%20to,U.S.%20Ambassador%2C%20Nguyen%20Quoc%20Dzung>
- <https://www.chathamcountync.gov/government/departments-programs-a-h/affordable-housing>
- <https://www.chathamcountync.gov/government/departments-programs-a-h/affordable-housing/chatham-county-housing-trust-fund>
- <https://chathammagazinenc.com/q-and-a-susan-levy-on-chatham-affordable-housing/>
- <https://chathammagazinenc.com/putting-down-roots-in-chatham-park/>
- <https://www.census.gov/quickfacts/fact/table/chathamcountynorthcarolina/PST045222>
- <https://camoinassociates.com/resources/humanizing-data-area-median-income-ami-and-affordable-housing-policy/>



Workstream 2 Sources Part 2

- <https://www.freddiemac.com/research/consumer-research/20220629-majority-consumers-say-they-would-consider-purchasing-manufactured-home>
- <https://pittsboronc.gov/400/Chatham-Park>
- <https://nchousing.org/release-of-2023-county-profiles/>
- <https://www.comparemymove.com/advice/buying-a-home/buying-a-steel-frame-house>
- <https://www.nar.realtor/on-common-ground/container-homes-can-upcycling-cargo-containers-produce-affordable-housing>
- <https://www.trianglerealestatejournal.com/blog/a-close-look-at-chatham-countys-residential-real-estate-market-june-to-august-2023>
- <https://chathamjournal.com/2017/03/28/north-carolina-facing-shortage-affordable-rental-housing/>



Workstream 2 will identify the target market, conduct a competitive analysis, and develop a marketing strategy for Intrepid's steel-framed housing project

Key Question for Workstream 2

How can Intrepid Build's modular housing project meet the demand for affordable housing in Chatham County, best align with the values and needs of the target market, and differentiate itself from its competitors?

Market Demand

Leverage local perspectives and surveys to identify target market, quantify demand, and define attainable housing.

Competitive Analysis

Analyze competitor offerings and conduct a power/stakeholder map to identify key players.

Go-to-Market Strategy

Use quantitative and qualitative research to identify language that will best highlights project value proposition.

Metrics of Success



Accurately estimate and predict market demand for modular steel-framed housing.



Identify key competitors in this market.

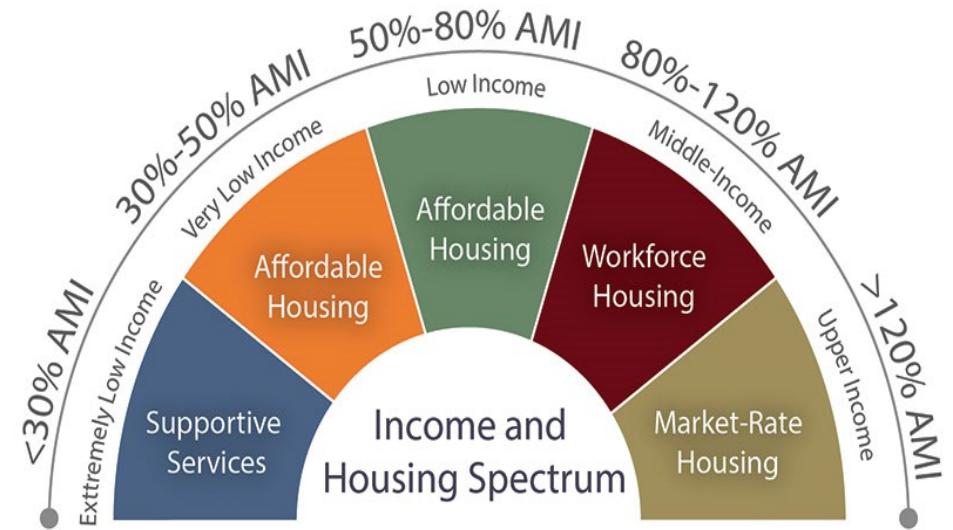


Clear go-to-market strategy for modular steel-frame housing project.



Affordable Housing Crisis Part 1

- **Household Income Levels:** An estimated 1,404 households in Chatham County earn 30% or less of the Area Median Income (AMI).
- **Affordable Rental Units:** Only 335 rental units are affordable to households earning 30% or less of AMI.
- **Housing Gap:** There is an estimated gap of 1,995 affordable rental units in Chatham.
- **Homeownership Opportunity:** The opportunity for homeownership among this population is extremely low



Affordable Housing Crisis Part 2

- **Equity Issue in Housing:** Demographics highlight an equity issue in the affordable housing dialogue.
- **Supply Chain Challenges:** Issues with the supply chain and high lumber costs impact housing affordability.
- **Job Creation Impact:** New economic development projects from Wolfspeed, VinFast, and Toyota will create 11,050 jobs, increasing the need for affordable homes.
- **Population Increase and Housing Development:** Chatham Park is set to boost the population count, yet only 7% of housing development is committed to affordable homes.



Source: Chatham Magazine, 2023 Chatham County Data Book

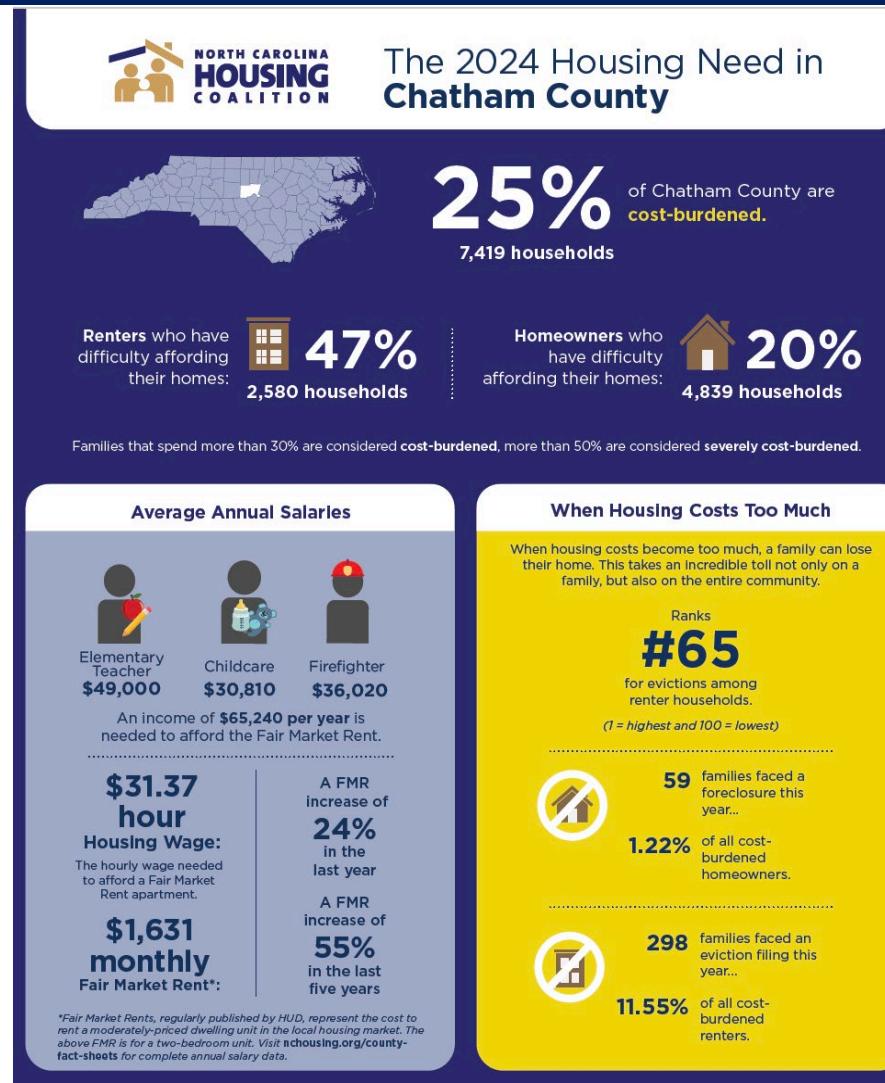
Chatham County – Durham-Chapel Hill, MSA, 2023, Income Limit (HUD)

Median Family Income	2023 Chatham Income Limits				
		1-person (\$70,800)	2-person (\$80,900)	3-person (\$91,000)	4-person (\$101,100)
\$116,200	30% of AMI	\$21,250	\$24,300	\$27,350	\$30,350
	50% of AMI	\$35,400	\$40,450	\$45,500	\$50,550
	80% of AMI	\$56,650	\$64,750	\$72,850	\$80,900



Sources: ChathamNC.gov

The 2024 Housing Need in Chatham County

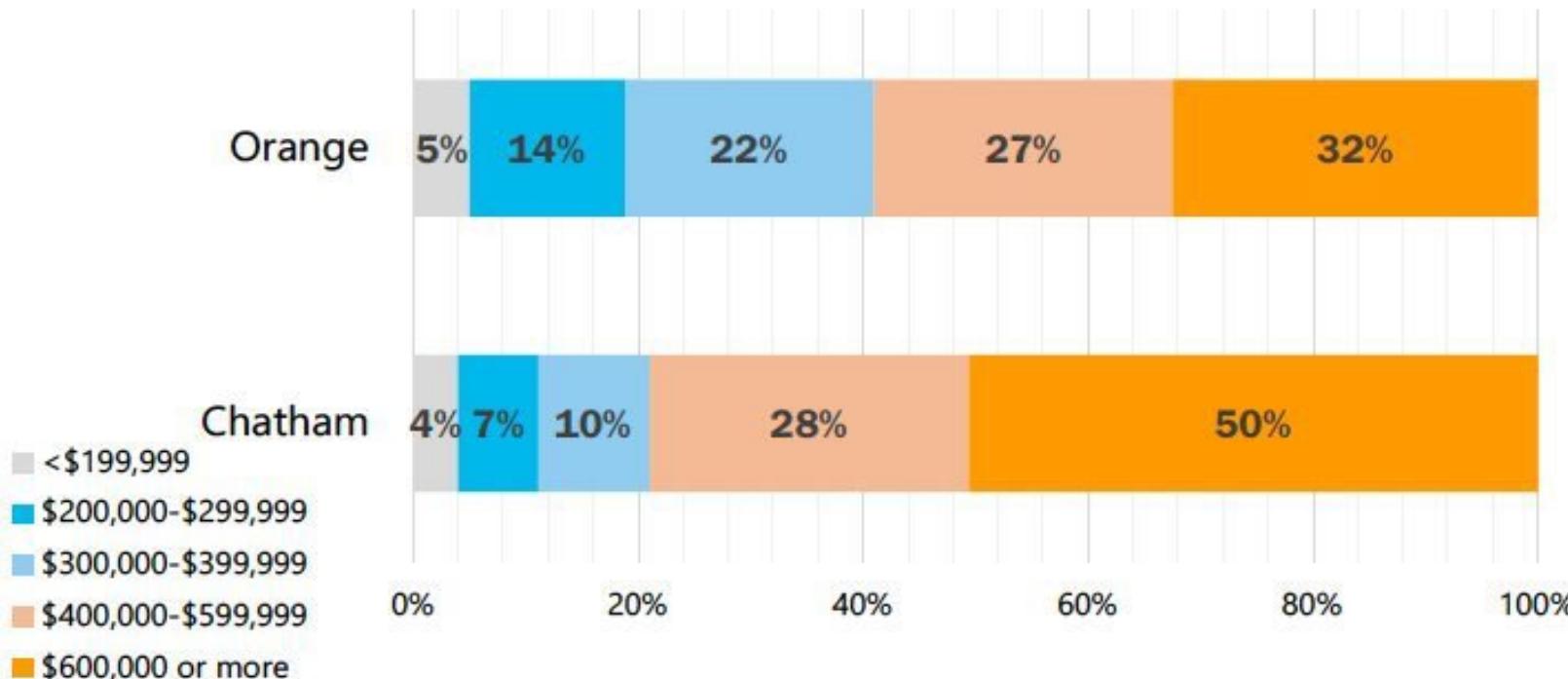


Sources: NC Housing Coalition

~78% of homes sales in 2022 fell in the \$400,000 - \$600,000+ range

2022 home sales by price band

2022 number of home transactions by closing price



Sources: 2023 Chatham County Data Book

Chatham County Missing Middle Housing Analysis

A	B	C	D	E	F
Chatham County Affordable Housing Analysis - Defining the Missing Middle					
Chatham County AMI	\$ 116,000				
Current Market Rate Home Price in Chatham County	\$ 550,000.00				
Recommended housing spend as a percent of monthly gross	30%				
% of AMI	30%	50%	80%	100%	120%
Annual Income for a Family of 4	\$ 34,800	\$ 58,000	\$ 92,800	\$ 116,000	\$ 139,200
Monthly Income for a Family of 4	\$ 2,900	\$ 4,833	\$ 7,733	\$ 9,667	\$ 11,600
30% of Monthly Gross (recommended housing spend)	\$ 870	\$ 1,450	\$ 2,320	\$ 2,900	\$ 3,480
House Price/Loan Amount (using a 6% interest rate and zero downpayment)	\$ 145,000	\$ 240,000	\$ 388,000	\$ 483,000	\$ 583,000
Source for house price/loan amount calculation:					
Mortgage Loan Value For a \$870 per Month Payment (saving.org)					



Sources: Anna Millar, Team Analysis

Affordable Housing Demand (Low-Income)

- Low income is 50-80% AMI
- Chatham County AMI for Family of Four is \$116,200

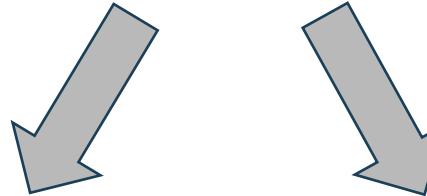
79,939 Residents in Chatham County



47% of residents are considered cost-burdened renters

37,571 Residents seeking affordable housing

21% of Renting Households



7,890

Residents seeking to rent

79% Homeownership Rate

29,681

Residents seeking to own



Source: U.S. Census Bureau, 2023 Chatham County Data Book



Workforce Housing Demand (Middle-Income)

- Middle-income is 80-120% AMI
- Chatham County AMI for Family of Four is \$116,200

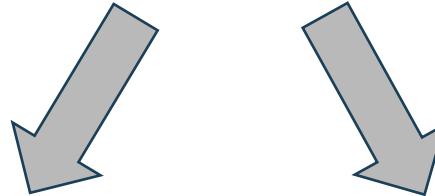
79,939 Residents in Chatham County



38.2% of residents are employed in healthcare, education, and manufacturing

30,537 Residents seeking attainable housing

21% of Renting Households



6,413

Residents seeking to rent

79% Homeownership Rate

24,124

Residents seeking to own



Source: U.S. Census Bureau, 2023 Chatham County Data Book

Chatham County Buyer Personas Based on Housing Prices

- **\$200,000 House Price**
 - **Buyer Persona 1** (Family unit with \$85K household income who saves over five years \$40,000 for 20% downpayment)
 - Total Mortgage of \$247,400 (30-year loan term)
 - With a 7.9% interest rate, you will have a **monthly payment of \$1,756**
- **\$325,000 House Price (Intrepid Build Potential House Price)**
 - **Buyer Persona 2** (Family unit with \$85K household income who saves over five years \$65,000 for 20% downpayment)
 - Total Mortgage of \$247,400 (30-year loan term)
 - With a 7.9% interest rate, you will have a **monthly payment of \$2,371**
- **\$465,000 House Price**
 - **Buyer Persona 3** (Family unit with \$85K household income who saves over five years \$93,000 for 20% downpayment)
 - Total Mortgage of \$247,400 (30-year loan term)
 - With a 7.9% interest rate, you will have a **monthly payment of \$3,384**



Source: consumerfinance.gov

How to market single-family steel framed affordable homes

Define the customer:

- Those who have important, but not necessarily high-paying jobs
- Workers of economic development projects (e.g. VinFast) with projected salaries of ~\$51,000

Income needed to afford local rent	
Average monthly rent and income needed to make it 'affordable.' Affordable is defined as spending no more than 30% of the pre-tax income on housing. Calculation does not include utilities.	
Chatham County 2023 Q2	
Average Rent	\$1,604
Monthly income needed to afford monthly rent	\$5,347
Annualized income needed to afford monthly rent	\$64,164
Hourly income needed to afford monthly rent	\$30.85
Number of hours at minimum wage to afford monthly rent	171 hours a week

Source: Eller Capital; The Chamber for a Greater Chapel Hill-Carrboro



Salary: \$36,000 - \$45,000
Hourly Income: \$19.20



Salary: \$49,000 - \$51,000
Hourly Income: \$31.53



Salary: \$68,686
Hourly Income: \$32



Source: U.S. Bureau of Labor, NC Volunteer Chatham Department, Glassdoor, Indeed

Customer Profile #1 – The Traditionalists

Demographics

- Predominantly White/Caucasian (92%)
- Majority female (62%)
- Predominantly homeowners (62%)
- Age primarily between 55-64 years (38%)
- Most common education level: College (69%)
- Income mostly between \$50,000 - \$200,000

Preferences & Interests

- Generally aware but not very familiar with steel-framed homes
- Moderate liking for steel-framed compared to traditional homes
- Would consider a steel-framed home, with budget around \$1000 - \$3000 for monthly housing costs
- Positive but cautious about the strength and durability of steel-framed homes



Sources: Market Research Survey, Team Analysis

Customer Profile #2 – The Young Professionals

Demographics

- Diverse ethnic background with a majority being White/Caucasian (64%)
- Gender balanced (56% Female)
- Mostly homeowners (68%)
- Age largely between 25-44 years (64%)
- High level of education with a notable number of postgraduates (32%)
- Income range mostly above \$80,000

Preferences & Interests

- Somewhat familiar with steel-framed homes
- Generally favorable perception of steel-framed over traditional homes
- Interested in steel-framed homes, likely to spend \$1000 - \$2000 on monthly housing
- Open to the idea of steel-framed homes but with some reservations about aesthetic appeal and market skepticism



Sources: Market Research Survey, Team Analysis

Customer Profile #3 – The Practical Savers

Demographics

- Mostly White/Caucasian (90%)
- Predominantly male (75%)
- All homeowners (90%)
- A mature age group with most between 25-54 years (85%)
- High educational attainment with significant postgraduate presence (50%)
- Higher income brackets, many earning above \$150,000

Preferences & Interests

- Moderate to high familiarity with steel-framed homes
- Balanced views on steel versus traditional homes, with a slight preference for traditional
- Open to considering steel-framed homes if aligned with personal needs, likely to spend \$1500 - \$2500 monthly
- Skeptical about the industrial look but recognizes the potential customization of steel-framed homes



Sources: Market Research Survey, Team Analysis

Intrepid has already designed a built a single-family home that is being well-received by the market



Proven Concept with Delivered Results



Single-Family Homes

WHAT

- Preferred size is 1,500 – 2,000 square feet
- 2-3 bedrooms
- Double wide modular home is the most common

WHY

- 70% of people prefer single-family homes
- Intrepid can cater to renovation/expansion needs of target market
- An Intrepid single-family home is already being built
- Faster construction

CONSIDERATIONS

- Insurance dwelling amount can be up to \$160,000
- Mortgage premium \$1,901 (lowest \$800)
- Construction materials can change mortgage terms
- Discounts can be applied if home is on a permanent foundation



Sources: Market Research Survey, Focus Group, Bowmen Insurance Company

Multi-Family Homes – Duplexes

- Multi-family homes (duplexes) are experiencing a 3.5% compounding demand increase annually
- **23%** of Chatham County residents prefer multi-family homes
- The idea of "community" is one of the biggest selling points for moving to and living in Chatham County
- Opportunity for Intrepid to offer "continuous building" services
 - Home buyers can design their initial house with the intention of potential expansion in the future



Market Research Survey

- **Survey Platform:** Qualtrics
- **Survey Creation:** Four components (demographics, preferences & priorities, awareness& perceptions, interest, claims testing)
- **Survey Goal:** Understand your housing needs, familiarity with high-strength steel homes, and overall demand for attainable housing options in Chatham County.
- **Survey Submission Goal:** 80 -100 responses (87 responses received)
 - 58 responses outside of Intrepid Build's Network (68%)
 - 48% male, 46% female, 60% in the 25-44 age group, 28% minorities (10% of that identified as Hispanic/Latinx), 65% white, 37% college graduated, and average household income of \$120,000 to \$200,000
 - 64% were homeowners, 76% live with a partner/spouse and/or children
- **Insights:** [Market Research Survey Analysis](#) for customer segments



Source: team analysis



Focus Group Debrief

- **Focus Group Attendees:** 6 (community leaders, realtors, residents, Intrepid Build staff, 67% male, 83% white)
- **Focus Group Goal:** Gather insights of local housing preferences, familiarity with high-strength steel-framed homes, and opinions on how to address affordable housing challenges in Pittsboro/Chatham County.
- Focus Groups Questions
- **Takeaways:**
 - Housing is not affordable, there's a supply issue
 - People were somewhat aware of modular steel-framed homes concept, however, the connection of this being a solution to the affordable housing market was not established yet
 - Creating an "affordable housing **community**" was emphasized throughout the conversation more than once



Source: team analysis

A Closer Look at Competitors



- International real estate developer
- Since August 2023, Greystar focused on building off-site, prefabricated modular apartments sustainably and at an attainable price.
- Greystar purchased a factory in Pennsylvania to capture those seeking workforce attainable housing.
- Currently, they are using investor decks to pitch idea and work out "kinks".
- The branding is called "LTD commodities"
- They strive to be first-movers in this space.



- Licensed General Contractors (one-stop-shop)
- Based in Burlington but serves several areas of NC up to 60 miles in distance.
- Has extensive list of floor plans for both first-time homebuyers and couples looking for their retirement home.
- Promote shorter construction times, energy efficiency, stronger framework, and affordable prices as benefits.
- Educates customers through one-pagers, videos, buying guides, and by debunking myths of modular homes through facts.



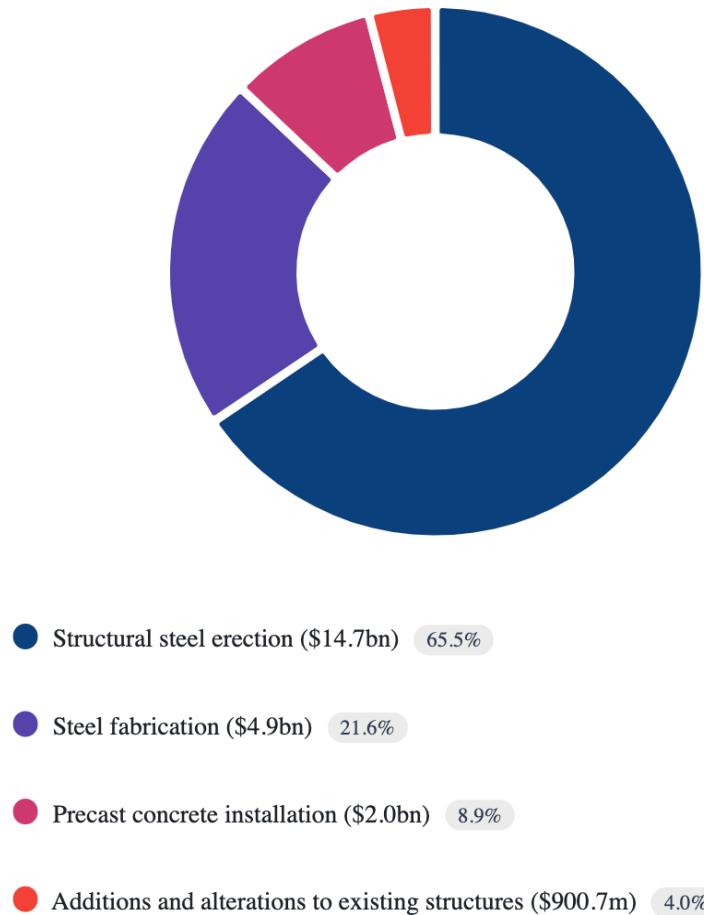
- Licensed General Contractors (one-stop-shop)
- Based out of Siler City, NC and serves 50 miles radius
- Focuses primarily on modular custom-built homes, giving the client the liberty to design their property
- Promote affordable prices and customizable floor plans
- Has high customer satisfaction ratings and are well-known across North Carolina



Source: Greystar Intern Interview, Carolina Customer Homes Website

22% of the Steel Framing Market in the U.S. is steel fabrication

Products and Services □



Source: IBIS World



Resale Value is at the top of customers concerns when thinking of buying a steel-framed home

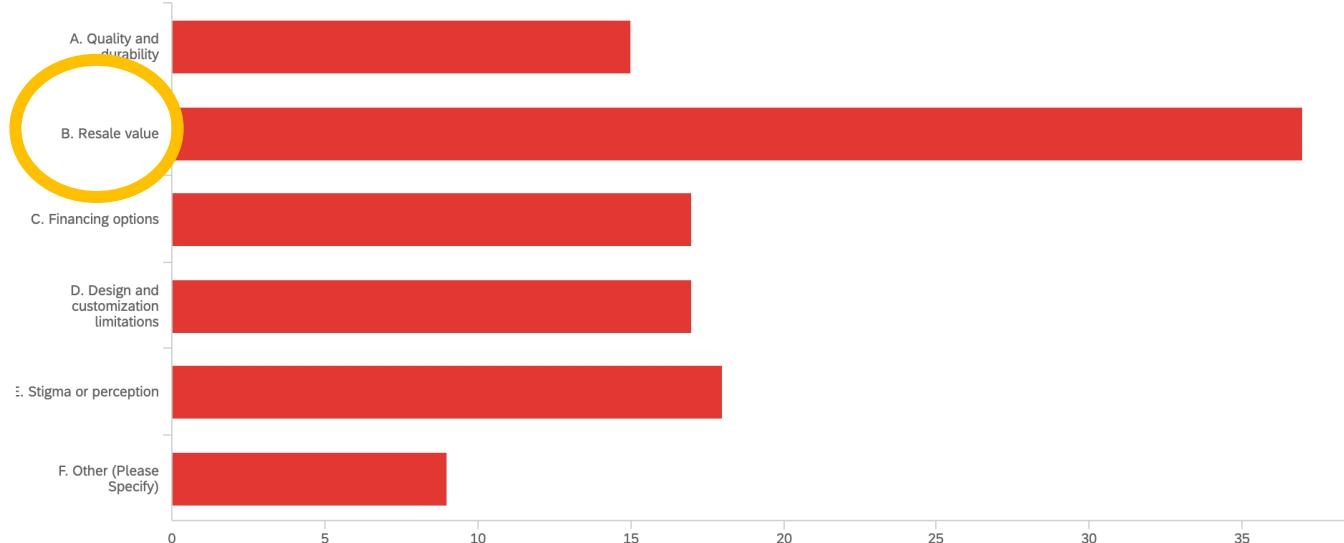
- **Risk:**

- Intergenerational wealth
- Permanent Property

- **Mitigation:**

- Educate the customer on material durability and pest control benefits
- Land Value will depreciate regardless
- Research and use counter points/language from competitors

Q3 - Q3. What concerns, if any, do you have about purchasing or living in a steel-framed home? (Select all ... Page



Source: Market Research Survey, Team Analysis



KENAN-FLAGLER
BUSINESS SCHOOL



Workstream 3 Partnerships & Funding

Workstream 3 Sources

- https://www.ncnonprofits.org/sites/default/files/resource_attachments/2018LegalComplianceChecklist.pdf
- <https://www.nchfa.com/home-ownership-partners/home-builders>
- <https://www.grants.gov/search-grants>
- <https://www.grants.gov/search-results-detail/353452>
- <https://www.rebuild.nc.gov/local-and-tribal-governments/community-development/AHDF#Round1-3069>



Approaching the government funding opportunities start with understanding their logic...

Key Question for the Government Bodies

Is this a viable project to make the investment worthwhile?



Creating Jobs
Increasing Average Salary
Increasing Tax Base



Affordable Housing
Sustainability
Addressing Inequalities

What does this mean for Intrepid Build?

Intrepid can look for funding opportunities for affordable and/or sustainable housing as well as small business fundings available for Chatham County.



Sources: expert interviews, team analysis

A promising grant: Chatham County Housing Trust Fund

Housing Trust Fund Priorities

1. To increase the supply of affordable housing near resources like grocery stores, public transportation, schools, jobs, and healthcare.
2. To reduce and avoid undue concentrations of poverty and subsidized housing.
3. To incentivize development of affordable and workforce housing for low-and moderate-income households.
4. To promote diversity and vitality of neighborhoods.
5. To preserve existing affordable housing through renovation, repair, and retrofitting.
6. To support high impact or innovative models of affordable housing.

Relevant Eligibility Criteria

- Applicants must be an organization, agency, state or local government, with a valid tax identification number.
- Agencies must have been in operation for at least three (3) years prior to being considered for a grant award.
- Agencies may not apply for funding for the same program from different county sources.
- Any expenditure of these funds must satisfy the North Carolina Constitution 'public purpose requirement', which requires that public funds be expended for the benefit of all citizens. See N.C. Constitution Article V, Section 2(1). Funds must also be spent on projects, programs, or services that Chatham County has the authority to directly provide according to statutory authority in N.C.G.S. §153A-449.



Source: Chathamcountync.gov

Chatham County Housing Trust Fund Rubric

Chatham County Housing Trust Fund Preservation/Rehab Projects Scoring Guide 2022-2023

Reviewer:	
Applicant:	
Project Name:	
Date:	

Tier 1		
1. Household Income Range Majority of the individuals to be served through the proposed project fall within the household income ranges.		
30	Max Points	Scale
	30% AMI or below = 30	
	60% AMI or below = 20	
	80% AMI or below = 15	
	100% AMI or below = 10	
120% AMI or below = 0		

2. Affordability Restrictions Length of time that units are income-restricted and/or subsidized. See application for detailed definition.		
25	Max Points	Scale
	Permanent Affordability (99+ years) = 25	
	21-99 years = 20	
	15-20 years = 15	

3. Unit Type Units are studio/efficiency, 1 bedroom, or 2 bedroom units.		
10	Max Points	Scale
	>50% of units are studio/1BR/2BR = 10	
	30-50% of units are studio/1BR/2BR = 8	
	20-30% of units are studio/1BR/2BR = 5	

Total Points	Score %
0	0%
Total Points Available (Not Including Bonus Points)	
190	

4. Property Type		
Majority of the proposed development includes one or more of the below categories.		
Max Points	Scale	Score
15	2+ Units Rental (including townhomes) = 10 Single-Family Detached Rental = 5	

5. Special Populations Served		
If development serves one or more special population.		
Max Points	Scale	Score
25	55+ = 5 Disabled = 5 Supportive Housing = 5 Homeless = 5 Veterans = 5	

6. Leveraging Funds		
Percent of Total Development Budget Funded by HTF		
Max Points	Scale	Score
10	HTF funds <30% of budget = 10 HTF funds 31-60% of budget = 0 HTF funds > 60% of budget = -5	

7. Mixed Income		
Both affordable and market rate units within proposed development.		
Max Points	Scale	Score
10	Market rate and affordable units (<80% AMI) within the same property = 10	

8. Project Readiness		
Project feasibility given the project schedule and financing		
Max Points	Scale	Score
20	Planning and Zoning approval received = 5	
	>50% other funds committed* = 10	
	Currently have contract or purchase option for acquisition (if applicable) = 5	

* Provide letters of commitment if requesting these points. See Budget Amendment in HTF Application.

Tier 2		
9. Developer Experience Applicant has experience developing similar or otherwise relevant properties with success since 2010.		
Max Points	Scale	Score
10	Has Experience = 10	

10. Property Management Experience Applicant or project team has property management experience, including working with low-income		
Max Points	Scale	Score
5	Has Experience = 5	

11. Project Design		
Max Points	Scale	Score
10	Innovative Project Idea = 5	
	Universal Design Characteristics = 5	
	Energy Efficiency (Energy Star, NC Green Built, LEED, etc.) = 5	

12. Project Innovation		
Max Points	Scale	Score
20	Project that is not in line with the typical product or program the respective organization applying for funds is known for = 5	
	Project that would be something completely new for the organization applying for funds = 5	
	A project that goes above and beyond established standards or funding expectations and includes additional amenities, supportive services, or other resources as a part of the proposed project = 10	

Available Points
145 Total Score - Priority Tier 1 0

Available Points
45 Total Score - Priority Tier 2 0

Available Points
40 Total Score - Bonus Points 0



Source: Chathamcountync.gov



Chatham County Housing Trust Fund Past Grants

Cycle	2018-2019	2019-2020	2020-2021
Total Amount	\$190,400	\$124,000	\$337,800
# of Recipient	4	2	5
Average Amount	\$47,600	\$62,000	\$67,560
Grant Amount Range	\$9,000 – \$120,000	\$54,000 – \$70,000	\$50,000 – \$90,000



Source: Chathamcountync.gov



Many Other Grant Opportunities Require Significant Actions from Intrepid due to Various Challenges

Grant Opportunity	Challenge	Possible Action
HUD RCB Grant	Eligibility: Non-profit	Non-profit Spin-off Non-profit Partnership
NCFHA Home Builder Assistance	Eligibility: Buyer	Project Funding
NCFHA Supportive Housing American Rescue Plan (SHARP)	Eligibility: Developer	Developer Partnership
NC Commerce Building & Site Funds	Eligibility: Old Building Sites	Expand Scope
EDP Financial Resources for Business Start-ups	Loan Not Grants	Borrowing Rather than Grants



Sources: Grant.gov, HUD, NCHFA, Commerce.NC.gov, EDP



B2C approach can be a good starting point

Pros:

Contributing to Addressing
Housing Crisis

Room for Experimenting and
Learning in the Process

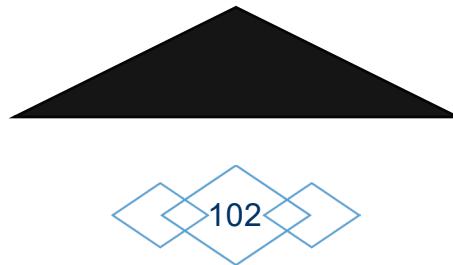
Low barrier of entry

Cons:

Unpredictable and Unstable
Demand

Unreliable for Long-term
Growth

Hard to Scale



Funding Opportunities Helpful for Retail Approach



For Home Ownership Partners:

Home Builders

The North Carolina Housing Finance Agency offers down payment assistance and competitive rates for first-time and move-up buyers that can widen your market for new home sales. We also provide a 60-day, interest-rate lock period so that you and your buyers don't need to worry about market fluctuations while the home is being completed.



Sources: NCHFA



Intrepid can expand reach by creating a non-profit spin-off

Pros:

Emphasize on the mission of addressing housing crisis

Increased Control via In-House Operations

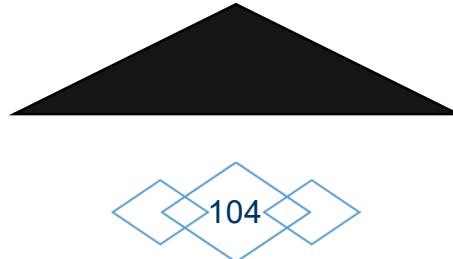
Access to Non-profit Grants

Cons:

Restrictions from Non-profit Requirements

Significant Resource Commitment

Potential Conflict of Interest



Source: team analysis



Or through partnership with non-profit organizations that brings benefit to both parties



- ✓ Consistent Demand
- ✓ Establishment of Distribution Channel



- ✓ Providing Affordable Houses

- ✓ Construction Expertise
- ✓ Scalability in Production



Source: team analysis

Intrepid's Benefit Estimation

- Intrepid's Cost per House: \$150,000
- Profit Margin: 20%
- Revenue per House: $\$150,000 * (1 + 20\%) = \$180,000$

	Year 1	Year 2	Year 3		
# of House	1	2	3	Total # of Houses	6
Revenue	\$180,000	\$360,000	\$540,000	Total Revenue	\$1,080,000



Source: team analysis



Habitat for Humanity's Current Cost per House

Cost Type	Habitat's Current Cost	
Land Cost	\$	20,000
Infrastructure/Development	\$	45,000
Construction Materials	\$	60,000
Sub-contracted Labor	\$	85,000
Direct Staff Cost	\$	46,000
Overhead	\$	44,000
Total	\$	300,000



Source: Habitat for Humanity Orange County

Habitat for Humanity Partnership Cost Breakdown

	Habitat's Current Structure	Under Partnership
Land Cost	\$20,000	\$20,000
Infrastructure/Development	\$45,000	\$45,000
Construction Cost	\$191,000	\$150,000
Habitat's Overhead	\$44,000	\$44,000
Intrepid's Overhead/Profit		\$30,000
Total	\$300,000	\$289,000



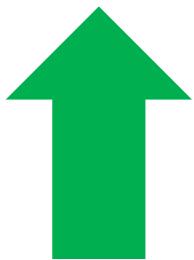
Source: Habitat for Humanity Orange County



Approaching the for-profit investors

Key Questions for for-profit investors and Venture Capitalists

Is this a viable project to make the investment worthwhile?

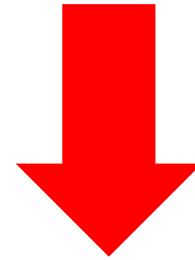


High Profit

Standardization and **Volume** are necessary: Grey Star produces 1,500 units/year.

Lower the cost: The average cost of building a 1,200 SF house in Durham is \$150,000 using conventional methods.

Factory Automation to appeal to tech VC's



Low Risk

For an untested product, a good strategy could be to partner with a developer for a breakeven pilot project to mitigate the risk and demonstrate potential.

For Multi-family Housing, a larger factory will be required, therefore the risk and the initial investment will increase.



Sources: expert interviews, team analysis

Navigating Partnerships: Intrepid's Path to Corporate Synergy



Currently, there is a need for attainable housing in Chatham and its surroundings. With the influx of these companies and jobs, this gap is expected to increase drastically.



Case Study: Disney's Workforce Housing Initiative in Central Florida

- **Challenge:** High cost of living near Walt Disney World impacting cast member retention.
- **Solution:** Partnership with The Michaels Organization to create Flamingo Crossings—a mixed-income community with over 1,300 housing units.
- **Benefits:**
 - **Increased Workforce Retention:** Affordable housing helps retain employees, reducing turnover costs.
 - **Improved Employee Morale:** Proximity to work and secure living conditions boost morale and well-being.



Source: <https://disneyconnect.com/>

Partnerships with Developers and Investors: Benefits, Challenges, and Opportunities

- Benefit for Intrepid:
 - **Standardization** and **Volume** within the Production Area (Grey Star produces 1,500 units/year).
- Challenge for Intrepid:
 - Developers tend to be **risk-averse**
 - **Cost:** The average cost of building a 1,200 SF house in Durham is \$150,000 using conventional methods.
 - Multifamily larger factory will be required, therefore the risk and the initial investment will increase.
- Opportunities:
 - **Add Sustainable features** to bundle the house as a sustainable/greenhouse





KENAN-FLAGLER
BUSINESS SCHOOL



Outside of Workstream Appendix

Thank you for your partnership and your commitment to building Chatham's future



Claire Coffey
CEO



Zachary Coffey
COO

Interviews with Industry & Community Experts

- ERIC MARIBOJOC, Professor of the Practice and Affordable Housing Initiative Lead, UNC Woods Real State Center
- ALICE JACOBY, VP of Policy and Advocacy, Habitat for Humanity Orange County
- THOMAS STEITH, STAR Faculty Member, UNC Kenan-Flagler Business School
- TIM MCLOUGHLIN, Carolina Angels Network
- ARUN HENDI, Assistant Professor of Sociology and Public Affairs, Princeton School of Public and International Affairs
- ETHAN KAPSTEIN, Executive Director of ESOC and Lecturer, Princeton School of Public and International Affairs
- ATUL KOHLI, Professor of Politics and International Affairs, Princeton School of Public and International Affairs
- JIM SPAETH, Professor of Practice of Finance, UNC Kenan-Flagler Business School
- SARAH J. LEE, former SINSI Fellow, United States Department of Housing and Urban Development
- CAITLIN QUINN, former SINSI Fellow, United States Department of Housing and Urban Development
- MIKAELA GERWIN, former SINSI Fellow, United States Department of Housing and Urban Development
- KYLE SHIPP, Pittsboro Mayor
- ALEX NICKODEM, Local Pittsboro Realtor
- LATOYA GREEN, Pittsboro resident seeking affordable housing
- BRYAN THOMPSON, Assistant County Manager
- CHRISTINE WENRICH, Intrepid Build Administrative Assistant
- JACOB DAVIES, UNC Kenan-Flagler MBA Full-Time Student and Pittsboro Resident



Source: team analysis

Intrepid Can Do This

- 1. Tailored Project Planning:** Strategically aligning goals, timelines, and budgets with modular steel home requirements.
- 2. Efficient Subcontractor Management:** Coordinating specialized subcontractors for seamless integration.
- 3. Budget Mastery:** Creating and controlling modular steel home budgets for cost efficiency.
- 4. Quality Assurance:** Maintaining rigorous standards for superior modular steel home construction.



We have three workstreams to address Intrepid Build's vision for steel frame production in a factory

HOW

Workstream 1 Financials

What are the upfront costs?
What are the cost of Acquisitions?
How much Intrepid could get from affordable housing?
How much about forecast investment return?

WHY

Workstream 2 Market Strategy

What is the demand for attainable housing in the Chatham area?
What is attainable housing?
How can Intrepid best communicate the value of modular steel-framed housing to key target market?

WHERE

Workstream 3 Funding Sources

How can Intrepid market Container Housing to secure investments?
Who can Intrepid go to for funding opportunities?
What are value propositions that would appeal to these funders?



Preliminary Conclusions

Finance & Analytics

- **Current State:** Built break-even projection based on available assumptions and data.
- **Consideration:** Total Cost Structure, Risk Assessment, Profit Analysis, and Break Even Analysis

Market Research & Strategy

- **Current State:** Research shows demand for attainable housing, however unclear perceptions of steel-framed homes persist among homeowners.
- **Consideration:** Critical to conduct a targeted focus group with key stakeholders in Chatham County to help define product vision and map the competitor landscape to guide strategic direction.

Funding Sources

- **Current State:** Researched and analyzed different funding Sources, including Government and Private resources.
- **Consideration:** Critical to consider both the volume and standardization of the product to reduce the cost per unit. Additionally, integrating sustainability features will make it more attractive to a broader range of investors.

