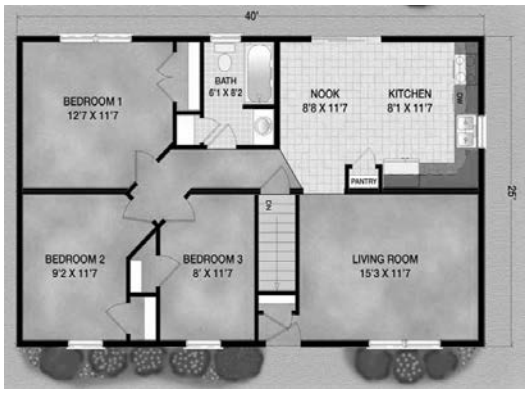
New Hampshire Housing Finance Authority

Affordable Single-Family Housing Study



Prepared for:

New Hampshire Housing Finance Authority
32 Constitution Drive
Bedford, NH 03110

Prepared by:

AECm
13 Water Street
Newmarket, NH 03857

In Collaboration with:

Big Spruce Construction
75 Rocky Hill Rd
Somersworth, NH 03878

Disclaimer

This study was initiated by the New Hampshire Housing Finance Authority to establish the feasibility of building affordable single-family homes in the state of New Hampshire.

The study is solely intended to promote discussion and to educate the industry and public. Discussion topics generated from this study may include but are not limited to: more favorable land use regulations, funding, affordability, necessities versus desires, etc. Several industry resources were used to complete this study including publicly accessible data and residential construction and realty professionals.

While best-practice standards were used to obtain relevant and complete data, the New Hampshire Housing Finance Authority and AECm, LLC make no express or implied guarantees as to the accuracy of data presented herein. All presented data, conclusions, and recommendations should be reviewed within the context of the stated objectives.

All costs and pricing presented herein should be reviewed within the context of the time period in which the study was completed. The residential housing market is very dynamic due to supply and demand, fluctuating labor and material costs, and other market influences and trends.

EXECUTIVE SUMMARY

This study evaluates the feasibility of constructing affordable single-family homes in urban, suburban, and rural communities in New Hampshire. It concludes that constructing affordable single-family homes is viable using various construction methods.

With a nationwide trend of diminishing affordable housing, a large population of prospective homeowners are forced to continue renting or relocating to a lower cost housing market. Multi-family housing has been the popular response to this modern issue, however, not all households and locations are well suited for multi-family developments. Increased volume of affordable single-family homes would serve a significant portion of the existing and potential homebuyer market in New Hampshire.

For the purposes of this study the price threshold for an affordable single-family home is $300,000 with a total living area ranging from 800 to 1,500 square feet. This study focuses on the construction and land cost components of newly constructed homes individually. Three modern construction methods were considered including conventional stick-built, panelized systems, and modular systems. Total costs for the three construction methods are similar, therefore, findings with respect to financial feasibility are applicable irrespective of the construction method used.

Understanding that the total cost of a new single-family home is largely influenced by land acquisition costs and zoning regulations, case study analyses of representative housing regions in New Hampshire were completed. Three municipalities were identified as being representative of New Hampshire urban, suburban, and rural regions. The selection also considered demographics including per capita income and median home value. Total costs to construct a 1,000 square foot home using modular systems are $284,715, $264,410, and $237,125 for urban, suburban and rural communities, respectively.

Single-Family Home Cost by NH Region

Cost Item	Urban	Suburban	Rural
Single-Family Lot	$80,000	$62,000	$30,000
Modular Construction (1,000 SF)	$204,715	$202,410	$207,125
Total Cost	**$284,715**	**$264,410**	**$237,125**

Construction costs include profit, permit, impact fees, and utilities

In a competitive housing market, residential developers are more inclined to build larger homes at sale prices that are unaffordable for many buyers. Generally, larger homes priced above median prices yield higher profit margins. Zoning regulations, such as minimum lot sizes, present challenges when constructing an affordable home. Developers have little incentive to construct smaller affordable homes on large land parcels. The variances and approvals required to develop a smaller lot discourage developers due to increased cost, time, and effort.

Additional market incentives, offsetting the total construction cost, will broaden the market for new single-family homes in New Hampshire. Land subsidies including discounted sale of public lands and financing incentives provide the most effective incentives for developers and owners.

The relative cost to construct an affordable single-family home in New Hampshire does not vary substantially by region. There are, however, several factors that vary regionally and influence the total cost of construction: most notably, site infrastructure and skilled labor cost and availability.

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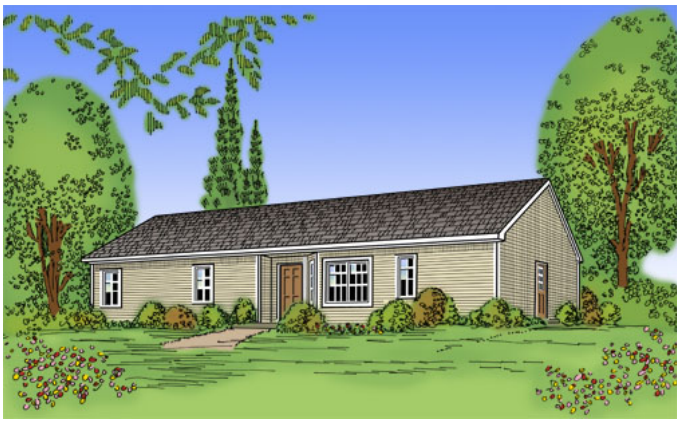
1.0 BACKGROUND & OBJECTIVE

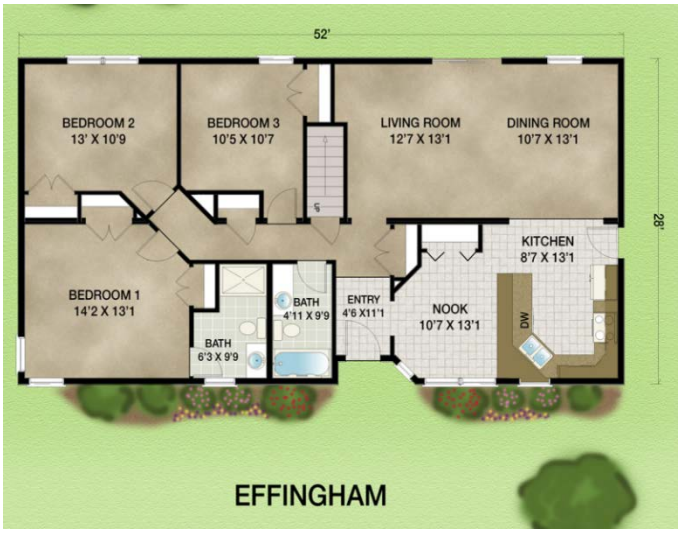
The diminished availability of affordable housing is a nationwide crisis. The effects of the affordable housing shortage are widespread, threatening our economic vitality and weakening our social fabric. The affordable housing market includes first-time homebuyers, young families, and older populations. Without an adequate supply of affordable single-family housing, these buyers are forced to continue renting or relocating to lower cost housing markets. In suburban and urban locations, multi-family housing has historically been the solution to the housing issue, however, not all households are suited to multi-family living. These developments are less common in rural communities that represent a substantial geographical portion of New Hampshire.

Throughout the country, states have implemented creative housing approaches to preserve and enhance communities. New Hampshire is affected by the nationwide affordable housing shortage with rental vacancies and low market inventories throughout the state.

The New Hampshire Housing Finance Authority has initiated this study to evaluate the feasibility of constructing affordable single-family housing in New Hampshire. This involves an objective and holistic assessment of representative markets and factors that comprise the total cost of ownership for homebuyers.

This study involves evaluations of all modern construction methods including conventional site-constructed stick-built, prefabricated stick-built (panelized), and modular construction.





Rendering and floor plan of Effingham Model (courtesy of New England Homes)

2.0 APPROACH

For this study, the cost threshold for an affordable single-family home in New Hampshire is established at $300,000 (including land) with a total net living area of 800 to 1,500 square feet. Commercial lenders establish loan amounts according to income and they typically assume that 40% of the buyer's income can be applied toward principal interest, taxes, insurance and any association fees.

Modern construction methods including conventional site-constructed stick-built, prefabricated stick-built (panelized), and modular construction were considered. The methods and environment that a building is constructed

within have a significant effect on long-term durability. The home designs are optimized for efficient use of material and space. Integrity of the building envelope exceeds the typical standard of quality throughout the three methods of construction. Finishes and materials selections consider function and durability.

Construction cost estimates include all building costs including site development. To establish land costs, three municipalities in urban, suburban, and rural locales were selected for case studies. Average lot prices based on historical sales (last five years) were determined and all variables influencing total cost including impact fees and zoning ordinances were evaluated.

In addition to home construction costs, economic assessments should also consider the costs to operate and maintain the home – or the "total cost of ownership". Initial capital investment for enhanced construction methods and technologies can provide a very quick payback and future cost savings to the homeowner. These enhancements also may allow the homeowner to take advantage of monetary incentives including energy conservation programs.

There are several variables that affect the cost to construct a lower priced or affordable single-family home in New Hampshire. The influence of each factor, as they relate to single-family affordable housing, vary considerably based on location / region and the scale of development. While it is not feasible to quantitatively measure all factors influencing the total cost of construction of single-family homes in New Hampshire, the following are considered in this study.

- Building Codes
- Homebuyer Expectations
- Zoning Standards
- Local Building Regulations
- Construction Methods
- Constructability of Design
- Labor Costs
- Material Costs
- Public Utility Services
- Energy Conservation
- Land Acquisition and Development
- Regional Variation

2.1 Industry Resources

Resources used to establish the basis of variables for this study include residential general contractors, developers, and material suppliers. Information includes construction means and methods, labor wages, materials pricing, and industry trends. Other resources such as historical pricing data were considered as well. Zoning, permitting, and building regulations were evaluated in representative urban, suburban, and rural cities and towns in New Hampshire.

2.2 Building Codes

With an increasing awareness on energy conservation, environmental stewardship, indoor air quality, life safety, and building durability building code requirements have become substantially more stringent. While modern codes improve home performance and durability, they require

higher initial cost. Modern building materials and construction technologies inherently increase costs.

Building rating and certification programs such as the U.S. Green Building Council® (USGBC), Leadership in Energy and Environmental Design (LEED) for Homes® program, and the U.S. Environmental Protection Agency (USEPA) ENERGY STAR® for Homes program have elevated construction standards and homeowner expectations. Modern construction methods and building technologies require a higher level of workmanship and training.

Rendering and floor plan of Fairview Model (courtesy of New England Homes)

In 2014, the state of New Hampshire adopted the 2009 International Residential Code (IRC). With all neighboring states (Maine, Massachusetts, and Vermont) having adopted the 2015 IRC, New Hampshire may elect to follow suit in the near-term. Some New Hampshire cities and towns have also adopted building codes or standards that exceed minimum code and life safety requirements.

When a new code is adopted in New Hampshire, construction modifications including enhanced thermal values, increased air sealing, mechanical ventilation, and a review of building means and methods must be completed to ensure compliance. Necessary upgrades to satisfy more stringent building codes are currently available through most builders and modular manufacturers, including the models considered herein.

Baseline construction costs presented in this report presume minimum compliance with the 2009 IRC. For compliance with 2015 IRC standards, a premium cost multiplier of 5% to 10% would be applied.

2.3 Homebuyer Expectations

Acknowledging that homebuyer expectations are regionally influenced, today's homebuyers have higher standards when purchasing a new home. With increased accessibility to home design and purchasing websites, most new homebuyers invest significant time researching when planning the construction of a new home.

Various home finishes once considered out-of-reach for typical homeowners are now more attainable. For example, granite countertops and hardwood flooring are replacing laminate and

vinyl as standard finishes. New materials manufacturing technologies have also broadened the market of finish materials.

Smart home system technologies provide the ability to control building systems from web-based smartphone applications. In addition to energy efficiency and quality of life improvements, this enables users to monitor and maintain a more comfortable home environment. This is an additional cost not considered in this study.

Renewable energy systems such as solar photovoltaic and geothermal heating and cooling systems are becoming increasingly popular. Previously an option limited to higher-end homes, these systems are making their way into all home market segments.

2.4 Zoning Standards

In most New Hampshire towns and cities, the zoning ordinances restrict best-practice development by modern definition. Large minimum lot sizes, high-density restrictions, and dimensional requirements prohibit compact development where high land and infrastructure costs can be substantially reduced and shared among multiple homeowners.

Obtaining variances, special exceptions and other special permits from local Planning Boards and Zoning Boards of Adjustment (ZBA) is burdensome for developers resulting in increased professional fees and project durations. Developers, who are obligated to manage risk in a volatile and cyclical business environment, are not guaranteed that they will obtain the approvals necessary to maintain an economically viable project.

Several New Hampshire towns and cities have adopted form-based zoning ordinances to promote best-practice development that is consistent with the existing setting (typically defined by architectural style and massing). This offers the opportunity for the developer to creatively plan housing that is consistent with the local master plan without special approvals.

Some zoning ordinances specifically address renewable energy systems including solar photovoltaic and small wind energy systems. The objective is to promote the responsible application of green energy systems. Owners can take advantage of incentives including federal tax credits and utility rebate programs.

2.5 Local Building Regulations

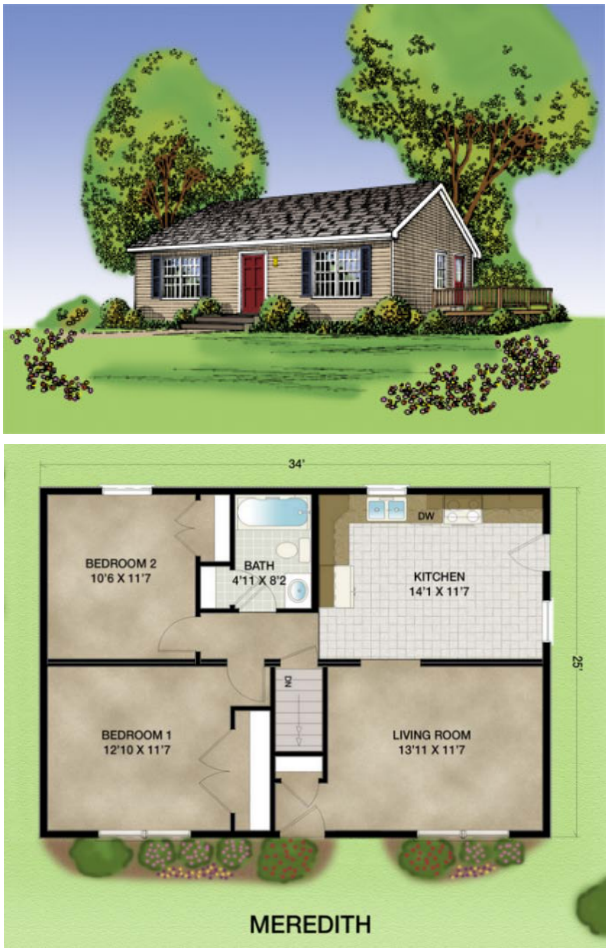
Local jurisdiction, code enforcement, life safety, and natural resource protection officials have the authority to mandate requirements that exceed minimum code and regulatory standards. Examples of increased requirements enacted by some New Hampshire towns and cities include fire-suppression (sprinkler systems), enhanced energy conservation (e.g., IRC 2015), and natural resource protections such as increased wetland setbacks.

Enhanced building standards inherently increase the cost of construction. For the purposes of this report, minimum New Hampshire code and regulatory standards are presumed.

2.6 Construction Methods

Most single-family homes in New Hampshire are erected using conventional on-site, stick-built construction methods. Modern off-site fabrication methods including panel systems and modular systems are increasingly popular, especially in urban and suburban areas where market demand is high and skilled labor resources are declining.

On-site stick-built home construction offers several benefits over pre-fabricated systems including adaptation to unforeseen site conditions and design changes. Local developers and contractors typically have working relationships with local planning and zoning boards and code enforcement officials thereby facilitating permitting and inspection processes. On-site construction also contributes to the community economy by employing local labor. However, the availability of skilled labor in many New Hampshire communities is limited.



Rendering and floor plan of Meredith model (courtesy of New England Homes)

Generally, off site construction by a reputable manufacturer in close-proximity to the site (less than 150 miles) yields the best value. Because most of the labor is completed in a controlled production facility, modular construction mitigates some of the risks associated with on-site construction and improves quality and schedule. A residential modular project like those considered in this study can be completed in approximately three months from the time of deposit (on a typical lot). Conventional on-site stick-built construction of a similar home typically takes five to eight months.

Construction efficiencies are realized by standardized designs that can be easily replicated. The cost to produce fifty single-family homes using a single basic design configuration is substantially less than custom-home construction. Additional cost-savings are realized in off-site fabrication where a controlled production-line manufacturing process can efficiently replicate house systems. Many off-site fabricators also offer quantity discounts for multiple units.

2.7 Constructability of Design

Constructability is defined as the level of complexity and effort associated with a specific design. Detailed house designs typically require increased skill, labor, and materials. For example, a house with multiple roof pitches and projections is less constructible than a house with a

symmetrical gable style roof. Constructability is also influenced by site conditions such as proximity to existing infrastructure (e.g. roadways, utility services), terrain, and subsurface conditions (e.g., bedrock).

For the purposes of this evaluation, the level of constructability is high (favorable). This presumes that affordable homes are simple designs constructed on typical building sites with no constraints.

Constructability is affected by the method of construction. The ability to adapt a design in the construction phase allows the builder to mitigate unforeseen site conditions and enable the owner to make design changes as the home is being constructed. For example, moving interior walls or adding windows.

Field modification of panelized systems is limited and doing such may reduce the quality of the system. For example, if a new window opening is added to an exterior wall panel the thermal and air-sealing integrity of the envelope may be compromised.

Modular systems cannot be practically modified during construction. Because the entire home is framed in sections at the manufacturing facility, changes to layout or design cannot be made post-fabrication.

2.8 Labor Costs

Wage rates for residential construction skilled labor trades vary throughout the state of New Hampshire. The highest rates occur in the Seacoast, Nashua, Concord, and Manchester metropolitan regions with the lowest rates occurring in the North Country. The current low unemployment rate throughout the state (2.6%[1]) results in increased wages as more construction companies compete for skilled labor resources.

There are several variables that affect construction costs for each subcontracted skilled trade including labor availability, project site proximity and travel, and competing wages for non-construction employment (manufacturing, technology, etc.). Trending data indicates that the number of young people entering the skilled building trades is declining.

The wage rates used in developing construction cost estimates in this report are based on current industry rates. While wage rates due vary by region, fluctuation does not greatly influence overall development cost and this report is based on statewide averages. For this study, hourly rates are established at $55 for a carpenter, $65 for electricians, and $85 for plumbers.

2.9 Material Costs and Supply

Escalating construction materials costs due to economic variables is difficult to predict. Supply and demand imbalances and trade sanctions (including embargoes, tariffs, and quotas)

[1] NH Employment Security, Economic & Labor Market Information Bureau, July 26th 2018 (https://www.nhes.nh.gov/elmi/statistics/documents/laus-current.pdf)

inherently increase the cost of construction materials. All costs presented in this study are based upon construction material pricing indexes at the time of report development.

2.10 Public Utility Services

The availability of public utilities influences the cost of construction. Although costs for new electrical services can vary, they are considered negligible within the context of this study. Natural gas services are very limited in New Hampshire and are generally confined to Seacoast communities and the southern-central core of the state (with the exception of some towns/cities with large consumers such as Keene, Berlin, and Lebanon/Hanover). While natural gas is the lowest cost distributed fossil fuel for heating, the availability does not influence the costs presented herein.

Public water and sewer services can significantly influence the cost of construction. The pricing provided herein is distinguished by region based on the common availability of public services (typically urban regions). Costs for water supply well installation and septic system construction are included for regions where public services are not commonly available including suburban and rural regions.

2.11 Energy Conservation

While energy conservation and the use of renewable energy resources are vital to sustainable building development, the associated costs are typically not practical for buyers in the affordable housing segment. Therefore, energy conservation measures considered in this study are limited to current residential building code requirements (IRC 2009). Although some New Hampshire communities have adopted IRC 2015 energy code standards, they represent a small percentage of New Hampshire cities and towns.

Energy conservation incentives such as ENERGY STAR® for Homes Certification programs were not considered as most builders are not constructing homes to that standard and the incentives generally do not offset the increased costs of construction. However, payback of these incremental costs is realized in the long-term resulting from reduced energy consumption and maintenance costs.

Rendering and floor plan of Washington model (courtesy of New England Homes)

Homes constructed in a controlled and efficient manufacturing process typically have improved envelope systems resulting in reduced energy consumption compared to a home constructed by conventional means.

2.12 Land Acquisition and Development

Costs for land acquisition and development represent a substantial portion of the total cost of construction for a new home. For affordable homes the land cost must be at or below the median land price regionally. Higher priced lots would likely increase costs above the affordable home threshold.

Programs to donate publicly owned lands can be a substantial incentive for single-family housing initiatives. Other strategies include private ownership (e.g., non-profit) with an owner ground lease agreement to defer land purchase costs either initially or permanently. This approach is most practical for a larger parcel that could be subdivided with numerous lease agreements.

Several variables impact the market value of buildable single-family home parcels. Site work costs can significantly vary based on these factors. Actual development costs for complex building sites often exceed the planned budget. Unidentified permits, land-use restrictions, and difficult site conditions can increase development costs well beyond the affordable housing threshold. Land acquisition and development costs are impacted by the following:

- Location
- Size
- Subdivision potential
- Public services (water and sewer)
- Landscape features and terrain (waterfront, wooded, mountainous, etc.)
- Accessibility from roadways
- Zoning regulations and setback requirements
- Proximity to wetlands or other protected natural resources
- Easements and rights-of-way
- Construction season and weather impacts

2.13 Regional Variation[2]

Case-studies of urban, suburban, and rural regions in New Hampshire were completed to establish relative differences affecting the feasibility of affordable single-family home construction. This considered population density, median age, per capita income, geography, and housing market activity.

Rural areas are defined by low population density often with a high proportion of land designated as open space. Rural area economics in New Hampshire are typically based on natural resources including agriculture and tourism. Suburban areas are defined as communities having a higher density of housing and some limited commercial businesses. Large housing developments are often densely located in suburban areas. Urban areas are dense, high population areas with a diverse mix of residential and commercial uses. Urban

[2] Victoria. "Difference Between Rural and Suburban and Urban." DifferenceBetween.net. April 8, 2011 < http://www.differencebetween.net/language/difference-between-rural-and-suburban-and-urban/ >.

areas often have political autonomy and tend to have a "center" or hub with public resources including water and sewer.

For each town, annual per capita as well as household income were determined so that an affordable mortgage payment could be established. The presumed threshold for affordable monthly mortgage payment is 40% of the individual or family's income including insurance, taxes, mortgage principal and interest, and utilities. While annual income per capita are relatively consistent, the annual household incomes do indicate some variance by community. Utilizing 40% of household monthly income for home ownership, a new home construction cost totaling $300,000 is feasible depending upon land acquisition costs. These figures are represented in the table below.

Table 1: Annual per capita income and household income for an affordable mortgage payment. (NH Employment Security, Data from ACS 2012-2016)

Region	Annual Per Capita Income	Monthly Per Capita Income	40% of Monthly Per Capita Income	Annual Household Income	Monthly Household Income	40% of Monthly Household Income
Urban	$33,637	$2,803	$1,121	$63,096	$5,258	$2,103
Suburban	$35,278	$2,940	$1,176	$77,845	$6,487	$2,595
Rural	$35,206	$2,934	$1,174	$58,523	$4,876	$1,950

The decision to purchase a new home or an older home largely depends on the homebuyer's budget. Median home values for the case study markets (urban, suburban, and rural) are $309,750, $236,000, and $212,234, respectively (2017 median sales). For the purposes of this study, the affordable home cost threshold is $300,000. Higher operation and maintenance costs expected of an older home can result a higher total cost of ownership. Therefore, a new home may cost less over the ownership term and it will have a higher market value. Minimum, maximum, and median prices of residential sales for the case study markets are presented in Table 2.

Mortgage Scenario: A 20% down payment on a $300,000 property yields a $240,000 loan. At an interest rate of 4.5%, monthly payments on a 30-year loan would be $1,216. Adding $7,761 in annual property taxes (assuming a tax rate of $25.87/$1,000) and an $800 home insurance premium, the total monthly payments including escrow would be $1,929. While there are many factors to consider on an individual basis, this is an affordable monthly payment as defined by this report and median monthly household incomes tabulated herein.

Table 2: Price demographics of residential home sales in each region.

Region	Year	No. of Sales	DOM	Min Price	Max Price	Median Price
Rural	2013	67	178	$50,500	$710,000	$175,000
	2014	67	96	$47,500	$768,600	$180,000
	2015	69	131	$45,000	$949,000	$207,900
	2016	71	104	$35,000	$955,000	$175,000
	2017	74	78	$30,500	$969,000	$212,234
Urban	2013	320	84	$49,500	$962,365	$263,356
	2014	332	75	$47,000	$1,325,000	$258,450
	2015	347	73	$90,000	$1,611,975	$280,000
	2016	377	57	$83,500	$1,275,000	$260,000
	2017	346	54	$37,000	$2,835,000	$309,750
Suburban	2013	75	73	$42,000	$440,000	$185,370
	2014	75	63	$44,000	$533,000	$190,000
	2015	66	48	$83,500	$435,000	$214,750
	2016	88	60	$30,000	$418,000	$222,000
	2017	93	39	$100,000	$424,900	$236,000

2.14 Accessibility Standards

It is presumed that any new home design can be easily adapted to accommodate disabled persons. Such modifications should comply with applicable accessibility standards as defined by the State of New Hampshire *Architectural Barrier-Free Design Committee* (ABFDC). Such modifications inherently increase construction costs.

3.0 FINDINGS

With the objective of determining the cost affordability of single-family home construction, all variables influencing total costs are evaluated. This includes construction and all associated development costs including permitting and approvals, land acquisition, site infrastructure, and incentives.

3.1 Construction Methods

A pricing comparison to determine the most affordable method of construction is presented in Table 8. Table 8 presents vendor's standard floor plans with similar square footage and specifications offered as kits for stick-building, panelized systems, and modular systems. Qualitative factors were also considered during method selection. Despite costing only two to three dollars more per square foot, the following limitations reduce the feasibility of on-site stick-built construction when compared to off-site fabrication methods:

- Availability and competency of local skilled labor.
- Material availability, lead time, and cost increases.

- Increased duration of construction and risk exposure.
- Noise and dust pollution to abutting neighbors.
- Reduced material-use efficiency.
- Material prone to theft.
- Weather impacts (schedule, cost, and quality).
- Consistency of construction methods and workmanship.

Considering pricing consistency, schedule, and quality, modular building is advantageous to panelized systems. The greatest disadvantage of modular systems is the fixed design offering little opportunity to modify the layout in the field. Panelized systems offer more flexibility since they can be altered and adapted to mitigate unforeseen site conditions and to accommodate design changes during construction.

Some modular companies offer panelized versions of their models, and if local labor rates for on-site construction are lower than those presumed in this report, then construction costs may be reduced further. It is important to consider all factors when considering this option including the planned construction season, anticipated weather delays, quality variation, and duration of the construction loan. A longer construction schedule escalates construction loan fees and interest charges.

3.2 Cost of Construction

Two modular manufacturers serving New Hampshire were considered. New England Homes (NEH) and Pro-Fab offer standard ranch home designs ranging from 850 square feet (2 bedrooms and 1 bathroom) to 1,456 square feet (3 bedrooms and 2 full bathrooms) (Table 14). All homes offer single-story living constructed on full height foundation walls providing the option to finish the basement in the future. Below slab insulation was assumed in foundation pricing. Insulation of the main floor is also included to complete the building envelope for current use. An interior stud wall would be constructed, insulated, and finished with wallboard.

The average unit cost for a NEH house with standard specifications is $179 per square foot which is $23 per square foot less than a Pro-Fab home (Table 14).

Table 14 and Table 15 present the cost to construct five NEH models and two Pro-Fab models with an optional detached garage. The NEH Meredith (850 square feet) is the smallest, least expensive house to construct at a total cost of $173,439 excluding all associated permits and utilities. As the largest evaluated model (1,456 square feet), the NEH Effingham yields the lowest cost per square foot at $158 for a total cost of $230,182. As presented in Table 3, permit and utility costs vary by municipality. Table 18 in the Appendix provides a more detailed accounting of construction costs.

Pricing was derived from historical data and consultation with industry professionals. Confidence in pricing for building construction is relatively high. Land development and site infrastructure costs are the greatest potential cost increase due to highly variable site-specific conditions.

Table 3: Building permit and utilities costs by region.

Cost Item	Small Modular (800-1,100 SF)				Large Modular (1,300-1,500 SF)		
	NEH Washington/ Cherrydale	NEH Meredith	NEH Meredith (revised floor plan)	Pro-Fab Waltham	NEH Fairview	NEH Effingham	Pro-Fab Acadia
Urban Building Permit	$1,912	$1,759	$1,906	$2,224	$2,212	$2,327	$2,620
Suburban Building Permit	$325	$280	$340	$338	$428	$462	$429
Rural Building Permit[3]	$390	$338	$408	$405	$510	$550	$511
Urban public sewer connection	$2,897	$2,897	$2,897	$2,897	$2,897	$2,897	$2,897
Urban public water connection	$2,274	$2,274	$2,274	$2,274	$2,274	$2,274	$2,274
Suburban public sewer connection	$4,534	$4,534	$4,534	$4,534	$4,534	$4,534	$4,534
Suburban public water connection	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500
Urban impact fee	$8,895	$8,895	$8,895	$8,895	$8,895	$8,895	$8,895
Suburban impact fee	$1,331	$1,331	$1,331	$1,331	$1,331	$1,331	$1,331
Rural impact fee	--	--	--	--	--	--	--
Septic System	$13,000	$12,000	$12,000	$13,000	$13,000	$13,000	$13,000
Water Well	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000

3.3 Development Costs

The total cost of residential development is determined by several variables. Cost magnitude varies widely based on the variables. For example, site development costs can dramatically increase construction costs. This report only considers items that have a substantial influence on the total cost of development.

[3] Includes driveway permit

3.3.1 Land

Pricing and size of buildable lots in the three case study communities in New Hampshire were obtained from the Multiple Listing Service (MLS) data for the past five years (2013-2017). There was a notable spike in available land for the rural region in 2017 relative to previous years. The suburban region represents the fewest number of available land plots while the number of lots in the urban and rural region are consistent (with the exception of 2017).

Prices in the suburban region range from a low of $12,500 to a high of $147,000 with a median price of $72,500. Urban region prices range from a low of $7,900 to a high of $950,000 with a median price of $100,000. Rural region prices range from a low of $4,000 to a high of $339,000.

The pricing evaluation reveals that lot size and lot price are not directly proportional to each other. As expected, landscape and location have the greatest influence on the price. This is especially true in the urban community where the highest price lot is $950,000 (1.41 acres) while another lot comprised of 53 acres of land was valued at $285,000. This is also evident in the rural region with a 145-acre plot of land costing $135,000 compared to a 0.62-acre plot of land costing $339,000.

Large land areas were excluded from the analysis since they may be subdivided into multiple lots thereby skewing the average cost. Additionally, development of larger lots may be restricted and limited due to site-specific constraints including wetlands, deeded rights-of-way, and conservation easements.

Table 4: Discounted regional land values

Region	Avg. Lot Size	Median Value	Discount Rate	Discounted Value
Urban	1.6	$100,000	20%	$80,000
Suburban	3.3	$72,500	15%	$61,625
Rural	1.5	$33,333	10%	$30,000

The cost threshold for “affordable” lots should also be considered. That is, developers and homebuyers of affordable homes will most likely purchase a lot that is below the median market value in the region of interest. Presumably the discounted rate is exponentially relative to the market value within the three regions.

For the purposes of this report, discounts of 20%, 15% and 10% are applied to the respective urban, suburban, and rural regions. Table 12 and Table 13 in the Appendix presents all unadjusted median lot prices and sizes.

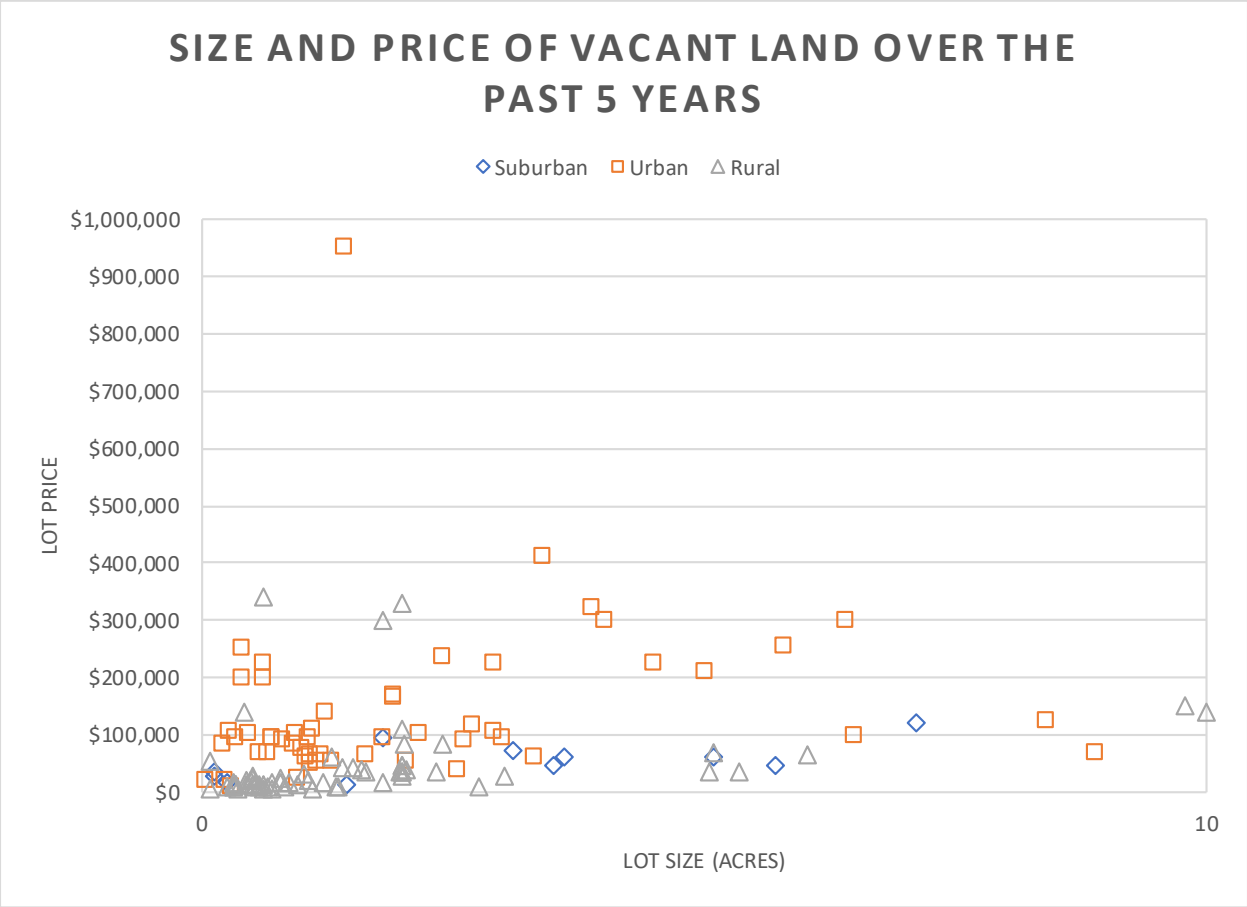


Figure 1: Available vacant lots for each region by size and respective price.

The scatter graph presented as Figure 1 depicts the density of house lots based on lot price and size for each of the case study regions. A more detailed depiction of this data is presented in Figure 3 of the Appendix. Large lots exceeding 10-acres are excluded from the analysis presuming that they may be subdivided into smaller buildable lots.

The urban region is represented by numerous data points, or lot sales, and as expected the mean lot size is relatively small. Suburban lot sales for the case study community are fewer and lot sizes are more evenly distributed while pricing is relatively consistent. Lot sizes for the rural community tend to be smaller with the lowest prices of the three regions. Vacation (secondary) homes are popular in the rural case study community which accounts for the higher density of smaller, lower-priced lots.

3.3.2 Planning and Permitting

Buildable lots are defined by local zoning ordinances. Table 10 presents the zoning ordinances for each of the three case study communities. Minimum lot size for the suburban community in the Medium Density – Residential (R1) is 20,000 square feet. This presumes a permitted use with municipal water and sewer services. For permitted use with municipal water only, the minimum lot size is increased to 60,000 square feet. Minimum lot size with town sewer only is 40,000 square feet.

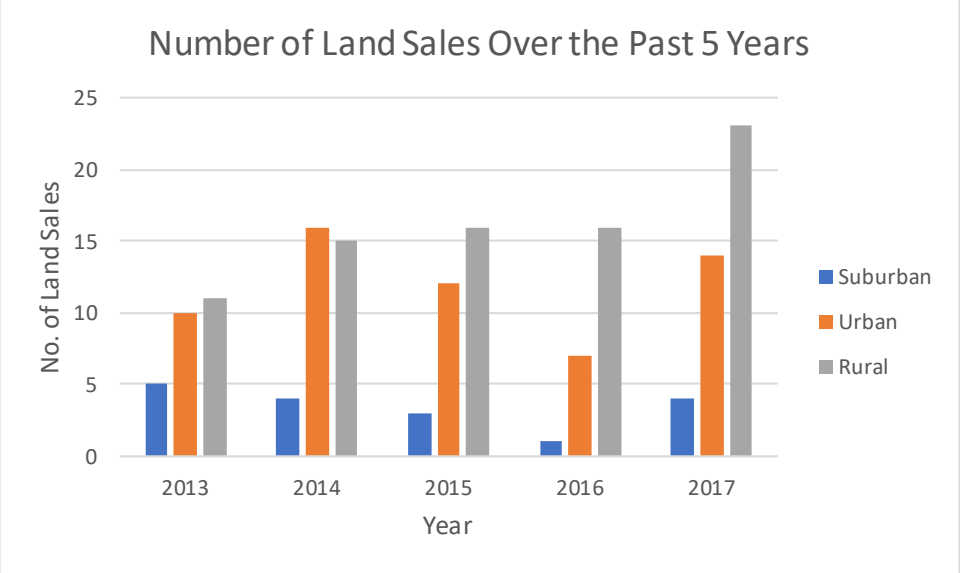


Figure 2: Number of land sales for each region in NH over the past 5 years.

The minimum lot size in the urban community with no municipal water sewer or sewer services is 30,000 square feet. When only municipal water is provided, the minimum lot requirement is 20,000 square feet.

Minimum lot requirement for all districts in the rural case study community is two acres. Many existing land parcels are below the two-acre minimum indicating that they are non-conforming lots or have received a variance. Non-conforming lots defined prior to the establishment of zoning ordinances are grandfathered. Subdivision regulations often allow for a reduction in lot size when portions of the subdivided land are designated as conservation or community greenspace. Today's progressive planning practices encourage smaller lots with denser development allowing for more compact layout of utilities and infrastructure.

3.3.3 Design and Permitting Fees

Design and permitting fees for architecture and engineering (often referred to as "soft costs") vary substantially based on the size and style of the home, parcel location, construction delivery method, and municipal regulations including planning board and zoning requirements and approvals processes. Total fees for a typical small affordable single-family home range from 5% to 10% of the total construction cost.

3.3.4 Site Infrastructure

Site infrastructure requirements and associated costs vary substantially based on site-specific conditions and constraints. Every site is unique and the costs to develop the necessary infrastructure can vary substantially. These constraints determine where the home can be sited within the lot. The associated costs represent a substantial portion of the total construction cost.

- Minimum frontage and setback requirements
- Site terrain and natural features (forested, mountain-side, water frontage, etc.)
- Soil type and subsurface conditions (e.g., bedrock)
- Septic systems (if required)
- Domestic water well (if required)
- Site proximity to public roadway
- Abutting property features

Setback requirements in the rural community residential district are a minimum of 75 feet from the roadway[4] and 50 feet from property boundaries. Residential buildings must also be setback a minimum of 75 feet from the mean high-water mark of any water course or standing body of water. The urban community specifies that minimum residential structures and parking setbacks from an external lot line shall be 50 feet. Minimum structure and parking setbacks from an external road are 100 feet and the minimum frontage on internal roads is 40 feet. The minimum setbacks for front yard and distance between buildings are 20 feet and 24 feet, respectively.

Dimensional lot requirements for each community type in this case study vary and consider the availability of municipal water and sewer (refer to Table 10 in the Appendix). The suburban community provides incentive bonuses to further reduce the size of each lot. Examples of incentive bonuses include front setback and frontage reductions. All incentive bonuses for the suburban region are presented in Table 5. The urban and rural case study communities currently do not provide density incentives.

Waterfront lots are subject to additional restrictive regulations and permitting requirements. Because affordable homes are typically not constructed on more desirable waterfront lots these regulations are not presented in this study.

[4] Setbacks measured from the center line of any road or right-of-way, property line, and mean high water mark at a water course or body of water to the nearest portion or part of any building.

Table 5: Example of Incentive Bonuses for Site Infrastructure (NH Suburban Community Case Study)

Incentive Bonus	Requirement
Front Setbacks: May be reduced up to 50%	(a) Parking is placed to the rear or side of the structure
	(b) Shared access drive and parking are established
	(c) Sidewalks and/or bicycle paths are proposed along the Town roadway as shown on cross section
Frontage Requirements: May be reduced up to 50%	(a) Parking is placed to the rear or side of the structure
	(b) Shared access drive and parking are established
	(c) Sidewalk/bike path is proposed along the Town roadway as shown on cross section
Open Space Requirements: May be reduced to 10%	Land of equal or greater size as the required area is donated to the municipality or an appropriate organization
Building Height Requirements:	For site plans with lot sizes greater than the minimum required acreage, the height structures may be increased 10 feet per additional acre of lot size, up to a maximum of 100 feet.

3.4 Ownership Costs

Operation and maintenance (O&M) costs must be considered when evaluating the total cost of ownership. These costs are inversely related to the quality of construction. That is, lower quality workmanship and materials standards result in higher O&M costs. They also reduce the market value of the home.

The initial cost for a newly constructed house may be considered affordable, however, increased O&M costs may be high thereby reducing the affordability to the homeowner. Costs to replace failed HVAC equipment or repair a leaking roof are significant.

Energy costs for a code-standard house are substantially higher than a house constructed to high-performance standards such as ENERGY STAR® for New Homes. Heating fuel and electric costs can vary dramatically based on the envelope integrity, heating fuel type, equipment type, lighting fixtures, appliances, and systems control. Energy-conscious homeowners can further reduce total consumption.

Construction standards also affect the future market value of homes. Today's homebuyers generally appreciate enhanced construction standards and "green" home standards. That trend is influenced by more stringent building codes, third-party certification standards (LEED® and ENERGY STAR®), and market valuations that increase appraised values for green home measures. Enhanced construction standards are available in modular home construction, however, the pricing premiums increase costs above the threshold for affordable housing.

3.5 Economic Incentives

As presented herein, there are several economic incentives available for new home construction. They include prescriptive and performance-based utility company rebates

(including the ENERGY STAR® Certification program). Some of these credits are available to the developer and some are provided directly to the homeowner.

These incentives provide a modest initial incentive for homebuyers. Because they are designed to reduce energy consumption and improve indoor air-quality, the long-term benefits are greater. Total cost of ownership is reduced through lower utility costs and future value of the home is increased. Table 6 presents a listing of incentives that are currently available to housing developers and owners.

Table 6: Incentive programs in New Hampshire. (DSIRE NC Clean Energy Technology Center 8/21/2018)

Incentive Type	Item	Incentive Amount
Energy Efficiency Rebate Program	Lighting	Online discounts
	Room air purifier	$40
	Room air conditioner	$20
	Clothes washer	$30
	Clothes dryer	$40
	Dehumidifier	$25
	Refrigerator	$20
	Refrigerator/freezer recycling	$30
	New Construction ENERGY STAR Home	up to $4,000
Unitil (Electric) Rebate Program	Home Performance with ENERGY STAR	up to $4,000
	Low-Income Home Energy Assistance	up to $8,000
Unitil (Gas) Rebate Program	Natural Gas Furnaces	$300-$450
	Natural Gas Boilers	$1,000-$1,500
	Condensing Boilers	$1,000-$1,500
	Indirect Water Heaters	$400
	Condensing Water Heaters	$500
	On Demand Tankless Water Heaters	$800
	Heat Recovery Ventilators	$500
	Boiler Reset Controls	$225
	Programmable Thermostats	up to $25
	Wireless Thermostats	up to $100
	Home Heating and Water Heating Rebates	50% of costs
Unitil (Electric) Loan Program	Maximum Loan	$7,500

Other potential incentives include donation or below-market value sale of publicly owned lands in New Hampshire. State and town/city owned lands can be used to incentivize developers and homeowners. This practice offers the most attractive incentive for developers interested in large-scale single-family home developments in all regions of New Hampshire.

4.0 CONCLUSION

Based on the data and information derived from this study, constructing an affordable single-family home in New Hampshire is feasible. Total costs for the three construction methods evaluated are similar. Each method has unique advantages and disadvantages and selection of the most practical method should consider the relevant variables for the specific application. Inherent with the construction process, prefabricated or off-site constructed homes improve quality and reduce overall schedule.

Site infrastructure and land development costs represent a substantial portion of total single-family home cost in New Hampshire. In terms of cost, site development presents the greatest risk due to regulations, unforeseen site conditions, and weather impacts. Due diligence in selecting a building lot is vital when planning the construction of an affordable single-family home.

While the total costs of new construction do not vary significantly by region, the availability of local skilled labor does influence the construction approach. The level of skilled trade experience and training determines schedule and quality (workmanship).

Land acquisition and site infrastructure costs are variable for the evaluated regions including urban, suburban, and rural. Conventional zoning requirements require larger lots although many towns/cities are adopting modern zoning standards that reduce lot sizes and promote higher-density housing development in New Hampshire.

Encouraging developers to construct smaller, affordable single-family homes in New Hampshire during a strong market where larger homes yield greater profits is a challenge. Providing additional incentives through innovative land use controls under RSA 674:21, and including: timing, intensity, and use incentives, inclusionary zoning, and impact fee waivers, would increase low-end market favorability. Additionally, public land grants and subsidized construction loans would keep development costs down and allow for profits that could spur the development of smaller units.

APPENDICES
Tables

Table 7: Advantages and drawbacks of each method of construction in question.

Stick Built Construction		Panelized Construction		Modular Construction	
Advantage	**Disadvantage**	**Advantage**	**Disadvantage**	**Advantage**	**Disadvantage**
Most familiar form of construction	Variation in quality and cost depending on available labor	Ease of repetition	Construction not as rapid as modular construction	Ease of repetition	Access to tight sites are not possible
Customization occurs late in design process	Building materials are exposed during construction	Constructed in climate-controlled factories with tight quality control	Builders/subcontractors may be unfamiliar with best practice of finish work	Constructed in climate-controlled factories with tight quality control	Inspections are complicated by enclosed MEP
Material easily maneuvered on tight sites	Slowest construction method	Buildings can be constructed independent to foundation work, shortening work schedule	Frontloaded funding	Buildings can be constructed independent to foundation work, shortening work schedule	No ordinance against modular construction in some neighborhoods
	Reduced material efficiency	Prices are independent of local labor rates reducing cost in some regions with no compromise on quality or schedule	Extremely tight sites can be difficult to access	Extremely rapid star to finish with pre-applied finishes and mechanical systems installed	Builders/ subcontractors are unfamiliar with construction method
	Noise and dust pollution on site	Adjustability is built in to accommodate foundation work		Reduced material waste	Frontloaded funding
	Material prone to theft during construction	No enclosed MEP to complicate building inspection			
	Replication is inefficient	Disentangled Electrical/plumbing systems from building envelope for ease of upgrading			
	Weather effects schedule, cost, and quality	Tight/efficient construction reduces energy cost			
	Lack of consistency between projects	Reduced material waste			

Table 8: Quantitative cost evaluation between stick build and panelized construction methods.

Quantitative Evaluation of Construction Method							
Component[5]	**Method of Construction**						
	Stick Built		**Panelized**			**Modular**	
Model	NEH Fairview	Hancock Sutherland R-11	Unity Xyla 123[6]	NEH Fairview	Hancock Sutherland R-11	NEH Fairview	Huntington Plainfield
General Conditions[7] ($)	8,000	8,000	$1,500[8]	6,500	6,500	2,000	2,000
Sitework ($)	Full Basement	Full Basement	Full Basement	Full Basement	Full Basement	Full Basement	Full Basement
Foundation ($)	20,000	20,000	22,000	20,000	20,000	20,000	185,000
Shell (insulated building envelope, installed) ($)	39,530	45,268	125,250	37,248	42,498	--	
Interior Partitions ($)						98,420	
Windows/Doors ($)							
Insulated Module ($)	--	--	--	--	--		
Roofing ($)	6,175	6,175	7,000	6,175	6,175		
Siding and Exterior Trim ($)	11,000	11,000	15,000	11,000	11,000		
Plumbing (including fixtures) ($)	14,000	14,000	10,000	14,000	14,000		
Electrical (including fixtures) ($)	8,000	8,000	8,000	8,000	8,000		
Interior Walls ($)	--	--	--	--	--		
Drywall ($)	8,500	8,500	6,000	8,500	8,500		
Foundation Prep ($)	--	--	--	--	--	1,500	
Interior Trim ($)	3,500	3,500	3,500	3,500	3,50	Included	
Paint ($)	4,300	4,300	4,300	4,300	4,300	5,000	
Interior Doors ($)	2,365	2,365	2,365	2,365	2,365	Included	
Flooring ($)	6,000	6,000	6,000	6,000	6,000	6,000	
Appliances ($)	3,000	3,000	3,000	3,000	3,000	3,000	
Cabinets, Vanities, and Countertops ($)	5,880	5,880	5,880	5,880	5,880	Included	
HVAC ($)	--	--	15,000	--	--	11,420	
Complete roofing ($)	--	--	--	--	--		Included
Complete Siding (gable ends) and Trim ($)							
Electrical and plumbing Connections ($)							
Drywall Repair/Taping ($)							
Connection Sheathing and Insulation ($)							
Sum ($):	**150,250**	**155,988**	**244,795**	**146,468**	**151,718**	**147,340**	**187,000**
Cost ($/SF)	112	115	176	109	112	110	131

[5] Note: assume $55/hour as standard labor rate, $65/hour for electrician, $85/hour for plumbers
[6] Upgrades include R-33 wall assemblies, triple-glazed windows, ERV, shell that scores <1 ACH 50 on blower door test
[7] Includes permit, engineering, permit drawing set, site supervision, dumpsters, sanitary facilities
[8] Includes permit set, engineering in shell

Table 9: Home median value for Urban, Suburban, and Rural developments in NH. (NH Employment Security, Data from ACS 2012-2016)

Development	Population	Age Median (years)	Average Per Capita Income ($)	Median Home Value ($)
Urban	31,150	36	33,640	229,420
Suburban	7,120	40	35,280	231,900
Rural	2,500	47	35,110	221,330

Table 10: Minimum lot size requirements & setbacks for Urban, Suburban, and Rural developments in NH.

Development	Lot Area (SF)	Front Setback (ft)	Side Setback (ft)	Lot Frontage (ft)
Urban	20,000	20	24	40
Urban[9]	30,000	20	24	40
Urban[10]	20,000	20	24	40
Suburban	20,000	40	20	120
Suburban[9]	80,000	40	20	200
Suburban[10]	60,000	40	20	150
Rural	87,120	75	25	200

Table 11: Median lot size and price for Urban, Suburban, and Rural developments in NH over the past 5 years.

	Size (acres)					Price ($)					
	2013	2014	2015	2016	2017	2013	2014	2015	2016	2017	Total
Urban	2.4	1.25	1.08	1.23	2.085	212,500	95,000	97,500	125,000	87,450	**100,000**
Suburban	3.6	4.6	12[11]	1.8	9.55	60,000	45,000	110,000	95,000	85,000	**72,500**
Rural	1.3	1.97	1.375	0.76	2.33	45,500	33,333	21,250	22,700	54,000	**33,333**

[9] Municipal water and sewer not provided.
[10] Municipal water provided.
[11] High median acreage due to large subdivided land parcel. Number of subdivision unknown.

Table 12: Price and size of vacant land for Urban, Suburban, and Rural developments in NH in 2013 (Left) and 2014 (Right)

2013	Size (acre)	Price ($)	2014	Size (acre)	Price ($)
Urban	00.65	68,750	Urban	0.04	18,500
	1	75,000		1.3	55,000
	6.5	99,000		1.15	55,000
	1.9	165,000		3.3	60,000
	0.6	200,000		0.56	70,000
	2.9	225,000		0.81	90,000
	0.6	225,000		1.05	95,000
	5.8	255,000		0.69	95,000
	53[12]	285,000		0.69	95,000
	4	300,000		3	95,100
Suburban	0.13	35,000		2.9	107,000
	5.1	60,000		1.1	110,000
	3.6	60,000		17.9[12]	125,000
	3.1	72,500		2.4	235,000
	42.3[12]	75,000		27	308,750
Rural	0.25	9,500		24	450,000
	0.31	10,000	Suburban	0.24	17,500
	0.6	11,000		5.7	45,000
	0.53	12,500		3.5	45,000
	2.04	39,900		42.7[12]	147,000
	2	45,500	Urban	0.53	7,000
	1.3	59,900		0.57	13,000
	6.03	65,000		0.77	14,500
	17.13[12]	118,000		0.86	16,000
	145[12]	135,000		0.45	21,500
	0.62	339,000		0.51	23,500
				1.97	33,333
				2	33,333
				2	33,334
				13.9[12]	61,000
				2.02	81,600
				29[12]	105,000
				10	139,500
				1.8	300,000
				2	330,000

[12] Large acreage assumed to be a subdivided land parcel of unknown subdivision quantity.

Table 13: Price and size of vacant land for Urban, Suburban, and Rural developments in NH in 2015 (left), 2016 (middle), and 2017 (right).

2015	Size (acre)	Price ($)	2016	Size (acre)	Price ($)	2017	Size (acre)	Price ($)
Urban	0.23	20,000	Urban	0.29	7,900	Urban	2.55	40,000
	0.96	25,000		0.34	95,000		1.03	60,000
	1.08	50,000		0.27	104,000		1.19	63,800
	2.04	55,000		8.4	125,000		1.62	64,500
	1.08	65,000		1.23	140,000		8.9	70,000
	1.8	95,000		3.88	320,000		0.21	82,000
	0.46	100,000		3.4	410,000		0.91	85,000
	0.92	100,000	Suburban	1.8	95,000		2.6	89,900
	2.17	102,000	Rural	0.36	4,250		2.7	115,000
	1.9	170,000		0.69	5,500		0.4	200,000
	4.5	225,000		0.83	7,500		5.00	210,000
	0.4	250,000		0.66	8,800		6.4	300,000
Suburban	1.44	12,500		0.45	12,500		12.2[12]	710,000
	14[12]	110,000		0.34	13,500		1.41	950,000
	12[12]	142,500		1.21	17,000	Suburban	0.12	28,000
Rural	1.1	4,000		1.06	20,500		12[12]	80,000
	0.32	7,000		0.51	24,900		22.7[12]	90,000
	1.35	8,000		0.51	26,000		7.1	119,000
	0.94	11,750		1.01	32,000	Rural	0.62	6,750
	0.34	13,250		5.34	34,000		1.34	7,800
	0.51	23,500		5.04	35,000		2.76	10,000
	1.81	15,000		2.00	47,000		0.56	10,000
	0.49	18,500		0.08	5,000		0.7	14,500
	0.78	24,000		10.21[12]	67,500		0.31	15,000
	3.02	27,500					2.00	28,400
	1.4	41,000					1.63	36,500
	67[12]	67,000					2.33	36,500
	5.1	68,500					1.59	37,500
	22[12]	95,000					1.5	43,000
	2.00	110,000					22.16[12]	54,000
	31.4[12]	130,000					0.08	55,000
							12[12]	65,000
							15.2[12]	72,900
							2.4	85,000
							32.5[12]	91,250

Table 14: Cost matrix of different size modular models.

	Small End 800-1100 SF				Large End 1300-1500 SF		
Modular Model:	**NEH Washington** [13]	**NEH Meredith**	**NEH Meredith** [14]	**Pro-Fab Waltham** [15]	**NEH Fairview**	**NEH Effingham**	**Pro-Fab Acadia**[16]
Area (SF)	1000	850	1050	1042	1344	1456	1346
# of Bedrooms	3	2	2	3	2	3	3
# of Bathrooms	1	1	1-1/2	1	2	2	2
Cost ($)	156,274	143,497	155,618	183,236	181,210	190,701	216,367
Price[17] ($)	188,736	173,439	188,112	219,862	218,691	230,182	259,457
Cost ($/SF)	189	204	179	211	163	158	193

[13] Cherrydale has same SF, different floorplan.
[14] Revised floor plan.
[15] A $4,000 discount is applied if ordering 5 homes at once. A $5,000 discount is applied if ordering 6-10 homes at once. An air exchange system is included in the price.
[16] A $4,000 discount is applied if ordering 5 homes at once. A $5,000 discount is applied if ordering 6-10 homes at once.
[17] Including Builder's fee (5% on modular package, 15% on all other costs), 10% contingency on total marked up price.

Table 15: Cost matrix of different modular garages.

	Garages		
Modular Model:	**Stoltzfus 24'x28' Standard 5-Pitch Two Car Garage**	**Stoltzfus 10'x24' A-Frame Single Car Garage**	**SP Rankin Garage Builders 24'x26' Single Story Two Car Garage**
Characteristics:	Built to customer's concrete pad. Pressure treated bottom place with insulator. 2"x4" wall studs @ 16" OC. 8' Sidewalls. ½" Painted Smartside Wood Siding or Cedar Creek Vinyl Siding with ½" Wood Sheathing. (2) 9'x7' Steel Garage Doors: ½ Lite man door. (4) 2'x3' Windows with shutters. 5-Pitch Pre-engineered Roof Trusses @ 24" OC. Hurricane Straps securing Trusses to wall. ½" Sheathing 15 lbs. tar paper 30-year architectural shingles Shipping: $5/mile from factory	Built to customer's concrete pad. 2"x4" Floor joists @ 12" OC. ¾" T&G SmartFinish Wood Flooring walls, 2"x4" @ 16" OC. 7' high walls. ½" LP Smartside Siding finished the exterior or an optional Cedar Creek vinyl siding with ½" wood sheathing or optional Hardi-Plank lap siding. (1) 9'x7' Solid steel garage door with aluminum diamond plate guard (note: 8'x6'-6" garage door in 10' wide buildings). 36" single door with aluminum floor guard. Includes (2) 18"x27" windows with screens. 2"x4" Rafters @ 16" OC. ½" sheathing tar paper roof. 30-year architectural shingles.	½" Roof sheathing plywood. 2"x8" Rafters @ 16" OC. 2"x4" Collar tie. 2"x4" Hanger. 2"x10" Ridge board. Galvanized drip edge. Pine fascia. Pine trim. 2"x4" gable studs. 2"x8" garage door header. 2"x4" jack stud. 2"x6" rafter tie @ 32" OC. 2"x4" pressure treated bottom plate. 2"x4" studs @ 16" OC. 2"x4" tie plate. 2"x4" top plate. 2"x8" window & service door headers. T-111 5/8" fir siding. 3/8" AC pine soffit. 20-year shingles. 5/12 roof pitch. Steel raised panel insulated overhead doors. 24"x32" double hung windows (optional) Steel insulated service door.
Cost ($)	21,570	6,415	17,850
Price[17] ($)	23,433.85	7,719.53	19,635
Cost ($/SF)	34.87	32.16	28.61

Table 16: Garage building permits and additional costs.

	Garages		
Modular Model:	**Stoltzfus 24'x28' Standard 5-Pitch Two Car Garage**	**Stoltzfus 10'x24' A-Frame Single Car Garage**	**SP Rankin Garage Builders 24'x26' Single Story Two Car Garage**
Urban Town Building Permit ($)	259.34	102.20	221.35
Suburban Town Building Permit ($)	226.60	97.00	212.20
Rural Town Building Permit (Includes Driveway Permit) ($)	235.20	84.00	218.40
Sitework ($)	2,000[18]	1,000[18]	2,000[18]
Foundation ($)	2,400[19]	870[19]	Included[19]
Electrical Including Fixtures (need to connect home runs) ($)	1,700	950	1,700

Table 17: Pricing demographics for single-family residential sales in Urban, Suburban, Rural developments in NH over the past 5 years.

Development	Year	# of Sales	Days on Market	Min. Price ($)	Max. Price ($)	Median Price ($)
Urban	2013	320	84	49,500	962,365	263,356
	2014	332	75	47,000	1,325,000	258,450
	2015	347	73	90,000	1,611,975	280,000
	2016	377	57	83,500	1,275,000	260,000
	2017	346	54	37,000	2,835,000	309,750
Suburban	2013	75	73	42,000	440,000	185,370
	2014	75	63	44,000	533,000	190,000
	2015	66	48	83,500	435,000	214,750
	2016	88	60	30,000	418,000	222,000
	2017	93	39	100,000	424,900	236,000
Rural	2013	67	178	50,500	710,000	175,000
	2014	67	96	47,500	768,600	180,000
	2015	69	131	45,000	949,000	207,900
	2016	71	104	35,000	955,000	175,000
	2017	74	78	30,500	969,000	212,234

[18] Allowance for shallow foundation excavation.
[19] Price represents thickened slab, if 4' frost walls are required adjust accordingly.

Table 18: Modular design selection and pricing

	Small End 800-1100 SF				Large End 1300-1500 SF		
Modular Model:	**NEH Washington**	**NEH Meredith**	**NEH Meredith (revised)**	**Pro-Fab Waltham**	**NEH Fairview**	**NEH Effingham**	**Pro-Fab Acadia**
Characteristics:	1000 SF, 3 bed 1 bath	850 SF, 2 bed 1 bath	1050 SF, 2 bed 1 1/2 bath	1042 SF, 3 bed 1 bath.	1344 SF, 3 bed 2 bath	1456 SF, 3 bed 2 bath	1346 SF, 3 bed 2 bath
Cost ($)	156,274	143,497	155,618	183,236	181,210	190,701	216,367
Price (excludes permit, utilities, and impact fees)[17] ($)	188,736	173,439	188,112	219,862	218,691	230,182	259,457
Cost ($/SF)	189	204	179	211	163	158	193
General Conditions ($)	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Urban Building Permit ($)	1,912	1,759	1,906	2,224	2,212	2,327	2,620
Suburban Building Permit ($)	325	280	340	338	428	462	429
Rural Building Permit (includes driveway permit) ($)	390	338	408	405	510	550	511
Urban Impact Fees ($)	8,895	8,895	8,895	8,895	8,895	8,895	8,895
Suburban Impact Fees ($)	1,331	1,331	1,331	1,331	1,331	1,331	1,331
Rural Impact Fees	None	None	None	None	None	None	None
Clearing ($)	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Excavation/ Drains/ Grading ($)	12,000	10,200	12,600	12,504	16,128	17,472	16,152
Driveway[20] ($)	3,800	3,800	3,800	3,800	3,800	3,800	3,800
Urban Public Sewer Connection ($)	2,897	2,897	2,897	2,897	2,897	2,897	2,897
Urban Public Water Connection ($)	2,274	2,274	2,274	2,274	2,274	2,274	2,274
Suburban Public Sewer Connection ($)	4,534	4,534	4,534	4,534	4,534	4,534	4,534
Suburban Public Water Connection ($)	1,500	1,500	1,500	1,500	1,500	1,500	1,500
Septic System[21] ($)	13,000	12,000	12,000	13,000	13,000	13,000	13,000
Well[22] ($)	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Trenching for Utilities ($)	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Loam and Seed ($)	6,000	6,000	6,000	6,000	6,000	6,000	6,000

[20] Assuming 40-foot driveway, price varies by length
[21] If public sewer is not available
[22] If public water is not available

Continuation of Table 18

Modular Model:	NEH Washington	NEH Meredith	NEH Meredith (revised)	Pro-Fab Waltham	NEH Fairview	NEH Effingham	Pro-Fab Acadia
Foundation	12,854	11,387	13,103	13,075	15,609	16,564	15,617
Foundation prep (girder, lally columns) ($)	1,200	1,200	1,500	included	1,500	1,500	included
Insulated Modules ($)	81,370	73,500	79,500	108,467	95,823	100,500	129,518
Interior Partitions ($)							
Installed Windows/Doors ($)							
Roofing ($)							
Siding and trim ($)							
Plumbing and Electrical Including Fixtures ($)							
Interior Walls ($)							
Drywall ($)							
Interior trim	Included	Included	Included	Included	Included	Included	Included
Paint (Finish) ($)	4,800	4,300	4,900	4,200	5,000	5,500	5,000
Interior Doors	Included	Included	Included	Included	Included	Included	Included
Flooring ($)	4,500	3,825	4,300	6,240	6,050	6,550	8,500
Cabinets, Vanities, and Countertops	Included	Included	Included	Included	Included	Included	Included
Appliances ($)	2,500	2,500	2,500	2,500	3,000	3,500	3,500
HVAC ($)	2,950	2,950	2,950	2,950	3,450	3,450	3,450
Complete Roofing ($)	8,300	7,835	8,465	included by button up crew	8,850	9,865	included by button up crew
Complete Siding (gable ends) and Trim ($)				included by button up crew			included by button up crew
Electrical and Plumbing Connections ($)				5,220			5,330
Drywall Repair/Taping ($)				2,280			3,500
Connection Sheathing and Floor Insulation ($)				included by button up crew			included by button up crew

Figures

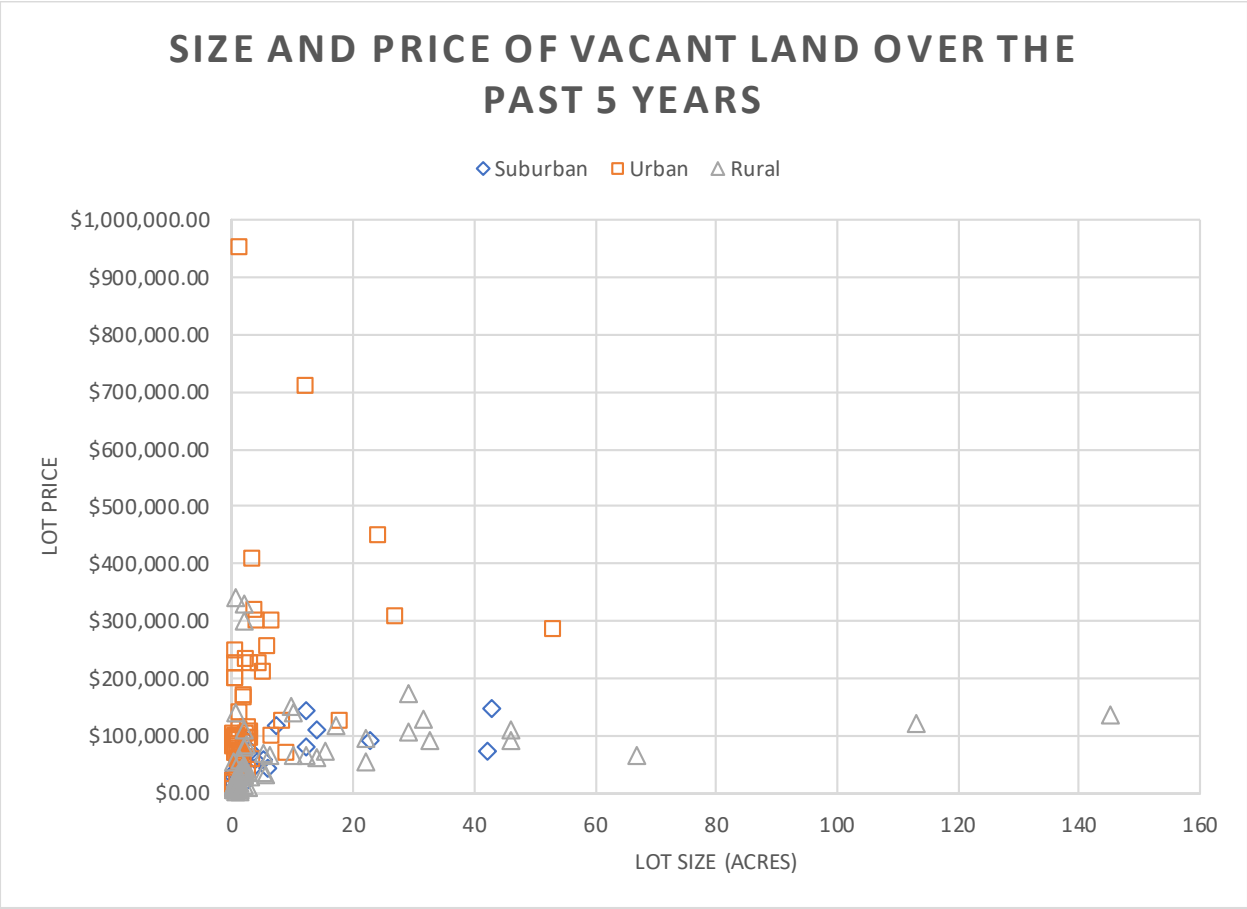


Figure 3: Size and price of vacant land for Urban, Suburban, and Rural developments in NH over the past 5 years.

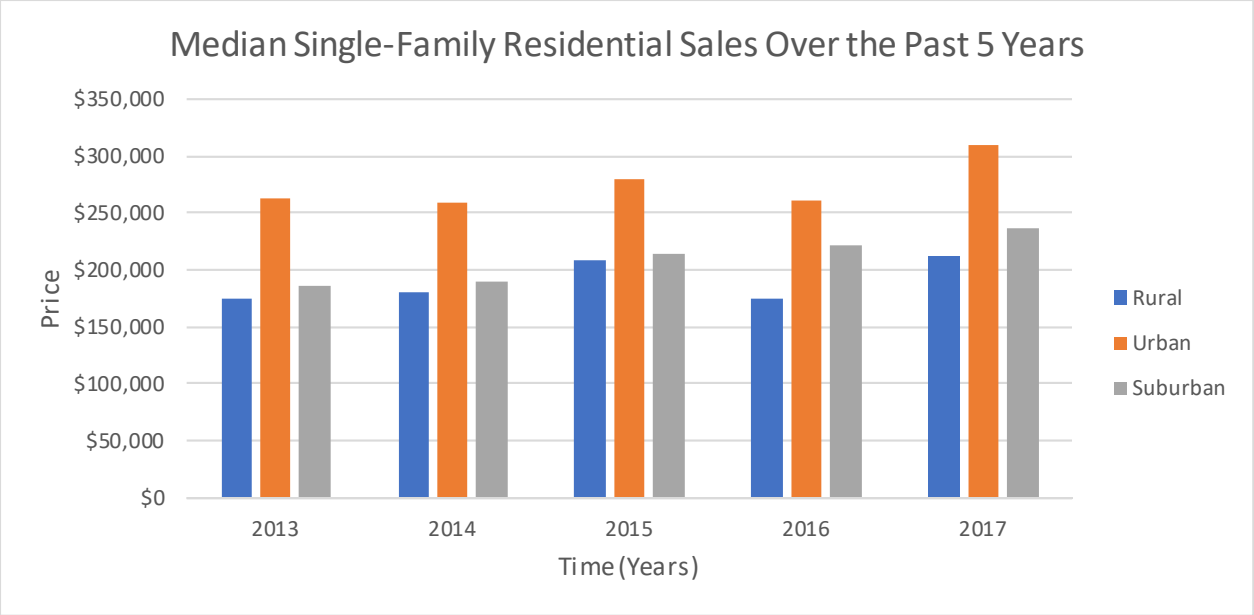


Figure 4: Median price of single-family residential sales in Urban, Suburban, and Rural developments over the past 5 years.

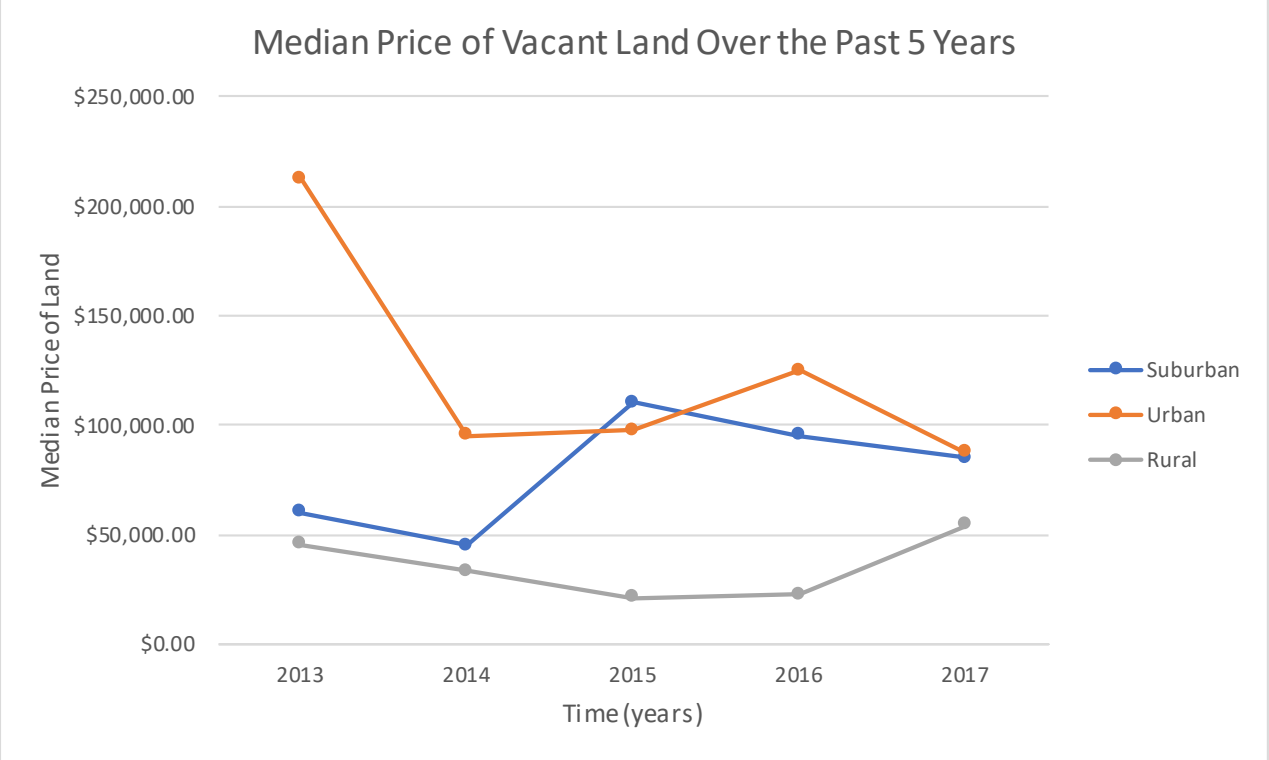


Figure 5: Median cost of vacant land of an Urban, Suburban, and Rural development in NH over the past 5 years.

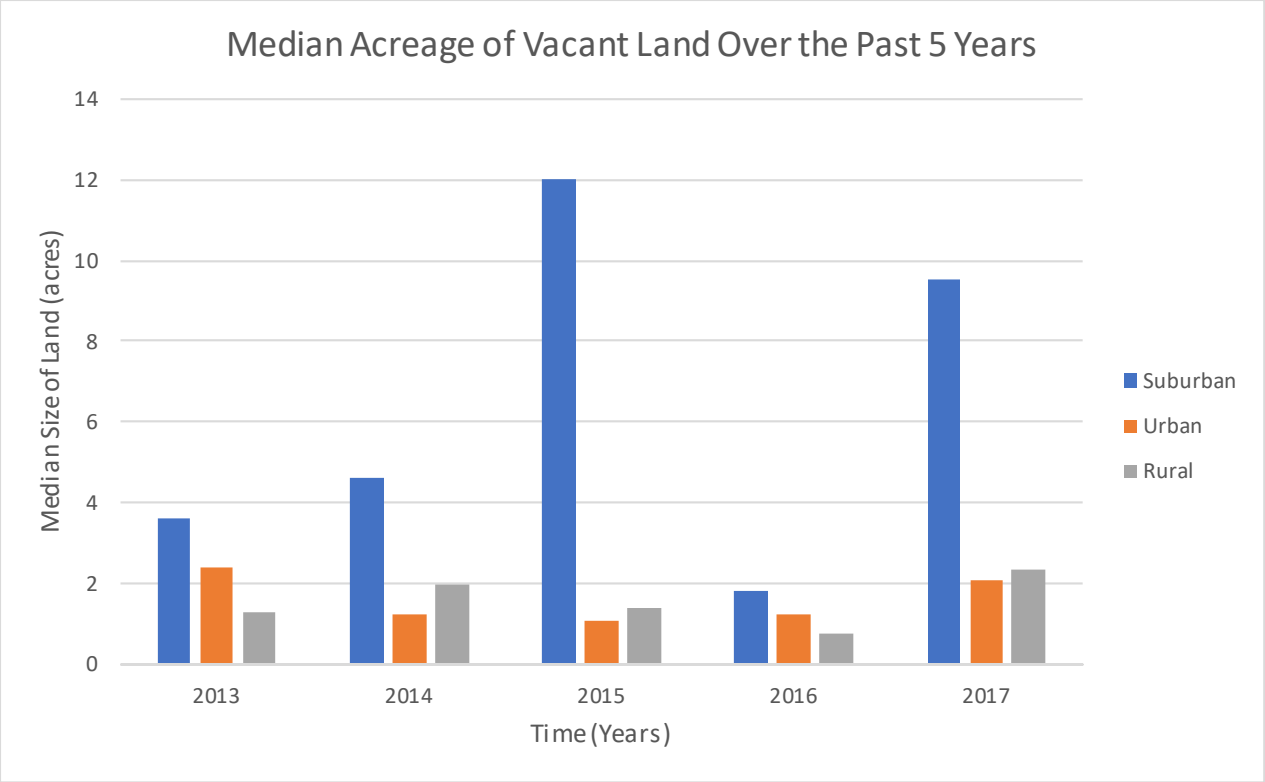


Figure 6: Median acreage of vacant land for an Urban, Suburban, and Rural development in NH over the past 5 years.

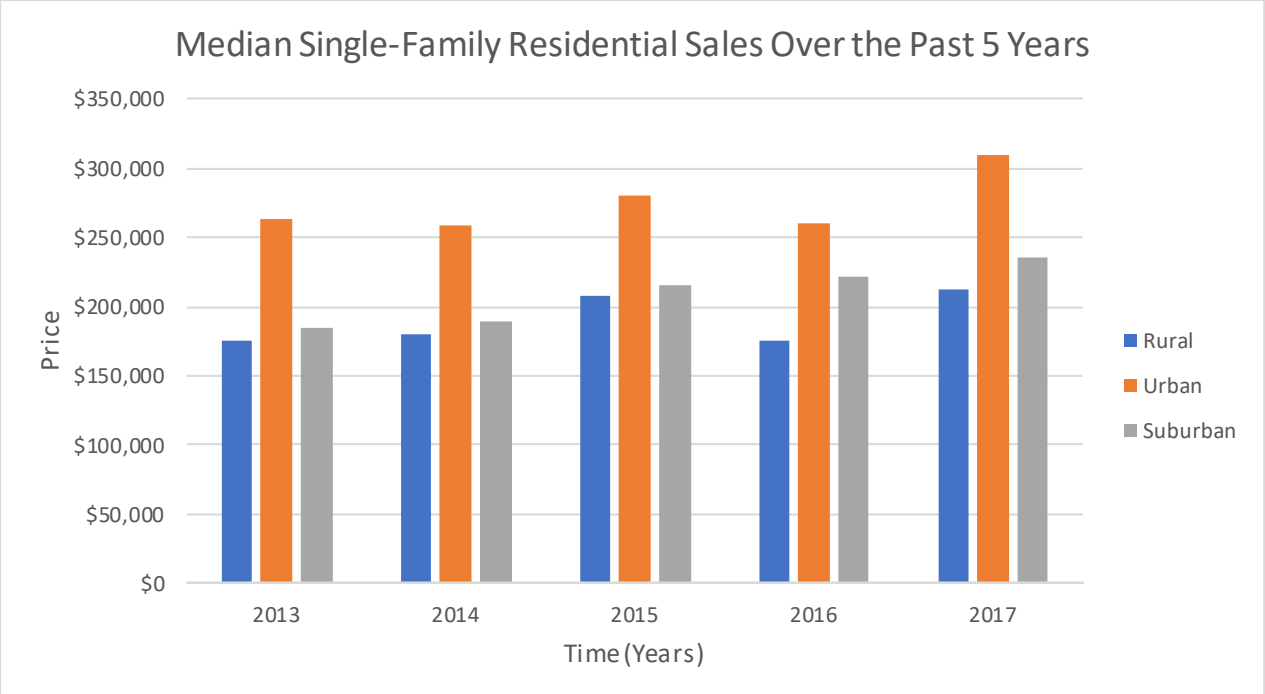


Figure 7: Median single-family residential home sales over the past 5 years by region

Attachments

Attachment 1: New England Homes Classic Series Specifications

New England Homes

Classic Series Specifications

Each New England Home is individually crafted to meet or exceed the high standards listed below. However, you may work with your Independent Builder to custom design a New England Home to meet your exact specifications.

Floor Systems:

- 2" x 8" or 2" x 10" floor joist 16" on center as required by span with double 2" x 12" rim joists. Steel joist hangers or ledger as required
- ¾" OSB tongue & groove floor decking glued and fastened
- Solid wood bridging installed at center spans
- 3½" concrete filled steel support columns provided
- Bath Area - Open Web Joists

Exterior:

- 2" x 6" studs, 16" on center
- Air infiltration barrier applied at sole and cap plates
- R-21 kraft faced insulation
- 7/16" OSB wall sheathing glued and fastened
- Typar House Wrap
- JeldWen Classic Series Energy Star Northern vinyl exterior double hung windows with Low-E, argon filled glass, brickmould profile, white GBG and full screens
- JeldWen Vinyl sliding patio door per plan
- Therma-Tru Insulated fiberglass smooth doors with wood frame, adjustable oak threshold
- Door chime at front and rear doors
- Exterior Portfolio Double 4 vinyl siding in 15 colors with Matching corners
- 5/8" OSB roof sheathing, ply clips used with 24" o.c. framing
- 6/12 roof pitch; 12/12 roof pitch standard on Capes
- White galvanized drip edge
- 30 year fiberglass architectural roof shingles (13 colors) over IKO Syn Roof Guard
- Ice and water barrier at eaves
- 6" or 12" (nominal) roof overhangs on front and rear of Colonials and Ranches and Capes
- 6" (nominal) gable end overhangs on Colonials and Ranches. Gable end overhangs are optional on Capes
- R-49 cellulose ceiling insulation (all States) Ranches and Colonials – Site Installed
- R-38 fiberglass ceiling insulation and R-38 high density 2nd floor insulation in Cape with folded roof system
- Kleer, PVC rake and fascia trim, smooth finish
- Vented vinyl soffit
- "Shingle Over" ridge vent

Interior:

- 2 x 4 studs, 16" on center interior wall framing
- Full 8' ceiling height; 2nd floor ceiling height on unfinished Cape vary by pitch
- ½" high strength gypsum board on ceilings with smooth finish
- ½" high strength gypsum board on walls
- All interior drywall surfaces are primed
- Primed, 6 Panel hollow-core (smooth) 3-hinged interior door
- Primed, louvered door at washer & dryer closet
- Brushed nickel finish passage and privacy lock sets
- Primed, finger jointed colonial 2½" casing and 3½"baseboard and door jambs (Ranches, unfinished Capes only)
- Primed, finger jointed colonial 3½" casing and 5¼" baseboard and door jambs (Colonials, finished Capes only)
- "Total Slide" pre-finished ventilating closet shelving

Kitchen:

- Kraftmaid Belmont Maple Square or Grandview Oak Square (36" overhead cabinets with crown moulding)
- Laminate counter top (290 wrap)
- Built-in Dishwasher
- Ductless range hood (ducted when required by code)
- Double bowl, 8" deep stainless steel sink
- Moen single lever faucet and spray
- Open above kitchen cabinets

Bathrooms:

- Kraftmaid Belmont Maple Square or Grandview Oak Square
- Laminate vanity top with china drop-in basin
- Fixture colors: white or bone
- Moen single lever faucets
- One-piece smooth finish fiberglass tub/shower unit or shower
- Shower rod
- All shower valves incorporate anti-scald single lever valving
- Broan direct vent bath fan with insulated air duct
- Elongated water closet bowl with insulated tank

Plumbing and Electrical:

- Hot water baseboard heat
- Pex plumbing
- PVC drain, waste and vent lines
- 200 AMP main service panel with circuit breakers
- Ground fault protected receptacles provided in kitchen, bath & exterior locations as required by code
- Hard wired smoke and CO detectors with built-in battery back up provided as required by code
- Two pre-wired telephone jacks: kitchen and one bedroom
- One pre-wired cable television jack in specified location
- Basement light fixtures installed
  Programmable Digital thermostat
  Emergency shut off boiler switch
- Decora rocker switches and receptacles
- Brushed nickel light fixtures provided at kitchen, dining, bath, walk-in closet, hall, entry foyer and exterior door locations
- Non-storage attic pull chain light in folded truss roof only
- Arc fault protection as required by code
- 5" Recessed light over kitchen sink
- Radon prep for all single family homes

NEW ENGLAND HOMES
277 Locust Street Suite B
Dover, NH 03820
603-436-8830 ● 800-800-8831
www.newenglandhomes.net

New England Homes reserves the right to change or substitute any of the above material with equal or better products to meet production schedules. Revised 5/14/2018

Attachment 2: Pro-Fab US Standard Specifications

US Standard Specifications 01-01-2016:

Floor System:

23/32" Advantech subfloor, glued & screwed
Rim board 1 or 2- LSL (based on width) with foam block insulation
Engineered "I" beam joists @ 16" o/c.
Metal hangers on both ends of floor joists
1 X 4" strapping to unite floor joists.
Central Beam 2 -LSL (if more than 48'module, 2 -LVL is used in front and central beam of module)

Exterior Walls:

House Wrap (Air barrier)
½" plywood sheathing
2 X 6 studs 16" o/c
R-22 Fiberglass Insulation
Vapor barrier – Type 1 poly
1X3 strapping @ 16" o/c
½" Sheetrock
Total R-25-Value wall

Interior Walls:

½" Sheetrock (Waterproof sheetrock around tub/showers)
2X4 interior partitions 16" o/c
2X4 interior partitions and ¼" OSB on marriage wall

Roof & Ceilings:

Roof Pitch as shown on model (6/12 minimum)
Hip roof if shown
Roof trusses 24" o/c (engineer approved)
½" plywood sheathing nailed and H-clips are used
Laminated Beams (LVL or LSL)
Vapor barrier -Type 1 poly
1X3" strapping at 16" o/c
½" sheetrock on ceiling (glued & screwed)
Synthetic roof underlayment
36" ice and water shield
Architectural shingles
1 ½" aluminum drip edge
6" aluminum fascia
8' ceilings standard (9' available only on first floor of a 2 story house)
Cathedral ceilings (if shown)
Overhang; front, back and ends 12"
R-40 cellulose insulation
Total R-42-Value Ceiling

PRO-FAB

Siding & Windows:

D/4 Traditional or Dutch lap 14 standard colors
Vinyl cedar shakes are available as and option
Vinyl shutters if shown on plan
Decorative vinyl trims around windows if shown on plans (White)
Aluminum fascia & PVC vented Soffit – White (other colors available) if colored soffit it's aluminum
Casement or double hung windows per plan (interior grills are optional)
Low E – Argon
Full PVC– Wood is available & Wood with aluminum cladding is available as and option

Plumbing & Heating:

Pex water supply lines stubbed through floor
PVC schedule 40 drain, waste and vent system.
Plumbing for washing machine if shown on plans
Hot Water baseboard included on second floor & optional on first floor

Electrical:

Wired per the NEC Code
Grounded Electrical System
200-amp circuit breaker panel (60 circuits possibility of 80)
Decora switches
4 lights pre-wired in basement
Smoke detectors (AC/DC) not included in state of Massachusetts
2 exterior GFI receptacles
Wall-mounted light at all exterior doors
Bathroom Fan 110 CFM
Electrical for washer and dryer if shown on plan
Doorbell at front door
4 telephone wires (jacks not included)
4 cable wires (cable box not included)
ARC Fault breakers per code
Light box in center of each room (fixture not included)
Light box over kitchen sink (fixture not included)
Light box over each vanity in ceiling (fixture not included)
GFI Kitchen and baths

PRO-FAB

Bathroom:

Cabinets-Natural oak shaker (other stain colors available) Maple, Birch cabinets are available as option
Thermo & Polyester is also available as an option
Laminated Countertops with italo edge over 250 standard colors
Porcelain Sinks
Single lever faucets (Full range of optional faucets)
Fiberglass tubs and showers as shown on each model
1.6 gallon water saver toilets (Elongated toilets available)

Kitchen:

Cabinets-Natural oak shaker (other stain colors available) Maple, Birch cabinets available as option.
Thermo & Polyester cabinets also available as an option
Adjustable shelves in top and bottom of cabinets.
Pantry included with two pull out shelves if shown in plans
Custom cabinet options available; pull outs, glass doors, recycle bin etc.
Double bowl stainless sink
Single lever faucet
Knobs and pulls included over 300 standard choices
Variable speed kitchen range hood- 280 CFM
Laminate countertops with Italo edge over 250 standard colors

Exterior Doors:

Doors included as shown on plans steel insulated door with wood frames & PCV cladding
Front door 36"- service door 34"
Sliding door or garden door include if shown on plans
All steel doors painted white (24 other colors available)
Service doors handle - Round with deadbolt (choice of color)
Front Door handle - Thumb latch with deadbolt (choice of color)

Interior Doors:

Masonite primed doors - 5 different styles are standard
Round door knob in various colors
Full range of door knobs available as and option
Bi-fold sliding doors for closets per plan
Pocket doors included if shown on plan
Solid pine doors available as and option

PRO-FAB

Staircase:

Particle board treads and risers included for basement (per code)
Studs, sheetrock and handrail included for basement staircase
Colonial hardwood spindles to second floor in Oak or Birch
Hardwood treads and risers available as and option
Custom staircases available as and option

Trim:

Colonial door & window trim – 3 1/2" primed
Colonial Baseboard trim 5 ¼" primed
Colonial Clear pine stain grade trim is available as an option
Trim is not installed at factory

Miscellaneous:

Homes comply with HERS ratings
Lally columns included for basement (std 3X3X96") depending of loads could be bigger
All cape models come with second floor finished (built in 4 modules)
Raised ranch models include knee wall and windows per plans
PFS Third party inspection

Plans:

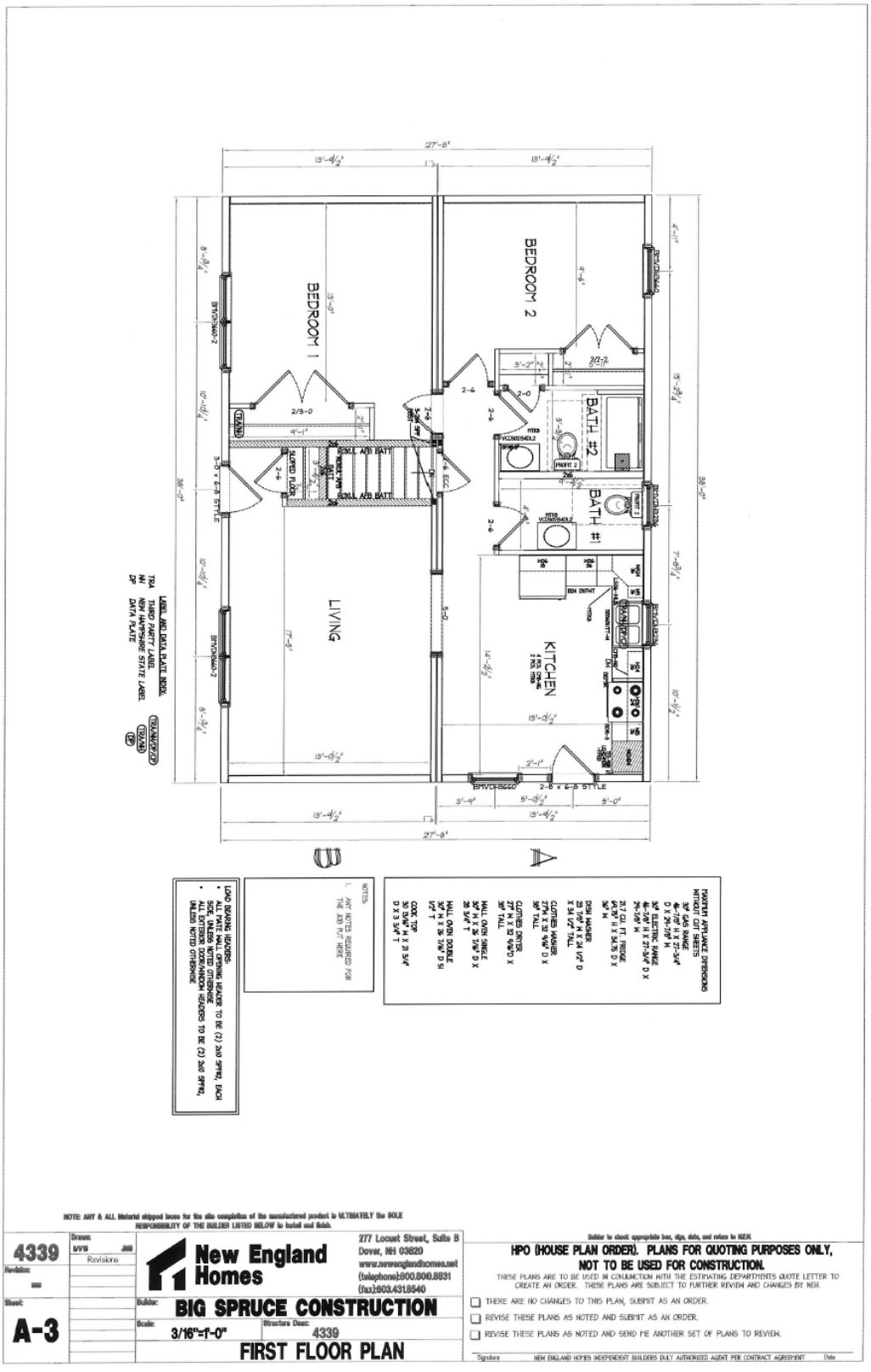
Garages, walk out basements will be drawn on plans
Three sets of drawn plans included. $100.00 each additional set with changes

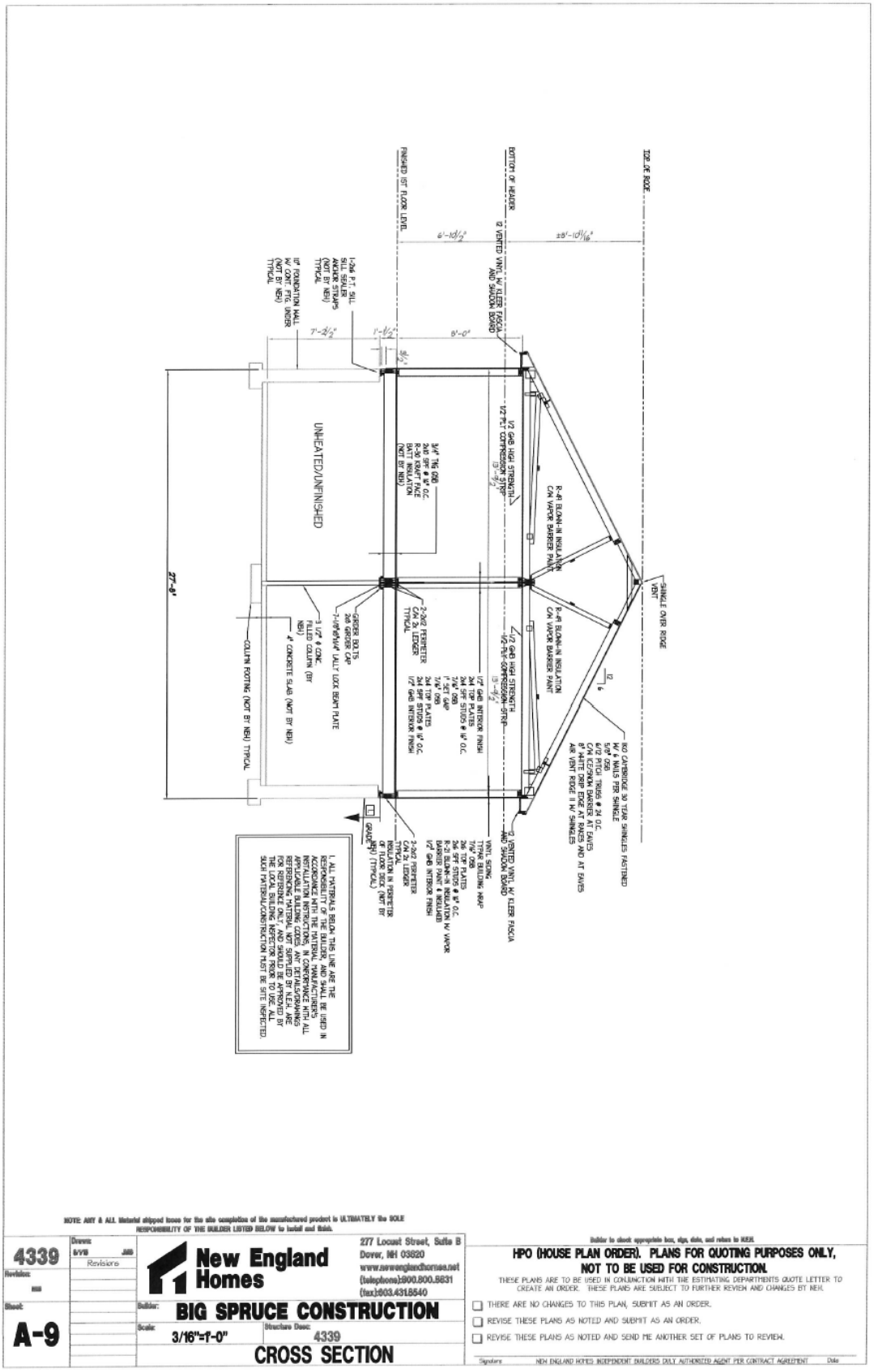
Delivery:

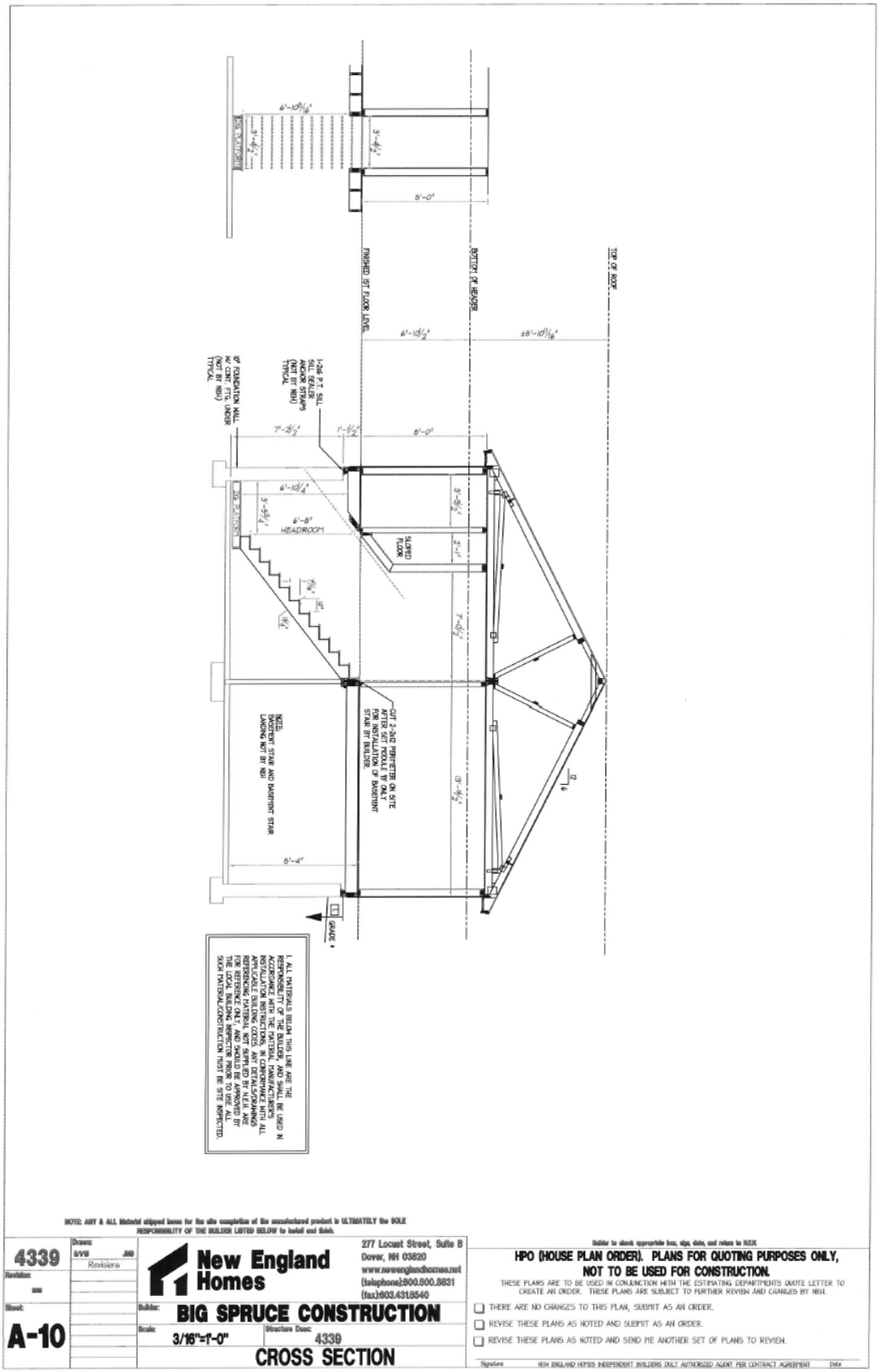
All prices include delivery to your site and installation of boxes on your foundation (crane not included)

Note: Each home is built per town/city/state requirements. Any work that needs to be done on site to comply will be builder's responsibility.

Attachment 3: Additional Specifications




FINISHED 1ST FLOOR LEVEL
BOTTOM OF HEADER
TOP OF ROOF
UNHEATED/UNFINISHED
27'-9"
SINGLE OVER RIDGE VENT
NOTE: ANY & ALL Material shipped loose for the site completion of the manufactured product is ULTIMATELY the SOLE RESPONSIBILITY OF THE BUILDER LISTED BELOW to Install and Finish.
4339
A-9
New England Homes
277 Locust Street, Suite B
Dover, NH 03820
www.newenglandhomes.net
(telephone)800.800.8631
(fax)603.4318540
BIG SPRUCE CONSTRUCTION
3/16"=1'-0"
4339
CROSS SECTION
HPO (HOUSE PLAN ORDER). PLANS FOR QUOTING PURPOSES ONLY, NOT TO BE USED FOR CONSTRUCTION.
THERE ARE NO CHANGES TO THIS PLAN, SUBMIT AS AN ORDER.
REVISE THESE PLANS AS NOTED AND SUBMIT AS AN ORDER.
REVISE THESE PLANS AS NOTED AND SEND ME ANOTHER SET OF PLANS TO REVIEW.



NOTE: ANY & ALL Material shipped loose for the site completion of the manufactured product is ULTIMATELY the SOLE RESPONSIBILITY OF THE BUILDER LISTED BELOW to Install and Finish.

4339	Drawn: BVB JMB Revisions	New England Homes	277 Locust Street, Suite B Dover, NH 03820 www.newenglandhomes.net (telephone):800.800.8831 (fax):603.4318540
Revision:		Builder:	BIG SPRUCE CONSTRUCTION
Sheet: A-10		Scale: 3/16"=1'-0"	Structure Desc: 4339
		CROSS SECTION	

Builder to check appropriate box, sign, date, and return to N.E.H.

HPO (HOUSE PLAN ORDER). PLANS FOR QUOTING PURPOSES ONLY, NOT TO BE USED FOR CONSTRUCTION.

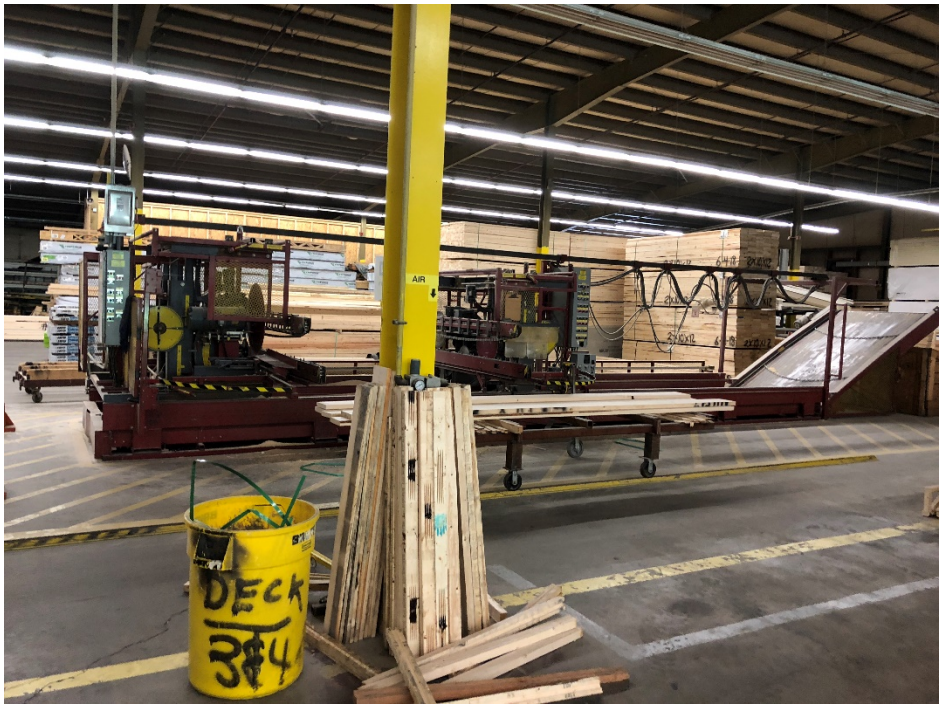
THESE PLANS ARE TO BE USED IN CONJUNCTION WITH THE ESTIMATING DEPARTMENTS QUOTE LETTER TO CREATE AN ORDER. THESE PLANS ARE SUBJECT TO FURTHER REVIEW AND CHANGES BY NEH.

- ☐ THERE ARE NO CHANGES TO THIS PLAN, SUBMIT AS AN ORDER.
- ☐ REVISE THESE PLANS AS NOTED AND SUBMIT AS AN ORDER.
- ☐ REVISE THESE PLANS AS NOTED AND SEND ME ANOTHER SET OF PLANS TO REVIEW.

Signature NEW ENGLAND HOMES INDEPENDENT BUILDERS DULY AUTHORIZED AGENT PER CONTRACT AGREEMENT Date

Attachment 4: NEH Photo Synopsis

1. The photo below depicts raw material to be cut and sent to the framing station



2. Floor systems are framed, sheathed and then slid into the center of the framing station.

3. Walls are framed over drywall, which is then attached with a 2-part adhesive. Walls are lifted into place on the floor system with an overhead gantry crane.

4. Ceilings are framed, lifted into place, then modules are slid into the area where electricians and plumbers rough them in on air pressurized castors.

5. Plumbing and electrical systems are roughed in, and the module then slides over to the insulation, sheathing, and window installation area.

6. Modules are insulated with dense pack cellulose, sheathed, wrapped, and windows and doors installed. The Drywall is also taped, mudded and primed.

7. As an option, trim can be finish coated in the spray booth.

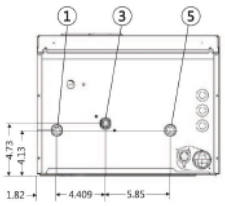
8. Modules slide into the next station for installation of interior trim, plumbing and electrical fixtures, cabinets and vanities. If the home receives laminate counters they are installed here, solid surface countertops are templated for field installation.

9. Modules slide in front of the overhead doors where siding and exterior trim is applied. They are then jacked up so that plumbing drains can be connected, and trailers backed under for transport to the jobsite. The modules are shrink wrapped for protection during transport.

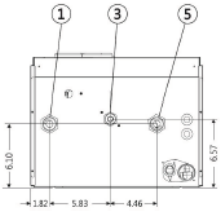
10. When modules arrive on site, a crane lifts them onto the prepped foundation. Marriage walls are tied together, building wrap and roofing stitched, and structural connections made. Completion of the siding at gable ends, roof trim, scribing sheathing to foundation, plumbing and electrical home runs, floor insulation, finish painting, and finish floor installation are all completed on site by the local builder.

Attachment 5: Combination Gas Fired Boiler

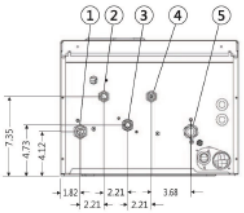
WMB-80C for houses up to 1000 SF
WMB-120C for houses ranging from 1000-1456 SF



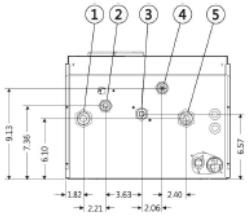
Heating Only Bottom (80/120)



Heating Only Bottom (155)

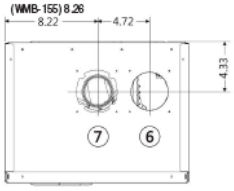


Combi Bottom (80/120)



Combi Bottom (155)

Front (80/120/155)



Top (80/120/155)

Connections (NPT/Inches)			
		80/120	155
1	Heating system supply tapping	¾"	1"
2	Domestic hot water outlet	¾"	¾"
3	Gas connection	½"	½"
4	Domestic cold water supply	¾"	¾"
5	Heating system return tapping	¾"	1"
6	Combustion air connection	3"	3"
7	Flue outlet connection	3"	3"

Domestic Hot Water Flow Rate (Based on 70° temperature rise)	
Model[1]	Gallons per minute
WMB-80C	2.0
WMB-120C	3.2
WMB-155C	4.0

		Input MBH		AHRI Certified Ratings						
	Model[1]	Max.	Min.	DOE heating capacity MBH[2]	Seasonal efficiency AFUE %	Net water rating MBH[3]	Vent/air pipe size (Inches)[4]	Vent material	Boiler water content (Gallons)	Approx. shipping weight (Lbs.)
HEAT ONLY	WMB-80	80	8	73	92.4	63	2 or 3	PVC, CPVC, PP, SS	.45	61
	WMB-120	120	12	109	92.2	95	2 or 3	PVC, CPVC, PP, SS	.55	64
	WMB-155	155	15.5	143	94.4	124	3	PVC, CPVC, PP, SS	.65	67
COMBI	WMB-80C	80	8	73	92.4	63	2 or 3	PVC, CPVC, PP, SS	.53	70
	WMB-120C	120	12	109	92.2	95	2 or 3	PVC, CPVC, PP, SS	.63	77
	WMB-155C	155	15.5	143	94.4	124	3	PVC, CPVC, PP, SS	.75	87

[1]Natural gas field convertible to LP with optional kit.
[2]Based on standard test procedures prescribed by the United States Department of Energy. MBH refers to thousands of Btu per hour.
[3]Net AHRI ratings are based on net installed radiation of sufficient quantity for the requirement of the building and nothing needs to be added for normal piping and pick-up. Ratings are based on piping and pick-up allowance of 1.15. An additional allowance should be made for unusual piping and pick-up loads.
[4]Boilers must be vented directly to the outdoors. See boiler manuals for details.

STANDARD EQUIPMENT:

- Stainless Steel heat exchanger
- Mounting bracket and hardware
- Spark ignition
- Outdoor sensor
- Honeywell control
- T & P gauge
- 3-prong power cord
- Water treatment inhibitor and test kit
- Condensate drain
- Relief valve
- 3-in-1 Vent adapter
- Low NOx SCAQMD compliant

COMBI MODELS:

- DHW flat plate heat exchanger
- 3-speed circulator

OPTIONAL EQUIPMENT:

- Propane conversion kit
- Concentric vent kit
- Condensate neutralizer

WARRANTY:

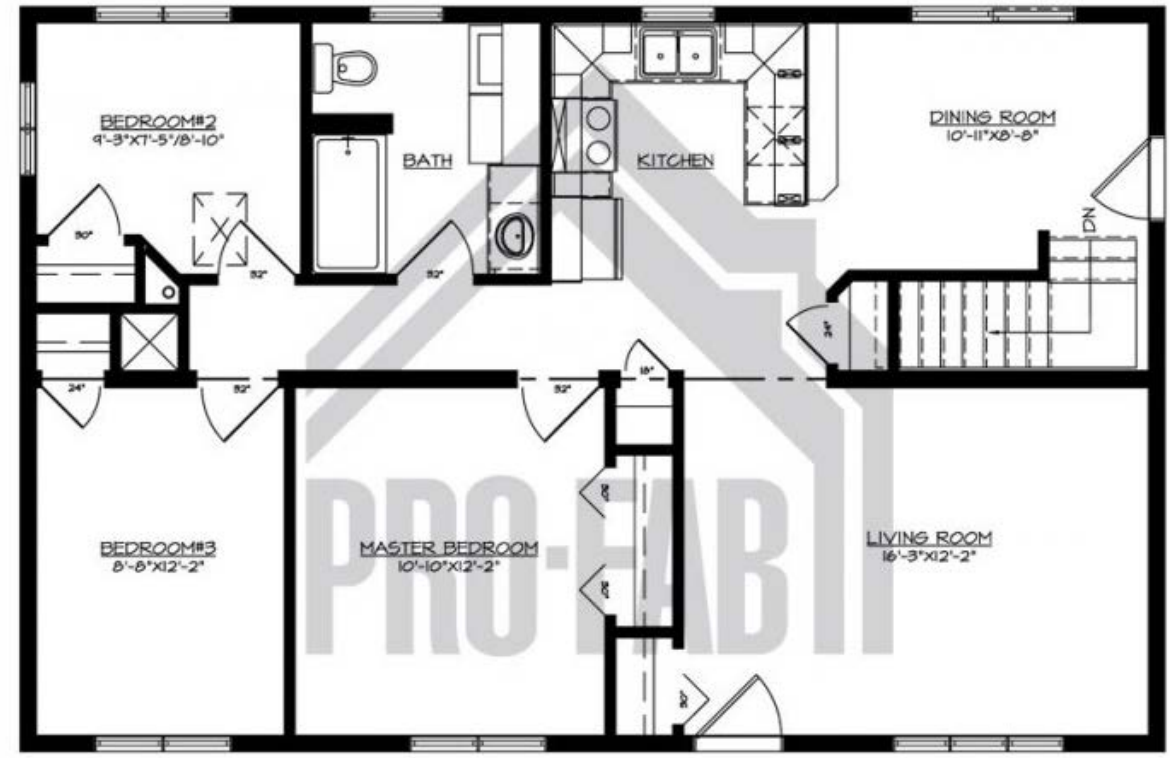
- 10 year limited warranty heat exchanger for residential use
- 5 year limited warranty heat exchanger for commercial use
- 2 year limited warranty all other parts

In the interest of continual improvement in product and performance, Weil-McLain reserves the right to change specifications without notice.

Attachment 6: Floor Plans for Pro-Fab Modular Home Designs

Pro-Fab Acadia

Pro-Fab Waltham



References

Difference between Urban, Suburban, and Rural

http://www.differencebetween.net/language/difference-between-rural-and-suburban-and-urban/