The Nelson A. Rockefeller Center at Dartmouth College
The Center for Public Policy and the Social Sciences

The Class of 1964 Policy Research Shop

2018 STATE OF THE UPPER VALLEY POLL

Affordable Housing

Presented to Vital Communities and Discussion Participants

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EXECUTIVE SUMMARY

Affordable housing continues to be a concern among Upper Valley residents. There have been numerous reports in local newspapers addressing the issues and the causes of lack of affordable housing options in the Upper Valley. Despite lack of housing options, there have been difficulties in constructing new housing developments due to state and local regulations as well as litigation resulting from disagreements about the need for affordable housing in particular locations throughout the Upper Valley.

The Upper Valley Housing Survey, created by students in the Nelson A. Rockefeller Center at Dartmouth College, was sent out electronically to a random sample of registered voters in the Upper Valley for whom email addresses could be located. In addition, the survey was posted on the Upper Valley Listserv. Survey responses (N=403) were assessed to analyze the larger issues and sentiments regarding housing in the region. The questions focused on demographics and the attitudes of residents toward affordable housing. Almost two-thirds of respondents believe that current housing situation is very serious; an additional 22 percent believe it is somewhat serious. Furthermore, a majority of respondents support the creation of new affordable housing in the Upper Valley. The report further analyzes the correlation between current housing situations and income. There is a disparity between the types of housing occupied by individuals of different income brackets which points to the need for a larger variety of housing options in different price ranges.

1. INTRODUCTION

The Upper Valley has experienced a housing crisis for over two decades. The number of housing units available is not sufficient for the regional population. It is estimated that 5,000 units need to be constructed to fill the needs of the Upper Valley.[1] These needs range from one-bedroom apartments and multi-bedroom condominiums to single family homes of all sizes.

The housing crisis in the region is caused by the widening income gap and lack of affordable housing options. Affordable housing is defined as housing for which the occupants are paying no more than 30 percent of their monthly post-tax income for gross housing costs, including utilities.[2] The majority of respondents fall into two categories: 1) residents who are under-housed, meaning they pay less than 30 percent of their monthly income on housing or 2) resident who are having difficulty affording their current housing, meaning that they pay more than 30 percent of their monthly income on housing. There is a large disparity in housing costs and opportunity throughout the Upper Valley. Housing is most expensive and least available in towns with the most job opportunities, causing many workers to commute large distances to and from work.[3]

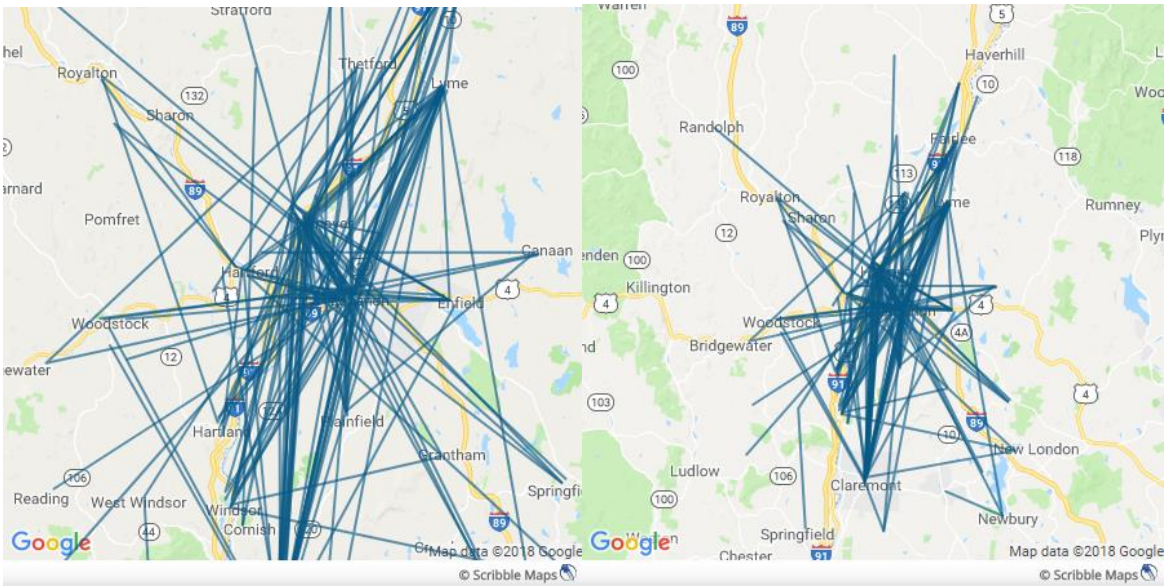
The Upper Valley Housing survey collected data from Upper Valley residents in order to assess the housing concerns in the region. The data includes demographics, general questions about housing, and the feelings of Upper Valley residents towards affordable housing.

2. SURVEY FINDINGS

The survey asked 20 questions regarding the current housing situations of respondents and their general opinions about affordable housing in their towns and in the Upper Valley as a whole. While respondents reside in 59 of the 69 towns that comprise the Upper Valley; many of the respondents are concentrated in Claremont, Hanover, Lebanon, Lyme, Norwich, and Hartford/White River

Junction. The places of work reported by respondents who work outside of the home are also concentrated in Claremont, Hanover, Lebanon, and the White River Junction area. Two-thirds of the respondents identified a place of work (N=273) outside of their homes. The average commuting distance for workers outside of the home is 14.7 miles (see Figure 2.1). The overwhelming majority of respondents indicated they live in single family homes (77.6 percent), while 15.3 percent live in apartments, 2.8 percent in duplexes, and 4.3 percent in condominiums. When asked how many people reside in respondents' households, respondents most frequently answered "two" (43.4 percent), followed by "one" at 21.9 percent, "four" at 15.5 percent, "three" at 14.5 percent, and "5 or more" at 4.7 percent. The overwhelming majority of respondents indicated they are homeowners (72.73 percent), while 24.2 percent of respondents are renters, and 3.0 percent are living with others and assisting with paying rent or mortgage.

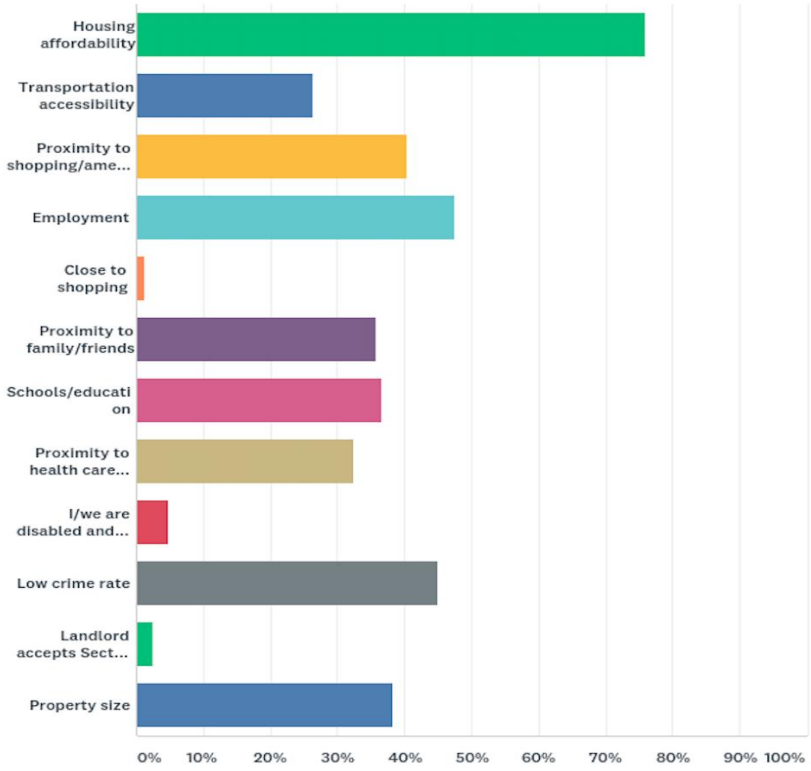
Figure 2.1: Commuting Patterns of Residents Who Work Outside of Their Homes



Next, the survey asked a series of questions about satisfaction with current living arrangements. A slight majority of respondents answered they were very satisfied with their current living arrangements, 27.9 percent indicated they were somewhat satisfied, 7.2 percent were neutral, 9.5 percent were not very satisfied, while 3.5 percent were not satisfied at all. For respondents who answered "not very satisfied" or "not satisfied at all," another question was asked about their dissatisfaction. A large number of respondents indicated that they were dissatisfied with current living arrangements because they were either too expensive (45.5 percent) or in need of repairs that respondents could not afford (35.8 percent). Additionally, 25.2 percent indicated that they were dissatisfied because of bad/rude/loud neighbors, 16.3 percent because property value fell, 13.0 percent because landlord will not make repairs, 13.0 percent due to transportation barriers, and finally 1.6 percent because of foreclosure concerns.

Respondents were also asked about monthly expenditures on rent/mortgage. Responses were somewhat evenly split between the three categories, with 39.4 percent of respondents spending less than 30 percent, 32.8 percent spending more than 30 percent, and 27.8 percent spending about 30 percent. Survey respondents were also asked about factors that are most important when choosing a home or apartment; housing affordability was the most selected option with 75.6 percent (see Figure 2.2).

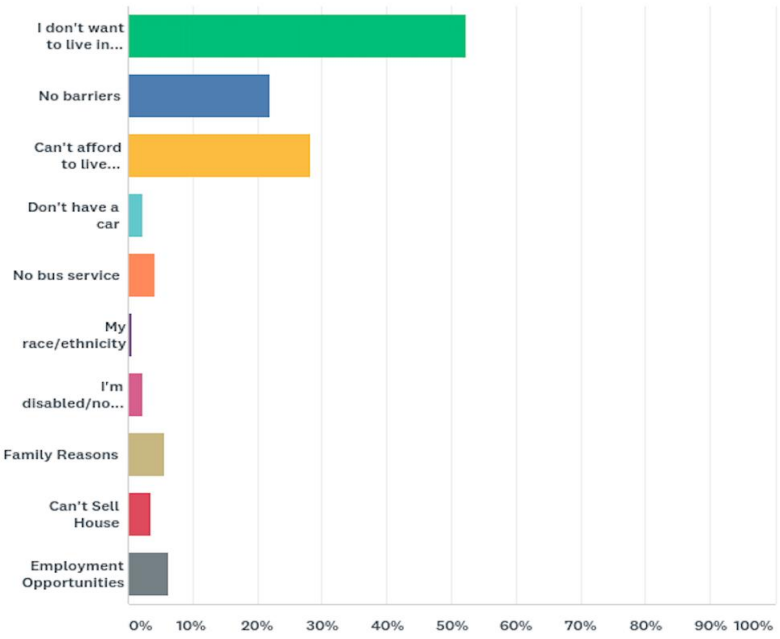
Figure 2.2: Factors Most Important when Choosing a Home or Apartment



The majority of respondents, 62.8 percent, indicated they would not like to move from their current home, while 37.2 percent indicated they would like to move. Next, respondents were asked what barriers, if any, keep them from moving to a different part of the Upper Valley. More than half of the respondents did not want to move to a different part of the Upper Valley; about 20 percent of the respondents felt that there were no barriers to moving; while about one-quarter of the respondents felt that they could not afford to live anywhere else in the Upper Valley. Lack of personal transportation, lack of bus service, lack of employment opportunities, disability, and inability to sell their current property were also mentioned as barriers (see Figure 2.3).

Next, respondents were asked about the seriousness of the issue of affordable housing in their own towns and in the Upper Valley as a whole. While 64.5 percent perceive the issue as very serious in the Upper Valley, 49.6 percent believe the issue was very serious in their town. While 29.8 percent believe the issue is somewhat serious in the Upper Valley, 37.6 percent see it as somewhat serious in their own town.

Figure 2.3: Reasons Preventing Respondents from Moving



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When asked how long they have lived in their current residence, the largest plurality of respondents have lived in their current residence for "more than 10 years" (43.9 percent). Only 4.5 percent have lived in their current residence for under 6 months and another 7.9 percent of respondents have lived in their current residence for seven months to one year. Just under 30 percent of respondents have lived in their current homes between one and five years (28.8 percent), with an additional 14.7 percent between 5 and 10 years. The survey asked respondents if their previous place of residence was located in the Upper Valley—62.8 percent did live in the Upper Valley previously; 34.9 percent lived elsewhere, and 2.3 percent of respondents have never moved. Regarding the building of additional affordable housing units, respondents were asked to agree or disagree with the statement "I support the creation of additional affordable housing in my town." More than three-quarters of respondents agreed with the statement; 49.8 percent selected "strongly agree" and an additional 29.3 percent selected "agree."

If an effort to gauge resident awareness of the magnitude of the gap in affordable housing in the Upper Valley, respondents were asked how many new housing units would be necessary to alleviate the need for affordable housing in the Upper Valley. The largest plurality of respondents were "not sure" (41.9 percent), highlighting the limited awareness of the scope of the housing shortage. Only 1.3 percent believed there no need for additional affordable housing units in the Upper Valley. Almost half of the respondents who ventured an estimate (44.6 percent) selected responses ranging from 1-100 units to 2,000-4,000 units—all responses below the approximated 4,500-8,000 units currently believed to be a conservative estimate. Only 12.2 percent of respondents properly estimated or over-estimated the magnitude (options ranging from 4,000-6,000 units up to "more than 10,000 units").

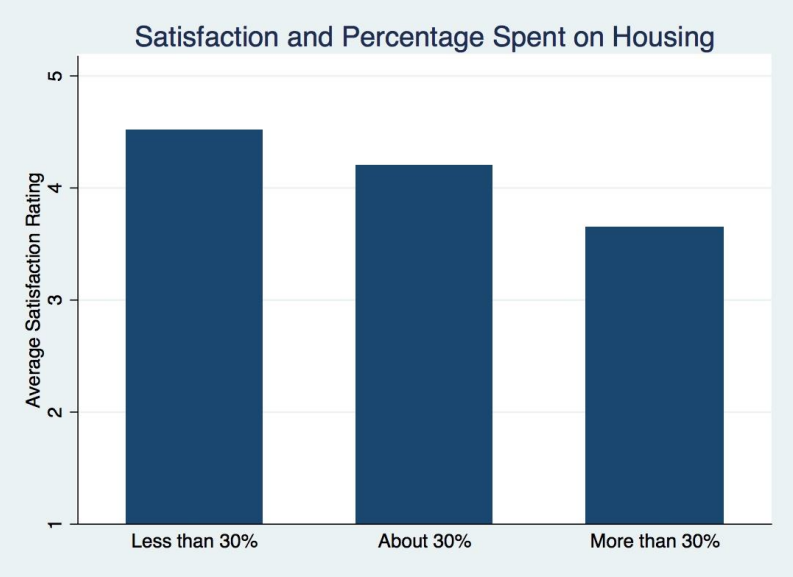
Finally, 171 respondents elected to share additional feedback in an open-ended section at the end of the survey. Their responses varied in degree of detail and of positivity, though ideas and comments mentioned multiple times were concern over the lack of single-family homes readily available in the Upper Valley and the desire for increased and higher quality senior living arrangements. One respondent mentioned buying their home at a price that was affordable 15 years ago, and having their property taxes now threaten their ability to continue living in the Upper Valley or retire in the region. There was also dissatisfaction with current public transportation options and the desire to live closer to that infrastructure, among other governmental programs or the belief that the government should improve the quality of their offerings, especially for seniors or citizens with disabilities. Other respondents expressed the belief that Upper Valley employers like Dartmouth College and the Dartmouth-Hitchcock Medical Center should bear more of the responsibility for the solution to this issue.

3. ANALYSIS

Analysis of the data yielded several interesting results. Our analysis is presented below in graph form as well as a series of linear regressions.

First, we wanted to establish a correlation between satisfaction with housing and percentage of monthly income spent on housing. We find that people who pay more than 30 percent of the monthly household income on housing are nearly a point less satisfied on a five-point scale than individuals who spend less than 30 percent. These results are displayed in Figure 3.1 below.

Figure 3.1: Satisfaction and Percentage Spent on Housing



Next, we examine perceptions of the seriousness of the housing problem in both the Upper Valley and in the respondent's town. We examine the seriousness ratings, given on a four-point scale, across categories of percentage of monthly income spent on housing and overall income. Figures 3.2 and 3.3 below indicate that across income brackets and across categories of housing costs, respondents gave on average nearly the highest marks possible in terms of perceived seriousness of the housing problem in both the Upper Valley and their towns. It is worth noting that while perceptions of

seriousness in the home town of the respondent increases the more one spends on housing, the seriousness ratings decrease as one moves up the income brackets.

Figure 3.2: Seriousness of Housing Problem and Percentage Spent on Housing

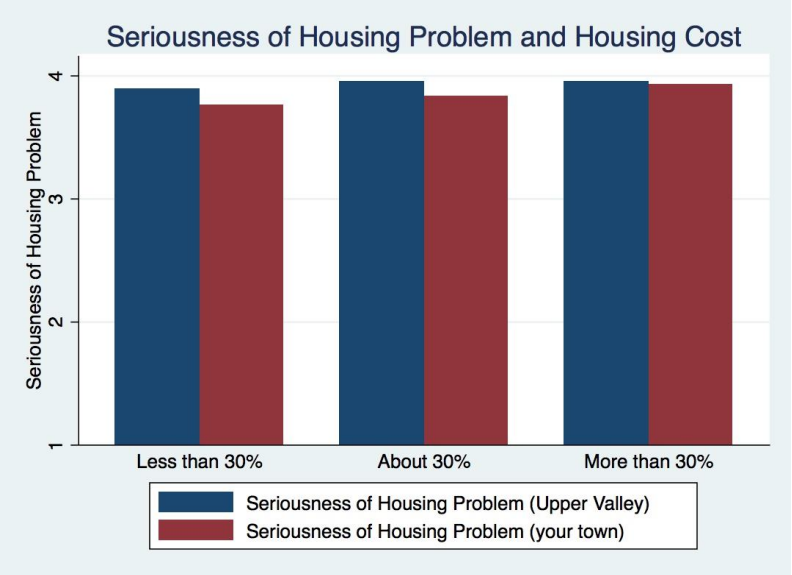
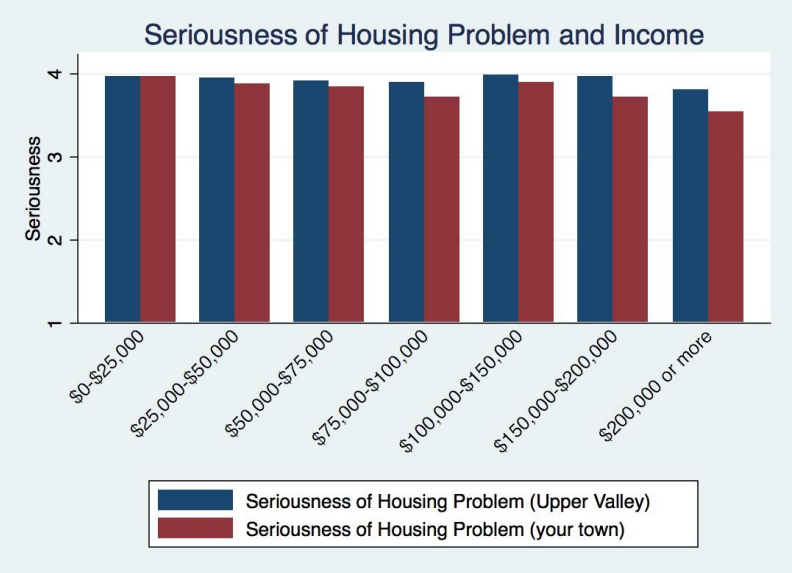


Figure 3.3: Seriousness of Housing Problem and Income



We then examine the support that respondents have for the creation of affordable housing in both the Upper Valley in general and their own town. Again, we examine these statistics across housing cost and income brackets (see Figures 3.4 and 3.5).

We find that there is general support for affordable housing creation in both the Upper Valley and respondent towns, with an average rating of around four on a five-point scale in which five indicates maximum support or agreement.

Figure 3.4: Affordable Housing Support and Percentage of Income Spent on Housing

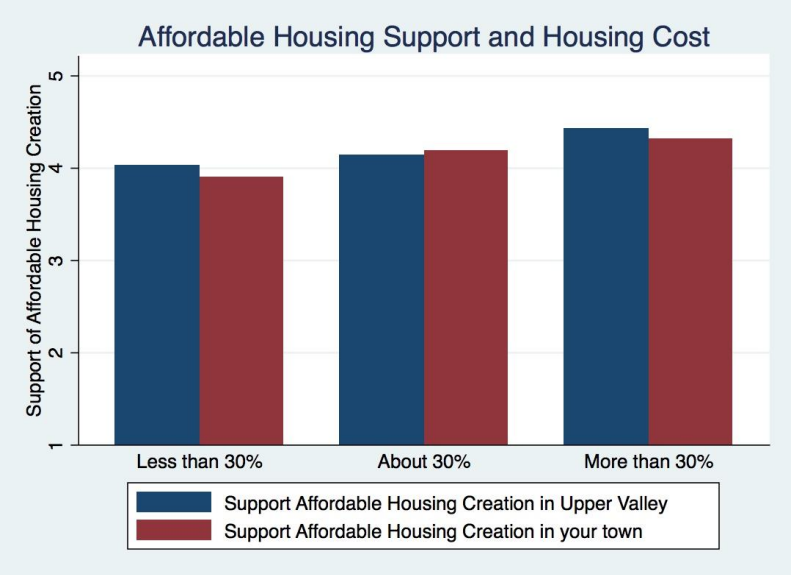
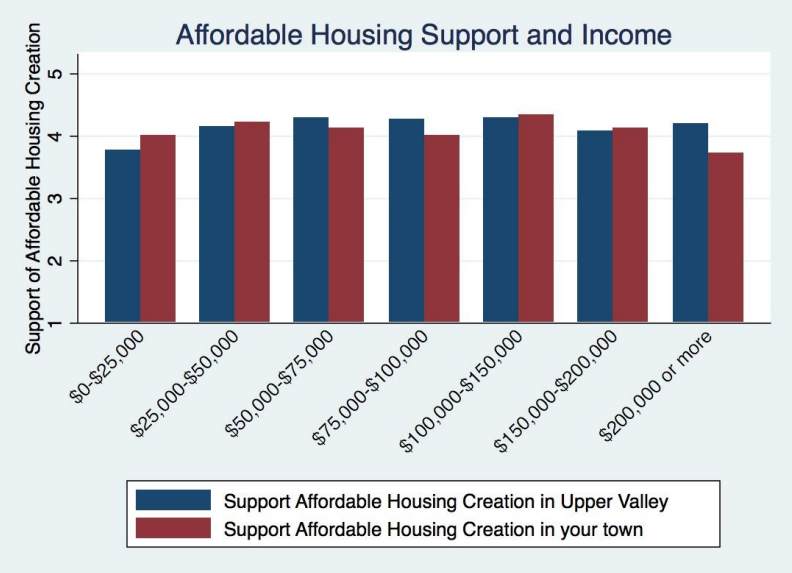


Figure 3.5: Affordable Housing Support and Income



Next, we conducted ordinary least squares regressions on five different variables: the likelihood of the respondent paying more than 30 percent of their monthly income on housing, perceived seriousness of the affordable housing problem in the Upper Valley and in your town, and support of affordable housing creation in the Upper Valley and in your town.

In a series of bivariate linear regressions in Table 3.1, we found several statistically significant coefficients that were correlated with paying more than 30 percent of monthly household income on housing. Wanting to move was correlated with an 11.0 percent less (β=-0.11; p<0.05; 95% CI: [-0.21, -0.01]) likelihood of paying more than 30 percent of household income on housing at statistically significant levels. Living in an apartment led to an 11.1 percent increase (β=0.11; p=0.11; 95% CI: [-0.02, 0.25]) in the likelihood of paying more than 30 percent of monthly household income on housing, though this coefficient did not reach statistical significance. The longer a respondent lived in their current home (based on six-point scale; see Appendix), the likelihood they spent more than 30 percent of their income on housing decreased by 7.3 percent (β=-0.07; p<0.01; 95% CI: [-0.10, -0.04]) at statistically significant levels. Income also saw a statistically significant correlation: for every increase in income bracket (based on seven-point scale, see Appendix), respondents were 8.6 percent less (β=-0.09; p<0.01; 95% CI: [-0.11, -0.06]) likely to pay more than 30 percent of their monthly household income on housing.

When combining the variables in a multivariate regression, we found that the coefficient for wanting to move lacked statistical significance (β=-0.06; p=0.23; 95% CI: [-0.16, 0.04]). However, living in an apartment was correlated with a 20.2 percent decrease (β=-0.20; p<0.05; 95% CI: [-0.36, -0.05]) in spending more than 30 percent of monthly household income on housing, an increase in time lived bracket was correlated with an 8.5 percent decrease (β=-0.09; p<0.01; 95% CI: [-0.12, -0.05]), and an increase in income was correlated with a 9.1 percent decrease (β=-0.09; p<0.01; 95% CI: [-0.12, -0.06])—all at statistically significant levels.

Table 3.1: OLS Regressions of More Than 30 Percent of Income on Housing

VARIABLES	(1) >30% of Income on Housing	(2) >30% of Income on Housing	(3) >30% of Income on Housing	(4) >30% of Income on Housing	(5) >30% of Income on Housing
Want to Move	-0.110**				-0.0593
	(0.0494)				(0.0497)
Apartment		0.111			-0.202**
		(0.0685)			(0.0785)
Time Lived			-0.0732***		-0.0854***
			(0.0150)		(0.0170)
Income				-0.0856***	-0.0907***
				(0.0136)	(0.0141)
Constant	0.497***	0.306***	0.659***	0.648***	1.180***
	(0.0855)	(0.0249)	(0.0754)	(0.0592)	(0.122)
Observations	395	403	401	374	367
R-squared	0.013	0.007	0.060	0.088	0.161

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Then, we examined variables that may help predict respondent perceived seriousness of the affordable housing problem in the Upper Valley, measured on a four-point scale (see Appendix). In a series of OLS regressions in Table 3.2, we find that a one point increase (e.g., from somewhat serious to very serious) in respondent perceived seriousness of the affordable housing in their town (also measured on a four-point scale; see Appendix) was correlated with a 0.3 point increase (β=0.32;

p<0.01; 95% CI: [0.17, 0.47]) in perceived seriousness in the Upper Valley at statistically significant levels. Support for affordable housing creation in the Upper Valley, measured on a five-point scale (see Appendix), was also correlated with perceived Upper Valley seriousness, with an increase in perceived seriousness by 0.04 points (β=0.04; p<0.01; 95% CI: [0.01, 0.07]) for every point increase in support, at statistically significant levels. A one point increase in support for affordable housing creation in the town of the respondent was correlated with a 0.08 point increase (β=0.08; p<0.01; 95% CI: [0.04, 0.12]) in perceived seriousness in the Upper Valley at statistically significant levels. Coefficients for paying more than 30 percent of household income on housing (β=0.05; p=0.11; 95% CI: [-0.01, 0.10]) and an increase an income bracket (β=-0.01; p=0.29; 95% CI: [-0.03, 0.01]) did not reach statistical significance.

In our multivariate regression, we found that only a one point increase in perceived seriousness of the affordable housing problem in the town of the respondent maintained a statistically significant correlation. Specifically, a one point increase in perceived seriousness in town was correlated with a 0.3 point increase (β=0.27; p<0.01; 95% CI: [0.12, 0.43]) in perceived seriousness in the Upper Valley.

Table 3.2: OLS Regressions of Respondent Perceived Seriousness of Affordable Housing Problem in the Upper Valley

VARIABLES	(1) Seriousness UV	(2) Seriousness UV	(3) Seriousness UV	(4) Seriousness UV	(5) Seriousness UV	(6) Seriousness UV
Seriousness Town	0.322***					0.273***
	(0.0746)					(0.0782)
Support UV		0.0420***				0.0203
		(0.0149)				(0.0130)
Support Town			0.0775***			0.0231
			(0.0199)			(0.0180)
More Thirty				0.0461		-0.00644
				(0.0284)		(0.0268)
Income					-0.0109	-0.000505
					(0.0103)	(0.00881)
Constant	2.696***	3.755***	3.612***	3.915***	3.972***	2.711***
	(0.296)	(0.0715)	(0.0922)	(0.0199)	(0.0368)	(0.311)
Observations	398	398	398	400	373	368
R-squared	0.244	0.031	0.092	0.005	0.004	0.259

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3.3 presents the results of a series of OLS regression on the perceived seriousness of the affordable housing problem in the town of the respondent. We found that, in a series of bivariate regressions and at statistically significant levels, a one point increase in perceived seriousness of the affordable housing problem in the Upper Valley was correlated with a 0.8 point increase (β=0.76; p<0.01; 95% CI: [0.52, 1.00]) in seriousness in the town of the respondent, a point increase in support for affordable housing creation in the Upper Valley was correlated with a 0.05 point increase (β=0.05;

p<0.05; 95% CI: [0.01, 0.09]), a one point increase in support for affordable housing creation in the town of the respondent was correlated with a 0.2 point increase (β=0.16; p<0.01; 95% CI: [0.10, 0.21]), paying more than 30 percent of household income on housing was correlated with a 0.1 point increase (β=0.12; p<0.01; 95% CI: [0.03, 0.20]), and an increase in income bracket was correlated with a 0.04 point decrease (β=-0.04; p<0.01; 95% CI: [-0.07, -0.01]).

In the multivariate regression, only two coefficients retain statistical significance: seriousness in the Upper Valley (β=0.64; p<0.01; 95% CI: [0.37, 0.91]) and support for affordable housing in the town of the respondent (β=0.12; p<0.01; 95% CI: [0.06, 0.12]).

Table 3.3: OLS Regressions of Respondent Perceived Seriousness of Affordable Housing Problem in the Respondent's Town

VARIABLES	(1) Seriousness Town	(2) Seriousness Town	(3) Seriousness Town	(4) Seriousness Town	(5) Seriousness Town	(6) Seriousness Town
Seriousness UV	0.759***					0.640***
	(0.120)					(0.139)
Support UV		0.0476**				-0.00217
		(0.0202)				(0.0193)
Support Town			0.160***			0.116***
			(0.0280)			(0.0294)
More Thirty				0.118***		0.0509
				(0.0426)		(0.0416)
Income					-0.0395***	-0.0236*
					(0.0150)	(0.0128)
Constant	0.850*	3.636***	3.178***	3.796***	3.976***	0.918*
	(0.477)	(0.0946)	(0.130)	(0.0310)	(0.0531)	(0.511)
Observations	398	397	397	399	373	368
R-squared	0.244	0.017	0.163	0.014	0.019	0.333

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3.4 presents bivariate and multivariate regressions for support of affordable housing creation in the Upper Valley. In the series of bivariate regressions, the following variables were correlated at statistically significant levels: a one point increase in the perceived seriousness of the affordable housing problem in the Upper Valley was correlated with a 0.7 point increase (β=0.73; p<0.01; 95% CI: [0.29, 1.18]), perceived seriousness in town with a 0.4 point increase (β=0.36; p<0.01; 95% CI: [0.09, 0.62]), and support for affordable housing creation in town with a 0.3 point increase (β=0.28; p<0.01; 95% CI: [0.16, 0.41]). In the multivariate regression, only a one point increase in support for creation in town, correlated with a 0.2 point increase (β=0.25; p<0.01; 95% CI: [0.09, 0.40]) in support for creation in the Upper Valley, retained statistical significance.

Table 3.4: OLS Regressions of Respondent Support for Affordable Housing Creation in the Upper Valley

VARIABLES	(1) Support UV	(2) Support UV	(3) Support UV	(4) Support UV	(5) Support UV	(6) Support UV
Seriousness UV	0.736***					0.457
	(0.227)					(0.297)
Seriousness Town		0.356***				-0.0209
		(0.136)				(0.186)
Support Town			0.282***			0.247***
			(0.0641)			(0.0793)
More Thirty				0.225		0.240*
				(0.138)		(0.139)
Income					0.0498	0.0748*
					(0.0413)	(0.0398)
Constant	1.270	2.790***	3.000***	4.077***	3.976***	1.081
	(0.895)	(0.523)	(0.269)	(0.0756)	(0.174)	(1.048)
Observations	398	397	398	400	372	368
R-squared	0.031	0.017	0.069	0.007	0.004	0.093

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Our final series of OLS regressions centered on support for affordable housing creation in the town of the respondent. In the bivariate regressions in Table 3.5, we found that the following were correlated with support at statistically significant levels: a one point increase in perceived seriousness of affordable housing in Upper Valley was correlated with a 1.2 point increase (β=1.19; p<0.01; 95% CI: [0.68, 1.69]), a point increase in perceived seriousness of affordable housing in town with a 1.0 point increase (β=1.02; p<0.01; 95% CI: [0.74, 1.31]), a point increase in support for affordable housing creation in the Upper Valley with a 0.2 point increase (β=0.24; p<0.01; 95% CI: [0.12, 0.37]), and paying more than 30 percent of household income on housing with a 0.3 point increase (β=0.30; p<0.05; 95% CI: [0.06, 0.54]). In the multivariate regression, we find that only perceived seriousness of the problem in one's town (β=0.85; p<0.01; 95% CI: [0.53, 1.17]) and creation support in the Upper Valley (β=0.19; p<0.01; 95% CI: [0.06, 0.32]) retained statistical significance.

Following Table 3.5, we provide a series of regressions of the five previous variables with a full multivariate regression of all of the controls. Interestingly, when examining the factors that predict the likelihood of spending more than 30 percent of monthly income on housing, only two coefficients reach statistical significance. For every increase in the "time lived in current residence" variable, the likelihood that an individual pays more than 30 percent of monthly household income on housing decreases by 7.2 percent (β=-0.07; p<0.01; 95% CI: [-0.12, -0.02]) at a statistically significant level. Also, unsurprisingly, for every increase in the income bracket, the likelihood that an individual pays more than 30 percent of monthly income on housing decreases by 10.9 percent (β=-0.11; p<0.01; 95% CI: [-0.15, -0.06]) at a statistically significant level (see Table 3.6).

Table 3.5: OLS Regressions of Respondent Support for Affordable Housing Creation in Respondent's Town

VARIABLES	(1) Support Town	(2) Support Town	(3) Support Town	(4) Support Town	(5) Support Town	(6) Support Town
Seriousness UV	1.186***					0.396
	(0.256)					(0.305)
Seriousness Town		1.025***				0.846***
		(0.145)				(0.162)
Support UV			0.245***			0.188***
			(0.0636)			(0.0647)
More Thirty				0.302**		0.0944
				(0.122)		(0.124)
Income					-0.0338	-0.000217
					(0.0407)	(0.0344)
Constant	-0.564	0.179	3.087***	4***	4.237***	-1.492
	(1.016)	(0.566)	(0.290)	(0.0725)	(0.161)	(1.203)
Observations	398	397	398	400	372	368
R-squared	0.092	0.163	0.069	0.014	0.002	0.227

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The second model examines variables that may predict how serious respondents perceive the problem of affordable housing in the Upper Valley. Interestingly, only one coefficient reaches statistical significance in this regression—for every one point increase in perceived seriousness of the affordable housing problem in their town, the respondent also responded 0.3 points higher (β=0.28; p<0.05; 95% CI: [0.07, 0.49]) on the Upper Valley seriousness scale. None of the other variables in the regression appeared to predict perceptions of seriousness of the housing problem in the Upper Valley.

Next, we examine the perceived seriousness of the affordable housing problem in the respondent's town. Specifically, we find several statistically significant predictors. Similar to the previous model, seriousness perceptions were correlated with each other. Specifically, for every one point increase in the perception of the seriousness of the affordable housing problem in the Upper Valley, the respondent score is 0.6 points higher (β=0.58; p<0.01; 95% CI: [0.23, 0.93]) on the seriousness perception scale for his or her own town. In addition, for every one point increase in support of affordable creation, respondents also rated the seriousness of the affordable housing problem in their town 0.1 points higher (β=0.10; p<0.01; 95% CI: [0.03, 0.16]). Wanting to move was also a statistically significant predictor, associated with a 0.1 increase (β=0.14; p<0.01; 95% CI: [0.01, 0.28]) on the perceived town seriousness scale. Interestingly, retirees on average responded 0.3 points higher (β=0.30; p<0.01; 95% CI: [0.10, 0.50]) on the seriousness scale for their towns at statistically significant levels. Lastly, for every increase in housing units needed prediction (see Appendix), perceived seriousness of the affordable housing problem in the town of the respondent decreased by 0.02 points (β=-0.02; p<0.05; 95% CI: [-0.03, -0.00]) at a statistically significant level.

Table 3.6: Survey Results, Full Controls

VARIABLES	(1) >30% of Income on Housing	(2) Seriousness UV	(3) Seriousness Town	(5) Support UV	(4) Support Town
More Thirty		0.0163	0.0340	0.230	-0.0191
		(0.0311)	(0.0564)	(0.184)	(0.160)
Seriousness UV	0.0502		**0.583*** **	0.249	0.298
	(0.0989)		(0.178)	(0.390)	(0.372)
Seriousness Town	0.0504	**0.281** **		0.279	**0.839*** **
	(0.0808)	(0.108)		(0.242)	(0.242)
Support UV	0.0296	0.0104	0.0242		0.0631
	(0.0239)	(0.0160)	(0.0225)		(0.0776)
Support Town	-0.00326	0.0165	**0.0968*** **	0.0837	
	(0.0271)	(0.0209)	(0.0326)	(0.101)	
Apartment	-0.251*	0.0116	-0.0583	0.471	0.00399
	(0.139)	(0.0473)	(0.0651)	(0.458)	(0.296)
Home	0.0796	-0.0740	-0.0670	0.463	-0.0772
	(0.105)	(0.0643)	(0.0571)	(0.325)	(0.184)
Homeowner	-0.0167	-0.00413	-0.130*	-0.0698	-0.159
	(0.158)	(0.0427)	(0.0756)	(0.366)	(0.300)
Renter	-0.0247	-0.0494	-0.0427	-0.0392	-0.0833
	(0.171)	(0.0995)	(0.0807)	(0.371)	(0.288)
Satisfied	-0.0480	0.0138	-0.0457*	0.0314	0.0671
	(0.0364)	(0.0164)	(0.0267)	(0.0949)	(0.0832)
Want to Move	-0.0286	-0.0484	**0.143** **	0.112	-0.0917
	(0.0796)	(0.0402)	(0.0698)	(0.180)	(0.173)
Full-Time Employment	0.00117	0.00601	-0.0369	0.268	0.114
	(0.0758)	(0.0388)	(0.0530)	(0.223)	(0.187)
Retired	-0.189	0.0169	**0.301*** **	0.223	-0.305
	(0.124)	(0.0785)	(0.102)	(0.341)	(0.371)
Distance	-0.00173	0.000799	-0.00190	0.00669*	-0.000794
	(0.00135)	(0.00113)	(0.00201)	(0.00394)	(0.00399)
Time Lived	**-0.0724*** **	0.0191	0.0146	-0.0878	-0.110
	(0.0259)	(0.0171)	(0.0238)	(0.0813)	(0.0713)
Previously in UV	0.0563	0.0364	-0.0444	0.110	0.0987
	(0.0626)	(0.0443)	(0.0568)	(0.193)	(0.169)
Housing Units Needed	0.00586	0.0119*	**-0.0191** **	0.000472	-0.0255
	(0.00975)	(0.00674)	(0.00757)	(0.0272)	(0.0234)
Age	0.0140	0.000721	-0.0180	-0.00257	0.0464
	(0.0287)	(0.0113)	(0.0249)	(0.0827)	(0.0719)
Female	0.0441	0.0313	0.0162	0.110	-0.0377
	(0.0658)	(0.0405)	(0.0611)	(0.215)	(0.182)
Education	0.0376	-0.0114	0.0471*	-0.0457	0.0110
	(0.0259)	(0.0143)	(0.0245)	(0.0641)	(0.0612)
Income	**-0.109*** **	0.00940	-0.0373	0.0427	-0.0465
	(0.0225)	(0.0137)	(0.0227)	(0.0700)	(0.0607)
Constant	0.553	2.621***	1.239*	1.044	0.0879
	(0.421)	(0.468)	(0.670)	(1.896)	(1.732)
Observations	230	230	230	230	230
R-squared	0.209	0.253	0.394	0.087	0.219

(Robust standard errors in parentheses) *** p<0.01, ** p<0.05, * p<0.1

The final two models in the analysis examine variables that may correlate with support for affordable housing creation in either the Upper Valley or the town of the respondent. Interestingly, no variables predicted support for creation of affordable housing in the Upper Valley at statistically significant levels, similar to the few predictors regarding the seriousness scale of the affordable housing problem in the Upper Valley. However, the model also does find one variable that predicts support of affordable housing creation in the town of the respondent at statistically significant levels: for every one point increase in perceived seriousness of the affordable housing problem in the respondent's point, the respondent on average supported affordable housing creation in their town by 0.8 points (β=0.24; $p<0.01$; 95% CI: [0.36, 1.32]).

4. RESULTS

Through the figures and tables presented, we provide evidence that individuals who pay more than 30 percent of their monthly income on housing are less satisfied with their housing situation. It is also apparent that most individuals see the affordable housing problem as serious in both the Upper Valley in their own communities. On average, support for affordable housing creation was also strong for both in the Upper Valley and in respondent towns.

We then conduct OLS regression with robust standard errors and full controls to examine correlations with paying more than 30 percent of income on housing as well as the seriousness and support variables. Specifically, we find that time lived in the current home of the respondent and income were the only two statistically significant predictors of paying more than 30 percent of monthly income on housing. Both coefficients were in the negative direction, 7.2 percent and 10.9 percent, respectively, indicating that they are correlated with a decrease in the likelihood of paying more than 30 percent of monthly income on housing. The income finding is relatively intuitive—individuals who have more money will be less likely to pay more than 30 percent of their monthly income on housing. This could indicate an under-housed population in the Upper Valley. The time lived coefficient is slightly more ambiguous—perhaps individuals that have spent extended periods of time in their Upper Valley residence have paid off their mortgages and no longer spend significant amount on housing.

When examining the perceptions of seriousness of the affordable housing problem in the Upper Valley, we find that changes in seriousness perceptions in the town of the respondent were the only statistically significant predictor, correlated with a 0.3 increase in seriousness rating on average. On the other hand, several different coefficients were statistically significant predictors of the seriousness perceptions of the affordable housing problem in their own towns. While seriousness perceptions in the Upper Valley had the largest coefficients, 0.6 points, being retired (0.3 points) and supporting the creation of affordable housing in their towns (0.1 points) were also statistically significant coefficients. These findings indicate that if respondents perceived a seriousness in the Upper Valley or supported affordable housing creation in their town, they generally perceived a seriousness in the problem in their town. Retired individuals in particular rate the seriousness higher on average, perhaps indicating they are exposed to less congenial housing situations. Interestingly, increase in the perceived amount of housing units needed was actually associated with a slight decrease in perceptions of the seriousness of the affordable housing problem in the town of the respondent, but this statistically significant coefficient is incredibly small (0.02 points) and the variable is noisy.

While no variables predicted support of creation of affordable housing in the Upper Valley, support for affordable housing creation in the town of the respondent was highly correlated with the perceived seriousness of the problem in their town, a coefficient of 0.8 at statistically significant levels. This

logically follows—those who think there is a problem in their town will want to address it. Interestingly, no other variables predicted support of affordable housing creation in either the Upper Valley or the respondent's town at statistically significant levels.

5. METHODOLOGY

During the first two weeks of May, 2018, students from the Nelson A. Rockefeller Center at Dartmouth College, through PBPL 51: Leadership in Civil Society, conducted a survey of roughly 4,000 Upper Valley residents drawn randomly from a database of registered voters in the 69 towns that comprise the Upper Valley. Email addresses were linked with the registered voters through an outside vendor, VoterListsOnline. The link to the survey was also posted on the Upper Valley Listserv. The survey was generated using SurveyMonkey online software and was sent out via email. The response rate was about 10 percent, (N= 403), with an error rate of +/- 4.9 percent at a 95 percent confidence interval. The 25-question survey took approximately six minutes to complete. The survey was titled "Upper Valley Housing Survey" and was designed to gather respondents' opinions on the seriousness of the issue of affordable housing in the Upper Valley. The questions asked fall into two main categories: demographics and housing questions. The survey instrument is presented in the Appendix.

6. DEMOGRAPHICS

Five questions regarding respondent demographics were asked on the survey—age, gender, education, employment status, and income. The survey provides seven age categories: 18-29 (7.2 percent), 30-39 (19.7 percent), 40-49 (15.5 percent), 50-59 (17.9 percent), 60-69 (24.9 percent), 70-79 (11.7 percent), and 80 or older (2.9 percent). The respondents are disproportionately female, with 31.22 percent "male" and 68.3 percent "female;" 0.5 percent answered "other." While all respondents have at least a high school education (6.5 percent have a high school diploma or equivalent), three-quarters of the respondents have college degrees or higher, with 10.5 percent having some college, 7.3 percent having an Associate's degree, 34.1 percent with a Bachelor's degree, 30.3 percent with a Master's degree, while 11.3 percent had a professional or doctoral degree.

Employment status was divided into 10 categories: employed for wages (part-time), employed for wages (full-time), self-employed (part-time), self-employed (full-time), out of work and looking for work, out of work and not currently looking for work, homemaker, student, retired, and unable to work. Among the respondents, 8.5 percent are employed for wages (part-time), 49.5 percent are employed for wages (full-time), 6.5 percent are self-employed (full-time), and 26 percent are retired. The remaining 9.3 percent of respondents' answers fell into the remaining categories. Annual household income was divided into seven categories--$0-$25,000 (8.8 percent), $25,000-$50,000 (21.9 percent), $50,000-$75,000 (19.5 percent), $75,000-$100,000 (18.9 percent), $100,000-$150,000 (17.1 percent), $150,000-$200,000 (8.3 percent), and $200,000 or more (5.4 percent).

APPENDIX

Upper Valley Housing Survey

1. In what town do you currently live?

2. In which type of housing unit do you currently live?

1 ( ) Apartment 2 ( ) Single family home 3 ( ) Duplex 4 ( ) Condominium 5 ( ) Other (please specify)

3. How many people reside in your current household?

4. Which of the following best describes your current housing situation?

1 ( ) Homeowner 2 ( ) Renter 3 ( ) Living with others and assisting with paying rent or mortgage 4 ( ) Other (please specify)

5. Are you satisfied with your current living arrangements?

1 ( ) Very satisfied 2 ( ) Somewhat satisfied 3 ( ) Neutral 4 ( ) Not very satisfied 5 ( ) Not satisfied at all

6. If not very satisfied or not satisfied at all, please tell us why.

1 ( ) Home/apartment needs repairs that I cannot afford 2 ( ) Landlord won't make repairs 3 ( ) Property value fell 4 ( ) Foreclosure concerns 5 ( ) Bad/rude/loud neighbors 6 ( ) Too expensive 7 ( ) Transportation barriers 8 ( ) Other (please specify)

7. What percentage of your household's monthly post-tax income is spent on housing (rent or mortgage/property taxes and utilities)?

1 ( ) Less than 30 percent 2 ( ) About 30 percent 3 ( ) More than 30 percent

8. What factors are most important to you when choosing your home or apartment? Select all that apply.

1 ( ) Housing affordability 2 ( ) Transportation accessibility 3 ( ) Proximity to shopping/amenities 4 ( ) Employment 5 ( ) Proximity to family/friends 6 ( ) Schools/education 7 ( ) Proximity to health care facilities 8 ( ) I/we are disabled and require accessibility 9 ( ) Low crime rate 10 ( ) Landlord accepts Section 8 vouchers 11 ( ) Property size 12 ( ) Other (please specify)

9. Would you like to move from your current home or apartment? If so, please tell us why?

1 ( ) Yes 2 ( ) No 3 ( ) If yes...

10. What are the barriers, if any, that keep you from living in another part of the Upper Valley?

1( ) I don't want to live in another part of the Upper Valley 2 ( ) No barriers 3 ( ) Can't afford to live anywhere else 4 ( ) Don't have a car 5 ( ) No bus service 6 ( ) My race/ethnicity 7 ( ) I'm disabled/no accessible housing elsewhere 8 ( ) Family Reasons 9 ( ) Can't Sell House 10 ( ) Employment Opportunities 11 ( ) Other (please specify)

Affordable housing is generally defined by the U.S. Department of Housing and Urban Development as housing for which the occupants are paying no more than 30 percent of their monthly post-tax income for gross housing costs, including utilities.

11. How serious do you think the issue of affordable housing is in the Upper Valley?

1 ( ) Very serious 2 ( ) Somewhat serious 3 ( ) Not very serious 4 ( ) Not serious at all

12. How serious do you think the issue of affordable housing is in your town?

1 ( ) Very serious 2 ( ) Somewhat serious 3 ( ) Not very serious 4 ( ) Not serious at all

13. What is your employment status?

1 ( ) Employed for wages (Part-Time) 2 ( ) Employed for wages (Full-Time) 3 ( ) Self-employed (Part-Time) 4 ( ) Self-employed (Full-Time) 5 ( ) Out of work and looking for work 6 ( ) Out of work but not currently looking for work 7 ( ) Homemaker 8 ( ) Student 9 ( ) Retired 10 ( )Unable to work

14. If you are employed outside of your home, approximately how far is your one-way commute to work (in miles)?

15. In what town do you work?

16. How long have you lived in your current residence?

1 ( ) under 6 months 2 ( ) 7 months to 1 year 3 ( ) 1 year up to 3 years 4 ( ) 3 years up to 5 years 5 ( ) 5 years up to 10 years 6 ( ) more than 10 years

17. Was your previous place of residence in the Upper Valley?

1 ( ) Yes 2 ( ) No 3 ( ) Never moved

18. I support the creation of additional affordable housing in my town.

1 ( ) Strongly agree 2 ( ) Agree 3 ( ) No opinion 4 ( ) Disagree 5 ( ) Strongly disagree

19. I support the creation of additional affordable housing in the Upper Valley.

1 ( ) Strongly agree 2 ( ) Agree 3 ( ) No opinion 4 ( ) Disagree 5 ( ) Strongly disagree

20. How many housing units do you think are needed to meet the current affordable housing needs of the Upper Valley?

1 ( ) None. There is not a need for additional affordable housing units in the Upper Valley 2 ( ) 1-100 units 3 ( ) 100-500 units 4 ( ) 500-1,000 units 5 ( ) 1,000-2,000 units 6 ( ) 2,000-4,000 units 7 ( ) 4,000-6,000 units 8 ( ) 6,000-8,000 units 9 ( ) 8,000-10,000 units 10 ( ) More than 10,000 units 11 ( ) Not sure

21. Do you have any additional thoughts or comments on affordable housing that you feel have not been addressed in this survey?

22. What is your age?

1 ( ) 18-29 2 ( ) 30-39 3 ( ) 40-49 4 ( ) 50-59 5 ( ) 60-69 6 ( ) 70-79 7 ( ) 80 or older

23. What is your gender?

1 ( ) Male 2 ( ) Female 3 ( ) Other

24. What is the highest level of education you have completed?

1 ( ) Did not graduate from high school 2 ( ) High school diploma or the equivalent (GED) 3 ( ) Some college 4 ( ) Associate degree 5 ( ) Bachelor's degree 6 ( ) Master's degree 7 ( ) Professional or doctorate degree

25. What is your annual household income?

1 ( ) $0-$25,000 2 ( ) $25,000-$50,000 3 ( ) $50,000-$75,000 4 ( ) $75,000-$100,000 5 ( ) $100,000-$150,000 6 ( ) $150,000-$200,000 7 ( ) $200,000 or more

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