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*FINAL REPORT*

# The Contribution of Transportation and Land Use to Citizen Perceptions of Livability in Oregon MPOs

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# THE CONTRIBUTION OF TRANSPORTATION AND LAND USE TO CITIZEN PERCEPTIONS OF LIVABILITY IN OREGON MPOS

## Final Report

## NITC-RR-1050

by

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16. Abstract

Livability is a key focus of integrating transportation and land use planning throughout the United States, and the world. Livability is a concept that has been guiding U.S. Department of Transportation (USDOT) policy since 2009, focusing on six principles including: providing transportation choices, expanding housing location, improving economic competitiveness, improving existing communities, aligning federal policy, and enhancing unique characteristics of communities (USDOT, n.d.). In Oregon, the state's long-range transportation plan (Oregon Transportation Plan) identifies "enhancing livability" as a key outcome. Efficiency and livability are cornerstones of Oregon's Statewide Planning Program, which relies on urban growth boundaries to increase land use efficiency while conserving farm and forestland. The Department of Land Conservation and Development (DLCD), the state agency responsible for overseeing the statewide planning program, uses livability as a guiding principle. Livability is a core element of Statewide Planning Goal 14 (Urbanization) "…to ensure efficient use of land, and to provide for livable communities." But, as researchers astutely summarized in a 1991 report, "livability is difficult to define, and once defined, to measure" (ECONorthwest, 1991).

While many government agencies at the federal and state level promote livability, little has been done to track and measure it. Oregon has established a policy framework in which land use and transportation decisions are integrated and sets goals for increasing land use efficiency and livability. Government and academic research, however, has not tackled citizen perceptions of how these planning efforts contribute to livability. We seek to fill this research need by exploring the question, "How do citizens understand the connection between transportation and land use planning, and its association with livability?"

The goal of this applied research project is to gain an understanding of how Oregonians in neighborhoods (as defined by ODOT Place Types) within MPOs outside of the Portland metropolitan region perceive livability at the individual, neighborhood and city scale. This study will add to the body of literature on citizen perceptions of livability by focusing on smaller communities outside of Portland – areas that have mostly been overlooked in previous studies. By conducting a targeted survey within selected MPOs across the state, we will gain an understanding of citizen perceptions of livability as it relates to transportation and land use planning. A recently constructed, statewide parcel database and spatial data on transportation investments will be overlaid with survey responses comparing citizen perceptions to existing neighborhoods. This information will provide valuable insight into how cities and state agencies justify investments in transportation infrastructure, which have long-term benefits of creating livable communities.


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# DISCLAIMER



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# 1.0 EXECUTIVE SUMMARY

What is livability? How does the built environment influence resident perceptions of livability? Although livability is a broadly used term and a key goal in land use and transportation plans at the state level, it is unclear whether residents think their neighborhoods are livable and what contributes to their perception of livability. The purpose of this project was to understand how Oregonians, in neighborhoods of varying densities and within Metropolitan Planning Organizations (MPOs), perceive livability at the nexus of transportation and land use. We sought to understand how residents define and perceive livability in three different MPOs in the state: Albany, Central Lane, and Rogue Valley. We administered an innovative survey to 3,100 registered voters across the three MPOs. We relied on stratified sampling to obtain a representative sample across different density categories. Our survey instrument included questions about livability, satisfaction, housing choice, and preferred and current characteristics of the neighborhood and accessibility. Based on previous research we examined how individual socioeconomic status, objective neighborhood features, and subjective perceptions of land use and transportation impact perceptions of livability.

This research provides government agencies and community organizations a broader perspective on which characteristics of the built environment add to or detract from livability, or what is sometimes referred to as the "good community." For instance, what does a livable community look like? Is it possible to measure livability objectively? What do residents consider livable and how do these perceptions differ from local and state agency conceptions? Finally, how can local and state governments achieve the objective of creating livable communities? These questions provide the foundation for this research.

Our regression analysis revealed the perceptions were more influential than objective (GIS) or sociodemographic measures. This finding mirrors previous literature which has found that perceptions are the most influential determinants of satisfaction when controlling for sociodemographic characteristics.

Some of our findings offer interesting insights into the determinants of livability. We found that people trade off affordability and livability. When people said that housing affordability was more important in decisions about housing and neighborhood choice, they had more negative perceptions of livability in their neighborhood. But people who prioritize accessibility have a more positive perception of livability. This finding warrants further investigation into the intersection with neighborhood choice and income.

Sociodemographics of individuals and neighborhoods showed interesting and unexpected results. Generation (age) affects perceptions of livability. While Boomers seem to have more positive perceptions of livability overall in the descriptive data, when we controlled for socioeconomic status Millenials saw neighborhoods as more livable than Boomers and Boomers saw neighborhoods as more livable than Generation X. As we expected, higher-income

neighborhoods were more livable than lower-income neighborhoods, but surprisingly, neighborhoods with a higher share of owner-occupied housing were perceived as less livable. The following table conveys the direction of the influence of objective and subjective measures on perception of livability. This table summarizes findings from descriptive analysis and regression analysis. We organize the table around measures of housing choice, urban form, transportation and amenities (like access to parks and services.)

| | **Positive** | **Negative** |
|---|---|---|
| **Housing Choice** | Prioritizing accessibility in housing/neighborhood choice | Prioritizing affordability in housing/neighborhood choice |
| | Affordability | |
| | Safety | |
| | Dwelling characteristics | |
| **Urban Form** | Sidewalks | Mixed use near homes |
| | Street trees | Density |
| | Mix of retail, residential and services | Perception that neighborhood is too dense |
| | Quality housing | |
| **Transportation** | Variety of options | Lack of desired transportation options |
| | Pedestrian options | Driving to work |
| | Sidewalks, trees, crosswalks | |
| **Amenities** | Proximity to parks (~) | Proximity to retail |
| | Proximity to grocery stores | |

The research has several implications. First, access to transportation options is important in descriptive and regression analysis. More specifically, individuals that reported better access to transportation options across a broad range of measures reported higher ratings of livability. Pedestrian improvements and natural amenities were important to survey respondents. This suggests that to improve livability, local governments seek balanced transportation options including investments in non-auto-centric modes – particularly pedestrian infrastructure. While the results suggest transportation options improve perceptions of livability, it is important to note that those options should not exclude automobile or vehicular options – 86% of survey respondents indicated this was important in their ideal neighborhood.

The findings, however, suggest challenges with transit. Regression results show a positive relationship between distance to transit stops and livability (e.g., closer transit stops relate to higher perceptions of livability). But, the results suggest that residents may not be tolerant of the densities needed to support alternative modes.

One of the core objectives of this research was to better understand how density relates to perceptions of livability. As a general observation, most respondents did not accurately indicate

the actual density of the neighborhood they live in. In fact, 28% indicated the correct density range, while 53% of respondents indicated perceived densities that were higher than the actual density. Nineteen percent of respondents indicated perceived densities that were lower than the actual density in their neighborhood.

Many communities face ongoing issues with housing affordability, and research increasingly points to zoning codes and NIMBYism as key contributors. The results suggest that density alone does not improve livability and has a negative impact on perceptions of livability. As other studies have shown, density needs to be combined with other services and accessibility to improve livability.

In short, people don't understand density within their neighborhoods. The implications are that local and state government should attempt to educate citizens about what density looks like. Researchers should continue to conduct research that gets at the root causes of these perceptions, which may be more strongly related to income and housing tenure than density. People trade off affordability for livability. Affordable housing policy should focus on making more livable neighborhoods accessible to all income groups.

# 2.0 INTRODUCTION

This report presents research exploring how Oregonians in small metropolitan regions perceive livability. "Livability" is a term broadly used within the planning discipline and is a central objective within Oregon transportation and land use plans. The term, however, is not defined in state statutes and administrative rules, and different organizations use different criteria to measure livability. In short, communities have broadly embraced livability as a core community development goal, but have not established a means to examine how well they are meeting that goal.

This research project focuses on how the built environment affects residents' perceptions of livability across a broad range of metrics. The research is based on results from a survey of residents in three Oregon Metropolitan Planning Organizations (MPOs) that concentrated on resident perceptions of livability. The survey data is supplemented with land use and socioeconomic data from the study MPOs. Key metrics include housing density, transportation networks, proximity of work and shopping, presence of urban amenities such as parks, diversity of land uses, and social characteristics.

## 2.1 BACKGROUND

In the discipline of urban planning, livability is a term that generally describes a location's desirability or quality of life. The dictionary defines livable as "(1) suitable for living in; habitable; comfortable; (2) worth living; endurable; and (3) able for living; companionable."[1] Livability is the noun form of livable. Planners incorporate livability into community visions and goals. Livability can relate to characteristics such as environmental quality, walkability, open space, economic activity, and the presence of cultural forces and activities. A common characterization of the term is as follows:

> *"the sum of the factors that add up to a community's quality of life—including the built and natural environments, economic prosperity, social stability and equity, educational opportunity, and cultural, entertainment and recreation possibilities."*[2]

Various definitions and understandings of the term exist at different levels of government and in the nonprofit sector, too. This study seeks to provide a better understanding of how people perceive livability at the individual, neighborhood and city level in Oregon.

In the planning context, the concept of livability is integrated in transportation and land use plans throughout the United States. The concept has been guiding U.S. Department of Transportation (USDOT) policy since 2009 by focusing on six key principles: (1) providing transportation choices; (2) expanding housing locations; (3) improving economic competitiveness; (4)

[1] "Livable." Dictionary.com. Accessed February 2017. http://www.dictionary.com/browse/livable?s=t.
[2] Partners for Livable Communities. (2017). what is Livability? http://www.livable.org/about-us/what-is-livability

improving existing communities; (5) aligning federal policy; and (6) enhancing unique characteristics of communities.[3] Moreover, as part of its current list of policy initiatives, the U.S. DOT seeks to pursue coordinated policies that emphasize placed-based decisions and investments,[4] meaning policy and investment-related decisions occur at the federal level based on general understandings of *livability*.

The Department of Land Conservation and Development (DLCD), the state agency responsible for overseeing the statewide planning program, uses livability as a guiding principle. Livability is a core element of Statewide Planning Goal 14 (Urbanization):

> *To provide for an orderly and efficient transition from rural to urban land use, to accommodate urban population and urban employment inside urban growth boundaries, to ensure efficient use of land, and to provide for livable communities.*[5]

Efficiency and livability are cornerstones of Oregon's statewide planning program, which relies on urban growth boundaries to increase land use efficiency while conserving farm and forestland. Nevertheless, as researchers astutely summarized in a 1991 report, "livability is difficult to define, and once defined, to measure."[6] Moreover, Oregon's long-range transportation plan (Oregon Transportation Plan) identifies "enhancing livability" as a key outcome.

## 2.2 PURPOSE

The purpose of this project was to understand how Oregonians, in neighborhoods of varying densities and within MPOs, perceive livability at the nexus of transportation and land use. The genesis of this project derived from earlier work by the research team done for DLCD as part of rulemaking related to House Bill 2254, which required DLCD to develop a simplified pathway for municipalities to amend urban growth boundaries.[7]

This research intends to provide government agencies and community organizations a broader perspective on which characteristics of the built environment add to or detract from livability, or what is sometimes referred to as the "good community." For instance, what does a livable community look like? Is it possible to measure livability objectively? What do residents consider livable and how do these perceptions differ from local and state agency conceptions? Finally, how can local and state governments achieve the objective of creating livable communities? These questions provide the foundation for this research.

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[3] USDOT. Livability 101: Six Principles of Livability. Retrieved from: https://www.transportation.gov/livability/101

[4] U.S. Department of Transportation. (2015). Livability 101. https://www.transportation.gov/livability/101

[5] OAR 660-0015-0014—Statewide Planning Goal 14, Urbanization.

[6] ECONorthwest. (1991). Urban Growth Management Study. Prepared for the Department of Land Conservation and Development.

[7] In response to the growing complexity of UGB amendment process, the 2013 legislature enacted HB 2254 (codified at ORS 197A and OAR 660-038) to provide for new, simplified methods for growing cities to evaluate the capacity of their UGBs. Livability is used as an evaluation metric to assess impact.

These questions are timely as "many of Oregon's communities are facing new challenges managing the growth that comes with prosperity" (DLCD, 2000). As the population continues to grow in Oregon, cities are becoming denser and is increasing the need for new and updated infrastructure.[8] Thus, balancing quality of life for residents becomes essential. This project aims to add to the body of literature on citizen perceptions of livability by focusing on smaller communities outside of Portland – areas that have mostly been overlooked in previous studies. Ultimately, this information provides valuable insight into how cities and state agencies justify investments in transportation infrastructure, which have the long-term benefits of creating livable communities.

Our work proceeds as follows: First, we describe previous research on livability, focusing on defining livability, measuring livability, and perceptions of livability. Then, we describe our survey methodology. Next, we present findings from descriptive analysis of our survey results and regression models that examine the impact of sociodemographic, subjective and objective measures. We close with key conclusions gained from this work and propose next steps for future work.

[8] Parker, Robert; Lewis, Rebecca; Moore, Terry; Kato Ken (2015). Analysis of Land Use Efficiency in Oregon Cities: A Report to the HB 2254 Rules Advisory Committee.

# 3.0 LITERATURE REVIEW

## 3.1 DEFINING LIVABILITY

In the context of planning and community development, livability is often undefined and rather nebulous. In short, no single agreed-upon definition of livability exists in the planning disciple. To better understand the dimensions of livability, the research team examined existing studies to help in contextualizing the term.

As policies and community plans begin to incorporate livability into their goals and objectives, it becomes important to understand the components that make up a livable community. The research team searched for mentions of the term "livability." From this process, several thematic categories emerged, including (1) housing, (2) community features or attributes, (3) infrastructure, (4) natural environment, and (5) transportation. The results show that each of these thematic categories include one or more potential metrics.

### 3.1.1 Housing

Housing affordability consistently emerged as one of the most important components in deeming a location livable. Baker and Biton (2015) observed that housing costs continue to grow faster than household income, and it is therefore imperative that communities begin to offer housing at higher rates of affordability . Baker and Biton also described the formation of the Partnership for Sustainable Communities (a federal, interagency initiative that promotes livability), in which an essential objective was to generate greater access to affordable housing. According to a study by Harrell et al. (2014), renters identified funding for affordable housing programs as the most important local government investment .

The literature suggests that housing density directly affects perceptions of livability, especially within urban neighborhoods (consider Smart Growth and New Urbanism principles). As discussed by Chapman and Lund (2004) regarding Portland's expansion, dense housing near amenities (sometimes referred to as community features) provides for more livable communities. While livability and density are most often correlated with urban settings, suburban locations are also seeing a push toward densification. Larco (2009) discusses that "it is important to focus on how we are implementing density and how the existing demographic and physical composition of multifamily suburbia might relate to smart growth goals." Godschalk (2007) discusses the relationship between density and design, ultimately stating the quality of place, scale, mix, and connections are of utmost importance regarding livability. In other words, density for density's sake does not contribute to livability – it must be carefully planned for and implemented cautiously.

Design – of buildings and urban areas – is an important component of livability. Ruth and Franklin (2014) discuss the impacts of planning and design implementation: "there is extensive

empirical evidence, for example, that architecture and planning can shape the economic and social profile of urban environments." Meanwhile, Mahmoudi, Ahmad and Abbasi (2015) discussed the negative impact of housing and other community features that are not visibly pleasing. For instance, poor design can overshadow the benefits of housing density or stigmatize housing affordability.

Harvey and Aultman-Hall (2016) note that further research on livability and housing needs to include quantitative (GIS) and qualitative assessment. While there is still much to understand, it can be posited that housing affordability, design, and density are connected. To generate truly livable neighborhoods, particularly in growing communities, each of these three aspects must work together.

### 3.1.2 Community Features

Research into livability frequently cites community features as being important. Sometimes called urban amenities or streetscapes, community features include elements such as sidewalks, street trees, lighting, crosswalks, benches and other elements of the street environment. Community features such as lighted bike paths along a river, a covered bus-stop shelter along a street or drinking fountains in a downtown neighborhood are becoming the norm for livable places. In fact, livable places are often judged by the amount and diversity of community features (amenities) they have (Balas, 2004). Not just quantity, but quality of community features is important. For instance, residents accustomed to historic architecture and intimate living and working spaces have vastly different notions of livability than those with more modernistic, grungy, or simple design preferences (Pojani and Stead, 2014). Accordingly, communities need to consider the features they employ: "adopt a narrative that resonates by leveraging historic, cultural or other unique attributes of your community that tend to unite people" (Guzman and Douglas, 2015).

Community features influence how people interact with others, another heavily cited component of livability. Silverstein, Johns, and Griffin (2008) discuss community features in relation to elder populations: "elder livability refers to the features of a local community that support older residents who wish to age in place, such as the presence of culturally appropriate services, good transportation options for non-drivers, safe neighborhoods, and affordable housing." Guzman and Douglas (2015) reiterate this by stating that a strategy toward livability is to build individual relationships. Human connections exist and flourish across a broad set of sectors, career and life paths: "foster connections with people in each sector, such as a business person or a faith-based leader, who will assume the role of a Livable Communities champion by leveraging their networks to spread the world." With the importance of fostering these connections, having the ability to do so daily is essential for elderly populations. Heatwole-Shank and Cutchin (2016) found that daily interactions are a key piece of contributing to positive connotations of livability regarding communal features.

Finally, community features regarding natural landscapes are of importance within the realm of livability. Jim (2003) found that legislators are committed to implementing and protecting trees and other environmental features as an element of livable communities. Planners need to be aware of stressing the importance of individual features too heavily, however. While community

features and amenities are important, weighing these too heavily on a single feature can come at the detriment of the community, especially if community members are not able to voice their preferences (Lewis and Donald, 2010).

In summary, the literature identifies several dimensions of community features: physical (such as street amenities or design elements), social (human interactions), and natural environment (tree-lined streets or parks). These dimensions' overlap because community features are meant to be shared and to strengthen each other. For example, a bike path (physical) reinforces the river (natural); street trees (natural) reinforces sidewalk benches (natural); playground features in an urban plaza (physical) reinforces interaction and the creation of familiar strangers (social). While a single feature can create amenity, diverse features enhance livability.

### 3.1.3 Natural Environment

Elements of the natural environment such as natural open spaces, water, air quality, and green infrastructure contribute to community livability. Clean drinking water and air, as well as access to healthy landscapes, are also related to people's sense of livability. People do not desire to live in contaminated places. In fact, one author notes that "landscape architecture will be crucial to humanize our cities and create warm and friendly environments where residents can find recreational space" (Grau, n.d.). Accordingly, the need for a healthy, natural environment is intrinsic to generating livable neighborhoods for everybody.

The relationship between livability, the natural environment, and equity are hard to tease apart. One author points out that access to open space and parks are somewhat dependent on residents' nativity status, finding that native-born residents of the United States are 7% more likely then foreign-born residents to live in neighborhoods with recreation options (Li, 2012). Rector (2006) found that wealthier households have better access to idealized locations in a community, where proximity to the natural environment is idealized and immigrants tend to be poorer on average.[9]

Li also states that more foreign-born residents live within a half block of railroads, airports, and four-lane highways, which places a disproportionate strain on those communities in terms of air and noise pollution. In this respect, "tensions between livability and ecology result in the 'green cities conflict,'" which arises from competing beliefs in the primacy of the natural versus the built environment (Duany et al., 2000; Beatley, 2000; Beatley and Manning, 1997). Godschalk (2004) explains that these tensions between livability and environmental equity result in the "gentrification conflict," where land use decisions negatively and disproportionately affect lower-income households.

In summary, natural features are important to individuals' perception of livability. Livability, physical space, and social concerns are connected. It is necessary to keep in mind that not all residents share equal access to livable places; clean, safe ecology and healthy, natural elements do not exist in all neighborhoods and communities.

[9] "First-generation immigrants and their families, who are one-sixth of the U.S. population, comprise one-fourth of all poor persons in the U.S." Rector, Robert. (2006). Immigration and Poverty in the United States: A Book of Charts. The Heritage Foundation.

### 3.1.4 Transportation

Transportation is frequently associated with livability, either through mention of traffic congestion, safer streets, transportation alternatives and modal choices, or even the impact new technology could have on transportation systems into the future. Appleyard et al. (2017) write that, "… livability has been identified as an important outcome of strategies to promote transportation and land use integration, but little guidance exists on what livability actually is, how to measure it, or how transportation and land use integration strategies can promote it." Appleyard et al. did a multiyear study on livability literature, theory and practice, followed by an extensive study of quantitative and qualitative methods of over 350 transit corridors to conclude, "… livability can be seen as an organizing principle for determining when and how to deploy integrated transportation and land use planning strategies." Livability opportunities are quality-of-life outcomes, particularly around transit.

Policy debates around the best strategies to accomplish these transportation goals of improving mobility, access, and options often discuss decreasing reliance on car dependency, which is a commonly cited goal of livability. Planners have also focused on creating more walkable communities. Simply said, but not simply accomplished, walkable communities and neighborhoods require robust levels of "livability-guided" land use and transportation initiatives. Taking steps to improve the walkability of neighborhoods requires practitioners to be cognizant of the three Ds: (increasing) density, (promoting) diversity, and (integrating) design (Appleyard et al., 2017).

Like other elements of livability, transportation is context dependent. Mekuria et al.(2017) concluded that "improving transit mobility and the comfort and encouragement of pedestrians and bicyclists to access a larger service area than traditionally attributed to transit produces the highest livability and increases alternatives for the traveler." By contrast, in rural communities "livability may involve improving regional mobility and safety on rural highways connecting workers to jobs, and economic development" (Pokharel et al., 2014).

In summary, livability and transportation are closely connected. The key dimensions are mobility and access. Like housing, we all require transportation to live and function in our modern day-constructed communities. While alternative modes of transportation are becoming increasingly important, particularly for urbanizing locales, rural and small communities still rely on the automobile. Some research suggests that reduction in automobile use increases livability (Chinnam and Murat, 2016).

## 3.2 MEASURING LIVABILITY

Like the terms "sustainability" and "resilience," livability is somewhat of a buzzword. Public agencies and academics use the term extensively with many assumed connotations (Vanzerr, 2011; USDOT, 2012). Yet, as is the case with many buzzwords, the actual definition of livability is unclear (Ferrell, 2016) and is dependent on context. The planning community seems to share a general understanding that livable communities are ones that people want to live in. Beyond this rather obvious fact lies a hazy area where no clear or concrete distinctions are drawn.

As livability becomes an increasingly important term in planning theory and practice, a clear interpretation of the term is ever more urgent. Operationalizing the concept of livability is necessary if communities want to work toward common goals and when evaluating whether they are getting closer to those goals. Before exploring the concept of livability, it is worthwhile to explore a basic framework for defining and measuring concepts and discus the operational definitions that exist to date.

Central to the idea of empirical research is measurement. In a statistical analysis sense, measurement is the assignment of numbers to a phenomenon that one is interested in analyzing. Often the phenomenon of concern is a broad one that does not have any single, accepted measure (e.g., patriotism, altruism, livability). Thus, to do empirical work about important concepts researchers must operationalize them (i.e., they must define the process they will use to measure the concepts).

A standard framework for measurement holds that concepts are measured indirectly through indicators specified by operational definitions.[10] Operational definitions are statements that specify how a concept will be measured, and metrics refer to things that can be measured directly and are linked to a concept through an operational definition. The key concept this research addresses is "livability." While different organizations identify various metrics for measuring livability, it is surprising how broadly the term is used and how little structure is provided in planning documents.

### 3.2.1 Operational Definitions of Livability

Livability is a concept that is largely undefined by state and federal agencies, and literature does not suggest any consensus about how to measure it. Without an agreed-upon operational definition, there are no set metrics or indicators that serve to classify the livability of communities. This, however, does not mean that people, organizations, and governments do not try.

Several federal agencies have proposed dimensions (key principles) that seek to create or enhance livability. Moreover, organizations such as the American Association of Retired Persons (AARP) and livability.com developed methodologies and indices that rank places by their livability. In fact, the AARP contextualizes livability, stating that, "A livable community is one that has affordable and appropriate housing, supportive community features and services, and adequate mobility options, which together facilitate personal independence and the engagement of residents in civic and social life" (Kihl et al., 2005). Finally, individuals and groups tend to hold their own notions of what makes a place livable based on tastes and preferences.

Accordingly, while the concept of livability can be multidimensional, the term invokes common themes or metrics. Indices such as AARP's or those developed by livability.com perhaps have some of the more robust methodologies for measuring these themes, as they operate on a national level, to compare the quality of place at different geographic scales (neighborhood, city, country, etc.). Well used by individuals and mimicking policies geared toward creating livable places, these methodological approaches use both quantitative and subjective measures to rate, score, or

[10] Basic Methods of Policy Analysis and Planning 3rd Edition. Patton, Sawicki, and Clark, 2012.

prioritize communities based on tangible and intangible elements of place. In view of this, while these indices do not pose an official definition, they do offer an interesting approach to operationalizing the concept.

Appleyard et al. (2014) observed the danger of having one definition to apply to all circumstances involving livability: "livability in a just society requires all individuals be assured equal access to such opportunities. Rather than one, monolithic definition of livability, there is a need for a theoretical moral basis to measure, understand and judge activity toward livability achievement through a set of clear, concise and easily applicable livability ethics." The ethics discussed by Appleyard et al. are similar to the livability principles outlined by the Partnership for Sustainable Communities (see Appendix D).

Nonetheless, the term's use in a planning context affects important aspects of people's lives and thus warrants operationalization. For example, local, state, and federal governments allocate public funding to projects and initiatives under the guise of promoting "livable communities." It is this hazy understanding of livability that prompts researchers in the planning and public policy fields to ask: *How do people make determinations of a livable community? Why do certain places feel more, or less, livable to certain people? Do different individuals experience livability in the same way?* Answering these questions could help generate metrics and criteria, allowing for a better allocation of funding and improved planning practices in general.

## 3.3 PERCEPTIONS OF LIVABILITY

The core of this research focuses on resident perceptions of livability; more specifically, how the built environment affects perceptions. Consistent with our research questions, we focus our literature review around three core themes: (1) neighborhood satisfaction and urban form: (2) impact of density; and (3) livability.

### 3.3.1 Neighborhood Satisfaction and Urban Form

There is a robust and extensive body of literature on neighborhood satisfaction. Dozens of studies have considered the determinants of neighborhood livability (Buys and Miller, 2012; Cook, 1988; Grogan-Kaylor et al., 2006; Gruber and Shelton, 1987; Hur and Morrow-Jones, 2008; Hur et al., 2010; Lu, 1999; Parkes et al., 2002). As Permentier et al. (2011) describe, the literature describes three primary groups of determinants: (1) individual/household sociodemographic characteristics; (2) subjective evaluations of neighborhood attributes; and (3) objective characteristics of the neighborhood.

Researchers have found that subjective evaluations are more important than objective attributes and sociodemographic characteristics (Lu, 1999; Parkes et al., 2002; Campbell et al., 1976; Carp et al., 1976; Galster, 1987). Lee et al (2017) examine the relationship between perceived and objective attributes to neighborhood satisfaction, confirming the finding that subjective evaluations are stronger than objective evaluations.

The primary factors that have been found to positively influence neighborhood satisfaction are safety, quietness, neighborhood ties and attractiveness (Mouratidis, 2017; Lovejoy et al., 2010).

In studying objective factors, several scholars have examined how urban design and urban form affect neighborhood satisfaction. For example, Cao (2015) examines land use mix, density, and street connectivity. In examining how neighborhood design affects satisfaction in the Twin Cities, Cao finds that land use mix is insignificant, higher density is negative, and street connectivity is positive and most influential.

Some studies of neighborhood satisfaction have sought to understand how perceptions vary across different metropolitan areas (Yang, 2008) or types of neighborhoods (Mouratidis, 2017; Lovejoy et al., 2010; McCrea, Shyy and Stimson, 2013). Lovejoy et al. finds that respondents from traditional neighborhoods are more satisfied with location and house characteristics than respondents from suburban neighborhoods. McCrea, Shyy and Stimson show similar levels of satisfaction across neighborhood types with respect to access to services, the natural environment and social environment.

The most common data collection method is surveys but the regression techniques vary. Some scholars use ANOVA (McCrea, Shyy and Stimson, 2013); some use ordinal regression models (Buys and Miller, 2012); some use ordered logit regression models (Lovejoy et al., 2010; Howley et al., 2009); and some use multilevel regression (Yang, 2008; Grogan-Kaylor et al., 2006). Mouratidis (2017) relies on triangulation from surveys, longitudinal analysis, and interviews to validate results.

### 3.3.2 Impact of Density

In this study, we are interested in how density affects satisfaction and perceptions of livability. Research on the impact of density on satisfaction is mixed. Research on the impact of density on livability is limited and discussed in the next section.

Some scholars have studied how density impacts neighborhood satisfaction. The research is varied. Several scholars find that high density is detrimental to life satisfaction (Cao, 2015; Bramley et al., 2009; Cook, 1988; Rodgers, 1981; McCulloch, 2012; Van Dyck, Cardon, Deforche and De Bourdeaudhuij, 2011). Other studies show that high density is not detrimental to satisfaction (Adams, 1992; Arundel and Ronald, 2017; Howley et al., 2009; Kearney, 2006). Yang (2008) shows that the impact of density on satisfaction varies based on context, finding that density positively influences satisfaction in some metropolitan areas like Portland but negatively influences satisfaction in lower-density areas like Charlotte, N.C.. Other scholars have found that perception of environmental quality dos not vary across density ranges, finding that "people trade off elements of their environment against each other for overall neighborhood satisfaction" (Walton et al., 2008, p. 418).

Some scholars examine the relationship between density and amenities or services. McCrea and Walters (2012) find that residents trade off resistance to density for neighborhood amenities and services. Allen (2016) also finds that services play a role in contributing to "quality of life" in higher-density neighborhoods in Auckland. Bramley (2006) found that urban residents trade off enhanced services and amenities for density against detached suburban houses. Lovejoy et al. (2010) also show that characteristics that promote accessibility positively influence neighborhood satisfaction when densities are similar.

Some scholars have looked exclusively at high-density residents. Buys and Miller (2012) examined inner-urban, higher-density neighborhoods in Australia, examining satisfaction with the dwelling, neighborhood and neighbors. Buys and Miller find that acceptance of density depends on dwelling design, noise and safety. Yang and O'Neill (2013) examine attitudes towards compact, mixed use by surveying residents in a New Urbanist community. Haarhoff, Beattie and Dupuis (2016) examine how density impacts livability in Auckland by examining three case studies of high density. The authors used interviews to understand how the perception of neighborhood affects livability. Haarhoff, Beattie and DuPois found that the interviewees were satisfied with high-density neighborhoods, but affirmed the findings of Walton et al. (2008), McCrea and Walters (2012), and Allen (2016) regarding the tradeoff between density and services. But, Haarhooff, Beatttie and Dupois acknowledge the limitations of their work. Because the authors only look at high-density neighborhoods, it is not possible to compare high-density to low-density perceptions.

Bonnes, Bonaiuto and Ercolain (1991) examine how crowding (density) impacts satisfaction by interviewing people in different types of neighborhoods in Rome. The authors used factor analysis and regression analysis to examine how sociodemographic characteristics and factors summarizing spatial density influence satisfaction. The authors found that the neighborhood type impacts satisfaction but not the evaluation of crowding, and that length of residence affects satisfaction but not the level of crowding perceived by respondents. Further, the authors found that age and socioeconomic status were most related to satisfaction.

### 3.3.3 Perceptions of Livability

While the literature more frequently considers neighborhood satisfaction, a few scholars make reference to livability. In some instances, neighborhood satisfaction is used as a proxy for livability (Mouratidis, 2017). In others, different metrics are used to examine livability (Chen et al., 2013). Additionally, some scholars have examined how street characteristics affect livability (McAndrews and Marshall, 2018).

Two previous studies have examined how density relates to livability. Mouratidis compares livability in compact and sprawled neighborhoods in Oslo, Norway, by examining neighborhood satisfaction as a proxy for livability. Mouratidis considers how public transport, accessibility to the city center and land use mix impact neighborhood satisfaction as well. Mouratidis finds that higher density leads to higher neighborhood satisfaction. The author suggests that it important to integrate density with other aspects like land use mix and public transportation to positively influence livability. Howley et al. (2009) also uses neighborhood satisfaction as a proxy for livability. Howley et al. examines the relationship between density and satisfaction in the central city in Dublin, Ireland. The authors find that density is not the source of dissatisfaction, but environmental quality, noise, traffic, and lack of services and facilities cause dissatisfaction in dense neighborhoods.

Some studies have asked about perceptions of livability directly. Li (2012) examines how perceptions of livability differ between native and foreign-born residents. Li finds that single-family neighborhoods, cleanliness, and newer housing are seen as more livable. In examining

demographics, racial minorities tend to rate their neighborhoods as less livable, while some foreign-born residents from particular countries (such as Europe, Latin America, and Middle Eastern countries) rate their neighborhoods as more livable.

Chen et al. (2013) examines livability and neighborhood satisfaction in China, focusing on how satisfaction varies by income status. The authors used random sampling by district to obtain a representative sample from different spatial units. Chen et al. examined residential location, housing characteristics and satisfaction while controlling for sociodemographic characteristics. In this study, Chen et al. define livability by examining surrounding land uses and designating neighborhoods in industrial zones as less livable. The authors found that neighborhood satisfaction varies with income, as lower-income groups are less satisfied with their neighborhoods. Further, the authors find that lower-income groups live in less livable (more industrial) neighborhoods.

More recently, scholars have examined the relationship between street design and livability. McAndrews and Marshall (2018) surveyed neighbors of 10 arterials in Denver to understand how roads affect perceived livability. The authors found that arterials that are perceived as vibrant are positive associated with livability. Thus, the authors conclude "livable arterials are those with commercial establishments that residents enjoy frequenting and those that residents perceive to be accessible to public transportation, bicycles, and pedestrians" (pg. 41).

### 3.3.4 Gaps in the Literature

A robust literature regarding neighborhood satisfaction points to three types of variables that are important to predicting neighborhood satisfaction: (1) subjective measures of urban form; (2) objective measures of urban form; and (3) sociodemographic control variables. Lovejoy et al. (2010) provides a detailed list of variables that have been examined in neighborhood satisfaction studies and summarizes the findings and direction of relationships. Density has been considered in a few of these studies. Most studies show a negative relationship between density and livability, but the results are mixed. Most studies of neighborhood satisfaction are survey-based but a few studies rely on interviews and focus groups. A few recent studies have sought to understand how neighborhood satisfaction varies by neighborhood type, examining city center vs. suburbs, or New Urbanist neighborhood vs. conventional neighborhood. There are numerous studies of neighborhood perception, but far fewer studies of neighborhood livability.

We seek to fill a gap in the literature by focusing on how perceptions of livability vary by density categories in smaller MPOs in Oregon. While there have been several comparative studies of different neighborhood types, there have been few studies of rural communities. Further, we focus on subjective evaluations of livability rather than neighborhood satisfaction.

# 4.0 METHODOLOGY

## 4.1 IDENTIFICATION OF CASE STUDIES

The literature review revealed that much of the research on livability and neighborhood preference has focused on larger metropolitan regions. The authors intentionally study smaller metropolitan regions to address that gap in the literature. Federal planning law (49 U.S.C. 5303) requires urbanized areas with a population of 50,000 or more to undertake a continuing, comprehensive, and cooperative (3C) multimodal transportation planning process. MPOs are created and designated to carry out the metropolitan transportation planning process.

This project focuses on Oregon MPOs, excluding the Portland MPO. These regions have populations between 50,000 and 300,000 and generally exhibit suburban and small-city development patterns. The research focused on three geographic regions: Albany , Central Lane , and Rogue Valley (see Figure 1). Researchers chose these three MPOs due to their variation in size and residential density.

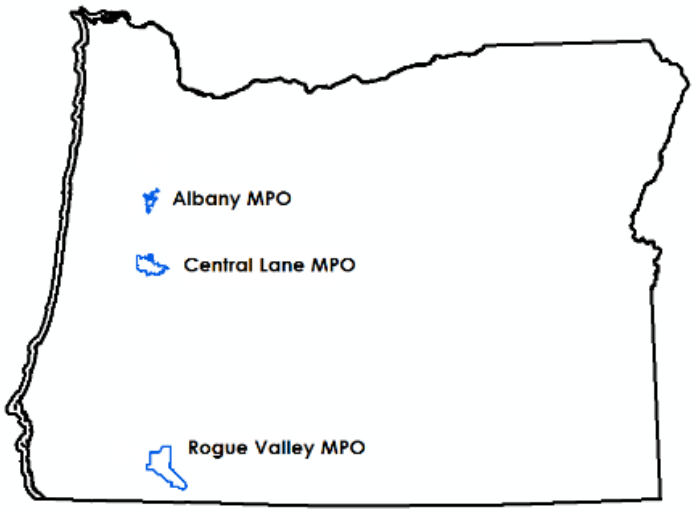


Figure 1: Metropolitan Planning Organizations in This Study
Source: The MPOs sampled in this study include Albany, Central Lane, and Rogue Valley.

Table 1 shows selected demographic characteristics of the MPO study areas and statewide. The data indicate that, while differing in size, the MPOs are similar across most variables with a few exceptions. Central Lane MPO has a higher percentage of individuals 25 and over with degrees, a lower percentage of single-family residences, and a lower percentage of people who drove alone to work – this is likely due to the presence of several higher-education institutions in the region, including the University of Oregon.

**Table 1: Selected Demographic Characteristics of MPO study areas**

| Indicator | Albany | Central Lane | Rogue Valley | Oregon |
|---|---|---|---|---|
| Population | 57,368 | 219,850 | 139,205 | 3,939,233 |
| **Age** | | | | |
| <20 | 28% | 24% | 25% | 18% |
| 20-64 | 59% | 63% | 57% | 66% |
| 65+ | 13% | 13% | 18% | 16% |
| **Race** | | | | |
| White | 81% | 80% | 82% | 77% |
| Latino | 12% | 10% | 11% | 12% |
| All others | 7% | 10% | 7% | 11% |
| **Educatonal Attainment** | | | | |
| Bachelor's or higher (age 25+) | 24% | 33% | 28% | 31% |
| **Housing** | | | | |
| Percent single-family | 70% | 62% | 69% | 64% |
| **Commute** | | | | |
| Percent drove alone | 90% | 67% | 76% | 71% |

## 4.2 SURVEY DESIGN

A mixed-mode survey of households in the three study MPOs was one of the primary data collection tools for this study.

The survey process proceeded as follows: (1) develop a sampling methodology/scheme; (2) develop the survey instrument; (3) obtain the sample frame; (4) pull the sample; (5) administer the survey; and (5) analyze the results. This appendix describes steps 1 through 5 in detail. To develop and administer the survey, the research team used the "Tailored Design Method for Mail and Internet Surveys" developed by Dr. Don Dillman (Dillman et al., 2014).

### 4.2.1 Develop the Sampling Scheme

The research questions drove the process of developing the sampling scheme.

- How do citizens perceive and define livability?
- How do different racial, ethnic and income characteristics relate to citizen perceptions?
- What terms do citizens use to describe livability?
- How do these terms relate to objectively defined measures of the built, social and economic environment?
- Which aspects of livability are most important to citizens?
- What are the key transportation, land use, social and economic characteristics of livability?
- How do definitions of livability differ across place types (described above), cities and MPOs across the state?

The research team was interested in several dimensions of representativeness in the sample: by MPO study area; by development type; and by density class. The principal investigators then developed a sampling methodology to capture a representative sample of Oregonians among the three MPOs . These three MPOs were selected due to their variability of neighborhood densities (defined by Transit Analysis Zones) with consultation from DLCD and ODOT.

Samples were selected across five categories of neighborhood densities (housing units per acre) using Census data in addition to voter registration records. Density categories included: 0 to 0.99 housing units/acre, 1.00 to 3.00 housing units/acre, 3.01 to 6.00 housing units/acre, 6.01 to 12.00 housing units/acres, and 12.01 and more housing units/acre. Because voters were unevenly represented across the density categories, the research team used a hybrid approach to identify the number of participants by group based on the objective of receiving 30 surveys per group with an expected response rate of 20%. Thus, we first computed proportional representation for all categories, then adjusted the low and high categories to obtain at least 120 participants for each density group.

### 4.2.2 Develop the Survey Instrument

- The research team developed the survey instrument based on (1) the research objectives, (2) previous surveys developed by the principal investigators, and (3) conceptual frameworks found in related academic literature. The survey included 38 questions organized in five sections:
- Questions about respondent perceptions of livability;
- Questions about how land use and transportation factors influence perceptions of livability at the neighborhood level;
- Questions regarding preferences for livability as it relates to participants' residence and neighborhood;
- Questions about transportation options; and
- Questions about respondent characteristics.

The survey was field tested on approximately 30 subjects to identify any areas where language was unclear or ambiguous, questions respondents found difficult, and the length of time it took to respond to the survey. The field test resulted in several modifications to the final survey instrument.

### 4.2.3 Prepare the Sample

Oregon voter registration lists were used as the sample frame. The research team obtained lists from Benton, Lane, Linn, and Jackson counties – the counties that included portions of the study area MPOs. Table 2 shows the sampling scheme.

**Table 2: Stratified Sample Scheme**

| | Registered Voters | Number Sampled |
|---|---|---|
| Albany | | |
| Rural (>=0 and <1) | 2,648 | 120 |
| Low (>=1 and <3) | 12,085 | 382 |
| Medium (>=3 and <6) | 9,426 | 378 |
| Medium-High (>=6 and <12) | 1,756 | 120 |
| High (>=12) | - | - |
| | **25,915** | **1,000** |
| Eugene/Springfield | | |
| Rural (>=0 and <1) | 8,601 | 120 |
| Low (>=1 and <3) | 51,592 | 245 |
| Medium (>=3 and <6) | 61,762 | 365 |
| Medium-High (>=6 and <12) | 15,403 | 150 |
| High (>=12) | 3,373 | 120 |
| | **140,731** | **1,000** |
| Medford | | |
| Rural (>=0 and <1) | 11,183 | 120 |
| Low (>=1 and <3) | 38,313 | 371 |
| Medium (>=3 and <6) | 34,553 | 389 |
| Medium High + High >=6 | 6,190 | 120 |
| | **90,239** | **1,000** |

The sample was pulled by merging land data into the address files. Samples were selected by generating random numbers and sorting the list by each strata from lowest to highest random numbers. The first n records were selected based on the number of desired samples from each strata.

### 4.2.4 Administer the Survey

The survey was administered to 3,100 randomly selected registered voters across the study MPOs and household density categories. The research team used a mixed-mode methodology that included options for mail or online responses. Those selected to participate received a post-card with the opportunity to take the survey online via Qualtrics. A paper survey (that included a link to the Qualtrics survey version) was mailed a week later to those who had not taken the online survey yet. CPW kept track of participants who completed the survey via a unique code tied to the respondent and their address. Respondents were instructed to enter or record this unique code prior to taking/submitting their survey. Finally, reminder notifications were also distributed.

Survey respondents also had the option to opt into a drawing for an opportunity to win a gift certificate; this provided incentive to participate, although residents did not need to participate in order to enter.

### 4.2.5 Response Rate

The survey was administered to 3,100 registered voters in Albany, Central Lane and the Rogue Valley using a mixed-mode method. Of the Oregon population aged 18 or older, 87% is registered to vote.[11,12] Potential respondents were selected using a cluster sampling methodology with an approximately equal number of surveys sent to each MPO. We received a total of 509 completed surveys, yielding a response rate of 16.2% (shown in Table 3.) The response rates were more or less consistent across the MPOs, ranging from a low of 16.1% in the Albany MPO to 16.3% in the Central Lane and Rogue Valley MPOs. Not all respondents completed all questions to the survey; throughout the report we present the number of respondents ('n' or the sample size) for each question to provide context.

**Table 3: Stratified Sample Scheme**

| Region | Sample Size | Responses | Response Rate |
|---|---|---|---|
| Albany MPO | 1,037 | 167 | 16.1% |
| Central Lane MPO | 1,099 | 179 | 16.3% |
| Rogue Valley MPO | 1,000 | 163 | 16.3% |
| **Total** | **3,136** | **509** | **16.2%** |

Source: Oregon Livability Survey, 2017.

A key concern of researchers who conduct surveys is statistical validity. If one were to assume that the sample was perfectly random *and* that there was no response bias, then the survey would have a margin of error of ±4.1% at the 95% confidence level.[13] One limitation of the study's methodology is potential non-response bias from the mailed and online survey. The survey results represent higher percentages of females, individuals age 55 or over, and with higher levels of educational attainment than reported by the American Community Survey.

## 4.3 FOCUS GROUPS

To interpret survey results and refine their understanding of livability, the research team conducted six 90-minute focus groups. Two focus group meetings were held in each case study MPO.

The structure and activities of the focus groups explored the results of the Oregon Livability Survey in more detail. The research team held focus group meetings in Albany, Ashland, Medford, and Eugene. Thirty-five people participated in total. The focus group meetings took approximately 90 minutes. The research team recruited focus group participants through the survey and by invitation through local networks.

[11] Oregon State Elections Division (2017-01-09). "Voter Registration by County"(PDF). Oregon.gov. Oregon Secretary of State. Retrieved 2017-08-28.

[12] Bureau, US Census. "Data." Selected Characteristics of the Citizen, 18 and Older Population. October 28, 2016. Accessed August 28, 2017. https://www.census.gov/data/tables/time-series/demo/voting-and-registration/electorate-profiles-2016.html.

[13] The survey uses a cluster sampling methodology that intended to obtain a reliable sample based on "place types." A more detailed discussion of the sampling methods is included in Appendix B.

The individual focus group discussions had a maximum of eight participants; in some locations we had two groups running simultaneously. Each focus group had a facilitator, timekeeper, and one or more note takers. The focus group meetings included facilitated discussion around broad open-ended questions. The focus group methods and results are discussed in more detail in a report titled “The Influence of the Built Environment on Perceptions of Livability in Small Oregon Metropolitan Areas” (Community Service Center, University of Oregon, February 2018).

# 5.0 FINDINGS

This chapter presents findings from our research. It starts with findings from the household survey, then discusses key findings from a series of focus groups conducted as a part of the research and concludes with the results of the statistical analysis.

## 5.1 SURVEY FINDINGS

This section presents findings from the household survey. The survey methods are described in detail in Section 3 of this report. We intentionally begin with a discussion of respondent characteristics. This provides context for interpreting the survey results as well as understanding the representativeness of the survey. The remainder of the discussion is organized similar to the survey instrument.

### 5.1.1 Respondent Characteristics

This section describes the demographic characteristics of survey respondents. We use American Community Survey data to compare respondent characteristics with population characteristics of Albany MPO, Central Lane MPO, and Rouge Valley MPO. The intent is to document (1) the characteristics of survey respondents, and (2) how the sample compares to the larger population. Table 4 shows the age distribution of residents in the study area MPOs over 18 and of survey respondents. About 40% of the respondents were 65 years of age or older and 23% were aged 55 to 64 years old – or 63% of respondents were age 55 or over. This compares with about 24% of the MPO population. With respect to younger ages, 16% of the sample population was aged between 18 and 34 compared to 45% of the MPO population. While we received a disproportionate number of people aged 55+, we grouped responses by age group into three categories to obtain enough responses per group for statistical analysis. We combined 18-34 (Millenial), 35-54 (GenX), and 55 and older (Boomer).

**Table 4: Age Distribution of Survey Respondents Compared to the MPO Population 18 and Over**

| | MPO Population | | Survey Responses | |
|---|---|---|---|---|
| Age | Number | Percent | Number | Percent |
| 18 to 19 years | 33,013 | 12.8% | 8 | 1.5% |
| 20 to 24 years | 44,736 | 17.3% | 23 | 4.3% |
| 25 to 34 years | 38,375 | 14.8% | 57 | 10.6% |
| 35 to 44 years | 36,686 | 14.2% | 53 | 9.8% |
| 45 to 54 years | 42,513 | 16.4% | 64 | 11.9% |
| 55 to 64 years | 37,333 | 14.4% | 122 | 22.6% |
| 65 years and over | 25,962 | 10.0% | 213 | 39.4% |
| Total | 258,618 | 100.0% | 540 | 100.0% |

Source: Oregon Livability Survey, Q28, 2017. U.S. Census ACS 2011-2015 (5-Year Estimates)

Table 5 shows annual household income as reported by survey respondents and the ACS. The income distribution of the survey sample much more closely mirrors that of the study area MPO populations than for other demographic characteristics.

**Table 5: Household Income in 2016, Survey Respondents and MPO**

| | MPO Population | | Survey Responses | |
|---|---|---|---|---|
| Age | Number | Percent | Number | Percent |
| Less than $15,000 | 28,162 | 17% | 53 | 10% |
| $15,000 to $24,999 | 21,365 | 13% | 60 | 12% |
| $25,000 to $34,999 | 19,049 | 11% | 58 | 11% |
| $35,000 to $49,999 | 32,216 | 19% | 67 | 13% |
| $50,000 to $74,999 | 24,171 | 14% | 104 | 21% |
| $75,000 to $149,999 | 34,216 | 20% | 115 | 23% |
| $150,000 or more | 8,485 | 5% | 48 | 10% |
| **Total** | **167,664** | **100%** | **505** | **100%** |

Source: Oregon Livability Survey, Q29, 2017. U.S. Census ACS 2011-2015 (5-Year Estimates), Income in the Past 12 Months.
Note: ACS Data is for households.

Survey respondents identified predominantly as White (85%) which is consistent with the population in each study area. With respect to gender, 61% of respondents identified as female, 37% as male, and 2% indicated non-binary/preferred not to say. Three-fifths of the respondents were female while ACS data suggests the study areas have a relatively even male-to-female ratio.

Most respondents own their current home (68%). Two percent of respondents occupy their current home without payment and another 2% preferred not to say. Respondents homeownership rates are comparable to figures reported by ACS data in the study areas.

Table 6 shows household size of survey respondents compared to ACS data in the study area. On average, respondent households consist of 2.4 persons (2.0 adults 18 years of age and older, and 0.5 children less than 18 years of age) with a majority of respondents (47%) living in two-person households. The average household size in Oregon is 2.5 persons per household.

**Table 6: Household Size of Survey Respondents**

| Persons per household | Survey Respondents | Oregon Population |
|---|---|---|
| 1 person | 20% | 28% |
| 2 person | **39%** | 34% |
| 3 Person | 16% | 16% |
| 4+ Person | 25% | 23% |
| Total | 531 | - |
| Persons per household (Average) | 2.5 | 2.5 |
| Persons per household (Median) | 2.0 | - |

Source: Oregon Livability Survey, Q34 2017. U.S. Census Bureau, 2016 American Community Survey 1-Year Estimates, Oregon.

With respect to mobility, about half of the respondents changed residence within the last five years and an additional 26% moved within the last 10 years.

## 5.1.2 Survey Findings

The following sections present key findings from the household survey. The sections are organized around the survey instrument (see Appendix A) and are presented in the following order:

- General Perceptions of Livability
- Influence of the Built Environment on Perceptions of Livability
- Influence of Residence and Neighborhood on Perceptions of Livability
- Influence of Transportation Infrastructure on Perceptions of Livability

This analysis is descriptive in nature and primarily relies on frequency distributions. To test relationships between key characteristics, the research team conducted cross-tabulations and calculated chi-square statistics.

### *5.1.2.1 General Perceptions of Livability*

Perceptions of livability vary from individual to individual. This section therefore discusses the questions getting at general perceptions of livability related to different geographic levels and basic, community factors.

Table 7 shows that most respondents are satisfied with where they live. Residents are most satisfied with their house/home (86%) followed by their state (82%). The percentage of respondents who indicated they were somewhat dissatisfied or extremely dissatisfied for any category never exceeded 16%.

**Table 7: Respondent Satisfaction with House/Home, Neighborhood, City, County, and State**

| Area | Extremely Satisfied | Somewhat Satisfied | Neither Satisfied or Dissatisfied | Somewhat Dissatisfied | Extremely dissatisfied | n |
|---|---|---|---|---|---|---|
| House/Home | **48%** | 38% | 5% | 6% | 3% | 557 |
| Neighborhood | 36% | **38%** | 9% | 13% | 3% | 550 |
| City | 25% | **45%** | 14% | 13% | 3% | 550 |
| County | 24% | **44%** | 19% | 11% | 2% | 549 |
| State (Oregon) | **49%** | 33% | 7% | 7% | 3% | 550 |

Source: Oregon Livability Survey, Q1, 2017.

Cross-tabulation of age by satisfaction shows that age (as grouped by generations) significantly influenced respondents' satisfaction for home, neighborhood, city, county, and state. Millennials were less satisfied with each geographic place than Generation X respondents, and Generation X

respondents less than Baby Boomers. While 90% of Baby Boomers were somewhat or very satisfied with their homes, this same level of satisfaction was only held by 79% of Generation X respondents and 76% of Millennials (see Figure 2).

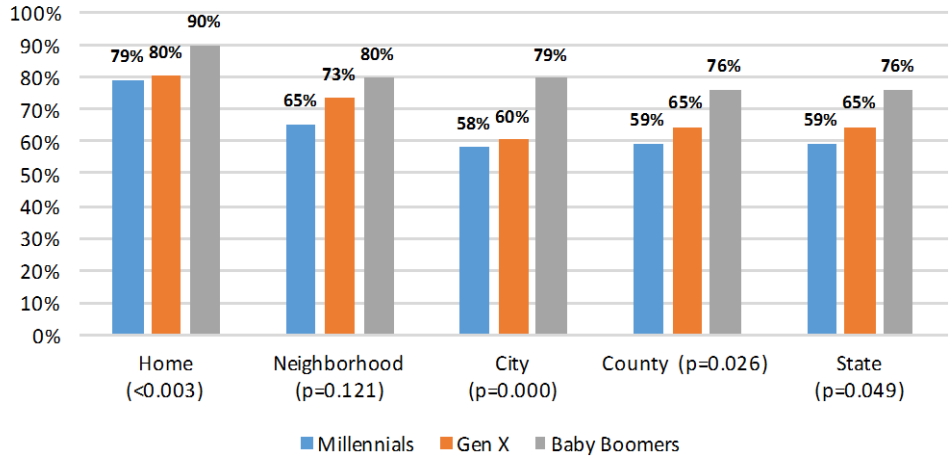


Figure 2: Satisfaction with Residence and Location by Generation
Source: Oregon Livability Survey, Q1, 2017.
Note: P-value statistic represents chi-square.

Table 8 shows the importance of factors to respondents in selecting their current home or neighborhood. The most important factors were affordability and crime levels; over 90% of respondents rated these factors as somewhat or extremely important. Dwelling characteristics (84%) and proximity to parks and open space (81%) were also important to respondents.

**Table 8: Respondent Rating of Importance of Factors for Selecting Current Home or Neighborhood**

| Factor | Extremely Important | Somewhat Important | Neither Importar nor Unimportan | Somewhat Unimportant | Extremely Unimportant | n |
|---|---|---|---|---|---|---|
| Affordability | **72%** | 23% | 3% | 1% | 1% | 500 |
| Crime Levels | **66%** | 27% | 5% | 2% | 1% | 499 |
| House Characteristics | 41% | **43%** | 13% | 3% | 1% | 499 |
| Proximity to Parks/Open Space | 32% | **49%** | 15% | 3% | 1% | 497 |
| Distance to Retail/Services | 21% | **54%** | 18% | 5% | 1% | 494 |
| Proximity to Neighbors | 22% | **49%** | 22% | 5% | 3% | 499 |
| Access to Transportation Options | 32% | **34%** | 19% | 11% | 4% | 501 |
| Proximity to Work/School | 27% | **38%** | 23% | 6% | 6% | 496 |
| School Quality | **39%** | 24% | 23% | 4% | 9% | 481 |
| Neighborhood Characteristics | 18% | **45%** | 26% | 6% | 5% | 496 |
| Proximity to Family Members | 21% | **30%** | 29% | 10% | 10% | 497 |

Source: Oregon Livability Survey, Q2, 2017. CPW ordered factors by highest to lowest using the sum of extremely important and somewhat important.

The survey asked respondents to describe their ideal livable neighborhood in three words. Respondents list 164 distinct qualities. Table 9 shows the 13 most commonly referenced terms. The three words most frequently listed were: safe, friendly, and clean. The survey asked respondents if these three words would describe their ideal livable city. Sixty-nine percent indicated they would, and 27% indicated they would differ slightly. Four percent indicated they would be completely different.

**Table 9: Describe Your Ideal Livable Neighborhood in Three Words**

| Qualities | Number | Percent |
|---|---|---|
| Safe | 225 | **15%** |
| Friendly | 153 | **10%** |
| Clean | 136 | **9%** |
| Quiet | 131 | **9%** |
| Affordability | 103 | **7%** |
| Aesthetics | 50 | 3% |
| Walkable | 46 | 3% |
| Crime Free | 40 | 3% |
| Maintained | 37 | 2% |
| Retail and Services | 37 | 2% |
| Accessibility | 34 | 2% |
| Green | 28 | 2% |
| Spacious | 26 | 2% |

Source: Oregon Livability Survey, Q3, 2017.

The survey asked respondents about their perceptions of livability of their current residence for various geographies. Table 10 shows that 86% of respondents indicated "good" or "excellent" when rating the livability of their house/home, 76% for their neighborhood, 71% for their city, 70% for their region, and 82% for their state.

**Table 10: Respondent Perceptions of the Livability of Current Home, Neighborhood, City, Region, and State**

| Geographic Level | Excellent | Good | Fair | Poor | n |
|---|---|---|---|---|---|
| House/Home | **46%** | 40% | 12% | 2% | 542 |
| Your Neighborhood | 36% | **40%** | 21% | 3% | 542 |
| Your City | 19% | **52%** | 23% | 5% | 542 |
| Your County | 18% | **52%** | 26% | 4% | 543 |
| State (Oregon) | **43%** | 39% | 14% | 4% | 539 |

Source: Oregon Livability Survey, Q5, 2017.

Cross-tabulation of age by perception of livability shows that age (as grouped by generations) significantly influenced respondent perceptions of livability for home, city, county, and state. Perceptions of neighborhood livability did not have a statistically significant correlation. A lower percentage of Millennials perceived livability of each geographic place than Generation X

respondents, and Generation X respondents less than Baby Boomers. While 90% of Baby Boomers consider the livability of their home good or excellent, this same level of satisfaction was held by 80% of Generation X respondents and 79% of Millennials (see Figure 3). A similar pattern exists for all geographic levels.

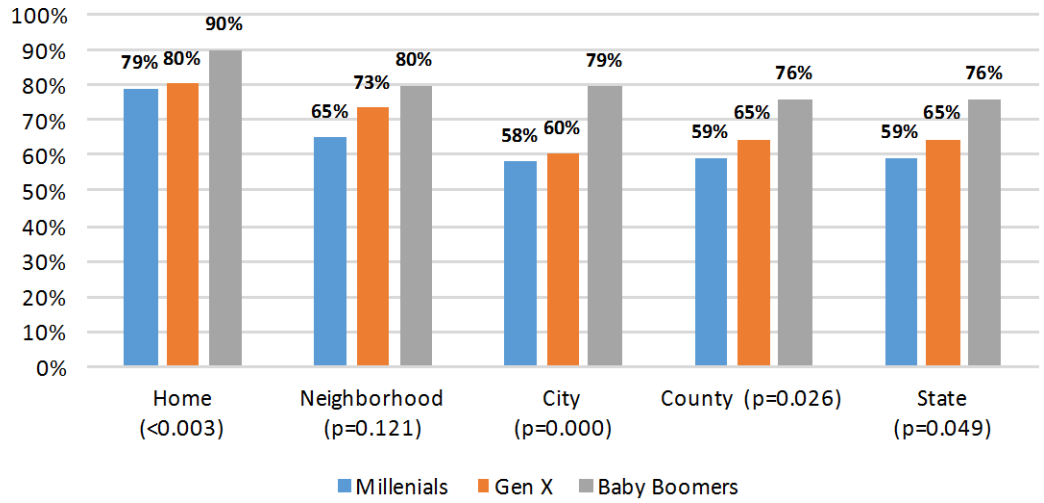


Figure 3: Respondent Perceptions of the Livability of Current Home, Neighborhood, City, Region, and State
Source: Oregon Livability Survey, Q5, 2017.

### 5.1.3 Influence of the Built Environment on Perceptions of Livability

This section describes respondents' perceptions of livability as it relates to the built environment, which includes man-made infrastructure such as roads, sidewalks, parking choices, housing choices, and the proximity between varying commercial, residential, and other land uses.

The survey asked respondents to indicate streets and intersections that would create an ideal neighborhood for them. Figure 4 shows that sidewalks (70%) and trees or greenery (65%) were the most frequently indicated characteristics of a street or intersection. Crosswalks (49%), traffic signs (42%), and dedicated bicycle facilities (31%) were desired by between one-quarter and one-half of respondents. Less than a quarter of respondents indicated that traffic lights, curb ramps, protected turn lanes, extended curbs and raised sidewalks were desired street or intersection characteristics.

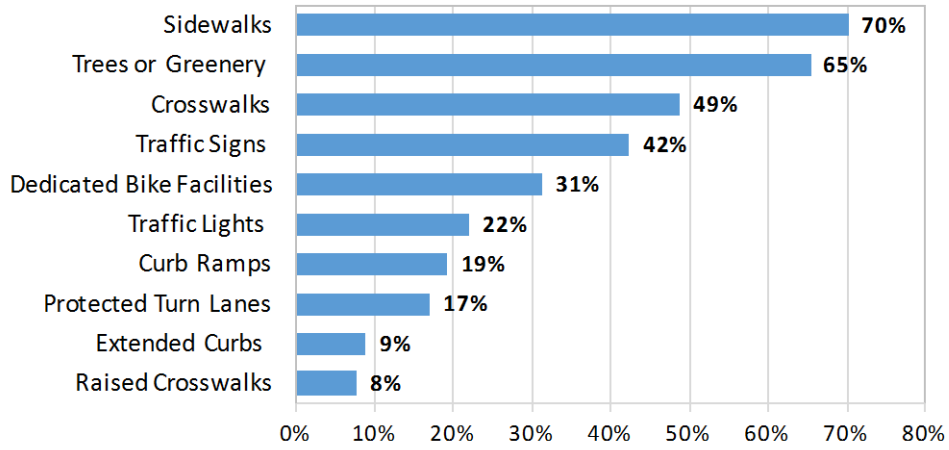


Figure 4: Desired Street or Intersection Characteristics in Respondents' Ideal Neighborhood
Source: Oregon Livability Survey, Q10, 2017.

The survey asked respondents to indicate what level of foot traffic they would consider ideal and the level in the neighborhood of their residence. Responses suggest that neighborhood patterns that produce moderate and intermittent foot traffic are perceived most ideal, which corresponds with the level that respondents report in their neighborhoods (See Figure 5).

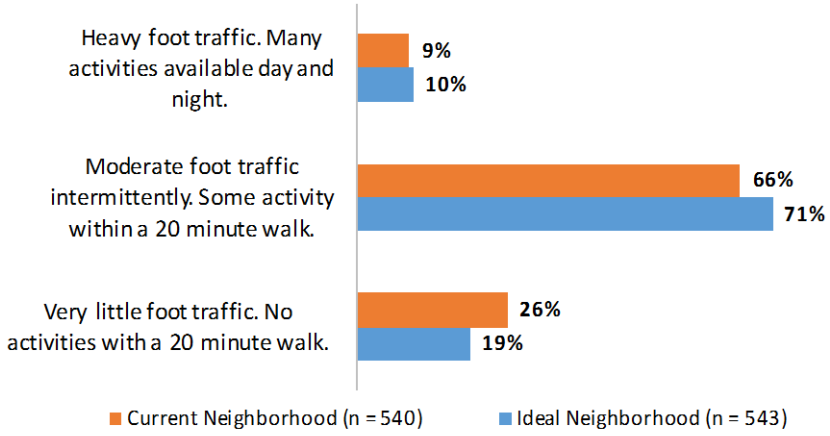


Figure 5: Respondent Perceptions of Level of Foot Traffic: Current Level in their Neighborhood and Ideal Neighborhood
Source: Oregon Livability Survey, Q6 and Q7, 2017.

The survey asked respondents about preferred location of parking in their ideal neighborhood. Figure 6 shows that the two most favored types of parking in respondents' ideal neighborhood are typical off-street parking facilities, personal garages (27%) and driveways (26%). The least preferred types of parking are parking lots in front of buildings (4%), parking lots on the side of buildings (6%), parking garages (7%), and parking lots behind buildings (8%).

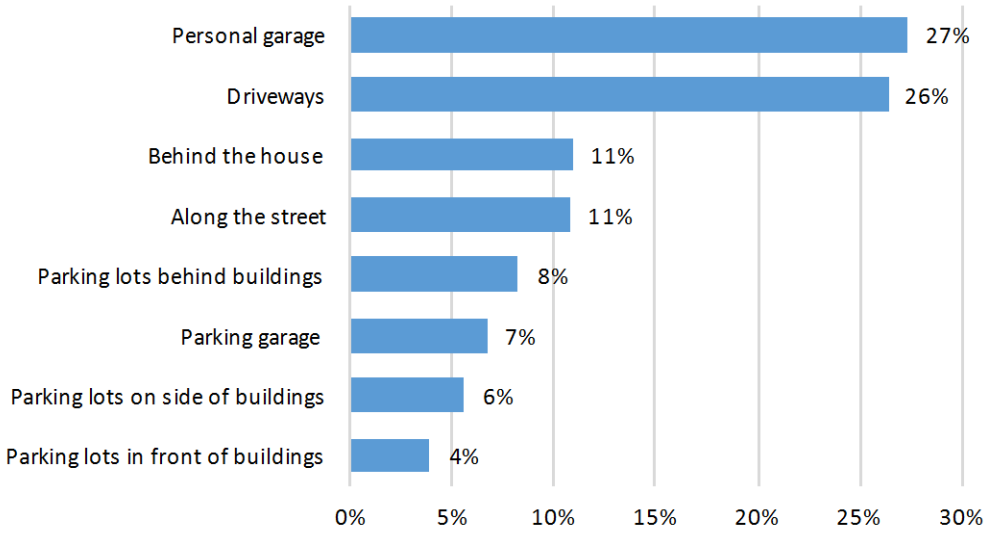


Figure 6: Respondents' Preferred Location of Parking in an Ideal Neighborhood
Source: Oregon Livability Survey, Q8, 2017.

The research team was interested in how important proximity to various amenities within a 20-minute walking distance was to respondents. Table 11 shows interesting patterns. Amenities that serve residents, such as parks, grocery stores and other services, were all identified as somewhat important or extremely important by more than half of the respondents. The amenities ranked as most important were parks and open space (79%), grocery stores (73%), and public services (65%). Amenities that are more a function of culture or choice – place of work, schools, and religious or cultural services – all ranked as less important. One interpretation of this result is that the quality or characteristics of these amenities is more important to respondents than proximity to their residences.

**Table 11: Importance of Living Within a 20-Minute Walk of Specific Amenities**

| Amenities | Extremely Important | Somewhat Important | Neither Important nor Unimportant | Somewhat Unimportant | Extremely Unimportant | n |
|---|---|---|---|---|---|---|
| Parks and Public/Open Space | **42%** | 37% | 14% | 4% | 2% | 545 |
| Grocery Store | 35% | **38%** | 17% | 6% | 3% | 548 |
| Public Services | 21% | **44%** | 24% | 8% | 3% | 548 |
| Shops and Services | 21% | **43%** | 23% | 9% | 4% | 536 |
| Medical Services | 21% | **42%** | 27% | 7% | 3% | 547 |
| Transit Station / Bus Stops | 24% | **32%** | 27% | 8% | 8% | 546 |
| Restaurants and Entertainment | 16% | **39%** | 29% | 11% | 5% | 546 |
| School or Children's School | 23% | 27% | **29%** | 8% | 13% | 539 |
| Other | 29% | 16% | **33%** | 7% | 15% | 55 |
| Work | 15% | 25% | **37%** | 10% | 13% | 534 |
| Religious or Cultural Services | 9% | 28% | **36%** | 14% | 13% | 547 |

Source: Oregon Livability Survey, Q9, 2017. CPW ordered amenities by highest to lowest percentage of aggregated extremely important and somewhat important.

The survey asked respondents about the importance of proximity to shops and services and whether respondents of different generations had different perspectives. Figure 7 shows that Boomers and Gen-Xers rated proximity to shops and services significantly more important than Millennials. This comparison between these groups resulted in a difference that was statistically significant (p = 0.000).

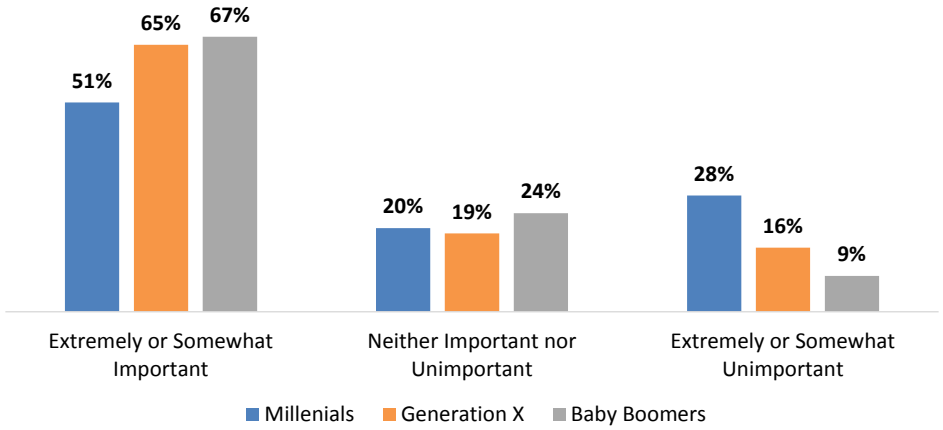


Figure 7: Importance of Living with a 20-Minute Walk to Shops and Services, by Generation
Source: Oregon Livability Survey, Q9, 2017.

Planners have promoted mixed-use development as a livability strategy for two or more decades. The survey asked respondents what mixture of land uses they would most prefer in their ideal neighborhood. Figure 8 shows desired mix of land uses in respondents' ideal neighborhood by generation. Forty-seven percent of all respondents prefer residential uses surrounding their house with a mix of uses further away. About 37% preferred a land use pattern that was a strictly residential neighborhood, and the least most popular pattern was a mixed-use neighborhood. Millennials show a greater preference for a mix of uses in their neighborhood than either Gen-Xers or Boomers. Twenty-four percent of Millennials preferred only residential in their ideal neighborhood compared to 37% of Gen-Xers and 40% of Boomers. Notably, very few respondents of any generation prefer office buildings in their ideal neighborhood.

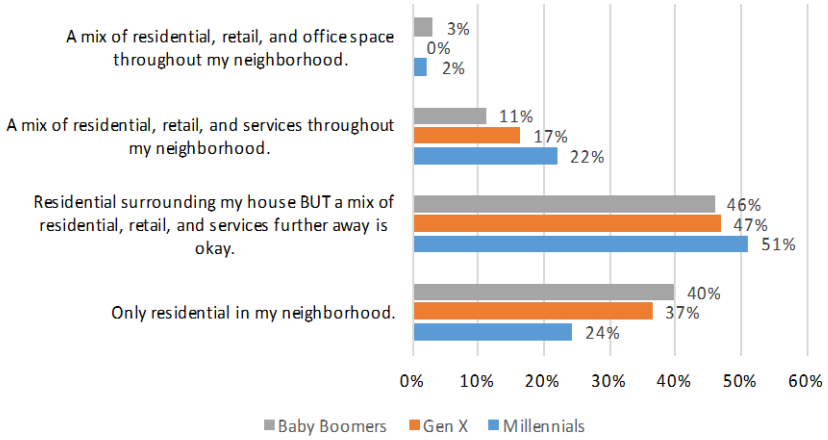


Figure 8: Desired Mix of Land Uses in Respondents' Ideal Neighborhood, by Generation
Source: Oregon Livability Survey, Q11, 2017. Note: p = 0.024

Figure 9 shows that 88% of respondents preferred a neighborhood with detached, single-family housing. The next most preferred housing types were secondary dwelling units (35%), duplexes (31%), and townhouses (30%). Least preferred were manufactured homes (11%) and temporary housing (3%).

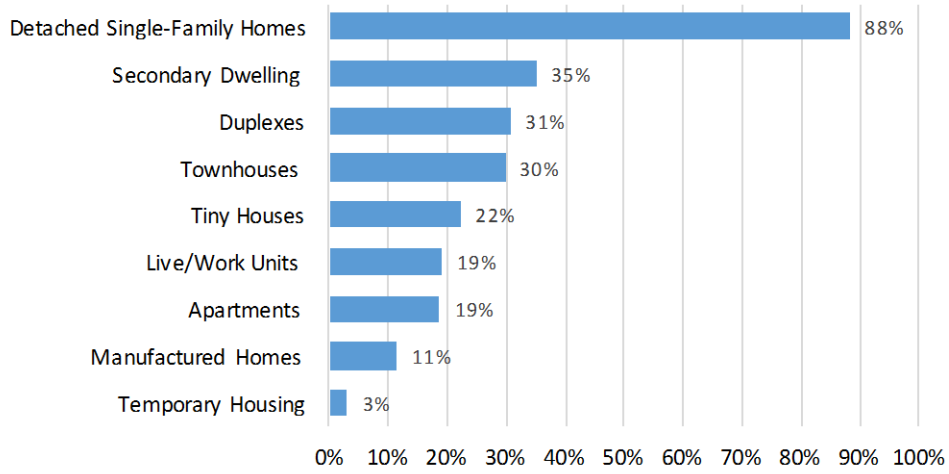


Figure 9: Preferred Housing in Respondents' Ideal Neighborhood
Source: Oregon Livability Survey, Q12, 2017.

The survey asked respondents how important having/seeing a range of different elements were within a 20-minute walk of their ideal home (Table 12). Elements that were somewhat or extremely important to 80% of respondents or more included presence of quality housing (92%), presence of sidewalks (91%), presence of tree-lined streets (87%), and presence of natural features/biodiversity (83%). Elements considered neither important nor unimportant were the presence of buildings in a similar style/design, presence of short blocks, presence of street layout on a grid, and the presence of cul-de-sacs.

**Table 12: Importance of Built Environment Elements Within a 20-Minute Walk of Ideal Home**

| Element | Extremely Important | Somewhat Important | Neither Important nor Unimportant | Somewhat Unimportant | Extremely Unimportant | n |
|---|---|---|---|---|---|---|
| Presence of Sidewalks | **61%** | 30% | 6% | 1% | 2% | 496 |
| Presence of Quality Housing | **51%** | 42% | 5% | 1% | 1% | 493 |
| Presence of Tree-Lined Streets | **47%** | 40% | 11% | 2% | 1% | 498 |
| Presence of Natural Features/Biodiversity | **47%** | 36% | 14% | 2% | 2% | 495 |
| Presence of Public Spaces | 31% | **41%** | 21% | 4% | 3% | 489 |
| Presence of Wide Roads/Streets | 30% | **46%** | 17% | 4% | 3% | 487 |
| Presence of Buildings Setback at least 10 feet from Street | 24% | **46%** | 20% | 5% | 4% | 493 |
| Presence of Physical Boundary or Border in Neighborhood | 17% | **38%** | 34% | 7% | 3% | 494 |
| Presence of Building Diversity in Style/Design | 10% | **43%** | 34% | 7% | 6% | 493 |
| Presence of Buildings with Similar Heights | 9% | 36% | **37%** | 10% | 8% | 494 |
| Presence of Street Layout on a Grid | 7% | 28% | **48%** | 11% | 6% | 490 |
| Presence of Short Blocks | 7% | 29% | **50%** | 10% | 4% | 494 |
| Presence of Cul-de-sac | 6% | 20% | **49%** | 13% | 11% | 495 |
| Presence of Buildings in a Similar Style/Design | 3% | 25% | **46%** | 17% | 10% | 493 |

Source: Oregon Livability Survey, Q13, 2017.

When asked whether the elements listed in Table 12 were important to be visually interesting in their neighborhoods, 80% of respondents indicated that it was important they should be visually interesting (see Figure 10). Only 3% said visually interesting elements were unimportant.

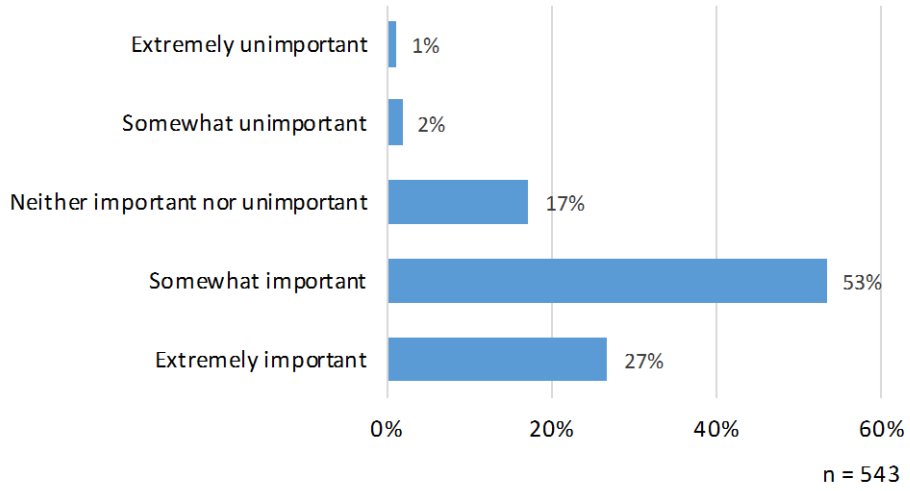


Figure 10: Respondent Ratings of the Importance that Neighborhood Elements are Visually Interesting
Source: Oregon Livability Survey, Q14, 2017.

### 5.1.4 Influence of Residence and Neighborhood on Perceptions of Livability

The survey asked a series of questions about how elements of respondents' dwellings and neighborhoods affected their perception of livability. The size and privacy of yards, what type of housing is preferred, and whether the density of a residential neighborhood affects the relationships between residences and neighborhoods were core attributes.

We asked respondents two questions related to outdoor space: What type of outdoor space would you ideally have and what do you currently have? Figure 11 shows that 40% percent of respondents said they have a medium-sized private yard and a comparable percentage indicated that was their ideal yard size. Respondents show a strong preference for a medium-sized yard or larger (80%). Nearly 40% indicated that they would ideally have a large private yard or acreage, while only 17% reported having that type of outdoor space.

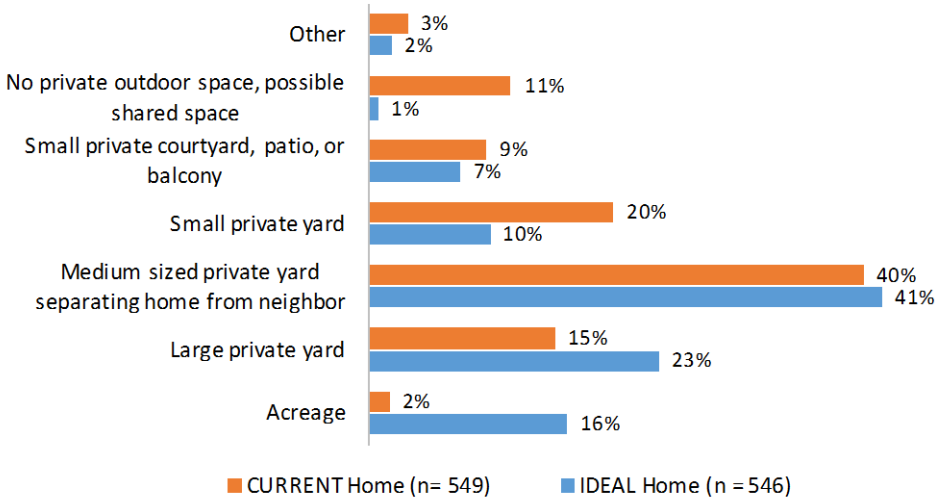


Figure 11: Respondent Description of their Current and Ideal Outdoor Space
Source: Oregon Livability Survey, Q15 and Q16, 2017.

We asked respondents to indicate what housing type they currently live in and what they would prefer. Figure 12 shows that a large majority (nearly 90%) indicated their ideal housing would be a single-family, detached home. About 75% of the respondents reported they currently live in a detached, single-family home.

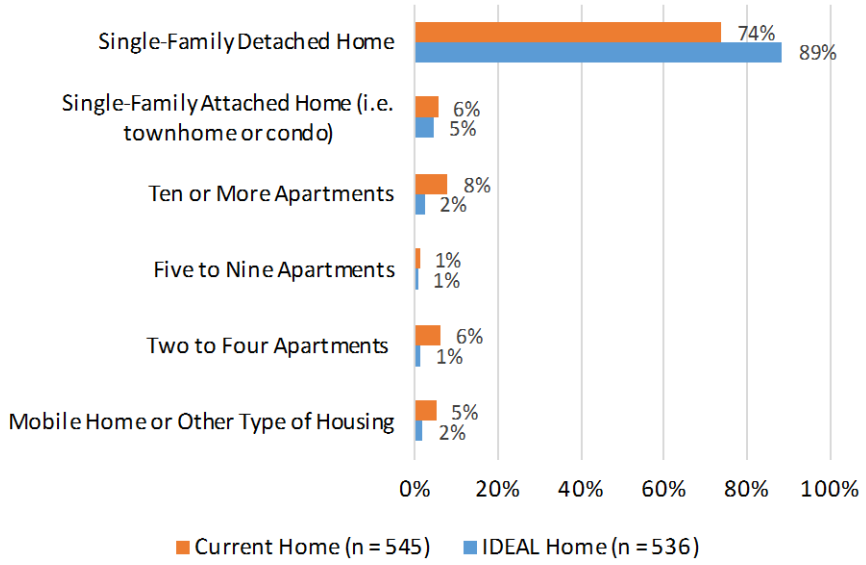


Figure 12: Respondents' Current and Ideal Housing Type
Source: Oregon Livability Survey, Q17 and Q18, 2017.

A key topic of interest for this research is the relationship between housing density and perceptions of livability. To better understand respondent perceptions, the survey asked respondents to indicate how dense they think their current neighborhood is and whether they felt their neighborhood was too dense.

Table 13 compares respondents' perceptions of the density of their neighborhood with the actual density. As a general observation, most respondents did not accurately indicate the actual density of the neighborhood they live in. In fact, 106 of the 378 observations (28%) indicated the correct density range. For those who did not indicate the correct density range, more respondents (53%) indicated perceived densities that were higher than the actual density. Nineteen percent of respondents indicated perceived densities that were lower than the actual density in their neighborhood. People in higher density neighborhoods were more accurate than medium or low density neighborhoods.

**Table 13: Perceived Neighborhood Density Compared to Actual Neighborhood Density**

| | Actual Density | | | | | |
|---|---|---|---|---|---|---|
| Perceived Density | Rural (>=0 and <1 du/ac) | Low (>=1 and <3 du/ac) | Medium (>=3 and <6 du/ac) | Medium-High (>=6 and <12 du/ac) | High (>=12 du/ac) | Number of Respondents |
| Rural (>=0 and <1 du/ac) | 14% | 4% | 2% | 3% | 12% | 17 |
| Low (>=1 and <3 du/ac) | 40% | 28% | 21% | 17% | 0% | 91 |
| Medium (>=3 and <6 du/ac) | 26% | 43% | 33% | 32% | 0% | 129 |
| Medium-High (>=6 and <12 du/ac) | 12% | 19% | 28% | 19% | 29% | 83 |
| High (>=12 du/ac) | 7% | 7% | 16% | 29% | 59% | 59 |
| **Total** | **100%** | **100%** | **100%** | **100%** | **100%** | |
| Number of Respondents | 42 | 134 | 127 | 59 | 17 | 379 |

Source: Oregon Livability Survey, Q21, 2017.

When asked whether they thought their neighborhood was too dense, most respondents (73%) however, did not think their neighborhood was too dense, while 21% thought their neighborhood is too dense for their liking. Six percent reported they didn't know. Of the respondents who indicated that their neighborhoods were too dense (21%), about half (55%) thought their neighborhoods had six or more dwelling units per acre.

Finally, we asked respondents to indicate how dense they thought their neighborhood was compared to the rest of their city. Seventy percent of respondents indicated their neighborhood is medium/moderately dense as compared to the rest of their city; 23% say their neighborhood is low/not dense compared to the rest of their city; and 7% say their neighborhood is high/very dense compared to the rest of their city.

### 5.1.5 Influence of Transportation Infrastructure on Perceptions of Livability

This section explores the relationship between transportation options available, choices made, and options desired.

Figure 13 shows that most respondents want a variety of transportation options in their neighborhood. The most frequently selected transportation options were auto/vehicular options (86%), pedestrian options (80%), and bicycle options (75%).

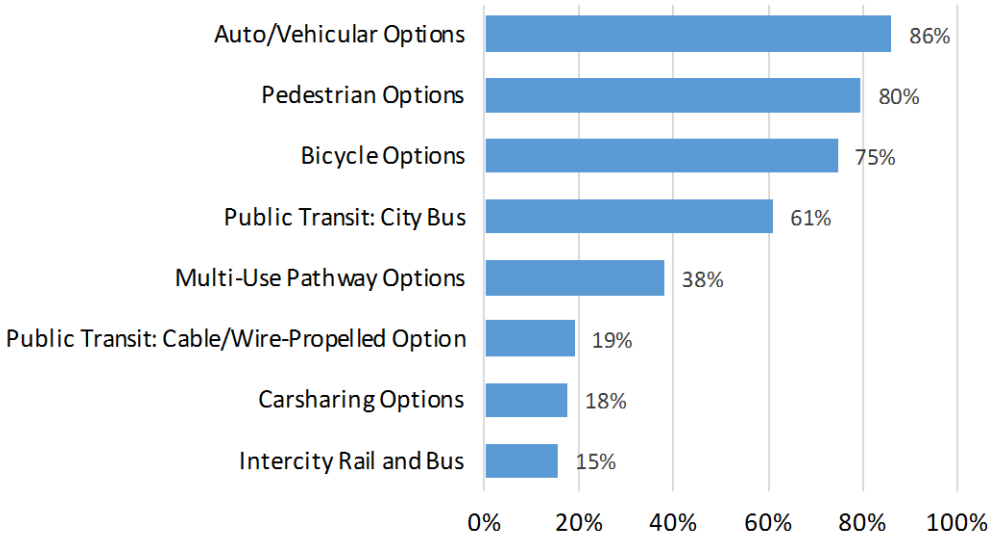


Figure 13: Transportation Options Respondents Want in their Ideal Neighborhood
Source: Oregon Livability Survey, Q22, 2017.

The survey asked respondents to indicate what transportation mode they most frequently used to get to various destinations (Table 14). More than 50% of respondents indicated automobile/carpool for all of the destinations, with more than 90% reporting using automobile/carpool for shopping. Notably, higher percentages of respondents reported walking to get their children to school (17%) and to get to parks and open areas (39%).

**Table 14: Respondent Primary Mode Choice for Various Destinations**

| Question | Automobile or Carpool | Bicycle | Walk | Bus/Public Transit | n |
|---|---|---|---|---|---|
| How do you get to shopping centers? | **91%** | 3% | 4% | 2% | 537 |
| How do you get to the grocery store? | **90%** | 3% | 5% | 2% | 541 |
| How do you get to work? | **85%** | 5% | 7% | 3% | 356 |
| How do you get your children to school? | **68%** | 5% | 17% | 10% | 184 |
| How do you get to parks and open areas? | **51%** | 8% | 39% | 1% | 525 |

Source: Oregon Livability Survey, Q23, 2017.

While most respondents reported using automobiles as their primary mode of transportation, it is not the preferred mode for many respondents. When asked about their most preferred transportation mode, 52% of respondents preferred the auto/vehicular option, while 32% preferred to walk and 16% preferred cycling.

Figure 14 shows that 64% of respondents agree or strongly agree that their neighborhood accommodates all of the transportation options they would want, and 19% disagree or strongly disagree that their neighborhood accommodates all of the transportation options they want.

Cross-tabulation analysis showed no statistical differences in responses by age of respondents grouped by generation.

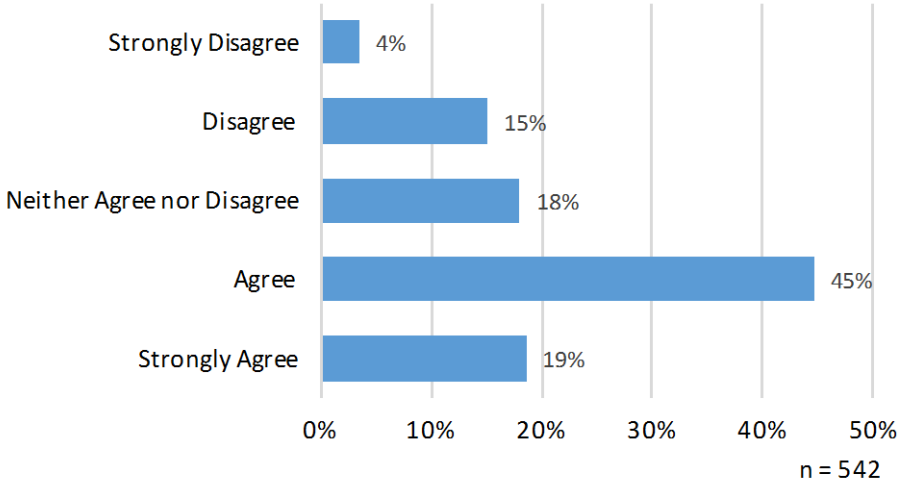


Figure 14: Respondent Perceptions Whether Their Neighborhood Accommodates all the Transportation Options They Want
Source: Oregon Livability Survey, Q25, 2017.

While most respondents agreed that their neighborhood accommodates all of the transportation options they would want to take, including walking and biking, half of respondents (51%) want their neighborhoods to be more bicycle/pedestrian friendly (see Figure 15).

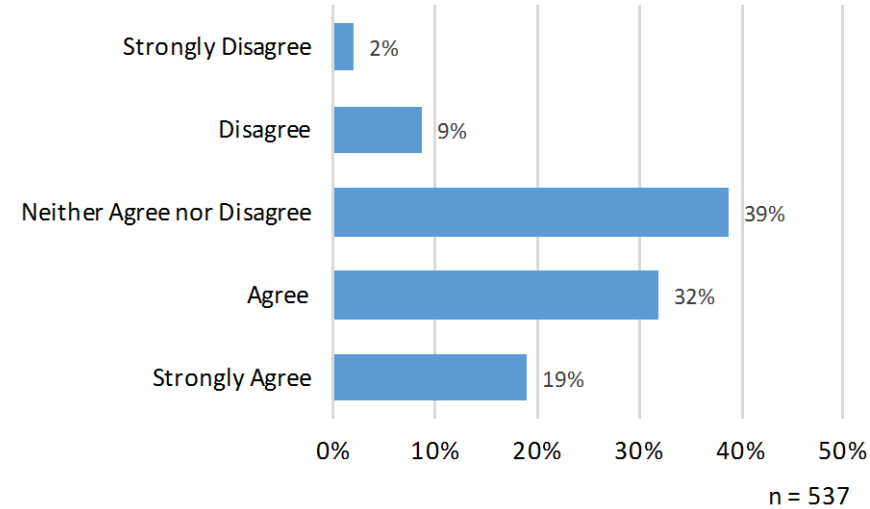


Figure 15: Respondent Agreement with the Statement: "I want my neighborhood to be more bicycle/pedestrian-friendly"
Source: Oregon Livability Survey, Q26, 2017.

### 5.1.6 Key Survey Findings

Key findings from the Oregon Livability Survey follow:

- Respondents indicated being most satisfied with their home (86%), followed by their state (82%), neighborhood (74%), city (70%), and county (68%). The ordering of these geographies based on satisfaction coincides with respondent ordering of geographies based on perceptions of livability. In addition, age influences perception of satisfaction, where older demographics tend to be more content with their current surroundings.

- Neighborhood factors such as housing affordability (72%) and crime levels (66%) were rated as slightly more important than factors such as house characteristics and distance to parks and retail services when selecting a home/neighborhood.

- Traditional/basic streetscape elements such as sidewalks, trees, crosswalks, traffic signals, and dedicated bike lines are more desired than modified elements such as curb ramps, protected turn lanes, extended curbs, and raised crosswalks.

- It is important to respondents to live within a 20-minute walk to parks, grocery stores, services and shops, transit stops, and restaurants. Living within a 20-minute walk of schools, work, and religious or cultural services was less important to survey respondents. Amenities that are more a function of culture or choice – place of work, schools, and religious or cultural services – all ranked less important. One interpretation of this result is that the quality or characteristics of these amenities is more important to respondents than proximity to their residences.

- Millennials show a greater preference for a mix of uses in their neighborhood than either Gen-Xers or Boomers. Twenty-four percent of Millennials prefer only residential in their ideal neighborhood compared to 37% of Gen-Xers and 40% of Boomers. Notably, very few respondents of any generation prefer office buildings in their ideal neighborhood.

- Respondents preferred a neighborhood with detached, single-family housing (88%). The next most preferred housing types were secondary dwelling units (35%), duplexes (31%), and townhouses (30%). Least preferred were manufactured homes (11%) and temporary housing (3%).

- Forty percent of respondents said they have a medium-sized private yard and a comparable percentage indicated that was their ideal home. Respondents do tend to idealize a medium-sized yard or larger (80%). Nearly 40% indicated that they would ideally have a large private yard or acreage, while only 17% reported having that type of outdoor space.

- Most respondents did not accurately indicate the actual density of the neighborhood they live in. In fact, 28% indicated the correct density range. For those that did not indicate the correct density range, more respondents (53%) indicated perceived densities that were

higher than the actual density. Nineteen percent of respondents indicated perceived densities that were lower than the actual density in their neighborhood.

- Most respondents want a variety of transportation options in their neighborhood. The most frequently selected transportation options were auto/vehicular options (86%), pedestrian options (80%), and bicycle options (75%).

## 5.2 REGRESSION ANALYSIS FINDINGS

To examine the determinants of perceptions of neighborhood livability among respondents, we examined individual characteristics, neighborhood/parcel characteristics, and perception responses. Our dependent variable was: "In your opinion, how livable is your neighborhood," in which respondents rated their neighborhood excellent, good, fair or poor (question 5 on the survey instrument). We recoded the variables to a binary classification in which excellent and good=1 and fair or poor =0.

Using neighborhood satisfaction research as a framework, we considered several individual, neighborhood/parcel and perception variables which are based on survey responses, Census data, and GIS analysis of individual parcels.

To examine characteristics of individuals, we included categorical variables to represent Millennial, Baby Boomer and Generation X. We omitted Baby Boomers in regression models. We included household income, gender, and college education. We also considered housing type, years in residence, household size, and travel mode to work.

To examine characteristics of the neighborhood, we examined tract-level data representing median household income and percent owner. We examined the household density relying on TAZ data. We also computed parcel-level characteristics including average lot size in the TAZ, distance to nearest retail establishment, parks, and transit stops.

We included several neighborhood perception variables from the survey, including desiring more neighborhood walkability (Q26), neighborhood accommodating transportation options (Q25), neighborhood density (Q19), and factor scores to represent neighborhood choice variables (Q2). To construct these variables, we relied on factor analysis to group the factors used to select the respondents' current home/neighborhood. Based on factor analysis, we computed factor scores of neighborhoods' accessibility, characteristics of the home, and affordability.

### 5.2.1 Descriptive Analysis

Descriptive statistics are summarized in Table 15. The number of respondents varies because of incomplete survey responses or lack of parcel data.

Table 15 shows averages, ranges and standard deviation for the entire sample and for both categories of the dependent variable. Consistent with our research method, variables are grouped into three categories: (1) individual; (2) neighborhood; and (3) perceptions.

**Table 15: Descriptive Statistics of All Variables**

| | Pooled | | | | Livability= Fair/Poor | | Livability= Good/Excellent | |
|---|---|---|---|---|---|---|---|---|
| **Variable** | **N** | **Min/Max** | **Mean** | **St. Dev.** | **Mean** | **St. Dev.** | **Mean** | **St. Dev.** |
| Livability level of Neighborhood (0=Fair or Poor; 1= Excellent or | 540 | 0/1 | 0.76 | 0.43 | 0.00 | | 1.00 | |
| *Individual Characteristics* | | | | | | | | |
| Millenial | 538 | 0/1 | 0.16 | 0.37 | 0.24 | 0.43 | 0.14 | 0.35 |
| Generation X | 538 | 0/1 | 0.22 | 0.41 | 0.24 | 0.43 | 0.21 | 0.41 |
| Baby Boomers (Age ) | 538 | 0/1 | 0.62 | 0.49 | 0.52 | 0.50 | 0.65 | 0.48 |
| Household Income Above State Median | 504 | 0/1 | 0.53 | 0.50 | 0.36 | 0.48 | 0.59 | 0.49 |
| Gender (0=Male; 1=Female) | 507 | 0/1 | 0.63 | 0.48 | 0.68 | 0.47 | 0.61 | 0.49 |
| College Educated (1=Yes) | 533 | 0/1 | 0.46 | 0.50 | 0.40 | 0.49 | 0.48 | 0.50 |
| Housing Type (0=Other; 1=Single Family Detached | 543 | 0/1 | 0.74 | 0.44 | 0.63 | 0.49 | 0.78 | 0.42 |
| Years in Current Residence | 493 | 0/63 | 11.95 | 11.53 | 10.44 | 11.49 | 12.52 | 11.60 |
| Household Size | 553 | 0/20 | 2.25 | 1.52 | 2.45 | 1.63 | 2.25 | 1.48 |
| Travel mode to work (0=alternative mode; 1=automobile) | 354 | 0/1 | 0.85 | 0.36 | 0.87 | 0.34 | 0.84 | 0.37 |
| *Neighborhood/Parcel Characteristics* | | | | | | | | |
| Median Household Income 2015 ($) (tract) | 384 | 9103/91875 | $ 48,815 | $ 18,845 | $ 41,081 | $ 17,276 | $ 51,302 | $ 18,476 |
| Percent Owner (tract) | 384 | 0.1/0.95 | 0.58 | 0.23 | 0.50 | 0.24 | 0.61 | 0.22 |
| Household Density (units/acre) (TAZ) | 368 | 0/33.67 | 3.80 | 3.48 | 5.19 | 5.25 | 3.34 | 2.49 |
| Average Parcel Size in Acres (parcel) | 384 | 0/1.28 | 0.22 | 0.15 | 0.19 | 0.10 | 0.23 | 0.15 |
| Distance to Retail in Miles (parcel) | 323 | 0/1.66 | 0.44 | 0.29 | 0.38 | 0.20 | 0.47 | 0.32 |
| Distance to Park in Miles (parcel) | 323 | 0.04/6.73 | 1.54 | 1.53 | 1.29 | 1.29 | 1.67 | 1.62 |
| Distance to Transit Stop in Miles (parcel) | 322 | 0.1/3.51 | 0.47 | 0.59 | 0.39 | 0.47 | 0.51 | 0.63 |
| Albany MPO | 573 | 0/1.00 | 0.32 | 0.47 | 0.33 | 0.47 | 0.33 | 0.47 |
| Rogue Valley MPO | 573 | 0/1.00 | 0.31 | 0.46 | 0.28 | 0.45 | 0.32 | 0.47 |
| Lane MPO | 573 | 0/1.00 | 0.34 | 0.47 | 0.36 | 0.48 | 0.33 | 0.47 |
| *Individual Perceptions* | | | | | | | | |
| Want a more walkable neighobhrood | 544 | 0/1.00 | 0.51 | 0.50 | 0.57 | 0.50 | 0.50 | 0.50 |
| Neighborhood supports all transportation choices desired | 540 | 0/1.00 | 0.63 | 0.48 | 0.57 | 0.50 | 0.65 | 0.48 |
| Neighborhood is too Dense | 540 | 0/1 | 0.21 | 0.41 | 0.46 | 0.50 | 0.13 | 0.34 |
| Housing Affordability Important in Housing Choice (Factor Score) | 508 | -4.78/2.82 | -0.09 | 1.02 | 0.13 | 1.03 | -0.16 | 1.00 |
| Housing Characteristics Important in Housing Choice (Factor Score) | 508 | -4.12/1.90 | 0.09 | 0.98 | -0.12 | 0.94 | 0.16 | 0.97 |
| Neighborhood Accessibility Important in Housing Choice (Factor Score) | 508 | -4.70/2.23 | -0.03 | 1.03 | -0.23 | 1.12 | 0.04 | 0.97 |

### 5.2.2 Regression Findings

Table 16 shows regression results including individual, neighborhood and perception variables. We consider each group individually (Model 1-3), and the combinations of groups (Model 4-6), in addition to all variables (Model 7). The dependent variable was computed from question 5 (In your opinion, how livable is your neighborhood," in which respondents rated their neighborhood excellent, good, fair or poor (question 5 on the survey instrument). We recoded the variables to a binary classification in which excellent and good=1 and fair or poor =0.
Model 1 considers only characteristics of the individual respondent and controls for the MPO. In this model, the explanatory power is relatively weak. The only statistically significant variables (at the 90% confidence level) are household income and housing type. Higher-income respondents and respondents in single-family, detached homes see their neighborhoods as more livable, all else equal. The direction of variables is also interesting. Millennial groups see their neighborhoods as more livable than Boomers (the omitted category) while Generation X see neighborhoods as less livable. Female, college education, and years in residence also show a positive influence on perception of livability but are not statistically significant. Both Rogue and Lane have a negative influence on livability (relative to Albany) but neither are significant.
Model 2 only considers characteristics of the neighborhood. The explanatory power is slightly higher than only considering individual characteristics. Median household income has a positive and statistically significant impact on perception of livability, while percentage homeowners and housing density have a statistically significant and negative impact on perception of livability. Several variables are not statistically significant and the signs are expected, including average parcel size (positive), distance to transit stops (negative meaning being closer has a positive impact). Distance to retail and distance to parks show counterintuitive signs but are not statistically significant. Like Model 1, both Rogue and Lane have a negative influence on livability (relative to Albany) but neither are significant.

Model 3 only considers perception variables. The explanatory power is stronger than both individual and neighborhood characteristics alone. Two variables are statistically significant and negative: neighborhood is too dense and importance of housing affordability in housing choice. On the other hand, neighborhood accessibility as important in housing choice has a positive but statistically significant impact on livability. This shows that there is a tradeoff between affordability and accessibility. Respondents who want a more walkable neighborhood than they have perceive livability more negatively (but this is not statistically significant). Respondents who think their neighborhood has all the transportation choices they desire see the neighborhood more favorably but this is not statistically significant. Both Rogue and Lane have a negative influence on livability (relative to Albany) but neither are significant.

Models 4 through 6 show combinations of variable groups. In this description, we focus on interesting results that vary from Models 1 through 3. All of these models have greater explanatory power than groups of each variable alone, but that is to be expected. Model 6, which shows neighborhood and perception variables, has the strongest explanatory power. In Model 4, only travel mode to work has a statistically significant effect on perception of livability. Respondents who drive to work perceive their neighborhoods as less livable. Model 5 shows three variables that are statistically significant. In this model, Lane MPO has a negative impact on livability as well as a perception that the neighborhood is too dense. Neighborhood

accessibility as a factor in housing choice has a positive influence on the perception of livability. Model 6 shows several statistically significant variables. The following variables have a positive and statistically significant impact on livability: median household income, distance to park (being further from parks), and neighborhood supporting all transportation choices. The following variables have a negative and statistically significant impact: percentage of homeowners, household density, Rogue Valley MPO, Lane MPO, perception the neighborhood is too dense, and importance of housing affordability in housing choice.

Finally, Model 7 includes all variables. While the explanatory power improves in this model, statistical significance changes for several variables. The following variables have a positive and statistically significant impact: years in residence, further from retail, further from parks, and perception that the neighborhood includes all transportation choices. The following variables have a negative and statistically significant impact: driving to work, Rogue Valley MPO, Lane MPO, perception that the neighborhood is too dense, housing affordability is important in housing choice, and further from transit.

**Table 16: Regression Model Results**

| | Model 1 | | Model 2 | | Model 3 | | Model 4 | | Model 5 | | Model 6 | | Model 7 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Individual | | Neigh. | | Perception | | Individual + Neigh. | | Individual + Perception | | Neigh.+ Perception | | All | |
| | β | *p* | β | *p* | β | *p* | β | *p* | β | *p* | β | *p* | β | *p* |
| *Individual Characteristics* | | | | | | | | | | | | | | |
| Millenial | 0.059 | 0.889 | | | | | 0.227 | 0.704 | 0.498 | 0.307 | | | 0.778 | 0.317 |
| Generation X | -0.204 | 0.577 | | | | | -0.337 | 0.506 | 0.159 | 0.705 | | | -0.487 | 0.467 |
| Household Income Above State Median | 0.569 | 0.077 | | | | | 0.083 | 0.856 | 0.412 | 0.258 | | | 0.075 | 0.892 |
| Gender (0=Male; 1=Female) | 0.040 | 0.894 | | | | | -0.125 | 0.765 | -0.028 | 0.934 | | | -0.007 | 0.989 |
| College Educated (1=Yes) | 0.452 | 0.161 | | | | | 0.516 | 0.247 | 0.585 | 0.106 | | | 0.819 | 0.125 |
| Housing Type (0=Other; 1=Single Family Detached | 0.600 | 0.087 | | | | | 0.362 | 0.472 | 0.450 | 0.261 | | | -0.830 | 0.183 |
| Years in Current Residence | 0.028 | 0.139 | | | | | 0.043 | 0.106 | 0.032 | 0.144 | | | 0.094 | 0.025 |
| Household Size | -0.043 | 0.604 | | | | | -0.063 | 0.603 | 0.014 | 0.905 | | | 0.094 | 0.669 |
| Travel mode to work (0=alternative mode; 1=automobile) | -0.641 | 0.133 | | | | | -1.497 | 0.016 | -0.390 | 0.413 | | | -1.630 | 0.025 |
| *Neighborhood/Parcel Characteristics* | | | | | | | | | | | | | | |
| Median Household Income ($1000) (tract) | | | 0.062 | 0.001 | | | 0.049 | 0.073 | | | 0.065 | 0.005 | 0.040 | 0.247 |
| Percent Owner (tract) | | | -3.268 | 0.029 | | | -1.543 | 0.465 | | | -3.515 | 0.041 | 0.337 | 0.901 |
| Household Density (units/acre) (TAZ) | | | -0.088 | 0.096 | | | -0.035 | 0.605 | | | -0.118 | 0.056 | -0.073 | 0.379 |
| Average Parcel Size in Acres (parcel) | | | 0.878 | 0.555 | | | 1.969 | 0.427 | | | -0.002 | 0.999 | 3.991 | 0.182 |
| Distance to Retail in Miles (parcel) | | | 0.661 | 0.313 | | | 1.098 | 0.268 | | | 0.988 | 0.188 | 3.049 | 0.023 |
| Distance to Park in Miles (parcel) | | | 0.256 | 0.079 | | | 0.227 | 0.285 | | | 0.383 | 0.022 | 0.525 | 0.041 |
| Distance to Transit Stop in Miles (parcel) | | | -0.280 | 0.419 | | | -0.275 | 0.557 | | | -0.213 | 0.600 | -0.900 | 0.100 |
| Rogue Valley MPO | -0.161 | 0.657 | -0.497 | 0.294 | -0.130 | 0.654 | -0.635 | 0.377 | -0.236 | 0.566 | -1.175 | 0.036 | -1.987 | 0.037 |
| Lane MPO | -0.387 | 0.286 | -0.464 | 0.219 | -0.405 | 0.149 | -0.760 | 0.170 | -0.725 | 0.082 | -0.909 | 0.046 | -1.968 | 0.008 |
| *Perceptions of Respondents* | | | | | | | | | | | | | | |
| Want a more walkable neighborhood | | | | | -0.268 | 0.266 | | | -0.152 | 0.661 | -0.431 | 0.195 | -0.276 | 0.614 |
| Neighborhood supports all transportation choices desired | | | | | 0.354 | 0.141 | | | 0.383 | 0.269 | 0.661 | 0.050 | 1.612 | 0.007 |
| Neighborhood is too dense | | | | | -1.757 | 0.000 | | | -1.562 | 0.000 | -1.864 | 0.000 | -2.252 | 0.000 |
| Housing Affordability Important in Housing Choice (Factor Score) | | | | | -0.251 | 0.031 | | | -0.163 | 0.320 | -0.330 | 0.049 | -0.476 | 0.083 |
| Neighborhood Accessibility Important in Housing Choice (Factor Score) | | | | | 0.139 | 0.228 | | | 0.371 | 0.034 | 0.103 | 0.553 | 0.231 | 0.409 |
| Constant | 0.770 | 0.194 | 0.129 | 0.857 | 1.799 | 0.000 | -0.090 | 0.934 | 0.766 | 0.309 | 0.968 | 0.306 | -0.992 | 0.529 |
| N | 278 | | 266 | | 496 | | 159 | | 264 | | 293 | | 152 | |
| $R^2$ ( Cox and Snell) | 0.081 | | 0.103 | | 0.131 | | 0.185 | | 0.188 | | 0.240 | | 0.339 | |
| $R^2$ (Nagelkerke) | 0.119 | | 0.151 | | 0.198 | | 0.264 | | 0.277 | | 0.353 | | 0.485 | |

## 5.2.3 Summary

The authors draw several conclusions from the regression analysis. Not surprisingly, density has a negative effect on perceptions of livability. What is interesting about this result is that the perception of a neighborhood being too dense is statistically significant in all the models it was used in and is more influential than objective measures of density (housing units per acre or lot size).

The results show interesting perceptions among respondents by generation. When controlling for other characteristics like income, Millennials see neighborhoods as more livable than Boomers and Boomers more livable than Gen-Xers. The results suggest that individuals weigh tradeoffs

between accessibility and affordability, with housing affordability having a negative effect and accessibility having a positive effect. Income has a weak positive effect, while housing ownership has a stronger positive effect.

One of the interesting results of the analysis is that transportation appears to be more important to perceptions of neighborhood livability than land use or density. While density and small lot sizes negatively impact livability, the perception of a lack of transportation options negatively influences livability. The results suggest that access to transit positively influences perceptions of livability while, counterintuitively, distance to parks and retail show negative effects.

Walkability appears prominently in perceptions of neighborhood livability. Driving to work has a negative impact on livability. Moreover, the results suggest that individuals who are dissatisfied with the mode choices available do not think the neighborhood has all the options they want in their neighborhood and want a more walkable environment.

Finally, the Central Lane and Rogue Valley MPOs both had negative effects on perceptions of livability when compared with the Albany MPO. The Albany MPO has a population less than half the size of the Rogue Valley MPO and about one-quarter the size of the Central Lane MPO. While it is not possible to say that population size explains this result, the results suggest that individuals who live in smaller communities may perceive them as more livable relative to those in larger communities.

# 6.0 CONCLUSIONS

This research project examined how land use and transportation impact livability in three different MPOs in Oregon. While Oregon has established goals of improving livability in land use and transportation plans, there is limited understanding of how transportation and land use contribute to perceptions of livability. We focused our research on smaller communities outside of the Portland region that have been overlooked in previous studies. Relying on a mixed-mode survey administered to a stratified random sample of registered voters from different density categories, we gauged perceptions of livability and the contributions of land use and transportation. We received an effective response rate of 18% (537 responses), though some responses were incomplete.

This research provides government agencies and community organizations a broader perspective on which characteristics of the built environment add to or detract from livability, or what is sometimes referred to as the "good community." For instance, what does a livable community look like? Is it possible to measure livability objectively? What do residents consider livable and how do these perceptions differ from local and state agency conceptions? Finally, how can local and state governments achieve the objective of creating livable communities? These questions provide the foundation for this research.

Our regression analysis revealed the perceptions were more influential than objective (GIS) or sociodemographic measures. This finding mirrors previous literature which has found that perceptions are the most influential determinants of satisfaction when controlling for sociodemographic characteristics.

Some of our findings offer interesting insights into the determinants of livability. We found that people trade off affordability and livability. When people said that housing affordability was more important in decisions about housing and neighborhood choice, they had more negative perceptions of livability in their neighborhood. But people who prioritize accessibility have a more positive perception of livability. This finding warrants further investigation into the intersection with neighborhood choice and income.

Sociodemographics of individuals and neighborhoods showed interesting and unexpected results. Generation (age) affects perceptions of livability. While Boomers seem to have more positive perceptions of livability overall in the descriptive data, when we controlled for socioeconomic status Millennials saw neighborhoods as more livable than Boomers and Boomers saw neighborhoods as more livable than Generation X. As we expected, higher-income neighborhoods were more livable than lower-income neighborhoods but, surprisingly, neighborhoods with a higher share of owner-occupied housing were perceived as less livable. The following table conveys the direction of the influence of objective and subjective measures on perception of livability. This table summarizes findings from descriptive analysis and regression analysis. We organized the table around measures of housing choice, urban form, transportation and amenities (like access to parks and services.)

| | Positive | Negative |
|---|---|---|
| **Housing Choice** | Prioritizing accessibility in housing/neighborhood choice | Prioritizing affordability in housing/neighborhood choice |
| | Affordability | |
| | Safety | |
| | Dwelling characteristics | |
| **Urban Form** | Sidewalks | Mixed use near homes |
| | Street trees | Density |
| | Mix of retail, residential and services | Perception that neighborhood is too dense |
| | Quality housing | |
| **Transportation** | Variety of options | Lack of desired transportation options |
| | Pedestrian options | Driving to work |
| | Sidewalks, trees, crosswalks | |
| **Amenities** | Proximity to parks (~) | Proximity to retail |
| | Proximity to grocery stores | |

The research has several implications. First, access to transportation options is important in descriptive and regression analysis. More specifically, individuals who reported better access to transportation options across a broad range of measures reported higher ratings of livability. Pedestrian improvements and natural amenities were important to survey respondents. This suggests that to improve livability, local governments seek balanced transportation options including investments in non-auto-centric modes – particularly pedestrian infrastructure. While the results suggest transportation options improve perceptions of livability, it is important to note that those options should not exclude automobile or vehicular options – 86% of survey respondents indicated this was important in their ideal neighborhood.

The findings, however, suggest challenges with transit. Regression results show a positive relationship between distance to transit stops and livability (e.g., closer transit stops relate to higher perceptions of livability). But, the results suggest that residents may not be tolerant of the densities needed to support alternative modes.

One of the core objectives of this research was to better understand how density relates to perceptions of livability. As a general observation, most respondents did not accurately indicate the actual density of the neighborhood they live in. In fact, 28% indicated the correct density range, while 53% of respondents indicated perceived densities that were higher than the actual density. Nineteen percent of respondents indicated perceived densities that were lower than the actual density in their neighborhood.

Many communities face ongoing issues with housing affordability, and research increasingly points to zoning codes and NIMBYism as key contributors. The results suggest that density alone does not improve livability and has a negative impact on perceptions of livability. As other studies have shown, density needs to be combined with other services and accessibility to improve livability.

In short, people don't understand density within their neighborhoods. The implications are that local and state government should attempt to educate citizens about what density looks like. Researchers should continue to conduct research that gets at the root causes of these perceptions, which may be more strongly related to income and housing tenure than density. People trade off affordability for livability. Affordable housing policy should focus on making more livable neighborhoods accessible to all income groups.

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# 8.0 APPENDIX: SURVEY INSTRUMENT

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# The Oregon Livability Survey

**Dear Community Member,**

**You've been selected to participate in the Oregon Livability Survey!** The Oregon Livability Survey is intended to measure citizen perceptions of and preferences for livability.

The term "livability" is frequently used and promoted by communities across the United States. In Oregon, various local communities, including some state agencies, seek to improve livability. **But what is it?** The Community Service Center at the University of Oregon wants to know what you think livability is, specifically as it relates to transportation and land use patterns in your neighborhood. This survey will help Oregon governments and organizations better understand your community's needs and preferences.

This survey should take you about 15 to 30 minutes to complete. As an incentive, we will randomly select four participants to win $50 gift cards. **To enter to win, provide your contact information on the last page of the survey.** You do not have to complete the survey to enter the raffle.

There are two ways to provide feedback; choose the survey method that is most convenient to you.

1) **Paper Mailer Survey Instructions:**

- ☐ This questionnaire should be filled out by the individual in which this survey was addressed to.
- ☐ Carefully read each question and mark your responses.
- ☐ We will not publish or share any personally identifying information that you share with us.*
- ☐ **Please complete the survey and return by mail using the provided envelope by March 27, 2017.**

**Please record your survey code located on the front on your envelope above your address here:** ☐☐☐☐
(This will allow us to take your name off our mailing list after you complete the survey)

**– OR –**

2) **Online Survey Instructions:**

- ☐ Visit https://goo.gl/Xedb5C or use the QR Code:
- ☐ This questionnaire should be filled out by the individual in which this survey was addressed to.
- ☐ Carefully read each question and mark your responses.
- ☐ We will not publish or share any of the personally identifying information that you share with us.*
- ☐ **Please complete the online survey by March 27, 2017.**

**This survey was developed by the University of Oregon's Community Service Center (CSC) in partnership with the University of Oregon and funded through the National Institute of Transportation and Communities. Your answers are and will be completely confidential. Any personally identifying information will not be tied to any product this research produces. We will not share or sell your personally identifying information. By completing and returning this survey you provide consent in allowing the CSC to use these findings for research. You may choose not to participate in this survey without penalty. If you have any questions, please contact Robert Parker, Community Service Center Director (541.346.3801 or rgp@uoregon.edu).*

## First, we would like to know what you think LIVABILITY is.

**There are no official definitions of livability. One of the goals of this survey is to gain an understanding of resident perceptions of livability. In this survey, we ask questions about your IDEAL neighborhood and about your CURRENT neighborhood. Your IDEAL neighborhood is where you would like to live and your CURRENT neighborhood is where you currently live. For some respondents, your IDEAL neighborhood and CURRENT neighborhood may be the same. A neighborhood is defined as anything within a 20-minute walk of your home.**

**Q1** **How SATISFIED or DISSATISFIED are you with your current house/home, neighborhood, city, region, and state?**
*Consider "neighborhood" as everything within a 20 minute walk of your home. Note that the average person can walk about one mile in 20 minutes.*

| Geographic Levels: | Extremely satisfied | Somewhat satisfied | Neither satisfied nor dissatisfied | Somewhat dissatisfied | Extremely dissatisfied |
|---|---|---|---|---|---|
| House/Home | ☐ | ☐ | ☐ | ☐ | ☐ |
| Your neighborhood | ☐ | ☐ | ☐ | ☐ | ☐ |
| Your city | ☐ | ☐ | ☐ | ☐ | ☐ |
| Your county | ☐ | ☐ | ☐ | ☐ | ☐ |
| Oregon | ☐ | ☐ | ☐ | ☐ | ☐ |

**Q2** **Rate the following factors in level of importance for selecting your current home or neighborhood.**

| Characteristics: | Extremely important | Somewhat important | Neither important nor unimportant | Somewhat unimportant | Extremely unimportant |
|---|---|---|---|---|---|
| Proximity to neighbors | ☐ | ☐ | ☐ | ☐ | ☐ |
| Proximity to parks or open space | ☐ | ☐ | ☐ | ☐ | ☐ |
| Proximity to family members | ☐ | ☐ | ☐ | ☐ | ☐ |
| Distance to work or school | ☐ | ☐ | ☐ | ☐ | ☐ |
| Distance to retail/services | ☐ | ☐ | ☐ | ☐ | ☐ |
| Affordability | ☐ | ☐ | ☐ | ☐ | ☐ |
| Access to transportation options (i.e. ability to walk, bike or take the bus to destinations) | ☐ | ☐ | ☐ | ☐ | ☐ |
| Crime levels | ☐ | ☐ | ☐ | ☐ | ☐ |
| School quality | ☐ | ☐ | ☐ | ☐ | ☐ |
| Neighborhood characteristics (i.e. homes of a similar style v. variety of types, historic homes) | ☐ | ☐ | ☐ | ☐ | ☐ |
| House characteristics (i.e. number of bedrooms, accessibility, etc.) | ☐ | ☐ | ☐ | ☐ | ☐ |

**Q3** **If you had to describe your IDEAL LIVABLE NEIGHBORHOOD in three words, what would they be? Please write them in the space provided below.**

1: _____

2: _____

3: _____

**Q4** **Would the words you listed in Q3 be the same words you would use to describe your IDEAL LIVABLE CITY?**

- ☐ Yes
- ☐ No, they would differ slightly
- ☐ No, they would differ completely

**Q5** **In your opinion, how LIVABLE is your current house/home, neighborhood, city, region, and state?**

| Geographic Levels: | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| House/Home | ☐ | ☐ | ☐ | ☐ |
| Your neighborhood | ☐ | ☐ | ☐ | ☐ |
| Your city | ☐ | ☐ | ☐ | ☐ |
| Your county | ☐ | ☐ | ☐ | ☐ |
| Oregon | ☐ | ☐ | ☐ | ☐ |

## Next, we would like to know how TRANSPORTATION and LAND USE influences your perception of livability at the neighborhood level.

**Q6** **What is the IDEAL level of foot traffic in your IDEAL NEIGHBORHOOD?** *(the place you want to live)*

- ☐ Very little foot traffic. No activities with a 20-minute walk.
- ☐ Moderate foot traffic intermittently. Some activities within a 20-minute walk.
- ☐ Heavy foot traffic. Many activities available day and night.

**Q7** **Based on your response to Q6, what does your CURRENT NEIGHBORHOOD resemble?**

- ☐ Very little foot traffic. No activities with a 20-minute walk.
- ☐ Moderate foot traffic intermittently. Some activities within a 20-minute walk.
- ☐ Heavy foot traffic. Many activities available day and night.

**Q8** **Where would you prefer to see parking in your IDEAL NEIGHBORHOOD? (check all that apply)**

- ☐ Driveways
- ☐ Along the street
- ☐ Personal garage
- ☐ Behind the house
- ☐ Parking lots in front of buildings
- ☐ Parking lots on side of buildings
- ☐ Parking lots behind buildings
- ☐ Parking garage

**Q9** **Consider your IDEAL NEIGHBORHOOD. How important is living within a 20 MINUTE WALK of the following places listed below?**

| Access to Places: | Extremely important | Somewhat important | Neither important nor unimportant | Somewhat unimportant | Extremely unimportant |
|---|---|---|---|---|---|
| Work | ☐ | ☐ | ☐ | ☐ | ☐ |
| Shops and Services (i.e. retail) | ☐ | ☐ | ☐ | ☐ | ☐ |
| Grocery Store | ☐ | ☐ | ☐ | ☐ | ☐ |
| Restaurants and Entertainment | ☐ | ☐ | ☐ | ☐ | ☐ |
| Parks and Public/Open Space | ☐ | ☐ | ☐ | ☐ | ☐ |
| School or Children's School | ☐ | ☐ | ☐ | ☐ | ☐ |
| Public Services (i.e. library, emergency/police station, post office) | ☐ | ☐ | ☐ | ☐ | ☐ |
| Medical Services | ☐ | ☐ | ☐ | ☐ | ☐ |
| Religious or Cultural Services | ☐ | ☐ | ☐ | ☐ | ☐ |
| Transit Station/Bus Stops | ☐ | ☐ | ☐ | ☐ | ☐ |
| Other:_____ | ☐ | ☐ | ☐ | ☐ | ☐ |

**Q10** **What characteristics of a street or intersection would you want in your IDEAL NEIGHBORHOOD? (check your top three elements)**

- ☐ Traffic Lights
- ☐ Traffic Signs (i.e. stop sign, slow traffic)
- ☐ Crosswalks
- ☐ Raised Crosswalks
- ☐ Extended curbs (sidewalk curbs bulge out)
- ☐ Trees or greenery
- ☐ Curb ramps
- ☐ Protected turn lanes (auto)
- ☐ Dedicated bicycle facilities
- ☐ Sidewalks
- ☐ Other: _____

**Q11** **What mix of land uses do you prefer in your IDEAL NEIGHBORHOOD?**

- ☐ Only residential in my neighborhood.
- ☐ Residential surrounding my house BUT a mix of residential, retail, and services further away is okay.
- ☐ A mix of residential, retail, and services throughout my neighborhood.
- ☐ A mix of residential, retail, and office throughout my neighborhood.

**Q12** **What type of housing would you prefer to see in your IDEAL NEIGHBORHOOD? (check all that apply)**

- ☐ Detached Single-Family Homes
- ☐ Duplexes
- ☐ Apartments
- ☐ Manufactured Homes
- ☐ Temporary Housing
- ☐ Secondary Dwelling (i.e. granny flat, backyard cottage, basement apt)
- ☐ Tiny houses
- ☐ Live/Work Units (i.e. home + place of employment)
- ☐ Townhomes

**Q13** **Consider your IDEAL NEIGHBORHOOD. How important is having/seeing the following elements within a 20 MINUTE WALK of your ideal home?**

| | Extremely important | Somewhat important | Neither important nor unimportant | Somewhat unimportant | Extremely unimportant |
|---|---|---|---|---|---|
| Presence of Building Diversity in Style/Design | ☐ | ☐ | ☐ | ☐ | ☐ |
| Presence of Buildings in a Similar Style/Design | ☐ | ☐ | ☐ | ☐ | ☐ |
| Presence of Building with Similar Heights | ☐ | ☐ | ☐ | ☐ | ☐ |
| Presence of Buildings Setback at least 10 feet from Street | ☐ | ☐ | ☐ | ☐ | ☐ |
| Presence of Quality Housing | ☐ | ☐ | ☐ | ☐ | ☐ |
| Presence of Wide Roads/Streets | ☐ | ☐ | ☐ | ☐ | ☐ |
| Presence of Sidewalks | ☐ | ☐ | ☐ | ☐ | ☐ |
| Presence of Short Blocks (Length) | ☐ | ☐ | ☐ | ☐ | ☐ |
| Presence of Street Layout on a Grid | ☐ | ☐ | ☐ | ☐ | ☐ |
| Presence of Culs-de-sac | ☐ | ☐ | ☐ | ☐ | ☐ |
| Presence of Public spaces | ☐ | ☐ | ☐ | ☐ | ☐ |
| Presence of Natural Features/Biodiversity | ☐ | ☐ | ☐ | ☐ | ☐ |
| Presence of Tree-Lined Streets | ☐ | ☐ | ☐ | ☐ | ☐ |
| Presence of Physical Boundary or Border in Neighborhood (e.g. river, park or arterial) | ☐ | ☐ | ☐ | ☐ | ☐ |
| Other: _____ | ☐ | ☐ | ☐ | ☐ | ☐ |

**Q14** **How important is it that various elements (see examples in Q13) in your neighborhood are visually interesting? (i.e. that elements encompass design/architectural features)**

- ☐ Extremely important
- ☐ Somewhat important
- ☐ Neither important nor unimportant
- ☐ Somewhat unimportant
- ☐ Extremely unimportant

## Next, we would like to understand your preferences of livability as it relates to YOUR RESIDENCE AND NEIGHBORHOOD.

**Q15** **How would you describe your CURRENT home?**

- ☐ No private outdoor space, possible shared space
- ☐ Small private courtyard, patio, or balcony
- ☐ Small private yard
- ☐ Medium sized private yard separating home from neighbor
- ☐ Large private yard
- ☐ Acreage
- ☐ Other: _____

**Q16 How would you describe your IDEAL home?**

- ☐ No private outdoor space, possible shared space
- ☐ Small private courtyard, patio, or balcony
- ☐ Small private yard
- ☐ Medium sized private yard separating home from neighbor
- ☐ Large private yard
- ☐ Acreage
- ☐ Other: _____

**Q17 How would you classify the building in which you CURRENTLY live?**

- ☐ Single-Family Detached Home
- ☐ Single-Family Attached Home(i.e. townhome or condo)
- ☐ Two to Four Apartments
- ☐ Five to Nine Apartments
- ☐ Ten or More Apartments
- ☐ Mobile Home or Other Type of Housing

**Q18 How would you classify the building in which you would IDEALLY live?**

- ☐ Single-Family Detached Home
- ☐ Single-Family Attached Home (i.e. townhome or condo)
- ☐ Two to Four Apartments
- ☐ Five to Nine Apartments
- ☐ Ten or More Apartments
- ☐ Mobile Home or Other Type of Housing
- ☐ No preference

**Q19 In your opinion, would you characterize your CURRENT NEIGHBORHOOD as too dense?**

- ☐ Yes
- ☐ No
- ☐ Don't Know

**Q20 In your opinion, how dense is your CURRENT NEIGHBORHOOD compared to the rest of your city?**

- ☐ High/Very Dense
- ☐ Medium/Moderately Dense
- ☐ Low/Not Dense

**Q21 How dense do you think your CURRENT NEIGHBORHOOD is? (Note: an acre is about the size of a football field)**

- ☐ 0 to 1 housing units/acre
- ☐ 1 to 3 housing units/acre
- ☐ 3 to 6 housing units/acre
- ☐ 6 to 12 housing units/acre
- ☐ 12+ housing units/acre

## Please share your perceptions about transportation options.

**Q22 What kind of transportation options would you want in your <u>IDEAL NEIGHBORHOOD?</u> (check all that apply)**

- ☐ Auto/Vehicular Options
- ☐ Pedestrian Options
- ☐ Bicycle Options
- ☐ Carsharing Options (i.e. ZipCar)
- ☐ Public Transit: City Bus
- ☐ Public Transit: Cable/Wire-Propelled Option (light rail)
- ☐ Intercity Rail and Bus (i.e. Amtrak, Greyhound, etc.)
- ☐ Multi-Use Pathway Options (non-motorized, etc.)

**Q23** **Indicate the mode of transportation that you use MOST FREQUENTLY to get to the various places listed below in a typical week.**

| | Automobile / Carpool | Bicycle | Walk | Bus/Public Transit | Not Applicable |
|---|---|---|---|---|---|
| How do you get to work? | ☐ | ☐ | ☐ | ☐ | ☐ |
| How do you get to shopping centers? | ☐ | ☐ | ☐ | ☐ | ☐ |
| How do you get to the grocery store? | ☐ | ☐ | ☐ | ☐ | ☐ |
| How do you get to parks and open areas? | ☐ | ☐ | ☐ | ☐ | ☐ |
| How do you get your children to school? | ☐ | ☐ | ☐ | ☐ | ☐ |

**Q24** **If the choice was yours (and you were not constrained by distance, time, or finances) what would be your MOST PREFERRED mode of transportation? (Select only one)**

☐ Automobile ☐ Walking ☐ Bicycle

**Q25** **Please indicate your level of agreement or disagreement with this statement: "My neighborhood accommodates all of the transportation options I would like."**

☐ Strongly Agree
☐ Agree
☐ Neither Agree nor Disagree
☐ Disagree
☐ Strongly Disagree

**Q26** **Please indicate your level of agreement or disagreement with this statement: "I want my neighborhood to be more bicycle/pedestrian-friendly."**

☐ Strongly Agree
☐ Agree
☐ Neither Agree nor Disagree
☐ Disagree
☐ Strongly Disagree

## Finally, we would like to know a little bit about you.

**Q27** **When was the last time you moved (year)? _____**

**Q28** **What is your age?**

☐ 18-19 years
☐ 20 to 24 years of age
☐ 25 to 34 years of age
☐ 35 to 44 years of age
☐ 45 to 54 years of age
☐ 55 to 64 years of age
☐ 65 years and over

**Q29** **What was your annual household income in 2016?**

☐ Less that $15,000
☐ $15,000 to $24,999
☐ $25,000 to $34,999
☐ $35,000 to $49,999
☐ $50,000 to $74,999
☐ $75,000 to $149,999
☐ $150,000 to $199,999
☐ $200,000 or more

**Q30** **What is your gender identity?** _____ ☐ Prefer not to say

**Q31** **What is your race/ethnicity?**

☐ Prefer not to say
☐ White
☐ Black, African American
☐ Native Hawaiian, Other Pacific Islander
☐ Latino/Hispanic
☐ American Indian, Alaska Native
☐ Asian
☐ Other: _____

**Q32** **What zip code do you live in?** _____

**Q33** **What is the highest degree/level of school you have completed?**

☐ Less than high school graduate
☐ High school graduate (or equivalency)
☐ Some college or associates degree
☐ Bachelor's degree
☐ Graduate degree or higher

**Q34** **Indicate the number of people in your household.**

_____ Number of individuals who are 17 years of age or younger
_____ Number of individuals who are 18 years of age or older

**Q35** **Do you rent or own the housing unit that you live in currently?**

☐ Own ☐ Rent ☐ Occupy without Payment ☐ Prefer not to say

**Q36** **Finally, indicate the extent to which you agree or disagree with this statement: "My neighborhood is livable."**

☐ Strongly Agree
☐ Agree
☐ Neither Agree nor Disagree
☐ Disagree
☐ Strongly Disagree

**Q37** **Is there anything else that you would like to share with us about the concept of livability or your community?**

**Q38** **If you want to be eligible for the raffle or you like to participate in a focus group please provide your email address:** _____

☐ Yes, I would like to be contacted to participate in a focus group.
☐ No, thank you.
☐ Not sure, please send me more information.

**Your email address, as well as any identifying information, will not be tied to your responses in any product that this research produces. We will not sell or share any personally identifying information.*

## Thank you for participating!


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