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The aging population is increasing across the U.S.A., especially on Orcas Island, Washington, where many choose to retire for its unique amenities. While independent travel mobility is an important issue for aging Americans since most drive and must eventually cease driving, those aging on Orcas Island face a unique challenge due to geographic isolation in a rural environment and lack of sufficient transportation. This study explores the role that mobility holds for aging adults on Orcas Island in order to understand any conflicting needs and expectations of those who are no longer able to drive, or who anticipate this scenario in the future.

A sample of 62 adults who responded to a survey of 200 questionnaires made available at local organizations answered questions involving their lifestyles and future preferences in light of any reduced mobility, in order to determine how reduced mobility may affect their quality of life. The most popular reason respondents migrated to Orcas Island is for physical geography, e.g. its natural environment, scenic landscape and tranquility. The large majority of the sample would like to remain in their homes, or age in place, and a slight majority also indicated that they would be happier living somewhere with greater independent travel ability. The most common way respondents would address reduced mobility is by home healthcare, followed by new transportation services. The results indicate that the unique qualities of the island and sense of place help to compensate for some of the reduction in quality of life caused by reduced mobility.

THE GEOGRAPHY OF MOBILITY AND AGING IN COMMUNITY:

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CHAPTER I

INTRODUCTION

The aging population, categorized as those aged 65 years and older, is increasing in the U.S.A. and is projected to be doubled by 2050. In 2010, this cohort contained 40.2 million people, or 13% of the country's population. In 2013, it contained 44.7 million people and currently represents an estimated 14.1% of the American population. By 2025, over 62 million people, or approximately 18% of the population, will be in this cohort. This amount is expected to increase to 88.5 million, or 20.2%, by 2050; and then to 98 million by 2060 (Administration on Aging, Administration for Community Living, & U.S. Department of Health and Human Services, 2014; Bailey, 2004). An even sharper increase will occur among those aged 85 years and older, which is the fastest growing population group in the country (Yen & Anderson, 2012). By 2050, their percentage of the total population will have risen from 5.8 million, or 1.9%, to 19 million, or 4.3% (Administration on Aging et al., 2014; Boschmann & Brady, 2013).

Much of the aging population and especially those who are 85 years of age and older experience decreased mobility, caused by health issues that accompany aging or which become exacerbated in old age (Li, Iadarola, & Maisano, 2007). The loss of physical ability of these older adults affects their access to activities outside of the home and even their ability to age in place, or to continue to age in their home for as long as comfortably possible (Yen & Anderson, 2012). These impacts are more substantial

when the aging individuals live in rural or suburban locations – as most baby boomers do (Hanson & Hildebrand, 2011) – and are otherwise unable to access activities or social connections without the use of a vehicle. Some peripheral losses that can occur include regular access to a social network of friends or family, community involvement or vocational participation, and a comfortable or preferred lifestyle routine, all of which contribute to aging individuals' quality of life and societal engagement.

The quality of life of older adults is influenced by several important components. Those examined here in more depth include mobility and sense of place. Others include components such as mental and physical health, autonomy, and social integration (Stephens, Breheny, & Mansvelt, 2014). While certain influences on quality of life may be within individuals' control, others such as the built environment and its conduciveness for physical activity are not. This is especially true for mobility, as individuals' ability to travel outside of the home is impacted by the accessibility of the built environment surrounding their residential location. For those unable to drive, there may be nowhere within walking distance of their home; and for the 75% of the older population living in areas that are not densely populated enough to warrant efficient public transit services (Dumbaugh, 2008), there may be no feasible means by which to regularly travel. This negatively impacts older adults' quality of life if they can then no longer regularly engage in activities outside of the home.

Sense of place is another important component that impacts older adults' quality of life to varying degrees. It involves an individual's subjective experience with their location and how that shapes the location's level of importance. While many components

of quality of life are subjective, sense of place is especially so since it is constructed by the meaning that someone deems to a place (Relph, 1976). Mobility is emphasized as a universal component of living in the world since society depends upon movement (Cresswell, 2011), while sense of place exposes the significance that people place on a distinct geographic area.

While the literature discusses the importance of mobility retention for the elderly, Orcas Island, Washington attracts an increasing aging population that risks decreased mobility due to its limited transportation options and built environment (Aging on Orcas Island, 2013). Orcas Island is an attractive destination for retirees, but its popularity among this cohort is contrary to the literature which places significance on mobility features for the elderly. The purpose of this thesis is to identify: 1) the features that hold greater value than mobility for the Orcas Island aging population and for which residents exchange mobility benefits; 2) the impacts that decreased mobility will have on this population in light of those values; and 3) what may be done to mitigate those experiences based on their needs and preferences. Findings reveal which courses of action, such as transportation initiatives or accessible developments adjacent to places of interest in a walkable area, may best improve older residents' quality of life in light of present or anticipated mobility reduction. On a larger scale, findings may better equip the planning and gerontology fields to address the impact that geography has on the aging population's mobility limitations and expectations as this group continues to increase across the nation.

CHAPTER II

LITERATURE REVIEW

Orcas Island, Washington

The sparsely populated Orcas Island is the largest of the San Juan Islands which are located in the northwestern corner of Washington (figure 1). The San Juan Islands, which form San Juan County, have experienced a substantial increase in the percentage of residents aged 65 and above, from 10.2% in 1990 to 23.2% in 2010 (Losleben, 2013). In 2013, those aged 65 and older comprised 27.8% of San Juan County, which was more than twice as much as Washington's 13.6% (U.S. Census Bureau, 2015). This cohort currently comprises approximately 27% of the population on Orcas Island alone and is projected to increase to 37% by 2025. The estimated population of San Juan County's census tract 9601, which encompasses Orcas Island in addition to a few other smaller and sparsely populated residential islands immediately surrounding it, was 5,056 in 2013. About 1,330 people, or 26.3% of the population, were at least 65 years old, and 2.6% at least 85 years old (U.S. Census Bureau, 2013). Other estimates projected the total population at 5,246 with 1,182 residents aged 65 and older, or 22.5% (Losleben, 2013); and more recent estimates projected even higher amounts with a current total population nearing 5,700 with 2,000 residents aged 65 and older (D. K., personal communication, March 20, 2015). Within this group, the most rapidly increasing age range is 75-84 years old. The median age in Washington was 37 in 2010, similar to that of the entire country

(U.S. Census Bureau, 2010). The median age on Orcas Island, which neared 47 in the year 2000, surpassed 54 in 2013 (U.S. Census Bureau, 2015).

Figure 1. Study Area

Sources: Created from Major Shorelines and State shapefiles, geography.wa.gov/data-products-services/data/data-catalog, 2015; Island Shorelines (NOAA) shapefile, sanjuanco.com/gis/gislib.aspx, 2014; and City Points shapefile, wsdot.wa.gov/mapsdata/geodatacatalog

There are many characteristics of Orcas Island that make it a geographically unique case study for this research. Physically, it is isolated from built development and services available on the mainland and other islands. Socially, residents attest a 'community spirit.' They organize and fundraise when there is a need. At the same time, it attracts people who are independent and have the ability to meet many of their own

needs: “It’s not for people who live in a subdivision and are used to having all of their needs or entertainment met by others” (B. M., personal communication, October 1, 2014). It attracts amenity migrants: “People come very deliberately; very few people just happen to find their selves on Orcas Island. They are the independent pioneer type. Those who came 30-40 years ago came to a much different island…more ‘back to the land’ as opposed to ‘this is one of my second or third homes’ like you may see today” (D. K., personal communication, March 20, 2015). Some reported amenities of the island that add to its attraction include idyllic scenery, rural roads with no traffic lights, mountains, hiking trails, coastal access, marine wildlife, boating and other marine-based activities, and seclusion without being too far from others in the community since everything is within relatively close proximity (B. M., personal communication, October 1, 2014).

Those who intentionally migrate to Orcas Island for its amenities generally wish to age in place and retain the quality of life enhanced by those amenities to which they have become accustomed. The option to age in place or to ‘age in community,’ which is to stay involved in one’s community even when mobility decreases, depends on whether or not one’s basic physical and social needs can be met at home or within the community. A larger feat than simply aging in place, aging in community involves a local network that provides the services needed for adults with any age-related impairment to continue their lives as a part of the social fabric of the community. While one of the primary reasons that residents move off-island is family ties, a less controllable and potentially more disruptive reason is health issues related to aging (D. K., personal communication,

October 3, 2014). This is because there are few options on Orcas Island that allow residents to age in place if they cannot obtain sufficient home healthcare.

Orcas Island residents who do remain in their homes with any type of health concerns may pay $80 a year for a family helicopter service, AirCare, or $45-55 a year for a fixed-wing plane insurance, Island Air Ambulance. AirCare flies residents to Island Hospital in Anacortes, or to St. Joseph Medical Center in Bellingham, each about nineteen miles or a five minute flight away. San Juan Island, the most populated island in San Juan County, has a small hospital with an emergency department but not many specialists, which is why most Orcas Island residents call AirCare to be flown to St. Joseph in Bellingham for medical emergencies (B. M., personal communication, October 1, 2014; D. K., personal communication, October 3, 2014). Within driving range, there are only a few doctors who practice on Orcas Island.

Healthcare aside, transportation issues alone can be a barrier for island residents unable to drive. There is no regularly scheduled bus transportation aside from a seasonal shuttle that operates in the warmer months. There are services and support available to help those with mobility impairments to access transportation, but funding is limited and often expires early. One county program provides a few hundred dollars for two years toward transportation services, such as ferry tickets or transportation to the ferry. The latter, however, may cost approximately $50 coming from outlying areas of the island, and funding for the present year was exhausted early (D. K., personal communication, March 20, 2015). For residents who cannot drive and live in a more secluded part of the island, it can be costly to use paid transport services to travel to points of interest. There

are organizations that provide a variety of services to meet the needs of the community, but coordinating them can be a challenge since there is no one overarching organization that meets any given individual's myriad of needs.

Geographically, Orcas Island is not a simple place to navigate, despite its small size. Many roads are constructed on winding hills and are often unpaved. Many residents live up winding, gravel driveways and may need volunteer drivers to pick them up and drop them off at their door rather than just at the end of their driveway (D. K., personal communication, October 3, 2014). Unfortunately, not every volunteer driving service can provide this level of assistance, as it can be expensive and time-consuming (Dickerson et al., 2007). The importance of retaining the ability to access places is relevant in communities like Orcas Island where housing and services are so dispersed: "As a primarily rural community, the ability to drive ranks high in the list of unfulfilled needs, at present having few, if any viable solutions" (Losleben, 2013, p 8).

Orcas Senior Services is a resource that assists many older adults in the community. In addition to other services and activities, the Senior Center provides three meals each week as well as assistance with obtaining resources, including home healthcare, to enable those in need of additional care to remain in their homes. Also available is van transportation to the lunches, errands, medical appointments both on island and off island, in addition to weekly shopping trips on the mainland and monthly recreation trips. Individuals may schedule most of these trips for either very low fees or suggested donations, although a mainland medical trip averages $50 due to extra travel, by both land and ferry. While the transportation services offered are utilized and highly

beneficial, there is still a need for more options. Local organizations are aware of these issues and the need for more abundant, consistent and affordable senior transportation services. There is also a need for senior housing, including assisted living. These issues are significant because the provision of adequate transportation services and housing that accommodates seniors in an accessible environment would allow older residents who end up leaving Orcas Island to instead remain there.

A survey from the Orcas Research Group in 2006 addressed Orcas Island seniors' expected need for assisted living (Waltersdorph & Kolton, 2006). Out of its sample of 141 residents whose ages ranged from the forties to the nineties but who were mostly in their late seventies, roughly half reported an expected need for assisted living, with the majority preferring assisted living on Orcas Island. Many participants commented on the need for a facility with multiple levels of care. In addition, the majority expressed a preference for living in or near Eastsound (Waltersdorph & Kolton, 2006), which is the town on Orcas Island. This would indicate a desire for easy access to places in and around town. However, as indicated by their comments, an important trend among participant was the option to age in place: "My desire is to remain in my home as long as possible"; "I would like to remain in my own home as long as possible. Some assistance may be needed"; "If possible I think it is important for older people to stay in their own homes"; and, "I have my own home, but will need help eventually. I do not wish to go to a 'care' home. I love my own abode" (Waltersdorph & Kolton, 2006).

Some of the survey participants anticipated adequate help that would enable them to remain in their homes: "I feel very cared for on Orcas. With all the current

assistance…we'd manage at home just fine"; "My home has everything I need should I become disabled"; "We want and plan to live in our home with whatever assistance is needed. We have lived here for 48 years and do not plan on moving"; and, "At some point we may be interested in some assistance in our existing home"; though at least one participant anticipated a need to relocate: "Need for daily assistance will drive us off island" (Waltersdorph & Kolton, 2006).

Despite a desire to age in place, many older people face the need to downsize to a smaller residence, as well as the need to relocate within closer proximity and easier access of places of interest, and so hope to at least age in community: "While we are quite independent at present we…hope to live out our lives in the Orcas community with personal care available as needed. We would like to move into retirement housing within a few years as we are increasingly unable to keep up our house…we live too far from town" (Waltersdorph & Kolton, 2006). The desire to age in place is found to be a priority in a study by the American Association of Retired Persons (AARP): "Nearly 90% of Americans 50 and older want to stay in their homes, or 'age in place.' They want to remain in their communities where they have close ties to family, friends (…) and a deep sense of familiarity" (Hodder, 2007, p. 37). The findings from the Orcas Research Group's survey are congruent with this data. Even in addition to some level of home healthcare, there are other supporting services needed for those who can age in place. A nonprofit adult daycare has been requested by some in the Orcas Island community in order to assist both older adults and their caretakers by allowing caretakers to run errands

or accomplish tasks otherwise complicated by providing constant attention and care to an accompanying older adult (D. K., personal communication, March 20, 2015).

For options other than aging in place in one's home, a group of researchers on Orcas Island have been exploring the feasibility of a senior facility based on an assessment of what residents need and can afford. Some considerations include a smaller scale all-inclusive senior campus, as well as a mixed-use development (K. H., personal communication, October 10, 2014). Were such facilities available in Eastsound, residents would have easy access to nearby establishments. La Conner Retirement Inn, centrally located in La Conner, Washington, was suggested by a participant in the Orcas Research Group's assisted living survey as an example of a residential senior campus that includes all levels of care and is located within walking distance to various places. Another senior housing suggestion is the formation of a community-based organization similar to a nationwide model called Village to Village, which has been deemed successful in rural areas. It is modeled after the Beacon Hill Village, an intentional network of help and services in Boston (K. H., personal communication, October 10, 2014). Any of these suggested residential developments would entail adequate long-term funding and planning for the island's growing aging community.

An already existing facility on another of the four main San Juan Islands, the Hamlet House on Lopez Island is an example of a residential senior campus with a couple of levels of care, although size-limited. Included is a six-bedroom adult family home where residents receive help with activities of daily living (ADLs), medical supervision, and transportation. On San Juan Island, there is an assisted living center

called Village at the Harbor, as well as two adult family homes which accommodate six residents each. Orcas Island has one such home called Orcas Loving Care. San Juan Island also has a sixty-bed skilled nursing facility called LifeCare Centers of the San Juan Islands. It is the only place in San Juan County that meets highest-level needs but, for those who do not already live on San Juan Island, its accessibility is comparable to that of the mainland since a ferry is required from Orcas Island.

The fact that Washington is a certificate of needs state limits the county's ability to provide a skilled nursing facility on Orcas Island (K. H., personal communication, October 10, 2014). Even though the San Juan Islands are physically disjointed by nature, San Juan County is categorized as one jurisdictional unit for much of its service provision. This creates a challenge because the county as a whole is not considered to have a need for skilled nursing if there are already sufficient services on San Juan Island. Even though there are Orcas Island residents who need a higher level of care and can neither afford home healthcare nor pay for it with Medicaid, the state does not recognize the need as one that warrants additional services if LifeCare Centers on San Juan Island regularly has enough empty beds.

Relocating to San Juan Island is not preferable to most Orcas Island residents because their friends cannot regularly visit. Frequent ferry travel can be costly and time consuming and there are only a small amount of ferries that travel to San Juan Island during winter. In addition, many Orcas Island residents do not prefer the different atmosphere of the other San Juan Islands, which they consider to be "almost like different countries. The cultures on the islands are very different" (D. K., personal communication,

March 20, 2015). Relocating to another island within San Juan County in order to meet increasing levels of need is therefore not an ideal option for older adults who wish to retain the quality of life they experience on Orcas Island. Obtaining a certificate of need in order to build a skilled nursing facility on Orcas Island is not feasible while its increasing older population is still relatively low and LifeCare Centers on San Juan Island is not filled to capacity. Even the establishment of an assisted living facility on Orcas Island would not change the scenario in which residents who need an even higher level of care leave the island and relocate to the closest mainland cities of Anacortes, Mt. Vernon or Burlington (K. H., personal communication, October 10, 2014; D. K., personal communication, March 20, 2015).

It is expensive to live on Orcas Island, and a large percentage of residents' incomes goes to cost of living (Losleben, 2013; Working for a stable island economy, 2003). The median cost of a home on Orcas Island is almost twice the median cost of a home in all of Washington, yet the median household income of Orcas Island residents is almost $10,000 lower than that of Washington. The median household income of census tract 9601 was estimated to be $48,544 in 2013, while that of Washington was estimated to be $58,405. At the same time, the median value of owner-occupied housing units in San Juan County was $472,900, almost twice the median value of owner-occupied housing units in Washington, which was $262,100 (U.S. Census Bureau, 2015).

Characteristic of an amenity migration destination, the majority of the island's income is from migrants who stimulate the real estate and construction industries, investments from retirees, and seasonal tourism. This spurs increasing costs of living in

addition to an increasing older population composed mainly of retirees (Working for a stable island economy, 2003). Though the population is small, it is economically diverged and mostly consists of either those with considerable wealth or those who to some extent struggle financially, with few in the middle class (D. K., personal communication, October 3, 2014). Not many people migrate to Orcas Island for a career opportunity, so those who do migrate tend to be retired. An important feature of establishing long-term services for the aging population on Orcas Island is, then, fiscal sustainability but with enough support to provide for those who cannot easily afford the services. This would allow Orcas residents of all income levels to age in community.

Quality of Life

Quality of life (hereafter QoL) is a subjective variable, yet aligned with several commonly used measures including social networks, autonomy, and physical health. For the aging population, many factors contribute to QoL, and it is linked to healthy aging. Healthy aging is also broadly categorized and encompasses the related general concepts of physical, mental, emotional and social health, all of which are affected by a variety of influences. Given the subjectivity of the concept, Stephens et al. (2014) emphasize the difference between healthy aging as promoted by health authorities and healthy aging as defined by older adults, the former of which specifically aim to prevent disease and disability with healthy physical, mental and social initiatives. The authors organize identify six categories that compose healthy aging: physical comfort, social integration, contribution, security, autonomy and enjoyment. Enjoyment is described as a

continuation of the lifestyle which the elderly found satisfying at a younger age. Autonomy is emphasized and linked to the other topics by its overarching nature, defined as "the ability to make one's own decisions about what to buy, how to spend time or where to live" (Stephens et al. 2014, p 9).

The authors explain how resilience also indicates healthy aging since it involves making the best of one's circumstances no matter the consequences of aging, especially since healthy aging as defined by health authorities is not always entirely achievable by individual choices. Likewise, Mollenkopf, Hieber, and Wahl (2011) found that the more subjective measures of older adults' satisfaction with their mobility and ability to engage in leisure activities affect their wellbeing more than objective measures of functional impairments. Resilience allows older adults to genuinely maintain what they believe to be a high QoL, even if they are not operating at their previous level of ability, due to accepting reduced functioning and thereby shifting expectations for independence accordingly (Schwanen & Ziegler, 2011). Different individuals have differing levels and types of resilience, so that some are better able to cope with reduced functioning more than others, and still others have access to more adaptation techniques or services than others.

Many factors related to healthy aging and QoL are not within older individuals' control. Maintaining some areas of functioning can be obstructed by issues such as limited public transport or pedestrian accessibility, which prevents aging adults from continuing a physically or socially active lifestyle after they are no longer able to drive or if they lack access to an automobile, thereby reducing mobility. Marquet and Miralles-

Guasch (2015) emphasize, “At an age where adults experience a reduction in functional capacities, the settings of the built environment become even more important, as they have the potential to either compensate the deficits in mobility capacity or to exacerbate mobility problems” (Marquet & Miralles-Guasch, 2015, p. 25). While there are senior-oriented housing communities, activities and programs to help enhance QoL, older adults with limited finances are restricted as to which senior services or housing they can afford, and many cannot easily afford to relocate somewhere that enhances mobility opportunities by means of a more thriving, pedestrian-friendly built environment. Existing built environment and transportation patterns are significant ways in which larger societal patterns play a role in determining the elderly’s QoL.

Along the same lines as Stephens et al. (2014), Schwanen and Ziegler (2011) point out how governmental authorities and organizations portray wellbeing as an individual state that is entirely achievable by older adults, perhaps with community support, though larger societal obstructions evident in the more affordable low-density built environment or heavily auto-dependent transportation patterns are out of individuals,’ and often even communities,’ control (Schwanen & Ziegler, 2011). Yen and Anderson (2012) also point out, “It is important to distinguish between factors that the community organizations and citizens can influence, which can be thought of as micro factors, and what factors may be external to the immediate community, which can be thought of as macro factors, such as political factors (e.g., federal tax policies or safety regulations)… [and] economic factors (e.g., federal or state transportation budgets)” (Yen & Anderson, 2012, p. 952). Micro factors include those which individual aging adults can

control to some extent, such as diet, exercise and civic engagement, while macro factors compose the larger political and economic backdrop against which individuals and communities operate such as zoning laws and developer lobbyists which influence pattern of development that affects older adults' mobility.

Sense of Place

Sense of place is a facet of quality of life that relates to a person's geographical awareness and is connected to aging in community. It is described as "an interactive relationship between the experience of a tangible place and a person's place-in-the-world" (Kearns and Joseph, 1997, p. 24). It consists of the subjective experience of how a person interacts with their geographical location, or the space they inhabit. It influences well-being in that it creates a bond between a place and an individual, such that the individual feels emotionally attached to the place. The place then provides a sense of security and stability (Manzo, 2008). A place, as explained by Relph (1976), is identified not only by the physical attributes of its location but also by its activities and its meanings constructed by people's experiences there. Relph further explains that individuals identify with a place through varying levels of involvement, and so sense of place differs between different individuals and groups, and between different places (Relph, 1976). Sense of place may therefore hold varying importance for different individuals' or groups' experience of quality of life.

DeMiglio and Williams (2008) list some of the factors that influence sense of place, such as age, time and a place's characteristics. Since Orcas Island is a chosen

retirement locale for many, its residents may experience a sense of place specifically characterized by their age and life stage and opportunities to interact with their location in ways that are not necessarily dominated by employment responsibilities, as would be the case for younger adults. It is likely that those most engaged in opportunities unique to Orcas Island form a stronger sense of place: "the type or degree of sense of place is often shaped by what the place has to offer. These place characteristics or variables are constructed as having the capability to influence a person's well-being (…) the relationship that individuals establish with place is often based on whether the place offers amenities and opportunities that uphold or improve their standard of living" (DeMiglio & Williams, 2008, p. 24-25). Social ties also influence sense of place, though to varying degrees for different people, so that some may experience a greater sense of a place in a location that facilitates routine interaction with friends or family (DeMiglio & Williams, 2008; Buttimer, 1980).

Williams and Patterson (2008) explain how natural landscapes and places used for leisurely pursuits especially foster a sense of place so that those places not only provide desirable recreational activities, but they also facilitate individual and group identity that strengthens over time. This would indicate a stronger sense of place for those who have remained in any given desirable location, as well as for those whose time is largely shared by leisure.

Aside from those who have lived on Orcas Island for the majority or entirety of their lives, most residents chose to migrate there for its appeal as an ideal place to live or retire rather than a more utilitarian reason such as a career move. They therefore live

there purposefully and find satisfaction in their sense of place or home. To maintain their quality of life, they would need to stay connected to those aspects or amenities that provide satisfaction. As explained, the ability to do so depends on how well their needs continue to be met despite decreasing abilities, including mobility. Since most residents value their home as their intentional, as opposed to incidental, place to live, the disruption of sense of place by moving off-island in the event of decreased abilities related to aging can affect quality of life (Manzo, 2008), even to the point of generating an identity crisis (Buttimer, 1980), since sense of place typically provides a sense of belonging to a particular area. Social network, community involvement, physical environment and the psychological benefits of a sense of routine are affected. Tuan (1977) explains how sense of place develops due to the fact that individuals do not constantly move, but naturally establish a home or a sort of base. If "place is a pause in movement" (Tuan, 1977, p. 138) that attributes value to a location, then it is important to also examine the role of movement, or mobility.

Mobility

Mobility is a broad term that is understood in many different ways, on different scales, and through different lenses depending upon the population in question. There are theoretical applications of the term from different disciplines, such as cellular mobility in the field of biology, or upward mobility from an economic standpoint. From a more literal definition of the term involving human movement, which is the context used here, it is the physical ability to move and its scales range from basic ambulatory functions of

standing and walking to the ability to travel between various places, including across the world. While mobility may constitute a smaller scale such as the extent of a person's ability to move their limbs or walk, it often refers to a person's ability to travel outside of their home in order to engage in activities within the neighborhood, community or world.

Mobility has been described as "the fundamental physical capacity to move (…) a basic human need and essential to personal health" (Mollenkopf et al., 2011, p. 782), or, more specifically, "the ability to move oneself (either independently or by using assistive devices or transportation) within community environments that expand from one's home to the neighborhood and to regions beyond" (Webber, Porter, & Menec, 2010, p. 2). A simpler definition is, "the spatial extent of one's travel within the environment" (Webber et al., 2010 qtd. Stalvey et al., 1999, p. 2). An important point in this concept includes the *ability* to travel, or potential mobility (Metz, 2000). For this research, the focus is on mobility outside of the home as opposed to within the home. Here, mobility refers to a person's ability to travel away from their home to engage in activities within the neighborhood, community or whichever geographical span to which they are accustomed.

There are several different and important aspects of mobility. On the most basic level, physical mobility aspects are affected by an individual's physical (and cognitive and mental) health. Flexibility aspects constitute the ability to go where one wants when one chooses, or the ability and freedom to choose when and where to go at any given time. An individual on house arrest, for instance, would have limited flexibility of mobility. Environmental aspects constitute the built and natural environment, such as infrastructure or natural forces like inclement weather (Webber et al., 2010; Flamm &

Kaufmann, 2006). Economic aspects include what an individual can afford, such as owning a car and buying fuel, or owning a transit pass, bicycle or wheelchair. Temporal aspects are time constraints, such as a bus or ferry schedule in conjunction with timing work or leisure activities. Social or relational aspects include social obligations such as being a caregiver or guardian of someone else, thereby limiting one's ability to travel; as well as social resources such as family, acquaintances or volunteers available to assist with travel or to babysit a dependent family member on short notice if an individual needs to travel elsewhere. Living with another person who is able to assist with one's mobility, whether by providing rides or by helping one access other transportation services, can greatly increase mobility. Even this depends upon the other person's own schedule and flexibility.

All of these factors may differ for various populations. For instance, a young, financially sound and able-bodied man who owns a personal vehicle and has no dependents may not need to consider bodily, economic, temporal or social aspects of mobility. He may only be limited by environmental aspects, depending on where he lives and in what type of environment he travels. Such variables could include heavy traffic or a vast distance that must be spanned by car in order to reach certain places. Changing circumstances, however, would cause him to consider additional mobility aspects. Eliminating a personal vehicle may cause him to negotiate a public transit schedule, introducing temporal and flexibility restraints. Eliminating income may cause further strain, particularly if he is unable to pay transit fare in order to access a job or other responsibilities. An injury that eliminates the ability to drive introduces a bodily restraint,

which is also a factor if he uses a wheelchair and is unable to use certain forms of public transit, thereby having to rely on alternative accessible means of transit which may have less flexible schedules. Social aspects would also come into play, depending on his network of people available to help him travel. A new dependent such as a child or older relative may introduce a social constraint by reducing travel availability. Mobility must therefore be understood in the context of varying life structures across the general population. It is usually only when some aspect of mobility is compromised that an individual recognizes it as a valuable need that affects QoL.

The literature on mobility introduces related concepts that describe the components of an individual's mobility experience. Personal accessibility to activities outside of the home has been described as a perceived activity set, and a mobility resource is something that allows travel and may include an automobile, transit pass, bicycle, walking cane, engagement with a commercial or volunteer driving service, or any other intellectual or material means of travel (Le Vine, Lee-Gosselin, Sivakumar, & Polak, 2013). With the exception of walking freely, mobility requires some form of tangible mobility resource. Cresswell (2014) addresses the recent scholarly emphasis on mobility in its various forms, and explains how "mobilities are enabled and restrained by the prosthetic relations between human and world" (Cresswell, 2014, p. 715). On a larger scale, oil is a resource that enables worldwide ground, air and water transport. On a smaller scale, a car is a resource that transports individual people. While the reality of finite oil production will require the implementation of new mobility means for the world

at large (Cresswell, 2014), the reality of finite driving ability will require the implementation of new mobility means for aging individuals.

The extent of travel within and beyond the home to any other environment by any means has been conceptualized as life-space (Webber et al., 2010). Life-spaces are now located further apart than they have been traditionally, due to modern technologies and enhanced mobility (Flamm & Kaufmann, 2006). Seven mobility zones are described as expanding realms of life-spaces which range from the bedroom, to the home, the outdoor space surrounding the home, the immediate neighborhood, the local community, the surrounding area within national boundaries, to the world. In conjunction with these mobility zones are key determinants of mobility, some factors of which are addressed above, that include financial; psychosocial; environmental; physical; cognitive; and gender, cultural and biographical influences (Flamm & Kaufmann, 2006).

Gender influences include the varying rates of mobility among males and females, with findings showing that women worldwide experience less mobility than men (Tacken, 1998; Burkhardt, Berger, & McGavock, 1996). Cultural influences include varying socioeconomic opportunities, social relations and other ways in which an individual's life is structured such that it affects their mobility (Webber et al., 2010). What is important to consider is that varying mobility zones and key determinants are interrelated and affect different populations in different ways.

The older population specifically is affected more by the factors and key determinants that influence mobility. Due to the close relationship between mobility and valued priorities of autonomy, flexibility and freedom (Mollenkopf et al., 2011), mobility

impairment reduces elderly individuals' autonomy and the extent to which they can participate in activities outside of the home, therefore affecting their QoL. As with all age groups, mobility is linked to QoL in the older population, and it is for that reason that they generally desire to retain the same level of mobility that they enjoyed as a younger adult (Boschmann & Brady, 2013; Tacken, 1998).

As shown, QoL is associated with physical and psychological health, strength of social networks and life satisfaction. There is substantial literature linking loss of mobility to reduced QoL (Centers for Disease Control and Prevention, 2013; Hudakova & Hornakova, 2011; Engels & Liu, 2011; Spinney, Scott, & Newbold, 2009). Driving cessation, which causes decreased mobility, is a strong predictor of increased depressive symptoms in older adults (Dickerson et al., 2007); and Metz (2000) further explains that "loss of mobility is seen as resulting in a substantial diminution of well being, as happens when a person can no longer safely drive a car or when physical movement is significantly hindered through age-associated disability" (Metz, 2000, p. 149). He further defines mobility based on a number of beneficial affiliated attributes in addition to travel ability: psychological benefits of movement, physical exercise benefits, involvement in local community (social participation), and potential travel, or the knowledge that a trip is possible (Metz, 2000). Greater mobility is associated with access, choice, opportunity and freedom (Spinney et al., 2009; Alsnih & Hensher, 2003). Similarly, Mollenkopf et al. (2011) found these themes to emerge among responses from older adults who were asked what out-of-home mobility meant to them: an emotional (psychological) experience, a

social need, stimulation, movement meeting a basic human need, engagement with the natural environment, and freedom and autonomy.

Reduced mobility typically precipitates reduced physical activity, social stimulation, and physical and mental health (Centers for Disease Control and Prevention, 2013; Spinney et al., 2009; Mercado, Páez, & Newbold, 2010; Marquet & Miralles-Guasch, 2015). Healthy or active aging includes reduced prevalence or risk of disease, high levels of cognitive and physical functioning, and actively engaging in life (Spinney et al., 2009); and it is clearly connected to mobility and physical activity (Boschmann & Brady, 2013). As explained by Stephens et al. (2014), the healthy aging components promoted by the government, including community involvement and physical activity, may be out of reach for those who are less able to leave their home due to inability to drive and lack of transportation (Davey, 2007). Rather than failing to fulfill a personal responsibility to age actively and successfully, these individuals are hindered by built environments characterized by rural and suburban sprawl; and by absence of affordable, accessible and reliable transit services.

Unfortunately, mobility impairment increases as people age, and so QoL is affected by reduced involvement with a social network of friends or family, reduced or eliminated community or vocational participation, and reduced autonomy. In more secluded, rural communities, the non-driving population is the most vulnerable to mobility impairment (Hanson & Hildebrand, 2011). The rural Orcas Island community is an example, particularly since it is subject to the seasonal patterns characteristic of norther latitudes: “If you ask certain people what the number one problem with seniors is

they would say transportation just because we have dark windy roads; it's dark at 4:30 in the winter. It's hard for people to drive" (D. K., personal communication, March 20, 2015).

In addition to those living in more secluded areas, the older non-driving population includes those who either do not own a vehicle or other adequate means by which to safely travel such as bicycle, as well as those who are no longer able to drive at all. These people are dependent on other individuals or services for transportation, which may not always be costly, convenient or reliable. A younger person may easily navigate a transit website in order to quickly view a transit schedule and stop locations. Some older individuals with less technological experience may struggle with what a younger person would consider a seemingly basic concept, and may take more time and difficulty to make travel plans if they cannot walk, bicycle or drive their selves.

For older adults without access to other modes of transportation, the mitigation of negative effects of driving cessation may depend on their network of family, friends and acquaintances who can provide rides; this network's actual ability and willingness to provide rides as needed (Mercado et al., 2010); their geographical proximity to the older adults in need; and/or the older adults' financial ability to purchase transport services (such as a taxi program) if available. Even if a person has the financial resources to arrange for private transportation services, the schedule and availability may vary depending on where one lives. Living with or near adult children or other licensed family members may seem to boost mobility, but in actuality it does only if they have the time to provide transportation, which is less likely if they work full time or care for children.

Even if family or friends do have the time and will to provide transportation, it helps little if they live too far away for such rides to be convenient; and if they *do* live nearby, elders are often reluctant to ask for help because they do not like receiving help without being able to provide something in return (Davey, 2007). Adult children also often consider their parents' dependency on them for ride provision as burdensome (Haustein, 2012).

There are various other constraints to an older person's mobility as discussed above. In spite of reduced independent mobility, however, older people who retain the highest levels of mobility generally include those with social support to access travel services needed, as well as the income necessary to obtain such services if needed (Davey, 2007; Keeling, 2001; Stephens et al., 2014; Haustein, 2012). In addition, some mobility determinants can compensate for the reduction of mobility in any given life-space. This credits people's adaptive abilities, such that they make up for diminished mobility in one arena of life by increasing mobility or competency in another arena (Webber et al., 2010; Stephens et al. 2014).

Mobility is closely linked to QoL because it is how people access social activities, and therefore the basic means by which they function as participatory members of society (Webber et al., 2010; Metz, 2000). It is referenced in the World Health Organization's International Classification of Functioning, Disability, and Health (ICF), a model that takes into account both individual and environmental factors that affect potential mobility of the aging population (Prohaska, Anderson, Hooker, Hughes, & Belza, 2011; Webber et al., 2010). Mobility affects overall economic activity within a community. For those who comprise the entire labor force, few jobs may be done remotely, and an individual cannot

travel to vocational activities if they lack the mobility to do so. In addition, local economic growth can be stunted if people must remain at home except for absolutely necessary engagements such as medical appointments, pharmacy and grocery shopping. Increasing mobility potential among residents increases economic growth potential.

Mobility has implications for many fields of study including transportation, geography, gerontology, public health, planning and economic development. Geographically, spatial distribution of the built environment, including residences, plays a large role in individuals' mobility. This occurs on a smaller scale, such as the design and type of a home (i.e. stairs as a barrier to physical mobility, or availability of support staff in an assisted living facility); as well as on a larger scale, such as the distance between residences and locations of importance like medical facilities, businesses, and social establishments. Many factors have influenced the built environment format in the U.S.A., mainly the post WWII trend of automobile-dominated suburban development (Yen & Anderson, 2012). It is difficult to distinguish how much the choice of residents' home locations is due to their own preference and how much is due to the default spatial landscape. Other factors affect residence locations as well, importantly those which are financial, and social (i.e. proximity to close friends or family). Regardless of the reasoning, residence locations and the built environment significantly affect mobility, and they may impact the older population more so than the younger, more mobile population.

Driving is an ability that most Americans take for granted, yet it is highly linked to their mobility. All adults who live long enough, however, face a time when they can no longer drive. This issue is important because driving is the primary if not sole mode of

transportation for the overwhelming majority of Americans, as well as the elderly, and it is therefore the specific means by which they participate in activities outside of the home. The older populations in other Western countries likewise use the automobile as their primary mode of transportation (Lord & Luxembourg, 2006). This is why, "in American society and elsewhere, transportation mobility has become synonymous with being able to operate an automobile" (Dickerson et al., 2007, p. 579). In the U.S.A., roughly 90% of the elderly travel by automobile (Boschmann & Brady, 2013), and most live 6-10 years beyond their ability to drive (Centers for Disease Control and Prevention, 2013; Hodder, 2007). In 2006, 21% of older Americans were not driving, and that amount has been increasing (Hodder, 2007). Older adults without a driver's license and access to a personal vehicle do not travel as often as those who do (Mollenkopf et al., 2011).

Other transport modes, such as walking and especially public transport, do not always adequately replace driving as a transportation mode for older adults (Schwanen & Ziegler, 2011). This is not only related to common design of the built environment (Yen & Anderson, 2012), but to the lack of consistent, adequate and flexible transit schedules in most areas where older adults live. Thus, most have become more accustomed to driving a personal vehicle, having relied on this mode of transportation during their entire lives: just before the oldest baby boomers were preparing to drive, the Interstate Highway Act of 1956 began the large highway construction project that allowed automobile travel to dominate as the primary transportation mode in the U.S.A. Having now turned 65, this cohort may be the first wave of almost entirely car-dependent travelers.

Older adults' *decreased* mobility should be specified to non-drivers who *previously* owned a vehicle or other travel means and so are accustomed to that level of mobility as their personal norm. However, older adults whose incapacitated or deceased spouses were their primary drivers are included in this category if the lack of their spouse's ability to drive, whether due to death or impairment, is directly linked to their own mobility (Engels & Liu, 2011). For the sake of simplicity, they are included in this scenario since, even though they were dependent on another for mobility, their level of dependence was previously normal for them and so is their standard from which mobility and independence decline once an event changes the spouse's ability to continue to provide transportation.

The inability to continue to drive may pose as a barrier to continued access to vocational or recreational activities, including social engagement in the community (Lord & Luxembourg, 2006; Marquet & Miralles-Guasch, 2015), or even the ability to buy groceries or attend medical appointments. Regardless of a person's life situation, the point at which they cease driving impacts their life in varying ways and can diminish QoL. Physical health is affected if they can no longer attend activities involving physical exercise, and mental health is at risk since increased isolation can cause depression. Car access is associated with well-being since it allows older adults with (some) physical limitations to remain independent and able to participate in daily activities (Haustein, 2012). An adult who is dependent on others for daily travel needs is at risk of social disadvantage or exclusion (Marquet & Miralles-Guasch, 2015). It is no wonder that "older adults are extremely reluctant to give up driving" (Dumbaugh, 2008, p 18). Upon

being asked what they believe would cause them to have to cease driving, several licensed Orcas Island residents at the Senior Center responded with an example of why another individual should cease driving, though none of them answered the question for his or her self. This exposes how older adults may resist even acknowledging the fact that they will lose their mobility independence at some future point (D. K., personal communication, October 3, 2014), an attribute to the importance of autonomy and its effect on QoL.

Once older adults are no longer able to independently travel to the places to which they need or want to go, they lose an aspect of their autonomy since they become dependent on other people or services for transportation. For older adults, having independence means retaining self-reliance and autonomy, reciprocity, meaningful activity and continuity of identity (Schwanen & Ziegler, 2011). Independence and autonomy are associated with QoL, and the elderly often feel too proud or guilty to ask others for rides (Dumbaugh, 2008; Lord & Luxembourg, 2006). They are therefore less likely to go out as much as they used to and so experience a decrease in mobility and QoL. Though elders are more willing to ask family for transportation help due to a medical emergency or equally urgent scenario, they are much less likely to ask for rides to events deemed unnecessary such as leisurely excursions, or even important social events such as reunions or funerals. However, these events contribute to QoL (Davey, 2007; Dickerson et al., 2007).

In a study where older adults considered driving alternatives if they did not have access to a vehicle for travel, Hanson & Hildebrand (2011) found that the participants

reported that they would complete 52% of their trips as passengers with friends or family, while 14% reported that they would walk or bike, 1% reported that they would use a taxi, and 34% of all trips would be missed. None of the participants considered public transit as a feasible means by which to take their trips, which supports related research concerning the elderly, driving cessation and public transportation. Even though most participants considered rides with friends or family as the most popular alternative, 70% indicated that there should be an alternative so that they do not need to depend on others (Hanson & Hildebrand, 2011).

While efficient public transit is certainly an adequate alternative to driving for many people of all ages, it is limited to larger metropolitan areas and may not accommodate people with less agility (Lord & Luxembourg, 2006; Dickerson et al., 2007). All-access transit buses or paratransit services may be available in some places, but paratransit services can be unreliable and unavailable except for providing rides that the services deem to be more crucial, regardless of what elders believe is important (Mercado et al., 2010); and all-access bus routes and schedules are more limited and may not frequent less densely populated areas (Lord & Luxembourg, 2006; Clarke & Gallagher, 2013). This issue exists in other Western countries as well but is more common across the U.S.A. due to the country's built landscape and post-WWII prioritization and subsidization of the interstate highway system and burgeoning network of suburbs. In contrast, when an urban area such as Boston successfully implements a high-quality, accessible transit service, older adults make more trips to shop and to visit friends and family and report higher satisfaction with their travel ability (Dumbaugh,

2008). However, 80% of older adults lived in metropolitan areas in the year 2000, two-thirds of whom lived in the suburbs of these areas. A 50% increase is projected among older adults, specifically those aged 65-74, living in the suburbs between the year 2010 and 2020 (Yen & Anderson, 2012).

Alternative transportation modes are highly dependent upon the built environment and whether or not it is conducive to public transit or within easy accessible walking or biking distance of desirable locations such as retail, parks or social connections. The surrounding built environment therefore influences how smoothly driving cessation occurs. Someone who can walk to at least some places due to being within reasonably close proximity, such as to visit a friend or recreational facility, should have an easier time with driving cessation than someone whose home is located in a secluded, rural or suburban area with nothing accessible by foot. Marquet and Miralles-Guasch (2015) found that older adults living in a lively urban area containing mixed-use development and easy pedestrian access to many places of interest completed nearly 70% of their trips by walking. Haustein (2012) also found that older adults made fewer trips by automobile when they lived in a place with more facilities within walking distance. An AARP survey (as cited by Dumbaugh, 2008) showed that 92% of adults of age 45 and above prioritize doctor offices near their homes as either an important or highly important community characteristic for when they age, 84% report the same for shopping centers, 83% for groceries, and 80% for pharmacies.

Even if there are places within short distance, they may only be accessible if there are safe, navigable walking paths (Centers for Disease Control and Prevention, 2013;

Clarke & Gallagher, 2013). Lack of sidewalks or crosswalks poses a hazard, and hilly terrain or inclement weather conditions are also deterrents to those who would otherwise walk (Lord & Luxembourg, 2006; Haustein, 2012; Clarke & Gallagher, 2013). A study of adults aged 65 and older in Florida, California and Michigan, sponsored by the National Highway Traffic Safety Administration, the American Automobile Association (AAA) and the Beverly Foundation (as cited by Dumbaugh, 2008), showed that 80% believe safer intersections and sidewalks would best improve older adults' mobility. Such initiatives would not only improve mobility, but likely reduce injuries. American pedestrian injuries are up to four times as high as pedestrian injuries in countries like the Netherlands where transportation and urban planning prioritizes safer bicycling and walking environments (Yen & Anderson, 2012).

Even in places conducive to walking or taking public transit, public safety may be an issue if an older person faces the difficult negotiation of safety risk when living in an area afflicted by crime. As elders typically have lower incomes than younger adults, many cannot afford to live in the safest urban communities. Therefore, several aspects come into play to encourage 'active aging' such as prioritizing police presence in areas vulnerable to crime where people walk or wait for transit, or providing free instruction and provision of defense products. The AARP survey (as cited by Dumbaugh, 2008) showed that the 97% of adults of age 45 and above prioritize safety as the most important community characteristic for when they age.

One third of the older population lives in places with no available transit service, and 75% lives in places with too low population density to warrant conventional transit

services (Dumbaugh, 2008). These are not circumstances that are easy for any individual to change, and moving to a more populous area serviced by reliable transit is not a legitimate solution, since this may be financially infeasible or may disrupt older adults' sense of place. Driving cessation combined with the barriers to mobility as outlined above constitutes a "demographic time bomb" (Engels & Liu, 2011, p. 12). Built environment and extent of feasible transport services are key influential factors in this situation.

Residential Location

The location of an older adult's homes is highly linked to mobility. The vitality and associated walkability of a living area is highly linked to its residents' mobility, and therefore to their QoL. Marquet and Miralles-Guasch (2015) explore this link against a backdrop of concern regarding what the World Health Organization (WHO), as of 2010, classifies as the fourth global risk factor: lack of physical activity. They find that, of those aged 65 and above, residents in thriving urban environments regularly participate in more activities and social interactions (Marquet & Miralles-Guasch, 2015). Such environments facilitate the ability and convenience of short walking trips, and are identified by proximity to services and other destinations of interest and mixed-use development that contains attached housing units and proximate commercial establishments.

Older adults whose homes are not in urban environments conducive to walking are more likely to become disadvantaged once they cease driving. Antoninetti and Garrett (2012) discuss the spatial mismatch that exists when aging individuals are unable to

continue regular activities while remaining in a familiar environment due to lack of accommodation provided by that environment for the needs associated with aging. If one changes environments to accommodate those needs, disrupted routine is an issue since routine develops over time and increases in significance. The authors state, "when personal relations with customary landscapes become unbalanced, the process of self-identification suffers to the point of generating place panic, a special form of anxiety associated with feeling out of place in one's own house or neighborhood" (Antoninetti & Garrett, 2012 qtd. Casey, 2001) and, "the quality and attributes of people-place relationships in later age is clearly linked to issues of personal well-being and social practices" (Antoninetti & Garrett, 2012 qtd. Kendig, 2003). Older adults who experience such spatial mismatch may experience a disrupted sense of place due to having less independence in their familiar environment.

Many older adults do not have the option to downsize or relocate to an area that accommodates their needs. Some planned retirement communities, however, respond to this growing need by anticipating that their residents will face a reduction in mobility. One example is a village retirement community in Tennessee with many large homes of mostly retirees; but for the first residents who began living there in 1987, many now struggle to maintain their property, even with hired help. A planning movement began as a result of a recent related study concerning this issue. Many builders construct significantly smaller homes to provide prospective residents with a variety of living options to match diverse mobility needs, such as one-level access. A nearby newer village neighborhood includes a range of care levels to accommodate independent

residents in small cottages as well as those living in a larger facility for up to complete health care if needed (L.S., personal communication, February 20, 2015). While Orcas Island does not contain the population to support such a large project, it does contain the demographics to support a smaller-scale assisted living community with the same variety of levels of care except for complete nursing care.

Aging in community may not only enhance older adults' QoL, but provide economic contribution to the community by means of employment with services for the aging. As shown, residents of all ages on Orcas Island face high costs of living. The establishment of accessible and sustainable senior housing and convenient senior transit services may stimulate the local economy and support the entire community; in addition to sustaining mobility and QoL for which older residents chose to live on Orcas Island, most importantly by allowing them to remain on the island rather than relocate elsewhere out of medical necessity. It is projected that many of Orcas Island's older residents will experience reduced functional abilities and will require fulltime assistance that cannot be met on the island (Aging on Orcas Island, 2013). To understand how to best meet these needs, it is important to determine what residents prioritize and how their priorities align with or differ from mobility needs as emphasized in the literature.

CHAPTER III

DATA AND METHODOLOGY

In order to understand older adults' current or anticipated experiences with reduced mobility and its impact on their QoL and ability to age in community on Orcas Island, 200 questionnaires were distributed along with consent forms and stamped return envelopes. These were made available at several community organizations on Orcas Island in order to target the aging population. Each organization was contacted in advance in order to secure permission and to obtain a letter of support for the university Institutional Review Board. The survey was designed to show the type and level of concern regarding any future reduction in mobility and to indicate how mobility is prioritized in relation to other aspects of QoL. A practical outcome of these findings is to better enable the Orcas Island community to plan and implement effective programs or assistance as needed.

The questionnaire begins by explaining the content, the purpose of the research, and the intended participants (those aged 65 years of age and older), although without necessarily prohibiting participation by those under the age of 65. The decision to target those above this age threshold was to keep this study consistent with relevant literature which distinguish aging adults as those aged 65 and above, though some studies include those aged 60 and above or even those aged 55 and above. A thorough yet concise paper

survey was used instead of an online format due to the target population: while many older adults are increasingly technologically adept, this population is more likely to have a higher proportion of people who are not but as technologically adept and instead more likely to respond to a traditional paper survey.

The questionnaire first asks for basic demographic information (Appendix A). Respondents were asked to select the age group to which they belong, and the income group that describes their average annual household income from all sources. Income amounts were not grouped by equal intervals. Next, on an image of Orcas Island showing its outline, roads and water bodies, respondents were asked to draw a circle, the size of which was their choice, around the area where they reside (see Appendix A). This allowed respondents to share location information that is beneficial for qualitative data analysis without having to provide an address or other specific residential information.

The next questions addressed tenure and lifestyle: whether respondents have always lived on Orcas Island or moved there from a previous residence; why they chose to stay if they have always lived there; and how long they have lived there if they migrated, where they lived previously, and the reason(s) they moved to Orcas Island. Respondents were asked to select from among eight reasons plus an 'other' field in which to write their own reason(s) and, if applicable, to rank their selections. The reasons include: family or friends, employment opportunity, recreational activities, community qualities/atmosphere, ability to easily travel within area (less traffic, etc.), lower living expenses compared to previous home, physical geography of island/natural environment and scenic qualities, and weather. These reasons were formed due to their likelihood of

popularity based on information gained from personal communications, and they overlap with some of the nine factors believed to contribute to a location's quality – thereby improving QoL – based on the 1997 Places Rated Almanac (as cited by Whisler, Waldorf, Mulligan, & Plane, 2008) which include cost of living, job outlook, climate, recreation, and transportation.

Respondents were then asked to select the way(s) in which they spend the majority of their time. In addition to the 'other' field in which to write a customized answer, the selections were employment (includes self-employment); volunteering (includes providing care or services for friends or family); hobbies, recreational activities, exercise (non-paid activities); and medical care/treatment for self (health care excluding general exercise).

The next questions address mobility and its effects on lifestyle. Respondents were asked to select their primary mode of transportation for most activities outside of the home (including travel to ferry or other water/air transport if also used). In addition to the custom 'other' field, the six selections included: walking, bicycling, personal vehicle that you drive, passenger of personal vehicle of another driver (family, friend or acquaintance), passenger of volunteer transport service, and passenger of paid transport service (such as taxi). Those who primarily travel as a passenger (having selected among the latter three options of the previous question) are then asked if they are in a permanent situation that has reduced their previous ability to travel anywhere outside of the home. In addition to the custom 'other' field, the two selections were: discontinued access to previous mode(s) of transportation, for any reason other than a health condition; and

health condition. The first selection would have included those whose discontinued access to transportation was due to economic reasons, or due to legal restrictions, for instance.

Respondents are then asked which activities have been affected if they are in a permanent situation that has reduced their ability to travel outside of the home. Aside from the custom 'other field,' six selections include: employment; volunteering (includes providing care or services for family or friends); recreational activities, exercise, hobbies; medical care/treatment for self (health care excluding general exercise); social engagement (spending time with family, friends or acquaintances); and chores/errands (grocery shopping, etc.).

Respondents were then asked what they think would most help if they were in a permanent situation that has reduced their ability to travel outside of the home. In addition, those who didn't experience that situation were asked what they think would most help *if* that should happen. Almost one quarter of the sample (14) did not respond to this question. It is possible that they misunderstood the hypothetical nature of the second sentence, or only read the first sentence and skipped the question since they did not meet that scenario. Better survey design may be important to prevent lack of response, especially since this is the first of the last four questions that specifically focus on respondents' ability, desire and expectation to age in place and to age in community. Survey design aside, however, some respondents may have genuinely believed that the scenario could not apply to them, or they dismissed the scenario out of denial of future needs. This is an inherent challenge of gathering qualitative information concerning

anticipated services and needs from respondents who do not believe they will ever need them (D. K., personal communication, October 3, 2014). Without further inquiry of respondents, it is not possible to decipher whether the high lack of response to this question was a mistake or intentional.

The majority of the options provided in this question have to do with relocating in response to decreased mobility, which is a type of migration that is a "location adjustment made by households in response to their ever-changing needs and preferences" (Whisler et al., 2008, p. 61). In addition to the custom 'other' field, the fourteen options include: access to, or increased availability of, previous mode(s) of transportation (please specify); access to, or increased availability of, new mode(s) of transportation, e.g. walking, bicycling, driving, public transport services (please specify); relocate to an area on Orcas Island that would provide easier access to activities which are currently limited due to decreased travel abilities; relocate to a different island that would provide easier access to opportunities that are currently limited or unavailable due to decreased travel abilities; relocate to the mainland to increase access to such opportunities; relocate with or near close friends or family, whether on or off-island; home healthcare through family or friends (informal contact); home healthcare through an agency or formal contact; relocate to an assisted living facility or community on Orcas Island (if this best meets present or future needs, and if this option becomes available); relocate to an assisted living facility on a different island (please indicate which island); relocate to an assisted living facility on the mainland; relocate to a skilled nursing facility on Orcas Island (if this best meets present or future needs, and if this option were

possible); relocate to a skilled nursing facility on a different island, if available; and relocate to a skilled nursing facility on the mainland.

Respondents are then asked to select which option is most important to them when considering how they live the rest of their lives, which may include more than one option if equally important. Besides the custom 'other' field, five options include: staying in their current home, even if they experience reduced ability and/or opportunities to travel outside of the home as much as they currently do; relocating elsewhere on Orcas Island to increase their access to activities outside of the home, if their travel abilities become limited where they currently live; relocating elsewhere on Orcas Island to live with or near family or friends; leaving Orcas Island to relocate with or near family or friends elsewhere; and leaving Orcas Island to relocate elsewhere for any other reason(s).

The remaining two questions ask respondents to use the 5-point Likert scale, ranging from 1 (strongly agree) to 5 (strongly disagree), to indicate their opinion on each statement. The first reads, "My transportation arrangements generally satisfy my needs to participate in activities outside of the home." The second and final question reads, "I believe that I would be happier living in a place where I could independently walk (with or without assistance as needed from a cane or a walker), wheelchair, bicycle, or use some form of convenient public transport services in order to access activities outside of the home more easily, more often and with greater independent mobility." Lastly, the questionnaire provided space for additional comments, and though it also extended an invitation to participate in an interview, no requests were made. This was likely due to

the narrow timeframe during which interviews were possible, and the later date at which some participants completed and returned the survey.

While the questionnaire primarily contained multiple-choice questions, it also included many non-exclusive and open-ended questions to allow response elaboration. Once questionnaires were returned, the data was manually entered into Excel and analyzed within SPSS by coding responses and running crosstabulation tables and Pearson chi-square significance tests in order to compare responses and to show whether any relationships exist between variables. This method of analysis was chosen because most of the survey responses are categorical variables and so must be measured nominally. The level of significance for the chi-square testing was defined as a p-value equal to or less than .05, so that relationships between variables would be selected by chance, or at random. Any crosstabulated variables with a p-value higher than .05 were not considered to be related. The results of these tests are then compared alongside other facts such as the number of responses included for each crosstabulation, which may inflate the significance value disproportionately. Responses alone are also therefore thoroughly discussed in order to balance the mixed-methods approach of qualitative interpretation and descriptive analysis alongside statistical analyses.

CHAPTER IV

FINDINGS

Demographic Characteristics

Out of the 200 questionnaires distributed, 62 were completed and returned. All were intact except for one that was missing the last page and therefore the last three questions. Not all respondents answered all questions, so any unanswered are noted for each topic. Many respondents took the opportunity to elaborate responses and select multiple responses, and while that enriched exploratory analysis, it hindered statistical analysis since many relationships between factors that allowed respondents to select more than one option (and were therefore not mutually exclusive) showed low p-values which may be misinterpreted as significant. These results must be interpreted with caution since all of the non-exclusive responses produce a lower count than the entire sample, sometimes as low as one, reducing the validity of the test. For instance, to test the relationship between respondents' age and their having relocated to Orcas Island to be near family or friends limits the number of 'yes' responses among the reason-family variable to 17 instead of the entire sample of 62. This particular relationship showed no significance but many others with similarly low counts did and so were discounted since they could be explained by the low number tested.

In the same way, some variables that represent a large proportion of the sample were significantly related to several other variables, but upon closer observation the

relationship appears to be inflated due to the over-represented portion of the sample. For instance, the vast majority of respondents reported primary transportation mode as driving, and so this variable was highly correlated with others variables such as income since the majority of the respondents earn an annual household income between $50,001 and $75,000. The actual count of these variables may explain the low p-value. Generally, only those results which show some significance without a low enough number to invalidate them and without an over-represented portion of the sample are therefore discussed.

Most respondents were between the ages of 65 and 85; although six were under 65 and seven were 85 or older (figure 2). The age group with the highest number of respondents was 80 - 84, and the median residency tenure was 19.5 years (table 1).

Figure 2. Age of Respondents

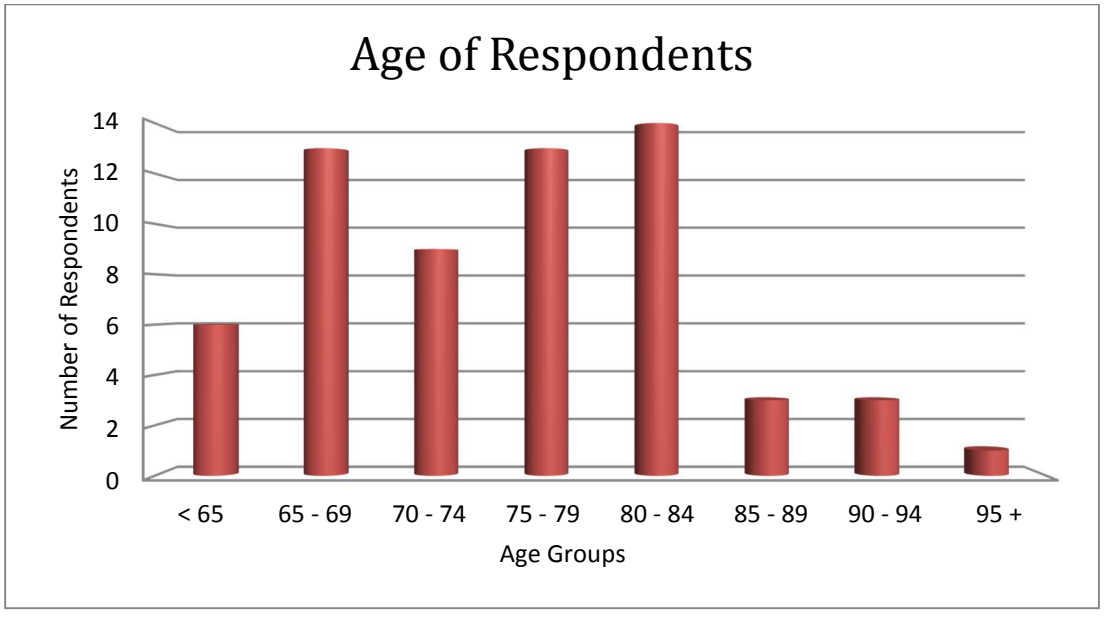
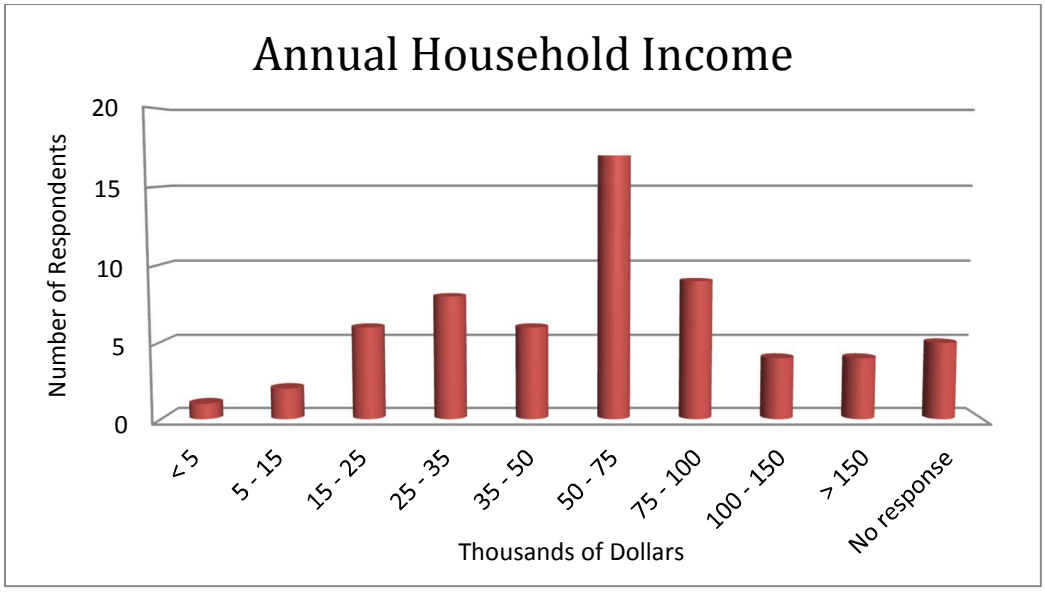


Table 1. Age, Household Income and Residency Tenure Summary

		Age	Household Income	Residency Tenure
N	Valid	62	57	62
	Missing	0	5	0
Median		75 - 79	$50,001 - $75,000	19.5
Mode		80 - 84	$50,001 - $75,000	16, 20
Minimum		Under 65	Less than $5,000	1
Maximum		95 or older	More than $150,000	66

Most respondents reported an annual income of $50,000 - $75,000 (figure 3). The majority of Orcas Island residents fall within this household income category (S. M., personal communication, October 3, 2014; U.S. Census Bureau, 2009), so the sample represents the population in this regard. Nationwide, the median household income of those aged 65 and above was $51,486 in 2013 (Administration on Aging et al., 2014).

Figure 3. Annual Household Income



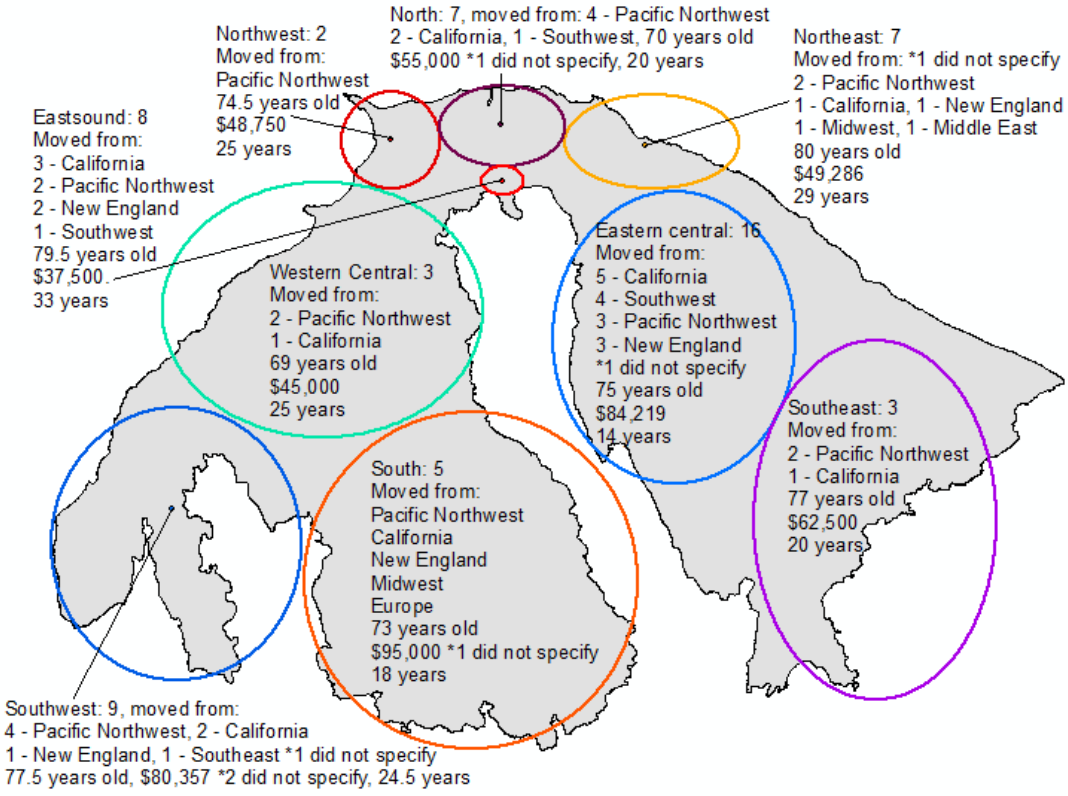
Note: Income groups are not divided by equal intervals

There was no statistically significant relationship between age and annual household income. This may be because most of the sample reported that they do not spend the majority of their time working, and income may be less likely to be as widely distributed among older adults who are already retired and need not depend on current employment for income. The amount of time respondents have been living on Orcas Island is also not related to their income, and neither is residency tenure related to age. Based on the nine geographical locations delineated by response distribution, there is no significant relationship between location and age, income, or residency tenure.

On the Orcas Island outline map where respondents were asked to draw a circle around the area where they live, two did not respond and most drew a small enough circle to ascertain the general location of their homes. Responses were categorized subjectively into nine areas according to the general location indicated, and while categories were delineated to the best of the author's ability, they are not to be considered exclusive since exact residence locations are not specific (figure 4). The categories include Eastsound, north, south, western central, southwest, northwest, eastern central, southeast, and northeast. The largest group of respondents (15) within one of the nine areas reported living in the eastern central area; which is near the middle of the inner coastline of the eastern portion of the "horseshoe," that is, the geographical shape to which the island is often referred due to its narrow northern section and burgeoning eastern and western sections toward the south. While nine reported living in the southwest section, which includes the hamlets of Deer Harbor and West Sound, 23 reported living in the northern area of the island, categorized into the three areas of Eastsound, the north and the

northeast. This concentration of the sample may correspond to the concentration of businesses in the same general region. Equally likely, it may simply correspond to the proximity to Eastsound and the surrounding area, which was where questionnaires were distributed.

Figure 4. Respondents Grouped by Location



Note: Data includes former residence and average age, income, tenure

Source: Created from Island Shorelines (NOAA) shapefile, sanjuanco.com/gis/gislib.aspx, 2014

Half of the sample drew circles around areas that either appear to be directly on the coast of the island, or relatively near it. There are several possibilities concerning coastal location. One may live on the coast with complete access to it, while another may

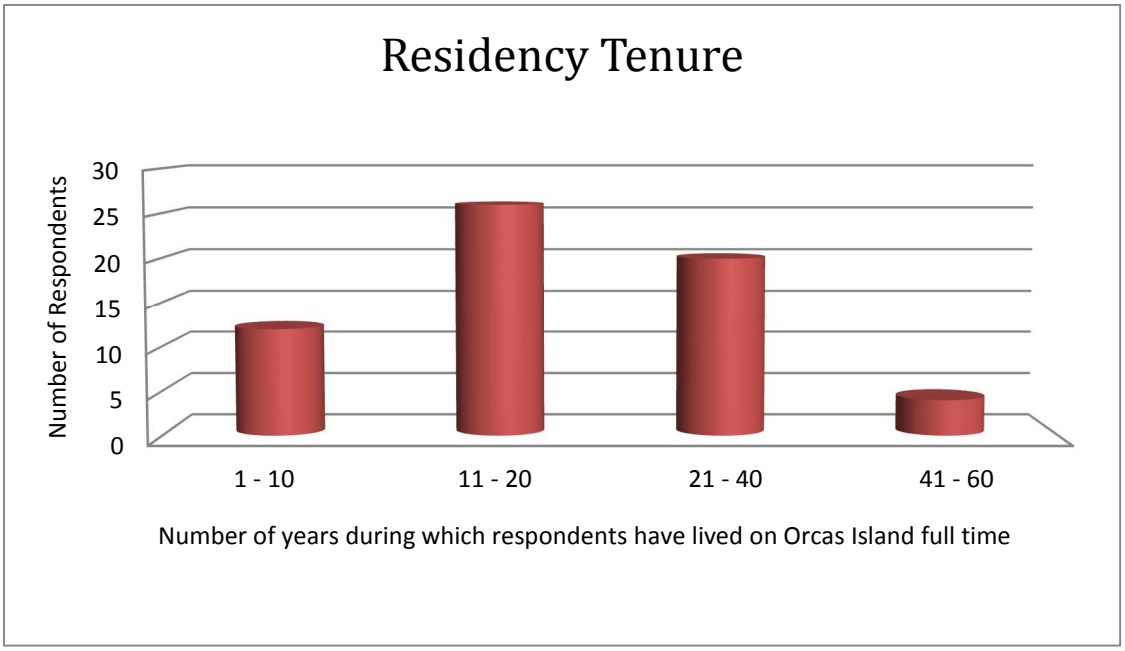
live geographically near the coast and have a view of it from a higher elevation but no easy access to it due to the geography of the land, while still another may live similarly close but have no view of it or access to it. It is therefore not possible to presume the nature of any potential coastal proximity as indicated by respondents' indications, since types of locations may vary in property value and attributes; but the large amount of general coastal locations of respondents' residences may indicate a trend of the older population having bought property on or near the coast during a time when it was cheaper than its current value, confirming previous reports (D. K., personal communication, May 19, 2015). Most who indicated residences that appear to be on or near the coast are 75-85, with most of those who indicated residences which more certainly appear to be on the coast being 80-84. When relating respondents' ages to their tenure, however, the tenure of coastal residents does not vary significantly from the tenure of those who do not live near the coast.

Each respondent reported having moved to Orcas Island from another place, at some point. One of the questions addressed those native to the island, and asked why they chose to stay on Orcas Island. Even though no respondents needed to answer that question since none were originally from there, three answered the question, probably to indicate why they chose to not relocate off-island again. Two reported that they stay due to family, and one reported, "Living here is my choice. I have lived in 21 places and this is the very best."

When reporting how many years they have lived on Orcas Island, some respondents wrote a plus sign (+) after the number of years, indicating having lived there

for at least that length of time. Some wrote how many months in addition to years they have lived there. For data consistency, only the amount of years indicated, and not months, is recorded in these cases (figure 5). Some respondents specified the amount of years they have lived full time on Orcas Island, or the amount of years they have owned property or visited during summers. In those cases, only the 'full time years' are recorded for data analysis since respondents would have otherwise lived at a different permanent residency during the additional years.

Figure 5. Residency Tenure



About three quarters of the sample migrated from the western part of the U.S.A., mostly from Washington and California. The places from which respondents migrated may not necessarily be their places of origin, as several respondents listed multiple previous residences. Eighteen respondents migrated from Washington, including ten from

Seattle; while 17 migrated from California. Eight migrated from New England; five from the Pacific Northwest without specifying Washington and four of whom specified Oregon; four from Texas; two from the Midwest; and two from the Southwest (not including California). One reported having migrated from another state, one from Tampa, one retired from military service in Italy, one retired from employment in the Middle East, one "lived all over the world in the past 50 years," and one gave no response.

The place from which respondents reported migrating to Orcas Island (origin of previous residence) was only significantly related to having moved to Orcas Island for employment (table 2). This may be due to the fact that four out of the seven who relocated for employment moved from somewhere in the Northwest (as opposed to one from the Southwest and two from the Midwest) and the amount of responses tested may be too small to reflect true significance. Also, most of the sample migrated from the Northwest. Origin was almost but not quite significantly related to selecting lower cost of living as at least one of the reasons for moving to Orcas Island. This pattern was already noted by simply observing that this selection was from respondents who reported migrating from states with generally higher costs of living but, again, the small size of respondents (five) who selected this reason may limit the validity of any significance. Even so, a larger sample in the future may reveal a similar pattern if tested again.

Table 2. Previous Residence and Migrating for Employment, and Lower Cost of Living

		Moved to OI for employment		Total
		Yes	No	
Where participant previously lived:	Northwest	4	18	22
	California	0	17	17
	New England	0	8	8
	Southwest	1	5	6
	Midwest	2	0	2
	Southeast	0	1	1
	Other	0	4	4
Total		7	53	60

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.157[a]	6	.003
Likelihood Ratio	16.959	6	.009
Linear-by-Linear Association	.029	1	.864
N of Valid Cases	60		

a. 10 cells (71.4%) have expected count less than 5. The minimum expected count is .12.

		Moved to OI for lower living expenses compared to origin		Total
		Yes	No	
Where participant previously lived:	Northwest	0	22	22
	California	2	15	17
	New England	3	5	8
	Southwest	0	6	6
	Midwest	0	2	2
	Southeast	0	1	1
	Other	0	4	4
Total		5	55	60

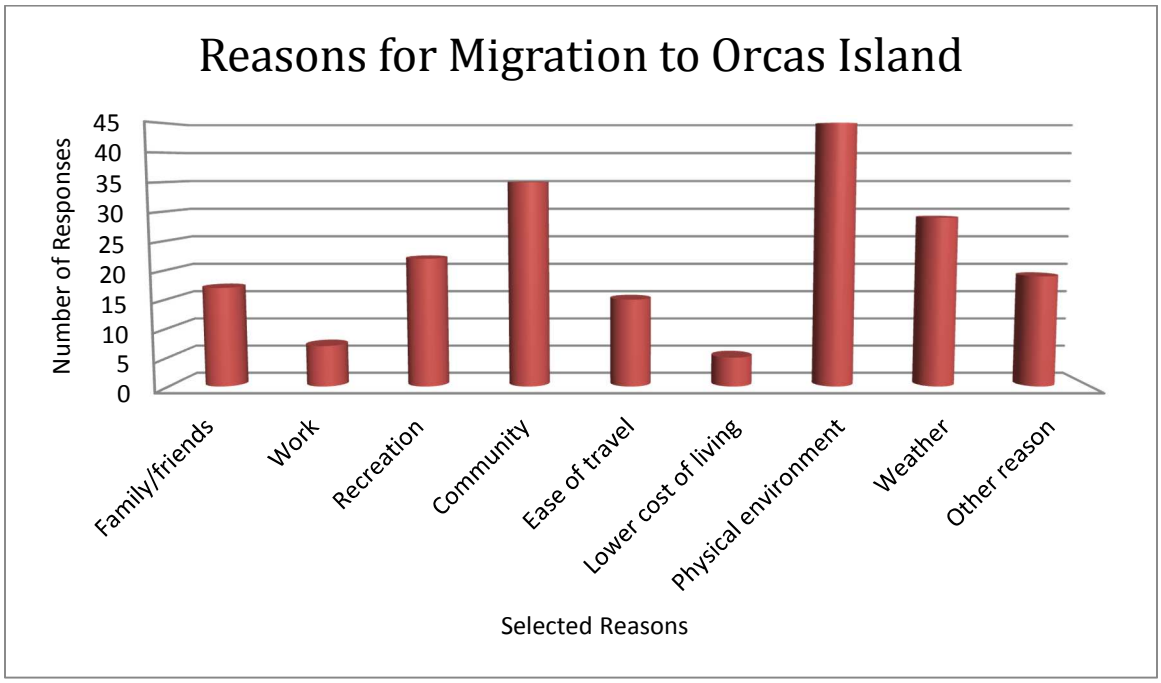
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12.353[a]	6	.055
Likelihood Ratio	11.520	6	.074
Linear-by-Linear Association	.033	1	.856
N of Valid Cases	60		

a. 10 cells (71.4%) have expected count less than 5. The minimum expected count is .08.

Amenity Migration and Geography

Respondents' selected reasons for why they moved to Orcas Island help to show what aspects specifically draw people to migrate there (figure 6). One did not respond. The most frequently chosen reason that respondents selected is the island's physical geography. Only sixteen of those who responded to the question did not select this as at least one of the reasons they moved to Orcas Island. Fifteen selected this reason without a rank, fourteen selected it as the first (primary) reason, twelve as the secondary reason, and four as the third. The second most frequently chosen reason is the island's community qualities/atmosphere. Nine selected this reason without a rank, nine chose it as the primary reason, seven as the secondary reason, seven as the third, and three as the fourth. The third most frequently chosen reason is the island's weather, and the fourth is the island's recreational activities. Only seven selected 'employment opportunity,' and only five selected 'lower living expenses compared to previous home.' The latter finding may be explained by the fact that two of those who selected that reason were from California and the remaining three were from New York City, Rhode Island and Maine, all of which are states with high costs of living, particularly the first two. The most frequent selections (natural environment, community atmosphere, weather and recreation), coupled with the rarity of economic selections (work and lower cost of living), may indicate that respondents migrated to Orcas Island primarily for its amenities.

Figure 6. Reasons for Migration to Orcas Island



Note: Responses are non-exclusive

Residency tenure is related to having selected geography as at least one of the reasons respondents migrated to Orcas Island (table 3), but the majority of the respondents (45) selected geography and so this selection's over-representation could inflate the relationship's significance. Tenure and respondents' transportation satisfying their mobility needs is also related, but the vast majority of respondents (51) strongly agree with the transportation statement and so that category may also be over-represented. Eight more somewhat agree with the statement, and the one who strongly disagrees has lived on Orcas Island for fifty years.

Among the reasons selected for which respondents migrated to Orcas Island, selecting family/friends is related to selecting formal home healthcare to help reduced

mobility (table 4). Selecting formal home healthcare to help reduced mobility is related to selecting assisted living on Orcas Island should one become available. Selecting formal home healthcare is also related to selecting relocation to a nursing home on Orcas Island should one become available. For all three of these relationships, most of the respondents who did not select one option also did not select the other.

Table 3. Migrant Characteristics Crosstabulated

Variable	Age					Income					Migrated for community					Migrated for travel ease					Migrated for physical geography				
	N	M	V	df	p	N	M	V	df	p	N	M	V	df	p	N	M	V	df	p	N	M	V	df	p
Migrant characteristics																									
Migrated for recreation											61	1	6	1	0.018	61	1	5	1	0.026					
Migrated for community																61	1	15	1	0.000					
Migrated for travel ease																					61	1	4	1	0.047
Residency tenure																					61	1	41	26	0.033
Transport mode	62	0	95	70	0.024	57	5	126	64	0.000															

Variable	Time spent: recreation					Passenger whose mobility is reduced					Reduced mobility affects recreation					Help mob: relocate A.L. on OI					Help mob: relocate N.H. on mainland				
	N	M	V	df	p	N	M	V	df	p	N	M	V	df	p	N	M	V	df	p	N	M	V	df	p
Migrant characteristics																									
Migrated for recreation											61	1	8	2	0.016										
Migrated for community																47	15	5	1	0.02	47	15	5	1	0.034
Migrated for travel ease	61	1	4	1	0.041																47	15	8	1	0.005
Residency tenure																									
Transport mode						62	0	130	30	0.000															

Variable	Aging priority: stay in home					Aging priority: relocate OI for mob					Aging priority: relocate to family					Transportation satisfies mobility					Happier where more mobility				
	N	M	V	df	p	N	M	V	df	p	N	M	V	df	p	N	M	V	df	p	N	M	V	df	p
Migrant characteristics																									
Migrated for recreation	60	1	4	1	0.047																				
Migrated for community						60	2	4	1	0.034											58	4	14	4	0.008
Migrated for travel ease											60	2	5	1	0.023										
Residency tenure																60	2	85	52	0.003					
Transport mode																60	2	77	18	0.000					

Note: Only results showing significance of 0.05 p-value or lower are displayed
N: valid responses. M: missing responses. V: chi-square value. df: degrees of freedom. p: p-value

Table 4. What Respondents Selected to Help Reduced Mobility Crosstabulated

Variable	Age					Income					Migrated for friends/family					Help mob: relocate mainland for mob					Help mob: relocate A.L. on OI				
	N	M	V	df	p	N	M	V	df	p	N	M	V	df	p	N	M	V	df	p	N	M	V	df	p
To help reduced mobility																									
Relocate mainland for mob.																					48	14	4	1	0.045
Relocate near friends/fam.	48	14	17	7	0.0174											48	14	8	1	0.006					
Relocate AL on O.I.																									
Informal home healthcare						44	18	16	8	0.038											48	14	4	1	0.04
Formal home healthcare											47	15	4	1	0.046						48	14	8	1	0.006

Variable	Help mob: relocate N.H. on OI					Help mob: relocate A.L. on mainland					Help mob: relocate N.H. on mainland					Aging priority: relocate OI for mob					Aging priority: relocate to family				
	N	M	V	df	p	N	M	V	df	p	N	M	V	df	p	N	M	V	df	p	N	M	V	df	p
To help reduced mobility																									
Relocate mainland for mob.											48	14	4	1	0.045						47	15	7	1	0.009
Relocate near friends/fam.																					47	15	8	1	0.005
Relocate AL on O.I.	48	14	18	1	0.000						48	14	5	1	0.033	47	15	11	1	0.001					
Informal home healthcare	48	14	5	1	0.027	48	14	4	1	0.048															
Formal home healthcare	48	14	9	1	0.003																				

Note: Only results showing significance of 0.05 p-value or lower are displayed
N: valid responses. M: missing responses. V: chi-square value. df: degrees of freedom. p: p-value

Migrating for recreational activities and migrating for the island's community qualities/atmosphere are positively related (table 3), so these two traits are perhaps related factors of Orcas Island's amenity migrant draw. It makes sense, then, that both migrating for recreation and migrating for community qualities are related to migrating for the ability to easily travel (less traffic, etc.) within the area. All of the participants who migrated for travel ease also migrated for community qualities. Migrating for travel ease is also related to both migrating for geography since all but one who migrated for travel ease also migrated for geography, and to respondents choosing recreational activities as at least one of the ways in which they spend the majority of their time since all but three who selected travel ease also selected the latter. The ability to easily travel

within the area, therefore, may accompany a preference for other desirable traits of a location such as physical geography, community qualities and recreation. Fewer respondents selected the former reason compared to the number who selected the latter reasons, but it should be noted that those who did also value the latter reasons.

There was no relationship between migrating for physical geography and migrating for either recreational activities, community qualities or the weather. There was also no relationship between migrating for the weather and migrating for recreation or community qualities. Migrating for recreation is related to respondents selecting recreation as at least one of the activities affected by reduced mobility (table 3). Though there were only four who reported the latter, they all listed migrating for recreational activities as at least one of the reasons they moved to Orcas Island. Migrating for recreation is also related to respondents prioritizing remaining in their homes as most important for the remainder of their lives. However, the majority of respondents (46) selected the latter which may inflate the relationship's significance.

Nineteen respondents commented in the 'other' field when selecting reasons for migrating to Orcas Island, two of whom did not also select other reasons: one respondent mentioned family, and noted, "loved it here since early childhood." This respondent also reported having owned property on Orcas Island since the 1950s and having lived there full time for over thirty years. The other respondent reported having bought property and having migrated in 1949. Early property ownership may indicate these two respondents' early recognition of the island's value or desirability.

Most respondents who commented in the 'other' field did so in addition to selecting other reasons. Some comments include: "quiet and simple"; "fishing/retired"; "a good place to raise a family"; "looking for land after retirement"; "close to family in Seattle"; "lack of crime" (connected to community qualities, which this respondent ranked as the primary reason for moving to Orcas Island); "concern regarding climate change - drought conditions in central Texas"; "childhood memories, and business"; "small town"; "family…relocated a long time ago"; "bought a business"; "academic and artistic population"; "marine environment"; "closer to children in California"; and "weather was a big factor… I am consistently physically active here." Some themes revealed indicate the area's safety and relaxed pace, specific weather factors and aspects of the environment, and retirement. A couple of respondents mentioned a business, and a couple mentioned proximity to family. The draw of the academic and artistic population mentioned by one respondent may be a 'population amenity' that attracts those who consider a desirable type of acquaintance.

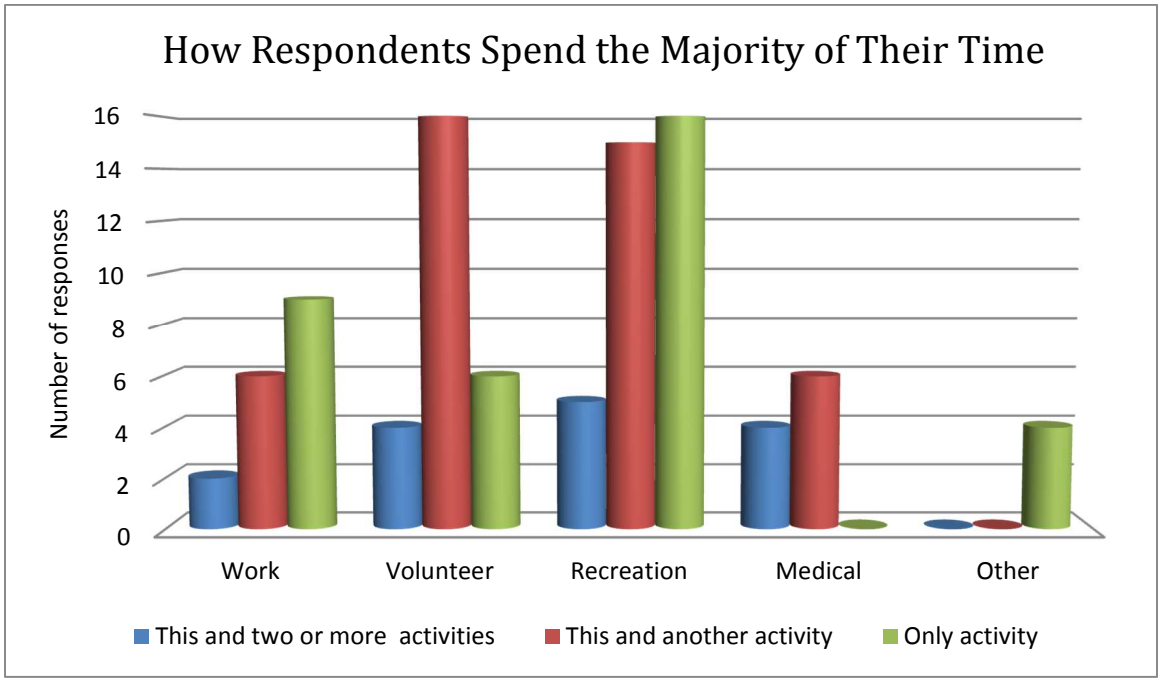
Those who selected family or friends among the reasons they migrated to Orcas Island (17) have lived there for an average of approximately twenty years. Those whose primary reason to migrate was due to employment (7) have lived there for an average of approximately 25 years. Those whose reasons included recreational activities (22) have lived there for an average of approximately 16.5 years. Those whose reasons included Orcas Island's community qualities/atmosphere (35) have lived there for an average of approximately 22 years, and those for whom this was the primary reason (10) have lived there for an average of approximately 31 years.

The findings show that the reasons why respondents migrated to Orcas Island centralize on the area's desirability, which may further confirm that those who migrate there do so more by desire than by necessity. Whisler et al. (2008) find that retirees prioritize living places that do not have high costs of living, high crime rates, or adverse climates. While the findings of this study support the latter two priorities, the growing population of retiree-aged Orcas Island residents does not seem deterred by the island's high cost of living. This may simply reflect the fact that the sample (and a significant portion of the population) is characterized by average incomes that are higher than those of the state or country's general aging population, but statistics show that Orcas Island residents actually spend a higher proportion of their income on living expenses (Losleben, 2013). Other factors may, then, outweigh any fiscal burden from higher cost of living.

With the exception of employment since it is not an optional activity if it provides or supplements the income by which an older adult survives, the way in which respondents spend the majority of their time can also shed light on their priorities. The most common way in which respondents spend the majority of their time is recreational activities or hobbies (figure 7). While the options are not exclusive, over half of the sample selected this. Almost half selected volunteering, and almost a quarter of the sample selected both volunteering and recreation. On respondent noted that he/she volunteered "some a few years ago - when could drive (age too dangerous)," and responded to a later question that volunteering was one of the activities affected by reduced mobility. Only 17, or a little over one quarter of the sample, selected

employment, and ten selected medical treatment/self-care. Eight of those ten also selected recreation, while one also selected only employment and another also selected only volunteering.

Figure 7. How Respondents Spend the Majority of Their Time



Note: Responses are non-exclusive

Several respondents commented in the 'other' field, though most of the comments qualified to be re-categorized as recreational activities/hobbies. Seven respondents only commented in the 'other' field without selecting any other reasons, though three of those comments were re-categorized as recreation (with one including volunteering which was re-categorized accordingly as well). The other four respondents reported spending the majority of their time in these ways: "quietly at home"; "care of 72 acres plus rental care"; "living"; and "building home in Eastsound." Each of these four comments may

arguably relate to the home, and therefore may relate to a common priority on aging in place. In response to a later question, the latter respondent specified building a one-story home where “one area will be wheelchair accessible - with kitchenette and two rooms that could be used as bedroom and living room.” This respondent is addressing either a current or future mobility limitation by building an accessible home in Eastsound, a walkable area.

The three respondents who selected ‘other’ as their only option, but whose responses could be categorized as recreational activities, reported: “artwork, writing, reading”; “artwork and related activities and weight training”; and “combination of working in yard and house at home, volunteering, hobbies.” The other six respondents who selected ‘other’ in addition to predefined options reported spending their time on a wide variety of classes and hobbies, community church, physically active yardwork and gardening at home, and having friends and family visit. It should be noted that not all activities specified require leaving the home. Activities such as entertaining guests or yardwork, for instance, may be prioritized hobbies that do not regularly require access to town or elsewhere. In these cases, any loss of previous mobility may be compensated by fulfilling activities that occur at home. This supports findings of Webber et al. (2010) and Stephens et al. (2014) which explore how older adults who may use resilience and adaptation to compensate for reduced mobility, in addition to findings of Clément and Daris (as cited by Lord & Luxembourg, 2006) which show how feelings of isolation or loneliness are not always the outcomes of reduced mobility.

Transportation and Mobility

How respondents fulfill their transportation needs can impact how satisfied they are with their current level of mobility. Most drive their own vehicle (table 5). Of those, four also receive rides as a passenger, three also walk, one also walks and bikes, and one also wrote in the 'other' field: "personal aircraft for off-island trips." Eight respondents receive rides as their primary transport mode, four of whom rely solely on this. One commented, "I never learned to drive, [was] always chauffeured, bus, train … lived in New York [for] 50 years." Seven respondents walk as their primary mode, one relying solely on this. This respondent did not indicate home location on the map outline, so it is unclear whether he/she lives in Eastsound or a smaller hamlet along the coast. Three respondents bicycle as their primary mode, one relying solely on this. This respondent indicated living in the northern part of the island, allowing easy cycling to Eastsound.

Table 5. Transport Mode(s)

	Frequency	Percent
Walk only	1	1.6
Bike only	1	1.6
Drive only	47	75.8
Ride as passenger only	2	3.2
Ride as passenger, and transport service	1	1.6
Walk and drive	3	4.8
Walk and ride as passenger	1	1.6
Walk, bike and drive	1	1.6
Drive and ride as passenger	3	4.8
Walk, bike and ride as passenger	1	1.6
Drive, and fly personal aircraft for off-island trips	1	1.6
Total	62	100.0

An interesting finding among this sample is that neither volunteer nor paid transport services, for those who do not drive, are used for all trips: the one respondent who uses transport services also uses informal rides as a passenger for trip-making. This may be due to the fact that, although volunteer transport services are available through the Senior Center, they must be scheduled and do not necessarily satisfy the majority of one's desired trips for social or other purposes. Paid transport services are comparatively costly. Only acquaintances, friends or family can provide rides for unscheduled, non-emergent activities.

The relationship between age and mode of transportation is significant (table 3). Those who do not drive and who ride as a passenger tend to be older (table 6). The relationship between annual household income and mode of transportation is very significant, as is the relationship between mode of transportation and whether transportation arrangements satisfy respondents' mobility needs (table 3). With the exception of five who somewhat agree, the other 41 respondents who drive strongly agree that their transportation arrangements satisfy their mobility needs (table 7).

Eleven respondents reported traveling primarily as a passenger and being in a situation that has reduced their previous ability to travel outside of the home (table 8), but three respondents' comments imply that riding as a passenger is simply a personal preference, and so it may not necessarily affect QoL. They commented in the 'other' field without selecting either of the other two reasons for reduced travel ability and reported, "Still stable…Activities continued"; "Physically healthy"; and "Good health." Three others also selected the 'other' field; however, one did not specify a situation. The other

two reported, “Personal preference”; and “more economical than two cars.” Three respondents reported a health condition as the situation that has reduced their travel ability. One noted, “Sometimes travel as passenger,” and another noted, “Mostly stuck at home. Daughter busy.” Two respondents reported discontinued access to previous mode(s) of transportation for any other reason as the situation that has reduced their travel ability. The relationship between transportation mode and respondents traveling primarily as a passenger and being a situation that has reduced their mobility is very significant (table 3).

Table 6. Transportation Mode and Age Crosstabulated

Transportation Mode	Age								Total
	Under 65	65 - 69	70 - 74	75 - 79	80 - 84	85 - 89	90 - 94	95 +	
walk	1	0	0	0	0	0	0	0	1
bike	0	1	0	0	0	0	0	0	1
drive	3	11	8	11	9	3	2	0	47
passenger	0	0	0	0	1	0	0	1	2
passenger, transport service	0	0	0	0	0	0	1	0	1
walk, drive	1	0	0	1	1	0	0	0	3
walk, passenger	0	0	0	0	1	0	0	0	1
walk, bike, drive	0	1	0	0	0	0	0	0	1
drive, passenger	0	0	1	0	2	0	0	0	3
walk, bike, passenger	1	0	0	0	0	0	0	0	1
drive, personal aircraft	0	0	0	1	0	0	0	0	1
Total	6	13	9	13	14	3	3	1	62

Table 7. Transportation Mode and Whether it Satisfies Mobility Crosstabulated

		Transportation satisfies mobility needs			Total
		Strongly agree	Somewhat agree	Strongly disagree	
Mode	walk	1	0	0	1
	bike	0	1	0	1
	drive	41	5	0	46
	passenger	1	1	0	2
	passenger and transport service	0	0	1	1
	walk and drive	3	0	0	3
	walk, bike and drive	1	0	0	1
	drive and passenger	3	0	0	3
	walk, bike and passenger	0	1	0	1
	drive and personal aircraft	1	0	0	1
Total		51	8	1	60

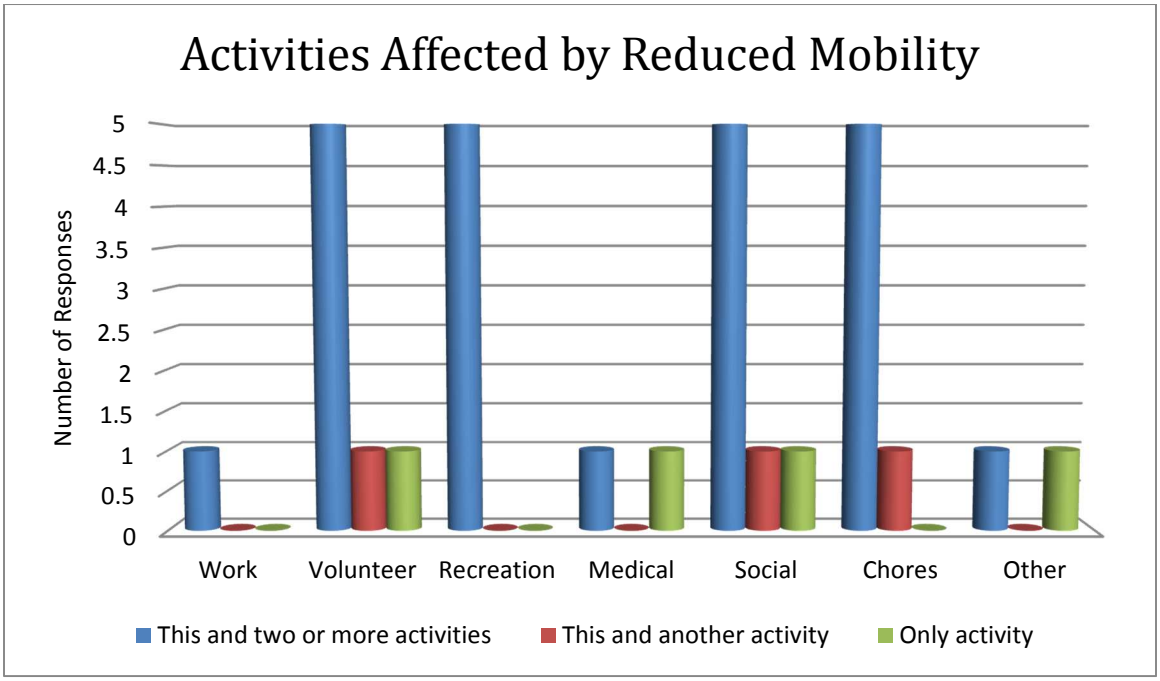
Table 8. Passengers with Reduced Mobility

	Frequency	Percent
Caused by no access to previous transportation mode	2	3.2
Caused by health condition	3	4.8
Other	6	9.7
Total	11	17.7

Eleven respondents reported having activities affected by their reduced ability to travel outside of the home (figure 8). Seven selected volunteering (one of whom specified "services for Senior Center"), seven selected social activities, six selected chores/errands, five selected recreation, two selected medical care/treatment for self, two selected 'other,' and one selected employment. Four respondents selected only one activity, and four selected at least four activities. One who selected volunteering and social activities also

commented, “I exercise a lot on my property…maintaining about nine acres. Fortunately I love working outdoors.” As indicated in response to how respondents’ spend their time, this may imply that recreational hobbies done at home can help to obviate any potential reduction in QoL caused by decreased mobility. How they spend their time and what they value about living on the island may influence the importance of independent mobility.

Figure 8. Activities Affected by Reduced Mobility



How to Mitigate Reduced Mobility

While fourteen respondents did not answer the question that asked what they think would most help if they were in a real or hypothetical situation that has reduced their ability to travel outside of the home, the most popular option among those who did respond was home healthcare (figure 9). Thirty out of 48 respondents selected either informal (provided by friends or family) and/or formal home healthcare (provided by an

agency or formal contact), with an equal amount of informal home healthcare options selected as formal home healthcare. Only two selected informal home healthcare as their *only* option, but considering how few selected only one option (figure 10), the fact that roughly half of the sample selected home healthcare at all indicates a priority to remain in the home where they reside. Fortunately, an organization on Orcas Island is in the process of training and certifying formal home healthcare providers so that more are available to assist residents of varying incomes whose only sources of payment for medical services are Medicare and Medicaid (D. K., personal communication, March 20, 2015).

Figure 9. What Respondents Believe Would Help Their Current or Theoretical Reduced Travel Ability (Non-Exclusive)

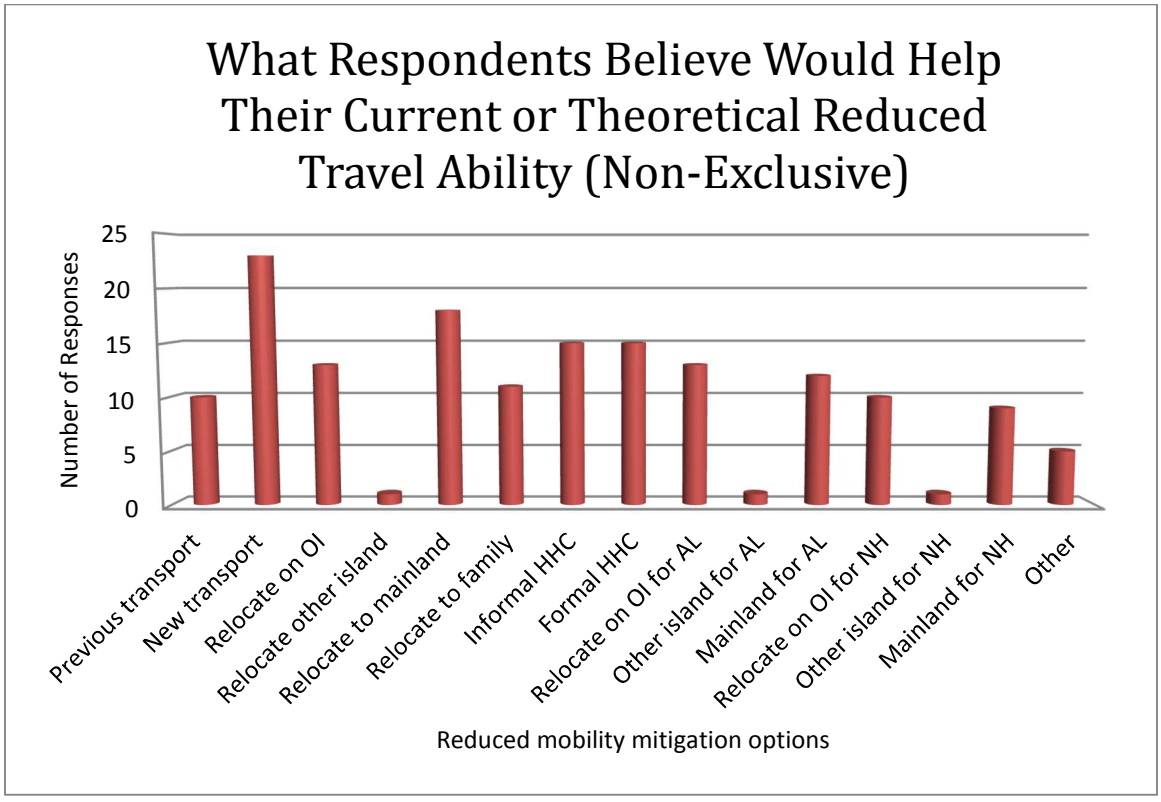
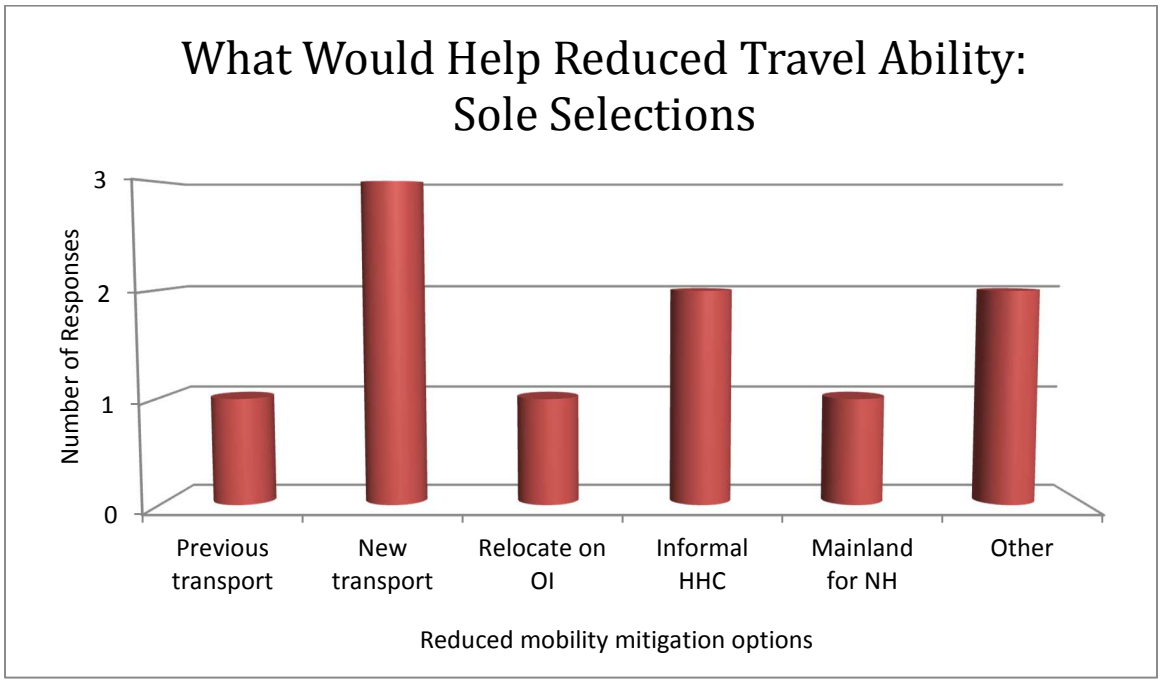


Figure 10. What Would Help Reduced Travel Ability: Sole Selections



There is a significant relationship between income and selecting informal home healthcare among the options to help current or theoretical reduced mobility (table 4). Although it has been noted that the majority of the respondents earn an annual household income within $50,001 and $75,000, half of the respondents (eight out of sixteen) in this income category selected the informal home healthcare option while the majority of the respondents within the $25,001 - $35,000 income category (four out of five) selected this option. Again, this significance should be interpreted with caution since it includes such low numbers, but were the study repeated with a higher sample, it may indicate a pattern of those in the lower income range favoring informal home healthcare more, and this may be due to the fact that it is more affordable than formal home healthcare. Comparatively, however, there is no significant relationship between income and formal home

healthcare. Out of the same count, five out of 11 of those within the $50,001 - $75,000 income category selected formal home healthcare, while three out of five of the $25,001 - $75,000 selected this option. This negates the cost assumption; although, again, the low count could prove the assumptions invalid altogether.

The second most popular option is a new transportation mode (some examples given of this option in the questionnaire include walking, bicycling, driving, or public transport services). Over one third of the sample selected this option, with most specifying public transport services. One respondent commented, “All these apply – I am anticipating mobility challenges – including inability to drive car.” Some specifically suggested a public bus, made available daily, and “by appointment as well as regular trips.” One also commented that this is “usually only available during the high (tourist) season.” One explained, “We need more public transportation…although I still drive…there will come a time when I cannot do as much driving.” One specified train and air in addition to bus, and one also specified walking. Three respondents specified a new transportation mode as driving (it is possible that these three have never driven before, or have not driven in some time, and that is why this mode would be new to them even though it is a commonly used transportation mode by the majority of the island’s population). Two respondents specified volunteer transport services, one of whom commented, “Senior Services have outings but more services could be utilized,” and another of whom specified riding as a passenger in a personal vehicle in addition to volunteer transport.

The third most popular option which respondents believe would help their current or theoretical reduced travel ability is to relocate to the mainland to increase access to opportunities that are currently limited or unavailable due to decreased travel abilities. This may appear incongruent with the theme of home location desirability evident among the findings, but it is unclear whether this option was chosen primarily because relocation on-island for similar reasons is considered to be impossible due to lack of infrastructure and needed services, or if it was chosen primarily due to personal preference. The intention was for respondents to select options based on personal preference, given the assumption that all options *are* possible. The fact that the entire sample migrated from another place points to the high probability of other established connections off-island, where they may prefer to relocate out of convenience should mobility limitations prove relocation beneficial. Of note is that out of the eighteen who chose this option, all but five later selected remaining in one's home even with decreased mobility as at least one of the most important options of how to spend the remainder of life. Of those five, only three did not select relocating elsewhere on-island to increase mobility. That may indicate that, with the exception of three, respondents who considered relocating to the mainland to increase mobility also prefer remaining in their current homes, or at least on Orcas Island.

The tied fourth most popular options which respondents believe would help reduced travel ability are to relocate to an area on Orcas Island that would provide easier access to activities which are currently limited due to decreased travel abilities, and to relocate to an assisted living facility or community on Orcas Island (should such an option become available). Other options fall close behind in popularity, but the least most

popular options involve relocating to another island. Only two respondents considered these options: one selected the option to relocate to a skilled nursing facility on a different island, if available, with the note, “Cannot rule out,” and another selected the options to relocate to a different island that would provide easier access to opportunities that are currently limited or unavailable due to decreased travel abilities, and to relocate to an assisted living facility on a different island with the note, “not a happy choice” (this respondent also noted already having had to spend time there). Both of these respondents listed several other options which they prioritized, and seemed to indicate that relocation to a different island would be a reluctant choice.

This finding confirms previous reports that Orcas Island residents generally do not favor the other San Juan Islands equally and therefore would sooner find reasons to travel to the mainland than to a different island, especially since ferry travel is necessary either way. Having to leave their homes and relocate to an assisted living facility, skilled nursing facility or other type of residence to accommodate decreasing mobility and independence may disrupt the unique sense of place that contributes to Orcas Island residents’ QoL, and which they seek to maintain by staying in their current homes as long as possible. Relocating to the mainland is a more popular option, likely due to familial ties or other connections already established there from previous residences.

Most respondents who selected relocating to an assisted living facility on Orcas Island, should one become available, in order to help reduced mobility also selected community qualities as one of the reasons for migrating to Orcas Island (table 3). It may be that those who would consider an assisted living facility on Orcas Island to be an

option believe that they would retain a sense of community in doing so. Most respondents who selected relocating to a skilled nursing facility on the mainland in order to help reduced mobility also selected having migrated for the island's community qualities. Migrating for the island's community qualities is also related to respondents' prioritizing relocation elsewhere on Orcas Island in order to increase activities outside of the home if travel abilities decrease, when considering how to live the rest of their lives. All but one respondent who selected the latter category also selected migrating for community qualities. Migrating for community qualities is also positively related to whether respondents believe that they would be happier living in a place where they had greater independent mobility.

Age was related to respondents having selected the option to relocate to live with or near friends/family, whether on or off island, in order to help their current or theoretical reduced mobility (table 4). Five of the 11 respondents who selected this option are 80 - 84, and three more are 85-89. It may be that those who are older are more likely to consider familial help for their mobility needs. Relocating to the mainland to increase access to opportunities in order to help reduced mobility is also related to relocating with or near friends or family wherever to help reduced mobility, and also to relocating to a skilled nursing facility on the mainland. This is also related to respondents' prioritizing relocating off of Orcas Island in order to live with or near family or friends when considering how to live the rest of their lives. These relationships indicate a connection between respondents' willingness to relocate to the mainland to increase mobility opportunities and relocating to the mainland to be near family. Not surprisingly,

relocating with or near friends or family, whether on or off island, to help reduced mobility is related to relocating off Orcas Island to live with or near family or friends when considering how to live the rest of their lives.

Relocating to an assisted living facility on the mainland to help reduced mobility is related to relocating off of Orcas Island to live near family or friends when considering how to live the rest of their lives, and relocating to a skilled nursing facility on the mainland is also related to prioritizing relocation off of Orcas Island to live near family or friends (table 9). For both of the last situations, most who did not select one option did not select the other. This may be because those who prioritize relocating near family do not consider the need or desire to relocate to a care facility.

Table 9. Most Important for Remainder of Lives Crosstabulated

Variable	Lives in Eastsound					Help mob: access to prev transport mode(s)					Help mob: access to new transport mode(s)				
	N	M	V	df	p	N	M	V	df	p	N	M	V	df	p
Priorities for aging															
Relocate elsewhere on O.I. to increase access (mobility)											47	15	6	1	0.011
Relocate off-island to live near friends/family															
Happier living somewhere with greater mobility	58	4	11	4	0.029	47	15	11	4	0.032					

Variable	Help mob: relocate A.L. on mainland					Help mob: relocate N.H. on mainland					Transportation satisfies mobility				
	N	M	V	df	p	N	M	V	df	p	N	M	V	df	p
Priorities for aging															
Relocate elsewhere on O.I. to increase access (mobility)															
Relocate off-island to live near friends/family	47	15	6	1	0.012	47	15	7	1	0.007					
Happier living somewhere with greater mobility											58	4	16	8	0.038

Note: Only results showing significance of 0.05 p-value or lower are displayed
N: valid responses. M: missing responses. V: chi-square value. df: degrees of freedom. p: p-value

Selecting informal home healthcare to help reduced mobility is related to selecting assisted living on the mainland to help reduced mobility (table 4). All but one of those who selected the former did not select the latter. This may indicate that those who consider informal home healthcare as an option to help reduced mobility would not consider relocating to an assisted living facility on the mainland. Comparatively, seven of the fifteen who selected the former selected relocating to an assisted living facility on Orcas Island (should one become available) to help reduced mobility and six of the fifteen selected relocating to a skilled nursing facility on Orcas Island (should one become available) as an option. The fact that selecting informal home healthcare to help reduced mobility is negatively related to selecting relocation to the mainland for assisted living, and positively related to selecting relocation on Orcas Island for assisted living or for skilled nursing care, may indicate that those who consider informal home healthcare as an option to help reduced mobility are more likely to relocate on Orcas Island for a higher level of care than relocate off-island. This suggests that they seek to maintain their sense of place, supporting the notion as explained within the literature.

Selecting relocation to an assisted living facility on Orcas Island (should one become available) to help reduced mobility is related to selecting relocation to a nursing home on Orcas Island; to selecting relocation to a nursing home on the mainland; and to relocation elsewhere on Orcas Island in order to increase mobility when considering how to live the rest of their lives (table 4). For these situations, most who did not select one also did not select the other. The first relationship mentioned would imply a dichotomous relationship between selecting relocation to assisted living on Orcas Island and selecting

skilled nursing care on Orcas Island. This may be unrelated to geography and instead related to anticipated level of care or preferred level of care which, despite individual efforts at good health, may not necessarily be up to an individual's choice. The second relationship mentioned may be due to the above scenario or geography. The third one is less clear yet may also have to do with respondents' anticipated care needs, whether they involve assisted living or simply relocation to a more accessible area (on island).

Seven respondents selected the custom 'other' field, a couple of whom explained that they are already in a situation that is best adapted to any reduced mobility levels. For instance, one reported, "I have [the] advantage [of] living and care with daughter and son-in-law. Home care to the end of days." Another selected multiple options, but also reported current efforts to adapt to this situation by building a one-story, wheelchair-accessible home in Eastsound. One respondent selected multiple options, but reported a desire for this option: "Relocate to senior subsidized housing," due to limited finances. He/she further specified the need for a one-story home, and that "some 'watching over' me might be necessary." This respondent also selected the option to relocate to an assisted living facility on Orcas Island, should such an opportunity arise, but explained that cost would be a barrier. He/she reported already living with family, but experiencing limited mobility due to their busy schedule. Another option he/she selected was to relocate elsewhere on Orcas Island in order to provide easier access to activities that are limited due to decreased travel abilities, but with the note, "But personal attachment to home." Evident in this respondent's selections are the potentially conflicting desire for increased mobility, realization of needing some level of care or support, realization of

finances limiting living and care options, and also the desire to remain in one's preferred home.

One respondent selected the option for access to previous transportation mode(s), along with the option, "Have family relocate here." Again, this supports the importance of sense of place and its role in QoL. Another selected multiple options, included relocating to the mainland in order to increase travel opportunities, and specified a preference to relocate to Anacortes (Anacortes is the closest mainland town, located at the mainland ferry terminal). Another respondent selected the option for access to new transportation modes and also explained, "It would depend on how much my ability was impaired." Similarly, another only wrote, "future needs will provide adequate decision. Today my thoughts are to remain in our home even with an illness." This last remark resonates with the next question's findings on respondents' priorities to remain in their homes. One respondent commented in the custom 'other' field a desire to stay near family and settle with adult children should they retire. This was categorized as an already listed option: relocate to live with/near family. One respondent wrote a note that was less a potential option than a general comment: "Relocation is not needed for me at almost 70 years old," in addition to selecting the option for access to new transportation modes.

As explained, there is currently no assisted living (AL) facility or community on Orcas Island aside from a small adult family home. Out of the 62 respondents, thirteen considered relocating to an AL facility or community on Orcas Island to be an option, should one become available in the future, if they currently or hypothetically experience

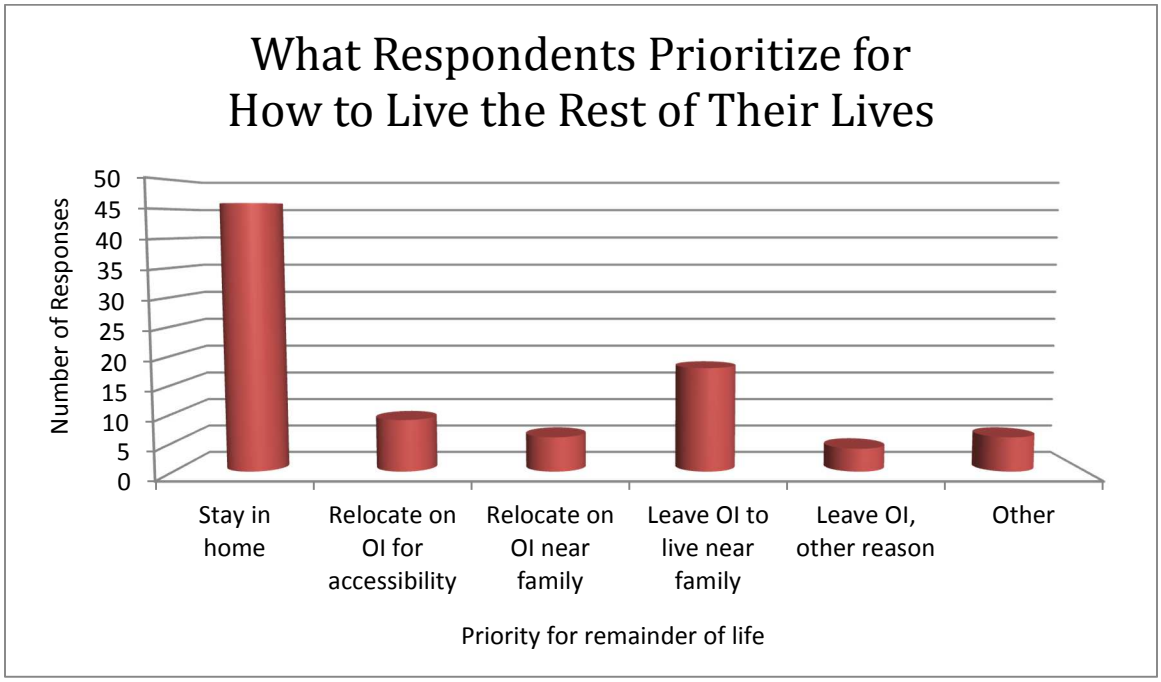
reduced mobility. Five of these also considered relocating to an AL facility on the mainland to be an option. A total of twelve consider AL on the mainland as an option, and one respondent considers relocating to an AL facility on another island to be an option but not preferred. Though no respondents consider relocation to an AL facility as their only option, almost one third (20 out of 62) consider it as an option among others. This is a somewhat lower percentage than shown in the older survey from Orcas Research Group which addressed Orcas Island seniors' expected need for AL and found that around half of its participants expected a need for AL, specifically on Orcas Island (Waltersdorph & Kolton, 2006). This may be due to the fact that the two surveys were created for similar but different purposes and were therefore designed differently.

Priorities for Aging, Quality of Life and Aging in Place

About three quarters of the respondents (46) selected staying in the current home, even if they experience reduced ability and/or opportunities to travel outside of the home as much as they currently do, as most important when considering how to spend the rest of their lives (figure 11). This finding supports the AARP research which found that 89% of Americans aged 50 and older would like to stay in their homes for as long as possible, and 85% would like to stay in their communities for as long as possible (Hodder, 2007). Sense of place, as emphasized in the literature, is therefore an important component of respondents' quality of life. Eighteen selected leaving Orcas Island to relocate with or near family or friends elsewhere as most important. While it involves leaving the known home, this response is not surprising since the entire sample migrated from elsewhere,

and “often the loss of driving privileges also signifies a lifestyle change that includes moving to new housing and relocating to be near adult children” (Hunter-Zaworski, 2007, p. 22). Nine respondents selected relocating elsewhere on Orcas Island to increase access to activities. Six selected relocating elsewhere on Orcas Island to live with or near family or friends, four selected leaving Orcas Island to relocate elsewhere for any other reasons, and two did not respond. Six commented in the ‘other’ field: “Relocating on Orcas – downsizing”; “Don’t know yet”; “If we move, Houston, TX is preferred” (this was re-categorized as ‘leaving Orcas Island to relocate elsewhere for any other reason’); “Moved into smaller home, gave big one to children”; “A semi-‘watched over’ situation…if affordable”; and one simply reported being currently healthy and active.

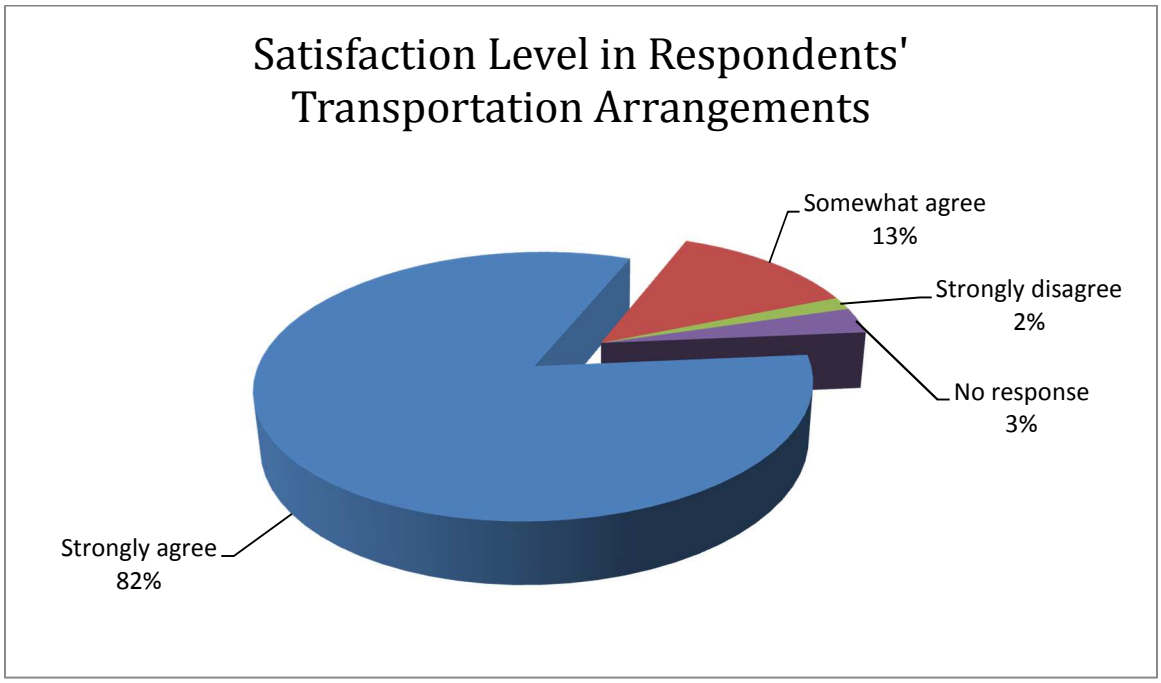
Figure 11. What Respondents Prioritize for How to Live the Rest of Their Lives



Note: Responses are non-exclusive; some respondents selected more than one priority

Aside from two who did not respond, all but nine respondents, or over four fifths of the sample, strongly agreed that their transportation arrangements generally satisfy their needs to participate in activities outside of the home (figure 12). One respondent noted, “Currently” next to this selection, and another explained, “As of this date…I still drive on island and off island, but I am concerned about future years as I live alone and live eight miles out of Eastsound.” Eight respondents somewhat agreed that their transportation arrangements satisfy their needs to participate in out-of-home activities, and one strongly disagreed. The respondent who strongly disagreed reported, in response to the question addressing primary mode of transportation, that he/she used to walk but is now “too ‘compromised,’" that he/she had driven until the age of 92, and that he/she accepts rides as a passenger with the Senior Center’s volunteer transport service when it is available. This respondent also reported volunteering as one of the activities affected by reduced mobility. For prioritizing how to spend the remainder of life, he/she selected relocating elsewhere on Orcas Island (“if possible”) to increase access to out-of-home activities, as well as staying in current home, noting “a semi-‘watched over’ situation would be great if affordable.” The fact that this respondent drove past the age of ninety and previously volunteered may have led to dissatisfaction with current transportation limitations.

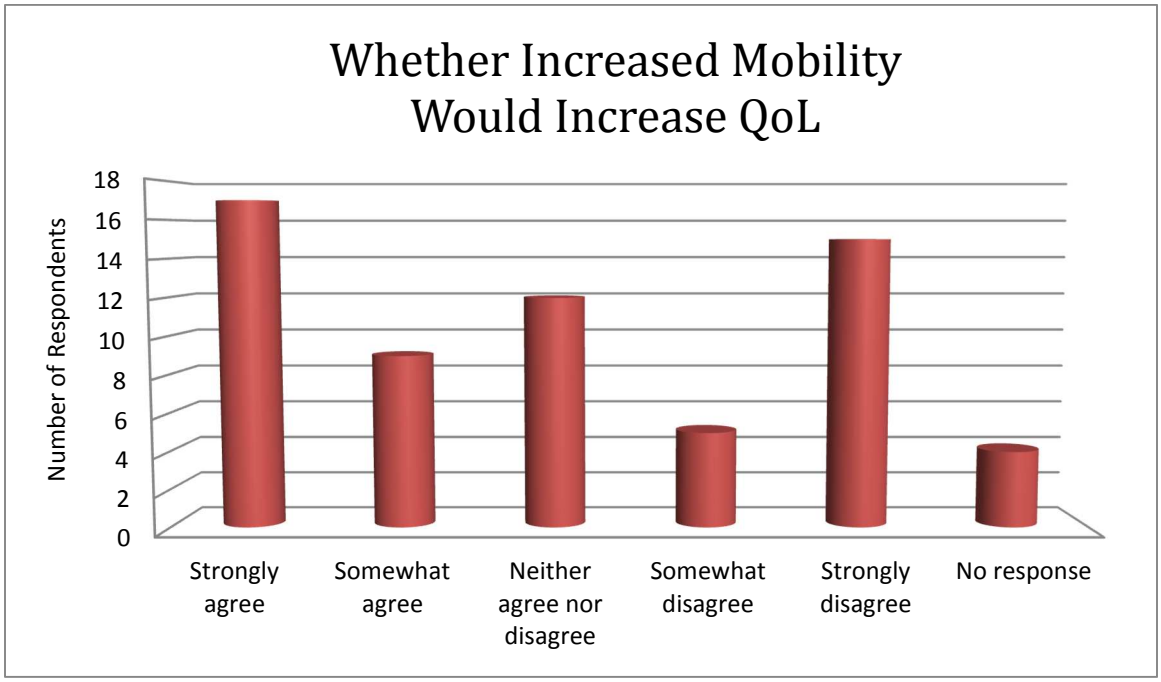
Figure 12. Satisfaction Level in Respondents' Transportation Arrangements



Four respondents did not answer whether they believe that they would be happier living in a place where they could independently walk, wheelchair, bicycle, or use some form of convenient public transport services in order to access activities outside of the home more easily, more often and with greater independent mobility. One of these wrote "N/A" and another wrote "N/A for now." Of those who did respond, a slight majority of 17 strongly agreed that they would be happier living somewhere with greater mobility (figure 13). Fifteen strongly disagreed, four of whom specified the answer to apply at the present time due to being currently independent, and one of whom noted, "I love my home and hope never to leave it alive." Twelve neither agreed nor disagreed, two of whom implied that they already moved somewhere with greater independent mobility by commenting, "Already done," and, "I live within walking distance to everything!" Nine

somewhat agreed that they would be happier living in a place with greater independent mobility, though one also commented, “Would miss home,” and mentioned potential financial barriers to this option. Five respondents somewhat disagreed.

Figure 13. Whether Increased Mobility Would Increase QoL



Respondents selecting access to previous transportation modes to help reduced mobility is related to whether they believe that they would be happier living somewhere with greater mobility (table 9). All but one out of ten who selected the former option either somewhat or strongly agree with the latter statement. Respondents selecting access to new transportation modes to help reduced mobility is related to their prioritizing relocation elsewhere on Orcas Island in order to increase activities outside of the home if travel abilities decrease, when considering how to live the rest of their lives. All but one of eight respondents who selected the latter also selected the former.

Relocating elsewhere on Orcas Island in order to increase mobility when respondents consider how to live the rest of their lives is almost related to whether they believe they would be happier living somewhere with greater mobility, although it is just outside of significance threshold. Selecting whether transportation arrangements satisfy needs to participate in activities outside of the home is related to whether respondents believe they would be happier living somewhere with greater mobility (table 9). Also, whether or not respondents live in Eastsound is related to whether they believe they would be happier living somewhere with greater mobility. Of the eight in Eastsound, five neither agree nor disagree, two strongly agree, and one strongly disagrees.

The last four questions, which concern what respondents believe would help any reduced mobility, what they prioritize when considering how to live the rest of their lives, whether their transportation arrangements satisfy their mobility needs, and whether increased mobility would increase QoL, reveal these important findings: the majority of the sample prefers remaining in their current home and they are currently satisfied with their transportation arrangements (mainly driving). However, excluding those who neither agree nor disagree that they would be happier living in a place with more transportation options and increased mobility, two of whom reported already living with optimal mobility, more respondents strongly or somewhat agree (26) than strongly or somewhat disagree (20). In addition to mobility, social connection and autonomy are important components of QoL. Relocating within one's own community in order to maximize independent mobility and social participation supports the literature that

emphasizes these connected components of QoL. When sense of place and mobility are dichotomous options, however, most respondents prioritize sense of place over mobility.

The chi-square statistics unveil significant relationships among various survey factors. Firstly, migrating to Orcas Island for its community qualities/atmosphere is related to several other variables: migrating to Orcas Island for its recreational activities; migrating for ability to easily travel within the area; selecting relocating to an assisted living facility on Orcas Island, should one become available, in order to help current or theoretical reduced mobility; selecting relocating to a skilled nursing facility on the mainland to help reduced mobility; selecting relocation to another area on Orcas Island in order to increase access to activities outside of the home; and whether respondents would be happier living in a place where they could experience more independent travel mobility. Most of these factors relate to remaining connected to the local island community. Relocating to a skilled nursing facility on the mainland to help reduced mobility may indicate a desire to maintain mobility and connection to a community even if it is in a foreign location, if remaining in place would otherwise increase isolation.

Migrating to Orcas Island for recreational activities was related to migrating for its community qualities, as mentioned above, as well as migrating for its travel ease. Migrating for its travel ease was related to migrating for its recreation and community qualities, as mentioned above, as well as to migrating for its physical geography, and to respondents selecting recreational activities as at least one of the ways in which they spend the majority of their time.

Selecting relocation to live with or near friends or family, whether on or off Orcas Island, in order to increase current or theoretical reduced mobility is related to respondents selecting relocation off of Orcas Island to live with or near friends or family when considering how to spend the rest of their lives. It is also related to relocating to the mainland to increase access to opportunities that are currently limited or unavailable due to decreased mobility. In addition, relocating to the mainland to increase mobility access is related to selecting relocating to a skilled nursing facility on the mainland, and to respondents selecting relocation off of Orcas Island to live with or near friends or family when considering how to spend the rest of their lives. These correlations signify relational links to the mainland which increase the likelihood of considering a necessary migration back to there.

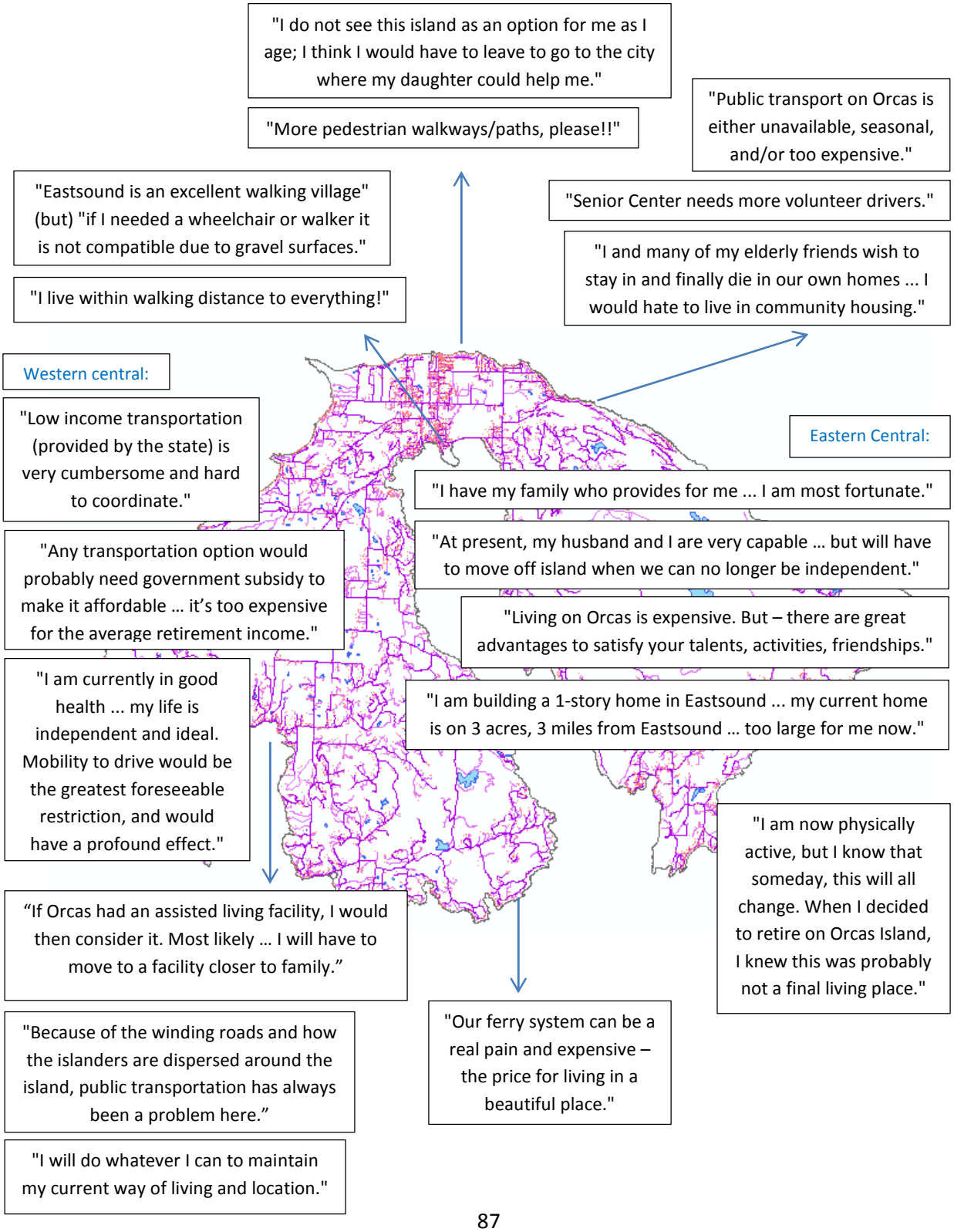
Respondents who selected informal home healthcare as an option to help reduced mobility were more likely to also select the options of relocating to either an assisted living facility or a skilled nursing facility on Orcas Island, should either become available, than to also select relocating to an assisted living facility om the mainland. Respondents selecting the option to relocate elsewhere on Orcas Island to increase travel mobility when considering how to spend the rest of their lives was related to having migrated there for community qualities, as mentioned above, as well as other factors: selecting access to new modes of transportation to help reduced mobility; relocating with or near friends or family, wherever, to help reduced mobility; relocating to the mainland to help reduced mobility; and whether respondents would be happier living somewhere with greater independent mobility. This indicates a trend that, among those who would

consider relocating on Orcas Island to increase mobility, mobility or staying connected to others or the community is a priority.

Whether respondents would be happier living somewhere with greater independent mobility is related to migrating for community qualities, as mentioned above, and to other factors: living in Eastsound, selecting access to previous modes of transportation to help reduced mobility; selecting the option to relocate elsewhere on Orcas Island to increase travel mobility when considering how to spend the rest of their lives; and whether transportation arrangements satisfy mobility needs. Since, as mentioned above, more respondents agreed with the above statement than disagreed, it is important to note the priorities affiliated with this value: community connection, more feasible transportation options, and affordable residence options in an area within convenient access to places of interest.

Over one third of the sample shared additional comments at the end of the questionnaire (figure 14). Some specifically mentioned trade-offs between inconvenience and advantages of living on Orcas Island: “Our ferry system can be a real pain and expensive - the price for living in a beautiful place”; and “Living on Orcas is expensive. But - there are great advantages to satisfy your talents, activities, friendships.” Some respondents explained their current living situation as manageable: “At 93 I have been teaching water aerobics on Orcas for 40 years”; and “At 81 I know I should begin to make transition plans but I cannot even generate discussion of possible future plans with my healthy 75 year old husband. Very good health care keeps us here.”

Figure 14. Comments Grouped by Location



Many respondents indicated their desire to remain in their home for as long as possible, expressed concerns about any future needs for care or downsizing to a more manageable home, or having to eventually relocate near family or services meeting their needed level of care: “At present my husband and I are very capable of travel in car and by train or air…but will have to move off island when we can no longer be independent”; “I am currently in good health…my life is independent, full, and ideal. Mobility to drive would be the greatest foreseeable restriction, and would have a profound effect”; “I would like to live in my home on Orcas as long as possible. This might involve having a caregiver…If Orcas had an assisted living facility, I would then consider it. Most likely at some point, I will have to move to a facility closer to family so it would be easier for them”; “I do not see this island as an option for me as I age; I think I would have to leave to go to the city where my daughter could help me”; “I will do whatever I can to maintain my current way of living and location”; “I and many of my elderly friends wish to stay in and finally die in our own homes…I would hate to live in community housing”; “Six years ago, I began to think about building a home in Eastsound. Two years ago, I purchased a lot and am currently building a home… my current home is on 3 acres, 3 miles from Eastsound. It is difficult to maintain - too large for me now.”

Many noted the lack of enough consistent, affordable transportation services: “Because of the winding roads and how the islanders are dispersed around the island, [lack of] public transportation has always been a problem here. Thank goodness for the Senior Center transportation”; “Senior Center needs more volunteer drivers…our population is about 1/3 people 65 and over…we need your info”; “Eastsound is an

excellent walking village. [But,] if I needed a wheelchair or walker it is not compatible due to gravel surfaces"; "More pedestrian walkways/paths please"; "Any transportation option would probably need government subsidy to make it an affordable option: wealthy people on the island have no trouble paying for transportation when needed…but it's too expensive for the average retirement income"; "Low income transportation (provided by the state) is very cumbersome (paperwork, etc.) and hard to coordinate"; "Public transport on Orcas is unavailable, seasonal, and/or too expensive (i.e. $50-60 one-way from ferry landing to Eastsound)." A couple of respondents wrote longer responses, one of whom shared,

> Thank you for creating this survey. I think a lot about my future needs as I age. I am now physically active, but I know that someday, this will all change. When I decided to retire on Orcas Island, I knew this was probably not a final living place. I have watched my parents making the transition from selling their home of many years to moving to a nursing facility…Luckily they were able to sell their property and have enough savings to pay for both of them…I learned a lot from their aging situation and I need to continue learning more about my own situation as it impacts my health issues as I age.

Another respondent wrote,

> I must say that living on Orcas Island has been a blessing and a paradise on earth since I was able to expand my activities and potential abilities by taking advantage of the offered volunteered activities and educational classes of advancement to keep me from boredom and depression and turning into a vegetable…[now,] without my dear husband I have found an outside world of friends to talk to and who have become my chauffeurs. I have learned that single women living on Orcas (husbands died) have to learn to do the chores their spouses had done…I still do not have their burdens because I have my family who provides for me…So I am most fortunate…Let me say that to live on Orcas is expensive. One has to have employment and income to provide for families. It is for retirees not for the young without employment. They struggle. Each situation and reasoning is unique.

These narratives, in addition to the many other comments, shed light specifically on how Orcas Island residents who responded to the survey currently live and anticipate living in the future should they experience any decline in independence or mobility. In addition, the findings indicate that, although the present sample mostly represents individuals who are currently independently mobile via driving and prioritize remaining in their own homes, they believe that their QoL can increase if living somewhere accessible to other independent mobility options. The most popular options for increasing any reduced mobility are home healthcare and new transportation modes, specifically public transportation services. This implies that respondents value their homes as well as their mobility.

It may be implied that the construction of an accessible residential community including assisted living would be a worthwhile investment. Thirteen respondents considered relocation to an assisted living facility on Orcas Island to be an option that could help their real or hypothetical reduced travel ability, and thirteen considered relocation to an area on Orcas Island with easier access to activities to be such an option. Roughly one third of the participants (twenty) consider at least one of those two options, so there is at least enough potential demand to house that amount of residents in such a development.

Remaining in their homes, despite any reduced mobility consequences, may have less of an effect on QoL than it would for older adults living in other parts of the country. This is because the majority of the sample reported migrating to Orcas Island for reasons having to do with its amenities, as opposed to the more utilitarian reasons which

characterize why other older adults live in other places. Based on the results and many corresponding comments from participants, remaining on Orcas Island is of high significance for the majority of the sample. Sense of place, therefore, may be a quality of life component that holds greater weight than mobility for Orcas Island residents. Experiencing reduced mobility does not in and of itself appear to be a strong enough disadvantage for respondents to relocate off-island, but need for care due to decreased independence is the primary cause for their potential need to leave Orcas Island (which could be also related to financial constraints) and often involves plans to relocate off-island with or near family.

The findings should be interpreted with caution since the sample only comprises 3-5% of the island's aging population and was not deliberately constructed to accurately represent the entire aging population's demographics. Since the sample is not necessarily representative of the island's entire aging population, it cannot be assumed that the entire population's response would follow the same trends when addressed with the same questions. However, the findings do provide qualitative insight into at least some of the concerns facing those aging on Orcas Island. For one, there is a consistent demand for public transport services, primarily in the form of a daily bus or accessible vehicle. Cost would be the primary obstacle if fares are to remain affordable for residents, not only ongoing operation but initial implementation. There may be public grants available to support community transportation initiatives, for which San Juan County or local nonprofit organizations may be able to apply on behalf of Orcas Island. The demand for public transport services also includes an expansion of the rides already provided by the

Senior Center. This service is an example of a successful response of which residents would like even more. Additional funding to support Orcas Senior Services may be available through county or state governments, or partnership with other sources.

The housing concerns of older residents are more difficult to address, both logistically and financially. To construct accessible housing and especially an assisted living facility is a largescale project that entails much planning, coordination and funding across public and private sectors. Transportation solutions seem to negate any need to relocate for those with limited mobility, but they will not suffice for those with limited functional ability that requires a higher level of care unless home healthcare is available and affordable. The purpose of this research is to consider options in light of mobility and the specific variables that enhance residents' QoL, and assisted living for the elderly is beyond the scope of sole mobility. However, the prior and current research points to this need. For the local organizations that are already in the process of planning potential implementation of some form of senior housing, an important finding from this study is that older residents prefer living somewhere with greater mobility even though they do not wish to leave their present homes. The location of senior housing should, then, be accessible to points of interest and therefore in or in very close proximity to Eastsound.

CHAPTER V

CONCLUSION

The study reveals the dynamics of sense of place and mobility and how they affect the aging population on Orcas Island. The first major findings are that people migrate to Orcas Island for its unique amenities, specifically its physical geography, community qualities, weather and recreational activities. The most common way respondents spend the majority of their time is on hobbies/recreational activities. Living on Orcas Island promotes a strong sense of place for residents which they are reluctant to forsake even when aging threatens reduced mobility, and they will generally sacrifice the option to relocate in order to increase mobility for the sake of remaining in their homes as they age. Aging in place, even while experiencing reduced mobility, is related to migrating to Orcas Island for recreational activities, suggesting recreational fulfillment that occurs both in home as well as outside of it. The priority to maintain mobility is related to migrating to Orcas Island for its community qualities, evidencing a desire to maintain community involvement. Migrating to Orcas Island for recreation and for community are related to one another, and so while certain priorities are exposed (aging in place versus relocating to increase mobility, while agreeing that living somewhere with increased mobility would increase quality of life), they are not dichotomous.

The second major finding is that while decreased mobility will impact residents' quality of life as they age, other aspects that contribute to their quality of life help to

mitigate that impact. The value that residents place on the physical geography of the island and other aspects of the community contributes to their sense of place and may play a stronger role in their aging experience than it would for aging adults elsewhere. At the same time, mobility difficulties are amplified by the fact that the island is an isolated rural community that lacks the population and infrastructure to support adequate and affordable transportation and assisted living options for those in need. These realities are what cause many older residents to relocate off-island. While many are aware of this probability, it is often not a desirable situation.

The third major finding is that the best way to mitigate reduced mobility for the aging population on Orcas Island is to provide more frequent and affordable transportation options, such as an accessible bus or volunteer driving services. Most respondents report that their transportation arrangements currently satisfy their needs to participate in out-of-home activities (likely because most of them still drive); though the most popular option which respondents believe would help their current or theoretical reduced travel ability, aside from either informal or formal home healthcare, is access to new transportation modes, primarily public transportation services. Respondents selecting access to previous transportation modes to help reduced mobility is related to whether they agree that they would be happier living somewhere with greater mobility, and respondents selecting access to new transportation modes is related to their prioritizing relocation elsewhere on Orcas Island in order to increase activities outside of the home if travel abilities decrease. Neither volunteer nor paid transport services, for those who do not drive, are entirely sufficient transportation modes; the one respondent who uses

transport services also rides as a passenger with a friend or family. For passengers who experience reduced mobility, volunteering and social activities have been most affected.

In addition, the availability of affordable home healthcare services would help those whose reduced independence exceeds simply the ability to drive. This would include certified assistants whose services may be reimbursed by Medicaid and Medicare. Staying in their current homes is most important when respondents consider how to spend the remainder of their lives, and the combination of informal and formal home healthcare was the most frequently selected option that they believe would help reduced mobility. A slight majority reported that they would be happier living somewhere with greater mobility, however. Affordable qualified home healthcare and affordable, sufficient transportation services would help address both circumstances.

Overall, the results imply that any current or future loss of mobility would not greatly encumber most in the sample. However, enough reduction in functional ability would likely lead most of the sample to relocate to the mainland if they are unable to afford (formal) or obtain (informal) home healthcare. Given that the majority of the respondents prefer to age in place for as long as possible, and given that the majority migrated to Orcas Island for its desirable amenities, such relocation may cause a reduction in QoL by interrupting sense of place. Although much of the literature shows the importance of mobility and its connection to QoL in the aging population, this study indicates that the unique qualities of an individual island help to compensate for some of the reduction in QoL caused by reduced mobility. It may be, then, that geography and sense of place play an important role in affecting how much mobility reduction lowers

QoL since the unique amenities of a specific geographic location add leverage. A similar study conducted in aging communities in such places as Florida or New England, for instance, may reveal that residents in those places prefer other geographically specific amenities, or attribute more or less importance to mobility in light of those amenities.

Limitations

Several factors limit the reliability of these findings. Given the small size of the Orcas Island community, the sample size was limited to 200. Out of this sample, 62 participants responded and even fewer completed the entire questionnaire. Another limitation is the fact that all respondents in the sample migrated to Orcas Island at some point, whether recently or many decades ago. No respondents were native to the island, and this is not representative of the entire island's population which also includes older people who have lived there their entire lives. However, some respondents migrated to Orcas Island in their young adulthood and so may have more in common with native residents than those who migrated five or ten years ago. Such comparisons and categorization is subjective, but it is important to note this limitation in the sample data since it is therefore not possible to compare responses from migrants and natives.

A significant limitation is the data collection method. Due to restricted ability to obtain addresses of older Orcas Island residents, questionnaires were provided at locations in the community instead of mailed to a targeted sample. This entails that respondents had to either attend one of the locations or receive a questionnaire from somebody else who picked one up for them. Unfortunately, this eliminates an important

group of potential respondents: those who are the least able to leave the home due to mobility limitations. This limitation was anticipated early while formulating research, and attempts at obtaining address information for mailing questionnaires were unsuccessful. Future research would benefit by successfully reaching home-bound residents via mail or online survey delivery.

A related limitation is the scope of locations from which questionnaires were made available. Places were chosen with the target audience in mind: the Senior Center, medical facilities, churches, and the local public library. However, older adults are no less likely to frequent any of the many organizations or businesses on Orcas Island than younger adults, so while the locations were chosen with this population in mind, they do not guarantee drawing in a balanced or diverse sample of this cohort. Some adults in their eighties may never frequent the Senior Center because they prefer going places where they are among younger adults, or because they have other interests which aren't met at the Senior Center. Likewise, not every senior will attend a church, frequent a traditional medical facility, or go to the library. These limitations must be considered when comparing the sample to the general population: the sample is not necessarily representative of the general aging population, or even that of Orcas Island, due to the limitations mentioned.

Survey design limited the precision of quantitative analysis. As a preliminary study, this research provides qualitative information that reveals diverse and valuable insights into respondents' situations and preferences. A follow-up survey would benefit from more exclusive questions that eliminate the opportunity to select more than one

option for questions that are important for statistical testing. Providing non-exclusive questions especially weakened the ability to compare respondents' answers to what would most help reduced mobility. Instead, each possible option (of which there were fourteen) was its own variable which had to be tested against other variables. Requiring participants to select only one of the fourteen options would have allowed the question itself to be a variable so that it could be regressed against other variables and render more precise and reliable results.

The downside of this is that respondents' opinions would be overly simplified and narrowed into only one possible selection per question, when this survey has shown that they actually consider multiple scenarios in response to reduced mobility. These are tradeoffs between qualitative and quantitative survey design, and an ideal study would include both types. For this research, the remote location of the study area limited the amount of time and breadth for data collection, thereby reducing the timeframe during which respondents could be interviewed. A more quantitative questionnaire in addition to follow-up interviews may provide a richer and more thorough collection of future data.

Future Studies

This is an initial qualitative study of mobility and its impact on quality of life in older Orcas Island residents. A more comprehensive follow-up study would benefit by asking more detailed demographic questions including residents' gender and household size in order to determine differences between these categories. While the focus of this study involves demographic differences between age, income level, and the various

factors that distinguish residents from one another as outlined in the questionnaire, studies show that women experience less mobility than men and so further refinement of this study through a future survey may also reveal such differences.

Almost half of the sample selected volunteering as at least one way in which they spend the majority of their time, and volunteering was the activity most affected by reduced mobility among those with limited travel ability. One respondent noted that volunteering specifically for the Senior Center was affected by reduced mobility. Helping to benefit others or the community, therefore, is a priority consistent with previous personal communications with Orcas Island residents. At the same time, related literature, personal communications with Orcas Island residents, and findings from this study underline the importance of autonomy and the fact that older adults prefer remaining as independent as possible for as long as possible. A reciprocal volunteer initiative may help to mitigate any discomfort caused by reduction of independent mobility as experienced by older residents of Orcas Island. If adults with no mobility limitations regularly volunteer to assist those who do experience mobility limitations, they may better accept their own mobility limitations in the future and utilize others' volunteer services at that time, having previously already helped others in the same situation.

One older resident with no mobility limitations is a pilot who provides 'mercy flights,' meaning he flies Orcas Island residents to the mainland for cancer treatments and other regularly scheduled medical treatments so that they don't have to take the ferry (B. M., personal communication, October 1, 2014). Each individual may respond differently once in a situation of reduced mobility, but if people help others in that situation while

younger, those same people could utilize the same volunteer services if they themselves are in need of help later. This type of 'earned help' may also incentivize volunteering in general by encouraging drivers or others to volunteer while they can. The existence of such a co-op community would allow older residents of all ages to contribute in a reciprocal fashion by providing transportation or other services while they are able, and then provide the same services to them once they are no longer as mobile.

Other future studies may explore the larger scale impact of autonomous vehicles (AVs), which are estimated to become more prevalent in the near future (Fagnant & Kockelman, 2015). An AV is a vehicle that is programmed to operate independent of manual control. A completely automated vehicle is, in other words, a car that drives itself. Not only will the prevalence of AVs impact the urban landscape and transportation networks, but it will profoundly affect older adults' mobility by providing a transportation mode that does not require sound driving skills or a sophisticated public transit network. While many industries and interest groups, as well as licensed individuals who prefer maintaining complete manual control while driving, may strongly resist this technology mainly due to its effects on the transportation industry and any industries economically connected, AVs could increase non-driving older adults' independence and mobility while also increased overall public safety.

There are numerous safety-related, social and economic advantages to AV use and availability. However, one disadvantage is the potential overall increased vehicle-miles traveled (VMT), due to an increase in demand and vehicle-usability, leading to increased negative externalities of congestion, sprawl and pollution (Fagnant &

Kockelman, 2015). There are other important risks and issues associated with AVs that are beyond the scope of this research, but for Orcas Island or other similar places, AVs could fulfill a growing need among the island's older adults who face current or potential decreased mobility. While estimates vary, the technology is not expected to become affordable for the general public for at least ten years (Fagnant & Kockelman, 2015).

Related to the disadvantage of AVs increasing overall VMT is the joint issue that an increasing aging population and increasing affinity for automobile travel will present a challenge in the form of continued congestion, sprawl and pollution. Unless there are vast changes in the country's built environment, suburban and rural connectivity and public transportation development – which is unlikely without significant policy changes and funding at the federal level – older adults living in non-urban areas will continue to independently drive for as long as possible and then later may still rely on others for car rides. Though literature has shown that maintaining mobility is important for older adults, continued and increased automobile use creates negative consequences for the environment, a larger global issue. The priorities of maintaining elderly travel mobility and an environmentally safe natural environment, both important but conflicting, may clash to a larger extent in the near future (Schwanen & Ziegler, 2011; Haustein, 2012). These are issues which must be considered and addressed at the planning level so that more effective alternatives to independent driving can be implemented.

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APPENDIX A

MOBILITY AND AGING IN COMMUNITY SURVEY QUESTIONNAIRE

This questionnaire is designed to identify what Orcas Island residents who are aged 65 and above prioritize as the most important aspects of their lives, to understand any current or future impacts that decreased mobility may have on their lifestyles, and to explore what is being done or can be done to mitigate that experience.

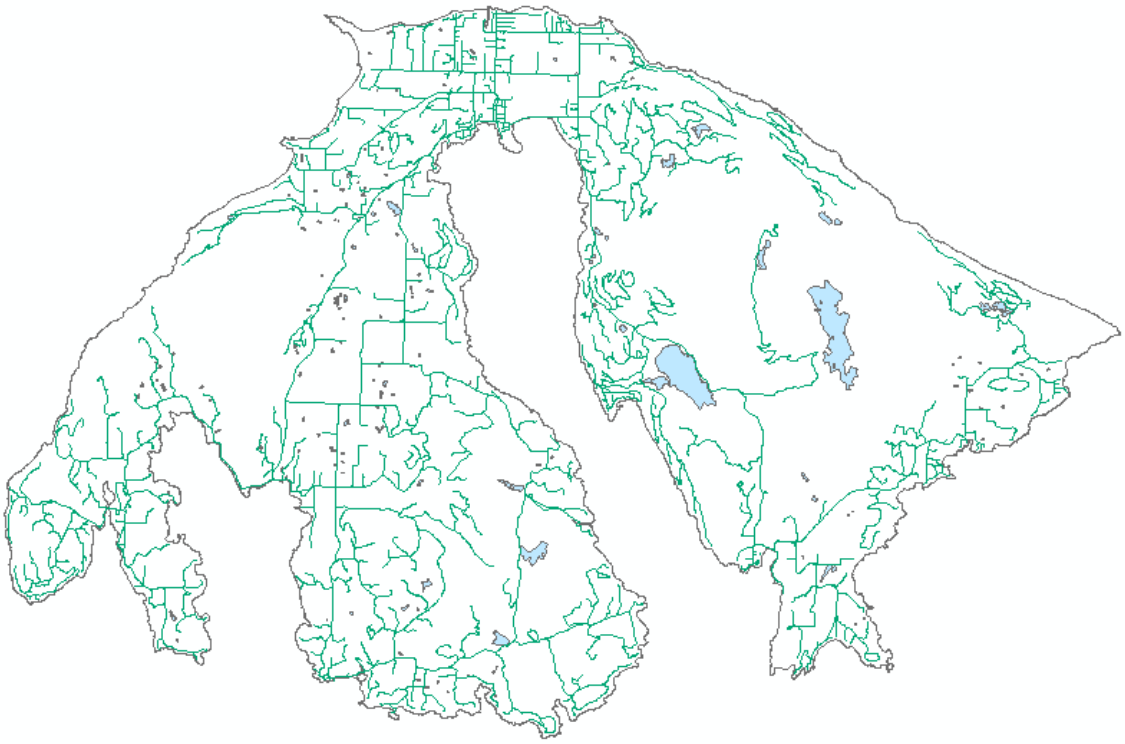
1. Which is your age group? Please circle one:

- o Under 65
- o 65 – 69
- o 70 – 74
- o 75 – 79
- o 80 – 84
- o 85 – 89
- o 90 – 94
- o 95 +

2. Past studies have indicated that income is associated with a person's independent mobility. Please circle the category that best describes your average annual household income from all sources:

- o Less than $5,000
- o $5,000 - $15,000
- o $15,001 - $25,000
- o $25,001 - $35,000
- o $35,001 - $50,000
- o $50,001 - $75,000
- o $75,001 - $100,000
- o $100,001 - $150,000
- o More than $150,000

3. The area where a person lives can impact mobility. Please draw a circle (as large or as small as you prefer) on the map below around the general area where you live. If you prefer, you may instead use the larger image of the island on the next page.



4. Please circle the description below that describes you:

- o I have always lived on Orcas Island
- o I moved to Orcas Island from another place

5. If you moved to Orcas Island from another place, please write how many years you have lived here:

_____

6. If you have always lived on Orcas Island, please share what keeps you here (whether due to necessary circumstances or by your own choice):

_____

_____

7. If you moved to Orcas Island from somewhere else, whether it was another island, another part of Washington, another state, or another country, please specify where:

_____

8. If you moved to Orcas Island from another place, what brought you here? Please circle all reasons that apply and, if more than one, rank each by order of importance with '1' being most important (write number in the space before each reason):

- o ___ Family or friends
- o ___ Employment opportunity
- o ___ Recreational activities
- o ___ Community qualities/atmosphere
- o ___ Ability to easily travel within area (less traffic, etc.)
- o ___ Lower living expenses compared to previous home
- o ___ Physical geography of island/natural environment and scenic qualities
- o ___ Weather
- o ___ Other:

  _____

9. How do you spend the majority of your time?

- o Employment (includes self-employment)
- o Volunteering (includes providing care or services for family or friends)
- o Hobbies, recreational activities, exercise (non-paid activities)
- o Medical care/treatment for self (health care excluding general exercise)
- o Other: _____

10. What is your **primary** mode of transportation for most activities outside of the home? (Including travel to ferry or other water/air transport if also used):

- o Walking
- o Bicycling
- o Personal vehicle that you drive
- o Passenger of personal vehicle of another driver (family, friend or acquaintance)
- o Passenger of volunteer transport service
- o Passenger of paid transport service (such as taxi)
- o Other: _____

11. If you primarily travel as a passenger, whether with friends or family or with a volunteer or paid service, are you in a permanent situation that has reduced your previous ability to travel anywhere outside of your home? Please circle all that apply:

- o Discontinued access to previous mode(s) of transportation, for any reason other than a health condition
- o Health condition
- o Other: _____

12. **If** you are in a permanent situation that has reduced your ability to travel outside of your home, which activities have been affected? Please circle all that apply:

- o Employment
- o Volunteering (includes providing care or services for family or friends)
- o Recreational activities, exercise, hobbies
- o Medical care/treatment for self (health care excluding general exercise)
- o Social engagement (spending time with family, friends or acquaintances)
- o Chores/errands (grocery shopping, etc.)
- o Other: _____

13. If you are in a permanent situation that has reduced your ability to travel outside of your home, what do you think would most help this situation?
Or, if you currently do **not** experience either situation, what do you think **would** most help if you ever do experience such a situation? Please circle all that apply:

- o Access to, or increased availability of, previous mode(s) of transportation (please specify): _____
- o Access to, or increased availability of, new mode(s) of transportation, e.g. walking, bicycling, driving, public transport services (please specify):

  _____
- o Relocate to an area on Orcas Island that would provide easier access to activities which are currently limited due to decreased travel abilities
- o Relocate to a different island that would provide easier access to opportunities that are currently limited or unavailable due to decreased travel abilities
- o Relocate to the mainland to increase access to such opportunities
- o Relocate with or near close friends or family, whether on or off-island
- o Home healthcare through family or friends (informal contact)
- o Home healthcare through an agency or formal contact
- o Relocate to an assisted living facility or community on Orcas Island (if this best meets present or future needs, and if this option becomes available)
- o Relocate to an assisted living facility on a different island (please indicate which island): _____
- o Relocate to an assisted living facility on the mainland
- o Relocate to a skilled nursing facility on Orcas Island (if this best meets present or future needs, and if this option were possible)
- o Relocate to a skilled nursing facility on a different island, if available:

  _____
- o Relocate to a skilled nursing facility on the mainland
- o Other: _____

  _____

  _____

14. Below, please indicate which is most important to you when considering how you live the rest of your life. If more than one is equally important, please circle all that apply:

- o Staying in your current home, even if you experience reduced ability and/or opportunities to travel outside of your home as much as you currently do
- o Relocating elsewhere on Orcas Island to increase your access to activities outside of your home, if your travel abilities become limited where you currently live
- o Relocating elsewhere on Orcas Island to live with or near family or friends
- o Leaving Orcas Island to relocate with or near family or friends elsewhere
- o Leaving Orcas Island to relocate elsewhere for any other reason(s)
- o Other (please explain): _____

_____

For each of the following two questions, please circle the number beside the statement that most accurately represents your situation:

15. My transportation arrangements generally satisfy my needs to participate in activities outside of the home.

1. Strongly agree
2. Somewhat agree
3. Neither agree nor disagree
4. Somewhat disagree
5. Strongly disagree

16. I believe that I would be happier living in a place where I could independently walk (with or without assistance as needed from a cane or walker), wheelchair, bicycle, or use some form of convenient public transport services in order to access activities outside of the home more easily, more often and with greater independent mobility.

1. Strongly agree
2. Somewhat agree
3. Neither agree nor disagree
4. Somewhat disagree
5. Strongly disagree