Periodic Atlas of the of the Metroscape: The Power of the Pyramid

Meg Merrick
Portland State University, dkmm@pdx.edu

Recommended Citation

Merrick, Meg (2015). "Periodic Atlas of the of the Metroscape: The Power of the Pyramid" Summer 2015 Metroscape, p. 13-19.

THE POWER OF THE PYRAMID

by Meg Merrick

Population pyramids have long been used to visualize the age and gender structure of societies. The shapes of these pyramids are largely determined by fertility, mortality, and migration. By dividing the population by sex (by convention, males are on the left of the vertical axis and females on the right) and stacking the age statistics (typically in 5-year cohorts with the youngest at the bottom and the oldest at the top), we get a snapshot of the relative age and sex balance of the population as well as a glimpse into the future — if people stay where they are. Indeed, before advances in public sanitation and medicine in the late 19th century, the globe's population was the classic pyramidal in shape. In a growing number of countries, that is no longer the case.

In its 1870 *Statistical Atlas,* the U.S. Census Bureau created population pyramids for each state and territory for both the native and foreign born populations to paint an often dramatic picture of the rapidly growing nation. The population of Oregon, like the global population, was markedly young but what is particularly striking during this period, is the imbalance of young males to females in the resource extraction states of the West: Wyoming, Arizona, Montana, Idaho, Dakota, and Colorado (figure 1). This gender imbalance is even more striking in certain foreign-born populations. The Census Bureau made special note of the Chinese who were, among other activities, heavily involved in building railroads across the American West (figure 2).
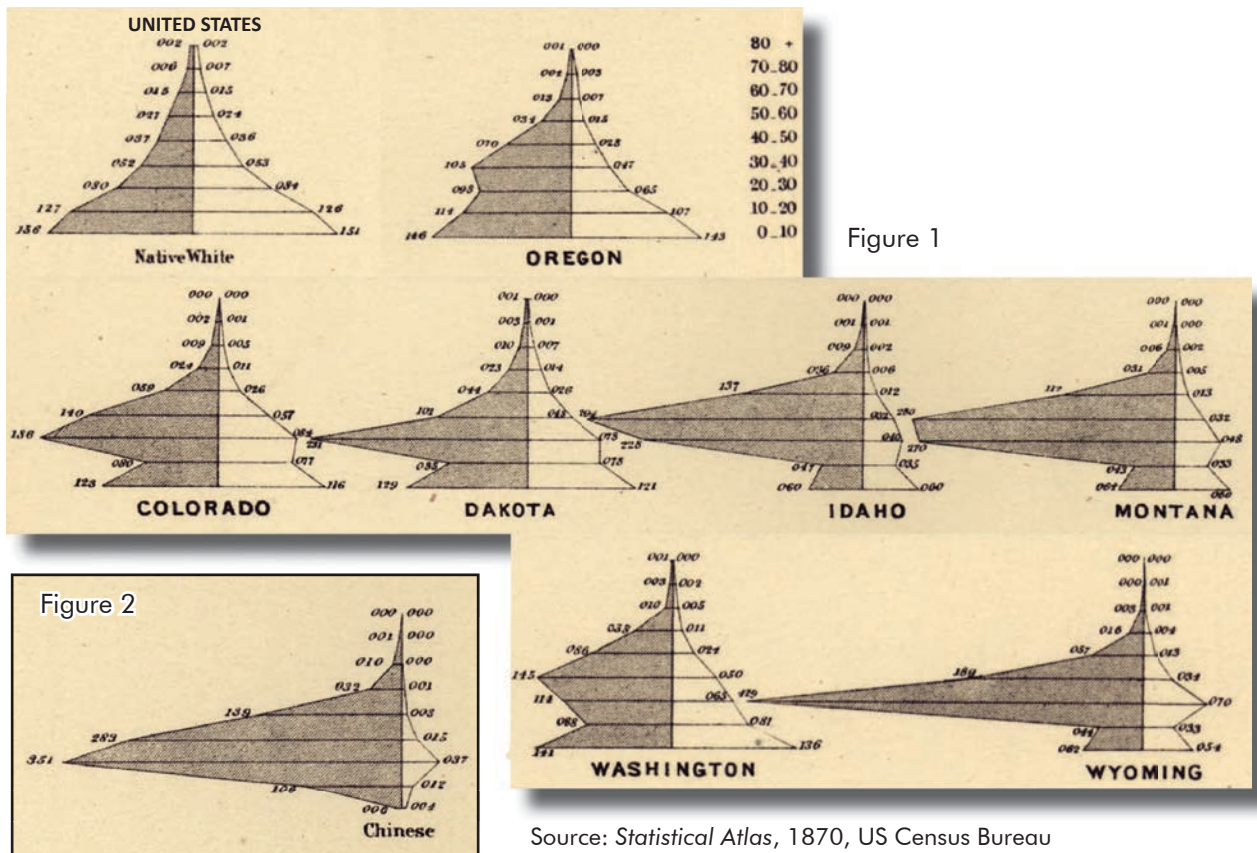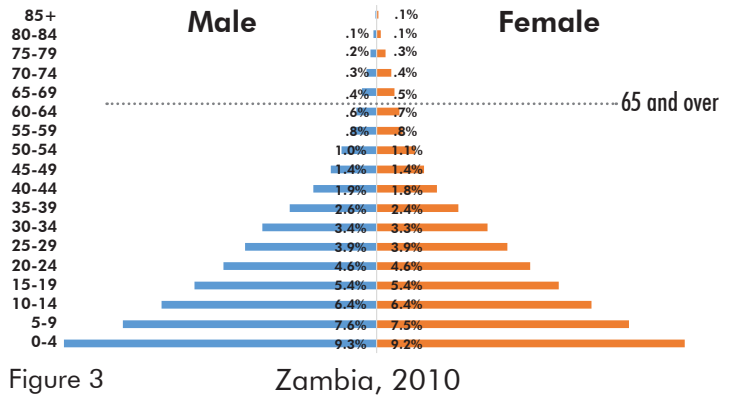

Figure 1

Figure 2

Source: *Statistical Atlas*, 1870, US Census Bureau

Today, population pyramids are most widely used to visualize the contrast between the age distributions of under-developed and many of the world's most highly developed countries. Zambia's 2010 population (figure 3), which is dominated by those under 20 years of age is typical of population pyramids for nations before the 20th century and like many African countries has been significantly impacted by the HIV/AIDS epidemic.
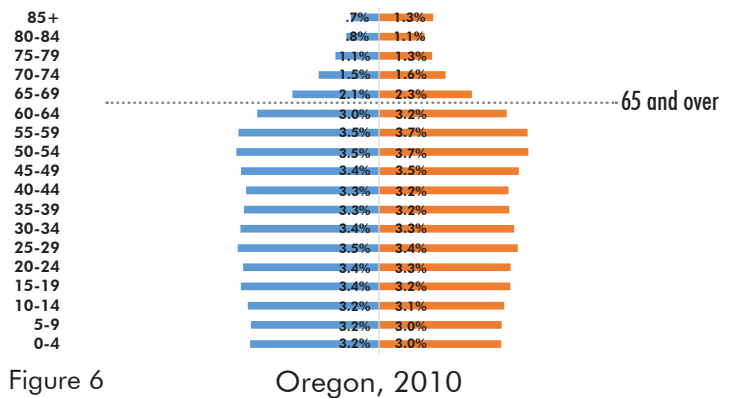
In contrast, the populations of Japan, Korea, and western European countries are markedly older. In 2012, over 24 percent of Japan's population was over 65 years of age (figure 4). According to the 2010 Census, 12.7 percent of the U.S. population was elderly
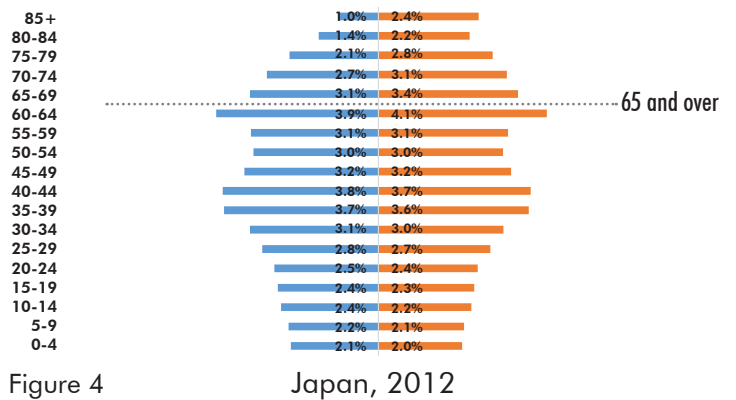
In fact, aging nations face significant challenges because there are fewer people of working age (typically considered 15 to 64 years old) relative to those 65 and older. A 2012 United Nations study states that Japan is projected to have the highest old age dependency in the world by 2050 with 72 elderly (aged 65 and older) for 100 working age people. The same study projects that there will be 36 elderly per 100 working age people in the U.S.
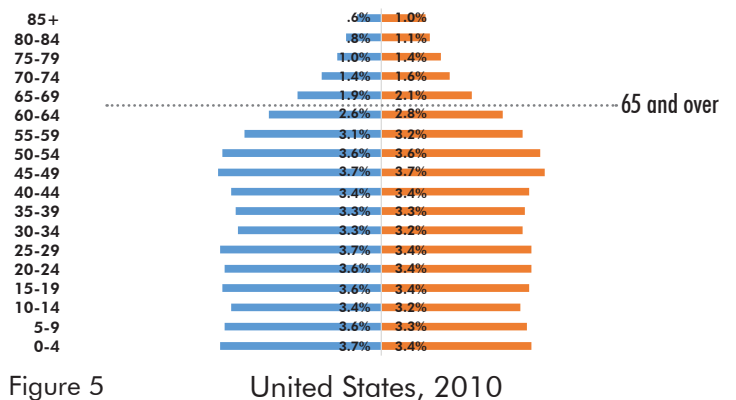
The age and sex composition of the population in the U.S. in 2010 (figure 5) is described by demographers as "stationary" which means that both the fertility and mortality rates are low. Oregon's population pyramid (figure 6) reflects the national trend although Oregon's population is slightly older. If fertility and mortality rates continue to trend down, without the in-migration of young families with higher fertility rates, these populations will age.

Population pyramids may also be used to visualize the age and gender

Population Pyramids:
Distribution of Populations by Age and Sex
by the Percent of the Total

Figure 3 — Zambia, 2010

Figure 4 — Japan, 2012

Figure 5 — United States, 2010

Figure 6 — Oregon, 2010

characteristics of cities. In comparison with the nation and the state of Oregon, Portland and Beaverton (figures 7 and 8) have noticeable bulges in the 25 to 34 year old age cohorts with populations in those age groups at 19.6 percent of the total for Portland and 18.3 percent of the total for Beaverton as opposed to 13.6 percent of the total for Oregon and the U.S.

Portland and Beaverton's elderly populations are considerably lower than Oregon's. In 2010, nearly 14 percent of Oregon's population was 65 and older but in Portland and Beaverton the elderly populations were 10.3 percent and 10.5 percent respectively. For comparison, Miami (figure 9) which is considered a mecca for seniors had an elderly population of 16 percent in 2010.

Visualizing Neighborhood Character

Because the decennial Census data are available in very small geographic areas (Census blocks are about the size of a city block), they can be reaggregated into new geographies. The Population Research Center at PSU has done this for neighborhoods in Portland and Beaverton using the 2010 Census data. And because these data are broken out by age and sex, we can create population pyramids from them that have the ability to tell us something about the character of these communities.

The map on page 16 displays population pyramids for Portland's neighborhoods. It is interesting to consider the shapes of the population pyramids relative to each other. These neighborhood pyramids represent the full gamut of population distributions from those that are distinctly youthful to those that are aging.
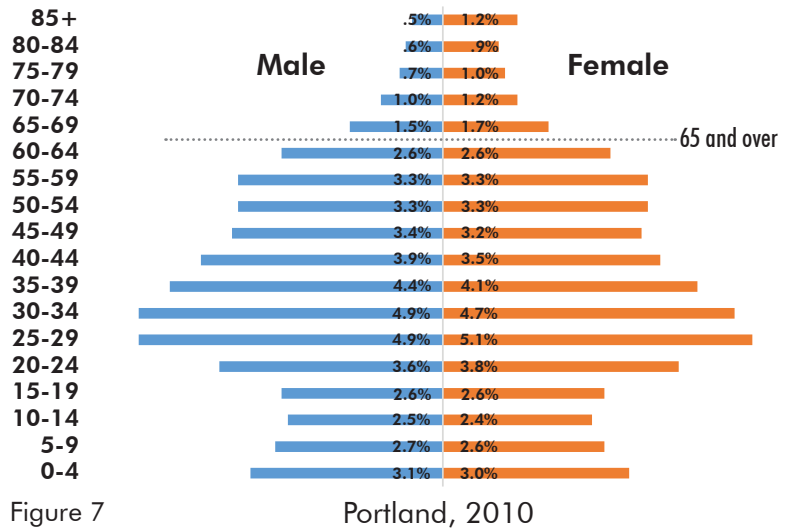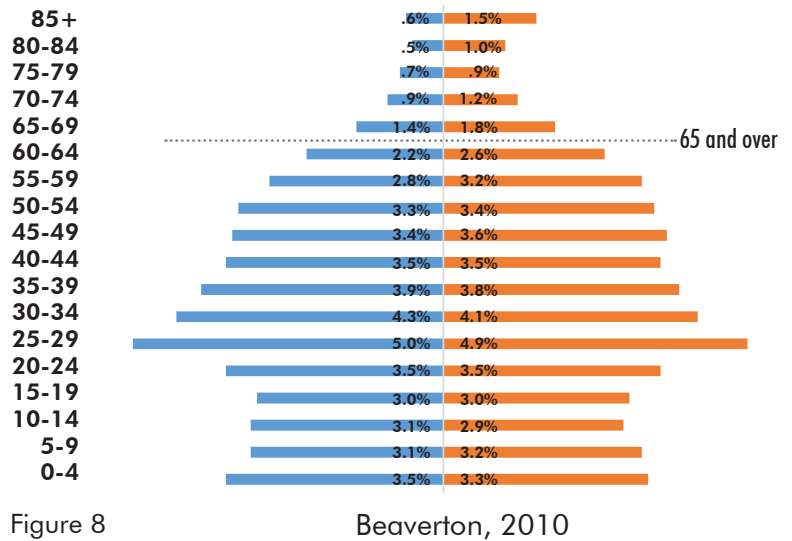

Figure 7 — Portland, 2010

Figure 8 — Beaverton, 2010

Figure 9 — Miami, 2010

Hayden Island

St. Johns

Linnton

Portsmouth

Kenton

Cathedral Park

East Columbia

University Park

Arbor Lodge

Piedmont

Woodlawn

Sunderland

Concordia

Cully

Humbold

Overlook

King

Vernon

Sabin

Alameda

Beaumont-Wilshire

Roseway

Boise

Eliot

Irvington

Grant Park

Hollywood

Rose City Park

Madison

Northwest Industrial

Northwest Heights

Forest Park

Northwest

Pearl

Lloyd

Kerns

Laurelhurst

North Tabor

Hillside

Goose Hollow

Old Town-Chinatown

Buckman

Sunnyside

Mt. Tabor

Montavilla

Arlington Hgts
Sylvan-Highlands

Arlington Hgts

Downtown

Southwest Hills RL

Homestead

Hosford-Aberthethy

Richmond

South Tabor

Brooklyn

Creston-Kennelworth

Foster-Powell

Bridlemile

Reed

Woodstock

Lents

Hayhurst

Hillsdale

Mt. Scott-Arleta

Maplewood

Multnomah

South Portland

Eastmoreland

Sellwood-Moreland

Ashcreek

South Burlingame

Markham

Collins View

Brentwood-Darlington

Marshall Park

West Portland Park

Arnold Creek

Portland

Hillside

85+
80-84
75-79
70-74
65-69
60-64
55-59
50-54
45-49
40-44
35-39
30-34
25-29
20-24
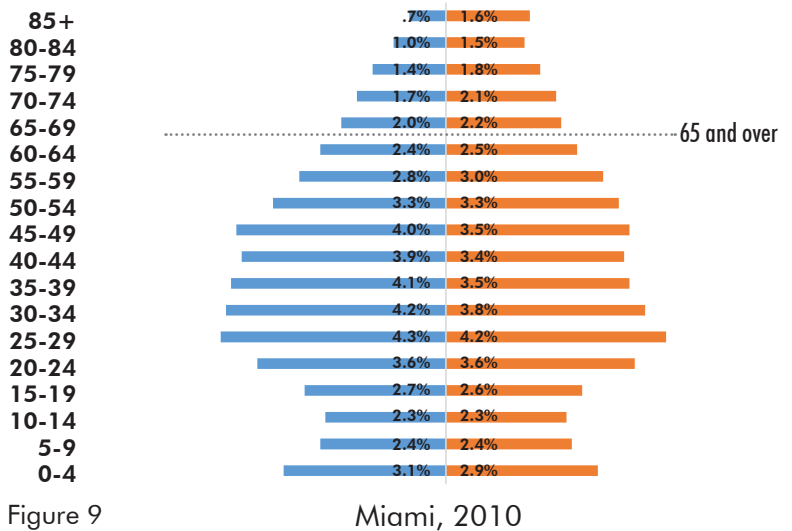15-19
10-14
5-9
0-4
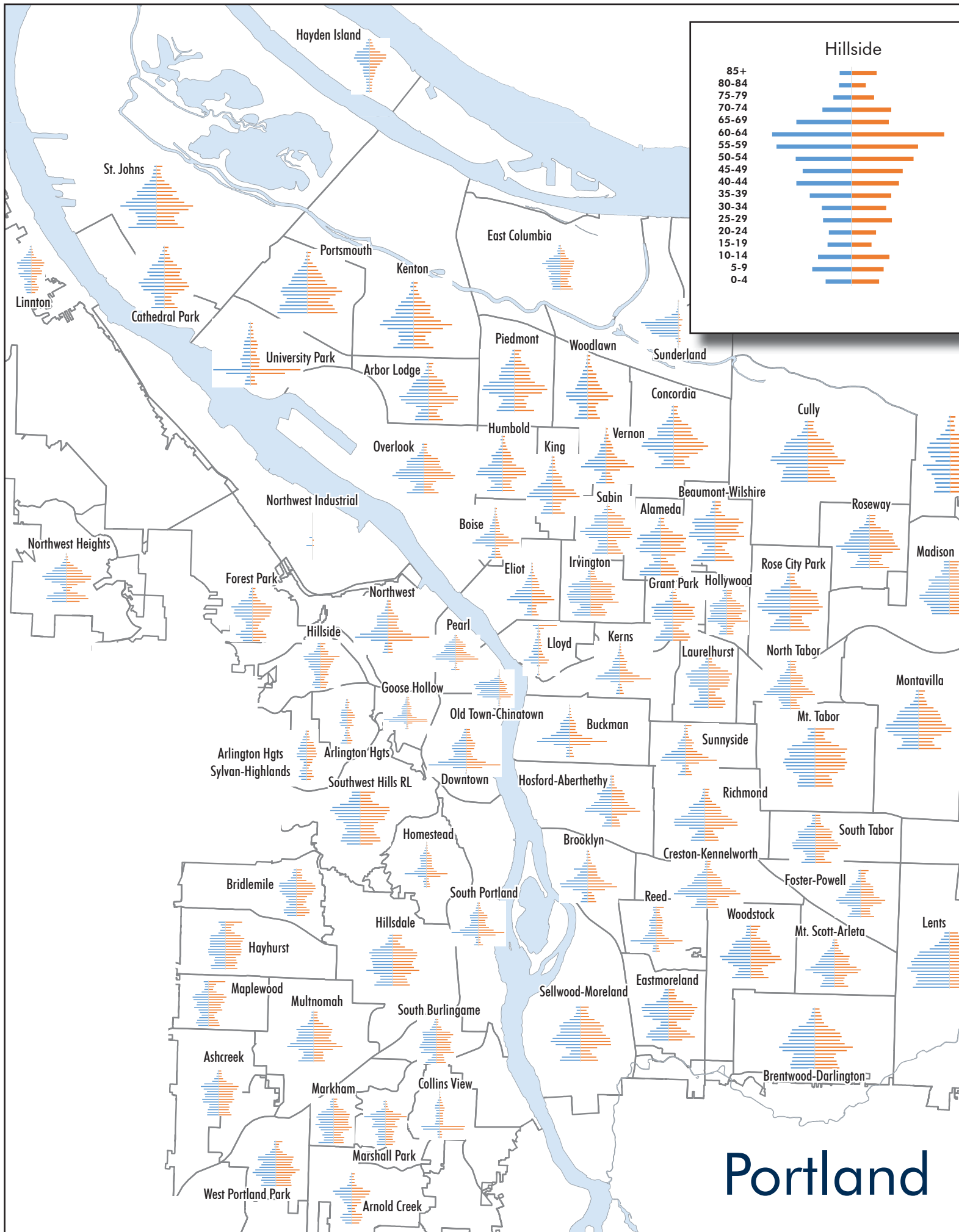
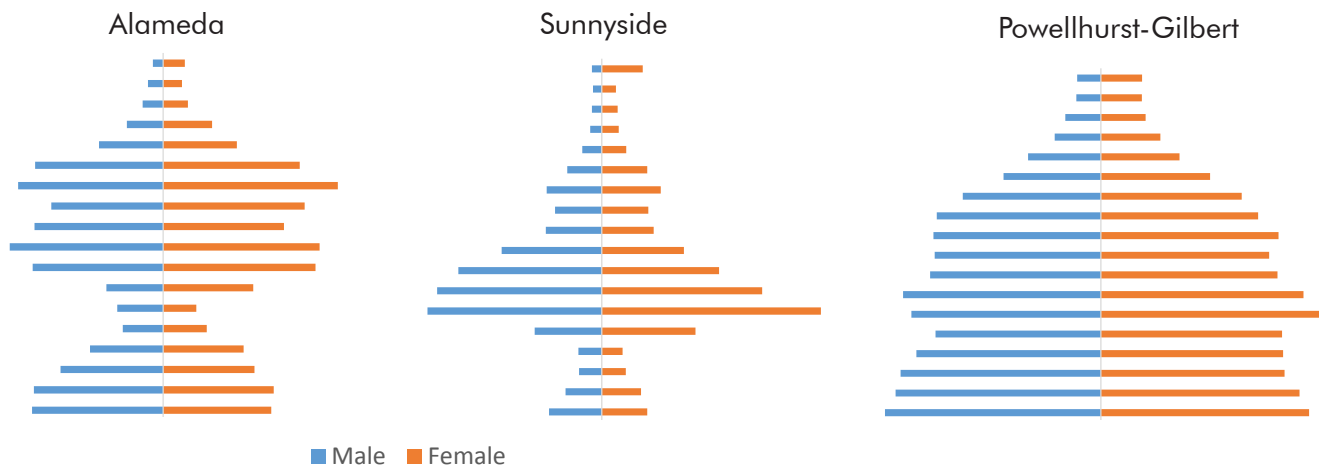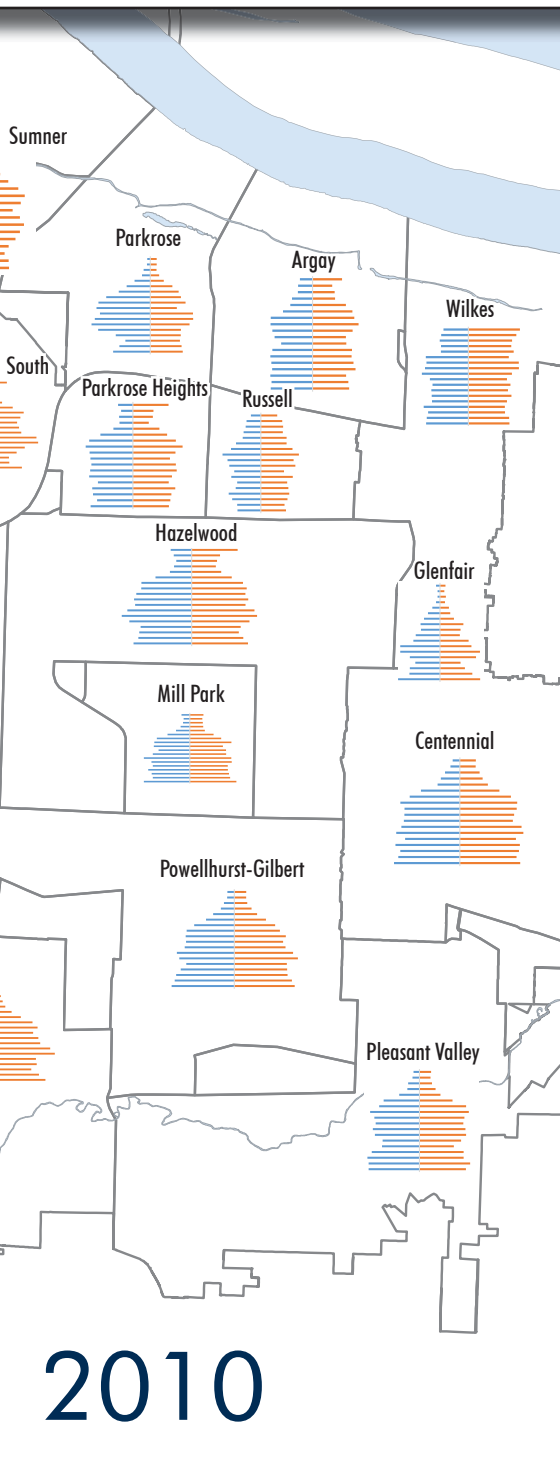Alameda   Sunnyside   Powellhurst-Gilbert

■ Male ■ Female

Figure 10

At opposite ends of the spectrum are several neighborhoods in the inner northwest and southwest of Portland including Hillside, Arlington Heights, and Bridlemile that are clearly aging, and many neighborhoods in East Portland such as Powellhurst-Gilbert, Mill Park, and Centennial that are distinctly young (figure 10). These East Portland neighborhoods are some of the region's most ethnically and racially diverse with relatively large populations of recent immigrants, many of whom have larger families.

Alameda's population pyramid (figure 10), which is sparsely populated by those aged 20 to 35, is characteristic of several of the historic, elite streetcar neighborhoods on Portland's inner eastside. These neighborhoods, known for their high quality residential architecture and arbored streetscapes, are seen as highly desirable places to live. In addition to Alameda, they include Irvington, Laurelhurst, and Eastmoreland, neighborhoods that over the last decade have become unaffordable for most young families.

Sunnyside (figure 10), on the other hand, is typical of many of Portland's hipper, more central neighborhoods with population bulges for the 25 to 35 year old cohorts that are absent in Alameda. These include Buckman, Richmond, Hosford-Abernethy, Eliot, King, Brooklyn, Sellwood-Moreland, and Woodstock among others.

Clearly, neighborhoods that are home to institutions of higher education such as Downtown (PSU), Homestead (OHSU), Reed (Reed College), Collins View (Lewis and Clark), and University Park (University of Portland) have large college-aged populations.

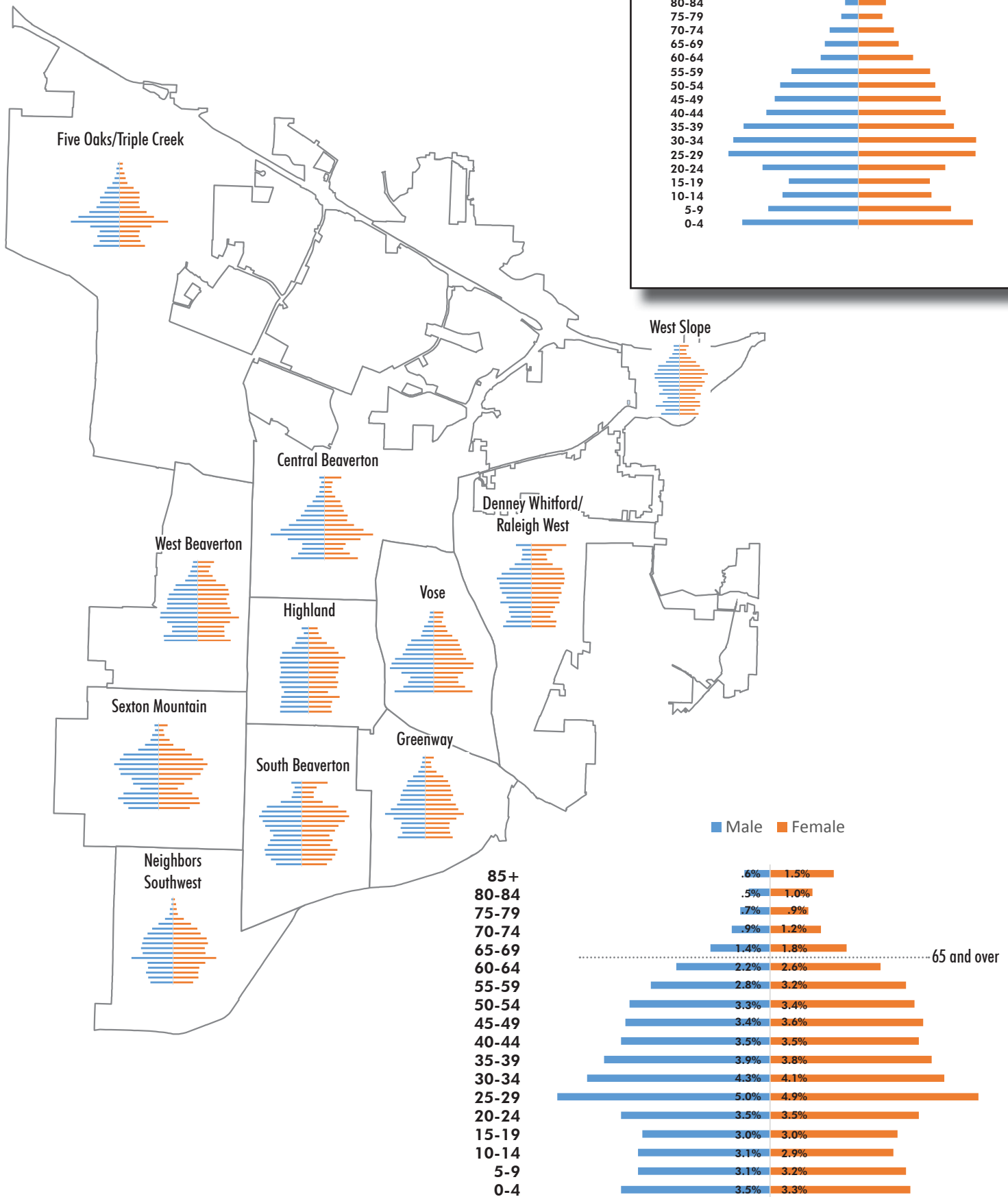And, while the overall population of the city tends to break out evenly between men and women except in

Sumner

Parkrose

Argay

Wilkes

South

Parkrose Heights

Russell

Hazelwood

Glenfair

Mill Park

Centennial

Powellhurst-Gilbert

Pleasant Valley

2010

Beaverton, 2010

Vose

Five Oaks/Triple Creek

West Slope

Central Beaverton

Denney Whitford/
Raleigh West

West Beaverton

Vose

Highland

Sexton Mountain

Greenway

South Beaverton

Neighbors
Southwest

■ Male ■ Female

Age	Male	Female
85+	.6%	1.5%
80-84	.5%	1.0%
75-79	.7%	.9%
70-74	.9%	1.2%
65-69	1.4%	1.8%
60-64	2.2%	2.6%
55-59	2.8%	3.2%
50-54	3.3%	3.4%
45-49	3.4%	3.6%
40-44	3.5%	3.5%
35-39	3.9%	3.8%
30-34	4.3%	4.1%
25-29	5.0%	4.9%
20-24	3.5%	3.5%
15-19	3.0%	3.0%
10-14	3.1%	2.9%
5-9	3.1%	3.2%
0-4	3.5%	3.3%

65 and over

Figure 11   Beaverton, 2010

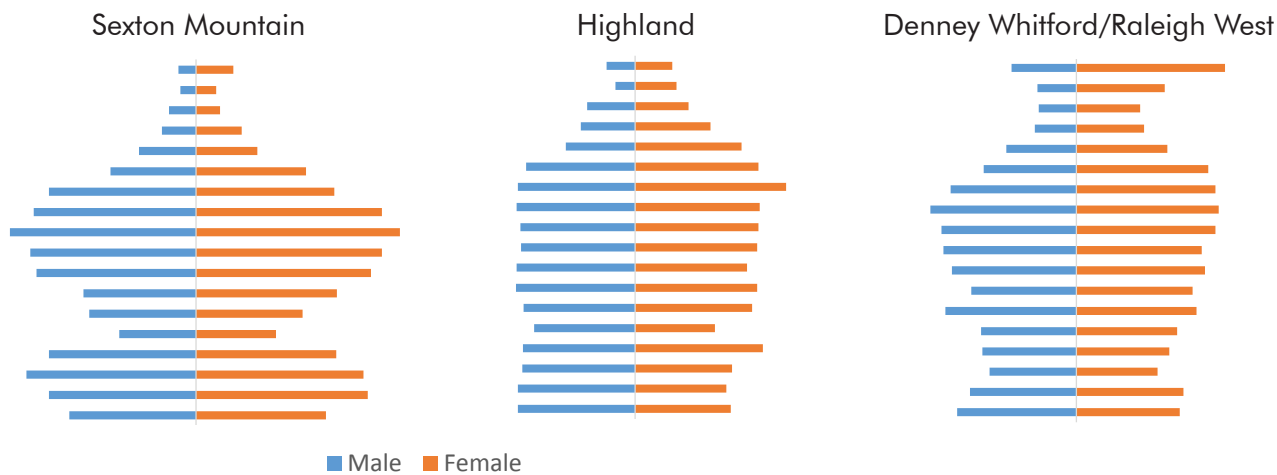| Sexton Mountain | Highland | Denney Whitford/Raleigh West |

■Male ■Female

Figure 12

the most elderly cohorts (which tend to have larger numbers of females), we can see that in Old Town/Chinatown (which has the highest number of single-occupancy residential facilities in the region) and Sunderland (near the airport and home to the city-recognized homeless community, Dignity Village) the populations are overwhelmingly male.

Like Portland, Beaverton's neighborhoods are markedly different from each other in terms of their age distributions (figure 12). Vose, Central Beaverton, and Five Oaks/Triple Creek have the youngest populations. Vose, in particular, is notable with nearly 9 percent of its population under the age of five. And for each of these neighborhoods the largest adult cohorts are between 25 and 34 years of age. Central Beaverton is remarkable in that 46 percent of its population is in these cohorts.

Sexton Mountain's population pyramid, and to a lesser extent South Beaverton and West Slope, contracts where the first set of neighborhoods described above bulges. The 25 to 34 year old cohort makes up 11.5 percent of Sexton Mountain's population while nearly 27 percent of its population is between 40 and 54 years of age.

Highland's population pyramid is nearly columnar and with its largest age cohorts (at nearly 15 percent of its population) between 50 and 60 years of age. What is remarkable about Denney Whitford/Raleigh West is its large percentage of extremely elderly residents. Over 11 percent of its population is 85 or older. In fact, 37.5 percent of its population in 2010 was 65 and older. This sort of distribution at the neighborhood level is indicative of the presence of assisted living, continuing care, and nursing home facilities.

Some Final Observations

There are a host of factors that play into where people live including the cost of housing and housing type, the quality of schools, the availability of jobs, and the proximity to parks, nature, services, cultural activities, major arterials, and transit. These visualizations not only tell us something about the community members who live there and help us to anticipate what their needs may be, but also help to remind us of the reality that neighborhoods across the region are very different with regard to the ages of the people who live there and sometimes even the male to female balance within them. M

Stay tuned this fall for more neighborhood information with the launch of the Institute of Portland Metropolitan Studies' new neighborhood initiative, Neighborhood Pulse!