



February 18, 2020

TO: Mike Reid, Economic Development Director
City of Olympia

FROM: Fred Brousseau, Principal

SUBJECT: City of Olympia Economic Ecosystem

Executive Summary

- The City's objectives for this analysis were:
 - a. To provide City of Olympia elected officials and management with baseline information to assist in the City's policy and decision making
 - b. To initiate Step 1 of the City's "Building a Resilient Economy for all Olympians" logic map.
 - c. To prepare an analysis to help the City develop strategies to build resilience, a stable, inclusive and thriving economy, and economically secure residents.

Results

- The population of the City of Olympia in 2018 was 52,555, representing an increase of 5,763, or 12.3 percent over the City's 2012 population of 46,792. This growth rate was slightly higher than the 10.1 percent growth rate for Thurston County as a whole during the same time period.
- The City's 2018 population is broken down by gender and race/ethnicity is shown in Exhibit A.

Exhibit A: Population, City of Olympia, 2012 through 2018

	2018		2012		Change	
	Total	%	Total	%	#	%
Total population	52,555	100.00%	46,792	100.00%	5,763	12.3%
Male	25,069	47.70%	22,430	47.94%	2,639	11.8%
Female	27,486	52.30%	24,362	52.06%	3,124	12.8%
White	44,304	84.30%	40,080	85.70%	4,224	10.5%
Black or African American	1,366	2.60%	784	1.70%	582	74.3%
American Indian and Alaska Native	526	1.00%	460	1.00%	66	14.3%
Asian	3,574	6.80%	2,990	6.40%	584	19.5%
Pacific Islander	105	0.20%	110	0.01%	(5)	-4.5%
Two or more races	2,260	4.30%	1663	3.10%	597	35.9%
Hispanic or Latino (of any race)	3,889	7.40%	3,462	7.40%	427	12.3%
White alone	41,256	78.50%	37,596	80.35%	3,660	9.7%

- The City’s residents were housed in 21,960 housing units in 2017, 54.8 percent of which were renter-occupied. The City of Olympia has a higher proportion of renters than Thurston County as a whole, for which only 35.9 percent of housing units were renter-occupied in 2017.
- 24,317 of the City’s residents were employed in 2017. Of those, 12,232, or 50.7 percent, worked outside the City and 11,846, or 48.7 percent, were employed in the City of Olympia.
- Olympia is an employment center for the area. In addition to the 11,846 residents that worked in the City of Olympia in 2017, an additional 36,720 workers who live in other jurisdiction are employed in the City, resulting in a total workforce of 48,556, with the majority non-residents. For every worker that commutes out of Olympia, 2.98 workers are commuting into the City.
- Median earnings for employed City residents were \$40,072 in 2017. The top five industries in which City residents were employed in 2017 and the median earnings for each was as follows:

Public administration	\$64,875
Health Care and Social Assistance	\$40,785
Retail Trade	\$21,054
Educational Services	\$45,274
Accommodation and Food Services	\$19,294
- As can be seen, City resident workers are employed in a combination of lower and higher paying industries.
- While our analysis summarized below identifies issues of higher poverty rates and lower earnings in Olympia than in the comparison jurisdictions of Lacey, Tumwater, and Thurston County as a whole, it should be pointed out that many Olympia residents earn reasonable incomes and should be able to live comfortably in the City.

- A higher percentage of City of Olympia residents are below the Federal Poverty Level compared to the cities of Lacey and Tumwater and Thurston County as a whole. Olympia’s rate was nearly double the rates of those under the FPL in Lacey and Tumwater in 2017 and more than twice the rate for the County as a whole. This equates to approximately 4,200 more residents than if Olympia’s rate was the same as Lacey’s.

Exhibit B Persons below the Federal Poverty Levels, Olympia, Lacey, Tumwater, and Thurston County, 2017

	Lacey			Olympia			Tumwater			Thurston County		
	Total	Below poverty level	% below	Total	Below poverty level	% below	Total	Below poverty level	% below	Total	Below poverty level	% below
Population for whom poverty status is determined	45,620	4,461	9.80%	48,777	8,973	18.40%	21,929	2,134	9.70%	283,280	23,786	8.40%

- The higher rate of residents in poverty in Olympia compared to Lacey and Tumwater held for all racial and ethnic groups in Olympia except American Indians and Alaska Natives and Native Hawaiians and Other Pacific Islanders and for all levels of educational attainment. Poverty rates were also higher in Olympia by gender compared to the two other cities.
- Median household income for Olympia was \$55,539 in 2017, lower by between \$9,092 and \$17,164 than the medians for households in Lacey, Tumwater, and Thurston County as a whole.

Exhibit C: Median Household Income, Olympia and comparison cities, 2017

	Lacey		Olympia		Tumwater		Thurston County	
	Number	Median income	Number	Median income	Number	Median income	Number	Median income
Households	18,513	\$64,631	21,960	\$55,539	9,297	64,786	110,713	72,703

- Compared to its neighboring cities, median household income in Olympia was lower for all racial/ethnic groups except American Indian and Alaska Natives and Pacific Islanders and for all educational levels except for those with less than high school graduation.
- We analyzed the following five factors that could possibly explain some of the geographical variations in poverty and earnings between Olympia and the comparison jurisdictions. We found that each of these factors appear to contribute to Olympia’s higher rate of poverty and lower earnings but no one factor is the sole explanation of the differences.

1. Labor force participation rates are lower in Olympia for some segments of the population

- While the labor force participation rate is reasonably close for Olympia and the comparison jurisdictions for the overall population aged 16 and over, it is 8-9 percentage points lower for males in Olympia than in the other jurisdictions.
 - The labor force participation rate for Black or African American Olympia residents is between 15.9 and 23.9 percentage points lower in Olympia than for the same population in the cities of Lacey and Tumwater.
2. There is a higher percentage of female-headed households under the Federal Poverty Level in Olympia than the comparison jurisdictions
 - Females in Olympia work in the same industries in roughly the same proportions as females in the comparison jurisdictions. They also earn less than males in all jurisdictions.
 - However, Olympia was found to be different than the other cities in that a higher proportion of Olympia's households are female-headed and more likely to be under the Federal Poverty Level at 6.3 percent of all families compared to rates of 4.4 percent and below for the other jurisdictions.
 3. The distribution of Olympia's workers by industry and occupation is similar to the comparison jurisdiction distributions in many ways except for the following factors.
 - Olympia has a higher proportion of its residents (62.5 percent) employed in industry sectors that have median earnings less than the Citywide median earnings of \$45,503.
 - Olympia has more residents employed in Service jobs with lower median earnings than found in Lacey and Tumwater.
 - A higher proportion of Thurston County residents that live outside Olympia are employed in higher paying public administration jobs than is the case for Olympia residents.
 4. Olympia had a higher prevalence of people moving into the City that were below the Federal Poverty Level in 2017. This could reflect Olympia's role as a job center for lower skilled, lower paid workers
 5. Olympia has a higher percentage of households receiving public assistance than comparison cities and Thurston County as a whole.

City Council Input

- Interviews conducted with City Council members as part of this analysis identified the following issues of interest, some of which are addressed in this report and some of which are included as areas for further research below as they were beyond the scope of this report. The issues included:

- a. What are the opportunities in the City to address lower labor force participation rates?
- b. Are more first-time homebuyers buying in Lacey rather than Olympia? If so, why?
- c. Are some Olympia residents choosing a different lifestyle that does not emphasize income maximization, indicating that lower household income in Olympia may not be a problem for all residents?
- d. How have industries and jobs changed in Olympia over the years? Have blue collar jobs declined and, if so, has this affected employment opportunities for residents?
- e. How far are residents commuting out of the City for employment? What is the nature of opportunities north of the City and is there a role for the City to help residents access such jobs?
- f. Is the housing stock in Olympia older than in neighboring cities and how is this affecting homeownership and location decisions in the region?

Further research

Areas that the Mayor, City Council and City management could consider for further analysis based on the results of this initial assessment of the City of Olympia's economic ecosystem include:

1. Employment and labor market structures,
 - factors that would explain lower earnings for person with high school education
 - factors that account for lower earnings by level of educational attainment for employed residents in Olympia
 - more details on the occupations of Olympia residents
2. Labor force participation rates – further analysis of factors that determine labor force attachment frequency and length of employment; identifying who has withdrawn from labor force, gender-based differences
3. More detailed analysis of household and family characteristics
 - Gendered characteristics of families; how this affects relevant social, income, policy needs
 - Cash assisted households (SSI, TANF, Food Stamps, and our supplemental supports)
 - Childcare needs – cost, access to services
 - Transportation and public transit – mobility factors that affect employment options, access to services, social supports
4. Educational outcomes
 - Local educational system
 - Factor determining access to college

Memo to Mr. Reid
February 18, 2020

- Differences by race and gender
- Relation to labor force participation and earnings

5. Housing demographic analysis

- Spatial mapping of distribution of owners, renters, by status
- Relation of composition of housing stock, spatial distribution of income and poverty, relation to the geography of the local labor market, mobility patterns

Population

Exhibit 1 presents overview data on total population, broken down by gender and race/ethnicity for 2012 and 2018. As shown, overall population growth in Olympia during that time period was slightly greater in Olympia than for Thurston County as a whole. However, the differences are minor, and indicate that the overall geographical distribution of population has remained relatively the same between 2012 and 2018.

Olympia has the highest percentage of females relative to total population than found in Thurston County as a whole. The percentage of males to females in Olympia is lower than this ratio for the U.S. as a whole, for which males compose 49.5 percent of the total population.

The racial and ethnic composition of Olympia underwent a change between 2012 and 2018 and is now more diverse. The Black or African American population grew by 74.3 percent between 2012 and 2018. There was also a significant increase in individuals that identify themselves as being “two or more races”, which increased by 35.9 percent. The number of Asians increased by 19.5 percent. However, in the case of Blacks or African Americans and Asians, and individuals of “two or more races”, the absolute number of such persons remains quite small relative to the population as a whole. Hence, in terms of actual percentages of various racial/ethnic groups as a share the population as a whole, the racial and ethnic mix of Olympia was relatively stable between 2012 and 2018.

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White alone	41,256	78.50%	37,596	80.35%	3,660	9.7%

Exhibit 1: Population, Thurston County, 2012 through 2018

	2018		2012		Change	
	Number	% Total	Number	% Total	Number	%
Total population	286,419	100.00%	258,332	100.00%	28,087	10.9%
Male	140,059	48.90%	125,998	48.77%	14,061	11.2%
Female	146,360	51.10%	132,334	51.23%	14,026	10.6%
White	234,291	81.80%	216,562	83.83%	17,729	8.2%
Black or African American	10,311	3.60%	7,559	2.93%	2,752	36.4%
American Indian and Alaska Native	5,156	1.80%	3,604	1.40%	1,552	43.1%
Asian	17,758	6.20%	15,116	5.85%	2,642	17.5%
Native Hawaiian and Other Pacific Islander	2,864	1.00%	1,856	0.72%	1,008	54.3%
Two or more races	16,039	5.60%	11,861	4.59%	4,178	35.2%
Hispanic or Latino (of any race)	26,351	9.20%	19,813	7.67%	6,538	33.0%
White alone	213,669	74.60%	200,779	77.72%	12,890	6.4%

Source: for 2018, <https://www.census.gov/quickfacts/thurstoncountywashington>

For 2012, ACS Table DP05

Housing Units and Households, Renters vs. Homeowners

There were 21,960 housing units in the City in 2017, an increase of 1,379, or 6.7 percent, since 2010. The 10.9 percent growth rate for housing units in Thurston County as a whole was greater than for the City of Olympia during that time period.

Compared to the County, the City of Olympia had a lower rate of home ownership, at 45.2 percent of all occupied housing units in 2017, compared to a home ownership rate of 64.1 percent for the County.

Olympia had a higher rate of renters at 54.8 percent of all occupied housing units compared to the County rate of 35.9 percent. Household size for both owners and renters was slightly larger in the County than in Olympia. Note also that the percentage of renter-occupied housing units has increased at a far more rapid rate than the total number of housing units in both Olympia and Thurston County. In Olympia, the number of owner-occupied units declined by 585, or 5.6 percent between 2010 and 2017.

Exhibit 2: Housing Units, Olympia and Thurston County, 2010-2017

Housing units: Olympia	2017	% Total	2010	% Total	Change	% change
Occupied housing units	21,960	100.0%	20,581	100.0%	1,379.00	6.70%
Owner-occupied	9,925	45.2%	10,510	51.1%	-585	-5.60%
Renter-occupied	12,035	54.8%	10,710	52.0%	1,325.00	12.40%
Average household size owner-occupied	2.38		2.33		0.05	2.20%
Average household size renter-occupied	2.07		2.04		0.03	1.50%

Housing Units: Thurston County

	2017	% Total	2010	% Total	Change	% change
Occupied housing units	110,713	100.0%	99,869	100.0%	10,844	10.90%
Owner-occupied	70,934	64.1%	65,797	65.9%	5,137	7.80%
Renter-occupied	39,779	35.9%	34,072	34.1%	5,707	16.80%
Average household size owner-occupied unit	2.57		2.59		-0.02	-0.80%
Average household size renter-occupied unit	2.53		2.27		0.26	11.50%

Housing costs and measures of economic distress

Exhibit 3 shows the percentage of households in Olympia that pay more than 30 percent of annual household income in rent. For Olympia as a whole, 53.4 percent of all renter households pay more the 30 percent of monthly income in rent. This is slightly higher than the 51.8 percent rate for Lacey and 6.2 percentage points higher than the 47.2 percent rate for Tumwater.

As is the case for all three cities compared, the proportion of households paying more than 30 percent of their household incomes is higher the lower the household income. Those most burdened are households earning less than \$20,000 in annual income who pay an average of 94.9 percent of their incomes on rent in the three cities. Households that earn \$20,000-\$34,999 in annual income pay an average of 91.4 percent of their income on contract rents¹.

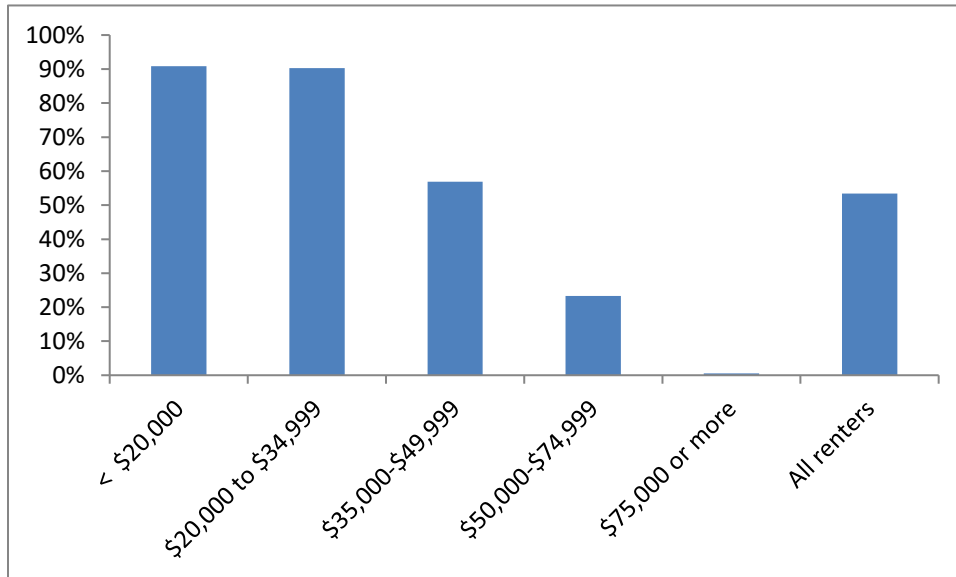
¹ Contract rents are base rent amounts, excluding any furnishings, utilities, or other items paid for by the tenant.

Exhibit 3: Rent burdened households paying more than 30 percent of household income on rent

Renter occupied units	Lacey	Olympia	Tumwater
Less than \$20,000	1,226	2,897	843
Pay 30 percent or more	1,170	2,630	829
% of all renters	14.03%	31.54%	9.94%
% in income bracket	95.43%	90.78%	98.34%
\$20,000 to \$34,999	1,351	2,236	659
Pay 30 percent or more	1,208	2,022	621
% of all renters	14.49%	24.25%	7.45%
% in income bracket	89.42%	90.43%	94.23%
\$35,000 to \$49,999	1,488	2,179	487
Pay 30 percent or more	894	1,235	272
% of all renters	10.72%	14.81%	3.26%
% in income bracket	60.08%	56.68%	55.85%
\$50,000 to \$74,999	2,193	1,918	1,028
Pay 30 percent or more	950	443	190
% of all renters	11.39%	5.31%	2.28%
% in income bracket	43.32%	23.10%	18.48%
\$75,000 or more	2,036	2,258	1,035
Pay 30 percent or more	99	8	10
% of all renters	1.19%	0.10%	0.12%
% in income bracket	4.86%	0.35%	0.97%
Zero or negative income	45	382	19
No cash rent	162	165	94
Total	8,339	11,870	4,071
Total paying over 30 %	4,321	6,338	1,922
% of all renters over 30%	51.82%	53.40%	47.21%

Source: ACS, 2017, Table S2503, See "Rent burden by income brackets 2017"

Exhibit 4: Percent of renters that pay 30% or more of household income in rent, Olympia



Source: ACS, 2017, Table S2503, see “Rent burden by income brackets 2017”

By contrast, as seen in Exhibit 5, the share of owner-occupants that pay more than 30 percent of their household income in “monthly owner costs” is far less than the percentage found in renter households. The percentages are fairly consistent across the three comparison cities. This indicates a greater degree of geographical homogeneity in relation to the income levels and occupations of owner-occupant households. Of all Olympia homeowners, 26.7 percent pay more than 30 percent of their income in owner costs. While this is significantly less than for renters, it still is indicative of an owner-occupant housing market that is high relative to the income levels of many Olympia residents.

Exhibit 5 shows the percentage of renter households defined as rent-burdened in Olympia for the years 2018 and 2010. Overall, there has been very little change in the percentage of households that pay 30 percent or more of total annual income in rent, as we observe a very slight decline of 0.2 percent. Exhibit 5 also shows the change in the median contract rent over the same period, and the percentage of all households that are renter households. Median rents have risen by 29.5 percent, which is equivalent to an annual inflationary increase of 3.2 percent. The percentage of households that are renters has risen by 5.5 percent, likely due to the combined effect of foreclosures that occurred during and after the 2008-2009 financial crisis, and the tenure status of the increase in the total number of resident households.

Exhibit 5: Rent burdened households, 2018 and 2010

	2018		2010		change, number	% change
	Number	%	Number	%		
Occupied units	11,727	100.00%	9,718	100.00%	2,009	0.00%
Less than 15.0 percent	1,013	8.64%	916	9.43%	97	-0.79%
15.0 to 19.9 percent	1,311	11.18%	1,212	12.47%	99	-1.29%
20.0 to 24.9 percent	1,678	14.31%	1,082	11.13%	596	3.17%
25.0 to 29.9 percent	1,369	11.67%	1,239	12.75%	130	-1.08%
30.0 to 34.9 percent	1,169	9.97%	903	9.29%	266	0.68%
35.0 percent or more	5,187	44.23%	4,366	44.93%	821	-0.70%
Total 30% or more	6,356	54.20%	5,269	54.22%	1,087	-0.02%

Source: ACS, Table DP04, 2018 and 2010

	\$ amount	%	\$ amount	%	
Median gross rent in \$	\$1,089	-	\$841	-	29.49%
% renter	-	54.40%	-	48.90%	5.50%

Exhibit 5: Housing burdened homeowners

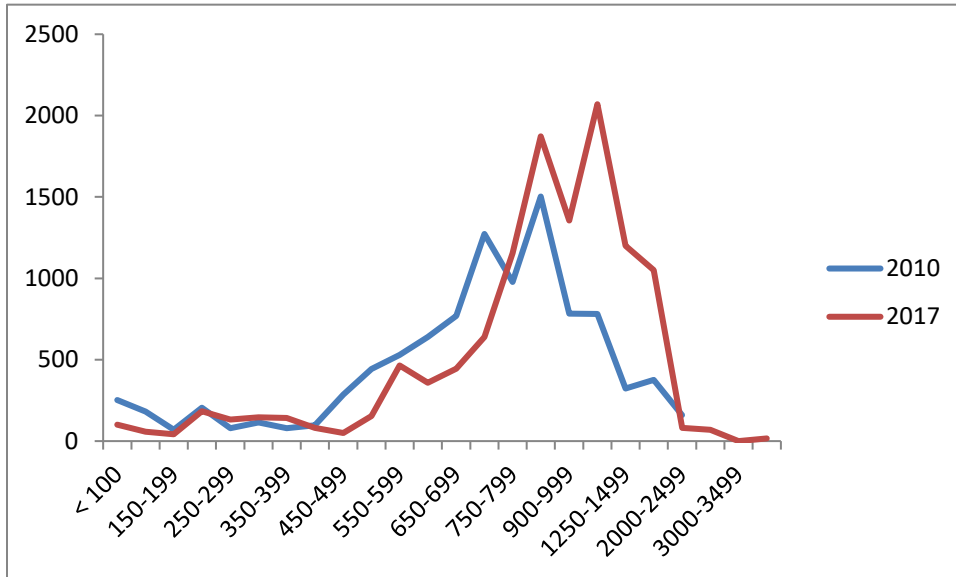
Monthly owner mortgage costs as percent of household income,

	Lacey	Olympia	Tumwater
Less than 20.0 percent	39.6%	42.1%	36.4%
20.0 to 24.9 percent	16.5%	17.0%	23.0%
25.0 to 29.9 percent	15.0%	14.0%	12.7%
30.0 to 34.9 percent	7.0%	9.6%	11.3%
35.0 percent or more	21.9%	17.1%	16.6%
Percentage >30%	28.9%	26.7%	27.9%

Source: ACS 2017 Table DP04, see "housing data DP04 2017"

Exhibit 6 displays the number of households in Olympia whose monthly rents fall within the income ranges reported in the ACS by the Census Bureau. Between 2010 and 2017, we see clear evidence of inflation in monthly contract rents. The distribution has shifted sharply to the right. Fewer households are paying rents under \$799, and a far larger number are paying rents that now exceed \$900 or more. In addition, in 2017 a significant number of households were paying over \$1,250 in monthly rent. (Note that rental payment categories are not set at a constant numerical scale, so that the redistribution of households towards the right, or higher cost, side of the scale, is far greater in actual dollar terms than what is captured in the visual display).

Exhibit 6: Number of renter households, by monthly rent, Olympia, 2010 and 2017



Source: ACS, 2017, Table B25056, see “contract rents B25056”

Jobs

In 2017, 24,317 Olympia residents were employed, with 11,846, or 48.7 percent working in the City and 12,332, or 50.7 percent, commuting out of Olympia for employment. The highest number of jobs for City residents was in:

- 1) Public Administration,
- 2) Health Care and Social Assistance,
- 3) Retail Trade,
- 4) Educational Services, and
- 5) Accommodation and Food Services.

As shown in Exhibit 7, jobs for 15,193, or 62.5 percent of City residents’ jobs, were in industries with median earnings below the Olympia median for all industrial sectors in which Olympia residents are employed of \$45,503. The other 9,114 jobs were in industries with median wages above the median for all sectors.

Exhibit 7: Olympia resident employment and median earnings by industrial sector

	Total	%	Median Earnings in Sector	Difference Sector Median from Olympia Median Sector
Accommodation and food services	2,156	8.87%	\$19,294	-\$26,209
Other services, except public administration	1,235	5.08%	\$20,598	-\$24,905
Arts, entertainment, and recreation	794	3.27%	\$21,000	-\$24,503
Retail trade	3,125	12.85%	\$21,054	-\$24,449
Administrative support	558	2.29%	\$28,125	-\$17,378
Agriculture and forestry	308	1.27%	\$30,921	-\$14,582
Manufacturing	1,307	5.37%	\$38,807	-\$6,696
Health care and social assistance	3,560	14.64%	\$40,785	-\$4,718
Educational services	2,150	8.84%	\$45,274	-\$229
MEDIAN			\$45,503	\$0
Information	584	2.40%	\$45,731	\$229
Utilities	82	0.34%	\$46,818	\$1,316
Wholesale trade	307	1.26%	\$47,153	\$1,651
Finance and insurance	964	3.96%	\$49,135	\$3,633
Construction	742	3.05%	\$51,250	\$5,748
Transportation and warehousing	440	1.81%	\$57,212	\$11,710
Professional, scientific, and technical	1,355	5.57%	\$59,554	\$14,052
Real estate and rental and leasing	404	1.66%	\$64,688	\$19,186
Public administration	4,236	17.42%	\$64,875	\$19,373
Employed residents 16 years and over	24,317	100.00%	\$40,072	-\$5,431
Employed in sectors under median sector	15,193	62.48%		

Source: ACS 2017, Tables S2403 and S2413. Note that median sector is the average of Education and Information

Median income and earnings

Income is measured in a number of ways by the U.S. Census Bureau and each measure presents insights into different segments of Olympia’s population. As shown in Exhibit 8, median earnings for employed Olympia residents were \$40,072 in 2017. Median family income, which covers two or more people related by birth, marriage, or adoption residing in the same housing unit, was \$77,623, a strong income level for this group. Median single person income was \$38,927, or approximately half of family income.

For all Olympia households, the median household income, which covers individuals and all groups of people who occupy a housing unit regardless of relationship, was \$55,539. There is a significant difference in household income based on renter vs. owner-occupant tenure status, with homeowners having an average income of \$85,505, as compared to \$37,707 for renters.

Exhibit 8: Median earnings by family and housing tenure status, 2017

Median earnings of employed residents	\$40,072
Median household income	\$55,539
Median family income	\$77,623
Median nonfamily income	\$38,927
Median household income, owners	\$85,505
Median household income, renters	\$37,707

Source: ACS 2017 and 2010, Tables S2413, DP03 and S2503

Commuting Patterns

Commuting pattern data show that Olympia is Thurston County’s major employment center. As seen in Exhibit 9, Olympia experiences a large net commuter inflow (Column H). and over half of employed Olympia residents work outside the City, as seen in Columns D and E. For every worker that commutes out of Olympia, 2.98 workers are commuting into the City.

As seen in Exhibit 10, the percentage of employed Olympia residents that work inside the City declined by 6.4 percent between 2011 and 2017. By contrast, there has been an increase of 15.6 percent in the portion of Olympia’s employed population that commutes to jobs outside the City. Of all workers employed in Olympia, the share of the total workforce that consists of Olympia residents has fallen by 9.9 percent. More workers overall are employed in Olympia, and a greater percentage share of Olympia residents now work outside the City.

Exhibit 9: Regional commuting patterns, 2017

	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>	<u>I</u>	<u>J</u>	<u>K</u>
	Total employed resident population	Total worker population, city	Worked in county	Worked in county, in place of residence	Total outflow from city	Total outflow from city to outside county	Total inflow to city	Net inflow (+) or outflow (-)	Ratio inflow to outflow	% of employed residents that work in city	% of employe resident commut out of City
Lacey	21,305	20,963	13,209	4,964	16,107	7,862	15,999	-108	0.99	23.0%	77.0%
Olympia	24,324	48,556	19,727	11,846	12,332	4,451	36,710	24,378	2.98	49.0%	51.0%
Tumwater	10,913	19,701	8,698	3,230	7,683	2,215	16,471	8,788	2.14	30.0%	70.0%

Source: ACS, 2017, Tables B8601 and B8604

Exhibit 10: Job share of Olympia residents, 2011 and 2017

	2017	2011	Change	% change
Total workforce population	48,556	46,733	1,823	3.90%
Worked in place of residence	11,849	12,653	-804	-6.35%
Worked outside place of residence	12,475	10,793	1,682	15.58%
Olympia resident % of total employment	24.40%	27.08%	-2.67%	-9.87%

Source: ACS, 2017, Tables B8601 and B8604

Poverty and Median Earnings Profile

The City of Olympia has a significantly higher percentage of its population below the Federal Poverty Level² compared to neighboring cities and Thurston County as a whole. As shown in Exhibit 11, a total of 18.4 percent of Olympia's total population is below the Federal poverty level, as compared to 9.8 percent for Lacey, 9.7 percent for Tumwater, and 8.4 percent for Thurston County.

Geographical variance in poverty levels across our comparison jurisdictions cannot be explained by a higher percentage of persons in racial groups that typically have higher overall poverty rates. The City of Olympia has a higher concentration of persons classified by the U.S. Census as “White alone”³, and a lower percentage of persons classified as “Black or African American”, “Asian alone”, than either Lacey or Tumwater, a lower percentage of person designated as “Latino” than Lacey, and a slightly higher percentage of total population represented by this group than Tumwater.

Exhibit 11: Persons below the Federal Poverty Levels, Olympia, Lacey, Tumwater, and Thurston County, 2017

	Lacey			Olympia			Tumwater			Thurston County		
	Total	Below poverty level	% below	Total	Below poverty level	% below	Total	Below poverty level	% below	Total	Below poverty level	% below
Population for whom poverty status is determined	45,620	4,461	9.80%	48,777	8,973	18.40%	21,929	2,134	9.70%	283,280	23,786	8.40%

Source: ACS, Table B1701; see “poverty status S1701 B1701 EPI”

² Federal poverty levels are established by the U.S. Health and Human Services and used to determine eligibility for certain programs and benefits, including savings on Marketplace health insurance and Medicaid and Children’s Health Insurance Program (CHIP) coverage. Various levels are established based on family size.

³ “White alone” as used by the Census Bureau refers to individuals who identify themselves as white, but not Hispanic or Latino. In some Census datasets, “white” includes those who also identify as Hispanics or Latinos.

Poverty across all racial groups is higher in Olympia than for our comparison cities and compared to Thurston County as a whole. As seen in Exhibit 12, all racial/ethnic groups used by the U.S. Census Bureau have higher poverty rates in Olympia with the exception of American Indian persons.

More striking still is the fact that Olympia's poverty rates are almost double that of Lacey, Tumwater, and Thurston County, for all educational levels, as seen in Exhibit 13. In other words, the higher poverty rates in Olympia cannot be explained by reference to racial/ethnic demographic composition or the level of education of its resident population, two common correlates of poverty. As seen in Exhibit 13, while Olympia has a lower percentage of its population aged 25 or over with some college, but without a bachelor's degree, it has a higher percentage of persons over 25 with a bachelor's or higher. In both categories, the percentage of persons in poverty is greater for Olympia than for either comparison city.

Exhibit 12: Residents under the Federal Poverty Level by race/ethnicity, Olympia, Lacey, and Tumwater, 2017

	Lacey			Olympia			Tumwater		
	Total	Number below poverty	% below	Total	Number below poverty	% below	Total	Number below poverty	% below
Total	45,620	4,461	9.8%	48,777	8,973	18.4%	21,929	2,134	9.7%
White alone	33,474	2,711	8.1%	41,106	7,111	17.3%	18,472	1,681	9.1%
Black or African American alone	2,600	317	12.2%	1,193	369	30.9%	599	68	11.4%
American Indian and Alaska Native alone	713	267	37.4%	497	159	32.0%	124	12	9.7%
Asian alone	3,773	362	9.6%	3,360	675	20.1%	910	73	8.0%
Native Hawaiian/Other Pacific Islander alone	830	207	24.9%	96	0	0.0%	119	14	11.8%
Some other race alone	761	102	13.4%	389	173	44.5%	199	11	5.50%
Two or more races	3,469	503	14.5%	2,136	504	23.6%	1,506	276	18.3%
Hispanic or Latino origin	5,154	649	12.6%	3,619	1,292	35.7%	1,398	231	16.5%
White alone, not Hispanic or Latino	29,970	2,188	7.3%	38,283	6,087	15.9%	17,645	1,517	8.6%

Source: ACS 2017, Table S1701 (See file "poverty status S1701 B1701")

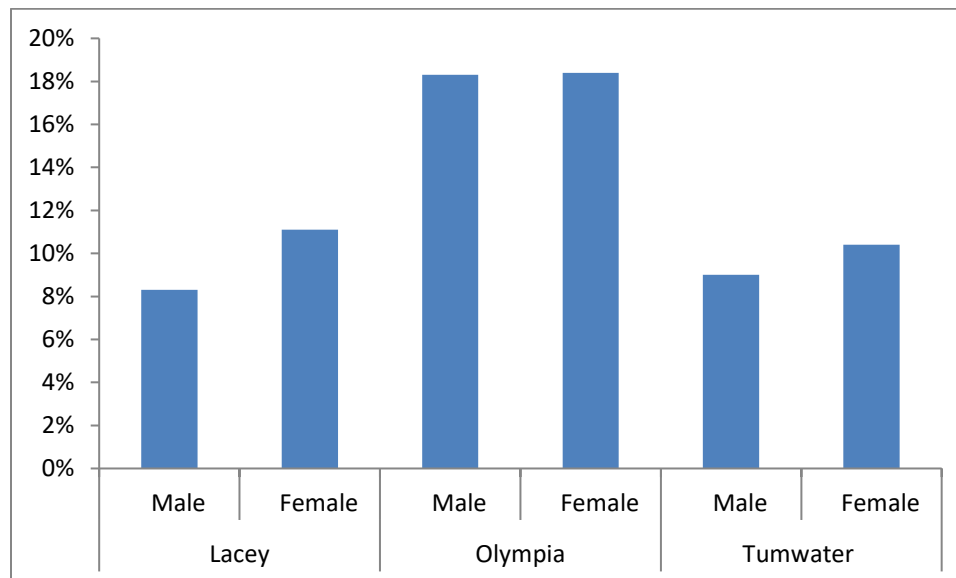
Exhibit 13: Residents under the Federal Poverty Level by education, Olympia, Lacey, and Tumwater, 2017

Educational Attainment	Lacey			Olympia			Tumwater		
	Total	Below poverty level	% below	Total	Below poverty level	% below	Total	Below poverty level	% below
Population 25 years and over	30,849	2,507	8.1%	34,940	5,362	15.3%	15,259	1,281	8.4%
Less than high school graduate	1,677	320	19.1%	2,176	733	33.7%	921	160	17.4%
High school graduate	6,817	804	11.8%	5,233	1,278	24.4%	2,965	324	10.9%
Some college, associate's degree	12,189	896	7.4%	11,774	2,098	17.8%	5,831	459	7.9%
Bachelor's degree or higher	10,166	487	4.8%	15,757	1,253	8.0%	5,542	338	6.1%

Source: ACS, 2017, Table S1701, see "poverty status S1701 B1701 EPI"

Olympia also has a much higher percentage of both its female and male population with annual earnings below the Federal poverty levels relative to the gender breakdown in the comparison cities, as seen in Exhibit 14. Of particular note is the 18.3 percent poverty rate for men in Olympia, nearly the same as the 18.4 percent poverty rate for women in Olympia and double the rates of the male populations in either Lacey or Tumwater.

Exhibit 14: Poverty rates by gender, 2017



	Total	Below poverty level	% below
Lacey			
Male	21,303	1,770	8.30%
Female	24,317	2,691	11.10%
Olympia			
Male	23,143	4,246	18.30%
Female	25,634	4,727	18.40%
Tumwater			
Male	10,498	942	9.00%
Female	11,431	1192	10.40%

Source: ACS, 2017, S1701 see "poverty status S1701 B1701 EPI"

Exhibit 15 shows a longitudinal comparison of changes in the percent of residents that have annual incomes that fall below the Federal Poverty Level for our three comparison cities. There is a significant degree of year-to-year variance in the data due to the measurement error inherent in the sampling methods used in the ACS, and the method of statistical adjustments deployed by the U.S. Census Bureau to construct population estimates based on person and/or household samples. Overall, there appears to be an upward trend in the percentage of households that report annual incomes below the Federal Poverty Level in Olympia. Poverty rates in Lacey are stable and show a downward trend in Tumwater. However, the variation year-by-year is sufficient to limit any definitive conclusions as to whether the changes reflect actual trends in the underlying measurement variable (poverty rates) or are due to uncorrectable sampling and adjustment (weighting) error. In any case, we conclude that poverty rates are significantly higher in Olympia than in our comparison cities.

Exhibit 15: Rates of Households below Federal Poverty Level: Cities of Olympia, Lacey, and Tumwater, 2012-2018

	2018	2017	2016	2015	2014	2013	2012
Olympia	16.70%	18.40%	17.10%	17.70%	16.50%	15.80%	15.60%
Lacey	10.00%	9.800%	10.60%	9.90%	10.30%	10.70%	10.50%
Tumwater	9.60%	9.700%	8.60%	12.30%	10.40%	10.60%	12.00%

Source: ACS, Table S1701

Exhibit 16 displays poverty rates by educational attainment and by gender. For all educational levels poverty rates are higher in Olympia for both men and women as compared to Lacey and Thurston County. The discrepancy is particularly pronounced relative to Thurston County. For instance, 11.9 percent of

persons over age 25 with less than a high school degree are below the Federal Poverty Level for Thurston County as a whole, whereas in Olympia the rate is 33.7 percent. We also find that poverty rates are higher for men with low levels of educational attainment than for women in Olympia, but not for Lacey or Thurston County as a whole. Men in Olympia with lower levels of educational qualifications are thus far more likely to be in households with annual incomes under the Federal Poverty Level. By contrast, women with higher educational qualifications are more likely to be in poverty than are men in Olympia, similar to the distributions in Lacey and Thurston County. Note that the incidence of poverty is higher for all genders for Olympia relative to Lacey and Thurston County for all education levels.

Exhibit 16: Poverty rate by educational attainment and gender for population 25 years and over for which poverty status is determined, 2017

	Total		Men		Women	
	number	% in poverty	number	% in poverty	number	% in poverty
Olympia						
Less than high school graduate	2,406	33.70%	1,229	36.70%	1,177	30.60%
High school graduate (includes equivalency)	5,577	24.40%	2,779	28.70%	2,798	20.20%
Some college or associate's degree	12,083	17.80%	5,254	16.10%	6,829	19.10%
Bachelor's degree or higher	15,835	8.00%	7,405	6.50%	8,430	9.20%
Lacey						
Less than high school graduate	1,713	19.10%	726	13.60%	987	23.20%
High school graduate (includes equivalency)	6,941	11.80%	3,302	13.20%	3,639	10.50%
Some college or associate's degree	12,299	7.40%	5,334	4.20%	6,965	9.70%
Bachelor's degree or higher	3,949	4.80%	5,098	4.30%	5,151	5.30%
Thurston County						
Less than high school graduate	10,645	11.90%	5,715	10.40%	4,930	13.70%
High school graduate (includes equivalency)	43,814	9.20%	21,689	9.30%	22,125	9.00%
Some college or associate's degree	70,777	8.50%	31,183	7.20%	39,594	9.60%
Bachelor's degree or higher	77,495	5.30%	38,466	4.60%	39,029	6.10%

Source: ACS, 2017, Table S1501

Note: Tumwater data not included for clarity.

A similar pattern of geographical discrepancy not correlated to educational levels observed in our three comparison cities is found in an examination of median earnings across the three cities. As seen in Exhibit 17, median household income is \$55,530 in Olympia, \$64,631 for Lacey, \$64,786 for Tumwater, and \$72,703 for Thurston County. Exhibit 17 also shows that Olympia has lower median incomes for all racial and ethnic groups relative to the comparison cities and Thurston County.

Patterns of racial/ethnic income disparities across cities cannot be explained by differing levels of educational attainment within racial/ethnic categories. Several racial/ethnic groups that report higher

rates of poverty in Olympia relative to Lacey (Asian and Latino) have higher percentages of individuals with a bachelor’s degree or higher levels of educational attainment. For instance, 31.1 percent of persons identified as “Hispanic or Latino origin” in Olympia have a bachelor’s degree or higher, as compared to 24.1 percent for this group in Lacey. For persons classified as “Asian only”, 33.5 percent have college degrees or higher in Olympia, as opposed to 29.2 percent in Lacey. Hence, there are clearly factors influencing poverty rates in Olympia that do not appear to be correlated in the manner expected with either of the cities over relative racial/ethnic composition, or levels of educational attainment. (Not shown in table).

Exhibit 17: Median Household Income by Race and Ethnicity, 2017

	Lacey			Olympia			Tumwater			Thurston		
	Number	%	Median income	Number	%	Median income	Number	%	Median income	Number	%	Median income
Households, total	18,513	100.00%	64,631	21,960	100.00%	55,539	9,297	100.00%	64,786	110,713	100.00%	72,703
One race												
White	14,582	78.80%	65,658	19,123	87.10%	56,320	8,249	88.70%	66,795	94,781	85.61%	74,252
Black or African American	1,122	6.10%	63,824	591	2.70%	53,208	202	2.20%	61,210	N		83,517
American Indian and Alaska Native	268	1.40%	23,750	150	0.70%	-	33	0.40%	-	N		70,198
Asian	1,238	6.70%	65,758	1,148	5.20%	61,667	282	3.00%	71,196	5,785	5.23%	63,460
Pacific Islander	204	1.10%	114,853	57	0.30%	120,719	72	0.80%	-	N		67,066
Some other race	291	1.60%	43,906	77	0.40%	42,847	70	0.80%	50,577	N		65,621
Two or more races	808	4.40%	61,051	814	3.70%	46,607	389	4.20%	51,512	N		70,034
Hispanic or Latino origin (of any race)	1,490	8.00%	60,158	1,136	5.20%	42,809	435	4.70%	50,299	7,132	6.44%	51,937
White alone, not Hispanic or Latino	13,581	73.40%	65,791	18,222	83.00%	57,397	7,973	85.80%	67,830	90,354	81.61%	75,232

Source: ACS, 2017, Table S1903

Olympia also has lower median earnings for all levels of educational qualifications from less than high school through graduate or professional degree than Lacey, Tumwater, or Thurston County as a whole. Exhibit 18 presents the differences between Olympia and the comparison cities. The first column in Exhibit 18 shows the percentage difference in the share of the population satisfying the designated level of educational qualification.

Olympia has a more highly educated population than Lacey or Tumwater or Thurston County overall. Median annual earnings in Olympia are significantly *lower* than for Lacey or Tumwater for all levels of educational qualification (the one exception is “less than high school”). For instance, the median earnings for workers in Olympia with a B.A. degree is \$6,514 *less* than for a worker with equivalent educational

qualifications in Lacey, and \$9,697 less than for a worker with a college degree in Tumwater. We surmise there may be city-specific cultural factors at work that produce this result – for instance, workers may be seeking to work reduced hours, or opting for jobs that may offer fewer hours and/or lower wages that have the tradeoff of reduced job responsibilities to allow these individuals to pursue a broader range of activities outside of work, including commitments to domestic activities, family life, and non-paying interests and activities. It may also reflect the spatial match between job location and place of residence.

Exhibit 18: Educational qualifications and median earnings, Olympia, Lacey, and Tumwater, 2017

	Lacey		Olympia		Tumwater	
	% of Lacey residents	Median earnings	% of Olympia residents	Median earnings	% of Tumwater residents	Median earnings
Population 25 years and over w/ earnings	100.00%	\$41,983	100.00%	\$41,172	100.00%	\$48,516
Less than high school graduate	5.50%	\$23,835	6.70%	\$25,405	6.00%	\$25,833
High school graduate	22.20%	\$33,917	15.50%	\$24,124	19.60%	\$40,750
Some college or associate's degree	39.40%	\$41,392	33.60%	\$36,524	38.20%	\$40,737
Bachelor's degree	22.40%	\$49,876	26.10%	\$43,362	20.20%	\$53,059
Graduate or professional degree	10.40%	\$67,122	18.00%	\$60,946	16.00%	\$65,000

Source: ACS 2017, Table S1501

Exhibit 19 shows household median income by family characteristics. Median household income for female headed households (no husband present) is significantly lower in Olympia relative to Tumwater or Thurston County as a whole but is slightly higher than the level reported for Lacey. The median household income of female headed households with a child present is marginally lower in Olympia relative to Lacey, differing by \$1,070 and is \$10,516 less than in Tumwater, and \$6,276 lower relative to the entire County.

Exhibit 19: Family household composition and median family income

	Lacey			Olympia			Tumwater			Thurston		
	Number	%	Median income	Number	%	Median income	Number	%	Median income	Number	%	Median income
Families	12,088	100.00%	\$74,208	11,126	100.0%	\$77,623	5,672	100.00%	\$78,298	73,809	100.00%	\$86,326
<i>Own children under 18 years</i>	5,688	47.10%	\$67,318	5,032	45.2%	\$60,821	2,545	44.90%	\$74,325	29,319	26.48%	\$84,649
<i>No children under 18 years</i>	6,400	52.90%	\$80,646	6,094	54.8%	\$88,735	3,127	55.10%	\$79,876	44,490	40.18%	\$86,868
Married-couple families	9,077	75.10%	\$84,486	7,946	71.40%	\$95,336	4,257	75.10%	\$89,956	56,991	51.48%	\$95,655
<i>Own children under 18 years</i>	3,795	31.40%	\$82,865	2,954	26.60%	\$89,785	1,678	29.60%	\$93,723	20,274	18.31%	\$105,957
Female householder, no husband present	2,201	18.20%	\$34,468	2,512	22.60%	\$35,857	1,091	19.20%	\$49,821	12,008	10.85%	\$46,521
<i>Own children under 18 years</i>	1,286	10.60%	\$29,542	1,623	14.60%	\$28,472	668	11.80%	\$38,988	6,307	5.70%	\$34,748
Male householder, no wife present	810	6.70%	\$61,944	668	6.00%	\$51,111	324	5.70%	\$52,028	4,810	4.34%	\$53,889
<i>Own children under 18 years</i>	607	5.00%	\$61,979	455	4.10%	\$36,620	199	3.50%	\$51,315	2,738	2.47%	\$45,382

Source: ACS, 2017, Table S1903; see “S1903 median income”

Exhibit 20 shows change in the median income in non-adjusted dollar amount for Olympia and Thurston County over the period 2010-2018. We also report the inflation-adjusted percentage change in median household incomes for Olympia and Thurston County that occurred between 2010 and 2018.

For all Olympia households, the percentage increase in inflation adjusted incomes is 3.38 percent between 2010 and 2018. This is greater than for Thurston County, where we observe a slight decline in inflation-adjusted household incomes of 0.42 percent. Median family income in Olympia fell by 3.9 percent over the period reported. By contrast, we observe strong income growth for nonfamily households in Olympia, which reported an inflation-adjusted increase of 16.9 percent over the eight-year comparison period. Income growth in Olympia has outpaced the

growth for Thurston County overall. In general, however, with the exception of nonfamily incomes, rates of growth, where calculated as the percent change over the eight year comparison interval, or the annual rate of growth shown in the last two columns of Exhibit RR, have been modest in Olympia, and stagnant in the county as a whole.

Exhibit 20: Changes in median incomes, by household type, 2010-2018

	<u>2018</u>		<u>2010</u>		<u>Inflation Adjusted % Change</u>			<u>Annual growth rate, Thurston county</u>
	<u>Olympia</u>	<u>Thurston</u>	<u>Olympia</u>	<u>Thurston</u>	<u>2010 to 2018 % change Olympia</u>	<u>2010 to 2018 % change Thurston</u>	<u>Annual growth rate, Olympia</u>	
Median household income	\$58,606	\$69,592	\$49,461	\$60,930	3.38%	-0.35%	0.42%	-0.04%
Median family income	\$78,242	\$82,393	\$71,029	\$71,833	-3.90%	0.07%	-0.50%	0.01%
Median nonfamily income	\$41,236	\$43,481	\$30,774	\$36,983	16.90%	2.57%	1.95%	0.32%

Source: ACS, Table DP04

Factors that correlate with observed geographical variations in poverty rates

No single factor appears to be driving the geographical distribution of low income households across Thurston County, and between our selected comparison cities. Rather, the relatively higher levels of poverty in Olympia and the median income discrepancies with the comparison cities are likely due to a series of factors that, in combination, appear to be correlated with variations in:

- (1) lower rates of male and African American labor force participation rates in Olympia,
- (2) higher percentages of female headed families in poverty in Olympia,
- (3) the industrial sectoral composition of the employed residential population,
- (4) a higher rate of low income individuals migrating to Olympia, and
- (5) a higher rate of Olympia residents receiving public assistance

We present information on each of these factors below.

(1) Labor force participation rates

As shown in Exhibit 21, the overall labor force participation rate across our three comparison cities shows that the percentage of the resident population 16 years or older that is participating in the labor force is approximately the same in Olympia and Lacey (63 and 62.8 percent, respectively), lower than the rate reported for Tumwater (66.8 percent), and slightly higher than for Thurston County overall. The population between 20 and 64 in Olympia is 1.9 percent below Lacey, 3.5 percent lower than Tumwater and identical to the overall rate for the County.

Exhibit 21: Labor Force Participation Rates, 2017

	Lacey	Olympia	Tumwater	Thurston
Population 16 years and over	62.80%	63.10%	66.80%	61.50%
Population 20 to 64 years	79.30%	77.40%	80.90%	77.40%

Source: ACS 2017, Table S2301

When we examine variations in labor force participation rates across cities by gender, the male LFPR in Olympia is eight to nine percentage points lower than rates observed in either Lacey or Tumwater. Of the 15,524 males in Olympia aged 20-64, a total of 3,276 persons in this demographic group, or 21.1 percent, are not formally participating in the labor force. For Lacey, of the total 12,875 males between 20 and 64, 1,558 are not participating in the labor force, or 12.1 percent. This is close to half Olympia's 21.1 percent male labor force participation rate.

Exhibit 22: Labor Force Participation Rates by gender, family characteristics, and race , 2017

Gender/family characteristics	Lacey	Olympia	Tumwater	Thurston
Male	87.9%	78.9%	87.0%	82.0%
Female	71.6%	75.9%	75.5%	73.0%
With own children under 18 years	66.5%	72.0%	67.9%	70.9%
With own children under 6 years only	60.8%	73.5%	56.5%	61.1%
With own children under 6 years and 6 to 17 years	51.6%	56.2%	57.8%	60.1%
With own children under 6 to 17 years only	77.4%	77.0%	77.6%	79.7%

Male Labor Force Participation	Lacey	Olympia	Tumwater	Thurston
Men, aged 20-64	12,875	15,524	6,388	83,465
Men not in labor force	1,558	3,276	830	15,024
Men not in labor force as % of male population aged 20-64	12.1%	21.1%	13.0%	18.0%

Race, all genders	Lacey	Olympia	Tumwater	Thurston
White alone	61.4%	62.6%	67.2%	60.00%
Black or African American alone	70.7%	55.4%	79.3%	N
American Indian and Alaska Native alone	44.0%	69.7%	40.0%	N
Asian alone	64.1%	65.6%	52.9%	59.20%
Native Hawaiian and Other Pacific Islander alone	63.4%	73.6%	65.5%	N
Some other race alone	69.1%	73.4%	79.8%	N
Two or more races	75.7%	72.2%	65.0%	N
Hispanic or Latino origin (of any race)	68.1%	75.6%	73.4%	69.60%
White alone, not Hispanic or Latino	61.00%	61.90%	66.70%	59.40%

Source: ACS, 2017, Table S2301, see "LFPR S2301"

N= not available

It is not possible using publicly available 2017 ACS data to examine variances in labor force participation rates amongst "men only" across racial groups. Some of the difference between LFPR observed in our comparison cities could be explained by the lower rates of labor force participation reported for both male and female African Americans in Olympia, who have a LFPR of 55.4 percent as opposed to 70.7 and 79.3 percent for Lacey and Tumwater, respectively.⁴ However, the variances in poverty rates and earnings across cities cannot be explained by racial group variation alone, as African Americans, who have the lowest rates of labor force participation in Olympia, comprise only 2.9 percent of the resident population.

⁴ The data is not available for several racial groups, including African Americans, for Thurston County overall,

As seen in Exhibit 23, Olympia also has lower labor force participation rates for all levels of educational attainment amongst the population aged 25 to 64, regardless of race/ethnicity. The discrepancy is particularly marked for persons with less than a high school education. However, the pattern of lower rates of labor force participation is found across the entire educational spectrum though the gap is very narrow between Olympia and Lacey for residents with bachelor’s degrees or higher. We believe this may be partially explained by particular lifestyle choices and preferences of a subset of Olympia’s resident population, as there is no a priori reason to assume persons residing in Olympia with some collage education would have a harder time accessing employment opportunities than such persons in other localities within Thurston County.

Exhibit 23: Labor force participation rates by education, 2017

	Lacey	Olympia	Tumwater	Thurston
Population 25 to 64 years	79.60%	76.80%	80.20%	77.20%
Less than high school graduate	69.80%	56.10%	61.10%	74.60%
High school graduate	72.70%	65.40%	61.60%	69.40%
Some college or associate's degree	79.70%	74.40%	81.90%	75.20%
Bachelor's degree or higher	85.80%	84.70%	89.90%	83.90%

Source: ACS 2017, Table S2301

Exhibit 24 shows that Olympia has a higher number of persons with incomes below the Federal Poverty Level and, of those, a higher rate of those not in the labor force than either of our comparison cities. Of the 5,561 total persons aged 16 and over that are under the Federal Poverty Level in Olympia, 53.3 percent of these individuals are officially reported as having work of some kind. This means that 2,597 individuals, or 7.9 percent of the population between 20 and 64 have reported incomes under the Federal Poverty Level and are not engaged in any type of formal employment. The corresponding numbers for Lacey and Tumwater are 1,391 and 453, which represent 5.1 and 3.3 percent of the populations of these cities between ages 20 and 64, respectively.

Exhibit 24: Labor force participation rates, by various poverty characteristics, 2017

below Federal poverty level	Lacey	Olympia	Tumwater	Thurston
Population, ages 20-64	27,252	32,506	13,663	169,866
Below poverty level, ages 20-64	2,624	5,561	1,344	15,228
Below poverty, not in labor force	1,391	2,597	453	7,812
Labor force participation, below Federal poverty level	47.00%	53.30%	66.30%	48.70%
% pop 20-64, below poverty and not in labor force	5.10%	7.99%	3.31%	4.60%

Source: ACS, 2017, Table S2301, see “LFPR S2301”

The higher prevalence of persons over 16 that are in poverty and report no labor force participation is consistent with the overall pattern of Olympia having both higher poverty rates and significantly lower rates of male labor force participation. Differences in male labor force participation is the most striking

characteristic that differentiates Olympia from the other comparison cities and appears to be well correlated with the variances observed in the higher rates of poverty in Olympia.

Finally, Exhibit 25 provides a longitudinal comparison of labor force participation rates for various racial categories for Olympia only. The labor force participation rate has declined by 6.3 percent for all Olympia residents aged 16 and over. Labor force participation has declined for most racial groups in Olympia over the last eight years; the fall is particularly pronounced for African Americans. The one major racial group – in terms of numbers and as a relative percentage of the entire population - that shows an increase is Hispanic, although the increase is very slight, at 0.6 percent. The fall in the labor force participation for "White alone" – which composes over 84 percent of the total population – is 7.1 percent, which is slightly greater than the decline observed for Olympia’s population 16 years and over as a whole. To put these numbers into some comparative context, the national labor force participation rate fell from 65.8 percent in 2010 to 63 percent at the end of 2018, or by 2.8 percent. For Washington State, the labor force participation rate fell from 67.4 in January 2010 to 64 percent in December 2018, or by 2.6 percent. Some portion of the decline in Olympia is thus ‘explained’ by the overall decline in national labor force participation. However, the decline in Olympia is significantly greater than for either the U.S. as a whole or for Washington state.

Exhibit 25: Labor force participation rate, Olympia only, 2010 and 2018

	2018		2010		% change
Population 16 years and over	43,064	62.60%	37,367	68.90%	-6.30%
White	36,004	61.30%	32,344	68.40%	-7.10%
Black or African American	1,147	52.10%	846	78.10%	-26.00%
American Indian	469	67.80%	418	44.70%	23.10%
Asian alone	3,057	69.10%	2,255	69.80%	-0.70%
Pacific Islander	164	83.50%	43	81.40%	2.10%
Some other race	604	77.50%	530	86.60%	-9.10%
Two or more races	1,619	78.70%	931	76.30%	2.40%
Hispanic or Latino origin (of any race)	3,171	72.70%	1,741	72.10%	0.60%
White alone, not Hispanic or Latino	33,858	60.80%	31,275	68.40%	-7.60%

Exhibit 26 shows the change in labor force participation rates between 2010 and 2018 by level of educational attainment. We observe an overall decline in labor force participation of 4.4 percent for all persons between 25 and 64. We also find that labor force participation rates have fallen for all levels of educational qualification within the prime working age population, with the exception of persons that have not completed high school, which rose by 13 percent. However, because this group represents a small percentage of the total prime age population, this increase is not sufficient to offset the decline observed in all other categories of educational qualification.

Exhibit 26: Labor force participation by level of educational qualification

	2018		2010		Change (%)
	Number	%	Number	%	
Population 25 to 64	27,981	77.20%	24594	81.60%	-4.40%
Less than high school	1,593	61.00%	1037	48.00%	13.00%
High school graduate	4,126	67.40%	4136	71.70%	-4.30%
Some college/associate's degree	9,450	75.20%	7839	82.40%	-7.20%
Bachelor's degree or higher	12,812	83.90%	11582	87.60%	-3.70%

Source: ACS, 2018 and 2010, Table S2301

To control for the potential effect of shifting demographic composition, in particular the possible effect of changes in the age structure on labor force participation, we have broken down the overall data by major age categories of Olympia over age 16 populations. There is no significant decline in terms of the overall decline in labor force participation between the three prime working age categories. The only age group that shows a (very slight) increase in labor force participation is persons over age 65. The decline is therefore robust across most of the major racial groups, and for all the major age groups. More specifically targeted research would need to be conducted to determine the factors driving the decline labor force participation rates for Olympia prime working age population.

Exhibit 27: Labor force participation rates, by age group, 2010 and 2018

	2018			2010			% change
	Total	In Labor force	LFPR (%)	Total	In Labor force	LFPR (%)	
16-24	6365	4128	64.86%	6943	4856	69.94%	-5.07%
25-54	21902	17592	80.32%	19089	16191	84.82%	-4.49%
55-64	6079	4018	66.10%	5505	3892	70.70%	-4.60%
65 +	8718	1236	14.18%	5830	809	13.87%	0.31%
Total	43064	26975	62.64%	37367	25747	68.90%	-6.26%

(2) Poverty and prevalence of female headed family households.

As noted in Exhibit 28 below, Olympia has a higher percentage of female headed households with children less than 18 years of age than found in our comparison jurisdictions. Of 1,381 family households that reported incomes below the Federal Poverty Level in Olympia, 57.3 percent of these households were female headed in 2017. While Lacey and Tumwater both have higher percentages of female-headed households with incomes below the poverty level, Olympia has a slightly higher percentage of female headed households as a share of all households than Lacey, Tumwater, or Thurston County - 20 percent in Olympia, 17 percent for Lacey, 19.2 percent for Tumwater, and 16.3 percent for Thurston County. In

addition, Olympia’s female-headed households are more likely to be in poverty than female-headed households in Lacey or Tumwater. The net effect is that Olympia has a higher share of all families below the poverty level that consist of female-headed households than either of the comparison cities, and of Thurston County.

Exhibit 28: Family type and poverty status, with children present, with income below Federal Poverty Level

	Lacey		Olympia		Tumwater		Thurston County	
	number	as % of families under poverty	number	as % of families under poverty	number	as % of families under poverty	number	as % of families under poverty
Married-couple family:	284	32.2%	461	33.4%	114	28.4%	1477	43.3%
Male householder, no wife present:	23	2.6%	128	9.3%	46	11.5%	244	7.1%
Female householder, no husband present:	574	65.2%	792	57.3%	241	60.1%	1693	49.6%
Total # of family households below poverty	881	100.0%	1381	100.0%	401	100.0%	3414	100.0%
% of family households at or below poverty		6.8%		11.0%		7.1%		4.6%
Female headed in poverty as % of all female headed		26.1%		31.5%		22.1%		14.1%
Female headed as % of all families		17.0%		20.1%		19.2%		16.3%
Female headed in poverty as % of all families		4.4%		6.3%		4.2%		2.3%

Source: ACS, 2017, Table B1701, see “poverty status S1701 B1701 EPI”

We have sought to determine any differentials about female-headed households in Olympia that might explain why they are more likely to be in poverty than female-headed households in our comparison cities and Thurston County. We reviewed: 1) the distribution of female workers by industry to determine if Olympia female workers were more likely to be in lower wage industrial sectors, and 2) median annual earnings by gender and industry to determine if Olympia’s female workers earn less than their counterparts in our comparison jurisdictions.

Our conclusion is that female workers earn less than male workers in most industries but that this differential is not more pronounced for Olympia’s female workers than for female workers in the comparison jurisdictions. However, because there is a higher proportion of female-headed households in Olympia than the comparison cities, and, a higher proportion of those households in poverty than in the comparison jurisdictions, the number of female headed households is a contributing factor in explaining Olympia’s workers’ lower earnings, but it is only one of several factors contributing to this difference.

Exhibit 29 shows the percentage of women employed in the major occupational groups that are ranked in terms of low to high median earning sectors for Thurston County as a whole. Overall, we find that

women are disproportionately represented in sectors with median earnings that fall below the County-wide median earnings in Olympia, the comparison cities, and Thurston County overall.⁵ However, we do not find a disproportionate distribution of females in these occupational groups in Olympia. In fact, women comprise a slightly lower percentage of total employees in lower earnings sectors in Olympia relative to Lacey or Tumwater. Hence, the higher prevalence of poverty amongst female headed households in Olympia relative to our comparison cities is not explained by the gendered composition of low wage employment sectors.⁶

⁵ We have used health care as our median sector. This is the sector that fall below the average median sector which is the weighted average of health care and information, due to the even number of sectors.

⁶ This conclusion is tentative. In fact, there is sufficient discrepancy in terms of the percentage of women in the specific lower earnings sectors that some portion of the higher instance of female headed household poverty could be explained by this factor. Determining this would require a far more detailed analysis. We do not think this would likely emerge as a major driver of higher incidence of poverty observed in Olympia, however.

Exhibit 29: Industry sector distribution of Olympia residential workforce, and gender as percentage of all workers employed, 2017

	Lacey			Olympia			Tumwater			Thurston			Median earnings in sector
	Total	Female	% female	Total	Female	% female	Total	Female	% female	Total	Female	% female	
Accommodation and food services	1,238	771	62.30%	2,156	1,083	50.20%	636	307	48.30%	8,665	4,924	56.80%	\$20,682
Administrative support	916	349	38.10%	558	295	52.90%	366	103	28.10%	4,059	1,521	37.50%	\$24,662
Retail trade	2,160	1,102	51.00%	3,125	1,514	48.40%	1,113	637	57.20%	14,846	8,629	58.10%	\$25,639
Other services, except public administration	865	423	48.90%	1,235	867	70.20%	586	270	46.10%	6,106	3,906	64.00%	\$26,692
Real estate	421	168	39.90%	404	179	44.30%	186	67	36.00%	2,324	1,508	64.90%	\$30,168
Agriculture, forestry, fishing and hunting	143	0	0.00%	308	115	37.30%	135	22	16.30%	3,730	1,138	30.50%	\$31,372
Arts, entertainment, and recreation	413	233	56.40%	794	460	57.90%	108	49	45.40%	3,485	1,539	44.20%	\$31,631
Transportation and warehousing	852	289	33.90%	440	72	16.40%	286	106	37.10%	4,792	955	19.90%	\$38,194
Health care and social assistance*	3,096	2,403	77.60%	3,560	2,375	66.70%	1,466	1,148	78.30%	18,097	13,657	75.50%	\$44,600
Sectors with earnings below median sector	10,104	5,738	56.79%	12,580	6,960	55.33%	4,882	2,709	55.49%	66,104	37,777	57.15%	
Information	349	107	30.70%	584	268	45.90%	235	128	54.50%	1,378	485	35.20%	\$46,535
Educational services	1,407	1,090	77.50%	2,150	1,360	63.30%	839	561	66.90%	13,184	9,096	69.00%	\$50,893
Construction	1,260	174	13.80%	742	156	21.00%	593	62	10.50%	9,978	657	6.60%	\$51,706
Manufacturing	1,081	193	17.90%	1,307	281	21.50%	726	155	21.30%	7,629	2,088	27.40%	\$52,669
Wholesale trade	449	242	53.90%	307	67	21.80%	282	36	12.80%	2,328	187	8.00%	\$56,346
Finance and insurance	638	339	53.10%	964	612	63.50%	436	260	59.60%	4,155	2,492	60.00%	\$60,342
Professional, scientific, and technical services	1,064	526	49.40%	1,355	686	50.60%	532	241	45.30%	7,058	2,371	33.60%	\$62,167
Public administration	3,790	1,828	48.20%	4,236	2,176	51.40%	2,320	1,378	59.40%	20,356	9,681	47.60%	\$62,938
Utilities	89	0	0.00%	82	41	50.00%	33	9	27.30%	332	0	0.00%	\$118,643
Mining, oil and gas extraction	0	0	-	0	0	-	6	0	0.00%	152	0	0.00%	-
Management of companies and enterprises	0	0	-	10	10	100.00%	0	0	-	43	43	100.00%	-

Source: ACS, 2017, Tables S2403, S2413, see "Industry sector gender employment and earnings"

When we consider average median annual earnings by sector differentiated by employee gender, we find that, with a few notable exceptions (agriculture and construction), men earn significantly higher annual incomes than female employees within any given industrial sector. As seen in Exhibit 30, the gaps are quite wide in several low earnings industries such as retail trade, "other services", real estate, and arts, entertainment and recreation. We note that differences in terms of average earnings by gender are more general phenomenon and are not particular to Olympia. Gendered difference in average or median earnings is a general phenomenon across all our comparison cities, and hence does not explain the higher rate and incidence of very low income families headed by women in Olympia per se.

Exhibit 30: City of Olympia within sector gender earning gap, 2017

	Median earnings in sector	Male	Female	Female as % of Male
Accommodation and food services	\$19,294	\$21,484	\$17,917	83.40%
Other services, except public administration	\$20,598	\$31,051	\$17,973	57.88%
Arts, entertainment, and recreation	\$21,000	\$27,963	\$11,851	42.38%
Retail trade	\$21,054	\$32,279	\$18,614	57.67%
Administrative support	\$28,125	\$30,286	\$20,774	68.59%
Agriculture and forestry	\$30,921	\$27,269	\$50,089	183.68%
Manufacturing	\$38,807	\$40,780	\$27,039	66.30%
Health care and social assistance	\$40,785	\$45,762	\$39,851	87.08%
Educational services	\$45,274	\$53,048	\$41,319	77.89%
Information	\$45,731	\$47,451	\$38,393	80.91%
Utilities	\$46,818	\$47,330	\$40,893	86.40%
Wholesale trade	\$47,153	\$50,259	\$41,641	82.85%
Finance and insurance	\$49,135	\$63,676	\$36,959	58.04%
Construction	\$51,250	\$43,264	\$67,500	156.02%
Transportation and warehousing	\$57,212	\$62,426	\$34,167	54.73%
Professional, scientific, and technical	\$59,554	\$75,446	\$42,167	55.89%
Real estate and rental and leasing	\$64,688	\$71,125	\$39,417	55.42%
Public administration	\$64,875	\$69,369	\$59,178	85.31%

Source: ACS 2017, Tables S2403 and S2413

We have also examined whether the differences in earnings by gender could be explained, in part, in average hours worked per week by gender. The percentage of the total male population between 16 and 64 who “usually worked 35 hours or more per week” was 61.9 percent in 2017, as opposed to 51.9 percent in the case of the female population between 16 and 64. Of persons between 16 and 64 who reported labor force participation in 2017, 78.3 percent of male workers and 68.3 percent of females worked 35 or more hours per week.

Some portion of the discrepancy in earnings by gender could be accounted for by differences in working hours – in particular, women may seek out part-time (less than 35 hour) employment due to responsibilities for childcare and the gendered division of household domestic labor. This is corroborated by the most recent report released by the Bureau of Labor Statistics on time usage that reported that women spend, on average, 1.51 more hours than men per day in activities related to caring for children and other forms of household labor (shopping, cleaning, etc.).⁷

⁷ The most recent BLS Time Use Survey for 2018 is available at <https://www.bls.gov/tus/database.htm>

Even after taking account of differences in average hours worked per week, there is still a difference in net earnings that reflects pay differentials across genders. Exhibit 31 shows median earnings for all workers employed year-round on a full-time basis for our three comparison cities broken down by gender. After accounting for employment status (full-time vs. part-time), and differences in the percentage of male and female workers that live in Olympia that work 35 hours or more, women engaged in full-time employment earn, on average, 83.6 cents for each dollar earned by men. This is higher than in Lacey, and lower than Tumwater. We conclude that a significant portion of the gendered earning differentials we observe within each industrial sector is likely to be accounted for by pay differentials based on worker gender. There is a likely interaction effect between gendered differences in hourly pay, and the percentage of female-headed households that report incomes under poverty level. Data needed to conduct a more detailed analysis of this subject is not readily available from the U.S. Census Bureau.

Exhibit 31: Women’s earnings as percentage of men’s earning, median, for FT workers, 2017

	Lacey		Olympia		Tumwater		Thurston
	Median earnings	as % of county	Median earnings	as % of county	Median earnings	as % of county	Median earnings
Male full-time, year-round workers (dollars)	\$55,912	99.2%	\$56,396	100.1%	\$59,445	105.5%	\$56,342
Female full-time, year-round workers (dollars)	\$42,426	88.1%	\$47,135	97.9%	\$52,592	109.2%	\$48,144
Ratio female/male	75.9%		83.6%		88.5%		85.4%

Source: ACS, 2017, Table DP03

(3) Industry sector and occupational distribution of Olympia’s resident labor force

We examined whether the higher rates of poverty and lower median household and personal income observed in Olympia are correlated with a higher relative concentration of the Olympia work force in sectors earning below median earnings for their city. Exhibit 32 shows the relative percentage of the resident working population in Olympia, Lacey, and Tumwater that are employed in sectors in which the median earnings of residents employed in these sectors are below their own-city median sector.

Median earnings for each city varies, as shown in Exhibit 32. Median earnings are broadly similar for Olympia, Tumwater, and for Thurston County as a whole. Lacey is the outlier, as that city’s median earnings are over \$10,000 lower than median earnings for Olympia, Tumwater, or Thurston County as a whole. The percentage of Olympia’s residents that are employed in sectors that have median earnings less than their own city median of \$45,503 is 62.5 percent, which is significantly greater than for Lacey, Tumwater, or for Thurston County overall. Olympia residents are disproportionately employed in sectors that have earnings below their own-city median sector. This could account for lower median earnings

across the categories of educational qualifications seen in the employed working population of Olympia as compared to Lacey or Tumwater.

Exhibit 32: Employed residents earning less than median for own-city industries

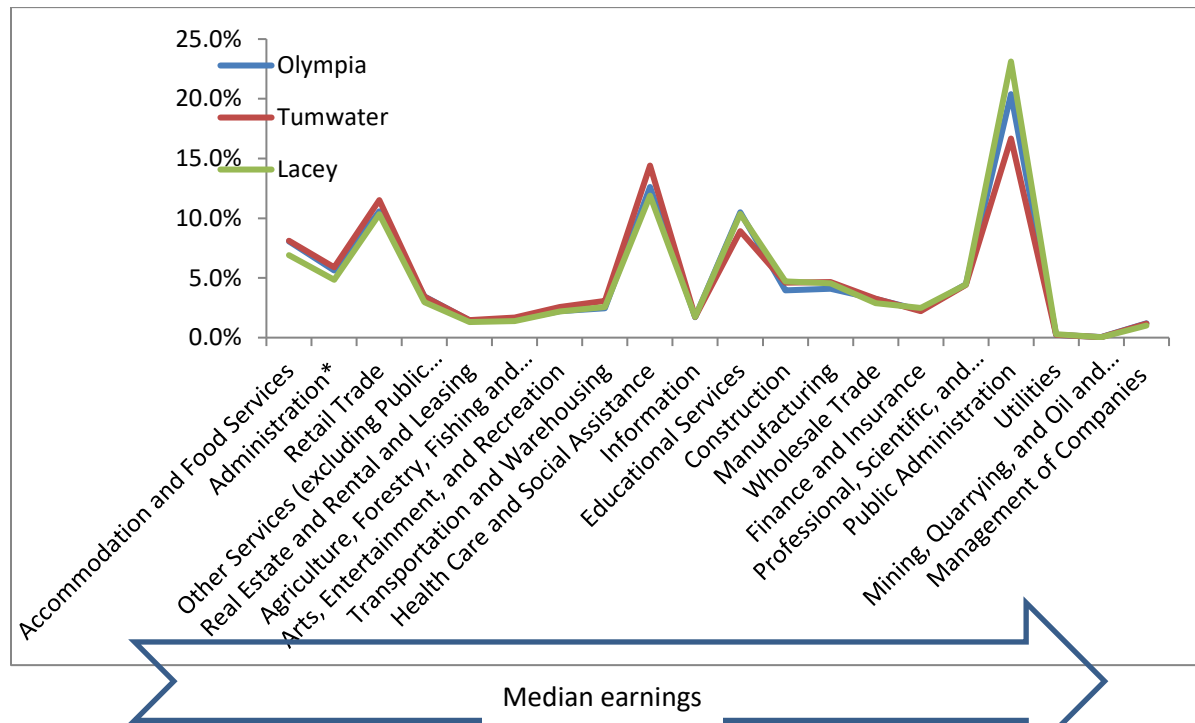
	Lacey	Olympia	Tumwater	Thurston
Median earnings for all industries ¹	\$33,470	\$45,503	\$46,844	\$44,600
% of workers employed below own-city median	52.80%	62.50%	50.80%	36.20%
Median for all employed residents (16+)	\$37,274	\$40,072	\$44,987	\$42,305

Source: ACS 2017, Tables S2403 and S2413

¹ This is the median earnings for all industries, as opposed to median earnings for employed residents

Exhibit 33 shows the percentage distribution of employed resident workers by major industrial sectors for our three comparison cities. The industrial sectors in Exhibit 33 are ranked from lowest to highest median earnings. We see that there is very little difference in terms of the relative sectoral distribution of the workforce in our three comparison cities. This indicates that, taken as a whole, the residents in our three comparison cities are distributed between the major industrial sectors in a manner that is largely identical. We cannot explain the higher incidence of poverty or lower individual earnings observed across all levels of educational qualifications in Olympia as the effect of a differential sectoral distribution of the working population relative to Lacey or Tumwater.

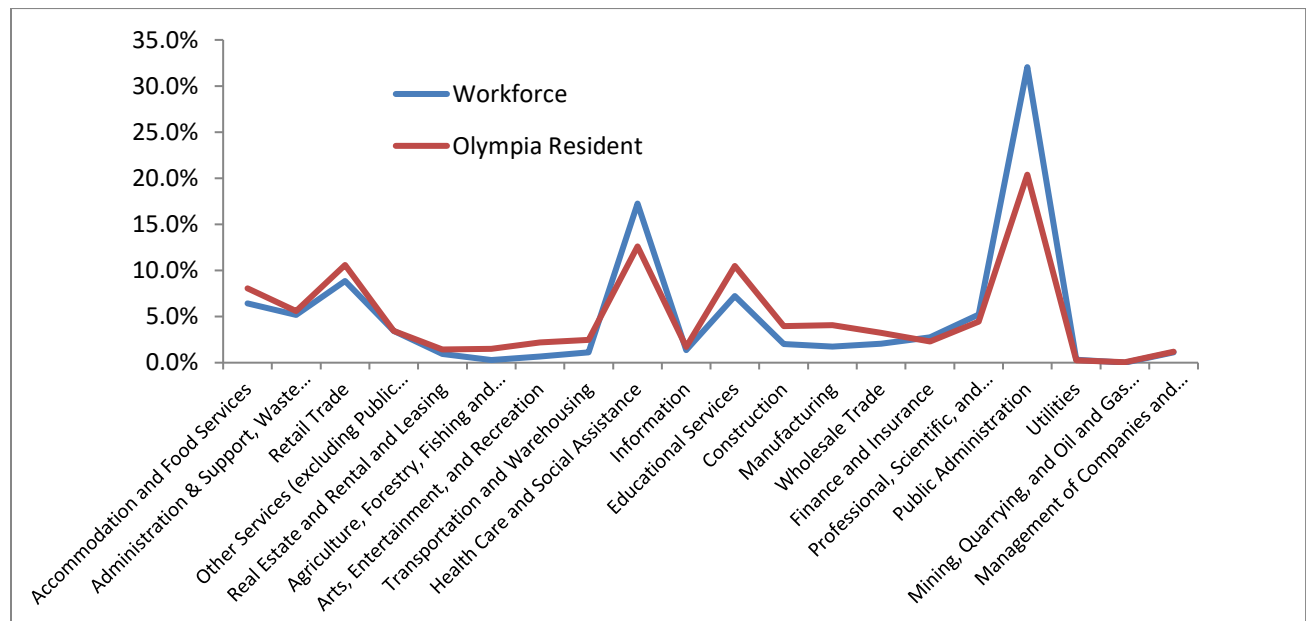
Exhibit 33: Industrial sectoral distribution of resident working population



Source: ACS, 2017, Tables S2403, S2413 see "Industry sector gender employment and earnings"

Exhibit 34 compares employment by industrial sector for the total Olympia workforce population, breaking out residents and non-residents.⁸ Olympia has higher relative concentrations of resident workers in several sectors that are characterized by earnings below the County-wide median of \$42,589 compared to Lacey, and a lower percentage of workers employed in relatively well-paying public administration jobs. Olympia has an approximately 5 percentage point greater concentration of the total resident workforce employed in sectors that earn below the County-wide median.

Exhibit 34: Industrial sectoral distribution of resident and total Olympia workforce



Source: ACS, 2017, Tables S2403 and S2413, see “Sectoral composition”

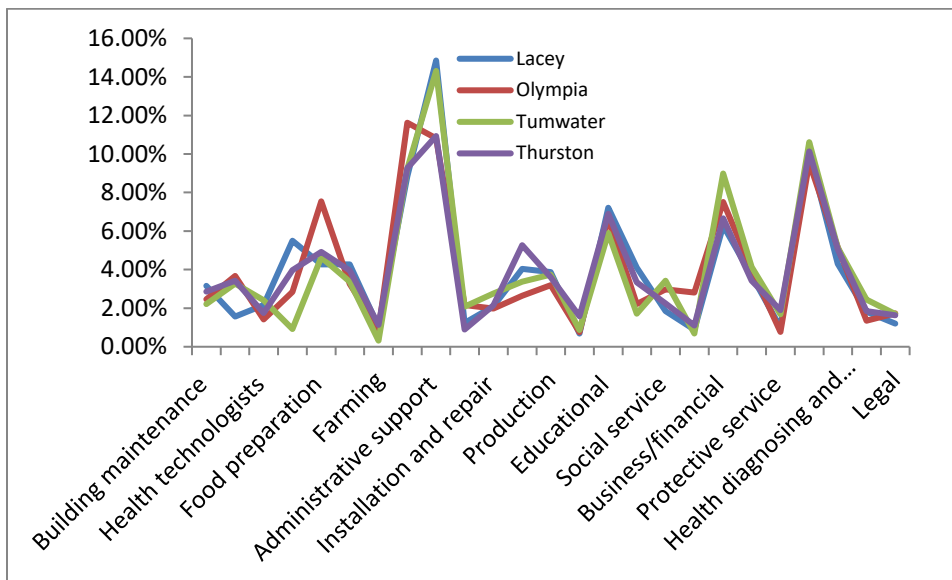
Overall, we find that the industry sectoral composition of the employed resident populations for Olympia and our comparison cities is similar. The major exception is the percentage of all Thurston County residents that reside outside of Olympia that are employed in Public Administration, which is one of the higher median earning sectors. This difference is likely to account for some of the difference in median earnings across our comparison cities. In addition, we see a marginally higher percentage of Olympia residents employed in lower earning sectors than the percentages we observe for Thurston County as a whole. However, the relatively greater share of Olympia residents employed in lower wage sectors indicates that variances in employment composition are a contributing factor to lower overall earnings and income for Olympia’s employed population relative to Lacey or Tumwater. We cannot explain the variations in median incomes and poverty rates between the cities primarily in terms of the distribution of the employed population by industry sector. Overall, the percentage differences observed do not seem sufficient to account for a large share of the higher poverty rate in Olympia relative to our comparison

⁸ Workforce population includes both resident and non-residents employed in the city.

cities and Thurston County overall, but they are a factor contributing to a greater prevalence of individual and households earning lower than County-level median wages.

Exhibit 35 shows the occupational distribution of the employed residential labor force for Olympia and our comparison cities. The occupations are arranged in ascending order as we move from left to right according to the median earnings of workers employed in each occupation. Moving from the lowest (left) to highest (right) median earnings occupations, we do not see large discrepancies across the cities in terms of the occupational composition of the employed residential population. Hence, we cannot explain the greater prevalence of poverty or the lower median earnings controlling for education in Olympia in terms of the occupational composition of the residential workforce.

Exhibit 35: Occupational groupings composition of employed residents



Source: ACS, 2017, Tables S2401 and B24012

It is still true that the occupational distribution of the resident workforce could have significant effects on income of employed residents if the median incomes in the various occupational categories show significant variation for employed residents across our comparison cities.

Exhibit 36 shows total number employed by major occupational groupings, the share of the resident workforce employed in each occupational grouping, and median earnings for each. As seen in the column that displays the percent of the resident workforce that is employed in the major occupational groupings, the occupational structure of the employed resident populations is broadly similar. However, Olympia stands out in having a larger share of its residents employed in lower earnings service occupations, with these workers earn significantly less than either the county-wide service occupational median, or the occupational median for either Lacey or Tumwater. This could be a contributing factor to higher rates of poverty observed in Olympia.

Exhibit 36: Occupational grouping distribution of resident workforces

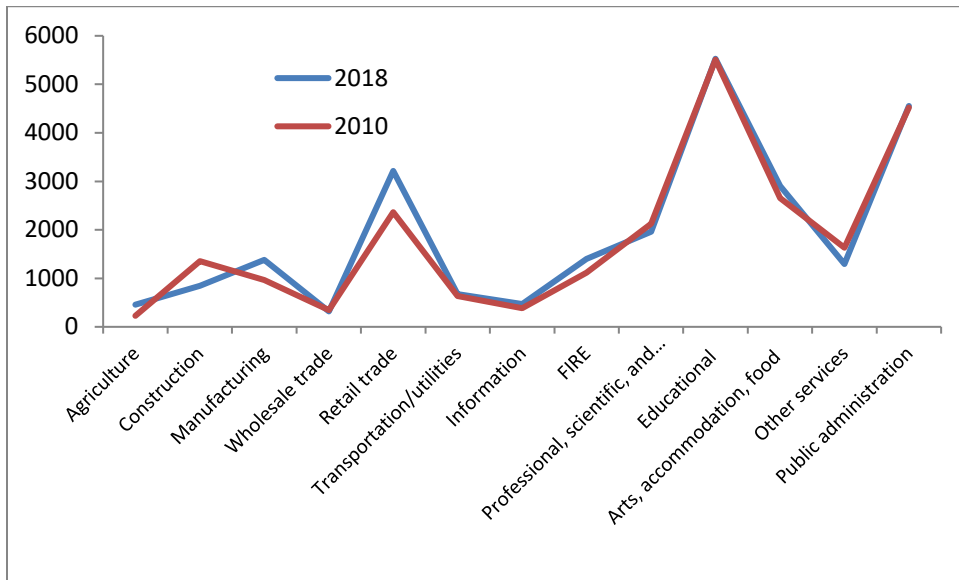
	Lacey			Olympia			Tumwater		
	Number employed	% of resident workforce	Median earnings	Number employed	% of resident workforce	Median earnings	Number employed	% of resident workforce	Median earnings
Service	3,364	16.18%	\$32,856	4,511	18.04%	\$27,969	1,547	13.60%	\$32,614
Sales and office	4,925	23.69%	\$40,772	5,609	22.44%	\$43,304	2,679	23.55%	\$44,124
Production and transport	2,549	12.26%	\$41,331	2,167	8.67%	\$44,920	1,005	8.83%	\$38,623
Construction, and maintenance	1,490	7.17%	\$54,253	1,374	5.50%	\$42,893	734	6.45%	\$60,046
Management, business, and financial	3,399	16.35%	\$62,039	4,265	17.06%	\$70,129	2,231	19.61%	\$64,641
Healthcare	1,346	6.47%	\$66,204	1,647	6.59%	\$82,411	860	7.56%	\$55,552
Education, legal, arts	2,389	11.49%	\$51,789	3,380	13.52%	\$58,056	1,492	13.11%	\$60,149
Computer, engineering, and science	1,330	6.40%	\$71,094	2,047	8.19%	\$74,810	829	7.29%	\$75,875
Civilian 16 years and over	20,792	100.00%	\$51,289	25,000	100.00%	\$54,425	11,377	100.00%	\$56,216

Source: ACS, 2017, Table B24021

Further analysis would need to be conducted to better understand sector-level and occupational effects that could explain both higher poverty rates and lower median earnings for all levels of educational categories we find in Olympia relative to Lacey and Tumwater.

Exhibits 37 and 39 show a comparison of the distribution of employed Olympia residents in terms of major industrial sectors (Exhibit 37) and by major occupational grouping (Exhibit 39) between 2010 and 2018. We also report the numbers of personnel employed by sector/occupation and a percentage of the total employed population in tabular form in Exhibit 38 (sector) and Exhibit 40 (occupation). We do not observe any major change in most categories shown for either the sector or occupational distribution. The exceptions are (a) the increase in the number of Olympia’s resident population employed in the retail industry, and (b) increase in the number or persons employed in the production, material moving, and transportation occupations. Taken as a whole, this comparison indicates that there has not been a major shift in the industrial distribution of the Olympia resident workforce, other than an increase in retail sector employment. Retail is a predominately low wage sector and is likely to be factor contributing to slower earning growth and – potentially – the higher prevalence of very low income households we observe in Olympia relative to our comparison cities.

Exhibit 37: Industrial sectoral grouping distribution of Olympia employed residents, 2010 and 2018

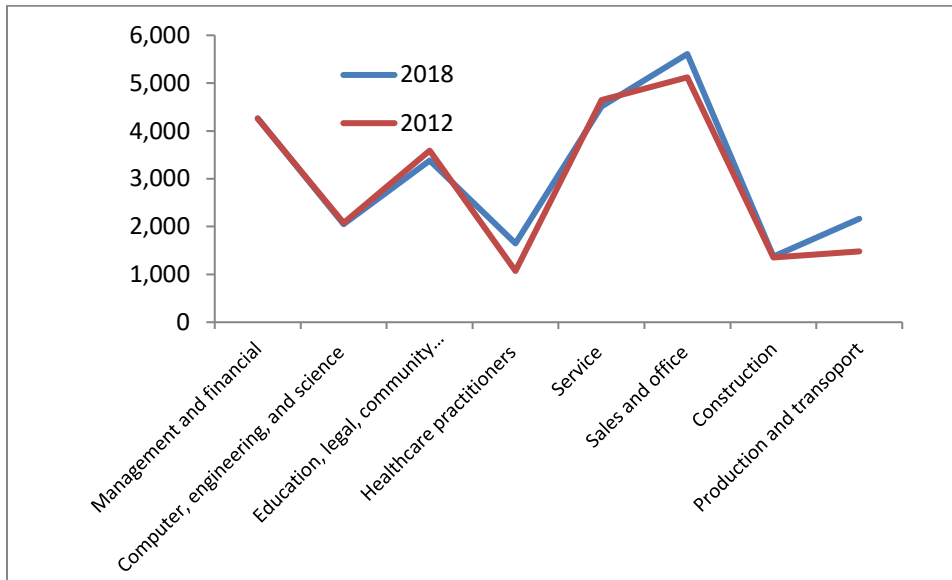


Source: ACS, 2018, Table S2407

Exhibit 38: Industrial sectoral grouping distribution of Olympia's resident employed population, 2010 and 2018

Sector	2018		2010	
Agriculture	458	1.83%	227	0.95%
Construction	848	3.39%	1,351	5.67%
Manufacturing	1,383	5.53%	962	4.04%
Wholesale trade	318	1.27%	345	1.45%
Retail trade	3,215	12.86%	2,361	9.91%
Transportation/utilities	674	2.70%	637	2.67%
Information	467	1.87%	387	1.62%
Finance, Insurance, & Real Estate	1,400	5.60%	1,116	4.68%
Professional, scientific, management	1,958	7.83%	2,124	8.91%
Educational	5,528	22.11%	5,509	23.12%
Arts, accommodation, food	2,902	11.61%	2,656	11.15%
Other services	1,292	5.17%	1,630	6.84%
Public administration	4,557	18.23%	4,522	18.98%
Total	25,000		23,827	

Exhibit 39: Occupational distribution of Olympia employed residents, 2012 and 2018



Source: ACS, 2018, Table S2401

Exhibit 40: Occupational grouping distribution of Olympia employed residents, 2012 and 2018

	2018		2012	
Management and financial	4,265	17.06%	4,261	18.06%
Computer, engineering, and science	2,047	8.19%	2,080	8.81%
Education, community service, arts, media	3,380	13.52%	3,587	15.20%
Healthcare practitioners	1,647	6.59%	1,072	4.54%
Service	4,511	18.04%	4,645	19.68%
Sales and office	5,609	22.44%	5,121	21.70%
Construction	1,374	5.50%	1,353	5.73%
Production, material moving, and transport	2,167	8.67%	1,481	6.28%
Total	25,000		23,600	

We note again that the most striking result of this analysis is that Olympia has a better educated population but within each educational category, residents are earning less than comparative qualified individuals in the rest of the county. The overrepresentation of workers in sectors with median earnings below their own-city median appears to be a major factor contributing to the lower earnings for workers with a college degree or higher. However, the precise sectoral distribution of these residents and their occupational locations cannot be readily determined from the currently available ACS data.

(4) Migration factors, household mobility, and workforce contingency

Exhibit 41 shows data on the numbers of persons that have moved to Olympia and the comparison cities by economic status. We have specifically sought to evaluate (a) whether Olympia is characterized by a higher rate of residential turnover than Lacey or Tumwater, and (b) if residential turnover is higher amongst households with annual incomes at or below 100 and 150 percent of the Federal Poverty Level in Olympia or the other cities. Census Bureau ACS data show the overall rate of residential turnover is similar between Olympia and Lacey and the rate for both of those cities is slightly higher than Tumwater. However, Olympia has a significantly higher percentage of persons in very low income households that have moved in to the City in the last year relative to our comparison cities. As shown, 37.7 percent of individuals who moved in to Olympia in the last year were below 150 percent of the Federal poverty level, as compared to 19.7 and 23.6 percent for Lacey and Tumwater, respectively.

Exhibit 41: Poverty status and residential mobility

	Lacey		Olympia		Tumwater	
Total persons	45,088		48,325		21,757	
Below 100 percent of the poverty level	4,351	9.65%	8,881	18.38%	2,134	9.81%
100 to 149 percent of the poverty level	2,740	6.08%	3,616	7.48%	1,602	7.36%
At or above 150 percent of the poverty level	37,997	84.27%	35,828	74.14%	18,021	82.83%
Moved in last year	11,439	100.00%	11,555	100.00%	4,472	100.00%
As percentage of persons moved in last year						
Below 100 percent of the poverty level	1,579	13.80%	3,320	28.73%	759	16.97%
100 to 149 percent of the poverty level	673	5.88%	1,033	8.94%	294	6.57%
Total below 150 percent of the poverty level	2,252	19.69%	4,353	37.67%	1,053	23.55%
At or above 150 percent of the poverty level	9,187	80.31%	7,202	62.33%	3,419	76.45%
Percent of persons below 150 of FPL that relocated in last year as percentage of total population		4.99%		9.01%		4.84%

Source: ACS 2017, Table B07012 See file "Mobility and poverty data"

Exhibit 42 shows the place of prior residence for very low income persons that have moved in the last year as reported in the ACS data (2017). We also show these persons as a percentage of each of our comparison cities' total residential populations. The pattern we observe when recent movers are broken down in terms of place of origin broadly conforms to the same general pattern, in which Olympia has a higher relative percentage of total residential population that consists of recent movers from each of the prior location categories and that these individual are all more likely to be in poverty.

Exhibit 42: Point of origin of recent low income arrivals

	Lacey	Olympia	Tumwater
Moved within same county	5,311	5,888	2,959
Below 100 percent of the poverty level	698	1,860	409
100 to 149 percent of the poverty level	420	419	225
Total below 150 percent of poverty level	1,118	2,279	634
Below 150 as % of total population	2.48%	4.72%	2.91%
Moved from different county within Washington	2,396	2,721	705
Below 100 percent of the poverty level	492	529	126
100 to 149 percent of the poverty level	164	459	41
Total below 150 percent of poverty level	656	988	167
Below 150 as % of total population	1.45%	2.04%	0.77%
Moved from different state	2,906	2,195	690
Below 100 percent of the poverty level	304	643	209
100 to 149 percent of the poverty level	38	134	28
Total below 150 percent of poverty level	342	777	237
Below 150 as % of total population	0.76%	1.61%	1.09%
Moved from abroad	826	751	118
Below 100 percent of the poverty level	85	288	15
100 to 149 percent of the poverty level	51	21	0
Total below 150 percent of poverty level	136	309	15
Below 150 as % of total population	0.30%	0.64%	0.07%

The role of Olympia as the primary ‘receiving’ center for recent arrivals to Thurston County reflects the role of Olympia as the region’s major employment center. The data indicates that persons in very low income households are more likely to seek residence in Olympia, as opposed to Lacey or Tumwater, as seen in the far larger percentage of very low income households that have relocated to Olympia. While this is likely due in part to the nature of the housing stock, the spatial distribution of population by income level also reflects the greater practical importance that low income households may place on proximity to places of work. By contrast, persons in more high income households are more likely to have relocated to either of our two comparison cities.

We conclude that the importance of proximity to places of employment, which may be greater for low income households, coupled with Olympia’s role as the major employment center, is an additional factor that contributes to the higher rate of poverty relative to our comparison cities. The very high costs of housing in relation to income earned from employment for this income stratum has not been sufficient to discourage very low income households from seeking residence near major centers of regional employment, discussed in earlier sections of this report.

Finally, we note that lower income migrants are more likely to have less secure labor market attachment, and more likely to be engaged in seasonal, limited term, and various informal and semi-formal types of employment. Workers in these sectors may not want to seek out more stable, long-term employment, or may experience greater barriers in accessing jobs that offer the potential for periodic increases in hourly wages, promotions, and coverage by union-negotiated labor contracts. As expected, low income persons experience higher levels of residential instability, due to the higher prevalence of renters in these income brackets, and the greater likelihood of weak or unstable labor market attachment. The fundamental factor that determines poverty status is the ability to access well paid employment. However, frequent relocation is an additional factor that can compound economic and social stresses being experienced by low income persons and families and may be an important secondary factor reinforcing existing structural barriers to exiting from poverty.

(5) Number of households receiving public assistance

A final factor contributing to the variation in the spatial distribution of poverty across our comparison cities and Thurston County is the larger number of persons receiving public assistance as a percentage of all households in each city. Exhibit 43 shows the number of households that receive public assistance, and each city's share of all cash assisted households in the County. Olympia has twice as many households receiving public assistance than Lacey. Cash assisted households make up 5.4 percent of all households in Olympia, as opposed to 3.2 and 4.0 percent for Lacey and Tumwater, respectively, and 3.7 percent for Thurston County. Olympia has a higher share of all cash assisted households in Thurston County.

The greater number of households that receive some form of public assistance in Olympia, while certainly a contributing factor to higher poverty rates in Olympia relative to Lacey and Tumwater, does not account for the major difference in earnings and income between Olympia and the comparison jurisdictions, which indicates that Olympia has a higher share of working poor, and may also have a higher share of households with intermittent or highly unstable incomes, insecure or marginal labor force attachment, and yet that do not receive any form of public assistance.

Exhibit 43: Households receiving public assistance

Memo to Mr. Reid
 February 18, 2020

	Total households	% of all households in county	With public assistance income	No public assistance income	Cash assisted as % of total households	Cash assisted as % of all cash assisted in county
Thurston	108,070	100.00%	3,598	104,472	3.33%	100.00%
Lacey	18,711	17.31%	625	18,086	3.34%	17.37%
Olympia	22,351	20.68%	1,129	21,222	5.05%	31.38%
Tumwater	9,336	8.64%	289	9,047	3.10%	8.03%

Source: ACS, 2017, Table B19057