

Exhibit A

PORTLAND STATE UNIVERSITY INTERGOVERNMENTAL AGREEMENT

This Agreement is entered into between City of Portland, by and through Portland Parks and Recreation, hereinafter referred to as SPONSOR or City, and Portland State University, hereinafter referred to as UNIVERSITY or State.

RECITALS

WHEREAS SPONSOR desires UNIVERSITY'S services on certain projects to be specified; and

WHEREAS the performance of such services is consistent, compatible and beneficial to the academic role and mission of UNIVERSITY;

Therefore, in consideration of the mutual promises and covenants contained herein, the parties agree as follows:

ARTICLE I - SCOPE OF WORK

UNIVERSITY agrees to perform for SPONSOR certain research related services which shall be described in task orders to this Agreement. All task orders are hereby incorporated by reference to this Agreement and subject to all its terms and conditions, unless the parties otherwise agree in writing. Each task order shall specify the period of performance for the work to be performed. SPONSOR'S Assistant Director or their designee, is authorized to execute all task orders under this Agreement.

ARTICLE II - AGREEMENT PERIOD

This Agreement shall become effective on the date of last signature and shall remain in effect for a period of 18 months. The Agreement Period may be extended by written agreement of the parties. Costs for each task order may be incurred from the date specified in the task order.

ARTICLE III - SCIENTIFIC PERSONNEL

Nicholas Chun is responsible for the conduct of research under this Agreement for the UNIVERSITY. The UNIVERSITY shall not replace Mr. Chun without prior written approval of the SPONSOR.

ARTICLE IV – CONSIDERATION

SPONSOR agrees to pay UNIVERSITY for services performed under this Agreement an amount not to exceed fifty thousand (\$50,000) DOLLARS. The consideration and the budget information for each task order shall be set forth in the task order. Each task order shall specify the date from which costs may be incurred for that task order.

Invoices for work accomplished under this Agreement shall be submitted on the schedule specified in the task orders and in an original and two copies to Jason Smith. Payment shall be sent to Portland State University, Sponsored Projects Administration PO Box 751 RSP-SPA, Portland, Oregon 97207-0751.

ARTICLE V - NOTICE

Any notice provided for under this Agreement shall be sufficient if in writing and delivered to the following addressee:

If to SPONSOR:

Jason Smith
Associate Director
1001 SW 5th Ave
Suite 2200
Portland, OR 97204

If to UNIVERSITY:

Jennifer WardPortland Parks & Recreation
Sponsored Projects Administration
Portland State University
PO Box 751 RSP-SPA
Portland, OR 97207-0751

ARTICLE VI - PERFORMANCE / REPORTING REQUIREMENT

UNIVERSITY is responsible for the performance of work and will provide progress reports of findings, if any, as stated in the task orders. UNIVERSITY shall maintain fiscal records pertinent to this Agreement for at least three (3) years following completion of work under this Agreement. UNIVERSITY shall maintain all fiscal records relating to this Agreement in accordance with generally accepted accounting principles. In addition, UNIVERSITY shall maintain all other records pertinent to this Agreement in such a manner as to clearly document UNIVERSITY'S performance hereunder.

ARTICLE VII - PUBLICATION BY UNIVERSITY

UNIVERSITY retains the right to publish or present at meetings the results of research conducted by UNIVERSITY. In addition, UNIVERSITY may use, reuse, and analyze the data developed by the UNIVERSITY during the course of research performed under this Agreement for teaching or research purposes.

ARTICLE VII - CONFIDENTIALITY

UNIVERSITY, subject to the limitations and conditions of the Oregon Public Records law, agrees to keep confidential any SPONSOR proprietary information that SPONSOR designates as such and supplies to UNIVERSITY during the course of research performed under this Agreement. Such information will not be included in any published material without prior approval by SPONSOR. UNIVERSITY agrees to provide any proposed publication to SPONSOR thirty (30) days prior to submission, to review for the inclusion of SPONSOR-owned confidential information, and to determine whether patentable inventions or discoveries are disclosed therein.

ARTICLE VIII – CONTRIBUTION IN LIEU OF INDEMNIFICATION

If any third party makes any claim or brings any action, suit or proceeding alleging a tort as now or hereafter defined in ORS 30.260 ("Third Party Claim") against a party (the "Notified Party") with respect to which the other party ("Other Party") may have liability, the Notified Party must promptly notify the Other Party in writing of the Third Party Claim and deliver to the Other Party a copy of the claim, process, and all legal pleadings with respect to the Third Party Claim. Either party is entitled to participate in the defense of a Third Party Claim, and to defend a Third Party Claim with counsel of its own choosing. Receipt by the Other Party of the notice and copies required in this paragraph and meaningful opportunity for the Other Party to participate in the investigation, defense and settlement of the Third Party Claim with counsel of its own choosing are conditions precedent to the Other Party's liability with respect to the Third Party Claim.

With respect to a Third Party Claim for which the State is jointly liable with the City (or would be if joined in the Third Party Claim), the State shall contribute to the amount of expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred and paid or payable by the City in such proportion as is appropriate to reflect the relative fault of the State on the one hand and of the City on the other hand in connection with the events which resulted in such expenses, judgments, fines or settlement amounts, as well as any other relevant equitable considerations. The relative fault of the State on the one hand and of the City on the other hand shall be determined by reference to, among other things, the parties' relative intent, knowledge, access to information and opportunity to correct or prevent the circumstances resulting in such expenses, judgments, fines or settlement amounts. The State's contribution amount in any instance is capped to the same extent it would have been capped under Oregon law if the State had sole liability in the proceeding.

With respect to a Third Party Claim for which the City is jointly liable with the State (or would be if joined in the Third Party Claim), the City shall contribute to the amount of expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred and paid or payable by the State in such proportion as is appropriate to reflect the relative fault of the City on the one hand and of the State on the other hand in connection with the events which resulted in such expenses, judgments, fines or settlement amounts, as well as any other relevant equitable considerations. The relative fault of the City on the one hand and of the State on the other hand shall be determined by reference to, among other things, the parties' relative intent, knowledge, access to information and opportunity to correct or prevent the circumstances resulting in such expenses, judgments, fines or settlement amounts. The City's contribution amount in any instance is capped to the same extent it would have been capped under Oregon law if it had sole liability in the proceeding.

ARTICLE IX - COMPLIANCE WITH LAWS

This Agreement shall be governed and construed in accordance with the laws of the State of Oregon. Any suit for enforcement shall occur, if in the state courts, in the Multnomah County Court having jurisdiction thereof, and if in the federal courts, in the United States District Court for the District of Oregon.

ARTICLE X – ASSIGNMENT

Neither party shall assign or transfer any interest in this Agreement, nor assign any claims for money due or to become due during this Agreement, without the prior written approval of the other party.

ARTICLE XI - DELIVERABLES

UNIVERSITY will provide to SPONSOR the Deliverables described in each task order. SPONSOR shall have the right to use all such Deliverables for its own purposes and to modify the Deliverables at its option. SPONSOR will make appropriate acknowledgment and attribution to UNIVERSITY in its use or distribution of unmodified Deliverables. If SPONSOR modifies the Deliverables in any meaningful manner, UNIVERSITY may request that SPONSOR include a notice of such modifications in the Deliverables. Such request shall be made in writing by UNIVERSITY to SPONSOR.

ARTICLE XII — CERTIFICATIONS

By execution of this Agreement or acceptance of any payments under this Agreement, UNIVERSITY certifies that:

1. UNIVERSITY is not presently debarred, suspended, proposed for disbarment, declared ineligible or voluntarily excluded from covered transactions by any federal department or agency.
2. UNIVERSITY is not delinquent on the repayment of any federal debt.
3. UNIVERSITY is in compliance with Sections 5151 to 5160 of the Drug-Free Workplace Act of 1988 (P.L. 100-960, Title V, Subtitle D).
4. To the best of UNIVERSITY's knowledge and belief:
 - (a) No federally appropriated funds have been paid or will be paid by or on behalf of the UNIVERSITY to any person for influencing or attempting to influence an officer or employee of any federal agency, a member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan or cooperative agreement.
 - (b) If funds other than federally appropriated funds have been or will be paid to any person for influencing or attempting to influence an officer or employee of any federal agency, a member of Congress, an officer or employee of Congress, or any employee of a member of Congress in connection with this federally-funded contract, grant, loan or cooperative agreement, UNIVERSITY shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
 - (c) UNIVERSITY shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

ARTICLE XIII - TERMINATION

This Agreement may be terminated by either of the parties hereto upon written notice delivered to the other party at least thirty (30) days prior to intended date of termination. By such termination, neither party may nullify obligations already incurred for performance or failure to perform prior to the date of termination. Payment to UNIVERSITY shall be prorated to and include the day of termination.

THIS AGREEMENT CONSTITUTES THE ENTIRE AGREEMENT BETWEEN THE PARTIES. THERE ARE NO UNDERSTANDINGS, AGREEMENTS, OR REPRESENTATIONS, ORAL OR WRITTEN, NOT SPECIFIED HEREIN REGARDING THIS AGREEMENT. NO AMENDMENT, CONSENT, OR WAIVER OF TERMS OF THIS AGREEMENT SHALL BIND EITHER PARTY UNLESS IN WRITING AND SIGNED BY ALL PARTIES. ANY SUCH AMENDMENT, CONSENT, OR WAIVER SHALL BE EFFECTIVE ONLY IN THE SPECIFIC INSTANCE AND FOR THE SPECIFIC PURPOSE GIVEN. SPONSOR, BY THE SIGNATURE BELOW OF ITS AUTHORIZED REPRESENTATIVE, ACKNOWLEDGES HAVING READ AND UNDERSTOOD THE AGREEMENT AND SPONSOR AGREES TO BE BOUND BY ITS TERMS AND CONDITIONS.

PORTLAND STATE UNIVERSITY

CITY OF PORTLAND, BY AND THROUGH
PORTLAND PARKS AND RECREATION

Name: _____
Jenifer Ward
Title: Associate Director
Date:
Employer Tax ID Number : 36-4776757

Name: _____
Kia Selley
Title: Interim Director of Portland Parks and Recreation
Date:

**Population Forecasts for Portland Neighborhood Coalitions
by Sex for Total Population and People of Color
Portland Parks & Recreation**

Proposed Scope of Work

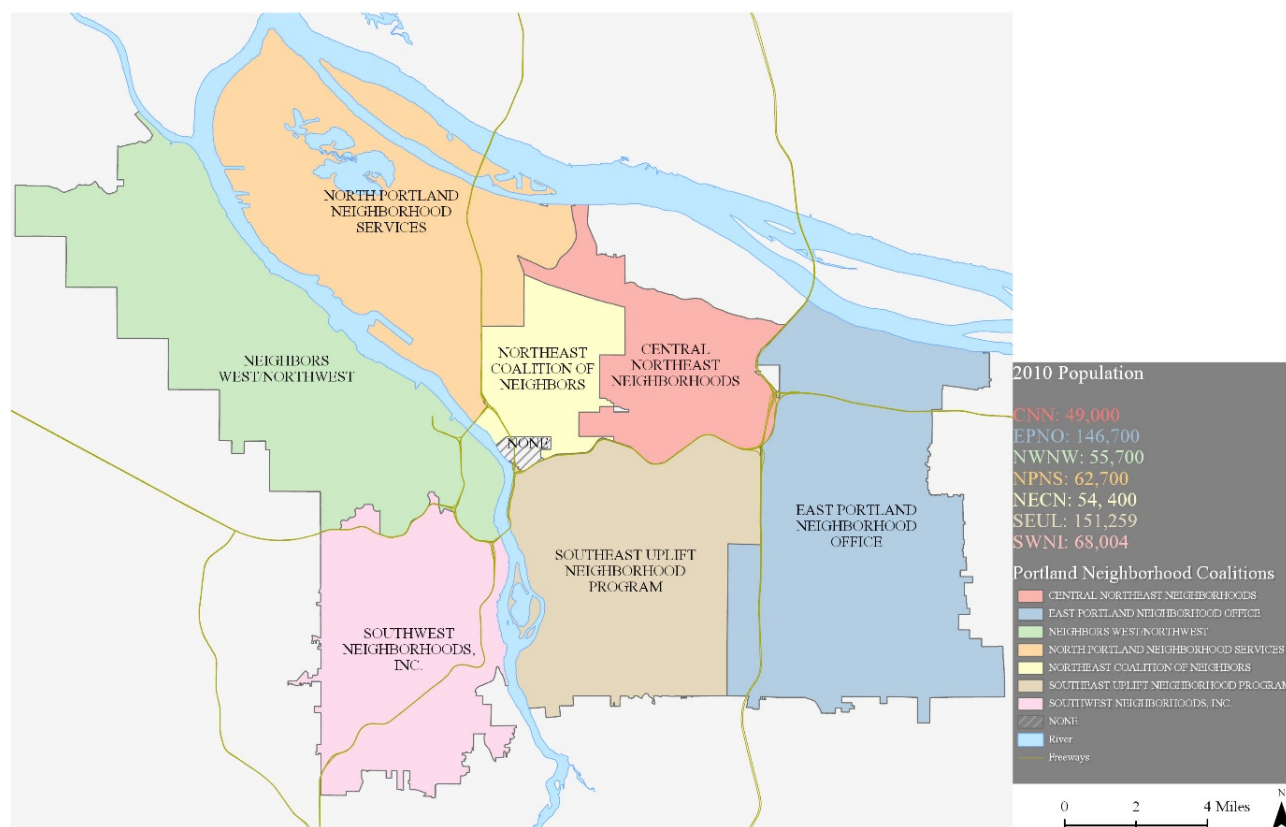
July 3, 2018

Background

The purpose of this project is to provide a population forecast for the city of Portland and its neighborhood coalitions to support Portland Parks & Recreation (PP&R) in developing the Parks 2030 Vision. PP&R has requested the Population Research Center provide population forecasts (2020-35) broken down by 5-year age groups and sex. Additionally, PRC will forecast people of color¹ for the city and its neighborhood coalitions, but this will not be stratified by age-group or sex. Additional line items include a (1) socio-economic profile from the Census's American Community Survey for each of the forecast areas and (2) maps of the forecast results.

¹ "People of color" refer to populations that do not self-identify as Non-Hispanic Whites ("White, Not Hispanic" as defined by Census). They include Hispanics of all races and the following non-Hispanic racial groups: Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, Other Race, and Two or More Races.

Portland Neighborhood Coalitions



Data Sources

PRC will be responsible for all of the data collection and analysis.

Center of Health Statistics: Vital statistics (births and deaths) from Center of Health Statistics (CHS) will be used to calculate fertility, survival, and migration rates.

U.S. Census Bureau: Census block-level data with population characteristics for 2000 and 2010

U.S. Census Population Estimates Program: Intercensal estimates by race between 2010 and 2017

Oregon Population Estimates Bureau: Intercensal estimates between 2010 and 2017

The Institute of Portland Metropolitan Studies: Portland neighborhood coalition boundaries shapefile

Methodology

PRC will use a Cohort-Component (CC) model to forecast populations for the city of Portland and its neighborhood coalitions. The cohort-component model forecasts future populations as outcomes of births, deaths, and migration. The frequency of these events vary and require age- and sex- specific rates of births, deaths, and migration to forecast future population.

$$Pop_{t2} = Pop_{t1} + Births(t1 \text{ through } t2) - Deaths(t1 \text{ through } t2) + NetMig(t1 \text{ through } t2)$$

Pop: Population

NetMig: Net In/Out-Migration

t: time

The most precise information on the age structure of the study area's population is decennial data from the U.S. Census Bureau. Census block-level data and point-level vital statistics data will be aggregated to neighborhood coalition boundaries to derive demographic rates of population change. Starting on decennial years, PRC will apply these rates to age-groups and age them through time, making adjustments that reflect assumptions of future growth. For example, such assumptions could be that fertility rates will continue to decline in the future, survival rates will continue to increase for those over the age of 65, or elderly cohorts will migrate into the study area for end of life care. Generally, these assumptions are conservative and do not assume trends will deviate drastically in the future, such as those observed during economic contractions and expansions.

Deliverables

Task 1: PRC will produce 16 forecasts from 2020-35 broken down by 5-year periods. The timeframe of this task will be roughly two months (eight weeks). The deliverables will be Excel tables with the following information:

- A citywide forecast (all ages, race/ethnicities) by 5-year age groups and sex
- A citywide forecast of people of color (all but non-Hispanic Whites) by 5-year age groups and sex
- Neighborhood coalition forecast (N=7; all ages, race/ethnicities) by 5-year age group and sex
- Neighborhood coalition forecast for people of color (N =7 ;all but non-Hispanic Whites) not stratified by age and sex

Task 2 (Optional): PRC can produce up to six maps to visualize the results of the forecast. Such options could include mapping the change in total population, diversity, and age composition (not stratified by race & ethnicity). The timeframe of this task would be 2 weeks, allowing time for feedback and adjustments to the maps. PRC can also produce a socio-economic profile of the neighborhood coalitions derived from the American Community Survey dataset. Measurements of data reliability and tests for statistical significance across time (2016 vs 2010 5-year estimates) or area (neighborhood coalitions vs Portland) would be included. Attached to this document is a profile detailing indicators PRC can produce for the neighborhood coalitions, with the possibility of additional indicators depending on the population size.

If PRC performed both tasks, the total timeframe of this project would be 10 weeks. In addition, PRC will review PP&R's forecast report up to two times to ensure the results are properly interpreted. This process will start at a later point in time after PP&R receives the deliverables and will take no longer than two weeks.

PRC Staff Experience and Qualifications

Nick Chun will be the Principal Investigator and forecaster for this project. Nick manages the Oregon Population Forecast Program (OPFP), which provides Oregon cities and counties outside the Metro UGB with long-range population forecasts to assist them with their land-use decisions and long-term planning.

Kevin Rancik will be a data analyst and GIS technician for this project. Kevin has several years of GIS database and mapping experience, analyzing administrative datasets, and providing support on a variety of PRC projects.

Charles Rynerson will be a consultant for this project. Charles has prepared enrollment forecasts for more than 25 school districts in Oregon. Additionally, Charles is the Oregon State Data Center lead, educating and training the public on how to access and understand Census data.

Budget

The period of performance for this project would occur sometime between August 1, 2018 and October 31, 2018, depending on the start date. The budget for this project ranges from \$29,868 and \$34,880, based on the inclusion or exclusion of GIS mapping and socio-economic profiles (in green).

The budget detail is as follows.

| Personnel/Item | Project role | Annual FTE | Cost |
|------------------------------|---------------------|------------|-----------------|
| Nick Chun | PI/Forecaster | .17 | \$10,143 |
| Kevin Rancik | Data analyst | .06 | \$3,410 |
| Charles Rynerson | Forecast Consultant | .02 | \$1,537 |
| Total Salary | | | \$15,091 |
| Other Payroll Expense/Fringe | | | \$8,613 |
| Socio-Economic Profile | | | \$500 |
| GIS Mapping | | | \$3,478 |
| Total Direct Costs | | | \$23,704 |
| With Line Items | | | \$27,683 |
| Indirect Costs @ 26% | | | \$6,163 |
| | | | \$7,198 |
| Total Project Cost | | | \$29,868 |
| | | | \$34,880 |

| | | | | | | | | |
|--|----------------------------|-------------------|--------------------|-----------------------|---------------|--------------------------|--------------------|---------------------------------------|
| TASK 1 | | | | | | | | |
| Project Name: | PP&R Forecast | | | | | | | |
| Project Dates: | 08/01/2018 thru 10/31/2018 | | | | | | | |
| PI: | Nicholas Chun | Index Code | TBD | | | | | |
| | | | | | | | | |
| STAFFING | | | | | | | | |
| Name | Dates | FTE | Base Salary | Monthly Salary | Months | 8/1/18 - 10/31/18 | Total Hours | Total FTE (# months full time) |
| Nick Chun | | | | | | | | |
| FY 2019 July - Dec | 8/1/18-10/31/18 | 100.00% | \$60,864 | \$5,072.00 | 2.00 | \$ 10,144.00 | 347 | 2.00 |
| | | | | | | | | |
| Kevin Rancik | | | | | | | | |
| FY 2019 July - Dec | 8/1/18-10/31/18 | 100.00% | \$54,564 | \$4,547.00 | 0.75 | \$ 3,410.25 | 130 | 0.75 |
| | | | | | | | | |
| Charles Rynerson | | | | | | | | |
| FY 2019 July - Dec | 8/1/18-10/31/18 | 50.00% | \$73,776 | \$6,148.00 | 0.50 | \$ 1,537.00 | 43 | 0.25 |
| | | | | | | | | |
| Total Salaries | | | | | | \$ 15,091.25 | 520 | |
| | | | | | | | | |
| | | | | | | OPE | | |
| OPE | | OPE rate | | | | | | |
| Chun | | 58% | | | | \$ 5,883.52 | | |
| Rancik | | 53% | | | | \$ 1,807.43 | | |
| Rynerson | | 60% | | | | \$ 922.20 | | |
| Total OPE | | | | | | \$ 8,613.15 | | |
| | | | | | | | | |
| | | | | | | | | |
| Total Personnel Cost | | | | | | \$ 23,704.40 | | |
| | | | | | | | | |
| S&S | | | | | | July - Dec | | |
| Data | | | | | | | | |
| Supplies | | | | | | | | |
| Total S&S | | | | | | \$ - | | |
| | | | | | | | | |
| Total Direct cost | | | | | | \$ 23,704.40 | | |
| | | | | | | | | |
| Indirect Costs @ 26% TDC | | | | | | \$ 6,163.14 | | |
| | | | | | | | | |
| | | | | | | | | |
| TOTAL Project Cost | | | | | | \$ 29,867.55 | | |
| task 2 options include \$500 and 2 weeks additional time adding about \$3478 more to personnel, would add \$1034 F&A | | | | | | | | |
| Total project if task 2 is included would be \$34,880 | | | | | | | | |

| | | | | | | | | |
|---------------------------------|----------------------------|-------------------|--------------------|-----------------------|---------------|--------------------------|--------------------|---------------------------------------|
| TASK 1 & 2 | | | | | | | | |
| Project Name: | PP&R Forecast | | | | | | | |
| Project Dates: | 08/01/2018 thru 10/31/2018 | | | | | | | |
| PI: | Nicholas Chun | Index Code | TBD | | | | | |
| STAFFING | | | | | | | | |
| Name | Dates | FTE | Base Salary | Monthly Salary | Months | 8/1/18 - 10/31/18 | Total Hours | Total FTE (# months full time) |
| Nick Chun | | | | | | | | |
| FY 2019 July - Dec | 8/1/18-10/31/18 | 100.00% | \$60,864 | \$5,072.00 | 2.00 | \$ 10,144.00 | 347 | 2.00 |
| Kevin Rancik | | | | | | | | |
| FY 2019 July - Dec | 8/1/18-10/31/18 | 100.00% | \$54,564 | \$4,547.00 | 1.25 | \$ 5,683.75 | 217 | 1.25 |
| Charles Rynerson | | | | | | | | |
| FY 2019 July - Dec | 8/1/18-10/31/18 | 50.00% | \$73,776 | \$6,148.00 | 0.50 | \$ 1,537.00 | 43 | 0.25 |
| Total Salaries | | | | | | \$ 17,364.75 | 607 | |
| | | | | | | OPE | | |
| OPE | | OPE rate | | | | | | |
| Chun | | 58% | | | | \$ 5,883.52 | | |
| Rancik | | 53% | | | | \$ 3,012.39 | | |
| Rynerson | | 60% | | | | \$ 922.20 | | |
| Total OPE | | | | | | \$ 9,818.11 | | |
| Total Personnel Cost | | | | | | \$ 27,182.86 | \$3,478.46 | |
| S&S | | | | | | July - Dec | | |
| Data | | | | | | \$ 500.00 | | |
| Supplies | | | | | | | | |
| Total S&S | | | | | | \$ 500.00 | | |
| Total Direct cost | | | | | | \$ 27,682.86 | | |
| Indirect Costs @ 26% TDC | | | | | | \$ 7,197.54 | | |
| TOTAL Project Cost | | | | | | \$ 34,880.40 | | |
| | | | | | | | | |
| | | | | | | | | |

Population, Housing, Social and Economic Profile

Multnomah County, Oregon

189291

| | 2007-2011 | | | 2012-2016 | | | Compare |
|--|-----------|-------------|--------------------------|-----------|-------------|--------------------------|-----------------------------|
| | Estimate | CV * | Margin of Error (+/-) | Estimate | CV * | Margin of Error (+/-) | Statistically Different? |
| POPULATION | | | | | | | |
| Total population | 724,803 | <div></div> | ***** | 778,193 | <div></div> | ***** | ** |
| Percent under 18 years | 20.6% | <div></div> | ***** | 19.7% | <div></div> | ***** | ** |
| Percent 65 years and over | 10.5% | <div></div> | 0.1% | 11.9% | <div></div> | 0.1% | ** |
| Median age (years) | 35.8 | <div></div> | 0.1 | 36.7 | <div></div> | 0.2 | ** |
| Percent white alone, non-Latino | 72.5% | <div></div> | 0.1% | 71.1% | <div></div> | 0.1% | ** |
| HOUSING | | | | | | | |
| Total housing units | 322,567 | <div></div> | 551 | 332,417 | <div></div> | 388 | ** |
| Occupied housing units | 302,224 | <div></div> | 1,335 | 313,181 | <div></div> | 1,375 | ** |
| Owner occupied | 166,916 | <div></div> | 1,713 | 168,631 | <div></div> | 1,776 | ** |
| Percent owner-occupied | 55.2% | <div></div> | 0.6% | 53.8% | <div></div> | 0.5% | |
| Renter occupied | 135,308 | <div></div> | 1,949 | 144,550 | <div></div> | 1,834 | ** |
| Vacant housing units*** | 20,343 | <div></div> | 1,289 | 19,236 | <div></div> | 1,296 | |
| Vacancy rate | 6.3% | <div></div> | 0.4% | 5.8% | <div></div> | 0.4% | |
| Average household size | 2.34 | <div></div> | 0.01 | 2.43 | <div></div> | 0.01 | ** |
| Renter households paying more than 30 percent of household income on rent plus utilities | 53.5% | <div></div> | 0.9% | 53.4% | <div></div> | 0.8% | |
| SOCIAL | | | | | | | |
| Age 25+ with a bachelor's degree or higher | 38.3% | <div></div> | 0.5% | 42.7% | <div></div> | 0.5% | ** |
| Foreign-born population | 101,627 | <div></div> | 2,316 | 108,386 | <div></div> | 3,037 | ** |
| Percent foreign-born | 14.0% | <div></div> | 0.3% | 13.9% | <div></div> | 0.4% | |
| Age 5+ language other than English at home | 132,653 | <div></div> | 3,191 | 144,381 | <div></div> | 3,399 | ** |
| Percent language other than English | 19.5% | <div></div> | 0.5% | 19.7% | <div></div> | 0.5% | |
| ECONOMIC | | | | | | | |
| Median household income (2016 dollars) | \$55,145 | <div></div> | \$629 | \$57,449 | <div></div> | \$700 | ** |
| Per capita income (2016 dollars) | \$32,117 | <div></div> | \$349 | \$33,255 | <div></div> | \$423 | ** |
| Percent of persons below poverty level | 16.5% | <div></div> | 0.5% | 17.1% | <div></div> | 0.5% | |

* **Green**, **orange**, and **red** icons indicate the reliability of each estimate using the coefficient of variation (CV). The lower the CV, the more reliable the data. **High reliability** (CV <15%) is shown in green, **medium reliability** (CV between 15-30% - be careful) is shown in orange, and **low reliability** (CV >30% - use with extreme caution) is shown in red. However, there are no absolute rules for acceptable thresholds of reliability. Users should consider the margin of error and the need for precision.

** Indicates that the two estimates are statistically different based on results of z-test taking into account the difference between the two estimates as well as an approximation of the standard errors of both estimates.

*** Vacant units include those for sale or rent, those sold or rented but not yet occupied, those held for seasonal, recreational, or occasional use, as well as other vacant such as homes under renovation, settlement of an estate, or foreclosures.

***** Indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.

Source: U.S. Census Bureau, American Community Survey 5 year estimates. Surveys are collected over a 60 month period. Estimates represent average characteristics over the entire period. Tabulated by Population Research Center, Portland State University, with additional calculations from source data as needed.

www.pdx.edu/prc