PROSPER PORTLAND
Building an Equitable Economy

DATE: November 9, 2022

TO: Board of Commissioners

FROM: Kimberly Branam, Executive Director

SUBJECT: Report Number 22-32

Update on the Inclusive Economic Development Strategy

BOARD ACTION REQUESTED

No action requested; this item is informational only.

At the November 9, 2022, Prosper Portland Board of Commissioners (Board) meeting, staff and consultant partners will provide an update on development of the city-wide Inclusive Economic Development Strategy (IEDS), which will establish a roadmap for widely shared economic growth and prosperity in Portland.

STRATEGIC PLAN ALIGNMENT AND OUTCOMES

The IEDS will assist Prosper Portland in delivering on the agency's Strategic Plan goals to create healthy, complete neighborhoods; foster wealth creation within communities of color; and form 21st century civic networks, institutions, and partnerships.

BACKGROUND AND CONTEXT

Under the direction of Mayor Wheeler and with budgetary support from City Council, Prosper Portland and the Bureau of Planning and Sustainability (BPS) are facilitating development of an IEDS that will establish a roadmap for widespread economic growth and prosperity. This strategy will be rooted in racial equity and climate justice, informed by data and community voice.

Once developed, the IEDS will identify key policies, approaches, partnerships, and investments necessary to achieve inclusive, sustainable economic growth goals in the next three to five years. Development and implementation of the IEDS will address opportunities for people, businesses, and places — such as individual economic mobility, business growth, and urban competitiveness — through the lens of racial equity and climate action.

After a competitive solicitation process in early 2022, Prosper Portland selected a team of consultants with the following key roles:

- Conduct economic analysis and planning (RW Ventures LLC)
- Design opportunities for community members and stakeholders to inform the inclusive economic development strategy (Camille E Trummer Consulting)
- Advise on racial equity and climate resilience (Estolano Advisors)

To guide this effort, Mayor Wheeler has convened an IEDS Steering Committee to provide their expertise and input throughout the process. The Steering Committee, which is comprised of public, private, and non-profit stakeholders (see the roster in Attachment A) has met five times to date and is charged with providing guidance on the development of the IEDS and the best path forward for the city's economy.

While the Steering Committee is the primary advisory body for the IEDS, a Leadership Roundtable, made up of community leaders (see the roster in Attachment B), also supports this effort by considering substantive strategic questions about the city's vision for Portland's economic future and providing tactical feedback on what it's going to take, collectively, to meet the goals. This group's work supports that of the Steering Committee.

Development of the IEDS includes the following high-level tasks:

1) Market Analysis
2) Focus and Affinity Group Engagement and Interviews
3) Mission, Vision, and Strategy Development
4) Performance Measure Design
5) Communications and Engagement Plan Implementation

The initial market analysis has been completed (see Attachment C) and is expected to be refined, in part, to include a comparison of Portland with peer cities. The IEDS team has also completed the focus and affinity group engagement and interviews; the remaining three tasks are in process.

While the City is facilitating development of the IEDS, it will take a cross-sector collaboration between leaders and policy makers in industry and business; education and workforce training; and land use to implement the strategy and ensure its success. Staff anticipate seeking both Prosper Portland Board and City Council approval of the final strategy in February 2023.

EQUITY IMPACT

The IEDS will establish a roadmap for catalyzing economic growth and creating widely shared economic prosperity that is grounded in racial equity and the transition to a zero-carbon economy. Past economic models have failed to be inclusive, leading to a tale of multiple economic experiences and widening inequity. Development of the IEDS has led with inclusion and equity from robust engagement to preliminary strategy identification. Strategies are surfaced using an equity and climate lens that will also be utilized in implementation to ensure equity and climate action remain centered.

COMMUNITY PARTICIPATION AND FEEDBACK

As mentioned above, both a Steering Committee and Leadership Roundtable are supporting development of the strategy and are made up of diverse groups of experts and leaders.

The consulting team has completed robust engagement via interviews and focus and affinity groups. To date, this engagement includes:

- Interviews with each member of the Portland City Council
- Interviews with each member of the Prosper Portland Board of Commissioners
- 100+ interviews with experts and leads in the public, private, and non-profit sector
- Seven focus and affinity group discussions
- Five Steering Committee meetings and one Leadership Roundtable meeting

Staff anticipate hosting an open house in early 2023 prior to Prosper Portland Board and City Council action.

ATTACHMENTS

A. Steering Committee Members
B. Leadership Roundtable Members
C. Market Analysis

Inclusive Economic Development Strategy Steering Committee Members

Mayor Ted Wheeler

Tavo Cruz, Prosper Board Chair

James Paulson, WSI Board Chair

Adam Zimmerman, CEO Craft3

Alando Simpson, PBA Board, City of Roses & Recycling

Ali Saalabian, Silver Eagle

Andrew Speer, MHCC Commissioner, Charter Commission, PGE

Angela Jackson, PSU, Seed Fund

Bridgid Blackburn, BBPDX Board, CEO of Cargo, CEIC,

Carlo Quinonez, HMCC Board, Nike

Chabre Vickers, NAYA Board, Wells Fargo

Dan Mehls, GPI Board + Mortenson

Desirée Williams-Rajee, Verde Chair, Kapwa Consulting

Grace Henricks, Business Advisor, APANO, small business owner

Eddie Sherman, ONAC + NAYA Board, Against the Current

Edward Feser, OSU Provost

Eric Cress, CEIC Board Chair, UDP

Maggie Long, SEIU

Jill Sherman, Co-founder of Edlen & Co.

Katherine Lam, Port Commissioner + Bambuza Hospitality Group

Kurt Huffman, Chef's Table + Travel Portland

Stephanie Copeland-Weber, Ruby President

Nidal Kahl, Venture Portland Board, GABA Chair, Biogen Lab Dev

Nolan Leinhart, ZGF, AVT Board, ULI

Peter Andrews, Action Table Chair + Melvin Mark

Sabrina Wilson, Rosewood Initiative

Su Embree, OCF Trustee, ELI & SINE, Fmr. CEO of DHM

Inclusive Economic Development Strategy Leadership Roundtable Members

Andrew Hoan

Andrew McGough

Annette Mattson

Karin Power

Carmen Castro

Clare Briglio

Cobi Lewis

James Alan Parker

Jan Mason

Jeff Miller

Malu Wilkinson

Jesse Hyatt

Joe McFerrin II

Jorge Guerra

Joy Church

Matt Hennessee

Lance Randall

Mitch Daugherty

Monique Claiborne

Nate McCoy

Oscar Arana

Willy Myers

Raihana Ansary

Rob Schneider

Skip Newberry

Tamara Kennedy-Hill

PROSPER PORTLAND

Inclusive Economic Development Strategy

Steering Committee #4

September 30, 2022

RW Ventures

Agenda

1. RECAP

2. SUMMARY: Key Themes and Goals

3. MARKET ANALYSIS: Economic Overview

4. MARKET ANALYSIS: 5 Market Levers
   - Human Capital
   - Clusters
   - Innovation & Entrepreneurship
   - Spatial Efficiency
   - Governance

5. Vision for Portland

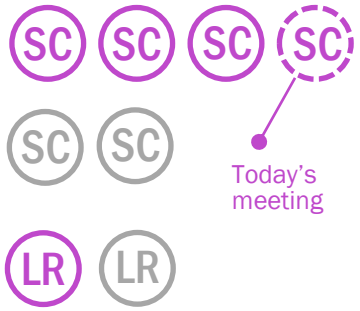
Goals of Today's Discussion

- Test strategic implications from the market analysis
- Get your initial reactions, feedback & questions
- Understand what gives you pause or what gets you excited

Community Engagement

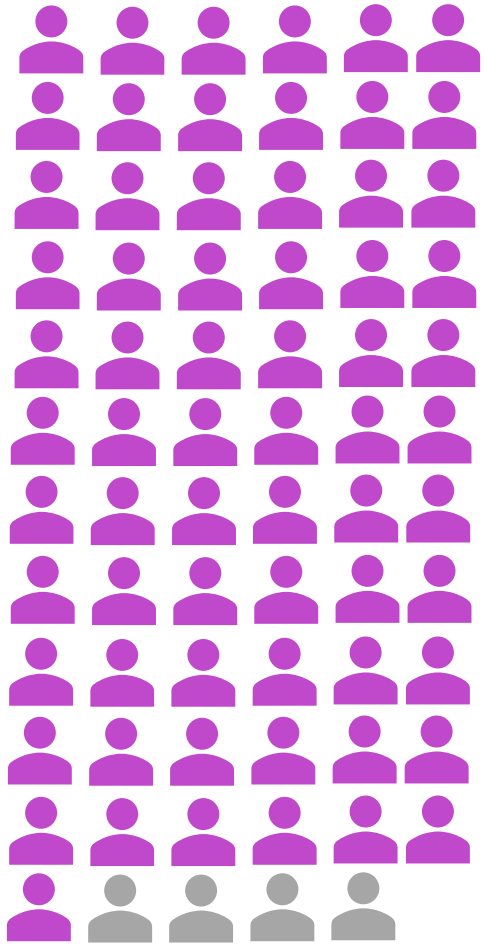
STEERING COMMITTEE & LEADERSHIP ROUNDTABLE

Committees



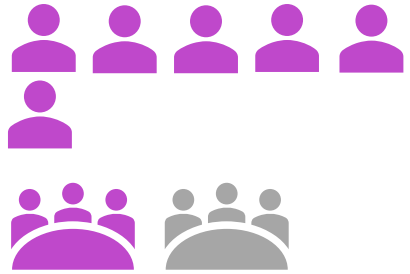
PROJECT MANAGEMENT, ANALYSIS & PLANNING

Scope A



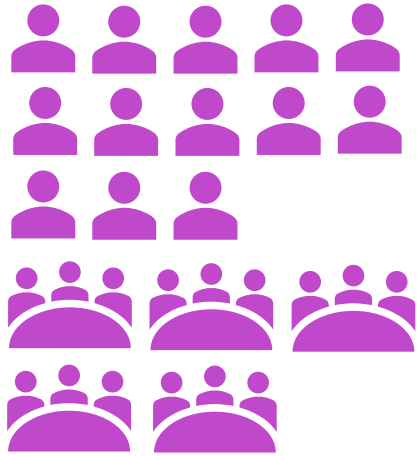
INCLUSIVE ENGAGEMENT & COMMUNICATIONS

Scope B



EQUITY & INCLUSION

Scope C



CLIMATE RESILIENCE & ADAPTATION

Scope D

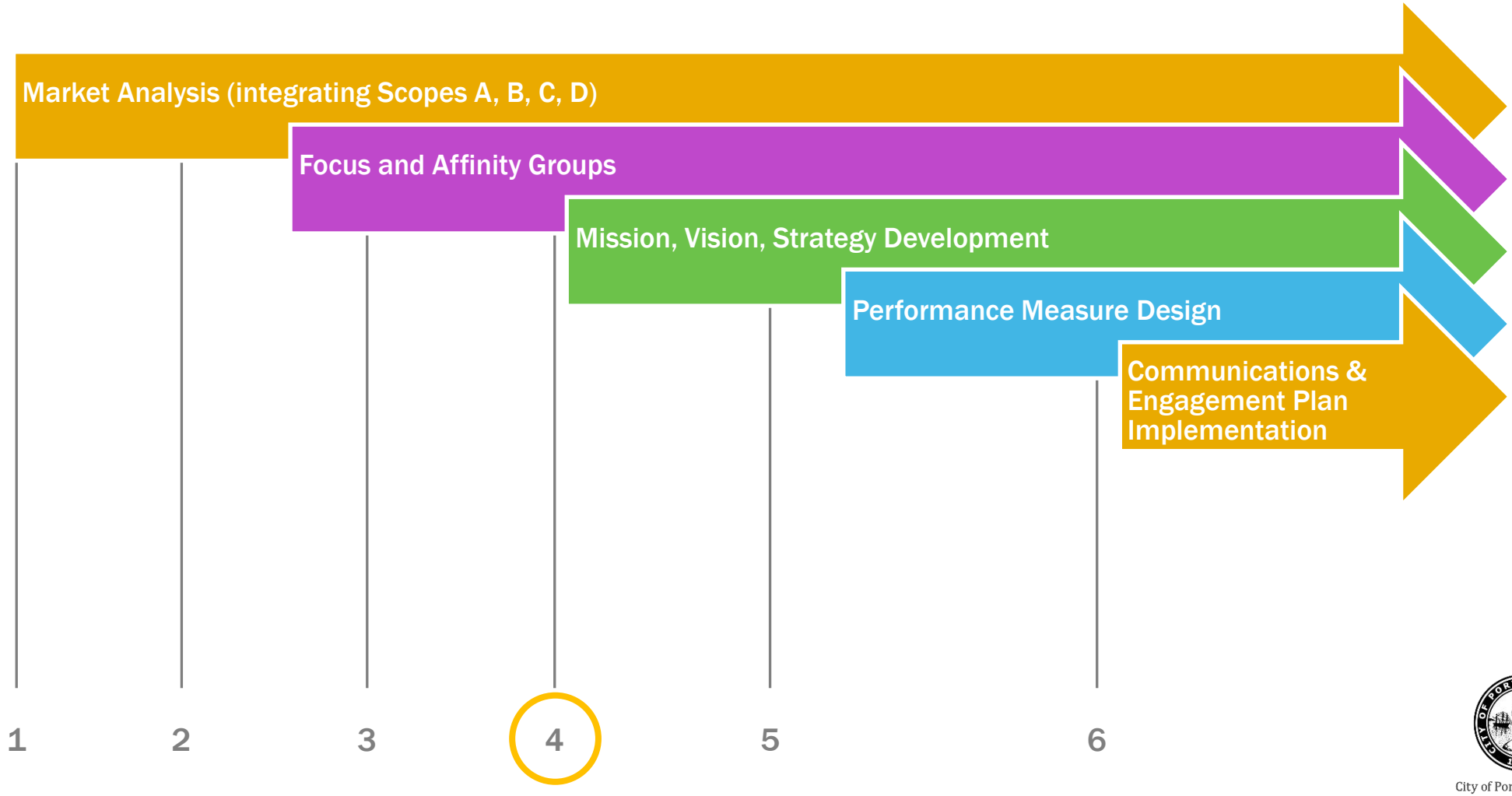
95 interviews

7 focus & affinity groups

8 committee meetings

Project Schedule

Steering Committee advising and feedback is expected at the following project milestones:



Steering Committee Focus

Steering Committee 3 (September 13)

- Introduced lenses for Equity and Climate
- Preliminary lenses are infused into the market analysis as they relate to economic development

Steering Committee 4 (Today: September 30)

- Detailed market analysis
- Set up for vision and strategies discussion at Steering Committee #5

Steering Committee 5 (October 25)

- Translate the market analysis findings into vision and strategies
- Discuss and provide feedback on strategy ideas – and how they align the 5 drivers of growth towards a vision for Portland's economic future

Climate & Equity Lens

Climate & Equity Lens Decision Criteria

Create a threshold to be considered

Does the intervention:

- Prioritize participation of and engagement with those most impacted by economic disparities and/or climate change-related risks and impacts in Portland?
- Align with economic and climate priorities shared in the community engagement process?
- Build local environmental and/or community resilience?
- Create economic growth opportunities that could be leveraged to advance climate and/or racial equity goals?

Consolidated into a single document:

IEDS Climate and Equity Lens.docx

**Changes from Steering Committee #3 noted in green text*

Climate & Equity Lens

Climate & Equity Lens Process Considerations

Use these considerations to prioritize

Climate Considerations:

- How does this increase opportunities for economic growth within the local or global low-carbon economy or the circular economy, including in connection to the global market?
- How does this intervention leverage or build upon local economic assets that are also “climate” assets (or represent climate-related opportunities)?
- How does the activity address the needs of those most impacted by climate change-related risks and impacts2?
- How does this support existing businesses to transition and grow into low-carbon industries, and/or in what ways might this increase local economic and environmental resilience?

Equity Considerations:

- What communities (Black, Indigenous, Latine, Asian American and Native Hawaiian or Pacific Islander (AANHPI), people of color, LGBTQIA2S+, and for vulnerable populations based on disability, income, national origin, and gender) were engaged and how?
- What factors will this recommendation address to help close the economic disparities faced by communities of color and vulnerable communities? In what ways?
- How does this intervention leverage or promote the unique qualities of our diverse communities?
- What measurable accountability metrics are embedded that can be disaggregated by race?

Climate & Equity Lens

Climate & Equity Implementation Expectations:

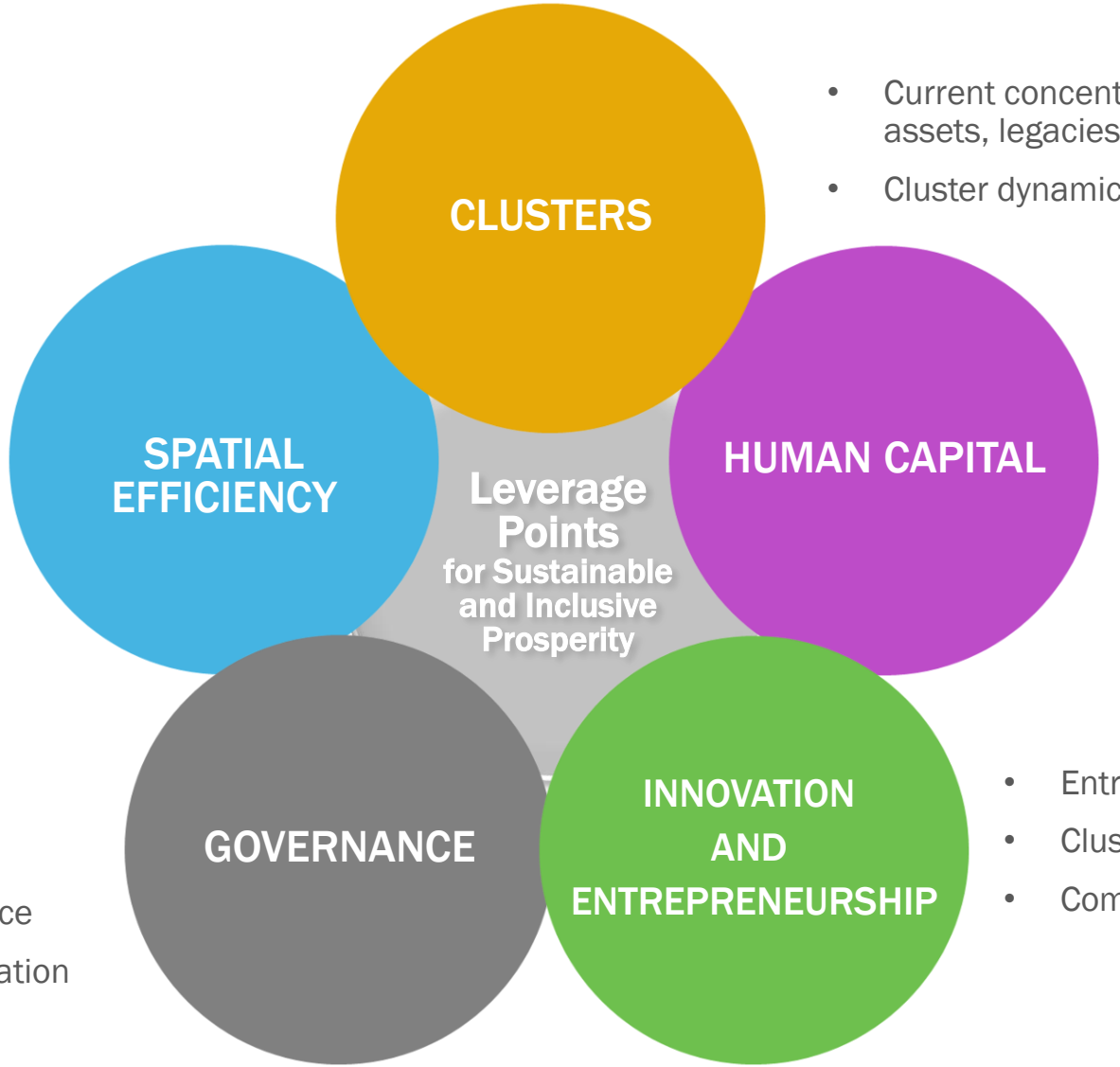
Ground implementation in accountability

- Sustaining engagement with impacted communities before, during, and after implementation of the strategies
- Establish and evaluate impact for this recommendation and develop feedback loop to make changes based on learnings, including intended and unintended results
- Ensure those most impacted by the strategy are partners in designing the interventions
- Acknowledge harm ~~and rebuild broken trust~~ in the historical relationships between the City and impacted communities and connect direct actions to address harm caused

RECAP

5 Market Levers Drive Economic Performance

- Compact, well-connected urban form
- Jobs-housing mismatch
- Next-generation infrastructure
- Distribution of industrial, commercial, residential uses



- Current concentrations: assets, legacies, and bets
- Cluster dynamics and drivers

- High levels of human capital and rich job pools
- Job matching and worker mobility
- Inclusiveness and opportunity

- Tax value proposition
- Cross-sector governance
- Government fragmentation

- Entrepreneurship
- Cluster- and firm-based innovation
- Commercialization of R&D

City of Portland, Oregon

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Key Pathways To Inclusive Growth

Ownership

Growing BIPOC company and real estate ownership

Employment

Increasing BIPOC employment, particularly in quality jobs with strong career ladders

Location & Access

Siting and supporting firms in places that are readily accessible to disadvantaged populations & assuring transportation and other infrastructure access to job and other economic activity centers

Participation

Ensuring diverse representation at the relevant private, public and civic sector “tables,” where growth strategies are shaped and deals get done

Strategies must drive economic mobility and place BIPOC communities, businesses, and workers at the forefront of the growth and wealth creation.

SUMMARY: KEY THEMES

Project Goal and Observations

Define a vision which aligns economic growth, inclusion and climate change mitigation/ adaptation for Portland

Define what Portland will be good at and known for – what human capital, business, institutional and other assets it can deliberately build from to become *the* place where certain targeted industries and populations will be most productive.

This requires:

Coordinated strategies, aligning the 5 drivers of growth towards the vision

Managing dimensions and tensions of growth (across the drivers):

- **Regionalism; managing growth** - agglomeration and externalities; role of central City
- **Business Growth and Amenities** (Human Capital and its Deployment)
- **Government and Markets** (and politicization of ED work)
- **Economic Growth and Inclusion**
- **Economic Growth (particularly manufacturing) and Climate**

Market analysis: key takeaways

Regional economy is strong

(outperformed the nation for 20y+) and boasts substantial industry, human capital, institutional and other assets to grow further

Portland also has strong assets, but:

- **Its role in the region is changing:** knowledge-based service businesses, high human capital, amenities
- **It faces several major challenges:** affordability/houselessness; public safety; inequity; lack of collaboration/coordination; politicization

Human Capital

- High human capital, but under-deployed, and substantial racial disparities
- Production and upskilling to new industries could be strengthened, especially BIPOC

Clusters

- Very strong clusters and growth opportunities (including related to “greening” manufacturing)
- Collaboration/cluster orgs/initiatives limited (innovation, workforce, etc.)
- Portland may be shifting towards a concentration of headquarters and professional services within the region’s traded sector industries

Market analysis: key takeaways (cont.)

Innovation

- Lacking major research university, insular R&D, limited coordination towards commercialization
- Strong entrepreneurship, many components of ecosystem, but challenges navigating, limited institutional capacity/support /finance, especially for BIPOC

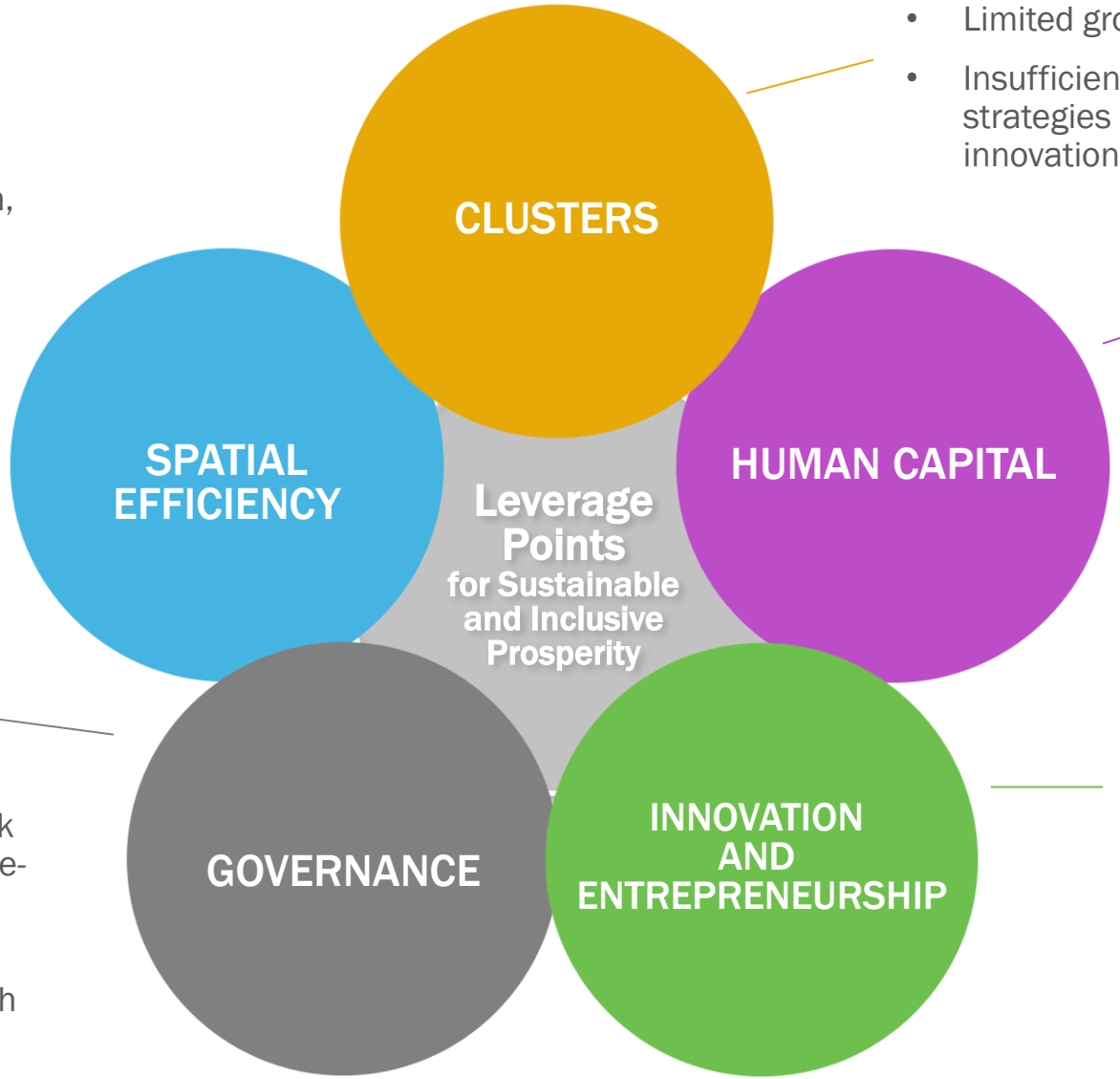
Spatial Efficiency

- Generally compact urban form
- Jobs-housing mismatch getting worse, especially for BIPOC
- Land use challenges (especially for locating new industrial/innovation centers near BIPOC)
- Need to revitalize downtown as economic center of gravity

Governance

- Functional fragmentation, lack of coordination in and between governments
- Politicization, anti-business segments
- Lack of cross-sector, inclusive, collaborative institutions – particularly corp. engagement

Market analysis: summary facts & observations



- Limited growth-cluster-specific strategies
- Insufficient engagement, collaborative strategies around targeted high-growth innovation opportunities, etc.

- Changing role for downtown
- Growing jobs-housing mismatch, particularly for BIPOC workers
- Little land available for new industrial development

- High-skilled workforce is under-employed
- BIPOC workers are underrepresented in growth industries/occupations
- Workers in legacy industries would benefit from up-skilling
- Over-emphasis on amenities alone to attract/retain workers

- Fragmentation/coordination/ efficiency issues
- Declining tax-value proposition
- Low corporate engagement, weak & often contentious public-private-civic sector relationships
- Few specialized programs to support strategic business growth

- Ecosystem lacks critical mass of resources, activity
- Disconnect between university & corporate R&D activities
- Few strong, experienced innovation leaders
- Over-emphasis on micro-enterprises serving local market

MARKET ANALYSIS: ECONOMIC OVERVIEW

Economic Overview

Until 2020, the region exhibits exceptional economic growth, reflecting high performing industries and levels of human capital. Multnomah County's role as the "economic engine" of the region is shifting and may be declining. BIPOC participation in this growth has been limited.

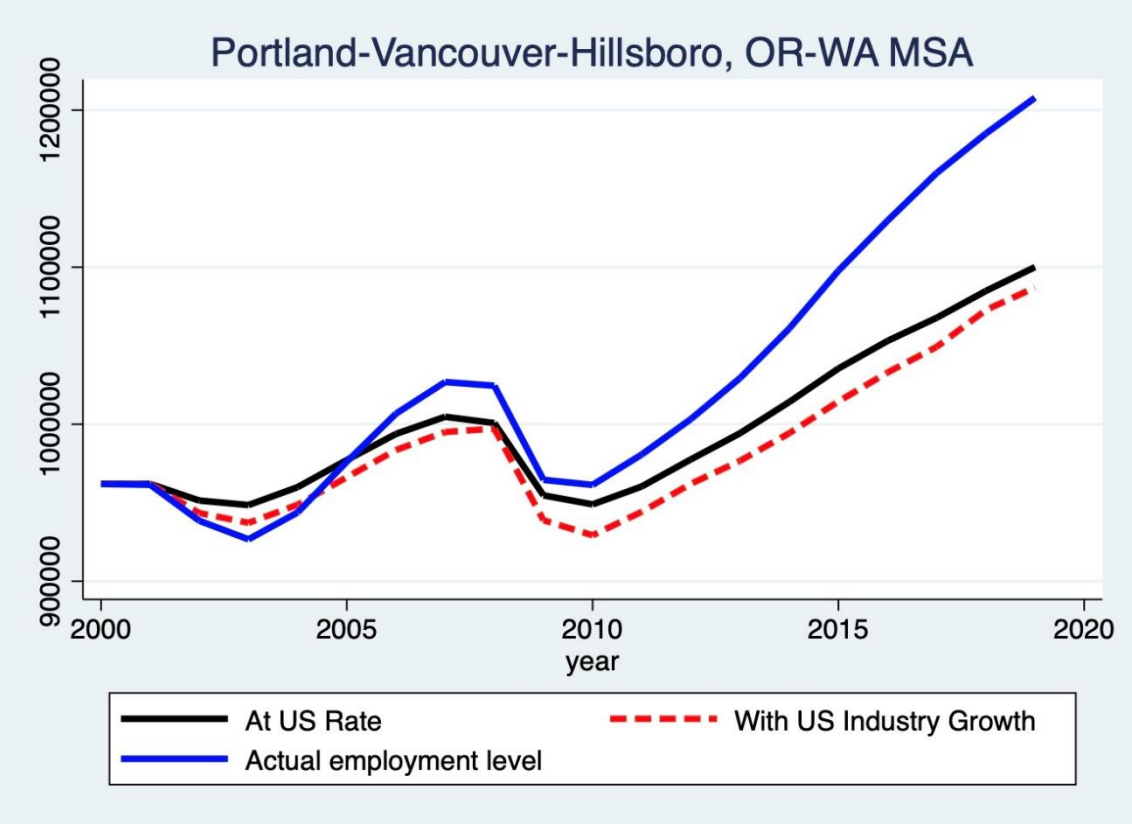
- Highly educated workforce, above national averages
- Gross regional product (GRP) has outpaced US growth over last 20 years (2.85% vs. 1.73%).
- Household income and employment growth are all higher than US – for MSA and County
- BIPOC Population - lower than national averages, higher poverty rates in County than the US

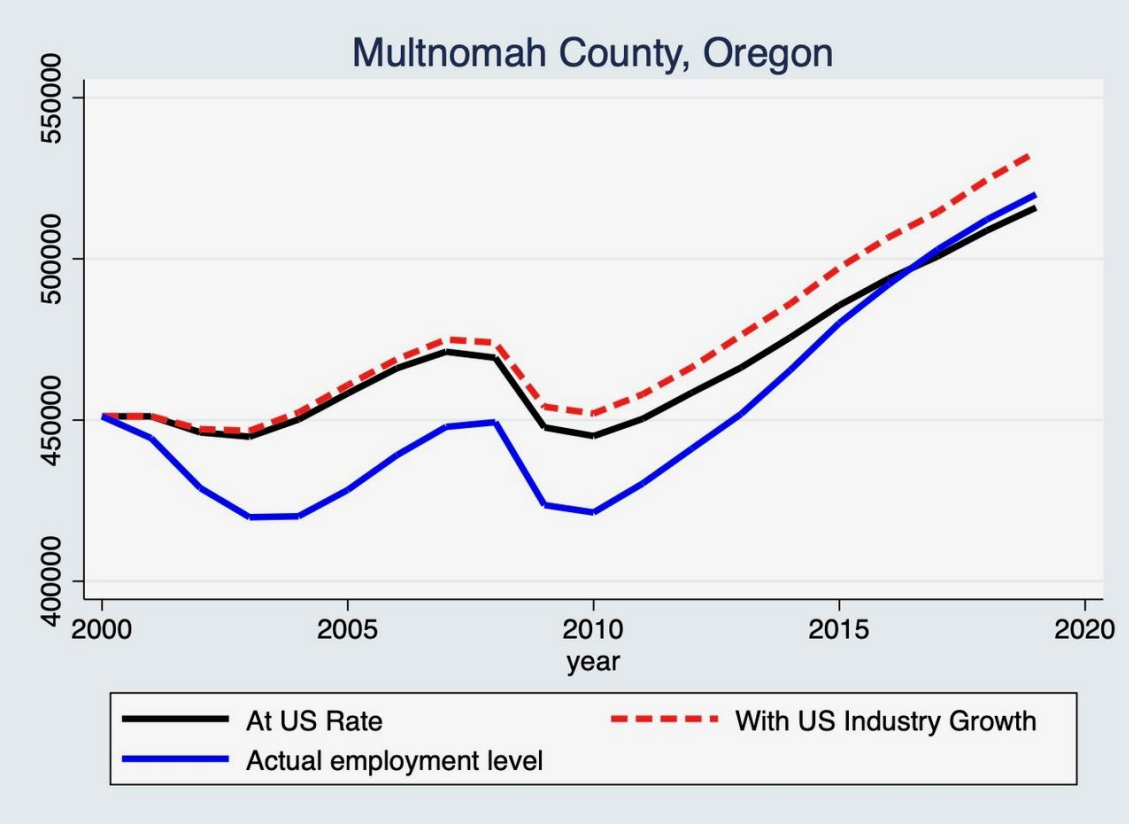
	Real GRP Growth CAGR (2001-20)	Real GRP Growth CAGR (2015-20)	Median Household (HH) Income (2020)	Median HH Income CAGR (2010-20)	Emp. Growth (2010-2020) CAGR	Total Unemp. 2020	BIPOC Unemp. 2020	Poverty 2020	BIPOC Poverty 2020	% BIPOC 2020	% Bachelor's + 2020
Multnomah County	1.46%	2.07%	$71,425	1.92%	1.37%	5.2%	7.0%	13.2%	19.6%	31%	47%
Portland MSA	2.85%	2.56%	$77,511	1.47%	1.59%	4.8%	6.2%	10.1%	14.2%	28%	40%
USA	1.73%	1.12%	$64,994	0.50%	0.99%	5.4%	7.5%	12.8%	18.2%	40%	33%

Data Source: BEA, US Census

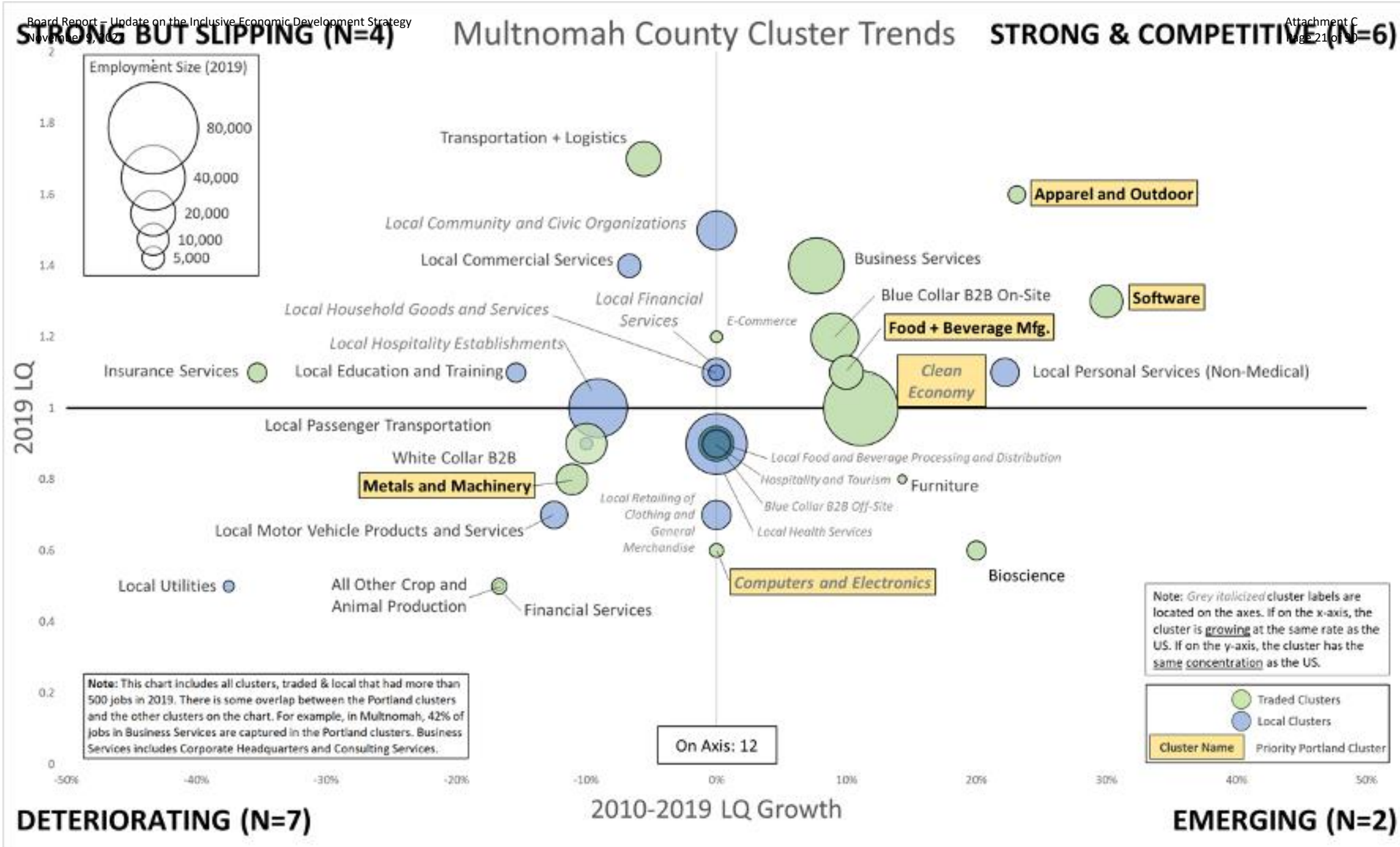
Portland MSA exceeds expected job growth, but Portland lagging

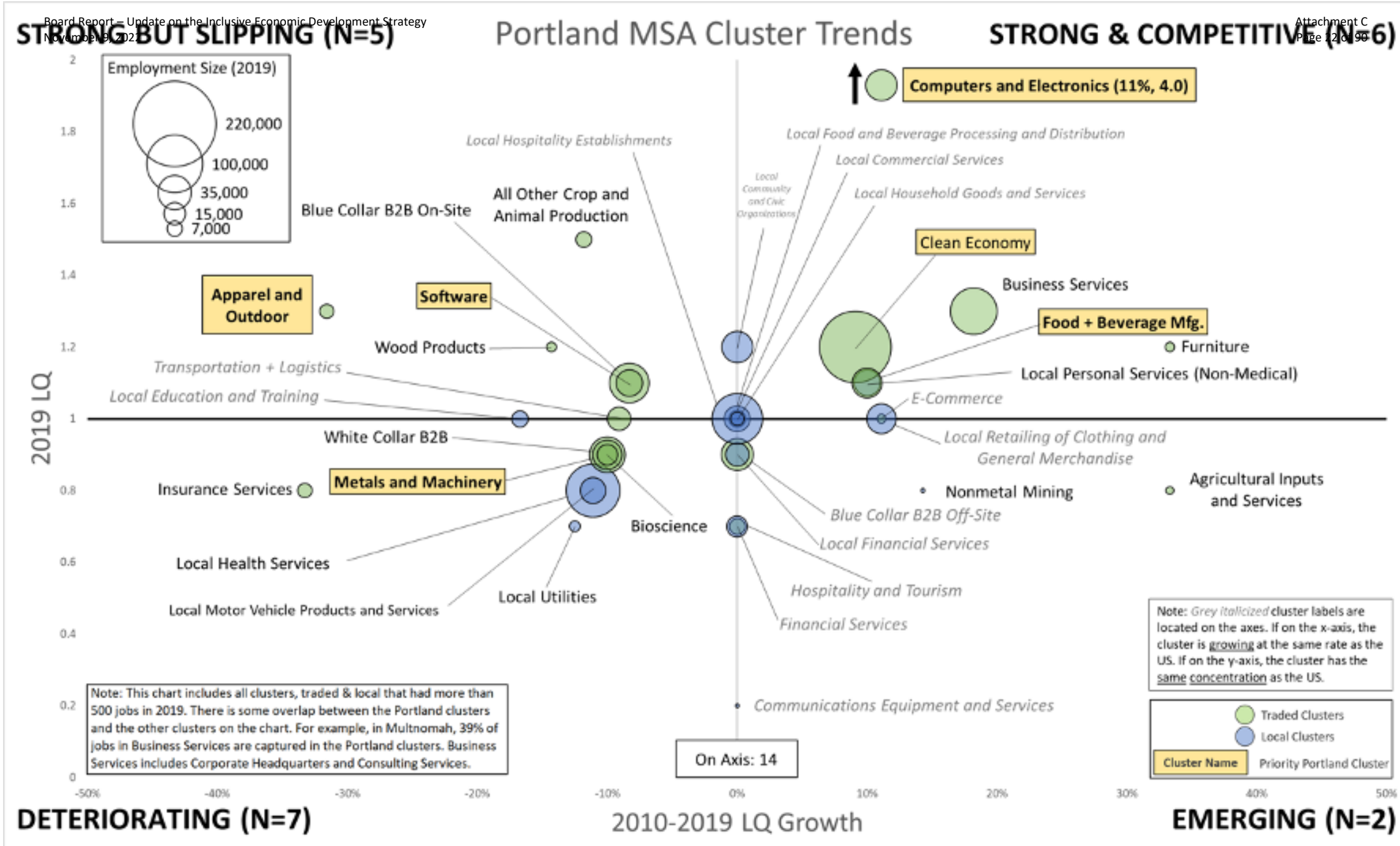
- Portland MSA employment has grown significantly more than U.S.
- Multnomah County's employment growth rate has not kept up with what would be expected considering its industry mix, but has recently surpassed the US rate





Source: Prof. Chris Berry, University of Chicago, Harris School of Public Policy

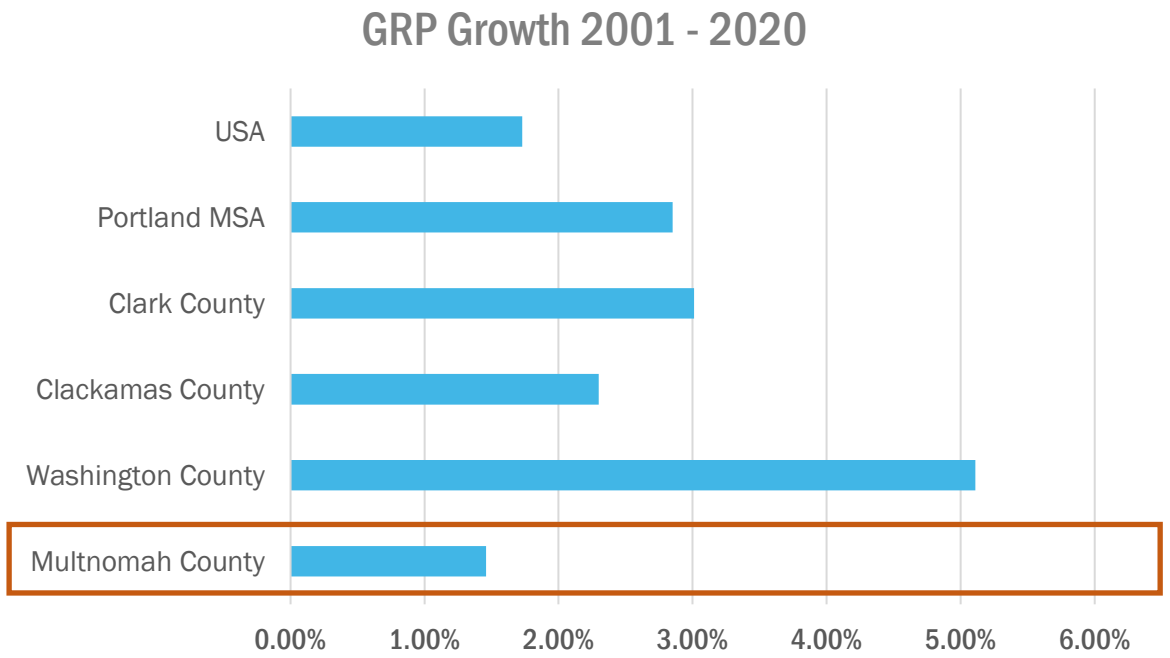

Multnomah County Cluster Trends
STRONG BUT SLIPPING (N=4)
STRONG & COMPETITIVE (N=6)
DETERIORATING (N=7)
EMERGING (N=2)
Employment Size (2019)
80,000
40,000
20,000
10,000
5,000
2019 LQ
2010-2019 LQ Growth
Transportation + Logistics
Apparel and Outdoor
Local Community and Civic Organizations
Local Commercial Services
Business Services
Blue Collar B2B On-Site
Software
Local Financial Services
E-Commerce
Local Household Goods and Services
Food + Beverage Mfg.
Local Hospitality Establishments
Insurance Services
Local Education and Training
Clean Economy
Local Personal Services (Non-Medical)
Local Passenger Transportation
White Collar B2B
Local Food and Beverage Processing and Distribution
Hospitality and Tourism
Furniture
Metals and Machinery
Local Retailing of Clothing and General Merchandise
Blue Collar B2B Off-Site
Local Health Services
Local Motor Vehicle Products and Services
Bioscience
Computers and Electronics
Local Utilities
All Other Crop and Animal Production
Financial Services
Note: This chart includes all clusters, traded & local that had more than 500 jobs in 2019. There is some overlap between the Portland clusters and the other clusters on the chart. For example, in Multnomah, 42% of jobs in Business Services are captured in the Portland clusters. Business Services includes Corporate Headquarters and Consulting Services.
On Axis: 12
Note: Grey italicized cluster labels are located on the axes. If on the x-axis, the cluster is growing at the same rate as the US. If on the y-axis, the cluster has the same concentration as the US.
Traded Clusters
Local Clusters
Cluster Name
Priority Portland Cluster


Portland MSA Cluster Trends
STRONG BUT SLIPPING (N=5)
STRONG & COMPETITIVE (N=6)
DETERIORATING (N=7)
EMERGING (N=2)
2019 LQ
2010-2019 LQ Growth
Employment Size (2019)
220,000
100,000
35,000
15,000
7,000
Computers and Electronics (11%, 4.0)
Local Hospitality Establishments
Local Food and Beverage Processing and Distribution
Local Commercial Services
Local Household Goods and Services
Local Community and Civic Organizations
All Other Crop and Animal Production
Blue Collar B2B On-Site
Clean Economy
Business Services
Apparel and Outdoor
Software
Food + Beverage Mfg.
Furniture
Wood Products
Transportation + Logistics
Local Personal Services (Non-Medical)
Local Education and Training
E-Commerce
White Collar B2B
Local Retailing of Clothing and General Merchandise
Insurance Services
Metals and Machinery
Nonmetal Mining
Agricultural Inputs and Services
Bioscience
Blue Collar B2B Off-Site
Local Financial Services
Local Health Services
Hospitality and Tourism
Local Utilities
Local Motor Vehicle Products and Services
Financial Services
Communications Equipment and Services
On Axis: 14
Note: This chart includes all clusters, traded & local that had more than 500 jobs in 2019. There is some overlap between the Portland clusters and the other clusters on the chart. For example, in Multnomah, 39% of jobs in Business Services are captured in the Portland clusters. Business Services includes Corporate Headquarters and Consulting Services.
Note: Grey italicized cluster labels are located on the axes. If on the x-axis, the cluster is growing at the same rate as the US. If on the y-axis, the cluster has the same concentration as the US.
Traded Clusters
Local Clusters
Cluster Name
Priority Portland Cluster
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
-50%
-40%
-30%
-20%
-10%
0%
10%
20%
30%
40%
50%

Portland's role in the region may be shifting…

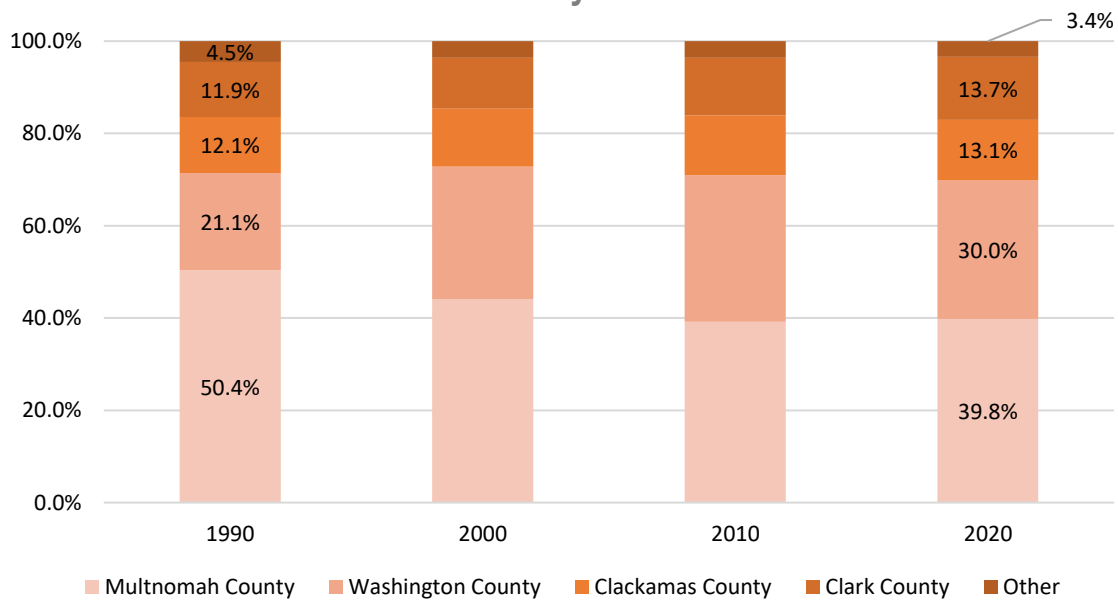
Multnomah County generates ~40% of Portland MSA GRP and about $11,784 more per capita compared to the Portland MSA

- This is flat from 2010, but down from 2000 (44%) and 1990 (~50%)



In the last 20 years, GRP growth has been primarily driven by collar counties

- Part of this can be attributed to manufacturing moving out of the city (to collar counties, overseas)



Source: US Census data as prepared by Woods & Poole

… Towards information, professional services, headquarters functions

	Portland MSA LQ 2020	Multnomah LQ 2020	Portland MSA 2010-2020 LQ Growth CAGR	Multnomah 2010-2020 LQ Growth CAGR ↑
Construction	1.24	1.00	1.6%	1.4%
Transportation and Warehousing	1.01	1.65	0.1%	1.4%
Information	1.12	1.21	0.2%	1.3%
Professional, Scientific, and Technical Services	0.98	1.23	0.6%	1.2%
Other Services (except Public Administration)	1.20	1.31	0.1%	0.4%
Health Care and Social Assistance	0.96	0.99	0.3%	0.4%
Real Estate and Rental and Leasing	1.11	1.30	0.0%	0.3%
Wholesale Trade	1.17	1.16	-0.9%	0.1%
Retail Trade	0.93	0.78	0.0%	-0.1%
Government	0.82	0.98	-0.6%	-0.1%
Mining, Quarrying, and Oil and Gas Extraction	0.14	0.03	2.0%	-0.2%
Administrative and Support and Waste Management and Remediation Services	0.89	0.78	-0.4%	-0.4%
Management of Companies and Enterprises	2.18	2.28	2.8%	-0.5%
Arts, Entertainment, and Recreation	0.83	0.88	-1.4%	-0.7%
Agriculture, Forestry, Fishing and Hunting	1.40	0.40	-0.1%	-0.9%
Manufacturing	1.23	0.75	0.0%	-1.0%
Finance and Insurance	0.87	0.95	-0.9%	-1.3%
Educational Services	0.91	1.13	-1.6%	-1.4%
Utilities	0.57	0.70	0.3%	-1.6%
Accommodation and Food Services	0.87	0.85	-1.0%	-2.4%

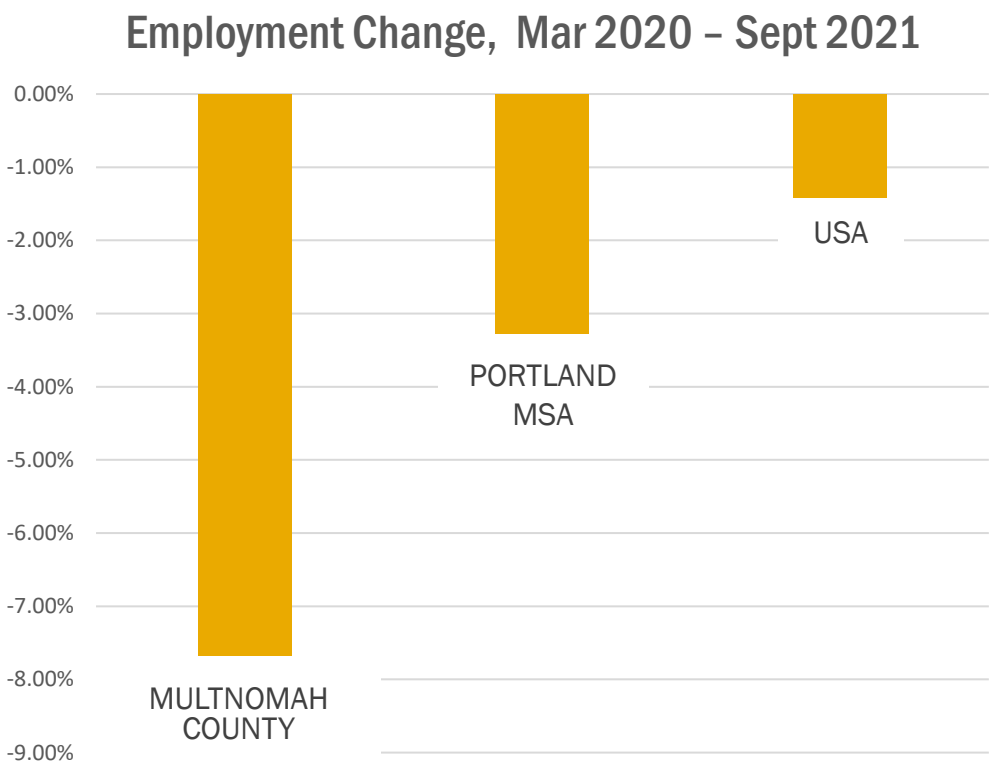
Data Source: EMSI

Notes
- Green: LQs above 1, indicating an industry with a greater share of the local area employment than is the case nationwide.
- Yellow: Top 5 LQ Growth rates for each geography.

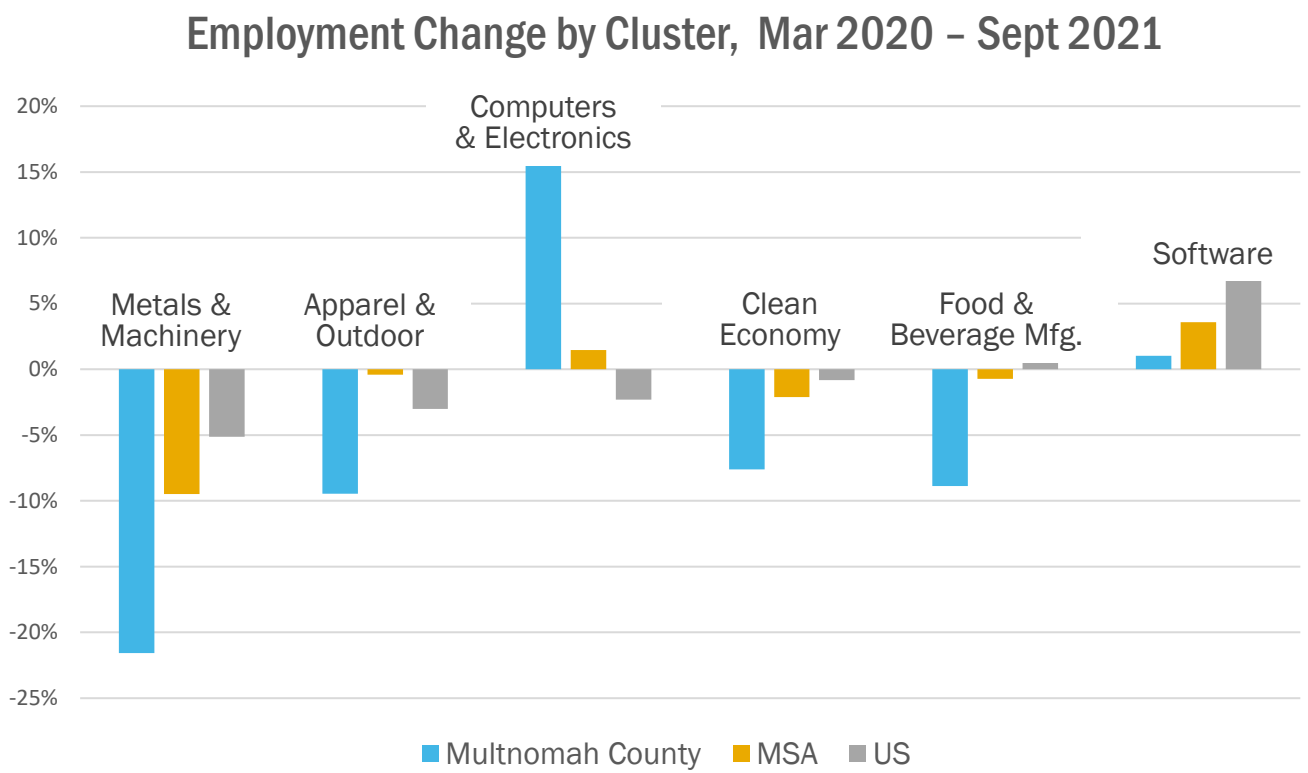
- **Transportation & Warehousing, Information, and Professional Services** have become more concentrated in Multnomah County in the last decade and have higher LQs than the MSA. Subindustries that became more concentrated include:
  - Warehousing and Storage
  - Data Processing
  - Computer Systems Design Services
  - Management, Scientific, and Technical Consulting Services
  - Architectural, Engineering, and Related Services
- **Management of Companies & Enterprises** became more concentrated at the MSA level in the last decade. The industry is highly concentrated in Multnomah County as well but due to lower job growth relative to the MSA and the US in the last decade, its concentration slipped.

COVID significantly impacted Region, particularly employment

Portland MSA lost more employees over the first 18 months of the pandemic than nation; Multnomah County lost even higher share



Computers & Electronics cluster *grew in employment* within the County (unlike US trends)

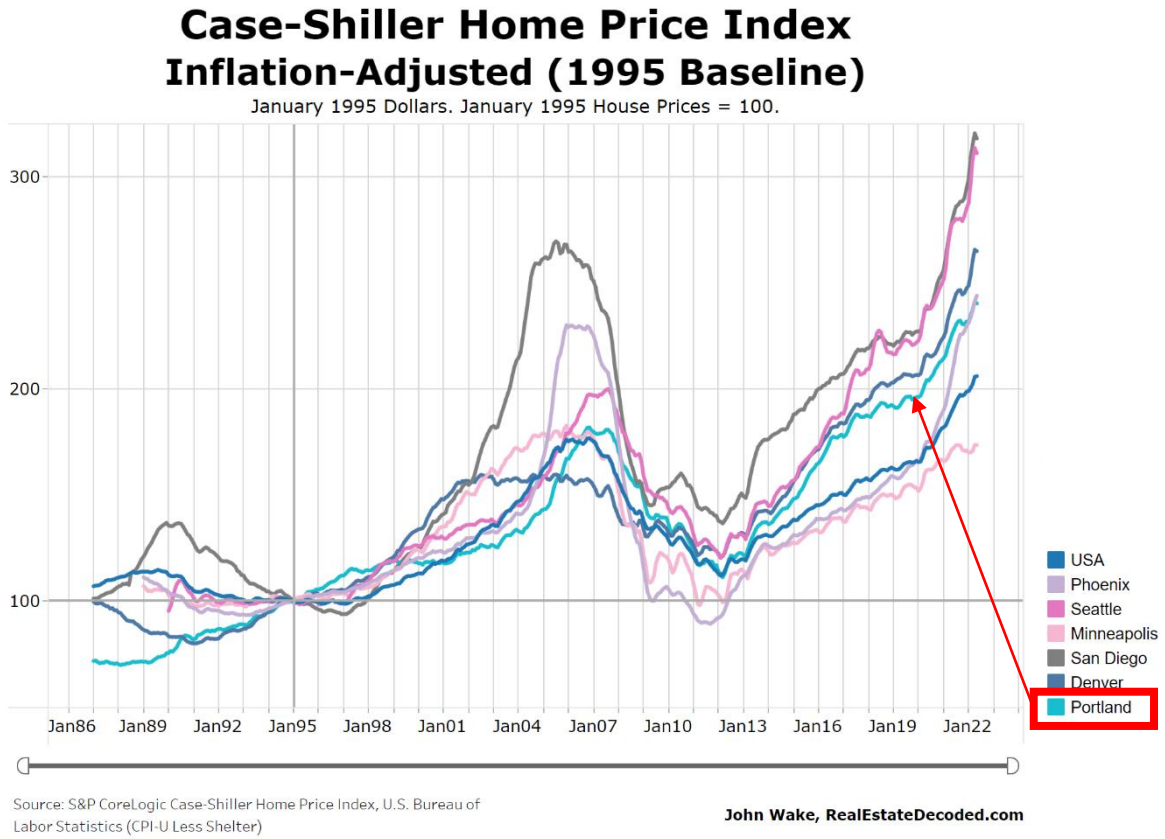


Source: data-Fab QCEW (6D NAICS 2017 vintage, privately-owned); data-Fab QWI (4D NAICS 2017 vintage, privately-owned)

Portland faces major obstacles

Challenges of Managing Growth:

- Rising crime, houselessness, food insecurity
  - Latest data available show property crimes up 26% compared to the 12 months leading up to Covid
  - Multnomah County's unhoused population estimated to be up 30% since 2019
  - After spiking to 13.1%, unemployment in the MSA (3.6%) is below the national rate (3.7%)
- Housing prices have risen faster than all but 5 of nation's 40 largest metro areas (see graph)
- Worsening tax-value proposition
- High levels of politicization, lack of coordination/broad engagement/alignment around economic growth and business



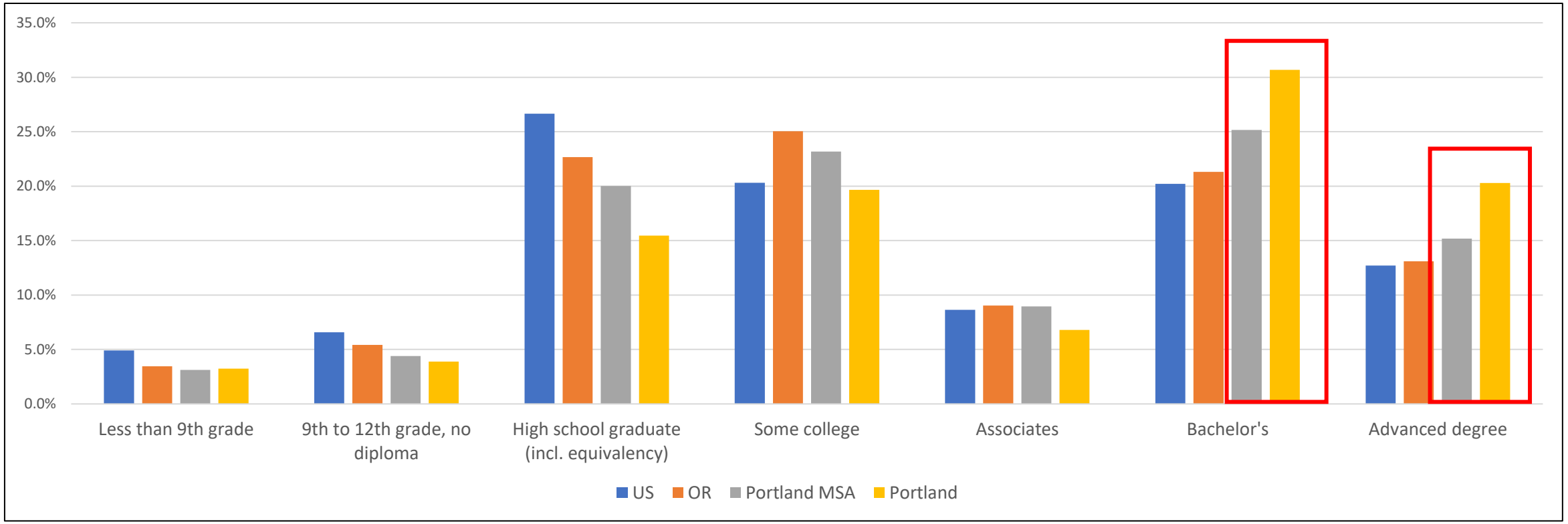
HUMAN CAPITAL

HUMAN CAPITAL

Highly educated population

- 51% of Portland residents have a bachelor's or more – 2/3 higher than US avg.
- Bachelor's+ attainment grew by 25% from 2010 to 2020

Educational Attainment (2020)

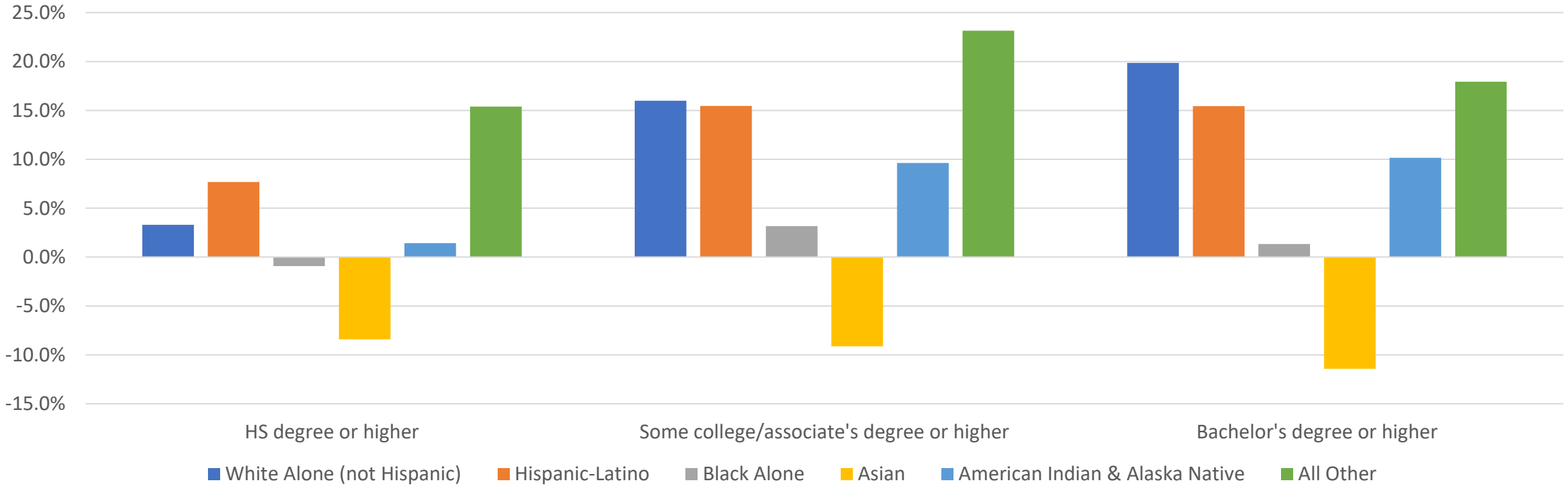


Source: RW Ventures analysis of American Community Survey data

But… Racial/Ethnic Inequities Persist

- White, Hispanic/Latinx, American Indian/Alaska Native and all other racial groups outperforming US ed. levels
- Black residents at US averages, Asian residents well below

Difference in Educational Attainment, Portland v. US (2020)



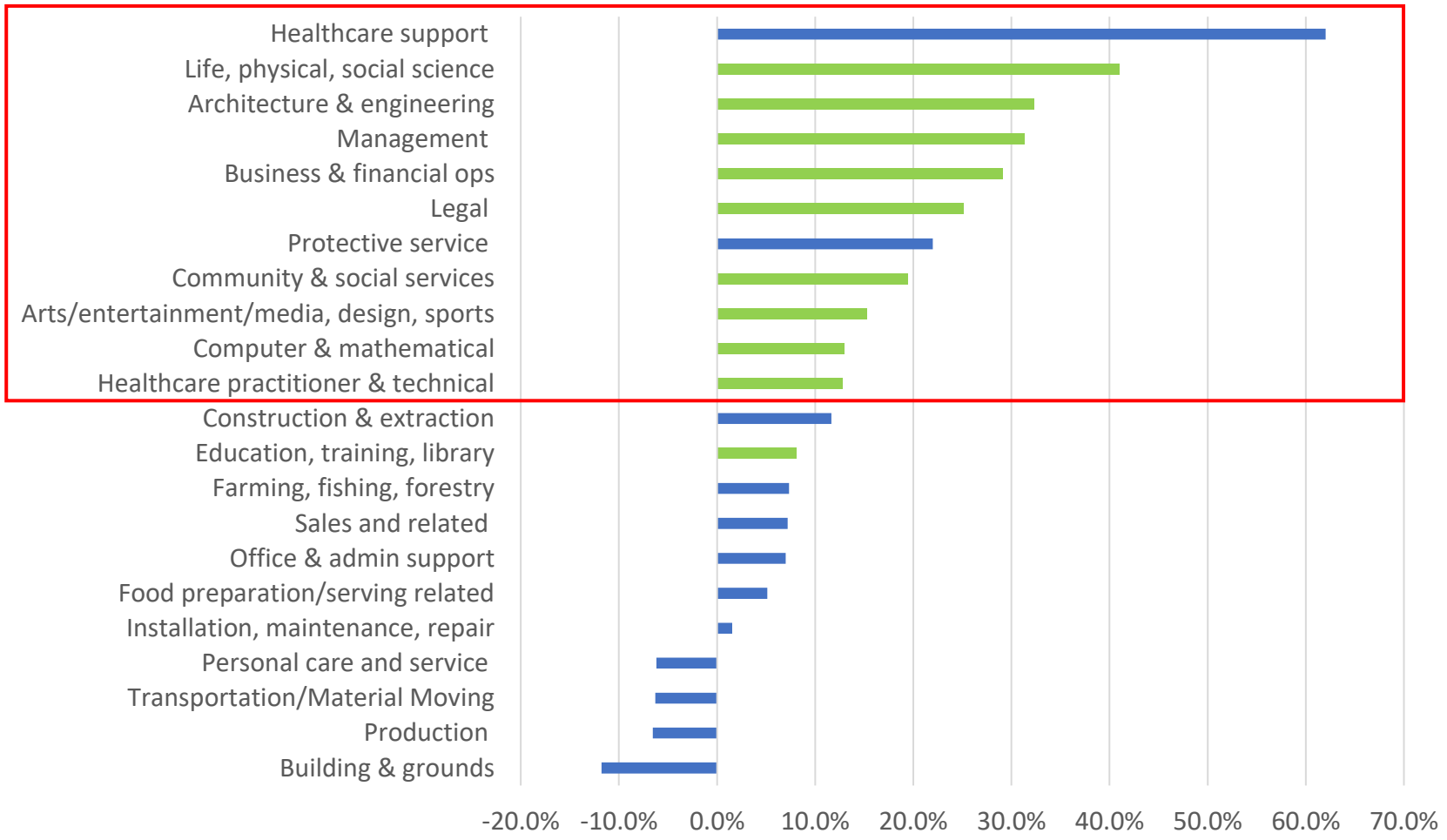
Source: RW Ventures analysis of American Community Survey data

Residents increasingly in higher-skilled jobs

HUMAN CAPITAL

- 9 of the 11 fastest-growing occupational categories require (on average) a Bachelor's degree or above

Change in Portland's Occupational Categories Relative to US, 2010-2020



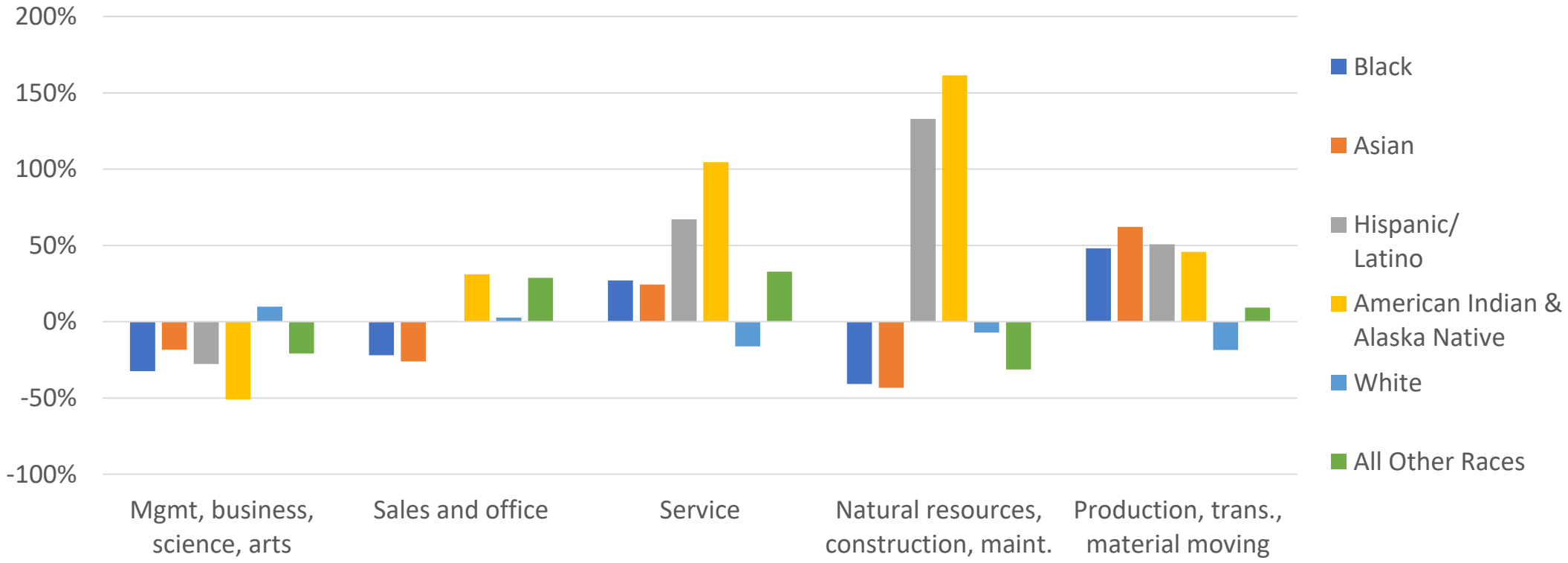
Source: RW Ventures analysis of American Community Survey data

HUMAN CAPITAL

But… BIPOC are underrepresented

- **Across major occupational groupings, BIPOC are almost all underrepresented in higher-skill positions, and over-represented in lower-skilled jobs**

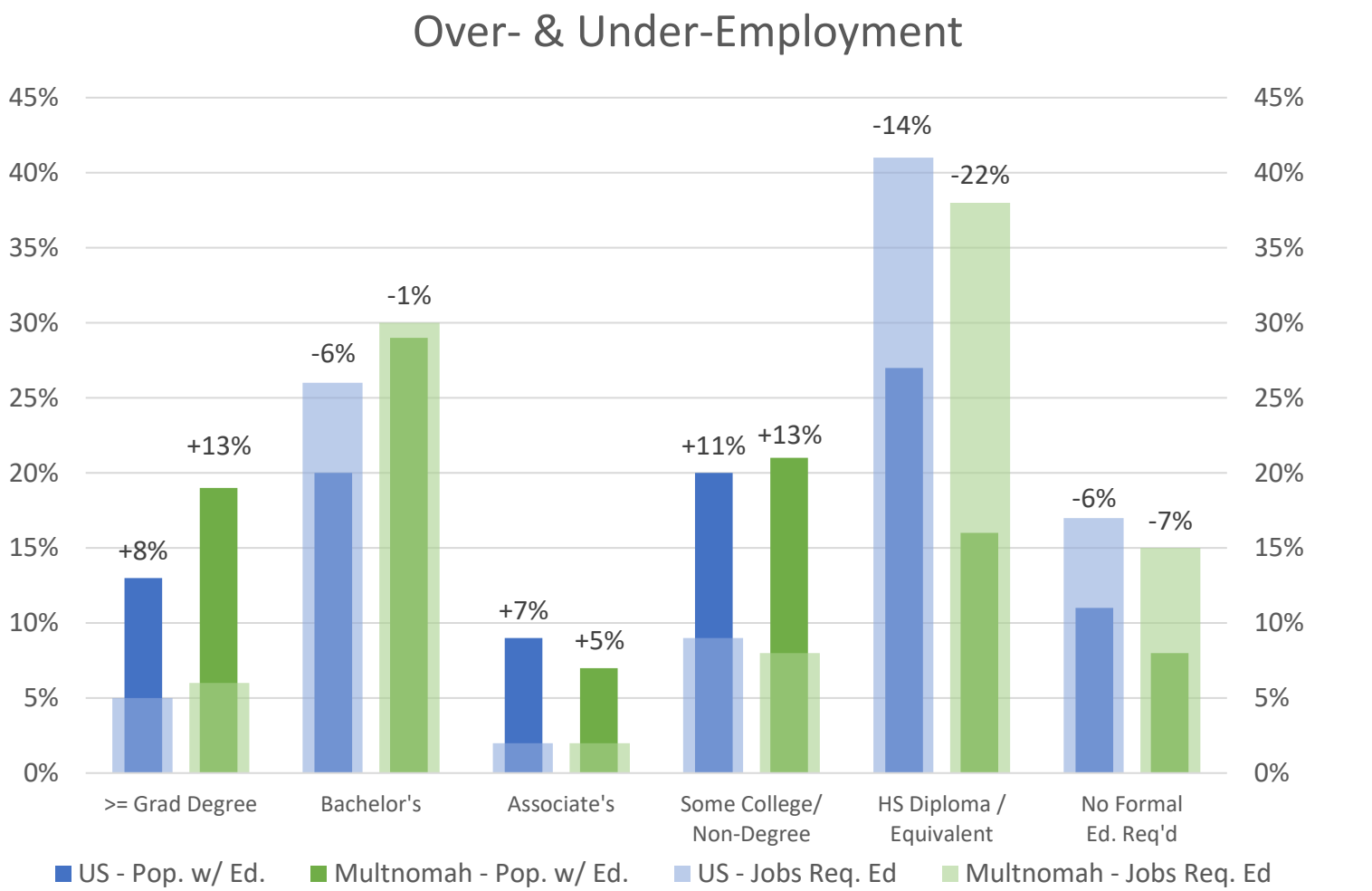
Difference in City of Portland Workforce Demographics and Occupation Representation, 2020



Source: RW Ventures analysis of American Community Survey data

Note: all figures are 2020 unless otherwise indicated

Portland's Human Capital Appears Under-deployed



Labels = Oversupply (+) or Undersupply (-) of workers with education v. jobs requiring that level of ed.

- Portland's demand for graduate degrees close to US average, but supply is higher, creating a **13% differential**
- Demand for bachelor's degrees higher than US, and almost fulfilled
- Overall, an **18% oversupply of middle-skill workers** (some college or Associate's)

Note: all figures are 2020 unless otherwise indicated

But… Remote Work May Account for Some Gaps

HUMAN CAPITAL

- Pre-pandemic, Portland remote work was on the rise: from 2010 to 2020, the proportion of people working from home rose from 7.4% to 12.7%
- In 2021, the work from home population was 28%, 13th place among US metros
- Nationally, the proportion of teleworking employees who moved away from their workplace nearly doubled, from 9% to 17%
- Workers with bachelor's or higher are more likely to be working from home part or all the time
- The urban core's office vacancy has been impacted and is now 22.1% (and does not reflect true vacancy with remote work levels)

DISCUSSION

CLUSTERS

Clusters: Key Criteria

1 Economic Growth Opportunity:

Cluster Strength & Growth Potential

Builds from strong, underlying regional assets

- Exhibits a large employment and firm base (LQ)
- Exhibits above-average concentration of employment or gross product
- Preferably already growing/concentrating
- Leverages institutional and other assets

Exhibits potential for economic growth:

- Market expectations to grow nationally or globally
- Export potential
- High employment multiplier

2 Inclusion Impact:

Alignment of Cluster's Needs with Inclusion Opportunities

Presents opportunities for BIPOC firms & entrepreneurs

- Existing BIPOC presence in the cluster (and its institutions);
- BIPOC presence in related businesses that could transition to cluster
- Opportunities lend themselves to participation by BIPOC entrepreneurs: lower barriers to entry, etc.

Presents opportunities for BIPOC employment:

- Jobs for which BIPOC labor force are qualified or can be upskilled; good career ladders
- Provide living wages and other benefits
- Accessible (nearby or by reasonable transit)

Other Community and Economic Development Impacts:

- Facilities locations
- Product impacts

Note: see the Appendix for high-level cluster definitions

Clusters: Key Criteria

3 Climate Impact:

Alignment of Cluster's Needs with Climate Resiliency

Cluster produces goods and services that further climate goals

Growth of cluster would not aggravate climate

4 Other Criteria:

Exhibits a high degree of existing organization and leadership

Exhibits opportunities for and challenges to growth that are amenable to strategic intervention

Has unusual externalities justifying philanthropic and public investment

Cluster Analysis of Potential Priority Industries

	Economic Growth Opportunity		Inclusion Impact			Climate Impact
Sector	**LQ, MSA (10 yr growth)**	**LQ, County (10 yr growth)** green = strong growth	**County Wages ($)** green = > $67k MSA avg	**County % BIPOC (emp.)** green = >= 27% MSA avg	**County % < Bachelor's** green = >= 60% (lower barrier to entry)	**Meets 1 or both criteria**
Apparel & Outdoor	1.3, (-35%)	1.6, (10%)	82,700	30%	71%	●
Metals & Machinery	0.9, (11%)	0.8, (-5%)	74,700	27%	76%	●
Computers & Electronics	4.0, (18%)	0.7, (19%)	139,600	39%	56%	●
Clean Tech	1.2, (35%)	1.0, (35%)	93,800	25%	67%	●
Food & Beverage Manufacturing	1.1, (28%)	1.0, (23%)	58,000	32%	77%	●
Software	1.1, (69%)	1.3, (117%)	129,100	23%	51%	●

● Climate impact could be augmented

STRONG & COMPETITIVE EMERGING MIXED INDICATORS

Note: see the Appendix for high-level cluster definitions

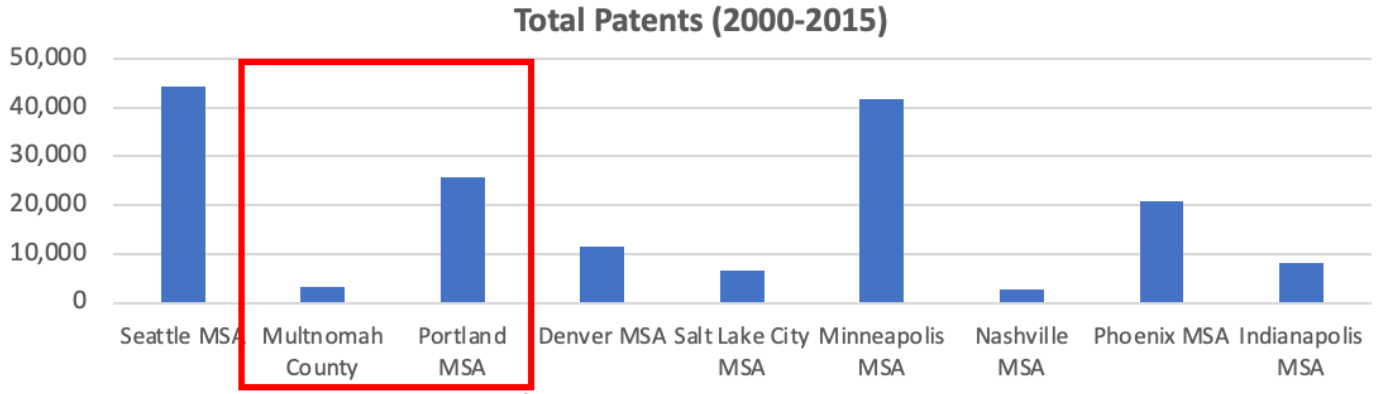
INNOVATION & ENTREPRENEURSHIP

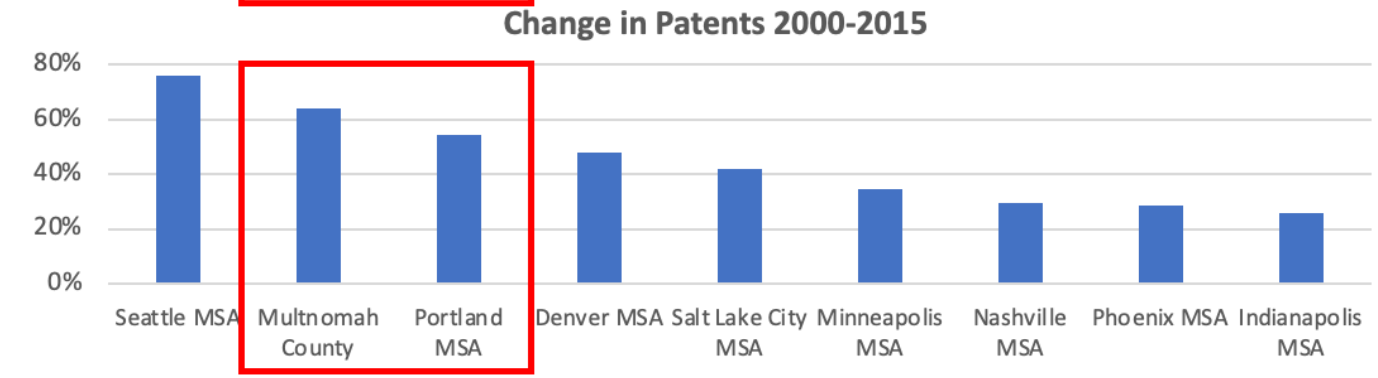
Innovation and R&D

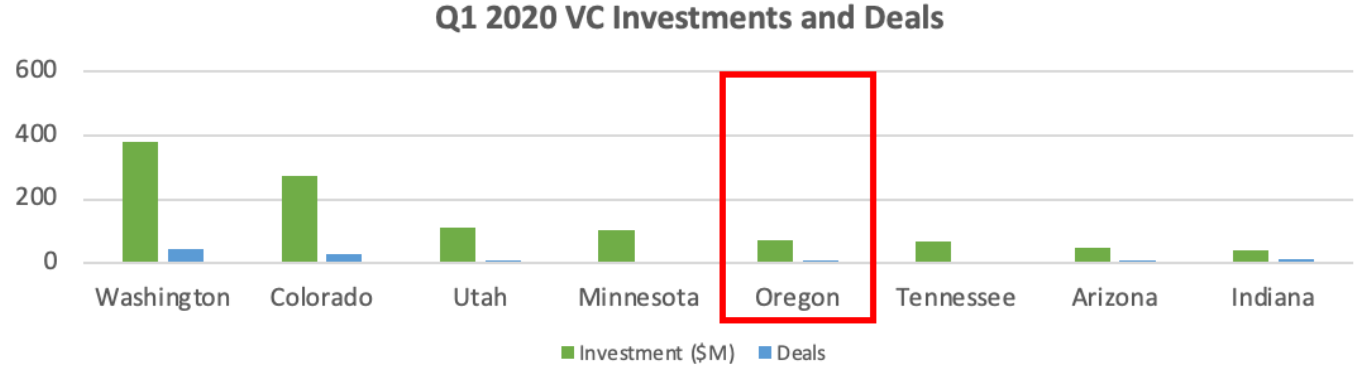
- **Limited inter-firm and university collaboration, R&D, and commercialization capacities**

- Regional corporate innovation is led by a few large companies (35 firms have over 50 patents; 2000 – 2015)
  - But, smaller companies, together, generate significant innovation (422 firms have under 10 patents)
  - Patent activity is growing in MSA and County

- VC investment in Oregon lags compared to other states
  - But, VC investment is growing in MSA (doubled from 2020 to 2021)







Source: USPTO; MoneyTree.

Entrepreneurship Ecosystem

Strengths

- Strong culture of entrepreneurship
  - Self-employed = 14.4% of County's labor force
    - US rate is just 6%
  - MSA ranked 6th for startup growth rate

- Many key components present, including:
  - Plethora of non-profits business support organizations (BSOs) offer TA
  - Networks to exchange ideas and facilitate connections, esp. peer-to-peer
  - Angel networks and VC (though VC half national average)
  - Growing community of CDFIs (currently modest capital)

Challenges

- Few firms scale – ranked 36th for % that scale up

- Navigation and coordination challenges, especially for firms looking to scale
  - Few BSOs support firms from launch to scale
  - Gaps in seed capital, Series B – firms secure growth funding elsewhere

- Insufficient institutional capacity
  - TA quality uneven; few orgs. w/needed resources, focus or sector depth
  - Limited opportunities to partner w/large firms or universities
  - Fierce competition for limited funding among non-profit BSOs

- Insufficient support for BIPOC entrepreneurs, particularly to scale
  - Disconnected from high-growth industries
  - Limited TA and capital support – reliance on informal networks to identify resources
  - Ample discussion about supporting BIPOC businesses, but little meaningful action, particularly by the private sector

Government's Role

- Historically, government at all levels (Federal / State / Local) not a significant partner or accelerator of innovation in Portland
  - Current levels of innovation almost accidental: nestled between two major tech hubs (Seattle, Bay Area), a few large firms and attractive lifestyle
- Government efforts often short-lived or lack adequate budget commitment
- Large, anchor firms' reluctance to engage reflects underlying distrust of government and hampers more collaborative, shared R&D efforts

> *"It would be helpful if big businesses were not left out of every public speech and conversations about the future direction of the city." - Corporate executive*
>
> *"Portland has a funny relationship with success. When you're young and scrappy and not making any money, you're super cool. And then as soon as you change absolutely nothing you're doing, but successful, then you're evil." - Small Business Leader*

Opportunities

- Major industry-specific public-private innovation hub focused on capital, R&D and commercialization, specialized support for entrepreneurs: large companies + research institutions + government – e.g. mHub
- Recapitalize targeted scale-up funds
- “Navigator” function – person or technology platform – to help businesses secure resources to scale (requires mapping ecosystem first)
- Tech, entrepreneurship and workforce training infrastructure to build skills for professional and/or entrepreneurship success – e.g., Manchester Bidwill, Bitwise, OneTen
- Increase procurement connections (i.e., Mercatus, Portland Means Progress) and resource liaison to facilitate introductions

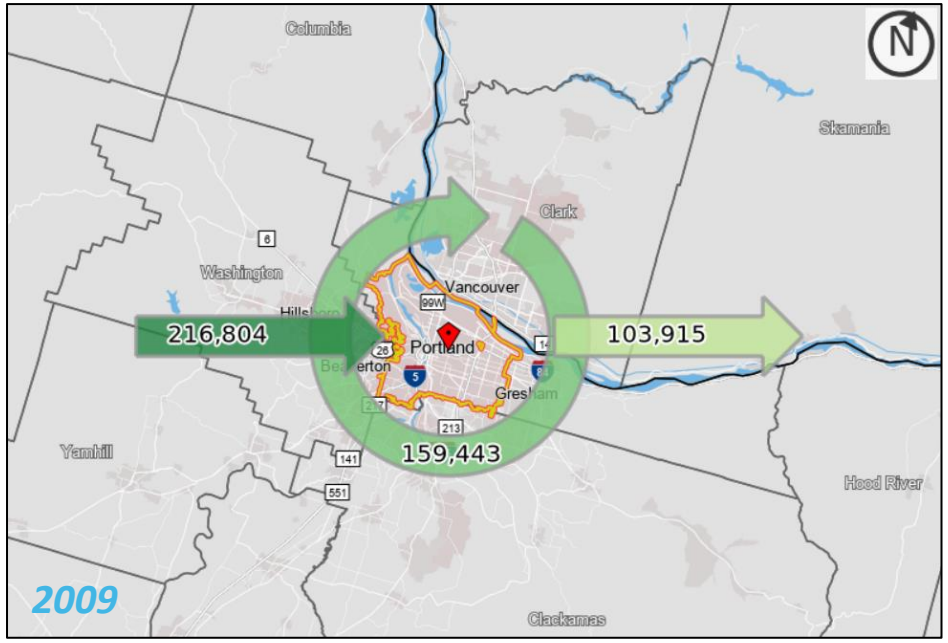
DISCUSSION

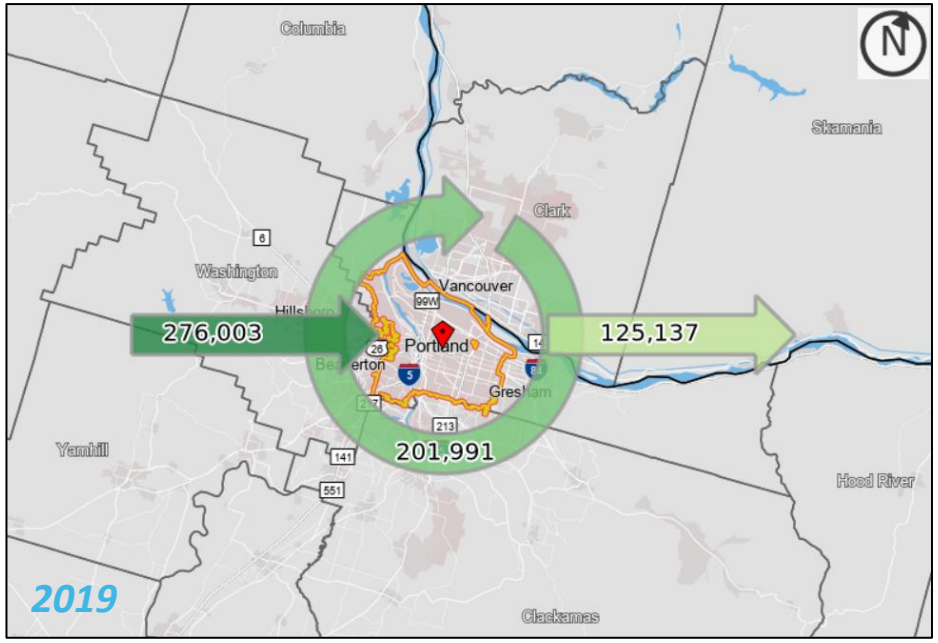
SPATIAL EFFICIENCY

Commutes are lengthening

- Since 2009, the share of Portland residents working outside of the city has decreased, while the share of both Portland residents working in Portland and non-residents travelling to the city for work has inclined
- The share of Portlanders with commutes ≤24 minutes has declined ~8% in the last ten years. With the increases in population, this means more commuters on the road for longer.
  - The largest increase in commute times in that period was those with commutes 45-59 minutes (+2.3%).

Worker Inflow/Outflow for Portland





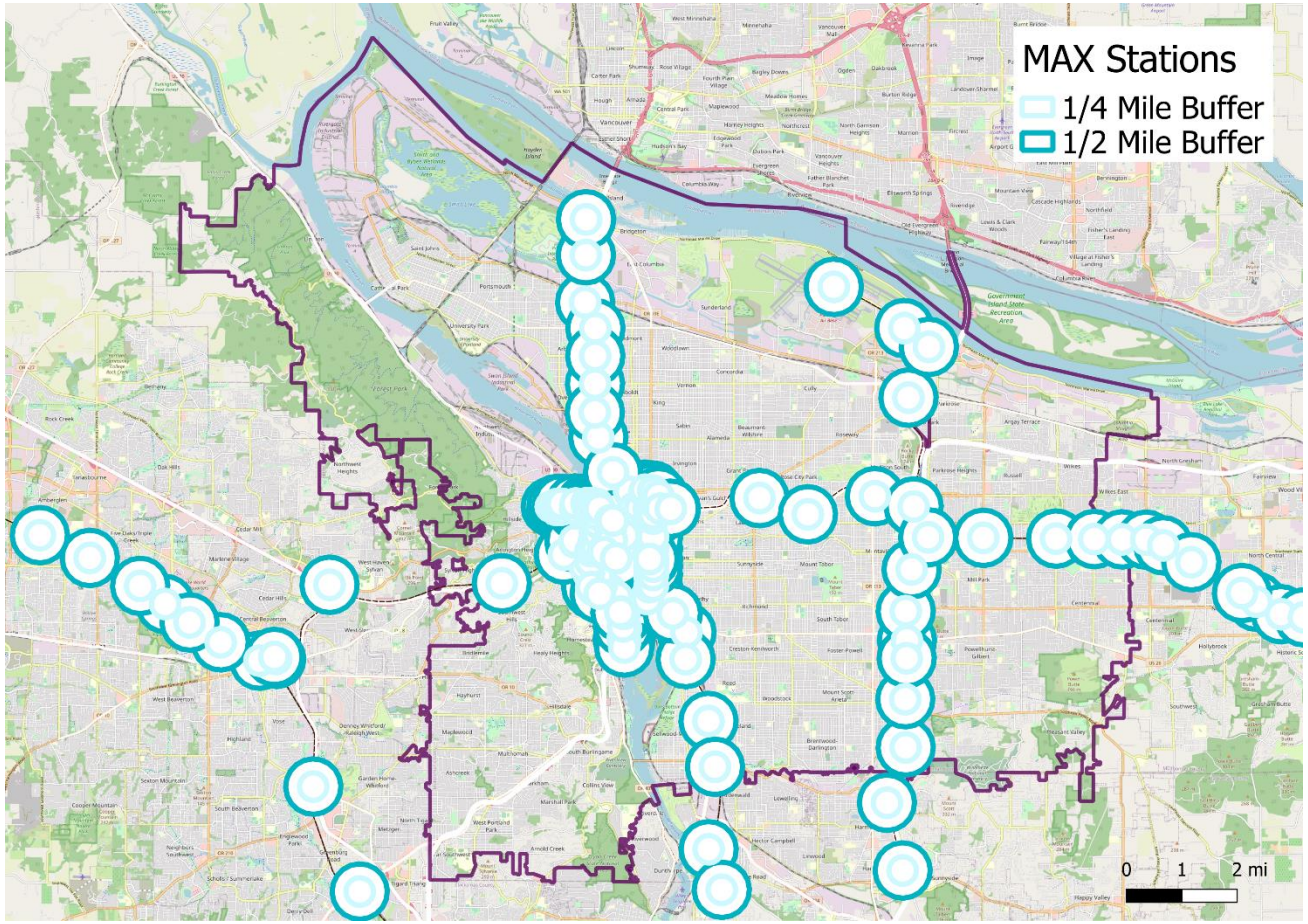
Source: https://onthemap.ces.census.gov/

SPATIAL EFFICIENCY

...especially for those without accessible public transit options

- Public transportation is lacking to wide swaths of East Portland – which is one of the furthest from Downtown's historic job density and most industrial job centers (such as those on the Willamette River and Vancouver)
    - This especially impacts BIPOC populations that live in East Portland or outside the city

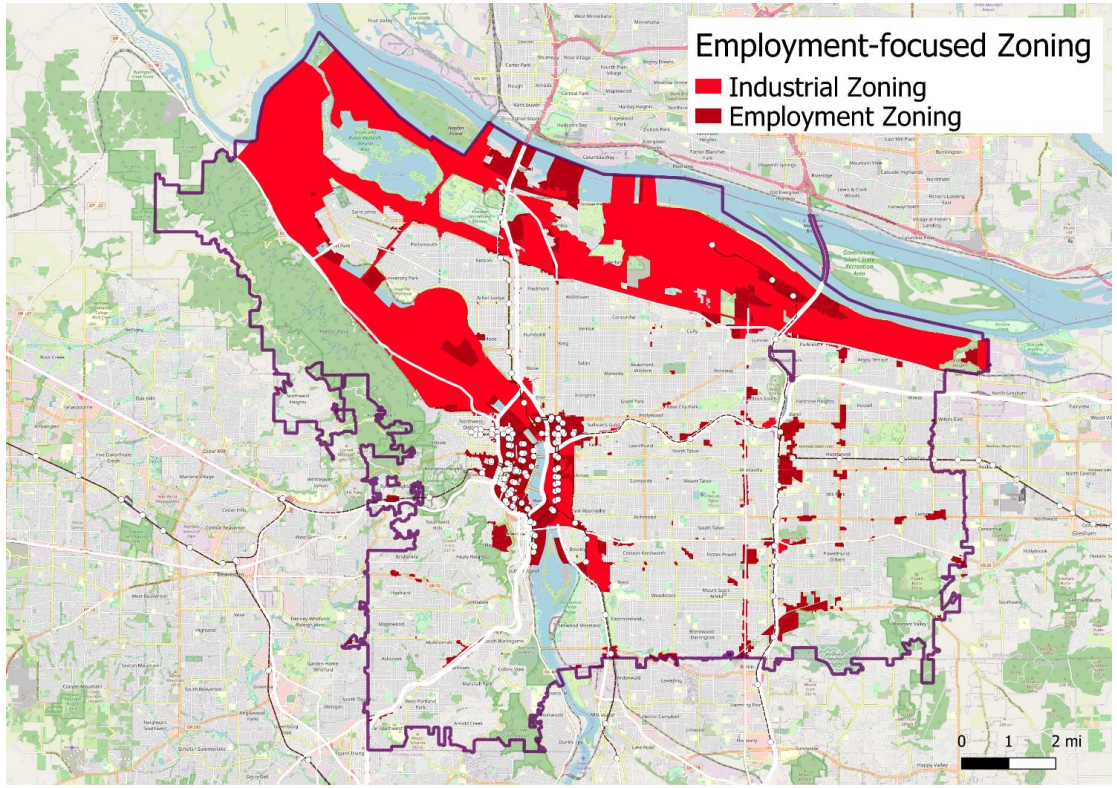
- From 2010 – 2020, the number of workers in Portland with commutes over 45 minutes increased by 15,000

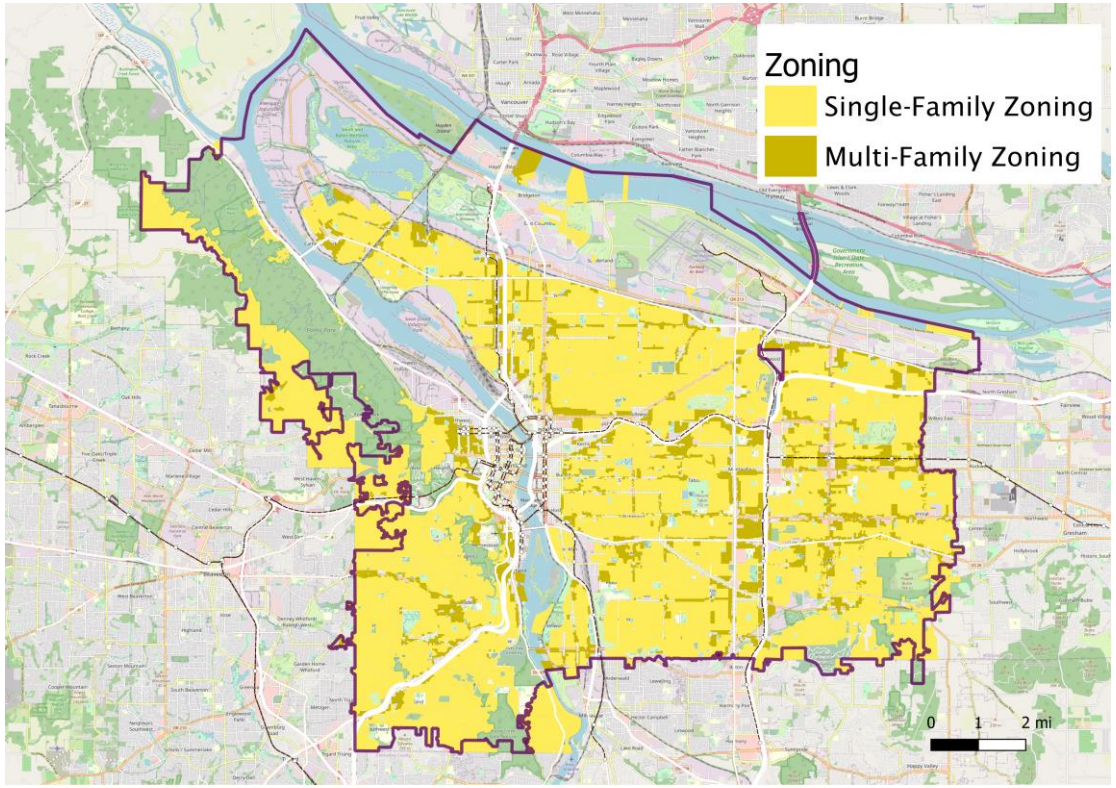


Source: US Census commute data

Changing zoning and land use could help close the gap

- Residential and employment centers are not well-integrated
- 43.2% of Portland jobs are within areas zoned “Employment”
- 21.3% of jobs in Portland are located within industrial areas in Portland
  - These areas offer both blue- and white-collar professions, but for many Portlanders are unreachable without a car





Source: RW Ventures analysis of QCEW data, City of Portland zoning shapefiles.

Beyond Spatial Efficiency: Regionalism; Agglomeration and Externalities; Role of Central City

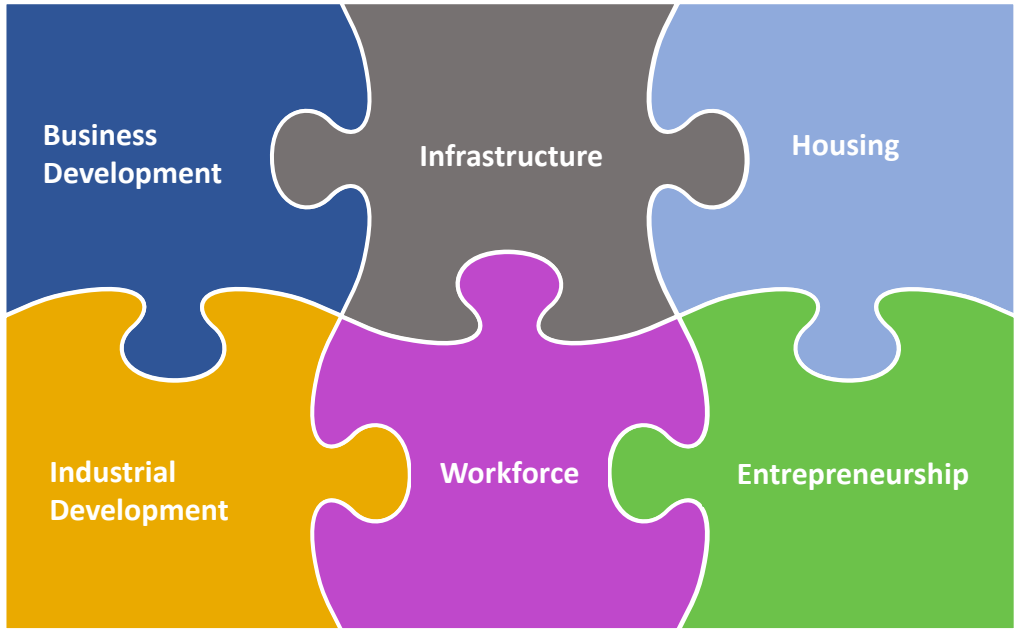
- **Why Cities?**
  - Firms and people concentrate in metropolitan areas (the key economic unit) because they are more productive when co-located with complementary firms and people, as concentration facilitates the exchange of labor, goods, and ideas; firms benefit from shared inputs (talent, suppliers); and people benefit from access to economic opportunities and amenities (supported by concentrated, prosperous demand).
- **Managing Growth**
  - As cities succeed through these agglomeration affects, they naturally attract more people and firms, and can reach a point where growth produces negative externalities, such as housing affordability and congestion, which then hamper further growth. Portland has had challenges managing growth, and now needs to define its vision as a “right-sized” city and manage to the vision.
- **Regional Competitiveness**
  - *Deployed* human capital is the main driver of growth. People seek quality jobs pools and firms seek concentrated talent pools. As people and firms locate to access dense networks of job pools and related human capital, agglomeration effects reinforce each other. Amenities also attract people and firms, but secondary factor, and flow from a growing concentration of higher-income earners. Portland has succeeded with a balance of job pools and amenities, but needs to pay more attention to business/job creation and slipping amenities.
- **Role of Portland and Downtown**
  - Historically, Portland was strong central city of regional economy, and downtown key center of gravity; City’s role in economy is shifting, and downtown needs to be re-imagined and re-vitalized

DISCUSSION

GOVERNANCE

Fragmentation

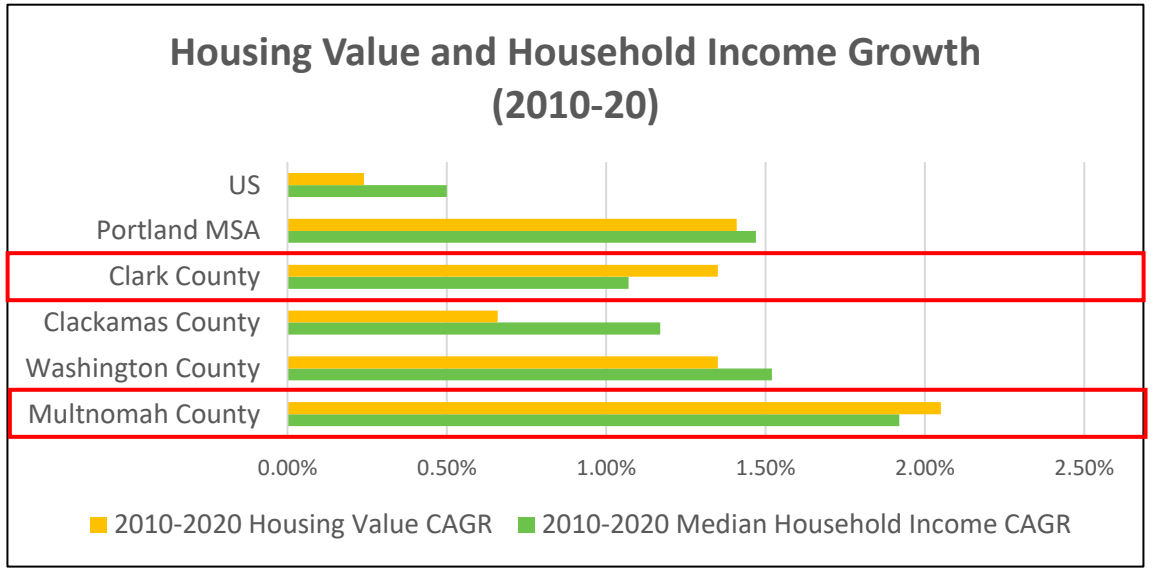
- Limited fragmentation but inefficiencies
  - Regional governance (Metro) and "youth" of region limit gen. purpose governments: only 3 per 100K pop., ranking 313 of 383 MSAs
- City gov't. constrains implementation capacity
  - Activities silo'd under elected commissioners
  - Insufficient strategic alignment, coordination and subject-matter expert participation
- Government hampers market activity
  - Opaqueness = hurdle to investment
  - Lacking comprehensive strategy and mandate to implement – reflects politicization
  - Piecemeal management, low accountability



Sources: https://www.governing.com/news/headlines/gov-most-local-governments-census.html (2017)

Tax-value proposition

- In next economy, successful cities compete on value-added, rather than low cost. Firms and people will pay higher taxes for value in public goods (education/human capital, infrastructure, amenities, development programs, etc.)
- Taxes: Portland can no longer compete on low cost
  - Business taxes +42% since Jan. 2020 (state + local), prompting relocations
  - Personal taxes high relative to large cities in other states (8th of 50; 2020)
- Value
  - High quality of life / amenities – e.g., 5th among large cities on AARP QoL Index
  - Rising unaffordability
  - Increasing houselessness, and crime



Sources: Oregon State and Local Tax Burdens (Oregon Business and Industry [OBI]; October 2020); 2021 Tax Survey (OBI); Tax Rates and Tax Burdens in the District of Columbia: A Nationwide Comparison (Gov't. of DC; 2020); AARP (https://livabilityindex.aarp.org/top-communities)

Cross-sector institutional environment and culture

- Lack of corporate engagement
  - Anti-business/anti-growth culture in government = contentious relationship with corporations
  - Vocal anti-capitalist segment of civic community is often opposed to “big business”
  - Need for greater public-private-civic coordination around economic development
- Networks
  - Relationships are between individuals, not organizations
  - Weak ties exacerbated by the turnover of leadership in area philanthropy/foundations
  - Lack of robust, coordinated, inclusive formal and informal institutional networks (including overlap of ED organizations, both private and otherwise)
- Too little action
  - Lack of sustained funding, at scale, for economic development efforts
  - Lots of ideas and discussions, but few initiatives successfully implemented and sustained
  - Interviews: “Portland does a lot of planning, but not enough doing.”

DISCUSSION

Preliminary VISION and Strategic Implications

Market analysis: strategic implications

- **Define aspirational – but achievable – vision/brand that aligns growth, equity and climate resilience – e.g.:**

  Portland is a leading global city modeling the alignment of growth, equity and climate goals; a "right-sized" city especially supporting sustainable and inclusive businesses, providing high quality jobs and amenities and engaged, innovative institutions and community

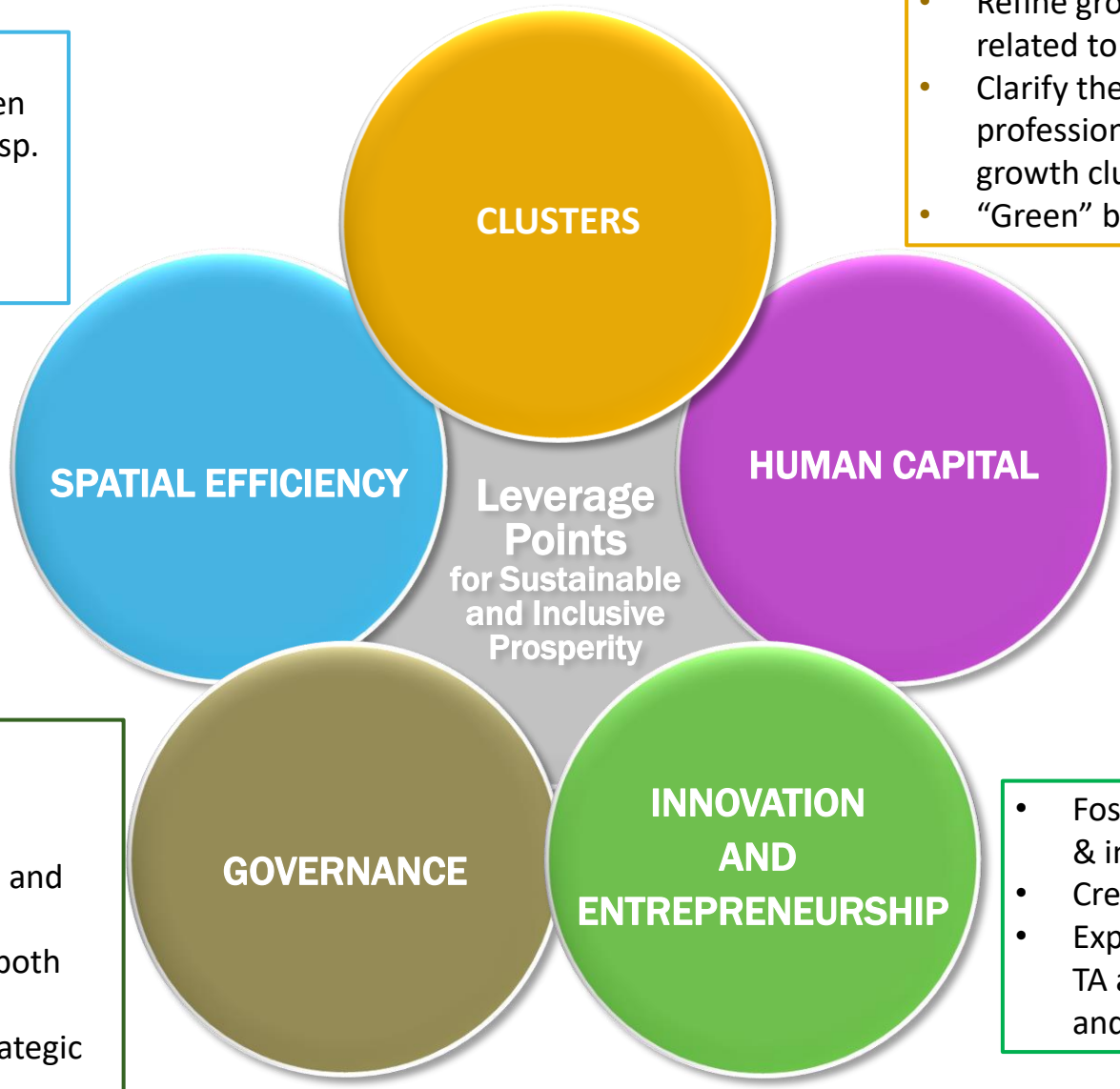
- **Deliberately develop and execute concrete strategies to realize the vision**
  - Address economic development "basics" – i.e., infrastructure, capital, programming and other investments that attract, retain, create and grow targeted businesses
  - Design and implement targeted next-generation strategies tailored to **priority clusters, human capital segments and geographies**

This presents an opportunity for Portland to define a vision for a "right sized," progressive city – and execute on it.

Market analysis: strategic implications (cont'd)

- Reinvent downtown
- Strengthen connections between employment & housing hubs, esp. for BIPOC workers
- Manage land use patterns to shrink jobs-housing mismatch

- Refine growth-cluster-specific strategies (including related to innovation, human capital, governance)
- Clarify the role of Portland, particularly professional/information services, etc. (within regional growth clusters)
- "Green" business, particularly manufacturing, focus



- Coordinate job pool and amenity strategies for human capital retention/attraction
- Focus on production, particularly re-/up-skill legacy and BIPOC workers for in-demand, living-wages occupations

- Coordinate economic development functions
- Build new cross-sector collaboratives/strengthen networks and expand participation, particularly corporate engagement and BIPOC, both general and program specific
- Specialized programs to support strategic business growth

- Foster deeper collaborations between corporate & institutional R&D
- Create major innovation hub
- Expand, coordinate, target, enable navigation of TA and financial resources (particularly scale up and for BIPOC participation in growth industries)

DISCUSSION

Appendix

Traded industries driving growth

- **Top 10 traded industries across PDX EDD region, by employment, establishments, and employment growth:**
  - **Software, engineering, management**
  - **High employment growth in manufacturing (chemical, food, equipment) (see Appendix)**
  - **Highest % BIPOC employment is *not* primarily in newer, high growth industries (see Appendix)**

NAICS description	Employment (2020)	Employment Growth (2010-2020)
Corporate, Subsidiary, and Regional Managing Offices	40,739	79%
Semiconductor and Related Device Manufacturing	27,796	26%
General Warehousing and Storage	12,015	363%
Software Publishers	9,610	49%
Engineering Services	9,440	50%
Computer Systems Design Services	6,648	35%
Hotels (except Casino Hotels) and Motels	6,423	-26%
Custom Computer Programming Services	6,277	228%
Direct Health and Medical Insurance Carriers	5,828	20%
Data Processing, Hosting, and Related Services	5,463	59%

NAICS description	Establishments (2020)	Establishment Growth (2010-2020)
Wholesale Trade Agents and Brokers	2,096	-36%
Software Publishers	1,612	309%
Other Scientific and Technical Consulting Services	1,465	201%
Custom Computer Programming Services	1,117	124%
Computer Systems Design Services	979	40%
Marketing Consulting Services	813	165%
Engineering Services	756	28%
Administrative Mgmt & General Mgmt Consulting Services	740	30%
Corporate, Subsidiary, and Regional Managing Offices	669	38%
General Freight Trucking, Long-Distance, Truckload	470	-36%

BIPOC employment

NAICS description	% BIPOC
Carpet and Rug Mills	67%
Curtain and Linen Mills	67%
Fruit and Tree Nut Combination Farming	60%
Orange Groves	60%
Citrus (except Orange) Groves	60%
Apple Orchards	60%
Strawberry Farming	60%
Tree Nut Farming	60%
Other Noncitrus Fruit Farming	60%
Grape Vineyards	60%
Berry (except Strawberry) Farming	60%
Frozen Fruit, Juice, and Vegetable Manufacturing	58%
Frozen Specialty Food Manufacturing	58%
Fruit and Vegetable Canning	58%
Dried and Dehydrated Food Manufacturing	58%
Specialty Canning	58%
Chicken Egg Production	58%
Broilers and Other Meat Type Chicken Production	58%
Turkey Production	58%
Poultry Hatcheries	58%
Other Poultry Production	58%
Hosiery and Sock Mills	52%
Other Apparel Knitting Mills	52%
Rolling Mill and Other Metalworking Machinery Manufacturing	52%
Cutting Tool and Machine Tool Accessory Manufacturing	52%
Industrial Mold Manufacturing	52%
Machine Tool Manufacturing	52%
Special Die and Tool, Die Set, Jig, and Fixture Manufacturing	52%
Postal Service	52%
Secondary Smelting and Alloying of Aluminum	50%
Aluminum Sheet, Plate, and Foil Manufacturing	50%
Other Aluminum Rolling, Drawing, and Extruding	50%
Alumina Refining and Primary Aluminum Production	50%
Air Traffic Control	50%
Other Airport Operations	50%
Other Support Activities for Air Transportation	50%

Multnomah County, industries where % BIPOC employment is over 50%

Clean Tech: Portland Region Assets

CLUSTERS

Clean Energy sub-clusters are listed that meet criteria: (1) LQ for employment or establishments is >= 0.7; employment > 1,000.

Highlighted cells are either: Employment LQ > 1; Employment Growth > 25%; % Change in Emp. LQ > 0%

	Alternative Energies - MFG/Upstream Inputs					Energy Storage	Sustainable Transportation MFG					Energy Efficient Product MFG			Professional Services						
2020	Biofuels/Biomass	Hydropower	Solar Photovoltaic	Wave/Ocean Power	Wind	Hydrogen Fuel Cells	EVs	Rest of Automotive Supply Chain	Planes	Boats	Hydrogen Charging Stations	HVAC and Building Control Systems	Building Materials	Recycled Paper Product Mfg	Environmental Svcs	IT/Data	Infrastructure/Building Construction	Grid Modernization	Transportation Systems	Recycling, Remediation, and Waste Services	Potential Carbon Capture Mfg Eqpt
Establishments	230	105	229	176	411	263	48	1,041	23	29	806	73	137	47	3,168	4,234	6,459	890	99	313	24
Employment	2,348	2,175	35,513	3,452	10,040	34,927	3,979	24,269	2,067	1,136	12,976	2,931	4,071	2,513	21,407	29,877	60,858	44,302	2,120	5,300	1,159
% Change Emp, 2010-2020	11%	16%	26%	26%	41%	25%	2%	15%	7%	38%	58%	-3%	20%	-31%	51%	65%	75%	24%	-8%	30%	38%
Emp. LQ	0.6	0.6	5.7	0.7	1.0	4.9	0.8	0.9	0.6	0.7	1.1	1.2	0.9	0.9	1.4	1.2	1.3	2.7	0.9	1.1	1.3
% Change LQ, 2010-2020	-20%	-13%	2%	-5%	14%	5%	-26%	-2%	-5%	15%	11%	-12%	-2%	-29%	18%	-3%	21%	-5%	-7%	4%	19%
Output per employee ($000s)	$79	$81	$142	$83	$63	$137	$64	$64	$99	$85	$77	$88	$66	$69	$90	$131	$75	$131	$30	$60	$79
Average Wage	$78,762	$81,041	$142,390	$82,823	$63,256	$137,272	$64,208	$64,440	$99,306	$84,580	$76,981	$88,418	$65,513	$69,222	$89,716	$130,519	$75,320	$130,865	$30,307	$59,516	$79,376

Employment concentrations: Grid modernization (44,000), hydrogen fuel cells (35,000), solar photovoltaics (35,000), environmental services (21,000) – with supporting industry strengths in IT/data and construction.

Note: all figures are 2020 unless otherwise indicated

Cluster Definitions

Metals and Machinery:
- Primary Metals Manufacturing
- Metal Fabrication
- Machinery
- Transportation Manufacturing

Computers & Electronics:
- Computer manufacturers
- Electronics manufacturers
- Components manufacturers
- (e.g., semiconductors, circuit boards, fluid meters, industrial controllers, etc.)

Apparel & Outdoor:
- Wholesaling of apparel, shoes and outdoor gear
- Manufacturing of apparel, shoes, and outdoor gear
- Those who make inputs, both material and design, for shoes and apparel

"Clean Economy" or "Clean Tech":
- Alternative Energies – Power Generation
- Alternative Energies – Manufacturing/Upstream Inputs
- Energy Storage
- Sustainable Transportation Manufacturing
- Energy Efficient Product Manufacturing
- Professional Services
- Transportation Systems
- Recycling, Remediation, and Waste Services
- Transition/Potential for Carbon Capture

Food and Beverage Manufacturing
- Food & Beverage Manufacturing
- Food & Beverage Packaging
- Food-related Equipment, Tools and Machinery
- Farm Product Wholesalers
- Food Wholesale and Distribution

Software
- Software Publishing
- Computer Programming and Design Services
- Computer Facilities Management and other Computer Services
- Data Processing and Hosting
- Internet Publishing, Broadcasting, and Web Search Portals

Opportunities within Potential Priority Industries

Sector	LQ, MSA (10 yr growth)	LQ, County (10 yr growth)	County Wages ($)	County % BIPOC	County % < Bachelor's	Strong Growth (County)	Wages > $67k (MSA avg.)	Current BIPOC >= 27% (MSA avg.)	Low Barrier to Entry	Opportunities to leverage
Apparel & Outdoor	1.3, (-35%)	1.6, (10%)	82,700	30%	71%	x	x	x	x	• Strong demand conditions, both locally and globally
Metals & Machinery	0.9, (11%)	0.8, (-5%)	74,700	27%	76%		x	x	x	• LQ is < 1 only when Transportation is included; focusing on *Machinery* there is more opportunity • Legacy base; opportunity to grow advanced, "clean" manufacturing
Computers & Electronics	4.0, (18%)	0.7, (19%)	139,600	39%	56%	x	x	x		• Opportunity to enter new semiconductor markets (e.g., EVs, industrial controls, DNA sequencing)
Clean Tech	1.2, (35%)	1.0, (35%)	93,800	25%	67%	x	x		x	• Sub-clusters to note: *Wind power manufacturing, Hydrogen Charging Stations, Environmental Services (including Architecture), IT/Data, HVAC & Building Control Systems*
Food & Beverage Manufacturing	1.1, (28%)	1.0, (23%)	58,000	32%	77%	x		x	x	• Can leverage the strong retail cluster to grow the food & beverage manufacturing cluster • Typically provides good inclusive opportunities for company ownership, employment and growth
Software	1.1, (69%)	1.3, (117%)	129,100	23%	51%	x	x			• Supports growth in many of the other clusters

STRONG & COMPETITIVE EMERGING MIXED INDICATORS

Note: see the Appendix for high-level cluster definitions

Apparel & Outdoor: Global Trends

- **Growing direct-to-consumer (DTC) and E-commerce presence**
  - Apparel and outdoor brands comprise more than 40% of all DTC sales
- **Retail bouncing back post-COVID**
  - 2022 sales expected to surpass pre-COVID levels
- **ReCommerce gaining traction**
  - Renting, reselling, or thrifting previously owned apparel; industry is projected to rise from $7BN to $36BN by 2024
- **Increasing role of digitalization in retail**
  - From AR/VR dressing rooms to big data to customizable, AI-powered fashion assistants

Apparel & Outdoor: Portland Region Assets

Apparel & Outdoor	US	Portland MSA	Multnomah County
Establishments	58,669	511	254
Employment	661,905	7,404	3,708
% Change Emp, 2010-2020	-15%	-35%	10%
LQ	-	1.3	1.6
% Change LQ, 2010-2020	-	-32%	23%
Industry output ($k)	$41,211,496	$612,660	$282,638
Average wage	$62,300	$82,700	$76,200

- Multnomah County: LQ 1.6 (up from 1.3 in 2010) – higher than the MSA, likely due to larger employers classified as corporate HQ rather than apparel-related industries.
  - This is part of the reason the MSA saw a drastic decline in employment and LQ.
- Portland MSA has highest concentration of A&O employees in the country
- 6 higher-ed A&O programs; Several VC funding opportunities
- Large, established companies (e.g., Nike, Columbia Sportswear, Adidas, Leatherman, LaCrosse Footwear) are part of an ecosystem of 500+ companies – but could be more engaged in growth of the cluster

Note: all figures are 2020 unless otherwise indicated

Apparel & Outdoor: Inclusion

CLUSTERS

Apparel & Outdoor	US	Portland MSA	Multnomah County
% BIPOC	41%	30%	32%
% Female	46%	43%	48%
% < Bachelor's Degree	76%	71%	68%

- Multnomah County employment: 48% women (above national figure); 32% are BIPOC (lower than national figure)

Photo credit: Portland Apparel Lab

Note: all figures are 2020 unless otherwise indicated

Apparel & Outdoor: Opportunities

1. **Cross-sector intersections** - opportunities for growth through crossovers with newer industries (e.g., intersection of A&O with bioscience →wearable technology, intersection of A&O with software →virtual changing rooms)

2. **Upcycling** - giving previously owned clothing a new lease on life, oftentimes upgrading the piece by changing its use, fit, or combining multiple garments to create higher fashion

3. **Textile recycling** - opportunity to become the first entry into this burgeoning practice, offering opportunity for major growth in both making a more sustainable cluster and in creating jobs

Metals & Machinery: Global Trends

- **Machinery and Transportation Equipment Manufacturing**
  - largest share of the Metals and Machinery market & highest projected growth (globally)
- **Sustainability/ESG goals**
  - driving manufacturers to reduce Scope 1 and 2 emissions – and improve the circularity of their products (e.g., zero-waste turbines)
- **COVID-19 impacts**
  - significantly affected supply chains in this industry, further disrupted by spending cuts in the mining sector, and declines in metals demand and in metals prices
- **Acceleration of digital technology adoption**
  - and, alongside this, increased need for cybersecurity investments
- **Materials innovation**
  - to respond to shortages in raw materials, and need for lightweight products (that still maintain their structural qualities), innovation in materials is resulting in new metal alloys and new composites

Metals & Machinery: Portland Region Assets

Metals & Machinery	US	Portland MSA	Multnomah County
Establishments	111,206	1,016	305
Employment	4,367,396	33,165	11,531
% Change Emp, 2010-2020	10%	11%	-5%
LQ	-	0.9	0.8
% Change LQ, 2010-2020	-	-10%	-11%
Industry output ($k)	$312,121,109	$2,477,708	$850,375
Average wage	$71,500	$74,700	$73,700

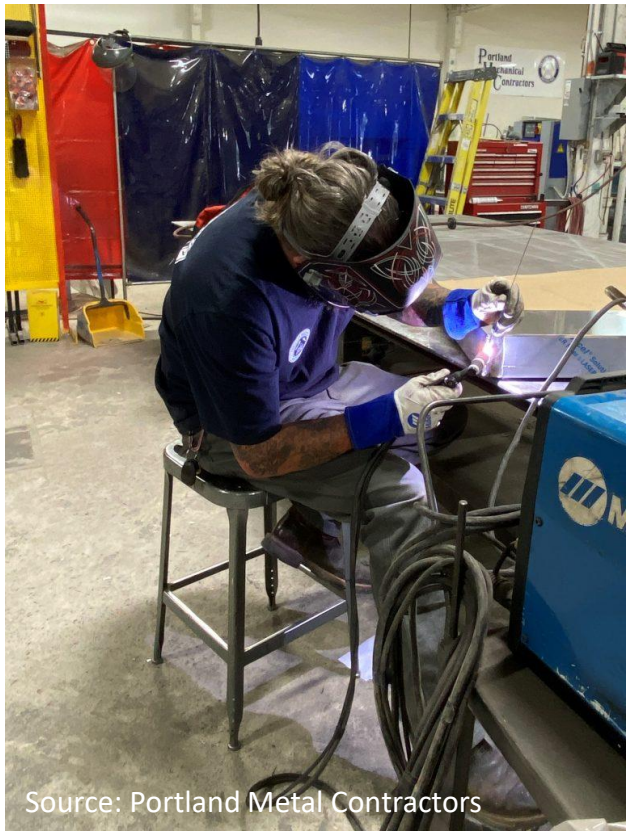
- Historically strong employment concentration in MSA & County (*LQ is > 1 with exclusion of transportation)
  - However, during COVID, the region lost ~3,500 jobs by Q3 2021 – largest loss of all clusters analyzed
- Potential for regional supply chains (strengths across primary metals, fabrication, machinery, transportation)
- Ferroalloy manufacturing strengths (used for materials innovations)
- Large manufacturers in aerospace, automotive, shipbuilding & clean energy innovations
  - But, corporates are not well connected to local supply chains or collaborative innovation efforts
- Significant industry support organizations
  - Assist manufacturers with: upskilling workforce, retooling (process improvements, climate goals), entering new markets

Note: all figures are 2020 unless otherwise indicated

Metals & Machinery: Inclusion

Metals & Machinery	US	Portland MSA	Multnomah County
% BIPOC	30%	27%	30%
% Female	22%	20%	18%
% < Bachelor's Degree	80%	76%	75%

- Low BIPOC and women employment in the sector (particularly women)
- Occupations have relatively low barriers to entry (34% of jobs do not require a Bachelor's degree) and salaries more than $10k above the national average - presenting opportunities for greater inclusion
- Salaries for Black and white Oregonians are about equal but Hispanic salaries are notably lower, while Asian salaries are notably higher (indicating distribution across entry level to executive roles)


Source: Portland Metal Contractors

Note: all figures are 2020 unless otherwise indicated

Metals & Machinery: Opportunities

1. **Materials Innovations** – lead the way in innovative structural materials in aerospace, the building industry, and clean economy. And, region could produce the machinery needed for these efforts.

2. **Retooling to meet net zero goals** – lead the way for manufacturers globally in adjusting processes to reduce Scope 1 and 2 emissions.

3. **Producing metals components for the clean economy** – Opportunities to scale production of clean economy products range from wind turbines to panel connectors for Cross-Laminated Timber to niche components for high-efficiency pumps for energy/water.

4. **BIPOC-focused training** – increase non-degree opportunities to upskill Portland's BIPOC and female workforce to enter high-growth sub-sectors or progress on career ladders

5. **Diversifying ownership** – Facilitate matchmaking between BIPOC entrepreneurs and companies ready for acquisition

Computers & Electronics: Global Trends

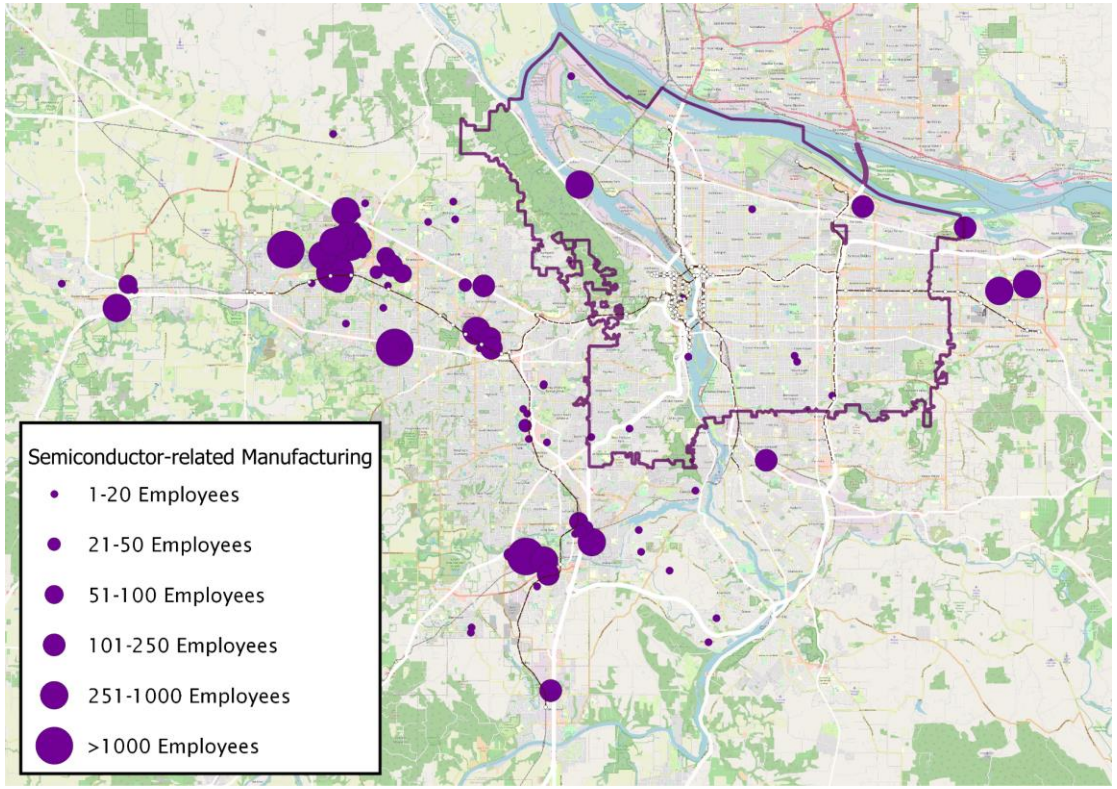
- **Projections for continued growth**
  - Demand for computer and electronics components from new sectors; microchip industry projected to grow 10% in 2022 alone
- **CHIPS+ Act**
  - $52 billion spending package of incentives and subsidies to reduce reliance on foreign semiconductors and scale up US production
- **COVID-driven microchip shortage**
  - Impacts to chip manufacturers: higher production costs as labor & raw material prices increase; increased revenue from sale price increases
- **Talent shortage**
  - mostly in the programming and software-related occupations
- **Increased automation**
  - 39.7% of jobs are at risk of automation
- **Low minority ownership**
  - In US, 12.8% of all manufacturing firms are owned by POC (compared to 19% of firms of any type), and 84% of minority-owned manufacturing firms have fewer than 20 employees, compared to 74% for non-minority-owned manufacturers

Computers & Electronics: Portland Region Assets

CLUSTERS

Computers & Electronics	US	Portland MSA	Multnomah County
Establishments	34,757	402	98
Employment	1,226,394	41,161	2,895
% Change Emp, 2010-2020	-0.3%	18%	19%
LQ	-	4.0	0.7
% Change LQ, 2010-2020	-	11%	17%
Industry output ($k)	$171,700,871	$5,475,085	$293,145
Average wage	$140,100	$139,600	$101,300

- Of all clusters, it is near the top in terms of average wages
- MSA has 3.6% of employees nationally (compared to 0.8% of employees in the overall economy)
- Significant 10-year growth in County's employment concentration (17%)
- Large companies (e.g., Intel, Lam Research, Tektronix, HP, Siemens)
- Well-trained workforce, some supplied by specialized university training programs at UofO, OSU, Portland State
- Reliable and inexpensive power
- Innovation spurred through spinoffs; not enough support for entrepreneurship



Note: all figures are 2020 unless otherwise indicated

Computers & Electronics: Inclusion

Computers & Electronics	US	Portland MSA	Multnomah County
% BIPOC	37%	39%	31%
% Female	33%	28%	29%
% < Bachelor's Degree	62%	56%	68%

- Higher share (31%) of BIPOC employees than the other clusters except for food and beverage manufacturing & apparel – though just 3% are Black, a percentage that has been persistently low
- Automation threatens 1,100 jobs within the cluster – and jobs that don't require a degree are more vulnerable


Source: Business Today

Note: all figures are 2020 unless otherwise indicated

Computers & Electronics: Opportunities

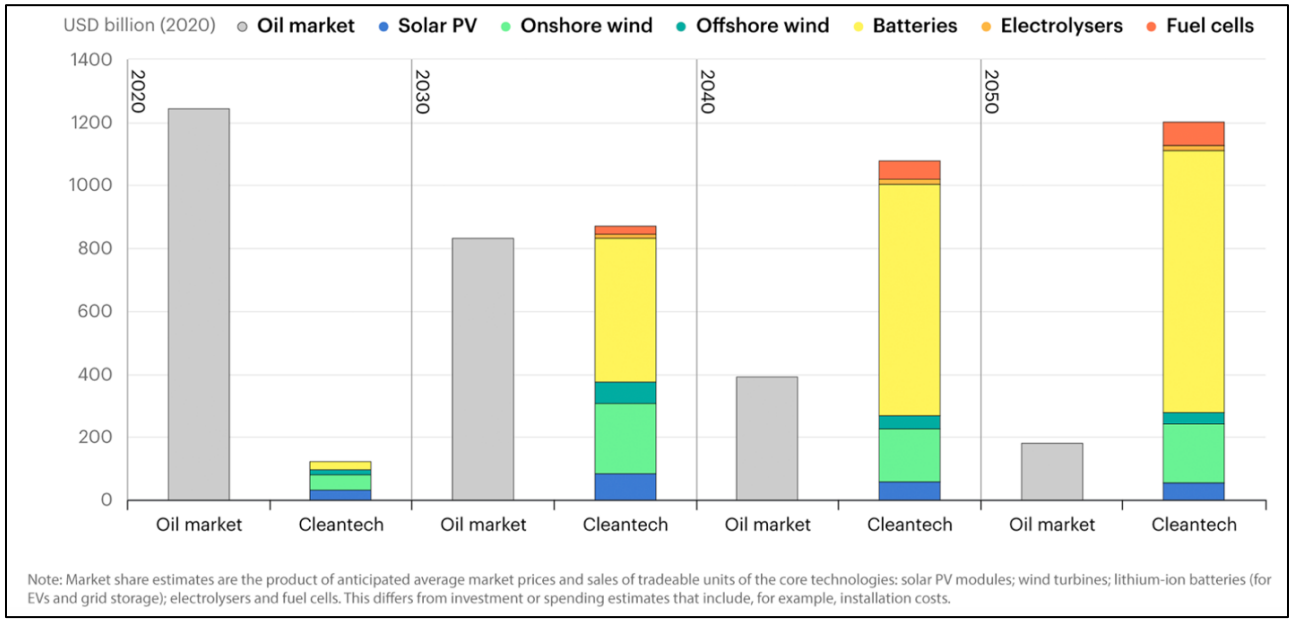
1. **Enhance talent pipeline** – industry-led solutions, particularly for BIPOC population

2. **Enter new markets** - opportunity to provide the electronic and computer components for EV & autonomous cars, etc.

3. **Cluster organization to address common growth barriers** - e.g., increase chemical storage opportunities to supply the sector (in an environmentally friendly way); identify multi-acre sites for industrial development; strengthen suburbs-city supply chains and relationships

Clean Tech: Global Trends

- **Net-zero transition** – biggest driver of change in clean economy
- **Growth of clean tech investments** – e.g., in alternative energy, storage, grid modernization
- **Convergence of digital technology and energy technology**
- **Inequities** - gender and racial inequalities within industries/occupations
- **Manufacturing presence** ~26% of clean economy jobs are in manufacturing
- **Scientific innovations** - 1 in 10 founders are from academia



*If the world were on track for net zero emissions by 2050, there would be a **$27 trillion market opportunity** for manufacturers of wind turbines, solar panels, lithium-ion batteries, electrolyzers and fuel cells*

Clean Tech: Portland Region Assets

Clean Tech	US	Portland MSA	Multnomah County
Establishments	1,597,033	16,661	5,894
Employment	21,239,475	209,068	73,697
% Change Emp, 2010-2020	19%	35%	35%
LQ	-	1.2	1.0
% Change LQ, 2010-2020	-	9%	11%
Industry output ($k)	$1,855,480,962	$19,607,524	$6,603,870
Average wage	$87,400	$93,800	$89,600

- Clean Tech encompasses a broad range of subclusters (below) – therefore this data is analyzed further at the subcluster level (see next slide).
  - *Alternative Energies – Power Generation*
  - *Alternative Energies – Manufacturing/Upstream Inputs*
  - *Energy Storage*
  - *Sustainable Transportation Manufacturing*
  - *Energy Efficient Product Manufacturing*
  - *Professional Services (including Architecture)*
  - *Transportation Systems*
  - *Recycling, Remediation, and Waste Services*
  - *Transition/Potential for Carbon Capture*

Note: all figures are 2020 unless otherwise indicated

Clean Tech: Portland Region Assets

Established strengths in:

- Solar PV manufacturing, Hydrogen Fuel Cells, Grid Modernization – see Appendix for more detail

Growing strengths in:

- Wind power manufacturing, Hydrogen Charging Stations, Environmental Services, IT/Data, HVAC & Building Control Systems – see Appendix for more detail

Other assets:

- Private sector innovation (e.g,. ESS, Powin, Nuscale, Avangrid, Vestas, Veris)
- Demand for low embodied carbon materials for buildings and products
- Research from PSU, OSU and UofO on wind and solar innovation, renewable hydrogen, nuclear reactors
- Leading-edge public policy and strategy (e.g., reduce emissions by 80% in 2050)
- EDA BBBRC $41.4M award for mass timber
- Portland's green brand

Clean Tech: Inclusion

Clean Tech	US	Portland MSA	Multnomah County
% BIPOC	32%	25%	21%
% Female	28%	27%	30%
% < Bachelor's Degree	71%	67%	67%

- Lower share of BIPOC employees than other clusters (but this average % differs significantly for each Clean Tech subcluster)

- Nationally:
  - Surveys indicate that women, particularly women of color, feel that the established networks within the industry are a barrier to inclusion

- A significant portion of jobs in Clean Economy are in manufacturing (~25%) – a sector which also typically has lower barriers to entry for employment and consists of on-the-job or credentialing training rather than degrees.

Note: all figures are 2020 unless otherwise indicated

Clean Tech: Opportunities

1. **Manufacturing** – of products for wind power, hydrogen charging stations, machinery/equipment for carbon capture, building controls, cross-laminated timber

2. **Professional services** – environmental consulting to support implementation of the green products produced in the region & greening manufacturer operations; IT/data strengths to support development of smart energy products; contractors to support building retrofits or modular ADUs/green infrastructure

3. **Recycled product innovation** –Develop innovative recycled materials for products like structural steel or batteries

4. **Private-sector led innovation** – increase BIPOC entrepreneurship (e.g., with corporate accelerators) to solve complex energy challenges and further demonstrate Portland's brand

Food & Beverage Manufacturing: Global Trends

- **Supply Chain Restructuring –** COVID-19, Ukraine, demand for locally sourced foods driving re-shoring, localizing supply chains
- **Plant-Based Foods –** Sales of plant-based food alternatives projected to increase 5x over next decade
- **Functional Foods –** Consumers seeking food that provides distinct physical benefits (energy, mood, focus) on top of nutrition
- **Private Labels -** Inflation driving consumers back to private labels, which have greatly diversified offerings over past decade
- **Automation and Digitalization of Manufacturing –** Labor pressures – resignations, increased labor costs– pushing companies more aggressively toward automation

Food & Beverage Mfg: Portland Region Assets

Food & Beverage Manufacturing	US	Portland MSA	Multnomah County
Establishments	151,535	1,676	670
Employment	4,022,052	35,949	14,280
% Change Emp, 2010-2020	11%	28%	23%
LQ	-	1.1	1.0
% Change LQ, 2010-2020	-	10%	0%
Industry output ($k)	$239,025,935	$2,084,070	$815,811
Average wage	$59,400	$58,000	$57,100

- Total cluster not highly concentrated in the region or county, but some production sub-clusters are strong:
  - 1) **Baked Goods, 2) Specialty Foods and Ingredients, and 3) Beverages** each had LQs over 1.4 and 1,400+ employees in 2020
- Strong local demand for natural, locally sourced products, helps those companies scale to exporting size
- Surplus of workers with some college or an Associate's degree to fill manufacturing roles

Note: all figures are 2020 unless otherwise indicated

Food & Beverage Manufacturing: Inclusion

Food & Beverage Manufacturing	US	Portland MSA	Multnomah County
% BIPOC	43%	32%	33%
% Female	33%	34%	32%
% < Bachelor's Degree	81%	77%	77%

- The region/county's cluster employment is slightly more diverse that the US, when comparing to the workforce's demographics
- Food & Beverage is Portland's most accessible priority cluster in terms of education required
- Cluster offers some of the most inclusive entrepreneurship opportunities of any traded industry

Note: all figures are 2020 unless otherwise indicated

Food & Beverage Manufacturing: Opportunities

1. **Regionally Focused Cluster Organization** – several major producers have expressed interest in helping to create a food and beverage organization focused on growing Portland's industry
2. **Sustainable Foods** – there is growing market demand for products that align with IEDS climate objectives, can strengthen Portland's green brand
3. **Filling the "processing gap"** – not enough ingredient options that are "semi-processed" – like chopped or diced vegetables – AND local; growing these types of companies would fill market demand and localize supply chain.

Software: Global Trends

- **The rise of remote work** – the days of tech workers in the office 9-5, five days a week, looks to be behind us
- **Growth of the internet of things** – the software cluster is at the heart of the world becoming more connected
- **Software was resilient through Covid** – both nationally and locally, employment remained strong in the cluster
- **Maturation of software and computer systems** – dated systems will require major upgrades for modernization

Source: Portland State University

Software: Portland Region Assets

Software	US	Portland MSA	Multnomah County
Establishments	389,560	4,586	1,983
Employment	3,358,405	31,350	14,800
% Change Emp, 2010-2020	65%	69%	117%
LQ	-	1.1	1.3
% Change LQ, 2010-2020	-	-8%	30%
Industry output ($k)	$507,971,194	$4,048,701	$1,988,041
Average wage	$151,300	$129,100	$134,300

- Local resiliency outpaced US during Covid
  - While Software was resilient nationwide, the dip and following job growth was more pronounced in Mulnomah County than nationally
- Highly educated population is good for labor dynamics in the cluster
- Companies are enthusiastic about convening as well as increasing BIPOC and female representation in the field
  - Plentiful industry support organizations representing a wide swath of employees
- Portland's location and **relative** affordability should continue to draw workers in the field trying to avoid Bay Area or Seattle

Note: all figures are 2020 unless otherwise indicated

Software: Inclusion

SOFTWARE	US	Portland MSA	Multnomah County
% BIPOC	38%	23%	20%
% Female	34%	34%	35%
% < Bachelor's Degree	50%	51%	53%

- One of the lowest shares of minority representation of all clusters
  - The % BIPOC locally lags the US in a meaningful way
- Highest educational burden of all clusters – with the lowest percentage of workforce with a high school degree or lower.
- Trails only apparel & outdoor and creative economy for female representation.


Source: Portland State University

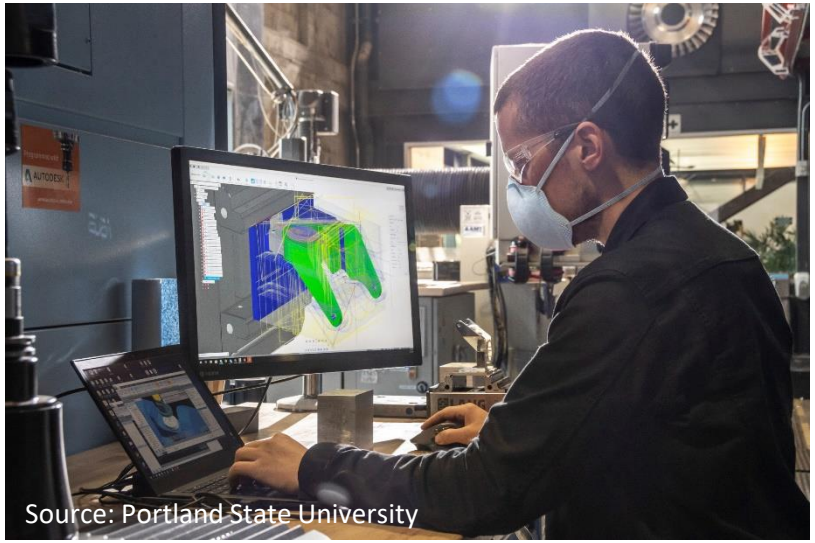
Note: all figures are 2020 unless otherwise indicated

Software: Opportunities

1. **Increased seed and VC funding** – the local funding environment could be stronger, with an investment from the City or State, a fund could both help grow the sector, build entrepreneurship, and pay off for government

2. **Increase minority representation in the field through public programs** – purposefully investing in computer science and coding courses in communities of color, either through schools or libraries (for older learners), could be powerful if done in tandem with a hiring pipeline

3. **Focus on verticals identified as existing strengths in market** – survey research firms, creative software to support design industries (font management, architectural design software), and cybersecurity have a foothold in the market. Focusing resources on these verticals could help the market become a national leader.


Source: Portland State University