

Employment Demand Factors & Trends

Task 1 Report - Metro Employment & Economic Trends Analysis

Final Draft

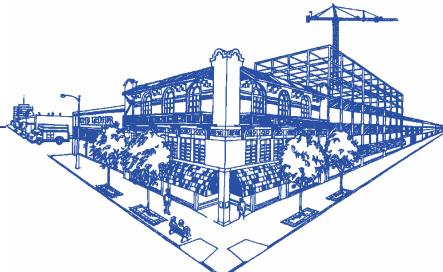
Prepared for:

Metro

March 2009

**E. D. Hovee
& Company, LLC**

Economic and Development Services



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Final Draft

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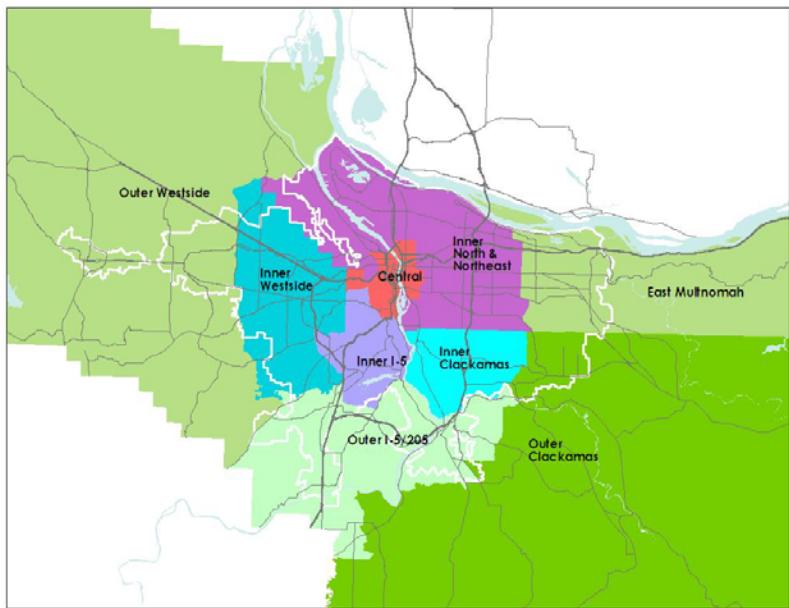
EMPLOYMENT DEMAND ANALYSIS OVERVIEW

Metro is engaged in conducting an employment and economic trends analysis for the Portland metropolitan region. This report covers *Task 1*, describing employment trends and demand factors and focused on the region's documented experience over the 2000-2006 time period.

For this analysis, the three-county Metro region has been divided into nine geographic subareas, which can be further aggregated to three overall *ring geographies*:

- Central (also a subarea of its own)
- Inner ring (Inner North & East, Inner Westside, Inner I-5 and Inner Clackamas)
- Outer ring (Outer Westside, East Multnomah County, Outer Clackamas and Outer I-5/205).

Market Area Geographies



This overview highlights major observations and findings from this Task 1 *Employment Demand Factors and Trends* analysis report, including a summary of implications for shaping a new employment land demand paradigm. Employment is one of many approaches to measuring economic activity. Because the focus of this report is how business uses land, employment and building development are emphasized. Other factors – such as wage levels, technology and capital intensiveness, monetary output and comparative regional advantage (or location quotients) – are not considered. This report also does not evaluate which industries and jobs the region should endeavor to encourage, but rather reports past trends as illustrated via employment data.

EMPLOYMENT TRENDS SUMMARIZED

Employment trends have been evaluated by market subarea geography, 2040 Design Types and by NAICS industry sector. Consistent with the forecast allocation approach being recommended, primary emphasis and confidence is placed on summary data for the subarea and design type geographies.

Employment by Industry Sector. As of 2006, the tri-county region (both inside and outside the Urban Growth Boundary) had total non-agricultural covered employment estimated at 842,000 jobs. This represents an increase of roughly 22,500 jobs since 2000, a relatively slow

0.5% annual job growth over a period marked by an economic downturn and subsequent recovery.

This is the longest time period for which subregional data is available and encompasses close to a full economic cycle. However, growth within this time period was far weaker than the 2.9% annual average growth experienced during the previous decade (see Figure 1, Chapter 1).

In 2006, the tri-county area captured 83% of jobs within the larger seven-county region, with the bulk of remaining jobs located in Clark County, Washington. This was a slight reduction from its year 2000 capture rate of 84%.

Sectoral shifts in the region's employment reflect the evolution of business job classification, as well as actual job losses and gains. When viewed by industry sector, the following key region-wide trends are noted:

- The service sector is associated with by far the largest recent growth and in 2006 accounted for 56% of the tri-county's covered employment.
- Health care and social assistance dominated service sector job growth, with a net gain of 17,000 jobs. Other growth service industries included accommodation and food service, management of companies and public administration.
- The industrial sector includes construction, utilities, manufacturing and wholesale and distribution. In 2006 30% of tri-county jobs were within the industrial sector, a decline from this sector's 32% share in 2000. Regional employment shifted away from this sector at an average annual rate of 0.6% and a reported total decline of 8,800 jobs.
- Manufacturing, a subset of the industrial sector, reported a net loss of 6,700 jobs. This is associated both with businesses retracting and moving outside of the tri-county area (including to Clark County), and a shifting in businesses' self-description of their employment away from industrial SIC/NAICS job classifications. A countervailing trend of note over this time period is manufacturing output, which the Bureau of Economic Analysis reports increased by more than \$9 billion for the seven-county region between 2001 and 2006. Within the manufacturing sector, business growth (or profit) appears to contradict job growth, due in part to high commodity pricing and strong export markets. Equivalent data for other industrial sectors such as transportation and warehousing is suppressed due to confidentiality.
- Retail jobs also declined over this time period. Ten percent of tri-county employment is within the retail sector, which contracted at a reported rate of -1.2% annually for a net loss of 6,300 jobs between 2000 and 2006. This contrasts with the 2.3% annual job growth rate retail experienced during the 90s. *Note:* prior to 2000, retail included dining (with SIC job classification). Post-2000, NAICS places dining within the service sector.

Employment by Market Subarea. Based on the subareas defined for this analysis:

- About one-half of the tri-county region's 2006 employment was located within the largely developed inner ring geography; the remainder was divided between the central ring and the outer ring.

- This distribution of regional employment is shifting, as central and inner ring geographies lost jobs by between 0.2% and 0.5% annually during the first half of this decade, and outer ring geographies added jobs at a pace above 3% per year. While outside of the purview of this report, Clark County also reported rapid job growth during this time period of 2.2% annually. This growth rate is below the tri-county outer ring subareas and significantly above the over-all tri-country growth rate of 0.5%.
- Service sector jobs increased throughout the region, in all but one subarea. The Central subarea and Outer Westside subareas report especially strong service sector gains at 10,400 and 7,000 net new jobs respectively. This likely reflects both job growth and some job reclassifications.
- Within the inner ring, the Central and North & Northeast subareas show the largest job loss, particularly for industrial jobs. Together, these two submarkets report a decline of 24,000 industrial jobs, resulting in a net job loss across all sectors of 16,800. Most inner ring geographies also experienced retail job losses, for a combined central/inner ring loss of 7,800 retail jobs.
- In contrast, outer ring subareas added industrial jobs, enough to off-set about 65% of inner/central ring losses (but still resulting in a regional industrial employment decline). Retail job growth was also widespread across outer ring subarea (+3,200), enough to offset about 50% of inner/central ring employment decline.

Employment by Design Type. Job growth also has been analyzed for 2040 Design Types:

- All of the *urban-focused* 2040 Design Types (centers and corridors) reported job growth occurring at rates below the 0.5% annual growth rate experienced region-wide with the exception of Town Centers, which grew at an equivalent pace. City Center and Corridors reported half as rapid growth (0.2% annually) and Regional Centers reported an extremely low 0.03% annual growth rate. This did vary by subarea, as discussed in the body of the report. Service and public sector jobs fueled what growth did occur within these most urban of the 2040 Design Types, with the exception of Town Centers which also reported retail growth.
- *Title 4* Industrial Areas are associated with the strongest growth rate at 4.3% annually, primarily via industrial jobs. However, approximately 30% of net new jobs locating in Industrial Areas were non-industrial (primarily service sector) jobs. The bulk of Industrial Areas (85%) are located within the region's outer ring. Employment Areas (58% of which are in the outer ring) grew more slowly at 2.4%, primarily through service sector jobs that offset a significant shift away from industrial employment. Regionally Significant Industrial Areas (RSIAs) reported a job base erosion of close to 1% annually. RSIAs are predominantly located within the central and inner ring geographies; about 70% are within the Portland harbor/Columbia Corridor.

DEVELOPMENT TRENDS SUMMARIZED

Development of industrial, commercial and mixed use building space for employment use has also been evaluated at a subregional level using the proprietary CoStar real estate inventory. This analysis addresses questions of how job growth corresponds to real estate development, the form

of recent development throughout the region and to the extent to which these patterns have changed in recent years.

Industrial & Commercial Development Trends. The commercial real estate industry typically distinguishes between industrial (including flex space), office and retail building types, a classification scheme far more generalized than job sectors. Key trends are summarized by building type and highlight the differences between subarea and design type geographies.

Overview Notes:

- Despite a regional shift away from *industrial* sectors jobs between 2000 and 2006, the CoStar commercial real estate inventory indicates that over 17 million square feet of industrial space has been completed since 2000 (although ‘recent development’ covers a longer time frame, through January 2009 rather than through 2006). This partly reflects a dispersal of service sector jobs into lower cost industrial and retail building formats, but also indicates a disconnect between job trends and development trends.
- While reported *retail* jobs declined, CoStar data indicates that 9.3 million square feet of new retail space was developed throughout the region. Some of this space outside of regional retail centers undoubtedly accommodates service sector (including dining related) employment.
- The region’s service sector driven job gains of close to 40,000 (including public sector) have served as a major impetus for the more than 9.5 million square feet of net added *office* space.
- Some discrepancies between building space and job numbers may exist as the result of mixing different data sources. However, this analysis clearly suggests that the development of industrial and commercial *real estate product* has out-paced job gains since 2000, throughout the region.

Industrial Development:

- Aligning with reported industrial job trends, a substantial portion of new industrial building product appears to be concentrated in the tri-county region’s outer ring (61%). Clark County also developed significant industrial product over this time period. Virtually no net new product classified as industrial has been built in the Central subarea since 2000.
- Post-2000 industrial development has concentrated in the subareas of Inner North and Northeast (inner ring), and East Multnomah and Outer I-5/205 (outer ring).
- The vast majority of both historic and recently developed industrial space is classified as distribution or warehouse throughout the region.
- Most industrial product remains 1-2 story in height, with a few notable exceptions such as Intel’s Ronler Acres (half office, 4 stories) and two-story buildings that house clean rooms, warehouse and food processing in other outer ring subareas.
- Flex space (typically with 50%+ office use) remains a small component of the over-all industrial market. It is heavily concentrated in the Inner Westside, with recent development also favoring outer Westside subareas. About 30% of post-2000 flex space

is two stories, mostly in conjunction 30,000-40,000 square foot structures in campus-oriented business or office parks.

Office Space Development:

- The outer ring's share of commercial buildings (both office and retail) close to doubled for post-2000 development.
- The Central subarea continues to support a slight majority of the region's office inventory (52%). Since 2000, however, the Central subarea has captured only 26% of the 9.5 million square feet of new office space developed in the tri-county region. In contrast, 41% of new development has located within the inner-ring (and 33% in the outer ring).
- The Central subarea retains its Class A office space dominance with 58% of the region's inventory, but Class A space developed since 2000 has been fairly evenly distributed between the Central subarea and the inner and outer ring.

Retail Development:

- New retail development has favored outer ring subareas, which have captured close to 50% of all post-2000 retail development (and virtually 100% of net retail job gains). In comparison, Portland's Central subarea has captured just 10% of new retail building development.
- As might be expected, with recent retail development larger retail centers have favored the outer ring subareas whereas smaller centers and main street development have dominated Central subarea and inner ring development patterns.

Structured Parking:

- While not generally considered a real estate development product of its own, structured parking is critical to achieving the higher urban densities associated with the 2040 design concept. To date, structured parking development remains limited to narrow geographies and uses within the region.
- Outside of the Central City, office buildings within Washington Square regional center Kruse Way (Inner I-5 subarea) have developed some structured parking without public subsidy.
- Within the Central subarea, a substantial portion of structured parking for retail customer use is provided as part of the City of Portland's *Smart Park* system. Outside of Central subarea mixed-use products, structured parking is confined to regional malls within the inner ring and Outer Westside subareas.
- Medical institutions and smaller medical office buildings are a prime sponsor of structured parking, especially in the Inner Ring and the Outer Westside subareas. Major corporate campuses – such as Nike, Adidas and Intel – have also developed structured parking over the last 10 years.
- Other identified examples of structured parking are municipal sponsored, either serving city offices (Hillsboro) or a private development supported by public funding support (for instance, the Beaverton Round). The region's office, business and industrial parks still generally rely primarily upon surface parking lots.

Intensity of Employment Development. This analysis operationalizes development density via the metric of floor area ratios (FARs), which are calculated by dividing building square footage by land square footage. Key observations are noted as follows:

- Commercial sector building development – office and retail – has become denser post-2000 across the region, although at present only the Central subarea is associated with FARs averaging above 1.0.
- All subareas for which data is available report substantial post-2000 commercial FAR increases ranging between 80% and 170% compared to development on the ground pre-2000.
- On average, even inner ring subareas continue to build commercial and industrial at single-level, surface-parking densities (FARs below 0.5). An important caveat for this analysis is that square footage data appears to be extremely limited for development within Washington and Clackamas Counties.
- Within the region’s urban-focused 2040 Design Types, employment-related FARs are much higher, approaching 1.0 within regional centers and exceeding 0.40 within town centers and corridors. These areas clearly appear to have densified in recent years (post-2000).
- Title 4 areas – RSAs, Employment and Industrial Areas – report typical industrial and office FARs of 0.30, with little variation over time (except for RSAs where FARs have increased for development occurring post-2000).

DEMAND FACTORS

The final chapter of this Task 1 report covers several topics of special interest in allocating job growth to the region’s land supply.

Employment on Vacant vs. Redeveloped Land. A major factor in estimating the land needs associated with future employment growth is the extent to which building development locates on vacant (greenfield) parcels versus parcels on which some existing – likely low valued – development is located, so that the new building represents land redevelopment.

Historic use data was available for a limited portion of parcels for which post-2000 development is reported. For the 450 taxlots region-wide for which data was available, more than one-half (53%) were properties on which some amount of development was located prior to the current building. Forty-seven percent of these taxlots were vacant prior to their post-2000 development.

When broken down by ring geographies, redevelopment rates appear to be far higher for the central and inner ring market geographies. Redevelopment rates appear to correlate with both land values and the extent of prior development within a subarea.

The Central subarea is associated with the highest redevelopment rate of 65%. The inner ring reported a high redevelopment rate of 59%. Predictably, the redevelopment rate was lowest in the outer ring at 36%. *Note:* An important caveat associated with these results is that necessary taxlot detail was missing for most taxlots within Washington and Clackamas Counties; results are most reliable for Multnomah County subareas.

Consumer Expenditures as Retail Driver. By and large, retail potential and actual spending appear to be roughly in balance in the 4-county Portland metro area (including Clark County) – with locally generated retail demand exceeding supply by about 4%. While there are potential imbalances within specific merchandise categories, these may be more the result of different consumer spending priorities and development patterns in the Portland metro area, rather than indications of actual sales leakage.

Consequently, further retail development over the longer term is expected to be dependent primarily on some combination of population growth and destination tourism activity (aided by Oregon's lack of retail sales tax). While the geographic distribution of retail sales could change between subareas within the region, in the absence of population and/or tourism growth, this shifting would be a zero-sum game, with some subareas gaining at the expense of others.

Institutional Utilization. Institutional uses warrant special consideration, because of their growing importance to the region's employment and land use patterns that are distinct from those of many other employers. Institutions such as medical, education and other public agency functions often tend to cluster employment, requiring larger parcels or aggregations of parcels, developing land more intensively (e.g. with structured parking) and locating in a variety of zones other than commercial and industrial (such as residential).

Metro's 2035 employment forecast projects that a significant 20% of net new employment is expected to be within the health and education sectors, accounting for 98,000 and 24,000 net added jobs respectively between 2008 and 2035. A portion of these jobs will be within institutional settings. A review of 2006 employment indicates that, within these sectors, 60% - 80% of employment occurs at sites with more than 50 employees.

In focus groups being conducted as a part of Task 6 for this employment and economic trends analysis work program, institutional land users report somewhat conflicting priorities:

- Dense (multi-story) development appears to work well for administrative and non-patient functions. On the other hand, lower profile mid-rise development often better maintains accessibility, reduces development costs and avoids neighborhood conflicts.
- Especially given the challenges of building in an often residential environment, institutional preference is to expand on-site (where existing agreements are in place) rather than to acquire new land on which to expand.
- Institutions value both easy auto accessibility (as most clients access institutions via cars) and good transit service, especially to serve the needs of a diverse workforce.
- Space needs are impacted in somewhat divergent direction via both an aging population (with greater health care needs and thus space needs) versus reduced on-site visits and fewer over-night stays (which may reduce medical institution space needs).

With the exception of major research functions, institutions increasingly appear oriented to decentralize and bring services closer to where people live. Given that the bulk of the region's population growth is projected for the outer ring, institutional employment growth is expected to follow suit and favor outer ring and other locations anticipated for substantial household growth.

Industrial Building & Site Utilization. A key topic of special interest affecting regional land demand is how land utilization has changed and will change within the industrial sectors. To what extent have or will industrial uses densify and thus reduce land needs? How do industrial trends influence this?

There are few clear trends on industrial land use and building development. As noted, a substantial portion of the region's flex space and a few notable industrial buildings have been developed since 2000 at 2+ stories within the region, primarily in outer ring geographies.

Despite these developments (and some increase in FARs for RSAs), over-all average industrial FARs appear to have changed very little, and if anything are decreasing. This decrease is likely related to the historic stock of multi-story warehouse space; such space is largely considered dysfunctional for modern warehouse uses and is not being replicated as businesses relocated to newer, lower profile buildings.

Metro's 2035 employment projections call for wholesale trade, warehousing and distributing to comprise approximately 45% of net new industrial sector job growth (58,000 new jobs between 2008 and 2035). Data indicates that warehouse buildings typically support fewer jobs per square feet than other types of industrial uses.

Of the remaining industrial sector jobs projected, high tech accounts for 45% and construction accounts for 39%; neither of which can be considered as 'traditional' industrial sector land users. Other manufacturing jobs are projected to account for only 4% of non-distribution related industrial job growth – a total of just 3,000 net added jobs between 2008 and 2035.

Based on preliminary Task 6 focus group results, the best opportunities for increased density of distribution related development may relate more to opportunities for high-cube space (with higher ceilings for more rack storage) than to multi-story development. Most manufacturing space is also expected to remain at one and in some cases two stories, albeit with high ceiling space requirements for some processes and with 2+ stories more possible for office, administrative and some R&D components of a firm's operations. For existing land constrained industrial uses, transition from at-grade to structured parking also may be considered in some cases.

Building Square Feet per Employee. Land needs forecasting (Task 3) will also incorporate standard assumptions on square requirement per employee, varied by sector. Generally, these values have been considered as relatively stable although there is speculation about changing densities in the years ahead with higher overall cost of real estate. A range of values from various sources are reported in the body of this report and will be more fully considered as input variables within the Task 3 analysis to come.

Implications for New Demand Paradigm. The results of this Task 1 analysis (together with Task 2 location variables trends research) will inform subregional employment forecasting within Task 3. Regional employment totals are expected to be consistent with Metro's already completed *2005-2060 Regional Population and Employment Forecast for the Portland-Beaverton-Vancouver OR-WA Primary Metropolitan Statistical Area (PMSA)*.

The New Demand Paradigm associated with Task 3 will allocate this employment to the tri-county portion of the larger metro area by industry sector, subarea geography and design types using a range rather than point estimate approach. Based on research being completed with Tasks 1, 2 and 6 of this Employment and Economic Trends research, the following implications are noted for the Task 3 demand allocation process.

1. The 2002 *Urban Growth Report* projected that the tri-county UGB would capture 75% of future job growth; this employment analysis indicates that the tri-county area captured 83% of 2006 employment. Task 3 forecast allocation scenarios may be varied to reflect this more recent experience and/or land capacity constraints within certain job sector or land use design types.
2. The Metro 2060 forecast provides a range rather than point estimate of future total employment but without detailed employment sector (or industry-specific) projections. This approach reflects the increasingly dynamic nature of the national and metro area economy and is proposed to be continued with the forecast allocation process – placing primary emphasis on subarea geography and design type categories rather than sector specific projections.
3. A baseline forecast allocation is expected to reflect the continued trend of job movement towards the outer rings of the metro region – especially for job sectors seeking Title 4 land and population-driven components of retail and institutional (service) growth. An alternative scenario may reflect growth patterns possible if urban-focused design types (centers and corridors) successfully compete for higher shares of regional employment growth.
4. Prior forecast allocations have translated employment growth to land demand with use of employment density factors (measured in terms of *jobs per acre*). In contrast, this planned allocation modeling process will pursue a two-step approach:
 - Application of *employment per square foot of building area* standards based on Metro and other research which generally are not expected to change materially over the forecast periods (of 5, 20 and 50 years) – at least in base case scenario.
 - Variation of *building to site area (or FAR)* standards reflecting both recent experience and regional policy objectives. FAR variations are seen as the primary means of influencing the future land footprint associated with regional employment growth.
5. Commercial office, retail and institutional uses have begun to transition to higher FARs, a trend that is forecast to continue albeit with higher FARs expected for the central and inner ring than the outer ring of the tri-county region. At FARs in the range of 0.50+/- (depending on use), transition from at-grade to structured parking and lowered parking ratios with active transit access would also be anticipated.
6. With the exception of RSAs, industrial FARs do not yet appear to be increasing within the tri-county region but are maxing out at about 0.30. A baseline forecast scenario can

be expected to maintain this cap for the foreseeable future. Alternative scenarios may reflect other industrial development patterns with reduced development footprint – including transition to higher cube distribution, structured parking for some major employers at site constrained facilities, and/or reduced tri-county capture for uses with lower ratios of employment per square foot of building area.

7. Information from this analysis suggests consideration of adjusting refill rates (currently assumed at 50% for commercial use and industrial at 35%) by location as well as by land use. Higher refill rates would be indicated for central and inner ring than for outer ring subareas. More information is needed – likely anecdotal – to support varying these rates by land use.

As Metro and local jurisdictions explore this new demand paradigm, additional data resources may be needed above and beyond what is currently available across the region. Important data-related tools to maintain and improve upon our ability to track the relationship between job and development trends include accurately geocoded ES-202 job data (potentially to the taxlot level of accuracy) and better populated tax assessor's databases for current land use, building square footage and year built (with best coverage currently available for Multnomah County).

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EMPLOYMENT DEMAND FACTORS & TRENDS INTRODUCTION

Metro is engaged in conducting an employment and economic trends analysis for the Portland metropolitan region. This project will outline a *new paradigm* for evaluating the building and land demands associated with regional job growth over 5-, 20-, and 50-year time horizons.

The employment and economic trends analysis is intended to serve as background for the *Urban Growth Report* Metro will complete in 2009. Other uses include land use and transportation modeling (including the MetroScope model), local jurisdiction information for Goal 9 comprehensive plan updates, and general information for business and economic development organizations throughout the region.

Six tasks have been outlined with this employment and economic trends analysis work program:

- Task 1 – Employment Demand Factors and Trends ([this report](#))
- Task 2 – Variables Affecting Location Decisions
- Task 3 – New Demand Assessment Paradigm
- Task 4 – New Capacity/Inventory Approach
- Task 5 – Frame Choices for Job Needs
- Task 6 – Focus Groups

PURPOSE OF TASK 1 ANALYSIS

This Task 1 report provides quantitative benchmarking to inform the rest of the assessment process, particularly the subsequent demand paradigm modeling of Task 3. The analysis encompasses a review of subregional job growth by sector since 2000, commercial development trends in location and form by 2040 Design Types and market subarea geographies, and a number of ‘special topics’ that impact land demand: redevelopment/infill versus greenfield development, consumer demand as a retail driver, and institutional and industrial development trends and average building space used per employee.

This is a draft report intended for review with Metro, the Employment Coordination and Advisory Committee (CAC) and Metro Council.¹

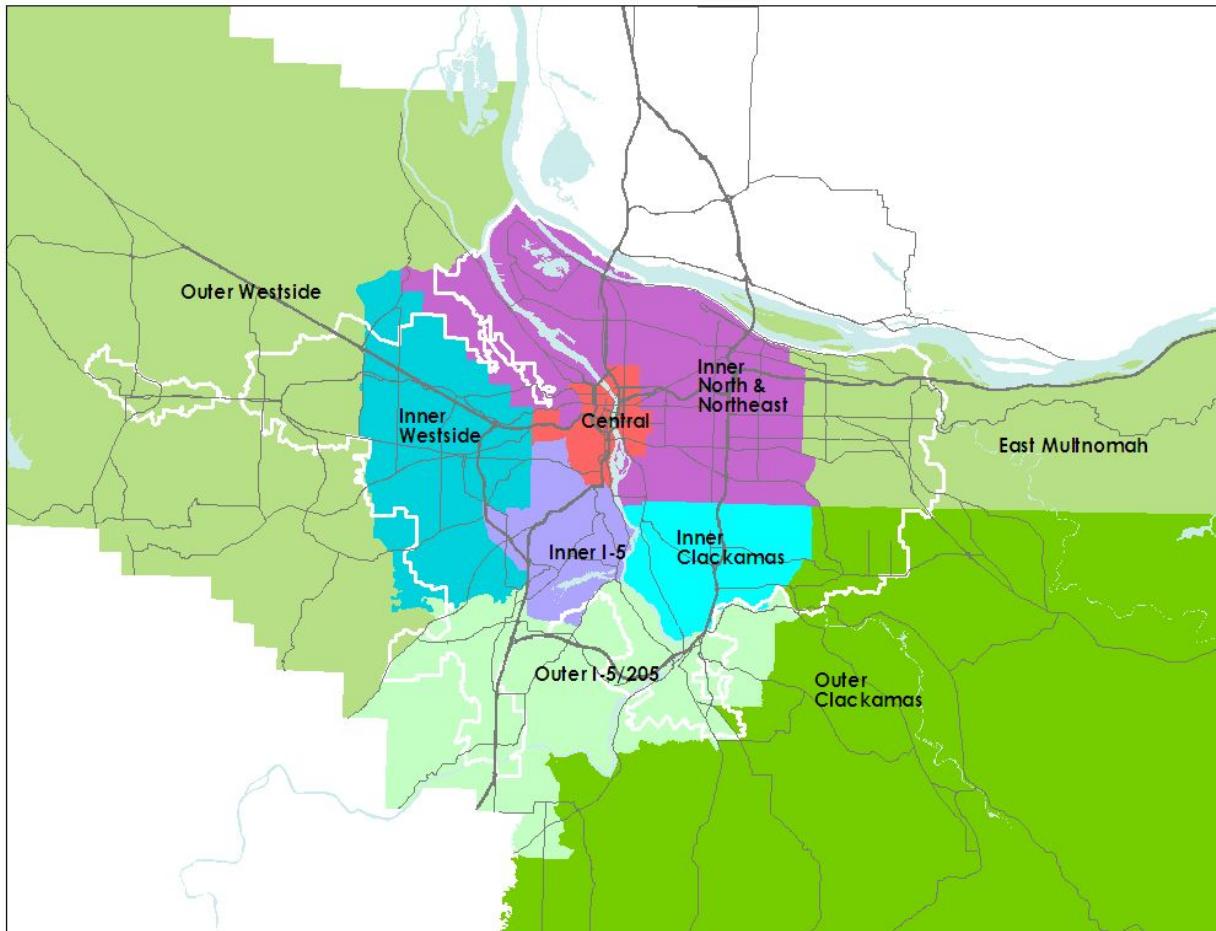
GEOGRAPHIC MARKET SUBAREAS

To review subregional trends in employment and development, the three-county Metro region has been divided into nine geographic subareas, mapped below. These subareas are intended to reflect major market distinctions; they vary by size and current density of employment activity. Subareas were designed to be compatible with Metroscope Census Tract geographies. The nine subareas can be aggregated to three overall *ring geographies*:

¹ Information for this report has been compiled from sources generally deemed to be reliable. The accuracy of data obtained from third-party sources is not guaranteed, is subject to change, and accompanied by limitations as noted in this report. Observations and findings in this report are those of the authors. They should not be construed as representing the opinion of other parties prior to their express approval, whether in whole or part.

- Central (also a Subarea of its own)
- Inner ring (Inner North & East, Inner Westside, Inner I-5 an Inner Clackamas)
- Outer ring (Outer Westside, East Multnomah County, Outer Clackamas and Outer I-5/205).

Market Area Geographies



The remainder of the report is organized by three primary topic areas:

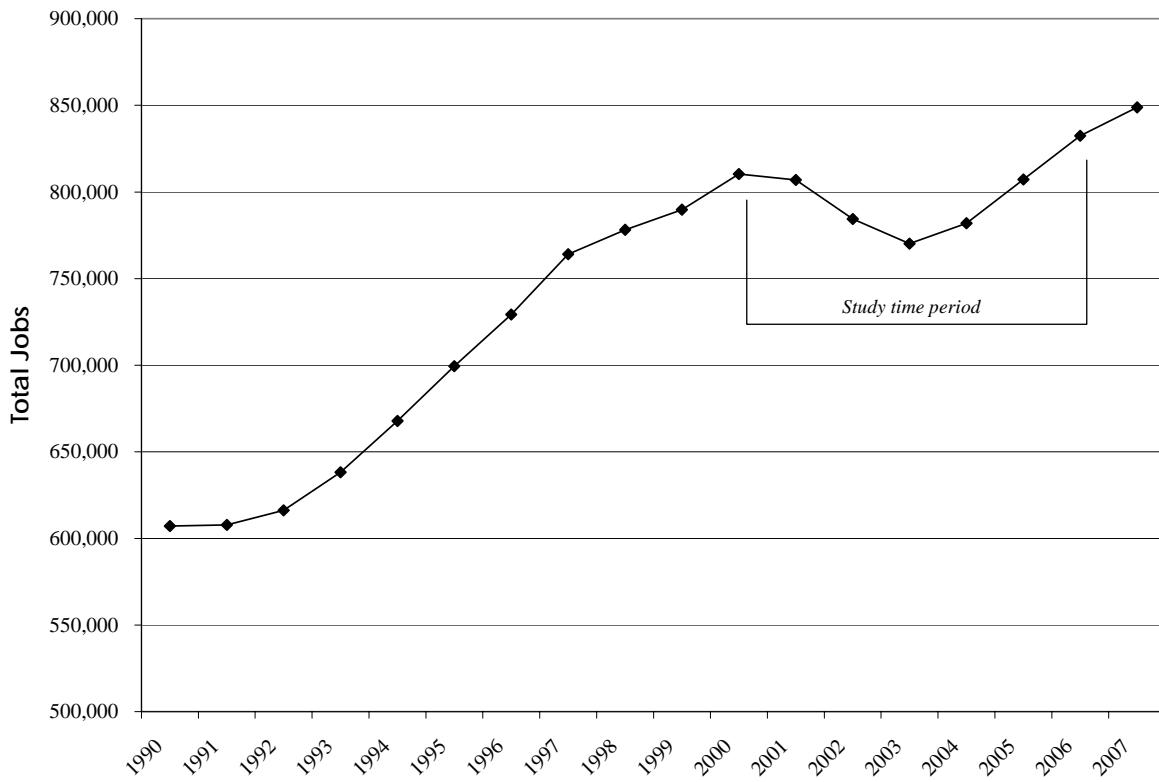
- I. Employment Trends
- II. Development Trends
- III. Demand Factors

I. EMPLOYMENT TRENDS

The employment trends analysis reviews tri-county regional job growth through the *dual lenses* of regional subareas and land use designations. This review is intended to inform the allocation of projected future regional employment between subareas and land use designations, together with longer-term, regional-level job trends. Past trends are considered to be one, but not the only, indicator of future growth potentials.²

Subregional employment trends have been analyzed using geocoded Employment Security 202 (ES 202) data for the years 2000 and 2006. Geocoding allows for sub-regional analysis of employment trends, and as a relatively recent data innovation, this is the longest time period for which data is available. This period covers close to a full economic cycle; however, tri-county job growth during this recent period of recover and expansion was relatively weak compared with regional job gains experienced during the previous decade, averaging only 0.5% annually.

Figure 1. Tri-County Covered Employment Trends (1990-2007)



Source: OLMIS, E.D. Hovee & Company, LLC.

² This discussion of employment trends updates and revises an initial draft memo dated November 11, 2008, and incorporates newly geocoded (mapped) employment data for improved accuracy. 2006 is the latest year for which detailed geocoded employment information is currently available.

Data Limitations. ES 202 data is the most comprehensive and timely source available, compiled from employees covered by unemployment insurance and generally covering about 85% of all employment.³ Other than firms expanding or declining and opening or closing, there are two primary issues associated with this data that impact its portrayal of job growth:

- 1) Employment has been parceled out to sites for employees with multiple sites, and this process may be more or less accurate in one of the two years (with a tendency towards greater accuracy in later years).
- 2) Employers self-report NAICS, which can vary over time (even for some larger firms).

The second set of issues related to changing employment classification is of greater concern, for several reasons including:

- National changeover from the Standard Industrial Classification (SIC) to North American Industry Classification System (NAICS) occurred post-2000, leading to new classifications and some confusion for many employers.
- There appears to be some trend toward companies reporting more than one NAICS, with a separate NAICS assigned to groups of employees as appropriate. For instance, in 2000 one major Portland area firm described its employment sites as concerned with retail and wholesale. In 2006, it described various employment sites as concerned with retail, wholesale, warehousing, and the management of companies. This greater detail in and of itself has shifted some employment away from the industrial sectors, as employment appears to be increasingly split between a company's former 'primary' industry classification (e.g. warehousing, manufacturing) and other classifications (such as management, which falls within the service sectors).
- If a company buys another company, the acquired company often will take on the NAICS of the parent company.
- The nature of a business may change, or a business may change its understanding of its core function.
- Companies self-report NAICS, and sometimes are inconsistent over time.⁴

Because of these issues, sectoral-level changes (for instance, the reported decline in manufacturing jobs and increase in service jobs) are best understood as shifts in the nature of the region's employment rather than necessarily as job growth or decline within a firm.

³ Alternative data sources include the Covered Employment Statistics, a sample survey-based time series that is adjusted to match ES 202 data, and the Economic Census, completed once every five years (with a several year lag before data release and not available at a sub-regional level). Total firm employment has been allocated to employment sites when appropriate; however, geocoding error remains one risk associated with the data and the conclusions drawn from the geocoded data base.

⁴ Metro staff and EDH reassigned year 2000 NAICS for approximately 1,300 out of 59,000 records with consistent names and addresses in both years but inconsistent NAICS codes.

Employment data should also be viewed as most reliable when summed on a geographic subarea or design type level, rather than when sectoral-level data is compared over time. This approach is consistent with anticipated forecast allocations, which may place equal or greater reliance on patterns of subregional and design type rather than sectoral allocations.

This chapter reviews employment trends within the time period for which subregional data is available are reviewed by:

- Employment sector
- Subarea geographies
- 2040 Design Types

EMPLOYMENT BY INDUSTRY SECTOR

As of 2006 there were just over 842,000 non-farm jobs in the tri-county region (excluding the largely non-urban agriculture, fish and forestry sector).⁵ This figure represents a modest 0.5% annual increase over 2000 tri-county employment, or 22,500 new non-farm jobs over a six-year period. Reported post-2000 job growth is significantly lower than the 2.9% annual average reported for 1990 through 2000.

For context, the tri-county's weak job growth post-2000 was not unique. It was well above the national average job growth rate (of only 0.3%), indicating that in fact the Portland region fared better than many areas. Statewide growth job growth also fell after 2000, but remained about twice the annual average reported for the tri-county area over the entire 2000-2006 period.

In 2006, the tri-county region captured 83% of jobs within the larger seven-county geography (including Clark and Skamania Counties, Washington, and Oregon's Columbia and Yamhill Counties). Clark County captured the bulk of the remainder. The tri-county's capture of the seven-county PMSA fell slightly in 2006 from 84% in 2000. The share of seven-county employment within the Urban Growth Boundary was nearly as high, and also declining: 79% in 2006 and 81% in 2000.

Job change is reported in the following table by two-digit NAICS (North American Industrial Classification System), as well as by the four major NAICS groupings used throughout this report:

- Industrial (of which manufacturing is a subset)
- Retail
- Services
- Public sector

Note: ‘Other’ is a final remnant category of unclassified jobs.

⁵ This sector reports wide fluctuations; reporting requirements vary by firm size, which tends to vary annually.

Region-wide, net employment gains are indicated only for the services and public sectors over the six-year study period considered. Services now comprise 56% of the tri-county non-farm economy. This aggregated sector increased by just fewer than 44,000 jobs, a 1.3% average annual growth rate (compared with roughly a 3.5% growth rate during the 90s).

Figure 2. Three-County Job Change by Two-Digit NAICS (2000-2006)

EDH Sector	NAICS	2006		Distribution	Change	
		2000	2006		Net	AAGR
Industrial	21 Mining	490	430	0%	(60)	-2.2%
	22 Utilities	7,030	4,000	0%	(3,030)	-9.0%
	23 Construction	44,900	48,980	6%	4,080	1.5%
	31 Man: food, textile, apparel	10,090	9,370	1%	(720)	-1.2%
	32 Man: wood, petrol, chemicals	21,680	19,170	2%	(2,510)	-2.0%
	33 Man: metal, machine, computer	81,670	78,170	9%	(3,500)	-0.7%
	<i>Manufacturing subtotal</i>	<i>113,440</i>	<i>106,710</i>	<i>13%</i>	<i>(6,730)</i>	<i>-1.0%</i>
	42 Wholesale Trade	53,490	51,390	6%	(2,100)	-0.7%
	48 Transportation	27,190	25,040	3%	(2,150)	-1.4%
Retail	49 Transport & Warehousing	12,540	13,720	2%	1,180	1.5%
	<i>Industrial subtotal</i>	259,080	250,270	30%	(8,810)	-0.6%
	44 Retail	57,360	58,510	7%	1,150	0.3%
	45 Retail: Dept, misc.	33,710	28,460	3%	(5,250)	-2.8%
Services	<i>Retail subtotal</i>	91,070	86,970	10%	(4,100)	-0.8%
	51 Information	26,600	20,440	2%	(6,160)	-4.3%
	52 Finance & Insurance	41,370	45,450	5%	4,080	1.6%
	53 Real Estate	21,400	18,980	2%	(2,420)	-2.0%
	54 Prof., Scientific, Tech Services	42,220	43,930	5%	1,710	0.7%
	55 Management*	9,130	21,010	2%	11,880	14.9%
	56 Admin Support, Waste	48,420	53,660	6%	5,240	1.7%
	61 Education	67,800	65,590	8%	(2,210)	-0.6%
	62 Health & Social Asst.	73,200	90,120	11%	16,920	3.5%
Public	71 Arts, Enter., Recreation	12,830	12,440	1%	(390)	-0.5%
	72 Accommodation & Food	58,650	65,670	8%	7,020	1.9%
	81 Other Services	33,280	31,560	4%	(1,720)	-0.9%
Other	<i>Service subtotal</i>	434,900	468,850	56%	33,950	1.3%
	92 Public Administration	30,470	35,690	4%	5,220	2.7%
Other	99 Unclassified	650	240	0%	(410)	-15.3%
	0 Unclassified	3,380	-			
	Total	819,550	842,020	100%	22,470	0.5%

*Note: Between 2000 and 2006, the industrial classification system changed from the Standard Industrial Classification System to the North American Industrial Classification System. 2000 NAICS data was converted to SIC codes, but some reported job change is the result of incompatibility between these two systems, particularly within the management sector.

Source: ES 202, Metro, E.D. Hovee & Company, LLC.

Health care and social assistance lead the service sector's job growth, with a net gain of close to 17,000 jobs, equal to 75% of the region's total net job growth. Other areas of service sector

growth were experienced with accommodation and food service, public administration, administrative support and waste management, finance and insurance and construction.⁶

The employment growth reported for the new management sector appears due in large part to reclassification of jobs (moving to the NAICS from the Standard Industrial Classification system) as much as actual growth in corporate headquarters jobs. Information is also a newly added sector and therefore also subject to error in trends reporting, but its loss of 6,000+ is in line with sustained job losses following the technology (dot-com) bust of 2001-2.

The industrial sector includes construction, manufacturing and wholesale and distribution. This sector contracted at an average of -0.6% annually during the study period, despite gains in both construction and transport and warehousing. This is a sharp contrast to the 2.6% annual growth during the 90s.⁷

In 2006 industrial jobs comprised about 30% of the tri-county job base, with manufacturing about 40% of that total (or 13% of regional jobs). Over the 2000-2006 time period the manufacturing subsector contracted even more rapidly than the larger industrial sector, at a rate of about -1.0% annually. At least a portion of this job loss may be associated with businesses retracting and moving outside of the tri-county area (for instance, to Vancouver Washington), as well as the administrative changes reported above (e.g. businesses re-coding themselves). A countervailing trend of note over this time period is manufacturing output, which the Bureau of Economic Analysis reports increased by more than \$9 billion for the seven-county region between 2001 and 2006. Within the manufacturing sector, business growth (or profit) appears to contradict job growth, due in part to high commodity pricing and strong export markets. Equivalent data for other industrial sectors such as transportation and warehousing is suppressed due to confidentiality.

Retail employment also contracted over this time period. Ten percent of tri-county employment is within the retail sector, which contracted at -0.8% annually (vs. 2.3% growth during the 90s).

EMPLOYMENT BY SUBAREA GEOGRAPHY

A second way of considering employment trends is by geographic subarea. For purposes of subregional analysis, the Portland tri-county region has been divided into nine market subarea geographies as illustrated on the following map. Subareas are intended to reflect major market distinctions, and vary in geographic size and current job density. Subareas also represent aggregations of Metroscope Census Tract geographies.⁸

⁶ As of 2008, widely reported construction job loss still did not appear within OED employment numbers.

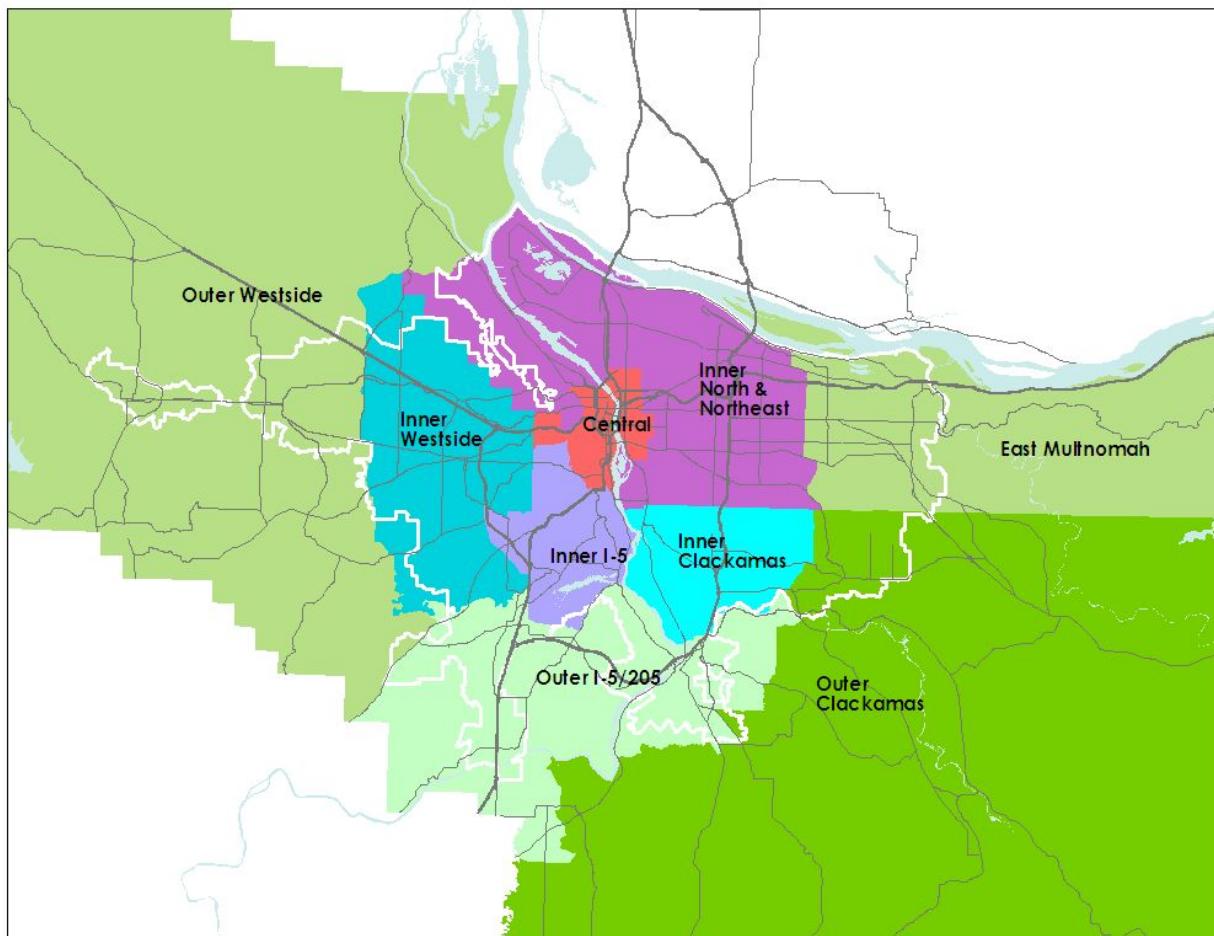
⁷ Job gains have been noted for some portions of manufacturing during the post-2001 period of economic recovery, especially in leading edge firms that also benefited from devaluation of the dollar. However, it remains to be seen whether the overall shift away from industrial employment continues or can be arrested within portions of the region's economy for which sustainable competitive advantage can be demonstrated.

⁸ Some notable and unavoidable anomalies derive from this need to conform Metroscope census tract boundaries. An example is the inclusion of Hillsdale and Providence St. Vincent within the Central subarea.

The nine subareas can be further aggregated to three overall *ring geographies*:

- Central (also a subarea)
- Inner ring (Inner North & East, Inner Westside, Inner I-5 and Inner Clackamas)
- Outer ring (Outer Westside, East Multnomah County, Outer Clackamas and Outer I-5/205).

Figure 3. Market Subarea Geographies



Note: Subareas are compatible with E-zone geography (aggregations of Census Tracts) to allow for comparison with Metroscope outputs.

Source: E.D. Hovee & Company, LLC.

As noted, there is a greater degree of confidence in employment trends reported by subarea geography (not broken down by jobs sector) as an indication of total job changes within the region.

Of the nine tri-county subareas, the Central subarea comprises the largest number of jobs with approximately 24% of the region's employment as of 2006. Inner North & East Portland represents the subarea with the 2nd largest employment base at 22%; the Inner Westside encompasses about 14%. The remaining subareas contain less than 10% of the region's employment each.

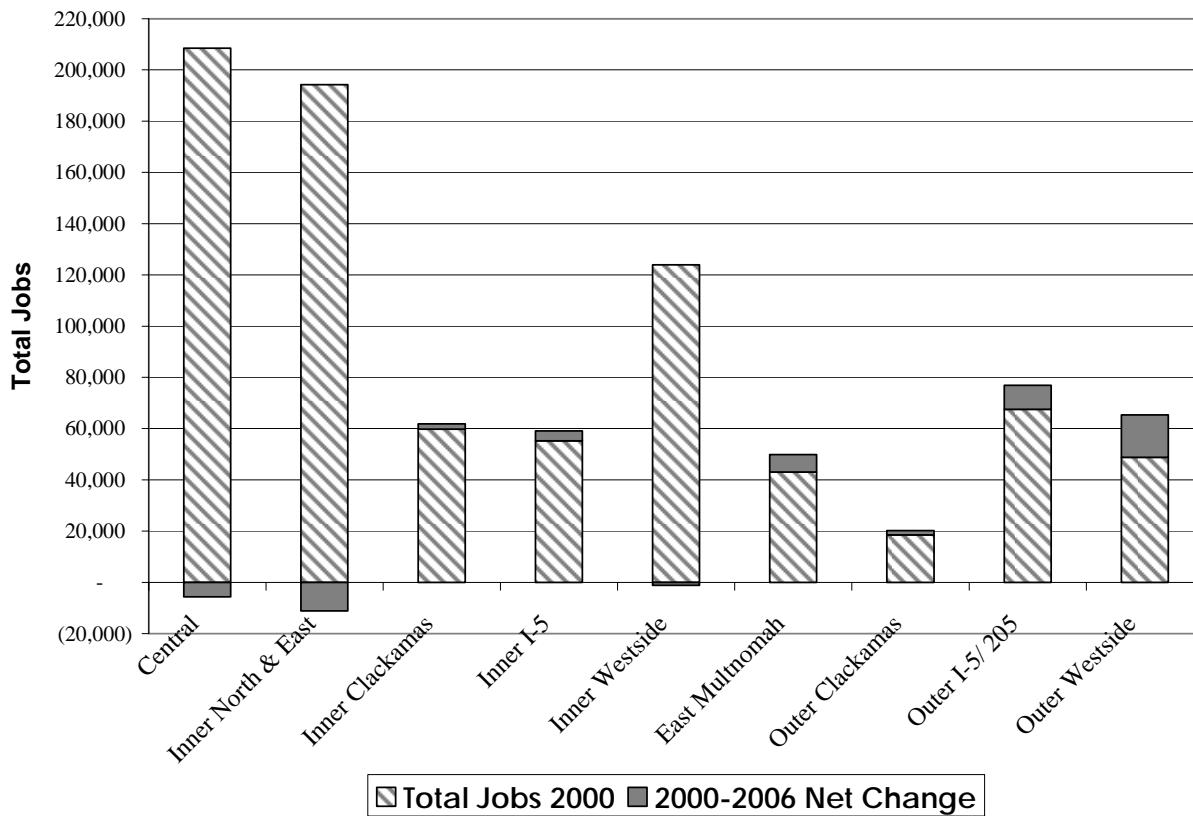
When the nine market subarea geographies are aggregated into central, inner and outer rings, their respective shares of total employment are as follows:

- Central: 25% (declining 0.5% annually)
- Inner ring: 50% (declining 0.2% annually)
- Outer ring: 26% (growing 3.2% annually)

Despite the region's significantly reduced growth post-2000, some subareas and design types were more successful in attracting new jobs.

Subarea Overview. Subarea job totals and net growth between 2000 and 2006 are illustrated by the following chart. While the Central and Inner North & East subareas account for the largest shares of the region's employment base, both have experienced job losses over the last 6 years (losses of 5,700 and 11,100 respectively). The Inner Westside also reports job losses of 1,100.

Figure 4. 2006 Subarea Job Totals and Net Growth (2000-2006)



Source: Metro, E.D. Hovee & Company, LLC.

Outer ring subareas reported much stronger growth trends, increasing its share of regional employment from 22% to 25% over these six years. Annual gains in each of the four subareas averaged 1.6% - 5.6% annually. The single fastest growing subarea is the Outer Westside

(adding 16,500 jobs in 6 years at more than twice the growth rate of any other subarea). Outer I-5/205 and East Multnomah County also both reported annual growth above 2%.

The following table portrays the same information in numerical format.

Figure 5. Subarea Growth Trends (2000-2006)

	Inner Ring				Outer Ring				Outer Westside
	Central	Inner North & East	Inner	Inner	Inner Westside	East Mult.	Outer Clack.	I-5/ 205	
			Clack.	I-5				Clack.	
Total Jobs 2006	202,800	183,300	61,900	59,100	122,900	49,900	20,167	76,900	65,300
2006 Share	24%	22%	7%	7%	15%	6%	2%	9%	8%
2000-2006 Net Change	(5,700)	(11,100)	2,000	3,900	(1,100)	6,900	1,717	9,400	16,500
Annualized Growth	-0.5%	-1.0%	0.6%	1.2%	-0.1%	2.7%	1.6%	2.3%	5.6%

Source: Metro, E.D. Hovee & Company, LLC.

While outside of the analysis scope of this report, Clark County functions as part of the Portland economy and labor shed. Non-agricultural job growth within Clark County appears to have followed outer ring trends, growing at an average annual rate of 2.2% – well above the tri-county average. At 130,000 jobs in 2006, Clark County represents about half as many jobs as the tri-county outer ring subareas combined, and added 16,000 additional jobs between 2000 and 2006.

Subarea Trends by Job Sector. Job growth between 2000 and 2006 can be further described in terms of shift between employment sectors. As discussed above, sectoral changes should be understood as shifts in the nature of employment as well as actual job losses or gains.

This review indicates substantial shifting of employment activity both between subareas and by industry sector:

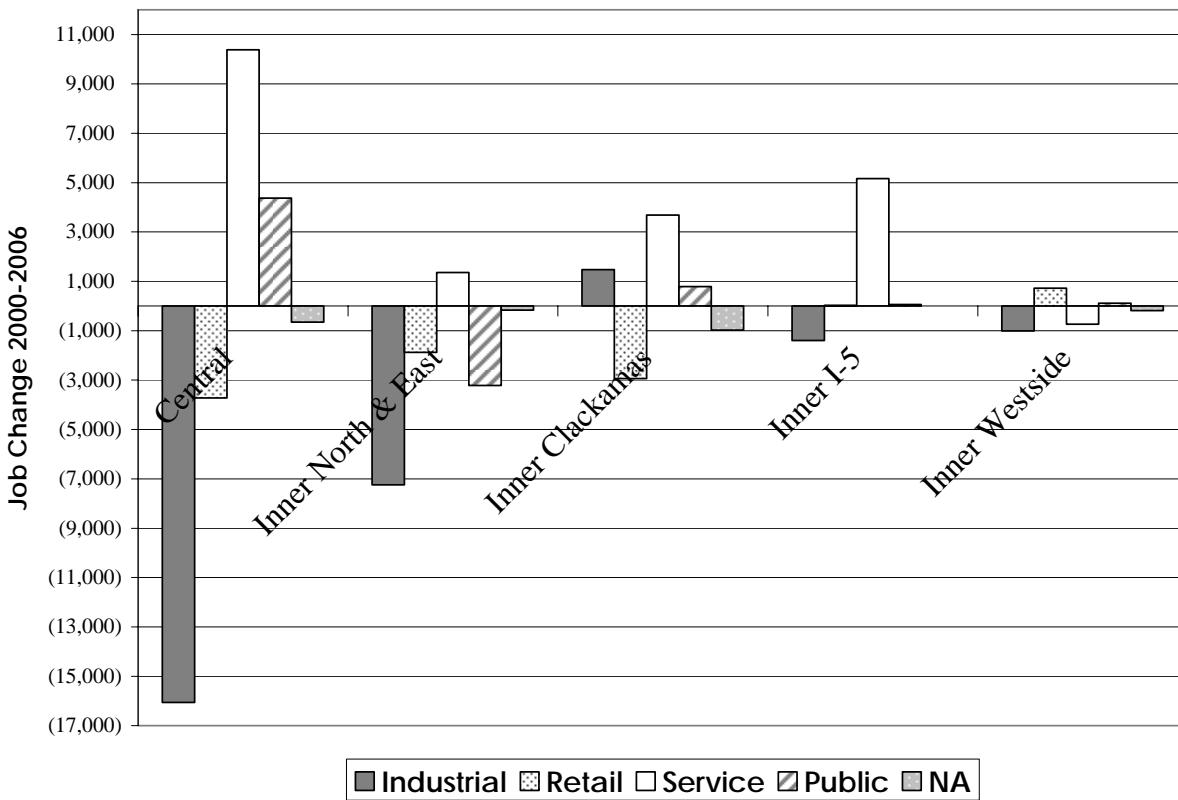
- When grouped together, the *outer ring* subareas gained jobs across all of the four broad job sector aggregations of industrial, retail, service sector and public sector.⁹
- Within the *Central* and aggregated *inner ring* subareas, in contrast, employment shifted away from the industrial and retail sectors, and the inner ring subareas report public sector job declines as well.
- Only service sector jobs increased across *all three* of the ring geographies.

Industrial: Over the study timeframe, the Central and most inner ring subareas report lower numbers of jobs identified with the industrial sectors: utilities, manufacturing, wholesale trade, and transportation & warehousing. Inner Westside subareas report declines of 1,000 to 1,400

⁹ NAICS 2-digit sectors aggregated into these groupings are as follows. Industrial: 11,21,22,23,31,32,33,42,48,49. Retail: 44,45. Service Sector: 51,52,53,54,55,56,61,62,71,72,81. Public Administration: 99.

jobs within these sectors; Inner North & East of 7,000, and the Central subarea of over 16,000 industrial jobs.

Figure 6. Job Sector Trends within Central and Inner Ring Subareas (2000-2006)



Note: NA indicates jobs without a NAICS classification

Source: Metro, E.D. Hovee & Company, LLC.

Re-classifying portions of industrial companies as ‘management’ (a service sector classification), likely accounts for a portion of this jobs shift, although data checking attempted to correct for this.

Inner Clackamas was the one exception to the close-in shift away from industrial jobs; this subarea gained close to 1,500 industrial sector jobs, with gains in both durable manufacturing and transportation and warehousing.

Despite the widespread shift away from industrial employment, as of 2006 the central and inner rings still retained more than 75% of the region’s jobs in utilities, wholesale trade, transportation and warehousing.

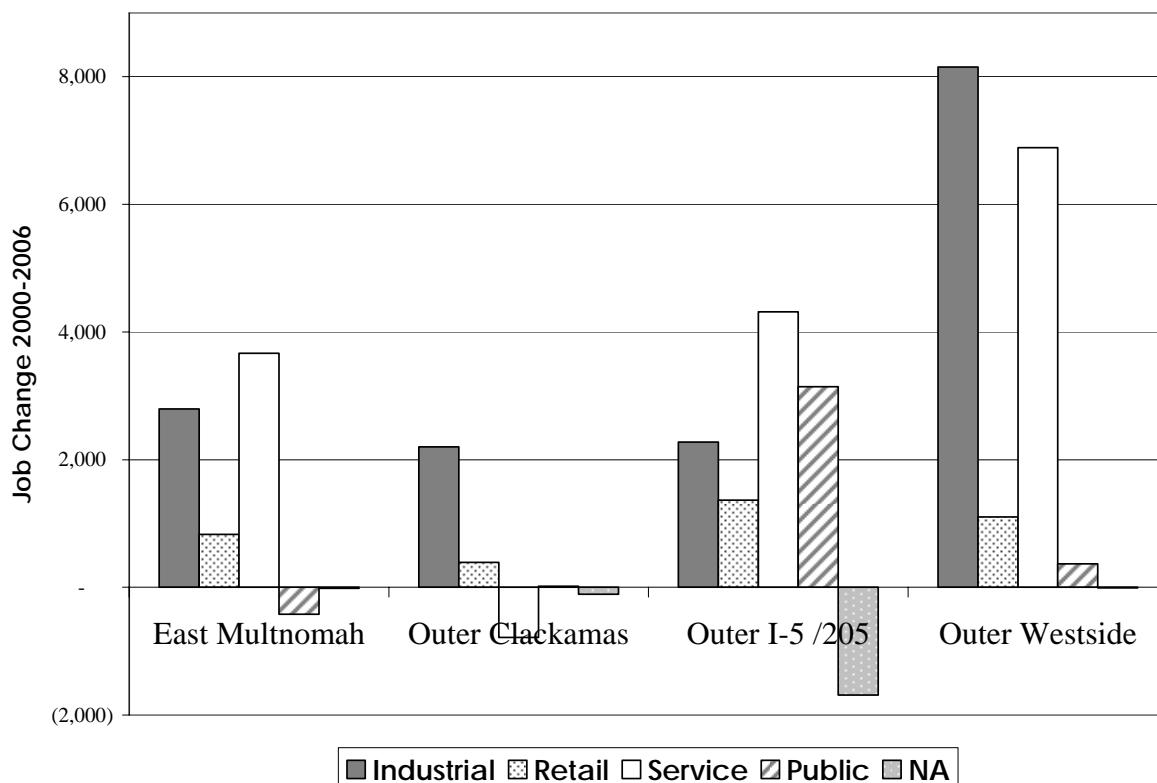
In contrast to the inner shift away from the industrial sectors, these sectors grew in all outer ring subareas: by approximately 8,200 jobs in the Outer Westside and more modest gains ranging from 2,200 to 2,800 in the remaining subareas.

Of the industrial sectors, manufacturing especially favored the outer ring, largely due to the Outer Westside manufacturing job gains of over 5,400. By 2006, the outer ring subareas represented 47% of the region's manufacturing jobs (up from 41% just six years earlier).

Construction employment (a part of the industrial sector aggregation) declined within the Central City and added twice as many jobs in the outer ring as in the inner ring (4,200 and 1,900 jobs, respectively).

Retail: Retail appears to be following the over-all trend of the region's jobs in moving outward. Within the Central subarea, jobs identified as retail declined by 3,700. Inner North & East and Inner Clackamas subareas also reported declines of 1,900 and 3,000 respectively. In contrast, retail employment increased in all outer ring subareas by a range of 400 to 1,400 net added jobs.

Figure 7. Sectoral Trends within Outer Ring Subareas (2000-2006)



Source: Metro, E.D. Hovee & Company, LLC.

Services: Services represent the one sector with growing numbers across almost all of the region's market subarea geographies. Over the six-year time frame, a substantial number of jobs were added in each ring:

- Central: +10,400
- Inner ring: +9,500 (with the Inner Westside reporting a loss, largely due to declines within the information and finance sectors)

- Outer ring: +14,100 (with the greatest gains in the Outer Westside – 7,000 – and a decrease of 800 reported for the Outer Clackamas subarea)

Health care and social assistance, administrative and waste management and finance and insurance were the greatest contributors to inner ring subarea service job gains. In the outer ring, growth in these sectors was matched in accommodation and food service. Management, public administration and education stand out as service growth drivers in the Central subarea.

EMPLOYMENT BY DESIGN TYPE

The 2040 Growth Concept defines design types intended to guide growth and implement the 2040 regional vision:¹⁰

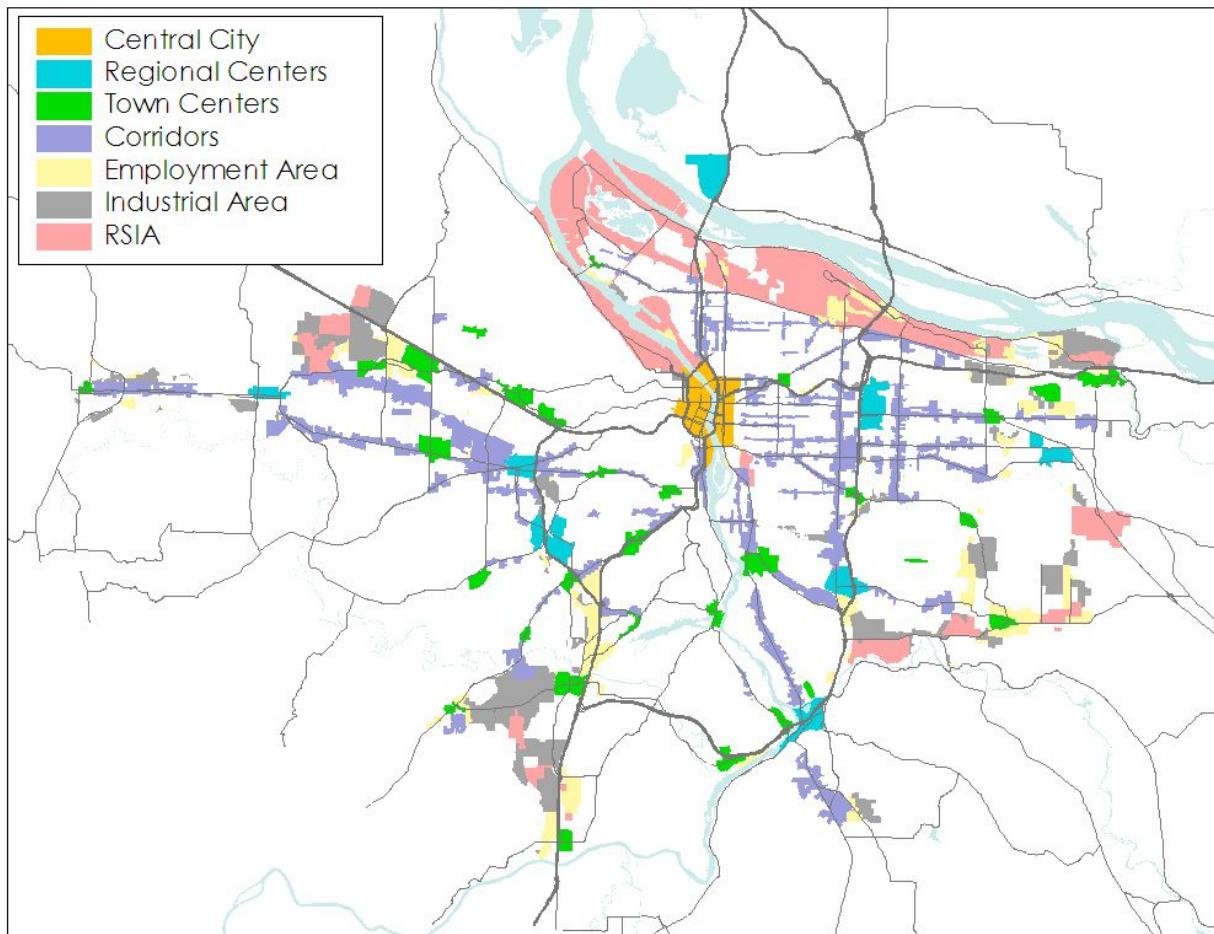
- Urban focused design types include the Central City, Regional Center, Town Center, and Corridor designations.
- Three Title 4 designations are also analyzed: Regionally Significant Industrial Areas (RSIAs), Industrial Areas and Employment Areas. These are intended to preserve land for industrial and employment uses by limiting non-industrial uses (particularly retail).

When these seven Design Type (including Title 4) designations are combined, they contain approximately 75% of all tri-county employment. The remaining 25% of the tri-county non-farm job base is located along streets not designated as corridors and within residential zones (e.g. as with a number of school, medical and other institutional uses). Jobs located in areas not designated with any of the Design/Title 4 types are classified as ‘Other.’

The analysis areas that correspond to the four urban design types and three Title 4 areas are illustrated by the following map.

¹⁰ Station areas have not been analyzed due to their frequent overlap with other 2040 Design Types. Title 4 land is here defined as land not within a 2040 center or corridor Design Type, some of which overlap. This methodology enables all of the Design Types indicated to be summed to equal total regional jobs – as a control total.

Figure 8. 2040 Growth Concept Employment Design Type Geographies



Source: Metro, E.D. Hovee & Company, LLC.

Design Type Overview. To give context to this design type discussion, the following table reports total acreage within parcels within the seven design types. This illustrates that parcels within Title 4 lands account for more than 40,000 acres region-wide, approaching four times the acreage identified with the urban design type designations. Design types are also not evenly distributed among the subareas: Inner North and Northeast contains almost 70% of the region's RSIA land, for example, whereas the majority of both Industrial and Employment Areas are located within the region's outer ring.

In general, Title 4 areas were intended to preserve land for employment uses. However, the character of these areas varies across the region, as they were fairly recently identified by local jurisdictions (by Metro's action in 2002) with varying land use and economic development objectives. For instance, some jurisdictions classified rail-served land as an Industrial Area; others classified rail-served land as Employment Area. In many cases designations were applied to land already developed with significant employers or public uses (corporate headquarters, airports, prisons). There are no lands indicated as having the RSIA designation with the Inner I-5 and Inner Westside market subarea.

Figure 9. Parcel Land Area within Design Types (in acres)

Subarea	Central	Regional		Town	RSIA	Industrial	Employ- ment	Total
	City	Corridors	Center	Center				
Central	420	2		90	120	80	210	920
Inner N/NE	2	250	640	270	13,060	410	1,180	15,810
Inner Clackamas		420	500	480	820	870	630	3,720
Inner I-5		170	370	680		70	690	1,980
Inner Westside		380	770	1,920		530	920	4,520
East Multnomah		30	410	800	2,050	2,300	1,440	7,030
Outer Clackamas				210	950	2,080	1,500	4,740
Outer I-5/205		690	540	940	570	3,600	1,660	8,000
Outer Westside		380	210	300	1,260	2,800	410	5,360
Total	400	2,300	3,440	5,690	18,830	12,740	8,640	52,080
Percent	1%	4%	7%	11%	36%	24%	17%	100%
Central	100%	0%	0%	2%	1%	1%	2%	
Inner Rings	0%	53%	66%	59%	74%	15%	40%	
Outer Rings	0%	47%	34%	40%	26%	85%	58%	

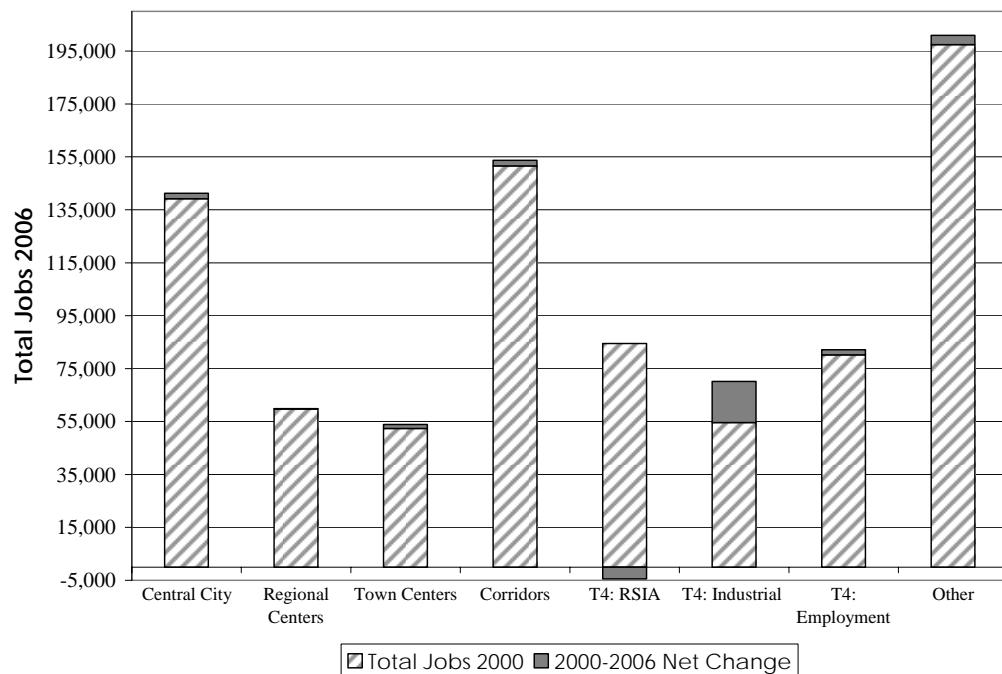
Source: Metro, RLIS, E.D. Hovee & Company, LLC.

The category of ‘Other Areas’ is not reflected within the above acreage chart; this residual category includes all tri-county land not within a designated design type (hundreds of thousands of acres).

Of Metro’s identified Design Types, Corridors and Central City accommodate the largest number of jobs at about 154,000 and 141,000 2006 jobs respectively. Taken together, these two design types account for 35% of the tri-county region’s job base but only 5% of the acres within the seven design types analyzed in this report.

However, more jobs (nearly 209,000 or 25% of the regional total) are accounted for by ‘Other’ employment than by any one of the design types. Job growth on land not captured within a Design Type was below the tri-county average.

Figure 10. 2006 Employment & 2000-2006 Growth by 2040 Design Type



Source: Metro, E.D. Hovee & Company, LLC.

The most significant job gains by far are reported for industrial areas (+ 15,600 jobs). All other Design Types gained between 100 and 2,200 jobs over this time period. ‘Other’ land (not classified as a Design Type) gained 3,500 jobs.

Of the urban design types, Town Centers appear to fare the best with a modest 0.5% annualized growth rate, equal to the regional growth average. The Inner Westside added 3,150 jobs within its nine Town Centers, which together represent 30% of the region’s Town Center acreage. Outer Westside, Inner North & Northeast and Inner Clackamas also reported Town Center gains. It is important to note that trends within the relatively smaller geographies of Town Centers, Regional Centers and Corridors can be more susceptible to substantial job changes from actions of single prominent employers rather than broad economic trends.

The Central City experienced slower growth of about 0.2% per year. It is important to note that the Central City design type is distinct from the Central subarea, which has about 30% more jobs with a larger geographic boundary, and which reported job losses during the study time frame.¹¹

Job growth within Corridors (including Main Streets) occurred at a modest rate about equivalent to that of the Central City at 0.2% per year. Corridor job growth varied widely by subarea: an average loss of about 2,100 jobs was reported for the Central and Inner Clackamas subareas, IN

¹¹ The primary geographic difference is that the Central subarea encompasses more land on the Westside than does the Central City design type, suggesting that the *subarea’s* job declines occurred west of I-405.

contrast, the Outer Westside, Outer I-5/205 and Inner Westside subareas reported an equivalent average gain.

Regional Centers fared least well with negligible job growth (0.03%), primarily due to losses significant losses indicated for the Inner Westside (Beaverton and part of Washington Square) that off-set gains in other subareas, primarily the outer subareas of East Multnomah and Outer Westside.

Figure 11. 2006 Employment & 2000-2006 Growth by 2040 Design Type

	Urban Design Types				Title 4 Areas*				Total
	Central City	Corridors	Regional Centers	Town Centers	RSIA	Industrial	Employment	Other	
Total Jobs 2006	141,280	153,740	59,870	53,900	80,040	70,170	82,080	200,950	842,040
2006 Share	17%	18%	7%	6%	10%	8%	10%	24%	100%
2000-2006 Net Change	2,060	2,200	110	1,480	(4,460)	15,600	1,930	3,550	22,480
2000-2006 Annualized Growth	0.2%	0.2%	0.0%	0.5%	-0.9%	4.3%	0.4%	0.3%	0.5%

Note: Title 4 jobs reflect those jobs *within* Title 4 areas but *outside* of centers and corridors (some of which overlap with Title 4 areas).

Source: Metro, E.D. Hovee & Company, LLC.

Title 4 areas report some of the strongest growth trends, particularly Industrial Areas (at an annualized growth of 4.3%). Again, these areas are disproportionately located in the outer subareas, where 85% of the tri-county's Industrial Areas acreage is located. The Central subarea reported losses (corresponding to the Central Eastside and portions of Lower Albina); all other subareas reported a gain. Significant gains include the Outer Westside (+8,250), East Multnomah (+4,330) and Outer I-5/205 (+2,540). Inner Clackamas and Inner Westside also each added over 1,000 jobs within Industrial Areas.

In contrast, RSAs report job *losses* averaging 0.9% annually. Seventy percent of RSA land is within the Inner North and Northeast subarea, along the Willamette and Columbia Rivers, the Columbia Corridor, and surrounding the airport. This designation includes all of the Port of Portland's properties, and the region's land with the longest industrial tradition. Known issues impacting some vacant and underutilized parcels within the harbor area include unresolved contamination, older facilities that require retooling, and some pricing pressure for land that interfaces with urban development. At sites with substantial remediation costs, redevelopment for industrial use may be more financially challenging than for commercial uses (as industrial is typically associated with lower average per acre pricing. It is unknown the extent to which these issues have impacted the reported job losses within North & Northeast RSAs (-2,500 jobs).

RSA losses were in fact the largest within the Central subarea, however, at close to -3,000. This RSA covers the Fred Meyer and Tri-met headquarters sites (between SE Powell and SE Holgate) and surrounding uses. Two thirds of the reported job loss is attributed to Tri-Met,

potentially changes of employment location. The remainder is dispersed among smaller employers.

Design Type Job Sector Trends. Reviewing Design Type job changes at a finer level of detail – by job sector – is less stable and more subject to data ‘noise’ than reviewing job totals. Keeping this in mind, design type job trends have been reviewed via four broad job sector aggregations: industrial, service, retail and public sector.

The *first chart* displays trends within the 2040 Design Types of Centers and Corridors. Employment shifted away from the industrial sectors within all of these urban design type categories. The greatest industrial sector job losses were within:

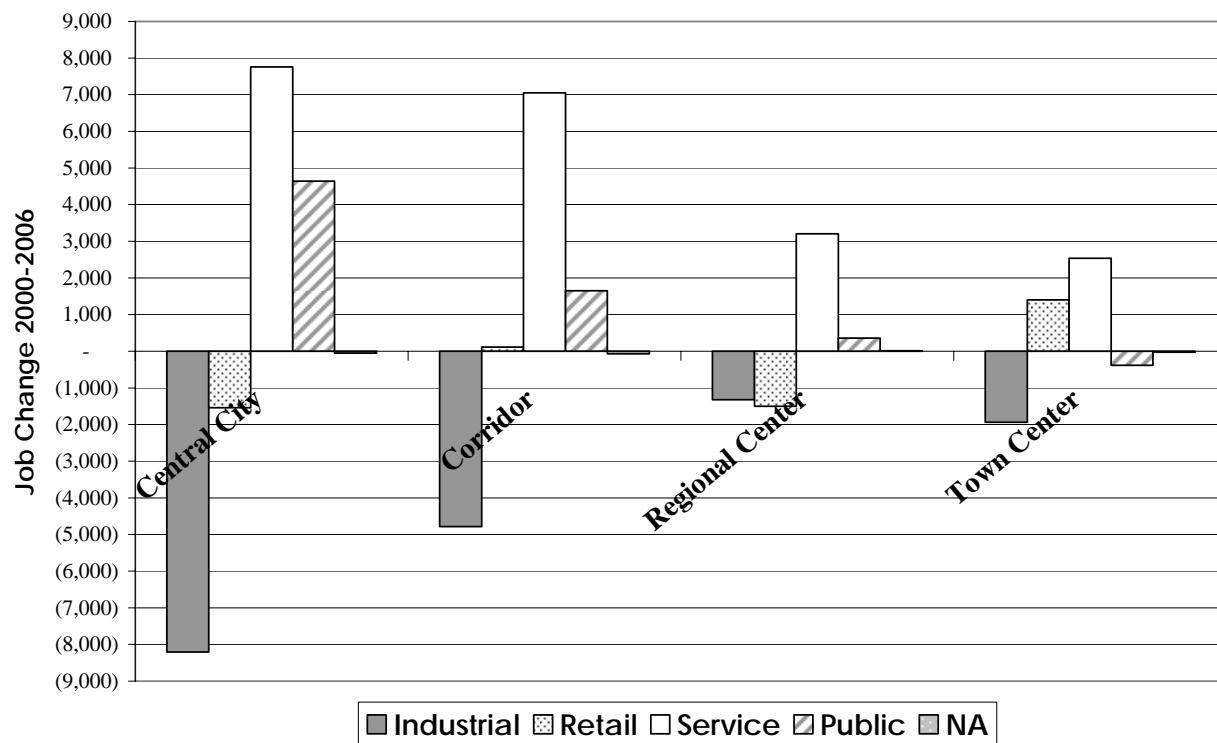
- The Central City (-8,300)
- Outer I-5/205 (-1,600)
- Inner Westside Regional Centers (-1,300)
- Inner I-5 Town Centers (-600)
- Inner North and Northeast Regional and Town Centers (-250 each)

Inner Westside Town Centers were the only Design Type to add more than 50 jobs over this time period.

Retail also is indicated as a declining job sector the Central City and within Regional Centers, with widespread losses in all subareas but Outer I-5/205 (+300) and East Multnomah County (+200).

Service jobs exhibited the greatest growth, increasing at average annualized rates between 1% and 2% across all the urban Design Types (2-3 times the regional total job growth rate). Public sector employment increased for all Design Types but Town Centers, but most significantly in the Central City (+4,650 jobs).

Figure 12. Sectoral Trends within Urban Design Types



Source: Metro, E.D. Hovee & Company, LLC.

Job growth with Title 4 Areas has been more varied, as depicted by the above chart. Within the Regionally Significant Industrial Areas (RSIAs), net job losses are primarily attributed to industrial job loss within the Central subarea (-3,100) and Inner North and Northeast (-5,700). Jobs classified as retail also declined within RSIAs, in every subarea by East Multnomah. The Central and Inner Clackamas RSIAs report a loss of more than 1,000 retail jobs each.

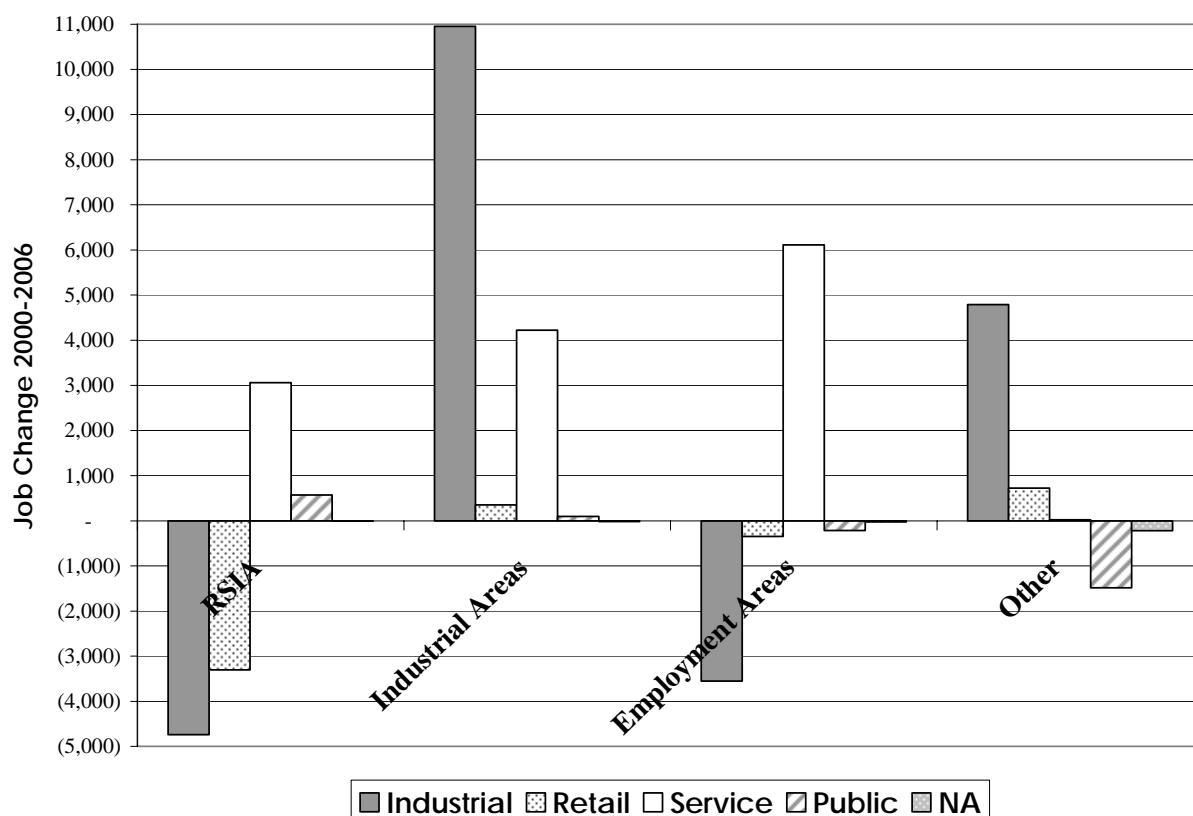
RSIA industrial and retail losses were partially offset by service sector gains, or shifts towards service sector functions: the Central City RSIA reported an increase of 2,000 service sector jobs, and Inner North and Northeast RSIAs reported +500 service jobs. Region-wide, RSIAs added 3,600 service jobs. Again, this in part reflects the changing description of employment: in 2000, Tri-met described its 2,900 Central subarea RSIA jobs as within the transportation sector; in the year 2006 at the same location it reported a decline of jobs – to 900 – now classified within various service sectors.

Employment Areas reported an over-all annual growth just below the regional average. This was despite a reported net decline in industrial sector jobs of -3,500 (all associated with Central and Inner Ring subareas). Service sector growth outweighed this loss: a net regional gain of 5,900 jobs was fueled by growth within the Central subarea (+2,000), Inner I-5 (+3,800), Outer I-5/205 (+1,000) and the Outer Westside (+850). Retail jobs gains and losses were less pronounced and displayed no clear trends.

In contrast to RISA and Employment Areas, Title 4 Industrial Areas report significant net industrial job gains of close to 11,000. Again, the Central subarea Industrial Areas (primarily the Central Eastside and Lower Albina) sustained significant industrial losses of close to 1,900, and Inner North and Northeast reported minor Industrial Area industrial job losses, but all other subareas reported Industrial Area industrial job gains. The outer ring subareas host 85% of the region's Industrial Areas and also dominated Industrial Area job gains, with the Outer Westside reporting growth of 7,700 Industrial Area industrial jobs, and East Multnomah and Outer I-5/205 reporting a gain of more than 2,000 Industrial Area industrial jobs each.

Service employment also grew within Industrial Areas, but far less dramatically: the Central, Inner Clackamas, Each Multnomah, Inner Westside and Outer Westside each added more than 500 Industrial Area service jobs for a regional gain of 4,300 Industrial Area service jobs (28% of total Industrial Area job gain).

Figure 13. Sectoral Trends within Title 4 Areas



Source: Metro, E.D. Hovee & Company, LLC.

'Other Areas' (not labeled as Title 4 or Design Type) also reported a strong shift towards industrial employment (+4,800 jobs, primarily within wholesale trade and construction). Manufacturing jobs declined within 'Other Areas' by close to 800 jobs.

In summary, both the Employment Areas and RSIAs appear to be experiencing a significant shift in the composition of their employment bases, away from industrial and toward service sector

employment. Both areas are well represented within the Central and Inner Ring subareas (42% and 76% of all acreage, respectively). In contrast, strong industrial job growth is associated with Industrial Areas and within land not designated by a Design Type ('Other Areas'). Further research is required to inform whether this divergence in the employment mix of Title 4 lands reflects shared characteristics of land within these designations (such as simply its location within the region's inner or outer ring), or the particular characteristics of diverse businesses located on land that was largely designated after its initial development and utilization.

II. DEVELOPMENT TRENDS

Employment growth typically affects land use in the form of industrial and commercial real estate development, the buildings in which jobs are housed. However, the relationship is not necessarily 1:1 as there are a number of factors beyond job growth that influence how jobs are translated in building form and associated land needs.

This chapter provides a review of real estate development trends, reporting sectors and metrics as typically tracked within the industrial and commercial real estate industry. Real estate sectors differ from job sectors in that they are far more generalized. The primary commercial real estate classifications used within the commercial real estate industry are:

- Office (Class A, B, C)
- Retail (by center type or ‘other’; roughly defined by size)
- Industrial (distributing/warehouse/general manufacturing)
- Flex (typically with a mix of at least 50% office space and the remainder as industrial/distribution).

To complicate matters, there is little uniformity within real estate professionals as to how product is categorized (for instance, are business parks an industrial, office or flex product?). This report at times compares growth within job sectors to growth within commercial real estate sectors, but acknowledges there is not necessarily a one to one relationship between how jobs and buildings are described or between the kinds of buildings in which a certain job sector is housed. For instance, a service sector job may be housed in an office structure, retail center or industrial building.

In the chapter following this review of development trends, additional demand factors and trends of note are explored that affect the ways in which building development and land needs respond to and influence tri-county employment.

This chapter provides additional context to inform assumptions regarding the extent and form of future employment-related development and how this will vary across the region. Primary sources of data are tax assessment data as packaged via Metro’s RLIS geocoded data set, and CoStar, a proprietary commercial real estate data base increasingly used by real estate professionals throughout this and other metro regions of the U.S. *Each data set is subject to limitations, as discussed below, but provides insight into both broad trends and subregional variations.*

Thos built environment analysis consists of two primary components, covering:

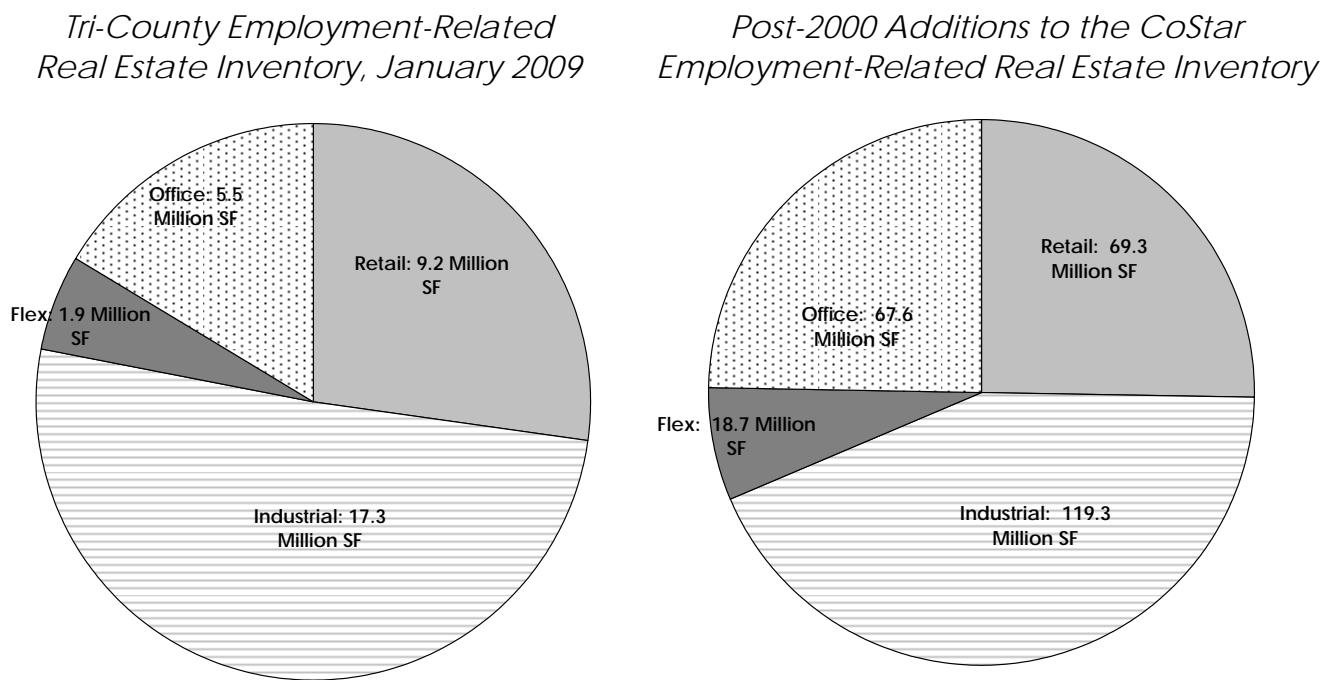
- Industrial & Commercial Broad Development Trends
- Intensity of Employment-Related Development

INDUSTRIAL & COMMERCIAL BROAD DEVELOPMENT TRENDS

Development trend data is derived from Costar, a proprietary database primarily used by commercial brokers that has been inventorying Portland real estate (new and existing) over approximately the past five years. This is the most comprehensive industry database on the region's building stock currently available, but has been focused on multi-tenant properties. While the data base is becoming increasingly inclusive, it tends to under-represent free-standing, smaller, and older properties, including some owner-occupied industrial and neighborhood retail properties.

Data tables are provided as an appendix to this report. The tables summarize development characteristics between and within subareas. The following is summary observations for each of the four employment real estate product types considered.

Figure 14. 2009 and Post-2000 Commercial Real Estate Inventory



Source: CoStar, E.D. Hovee & Company, LLC.

Industrial Development

- The Costar inventory includes 120 million square feet of industrial space in the tri-county region (excluding flex space, discussed separately below). Over 17 million square feet of this inventory is reported to have been developed since 2000, contrasting strongly with the net regional industrial job loss reported.
- The inner ring still contains the largest share of the region's industrial space (54%), but the outer ring has captured over 60% of the tri-county's post-2000 industrial development (10.5 million square feet). If the relative growth rates of the inner and outer rings

continue, the outer ring would account for the majority of the region's industrial space by 2028.

- The vast majority of both historic and recently developed industrial space is classified as distribution or warehouse. While Costar's classification system is not fully populated, it does indicate a bent, both historic and current.
- Inner North and Northeast (which houses three times the acreage of Title 4 land of any other subarea) reported the greatest volume of recent industrial construction with over 5 million new square feet. The vast majority of this space is described as distribution/warehousing.
- Other high growth subareas are in the outer ring: East Multnomah (5 million, about 10% manufacturing) and Outer I-5/205 (2.7 million square feet, close to 20% manufacturing). Virtually no industrial space has been built in the Central subarea since 2000.
- Clark County, while beyond the purview of this analysis, is an important geography within the region's economy. Clark County added 3 million square feet of industrial space since 2000; as a subarea this would be third in total square footage inventory after Inner North and Northeast and Outer I-5/205. The bulk of Clark County product was within a business park environment in 'outlying' portions of the County.
- The Outer Westside is the one market subarea with a significant amount of recent industrial product developed more than one story in height. This is largely due to the Intel Ronler Acres site on NW 229th, close to one million square feet in four stories. Ronler Acres is also the only known recent industrial development with structured parking, and is roughly half office space and half microprocessor fabrication.
- Other subareas also have examples of multi-story industrial development: Outer Clackamas reports two recent two-story warehouse and distributing buildings, about 20,000 square feet each. Outer I-5/205 most significantly reports an I-5 industrial park with 165,000 square feet of newly developed two-story space that includes clean rooms. East Multnomah reports a recently developed 181,000 square feet paper warehouse and a 56,000 square feet food processing plant. The remaining subareas report extremely limited two-story industrial square footage outside of older industrial building stock, which is primarily located in the Central and Inner Ring subareas.
- Industrial parking ratios vary widely between 1.8 and 3.8 per 1,000 square feet of building space region-wide, although parking ratio is a poorly populated field within the industrial inventory. There were no clear trends relating parking densities to types of industrial uses or subareas.

Flex Development

- Flex space differs from industrial in its higher office component (defined by Costar as comprising at least 50% of building space). The Costar inventory includes 19 million square feet of flex space, equal to only 16% of the square footage within the total industrial market.
- Close to 2 million square feet of flex space is reported to have developed since 2000. This represents a slower growth than was reported for traditional industrial space, in large part due to continuing high flex space vacancies within the Inner and Outer Westside subareas of the metro region.

- Close to half of the region's flex inventory is located within the Inner Westside subarea and continues to locate in this subarea. More recent development has also favored the Outer I-5/205 and Outer Westside subareas. No other subarea has developed more than about 100,000 square feet of flex space since 2000.
- Clark County has developed close to 300,000 square feet of flex space since 2000, mostly in the Cascade Park area east of I-205. As a subarea, this would rank 4th behind all Westside subareas except Inner I-5.
- Flex space tends to be in business or related campus park settings: in the Inner Westside subarea, about 81% of flex space is within a corporate park, versus 65% of industrial square footage.
- Recent development has been spread evenly across buildings, with buildings averaging 35,000 – 40,000 square feet in the three subareas in which this product type clusters.
- A greater share of flex product has been constructed in a multi-level format than is true for other industrial: about 30% of post-2000 development in the Inner Westside and Outer I-5/205 subareas. In the three subareas in which this product type clusters, however, the share of multi-story product actually decreased for buildings constructed after 2000 (pre-2000, the share of multi-story buildings was closer to 40%). This decrease in density may correspond to continuing high vacancies and resulting targeting of other more rate-sensitive sectors other than high-tech following the 2002 recession.
- In the subareas with the most flex product, flex parking ratios are above 3.0 per 1,000 square feet of building area but still slightly below office parking ratios.

Office Development

- There is 68 million square feet of competitive office product within the Costar inventory, with over 9 million reported as developed since 2000. Growth within the office inventory was in line with industrial and retail growth trends.
- The Central subarea continues to support a slight majority of the region's office inventory (52%). Since 2000, however, the Central subarea has captured only 26% of the 9.5 million square feet of new office space developed in the tri-county region. In contrast, 41% of new development has located within the inner-ring (and 33% in the outer ring).
- Clark County added a significant 2.2 million square feet of office space since 2000, more than any single tri-county outer ring subarea (despite a job growth rate below that of the East Multnomah, Outer I-5/205 and Outer Westside subareas). The bulk of Clark County's new office space is considered Class B. For contrast, within the three Metro jurisdiction counties, outer ring subareas added 3.1 million square feet combined, with the bulk within the Outer Westside (2.0 million square feet of primarily Class A space).
- For Class A buildings, the Central subarea has better retained its advantage, with 58% of total Class A product. Since 2000, however, new Class A office development (totaling 5.5 million square feet) has been fairly evenly distributed, ranging from 31%-35% capture in each of the Central, Inner and Outer rings of the region.
- Subareas with the greatest proportions of Class A (as a % of all subarea office space) are Outer Westside (63%), Inner Westside (47%), Inner I-5 (42%), and Central (40%). In terms of square feet of Class A space, however, Central dwarfs all other subareas with

more than twice the square footage of the entire inner ring and seven times the square footage of the outer ring.

- Very little new office product is being developed anywhere in the region at just one story, with the exception of Outer Clackamas. In all other subareas, at least 85% of office square footage development after 2000 has been higher than one story. Region-wide, the percentage of office square footage within one-story buildings was 13% pre-2000 and decreased to 6% for post-2000 development. Lower cost and lower density office space is in part moving to the retail inventory (e.g. within neighborhood and community retail centers, where services also locate).
- After 2000, buildings of four or more stories increased from 51% to 56% of total office square footage. Seven of the region's nine subareas report post-2000 office development over four stories: Central (81%), Outer Westside (60%), Inner Westside (54%), Inner North & Northeast (48%), Inner I-5 (46%), Inner Clackamas (39%) and Outer I-5/205 (36%). However, only four of these subareas developed more than one million square feet of office space in this time period (Central, Inner I-5, Inner Westside and Outer Westside).
- Only the Central subareas reported office parking ratios below 3.0 for recent development; other subareas range between 3.0 and 4.0. This reflects properties only that report dedicated parking spaces; some historic office product may have no associated parking and thus are not reflected within this average.
- Structured parking for office product remains limited to a few specific geographies within the region. Outside of the Central City, office buildings within Washington Square regional center (mostly within the Inner I-5 submarket) and Kruse Way (also Inner I-5) have developed some structured parking without public subsidy. Medical institutions and smaller medical office buildings are another example; this user type is perhaps the dominant sponsor of structured parking in Inner Ring and the Outer Westside subareas.
- The region's corporate campuses have also moved towards structured parking in the last ten years, with garages on the Nike and Adidas campuses (Inner Ring) and Intel's Ronler Acres (Outer Westside). Other identified examples of structured parking are municipal sponsored, either serving city offices (Hillsboro) or a private development supported by public subsidy (for instance, the Beaverton Round).

Retail Development

- There are 69 million square feet of retail product within the Costar inventory. Over 9 million square feet has been developed since 2000, despite a net reduction regionally in retail jobs. One (of many possible) disconnects between these data sources is that dining often falls within a retail building product but is now considered a service sector job (with the NAICS classification system). Of the product types covered by brokerage data such as Costar, retail may be the least well documented – particularly smaller, freestanding storefront and urban street retail within older properties.
- The majority of the tri-county region's retail space lies within the inner ring subareas. The Central subarea represents 18%; the outer rings represent 26% of the region's inventory. Inner North & East is the largest single subarea accounting for 25% of the region's inventory.

- Within the tri counties, stand alone, large format retail represents a fairly even share of each rings' building inventory (ranging from 11-15%).
- Small centers and main street retail dominate the Central and inner ring subareas, whereas centers of more than 35,000 square feet (and ranging up to 1+ million square feet) dominate the outer ring retail inventory.
- Region-wide, development since 2000 has favored larger format stores, which increased from 15% of the pre-2000 building stock to 21% of the post-2000 building stock. Centers have maintained a constant share of the region's retail inventory, while 'other' or main street retail has declined as a share of the reported regional total.
- Clark County developed a remarkable 3.8 million square feet of retail space since 2000, about 40% of the post-2000 development inventoried for Oregon counties. This represents very rapid growth for a county that has historically experienced substantial retail sales leakage to the Oregon side of the Columbia River. Post-2000 Clark County retail development has favored large retail centers (45%) and smaller format stores (32%).
- Predictably, the Central submarket reports the highest share of recently developed retail buildings more than one story (84%, including both all-commercial and mixed-use buildings). The Inner North & Northeast and Inner I-5 submarkets also report denser trends, with 46% and 44% respectively of post-2000 retail development in buildings with more than one story. The Inner Westside reports 25%. All other subareas report 11% or less. Outer Clackamas and Outer Westside report especially low density in recent retail development.
- In most subareas, the proportion of retail being developed within multi-story structures increased after 2000. The exceptions are Inner and Outer Clackamas and Outer Westside. Region-wide, the percentage of retail more than one story decreased from 27% in the pre-2000 inventory to 26% in the post-2000 inventory. When the three outlier subareas are removed, the percentage within the remaining six subareas increases from 23% to 25%.
- Parking ratios are the lowest within the Central subarea (below 2.0 spaces per 1,000 square feet in post-2000 development) and in East Multnomah County (2.85). A standard range of between 3.0 and 4.0 is reported for all other subareas both pre- and post-2000. Again, this average only reflects properties that report dedicated parking spaces; historic and urban streetfront retail very often have limited or no associated parking and do not report parking ratios.
- Structured parking is associated with retail development in numerous subareas beyond the Central subarea via regional malls: Lloyd District (Inner North & Northeast), Clackamas Town Center (Inner Clackamas), Washington Square (Inner I-5), Street of Tanasbourne (Outer Westside) and Bridgeport Village (Inner Westside). Beyond Outer Westside, the outer ring subareas have yet to develop retail-associated structured parking or with other center types.

INTENSITY OF EMPLOYMENT-RELATED DEVELOPMENT

Considerable attention has been given to the density of residential development across the tri-county region. Less attention has been given to density (or intensity) of employment development, with most analyses focusing on employment per unit of land area.¹² In contrast, this trends analysis focuses on the relationship between industrial/commercial buildings and land area as measured by floor area ratios (FARs).

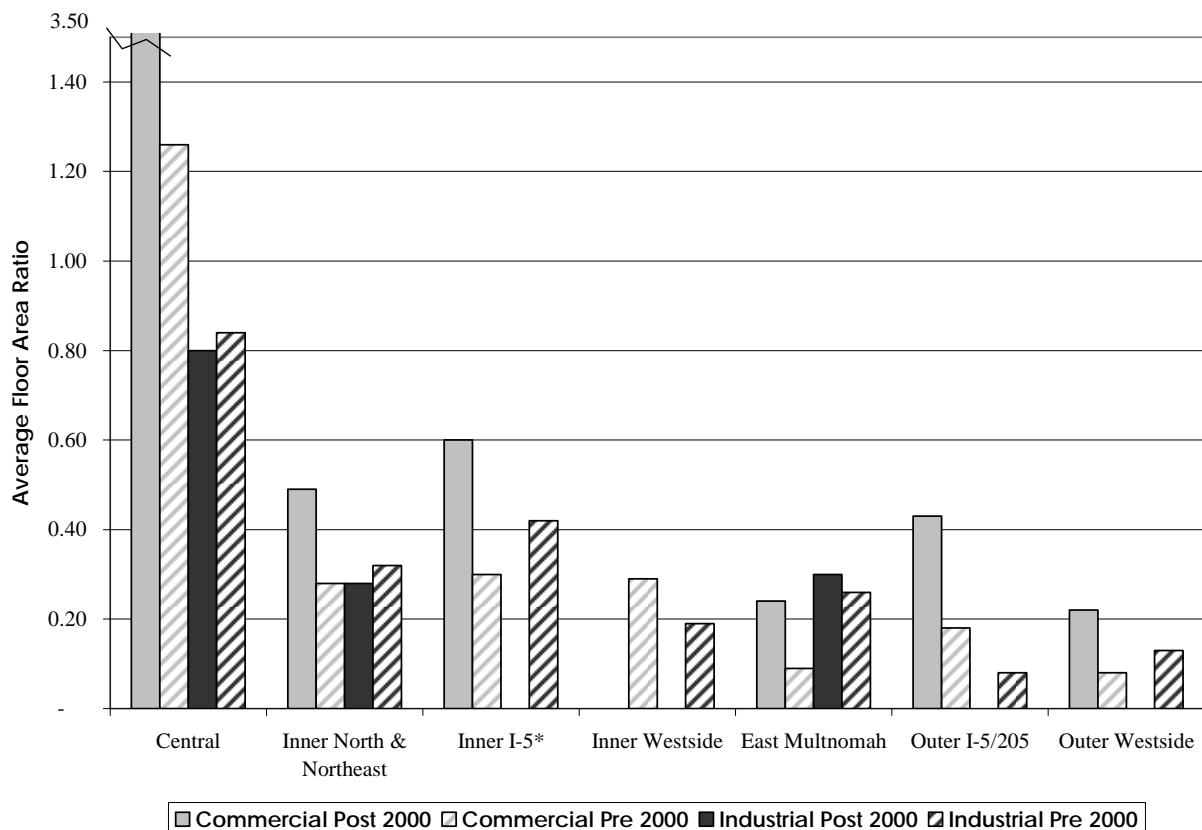
Floor area ratios describe the density of building development by comparing total building square feet to land square feet. An FAR of 0.5 indicates that total building square feet is equal to 50% of land area (for instance, a single story building with 50% lot coverage). An FAR above this often – although not always – indicates a multi-story building with some form of structured parking or below average parking ratios, as a substantial portion of site area is typically also required for on-site parking, landscaping, setbacks, etc.

Methodology. FARs have been calculated for each subarea and design type for development occurring both before and after 2000. For subareas, reported FAR describes land developed in commercial or industrial use (according to tax assessor data). Vacant lots and lots not developed in commercial or industrial use were excluded from the FAR calculations. *This approach describes existing employment-related development, rather than the landscape as a whole.*

FARs by Subarea. Density of commercial development appears to be substantially greater post-2000 than what was on the ground pre-2000. This is the case for the six subareas for which comparable pre/post-2000 data is available.

¹² Employment densities vary by product type (for instance, new industrial space may be warehouse space with relatively low densities of employment). It is noted that real estate product types do not neatly correspond to job classifications. For instance, an undetermined portion of service sector jobs are likely located in buildings classified as industrial.

Figure 15. Subarea Floor Area Ratios (pre & post 2000)



*Note: Excludes Clackamas County lots.

Source: Metro RLIS (Nov 08), E.D. Hovee & Company, LLC.¹³

Pre and post-2000 data is available for industrial development in only the three Multnomah County subareas. In two of these areas (Central and Inner North and Northeast), average FAR fell for post-2000 development. This is likely related to older, two-story industrial stock that is no longer being built for modern industrial uses but rather slowly converting to office uses.

A strong caveat to the above data is that limited square footage data is available for lots in Washington County, and no data is available for Clackamas County lots. The following table lists the total building square footage from which the above chart derives. It illustrates the uneven nature of the data: far more data is available for Multnomah County development.

¹³ In addition to limited parcels with reported square footage data, an added limitation of assessors data is that it relies upon tax data to identify current property use, which is not always accurate. There is a risk of over-stating FARs for larger development that may encompass more than one parcel (For instance, regional malls or developments that may involve parking on one taxlot and a building on an adjacent lot. In this case, a parcel in surface parking use would be described as vacant and not included in the FAR tally). However, this is an issue that would affect both pre- and post-2000 conditions and so should not affect the relative changes between these time periods.

Figure 16. Building Square Footage Data Available by Subarea

Building Square Feet	Central	Inner North & Northeast	Inner I-5*	Inner Westside	East Multnomah	Outer I-5/205	Outer Westside
Post 2000	5,028,000	9,407,000	372,000		6,740,000	92,000	84,000
Pre 2000	77,774,000	110,592,000	9,390,000	9,814,000	24,027,000	2,088,000	5,486,000

Source: Metro RLIS (Nov 08), E.D. Hovee & Company, LLC.

As would be expected, the Central subarea reports the highest FARs for employment land and the only FARs in the region averaging more than 1.0. Post 2000 development is associated with a substantial FAR jump, from 1.26 to 3.51 for commercial uses (office and retail) within Portland's Central subarea. All other subareas for which data is available also report substantial post-2000 commercial FAR increases ranging between 80% and 170% compared to development on the ground pre-2000.

For the two Inner ring subareas with sufficient data, post -2000 commercial FARs range from 0.50 to 0.60, increases from pre-2000 development.¹⁴ Industrial FARs, on the other hand, indicate slightly declining FARs for the two subareas with sufficiently populated tax data. Inner North and Northeast reports post-2000 industrial FARs about 70% below commercial FARs.¹⁵

Outer ring subareas report a substantially less dense pre-2000 building stock for employment lands, but post-2000 commercial FARs that appears to approach those of the inner ring subareas (ranging from 0.22 to 0.43). Increases in density of commercial development have been particularly dramatic for outer ring subareas for which data is available – with the Outer I-5/205 subarea indicating a more than three-fold increase in commercial FAR.¹⁶

FARs by Design Type. A similar exercise has been undertaken to evaluate FAR by Design Type including Title 4 land. For each of six Design Types (excluding Central City), FAR was calculated for the following

1. Parcels exclusively in commercial or industrial use, and
2. All mixed use center development within the design type (including residential use).¹⁷

¹⁴ Square footage data is substantially more complete for Multnomah County development than for Clackamas and Washington County, rendering FAR calculations more reliable for the Central, Inner North and East and East Multnomah subareas. No square footage data was available for Clackamas County (within Metro's geocoded taxlot data set); this impacts the Inner I-5 and Outer I-5/205 subareas as well as the two Clackamas County subareas. FARs for these subareas reflect non-Clackamas County lots only.

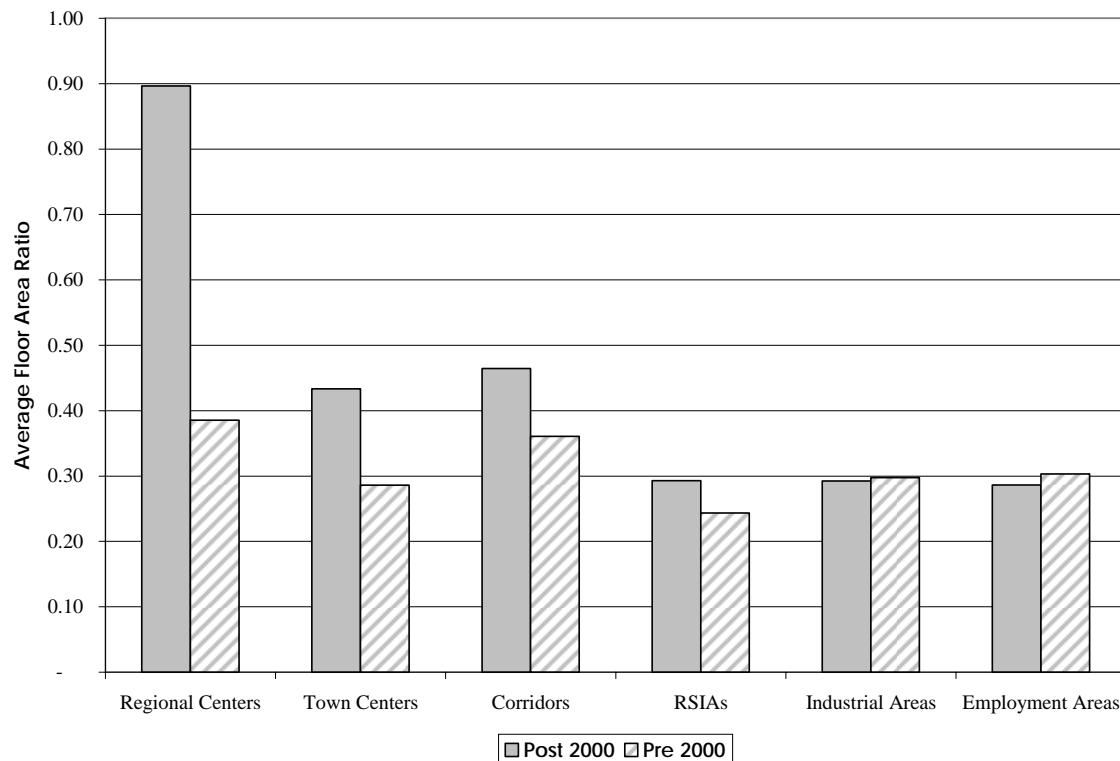
¹⁵ With less than 12,000 square feet reported in the tax assessor data, Inner Westside post-2000 data was deemed insufficient from which to draw FAR conclusions.

¹⁶ Square footage data is extremely limited for Washington County subareas and FAR calculations reflect only those parcels with reported building square footage.

¹⁷ Lots identified as resource, agricultural, open space, vacant or public facilities or other were excluded from the analysis. Also noted is that the FARs reported for employment land likely miss the commercial component within mixed-use buildings.

An increase in FAR is indicated across all of the urban (non-Title 4) design types with post-2000 development compared with pre-2000 conditions.

Figure 17. Design Type Floor Area Ratios (Employment-related Development)



Source: Metro RLIS (Nov 08), E.D. Hovee & Company, LLC.

It is important to note that the Design Type FAR conclusions reflect primarily Multnomah County and some Washington County taxlots, and exclude Clackamas County entirely (due to the limited tax assessor data available for those counties).

Regional centers reported the highest average FAR at 0.90, increasing to 1.07 when residential properties are included. Regional centers are also associated with greater increases in FAR than Town Centers or Corridors.

Across all the urban design types, post-2000 FARs increased when residential development was included. This indicates that recent residential development is on average now denser than recent commercial development. Just the opposite conditions prevailed for development on the ground pre-2000 development; data indicates that residential buildings were less dense than commercial development within the design types before 2000.

Title 4 industrial areas report less variation in pre-2000 and post-2000 FARs: FARs tend to cluster around 0.3. Regionally Significant Industrial Areas are the exception; pre-2000 FARs are somewhat lower pre-2000 (0.24), whereas post-2000 FARs are in line with other Industrial and Employment Areas at 0.29. While there is residential development within these areas, a ‘with

residential' FAR was not calculated because residential generally represents a non-conforming use within Title 4 that is now discouraged by regional land use policies.

The following table reports building square feet from which FARs were derived, and reports urban Design Type FARs both including and excluding residential buildings.

Figure 18. FARs by Design Type Detail

	Land SF	Building SF	FAR
Regional Centers			
Post 2000			
Commercial/industrial	1,975,000	1,771,000	0.90
With MFR/SFR	3,425,395	3,665,000	1.07
Pre 2000			
Commercial/industrial	24,815,000	9,564,000	0.39
With MFR/SFR	48,630,000	15,295,000	0.31
Town Centers			
Post 2000			
Commercial/industrial	2,011,000	871,000	0.43
With MFR/SFR	9,452,000	6,856,000	0.73
Pre 2000			
Commercial/industrial	27,581,000	7,895,000	0.29
With MFR/SFR	85,053,000	21,648,000	0.25
Corridors			
Post 2000			
Commercial/industrial	6,278,000	2,916,000	0.46
With MFR/SFR	27,750,000	18,504,000	0.67
Pre 2000			
Commercial/industrial	108,843,000	39,268,000	0.36
With MFR/SFR	346,639,000	103,207,000	0.30
Employment Areas			
Post 2000			
Commercial/industrial	6,116,000	1,751,000	0.29
Pre 2000			
Commercial/industrial	57,330,000	17,397,000	0.30
Industrial Areas			
Post 2000			
Commercial/industrial	10,153,000	2,968,000	0.29
Pre 2000			
Commercial/industrial	70,066,000	20,851,000	0.30
Regional Significant Industrial Areas			
Post 2000			
Commercial/industrial	23,402,000	6,855,000	0.29
Pre 2000			
Commercial/industrial	208,984,000	50,938,000	0.24

Note: The Central City design type has been excluded from this table due to data errors associated with residential condominiums and the prevalence of this building type within the Central City.

Source: Metro RLIS (Nov 08), E.D. Hovee & Company, LLC.

III. DEMAND FACTORS

This chapter considers four topics of special interest in allocating expected job growth to the region's land supply. These include:

- *Redevelopment rates*: to what extent is development occurring on vacant land versus land that is already in (potentially low value) use?
- *Consumer demand as a retail driver*: to what extent is the tri-county sufficiently served by retailers, and will retail continue to cluster in certain higher income subareas rather than evenly distribute throughout the region?
- *Institutional growth*: how much job growth will occur within institutional settings? How do institution's land use patterns vary from other users?
- *Land use within industrial sectors*: to what extent have industrial users intensified, as has been observed within the office sectors? To what extent might this occur in the future?
- *Employees per square foot*: assumptions are reported that will serve as a starting point to be combined with FAR inputs – translating job growth to site/land consumption.

EMPLOYMENT ON VACANT VS. REDEVELOPED LANDS

A major factor in estimating the land needs associated with future employment growth is the extent to which building development locates on vacant (greenfield) parcels versus parcels on which some existing – likely low valued – development is located, so that the new building represents land redevelopment.

To quantify this issue, parcels that tax data indicated had developed post-2000 were matched with the same property tax ID numbers from a 1999 taxlot database. The characteristics of the taxlot in 1999 were then noted, including whether the parcel had any improvements (indicated by improvement value and/or building square footage).¹⁸

The required data was available for about 450 taxlots region-wide, a very limited sample of the taxlots on which post-2000 development occurred and again disproportionately weighted towards Multnomah County taxlots. Within this sample, 53% were properties on which some amount of development was located prior to the current building (with at least 200 square feet and a value of at least \$5,000). Forty-seven percent of these taxlots were vacant prior to their post-2000 development.

¹⁸ This query relied upon year built and square footage data, which again were poorly populated for Clackamas and Washington County taxlots. It also only captures those taxlots that remained consistent within this timeframe, as opposed to taxlots that were split or aggregated in the redevelopment process.

Figure 19. Former Use of Parcels that Developed Post-2000 for Employment Uses

Geography	Number of Parcels by Improvement: Land Value Ratio*						1999 Status	
	Total	< 0.5	0.5 - 1	>1	No data	Vacant	Improved	Vacant
Central	52	20	5	7	2	18	65%	35%
Inner Ring	265	59	29	51	17	109	59%	41%
Outer Ring	129	18	6	17	5	83	36%	64%

*Note: Improvement to land value ratio describes the relationship between the value of land improvement (building) to the value of land.

Source: RLIS (November 2008), E.D. Hovee & Company, LLC.

Taxlots were also analyzed by subarea and by ring. Predictably, given the greater building stock and developed parcels with the central and inner ring – and the longer time period over which they have developed – redevelopment rates were higher for these two geographies.

The Central subarea reported the highest redevelopment rate among the ring geographies at 65%, which corresponds to its relatively high land values. The inner ring reported a similarly high redevelopment rate at 59%. The outer ring, which supports the bulk of the region's vacant parcels, reported a redevelopment rate of just 36%.

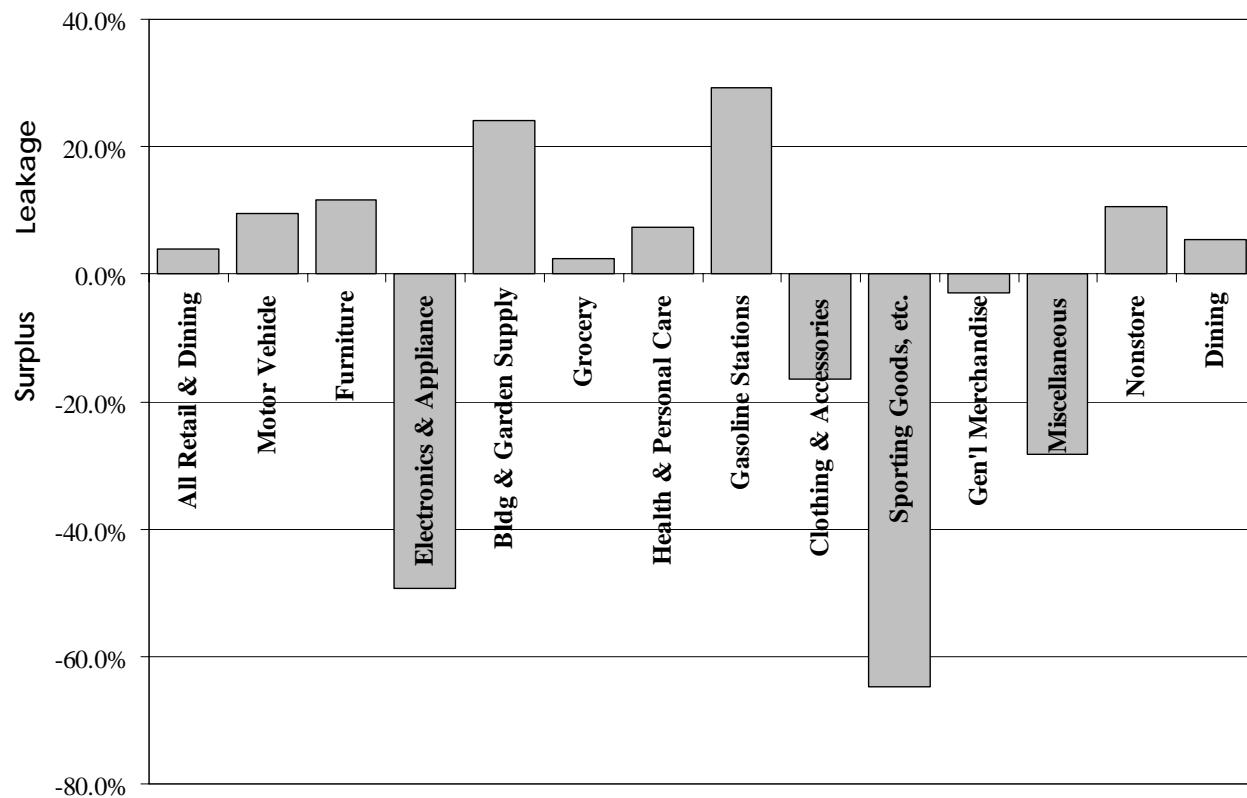
CONSUMER EXPENDITURES AS RETAIL DRIVER

As a real estate product, retail development is unique in its responsiveness to household consumer demand, primarily measured through housing densities and incomes. For this discussion, consumer retail expenditures are considered at the macro (regional) level of the Portland tri-county area plus Clark County, given Clark County's major influence on regional retail activity (its historic propensity to shop in retail tax-free Oregon).

As of 2008, an estimated \$24+ billion in consumer spending potential is estimated for the four-county metropolitan area. This estimate is based on household disposable income for the region and typical buying patterns exhibited throughout the U.S. In 2008, metro area retailers collected an estimated \$23 billion in sales, meaning that the remaining \$1 billion could be viewed as retail leakage, with consumers traveling elsewhere to shop (or shopping online). However, this relatively minor leakage (4%) could also simply indicate different consumer spending priorities in the Portland metro area.

As a percentage of total demand, the leakage is relatively modest – only 4% of total spending potential (retail demand). It also appears to be influenced by lifestyle and planning choices that, to some degree, set this metro area apart from the rest of the country. This becomes more evident with the following graphic depicting levels of sales leakage (or surplus) by major merchandise category.

Figure 20. Retail Sales Leakage as % of Demand – By Merchandise Type (2008)



Source: ESRI Business Information Solutions, E. D. Hovee & Company, LLC.

While total sales are very close to total estimated spending, sales within each retail category diverge (sometimes significantly) from the national norms. According to U.S. averages, the Portland region appears to spend less on motor vehicle sales, furniture and home furnishings, building materials and garden supply, grocery, health and personal care, gasoline stations, non-store retailers and dining. In contrast, retail sales are higher than would be expected in electronics/appliance stores, apparel, general merchandise, and a variety of specialty merchandise categories. These variances from the national norms could indicate tourism/destination spending (in ‘over supplied’ categories), shifts between categories (for instance, residents appear to be under-served with furniture stores but are more than amply served by home furnishings stores), and also retailers and their merchandise not neatly falling within the categories created by industry analysts.

This overview suggests four summary observations:

1. By and large, retail potential and actual spending appear to be roughly in balance in the Portland metro area (including Clark County). While there are potential imbalances within specific merchandise categories, these may be more the result of different consumer spending priorities and development patterns in the Portland metro area, rather than indications of actual sales leakage.

2. Consequently, further retail development over the longer term is dependent primarily on some combination of population growth and destination tourism activity (aided by Oregon's lack of retail sales tax).
3. The geographic distribution of retail sales could change between subareas within the region. However, in the absence of population and/or tourism growth, this shifting would be a zero-sum game, with some subareas gaining at the expense of others.
4. As the region grows, an appropriate planning and market question is whether the distribution of retail will or should continue to be strongly focused on the Central and Inner Ring areas or more dispersed to Outer Ring subareas to better serve local residents closer to home.

INSTITUTIONAL UTILIZATION

Institutional uses warrant special consideration as an employment generator and land consumer because their land use patterns are distinct from other employers. Institutions including health care, education and public agencies often tend to cluster employment, requiring larger parcels or aggregations of parcels, developing land more intensively (e.g. with structured parking) and locating in a variety of zones other than commercial (such as residential).

Metro's 2035 employment forecast (created in 2000) projects that a significant 20% of net new employment will be within the health and education sectors: a total of 126,000 new health care jobs and 31,300 new education jobs. Pro-rated, assuming constant annual growth, this equates to 97,600 health care jobs and 24,100 education jobs that might be expected between 2008 and 2035. Many of these jobs will locate outside of land designated for employment uses.

A review of 2006 health care and education employment sectors indicates that the bulk of employment sites (rather than employers, which may maintain more than one site) supports more than 50 employees: within education, more than 80% of employment is at sites with more than 50 employees; within health care, more than 60% of employment is at sites with more than 50 employees.

Figure 21. 2006 Education and Health Care Employment by Employees per Site

Employees per Site	Education		Health Care	
	Total	Percent	Total	Percent
Less than 10	1,500	2%	13,200	15%
10-50	11,400	17%	19,700	22%
50-100	12,100	18%	10,500	12%
101-500	15,300	23%	17,600	20%
500+	25,200	38%	29,000	32%
Total	65,500	100%	90,000	100%

Source: ES 202, Metro, E.D. Hovee & Company, LLC.

If these trends continue in the future, employment growth 2008- 2035 within these sectors would be distributed approximately as follows:

Figure 22. Projected Employment Growth 2008 – 2035 by Employees per Site

Employees per Site	Education	Health Care
Less than 10	600	14,300
10-50	4,200	21,400
50-100	4,500	11,400
101-500	5,600	19,100
500+	9,300	31,500
Total	24,200	97,700

Source: Metro, E.D. Hovee & Company, LLC.

In focus groups conducted as a part of Task 6 for this employment and economic trends analysis work program, institutional land users report somewhat conflicting priorities:

- Dense (multi-story) development fits well for administrative and non-patient functions. On the other hand, mid-rise development best maintains accessibility, keeps cost low and avoids neighborhood conflicts.
- Especially given the challenges of building in an often residential environment, institutional preference is to expand on-site (where existing agreements are in place) rather than to acquire new land on which to expand.
- Institutions value both easy auto accessibility (as most clients access institutions via cars) and good transit service, primarily to serve their workforce.
- Space needs are impacted by both an aging population (with greater health care needs and thus space needs) and reduced on-site visits and fewer over-night stays (which reduce space needs).

With the exception of major research and administrative functions, institutions generally appear oriented to decentralize and bring services closer to where people live. Given that the bulk of the region's population growth is projected for the outer ring, institutional employment growth is expected to follow suit and favor outer ring and other locations anticipated for substantial household growth.

INDUSTRIAL BUILDING & SITE UTILIZATION

A final topic of special interest that impacts regional land demand is how land utilization has changed and will change within the industrial sectors. Office uses are generally understood to increase in density as land prices increase, adding both building stories and structured parking. Given their emphasis on housing machinery and goods (rather than employees and clients), industrial uses have historically lacked the financial incentive to build at higher densities. To what extent have industrial uses densified in this region? How do broader industrial trends influence this – for instance, continued or accelerated growth in land-intensive warehousing and distributing uses?

To date, this analysis reveals relatively few clear trends indicating substantial changes with industrial land use and building development. Summary comments are listed below.

- Close to 30% of post-2000 flex space development in the Inner Westside and Outer I-5/205 subareas (where the bulk of new flex has located) has comprised 2+ story development since 2000. While reportedly a small component of new industrial sector development, flex is generally willing to develop at higher densities given its heavier emphasis on office.
- In two of nine subareas, 2+ level industrial development accounted for the majority of new space constructed – the Inner I-5 at 52% and Outer Westside at 61%. For the other seven market subareas, multi-level industrial accounted for at most 15% of new development.
- A few notable industrial buildings comprise much of the 2+ level industrial structures constructed since 2000. Examples include recent two-story warehouse and distributing buildings (of about 20,000 square feet each within Outer Clackamas) and an Outer I-5/205 industrial park with 165,000 square feet of newly developed flex two-story space that includes clean rooms). East Multnomah reports one recently developed 181,000 square feet paper warehouse and a 56,000 square feet food processing plant.
- The region's prime example of higher density developed industrial space is Intel's Ronler Acres site in the Outer Westside subarea. At four stories and with about 50% office use, this building fits within the traditional definition of flex (vs. industrial) space. The building is associated with structured parking, but retains a campus-style environment with significant green space surrounding the building. Due to this green space, the development's ultimate FAR may be low despite the multi-story and structured parking elements.
- With the exception of RSAs, over-all average industrial FARs appear to have changed very little, and if anything are decreasing. Decreasing FARs are likely related to the historic stock of multi-story warehouse space; such space is largely considered dysfunctional for modern warehouse uses and is not being replicated in newer buildings. For the most part, multi-story warehouse space is gradually leaving the industrial building inventory with industrial users migrating to new and lower profile construction. This is happening, for example, with office conversions in Portland's Central Eastside district (initially developed pre-1950).
- Metro's 2035 employment projections call for wholesale trade, warehousing and distributing to comprise 45% of net new industrial sector job growth, or a pro-rated 58,000 new jobs by 2035. Data indicates that warehouse buildings support fewer jobs per square feet than other types of industrial uses. Of the remaining industrial sector jobs projected, high tech accounts for 45% and construction accounts for 39%; neither of these are 'traditional' industrial sector land users (high tech tends to have a higher office component and construction requires more land for equipment storage than building square feet). Manufacturing jobs are projected to account for only 4% of non-distributing industrial job growth – a total of just 3,000 new jobs between 2008 and 2035. Again, it should be noted that job sectors locate in various types of commercial space, which are only broadly classified as industrial, flex, office or retail.

Based on focus group results, the best opportunities for increased density of distribution related development may relate more to opportunities for high-cube space (with higher ceilings for more rack storage) than to multi-story development. Most manufacturing space is also expected to

remain at one and in some cases two stories, albeit with high ceiling space requirements for some processes and with 2+ stories more possible for office, administrative and some R&D components of the structure.

Opportunities for multi-level development may also be greater for flex buildings with a higher component of office space, especially within high demand market subareas. For existing land constrained industrial uses, transition from at-grade to structured parking also may be considered in some cases.

BUILDING SQUARE FEET PER EMPLOYEE

Beyond building type and density, the final piece of data required to translate jobs into land needs is the number of building square feet required per employee. The following table lists a range of inputs that will be considered within Task 3 modeling for this Employment Demand Analysis project.

Figure 23. Square Feet per Employee

Employment Type	1999 Metro Study	2008 Metroscope Range
Manufacturing		500 – 1,100
Chemicals, petroleum, rubber, leather	720	
Primary & fabricated metals	320	
Machinery equipment	300	
Electrical machinery, equipment	400	
Transportation and Warehousing	3,290	
Communications and Public Utilities	460	
Wholesale Trade	1,390	
Retail	470	320-450
Services		320-450
Finance, Insurance	370	
Health services	350	500 – 1,100
Education, social, membership services	530	500 – 1,100

Source: 1999 Employment Density Study, Metro; E.D. Hovee & Company, LLC.

Obtaining updated real-world information requires a survey of employers. This was last completed in 1999 for Metro's Employment Density Study. Results available by job sector are reported in the second column. The third column reports simulated employment densities generated from the MetroScope employment model (which vary by Census Tract) that will also be considered with the Task 3 demand paradigm and employment allocations.

Few studies have been conducted that can provide *apples to apples* comparisons of employment density in a consistent manner across a multi-year time frame. Analysis that has been reviewed

does not always indicate a clear trend over time, nor does it reflect prospects for changing patterns that could yet emerge over the next 20-50 years.¹⁹

Examples of changes that could influence job densities in ways not experienced to date include increased property costs, business cost reductions, increased part-time and shared job positions, office hoteling (or space sharing), and automation. These or other variations may be modeled within a Task 3 demand scenario, as outlined in the following section.

¹⁹ As an example, data compiled by the national Building Owners and Managers Association for office space indicates that employment per square foot of office space generally declined for *private* downtown and suburban uses from 1985 to 1990, then increased somewhat from 1995-2003 (but not back to 1985 levels. With *government* office space, the reverse pattern is noted. Workers square feet increased from 1985-1995, then declined from 1995-2003. As cited by the Urban Land Institute (ULI) publication, *Shared Parking*, 2005.

IMPLICATIONS FOR NEW EMPLOYMENT DEMAND PARADIGM

As noted at the outset of this report, the results of this Task 1 analysis (together with Task 2 location variables trends research) will inform subregional employment forecasting within Task 3. Regional employment totals are expected to be consistent with Metro's already completed *2005-2060 Regional Population and Employment Forecast for the Portland-Beaverton-Vancouver OR-WA Primary Metropolitan Statistical Area (PMSA)*.

The New Demand Paradigm associated with Task 3 will allocate this employment to the tri-county portion of the larger metro area by industry sector, subarea geography and design types using a range rather than point estimate approach. Based on research completed with Tasks 1 and 2 of this Employment and Economic Trends research, the following implications are noted for the Task 3 demand allocation process.

8. The 2002 *Urban Growth Report* projected that the tri-county UGB would capture 75% of future job growth; this employment analysis indicates that the tri-county area captured 83% of 2006 employment. Task 3 forecast allocation scenarios may be varied to reflect this more recent experience and/or land capacity constraints within certain job sector or land use design types.
9. The Metro 2060 forecast provides a range rather than point estimate of future total employment but without detailed employment sector (or industry-specific) projections. This approach reflects the increasingly dynamic nature of the national and metro area economy and is proposed to be continued with the forecast allocation process – placing primary emphasis on subarea geography and design type categories rather than sector specific projections.
10. A baseline forecast allocation is expected to reflect the continued trend of job movement towards the outer rings of the metro region – especially for job sectors seeking Title 4 land and population-driven components of retail and institutional (service) growth. An alternative scenario may reflect growth patterns possible if urban-focused design types (centers and corridors) successfully compete for higher shares of regional employment growth.
11. Prior forecast allocations have translated employment growth to land demand with use of employment density factors (measured in terms of *jobs per acre*). In contrast, this planned allocation modeling process will pursue a two-step approach, similar to the prior Regional Industrial Land Study (RILS) approach:
 - Application of *employment per square foot of building area* standards based on Metro and other research which generally are not expected to change materially over the forecast periods (of 5, 20 and 50 years) – at least in base case scenario.
 - Variation of *building to site area (or FAR)* standards reflecting both recent experience and regional policy objectives. FAR variations are seen as the primary means of influencing the future land footprint associated with regional employment growth.

12. Commercial office, retail and institutional uses have begun to transition to higher FARs, a trend that is forecast to continue albeit with higher FARs expected for the central and inner ring than the outer ring of the tri-county region. At FARs in the range of 0.50+/- (depending on use), transition from at-grade to structured parking and lowered parking ratios with active transit access would also be anticipated.
13. With the exception of RSAs, industrial FARs do not yet appear to be increasing within the tri-county region but are maxing out at about 0.30. A baseline forecast scenario can be expected to maintain this cap for the foreseeable future. Alternative scenarios may reflect other industrial development patterns with reduced development footprint – including transition to higher cube distribution, structured parking for some major employers at site constrained facilities, and/or reduced tri-county capture for uses with lower ratios of employment per square foot of building area.
14. Information from this analysis suggests consideration of adjusting refill rates (currently assumed at 50% for commercial use and industrial at 35%) by location as well as by land use. Higher refill rates would be indicated for central and inner ring than for outer ring subareas. More information is needed – likely anecdotal – to support varying these rates by land use.

As Metro and local jurisdictions explore this new demand paradigm, additional data resources may be needed above and beyond what is currently available across the region. Important data-related tools to maintain and improve upon our ability to track the relationship between job and development trends include accurately geocoded ES-202 job data (potentially to the taxlot level of accuracy) and better populated tax assessor's databases for current land use, building square footage and year built (with best coverage currently available for Multnomah County).²⁰

²⁰ Also noted as a related data need will be GIS algorithms to better associate vacant and unimproved lots (particularly parking areas) with adjoining employment uses and buildings under common ownerships.

APPENDIX. DETAILED DEVELOPMENT DATA TABLES

Tables included in this appendix describe the region's (non-residential) built environment, as reflected in the CoStar commercial real estate inventory. Tables included are:

Summary Tables:

- Industrial, Flex, Office Trends by Subarea
- Summary table: Retail Trends by Subarea

Detailed Subarea Tables:

- Central Subarea
- Inner North & East
- Inner Clackamas
- Inner I-5
- Inner Westside
- Outer Multnomah County
- Outer Clackamas
- Outer I-5/205
- Outer Westside

Industrial, Flex, Office Trends by Subarea

	Central	Inner Ring	Outer Ring	Inner N/NE	Inner Clackamas	Inner I-5	Inner Westside	East Multnomah	Outer Clackamas	Outer I-5/205	Outer Westside	Total
Industrial												
Pre 2000	9,735,000	57,902,000	34,398,000	37,152,000	11,559,000	2,564,000	6,627,000	9,465,000	1,068,000	13,477,000	10,388,000	102,035,000
Post 2000	14,000	6,794,000	10,455,000	5,055,000	1,356,000	114,000	269,000	4,919,000	317,000	3,653,000	1,566,000	17,263,000
Total Industrial	9,749,000	64,696,000	44,853,000	42,207,000	12,915,000	2,678,000	6,896,000	14,384,000	1,385,000	17,130,000	11,954,000	119,298,000
% of Total	8%	54%	38%	35%	11%	2%	6%	12%	1%	14%	10%	100%
% of Post 2000	0%	39%	61%	29%	8%	1%	2%	28%	2%	21%	9%	100%
Flex (50% office)												
Pre 2000	911,000	12,349,000	3,578,000	1,204,000	495,000	2,564,000	8,086,000	231,000	104,000	1,523,000	1,720,000	16,838,000
Post 2000	-	1,010,000	879,000	18,000	-	114,000	878,000	103,000	12,000	447,000	317,000	1,889,000
Total Flex	911,000	13,359,000	4,457,000	1,222,000	495,000	2,678,000	8,964,000	334,000	116,000	1,970,000	2,037,000	18,727,000
% of Total	5%	71%	24%	7%	3%	14%	48%	2%	1%	11%	11%	100%
% of Post 2000	0%	53%	47%	1%	0%	6%	46%	5%	1%	24%	17%	100%
All Office												
Pre 2000	32,934,000	18,239,000	6,953,000	6,836,000	1,479,000	6,054,000	3,870,000	1,224,000	272,000	2,764,000	2,693,000	58,126,000
Post 2000	2,486,000	3,911,000	3,125,000	659,000	702,000	1,428,000	1,122,000	303,000	27,000	826,000	1,969,000	9,522,000
Total Office	35,420,000	22,150,000	10,078,000	7,495,000	2,181,000	7,482,000	4,992,000	1,527,000	299,000	3,590,000	4,662,000	67,648,000
% of Total	52%	33%	15%	11%	3%	11%	7%	2%	0%	5%	7%	100%
% of Post 2000	26%	41%	33%	7%	7%	15%	12%	3%	0%	9%	21%	100%
Class A Office												
Pre 2000	12,134,000	4,953,000	1,635,000	342,000	289,000	2,499,000	1,823,000	-	-	164,000	1,471,000	18,722,000
Post 2000	1,890,000	1,703,000	1,930,000	195,000	341,000	662,000	505,000	-	-	457,000	1,473,000	5,523,000
Total Class A	14,024,000	6,656,000	3,565,000	537,000	630,000	3,161,000	2,328,000	-	-	621,000	2,944,000	24,245,000
% of Total	58%	27%	15%	2%	3%	13%	10%	0%	0%	3%	12%	100%
% of Post 2000	34%	31%	35%	4%	6%	12%	9%	0%	0%	8%	27%	100%
Office Distribution												
Class A	40%	30%	35%	7%	29%	42%	47%	0%	0%	17%	63%	36%
Class B	37%	44%	47%	45%	48%	43%	44%	67%	45%	62%	29%	41%
Class C - F	23%	26%	18%	48%	23%	15%	10%	33%	55%	20%	8%	23%

Source: Costar (January 2009), E.D. Hovee & Company, LLC.

Retail Trends by Subarea

	Central	Inner Ring	Outer Ring	Inner		Inner		East	Outer		Outer	Total
				Inner N/NE	Clackamas	Inner I-5	Westside		Multnomah	Clackamas	Outer I-5/205	
All Retail												
Pre 2000	11,716,000	34,813,000	13,526,000	15,305,000	5,906,000	5731000	7,871,000	4,418,000	1,614,000	4,147,000	3,347,000	60,055,000
Post 2000	909,000	3,815,000	4,525,000	1,732,000	500,000	265000	1,318,000	1,337,000	172,000	1,524,000	1,492,000	9,249,000
Total Retail	12,625,000	38,628,000	18,051,000	17,037,000	6,406,000	5996000	9,189,000	5,755,000	1,786,000	5,671,000	4,839,000	69,304,000
% of Total	18%	56%	26%	25%	9%	9%	13%	8%	3%	8%	7%	100%
% of Post 2000	10%	41%	49%	19%	5%	3%	14%	14%	2%	16%	16%	100%
Large Format												
Pre 2000	1,911,000	5,267,000	1,615,000	2,026,000	1,246,000	1,177,000	818,000	706,000	136,000	475,000	298,000	8,793,000
Post 2000	-	1,062,000	871,000	587,000	171,000	-	304,000	192,000	-	198,000	481,000	1,933,000
All Large Format	1,911,000	6,329,000	2,486,000	2,613,000	1,417,000	1,177,000	1,122,000	898,000	136,000	673,000	779,000	10,726,000
% of Total	18%	59%	23%	24%	13%	11%	10%	8%	1%	6%	7%	100%
% of Post 2000	0%	55%	45%	30%	9%	0%	16%	10%	0%	10%	25%	100%
Centers >35,000 SF												
Pre 2000	3,669,000	15,266,000	7,150,000	4,371,000	3,110,000	3,031,000	4,754,000	2,292,000	851,000	2,391,000	1,616,000	26,085,000
Post 2000	335,000	1,135,000	2,467,000	467,000	83,000	125,000	460,000	763,000	50,000	938,000	716,000	3,937,000
All Centers	4,004,000	16,401,000	9,617,000	4,838,000	3,193,000	3,156,000	5,214,000	3,055,000	901,000	3,329,000	2,332,000	30,022,000
% of Total	13%	55%	32%	16%	11%	11%	17%	10%	3%	11%	8%	100%
% of Post 2000	9%	29%	63%	12%	2%	3%	12%	19%	1%	24%	18%	100%
Other												
Pre 2000	6,136,000	14,280,000	4,761,000	8,908,000	1,550,000	1,523,000	2,299,000	1,420,000	627,000	1,281,000	1,433,000	25,177,000
Post 2000	574,000	1,618,000	1,187,000	678,000	246,000	140,000	554,000	382,000	122,000	388,000	295,000	3,379,000
All Other	6,710,000	15,898,000	5,948,000	9,586,000	1,796,000	1,663,000	2,853,000	1,802,000	749,000	1,669,000	1,728,000	28,556,000
% of Total	23%	56%	21%	34%	6%	6%	10%	6%	3%	6%	6%	100%
% of Post 2000	17%	48%	35%	20%	7%	4%	16%	11%	4%	11%	9%	100%
Distribution												
Large Format	15%	16%	14%	15%	22%	20%	12%	16%	8%	12%	16%	15%
Centers	32%	42%	53%	28%	50%	53%	57%	53%	50%	59%	48%	43%
Other	53%	41%	33%	56%	28%	28%	31%	31%	42%	29%	36%	41%

Source: Costar (January 2009), E.D. Hovee & Company, LLC.

Central Subarea

DEMOGRAPHICS

2008 Households	47,630	Median Income	\$44,300	Median Age	37.1
2008 Population	83,100	Average Income	\$70,700	Percent Non-White	20%
Average Household Size	1.65			Percent Hispanic	6%

RETAIL

Year Built	Retail Types			Built Environment			Rents	
	Large Format	>35,000 SF	Centers	Total SF	>1 Story	Parking Ratio	Range	Average
Pre 2000	1,911,000	3,669,000	6,136,000	11,716,000	66%	2.76	\$4-\$40	\$19.09
Post 2000	-	335,000	574,000	909,000	84%	1.73	\$19-\$35	\$26.37
All Years	1,911,000	4,004,000	6,710,000	12,625,000	68%	2.67	\$4-\$40	\$19.93
Avg Rent/SF	\$11.00	\$19.78	\$20.06	\$19.93	(blank)			

OFFICE

Year Built	Square Feet by Building Class			Built Environment			Rents		
	A	B	C	Total	2-3 Stories	4+ Stories	Parking	Range	Average
Pre 2000	12,134,000	12,500,000	8,300,000	32,933,000	24%	72%	2.17	\$8-\$54	\$18.93
Post 2000	1,890,000	595,000	1,000	2,485,000	17%	81%	2.46	\$17-\$29	\$22.63
All Years	14,024,000	13,095,000	8,301,000	35,418,000	23%	73%	2.18	\$8-\$54	\$19.20
Avg Rent/SF	\$23.58	\$19.36	\$17.04	\$19.20	(blank)				

FLEX (50% office)

Year Built	SF	2+ Stories	Parking			Rents		
			Ratio	Range	Average			
Pre 2000	911,000	29%	3.04	\$5-\$14	\$10.07			
Post 2000	-	0%	-	-	-			
All Years	911,000	29%	3.04	\$5-\$14	\$10.07			

INDUSTRIAL

Year Built	SF	2+ Stories	Parking			Rents		
			Ratio	Range	Average			
Pre 2000	9,735,000	31%	1.23	\$3-\$20	\$9.83			
Post 2000	14,000	0%	-	-	-			
All Years	9,749,000	30%	1.23	\$3-\$20	\$9.83			

Inner North & Northeast

DEMOGRAPHICS

2008 Households	169,810	Median Income	\$74,600	Median Age	40.5
2008 Population	424,720	Average Income	\$106,800	Percent Non-White	13%
Average Household Size	2.37			Percent Hispanic	7%

RETAIL

Year Built	Retail Types			Built Environment		Rents			
	Large Format	>35,000 SF	Centers	Other	Total SF	>1 Story	Parking Ratio	Range	Average
Pre 2000	2,026,000	4,371,000	8,908,000	15,305,000		19%	3.42	\$2-\$54	\$15.88
Post 2000	587,000	467,000	678,000	1,732,000		46%	3.26	\$11-\$34	\$20.42
All Years	2,613,000	4,838,000	9,586,000	17,037,000		21%	3.41	\$2-\$54	\$16.81
Avg Rent/SF	\$14.56	\$17.86	\$16.79	\$16.81		(blank)			

OFFICE

Year Built	Square Feet by Building Class			Built Environment			Rents			
	A	B	C	Total	2-3 Stories	4+ Stories	Parking	Range	Average	
Pre 2000	342,000	2,931,000	3,563,000	6,836,000		56%	17%	3.40	\$7-\$53	\$16.95
Post 2000	195,000	417,000	47,000	659,000		37%	48%	3.22	\$13-\$26	\$18.84
All Years	537,000	3,348,000	3,610,000	7,495,000		55%	19%	3.39	\$7-\$53	\$17.12
Avg Rent/SF	\$36.76	\$17.19	\$16.34	\$17.12		(blank)				

FLEX (50% office)

Year Built	SF	2+ Stories	Parking		Rents	
			Ratio	Range	Range	Average
Pre 2000	1,204,000	18%	2.22	\$11-\$12	\$11.91	
Post 2000	18,000	0%	-	-	-	
All Years	1,222,000	18%	2.22	\$11-\$12	\$11.91	

INDUSTRIAL

Year Built	SF	2+ Stories	Parking		Rents	
			Ratio	Range	Range	Average
Pre 2000	37,152,000	6%	1.66	\$3-\$23	\$7.03	
Post 2000	5,055,000	0%	1.24	\$4-\$8	7.03	
All Years	42,207,000	5%	1.65	\$3-\$23	\$6.89	

Inner Clackamas

DEMOGRAPHICS

2008 Households	48,700	Median Income	\$61,600	Median Age	38
2008 Population	125,500	Average Income	\$77,400	Percent Non-White	14%
Average Household Size	2.56			Percent Hispanic	8%

RETAIL

Year Built	Retail Types			Built Environment			Rents	
	Large Format	>35,000 SF	Other	Total SF	> 1 Story	Parking Ratio	Range	Average
Pre 2000	1,246,000	3,110,000	1,550,000	5,906,000	23%	4.29	\$7-\$38	\$17.46
Post 2000	171,000	83,000	246,000	500,000	8%	3.84	\$15-\$33	\$19.92
All Years	1,417,000	3,193,000	1,796,000	6,406,000	21%	4.22	\$7-\$38	\$17.81
Avg Rent/SF	\$30.48	\$18.32	\$16.99	\$17.81	(blank)			

OFFICE

Year Built	Square Feet by Building Class			Built Environment			Rents		
	A	B	C	Total	2-3 Stories	4+ Stories	Parking	Range	Average
Pre 2000	289,000	717,000	473,000	1,479,000	61%	15%	4.09	\$1-\$24	\$16.33
Post 2000	341,000	340,000	21,000	702,000	57%	39%	3.95	\$15-\$30	\$22.90
All Years	630,000	1,057,000	494,000	2,181,000	60%	23%	4.07	\$1-\$30	\$17.34
Avg Rent/SF	\$24.36	\$19.18	\$12.54	\$17.34	(blank)				

FLEX (50% office)

Year Built	SF	2+ Stories	Parking		Rents	
			Ratio	Range	Range	Average
Pre 2000	495,000	23%	2.88	\$5-\$31	\$12.18	
Post 2000	-	0%	-	-	-	
All Years	495,000	23%	2.88	\$5-\$31	\$12.18	

INDUSTRIAL

Year Built	SF	2+ Stories	Parking		Rents	
			Ratio	Range	Range	Average
Pre 2000	11,559,000	7%	2.03	\$3-\$20	\$7.16	
Post 2000	1,356,000	4%	1.36	\$5-\$7	5.26	
All Years	12,915,000	7%	1.92	\$3-\$20	\$6.89	

Inner I-5

DEMOGRAPHICS

2008 Households	41,490	Median Income	\$74,600	Median Age	40.5
2008 Population	99,700	Average Income	\$106,800	Percent Non-White	13%
Average Household Size	2.37			Percent Hispanic	7%

RETAIL

Year Built	Retail Types			Built Environment		Rents		
	Large Format	>35,000 SF	Centers		Parking	Ratio	Range	Average
Pre 2000	1,177,000	3,031,000	1,523,000	5,731,000	38%	5.6	\$26-\$32	\$17.26
Post 2000	-	125,000	140,000	265,000	44%	4.4	\$10-\$32	\$28.07
All Years	1,177,000	3,156,000	1,663,000	5,996,000	38%	5.5	\$10-\$32	\$18.09
Avg Rent/SF	17.33	17.00	18.39	18.09		(blank)		

OFFICE

Year Built	Square Feet by Building Class			Built Environment			Rents		
	A	B	C	Total	2-3 Stories	4+ Stories	Parking	Range	Average
Pre 2000	2,499,000	2,474,000	1,081,000	6,054,000	47%	43%	3.57	\$7-\$49	\$20.46
Post 2000	662,000	758,000	8,000	1,428,000	45%	46%	3.64	\$14-\$35	\$23.71
All Years	3,161,000	3,232,000	1,089,000	7,482,000	47%	44%	3.58	\$7-\$49	\$21.07
Avg Rent/SF	\$25.50	\$21.51	\$15.25	\$21.07		(blank)			

FLEX (50% office)

Year Built	SF	2+ Stories	Parking		Rents	
			Ratio	Range	Range	Average
Pre 2000	2,564,000	5%	3.15	\$10-\$15	\$12.39	
Post 2000	114,000	0%	-	-	-	
All Years	2,678,000	5%	3.15	\$10-\$15	\$12.39	

INDUSTRIAL

Year Built	SF	2+ Stories	Parking		Rents	
			Ratio	Range	Range	Average
Pre 2000	2,564,000	2%	1.81	\$4-\$9	\$5.82	
Post 2000	114,000	52%	3.00	-	-	
All Years	2,678,000	4%	1.87	\$4-\$9	\$5.82	

Inner Westside

DEMOGRAPHICS

2008 Households	129,140	Median Income	\$67,200	Median Age	34.9
2008 Population	332,140	Average Income	\$88,100	Percent Non-White	22%
Average Household Size	2.56			Percent Hispanic	12%

RETAIL

Year Built	Retail Types			Total SF	Built Environment		Rents	
	Large Format	>35,000 SF	Other		> 1 Story	Parking Ratio	Range	Average
Pre 2000	818,000	4,754,000	2,299,000	7,871,000	9%	4.07	\$10-\$38	\$19.47
Post 2000	304,000	460,000	554,000	1,318,000	25%	4.07	\$18-\$43	\$27.97
All Years	1,122,000	5,214,000	2,853,000	9,189,000	11%	4.07	\$10-\$43	\$21.28
Avg Rent/SF	\$25.18	\$20.63	\$21.41	\$21.28	(blank)			

OFFICE

Year Built	Square Feet by Building Class			Total	Built Environment		Rents	
	A	B	C		2-3 Stories	4+ Stories	Parking	Range
Pre 2000	1,822,863	1,566,429	480,296	3,869,588	64%	25%	4.10	\$10-\$108
Post 2000	505,266	607,174	10,000	1,122,440	42%	54%	3.87	\$16-\$31
All Years	2,328,129	2,173,603	490,296	4,992,028	59%	32%	4.06	\$10-\$108
Avg Rent/SF	\$23.23	\$24.89	\$15.44	\$21.56	(blank)			\$21.56

FLEX (50% office)

Year Built	SF	2+ Stories	Parking		Rents	
			Ratio	Range	Range	Average
Pre 2000	8,086,000	48%	3.76	\$5-\$22	\$11.29	
Post 2000	878,000	29%	3.68	\$7-\$11	9.86	
All Years	8,964,000	46%	3.75	\$5-\$22	\$11.13	

INDUSTRIAL

Year Built	SF	2+ Stories	Parking		Rents	
			Ratio	Range	Range	Average
Pre 2000	6,627,000	6%	2.44	\$4-\$26	\$8.30	
Post 2000	269,000	0%	2.57	\$5-\$16	10.68	
All Years	6,896,000	6%	2.45	\$4-\$26	\$8.42	

Outer Multnomah County

DEMOGRAPHICS

2008 Households	53,080	Median Income	\$60,300	Median Age	34
2008 Population	145,210	Average Income	\$69,800	Percent Non-White	20%
Average Household Size	2.70			Percent Hispanic	14%

RETAIL

Year Built	Retail Types			Built Environment			Rents	
	Large Format	Centers	Other	Total SF	>1 Story	Parking Ratio	Range	Average
Pre 2000	706,000	2,292,000	1,420,000	4,418,000	6%	4.09	\$8-\$34	\$14.35
Post 2000	192,000	763,000	382,000	1,337,000	10%	3.86	\$11-\$28	\$21.23
All Years	898,000	3,055,000	1,802,000	5,755,000	7%	4.05	\$8-\$34	\$16.41
Avg Rent/SF	\$9.90	\$17.09	\$16.50	\$16.41		(blank)		

OFFICE

Year Built	Square Feet by Building Class				Built Environment				Rents	
	A	B	C	F	Total	2-3 Stories	4+ Stories	Parking	Range	Average
Pre 2000	-	737,000	484,000	3,000	1,224,000	81%	0%	4.28	\$6-\$28	\$14.60
Post 2000	-	290,000	13,000	-	303,000	87%	0%	2.85	\$16-\$26	\$21.69
All Years	-	1,027,000	497,000	3,000	1,527,000	82%	0%	4.21	\$6-\$28	\$15.42
Avg Rent/SF	\$0.00	\$16.67	\$14.16	\$0.00	\$0.00		(blank)			

FLEX (50% office)

Year Built	SF	2+ Stories	Parking			Rents		
			Ratio	Range	Average			
Pre 2000	231,000	0%	3.00	\$8-\$9	\$8.33			
Post 2000	103,000	0%	2.56	\$10-\$11	\$10.90			
All Years	334,000	0%	2.75	\$8-\$11	\$9.19			

INDUSTRIAL

Year Built	SF	2+ Stories	Parking			Rents		
			Ratio	Range	Average			
Pre 2000	9,465,000	2%	1.81	\$4-\$10	\$6.94			
Post 2000	4,919,000	6%	1.23	\$5-\$8	\$5.71			
All Years	14,384,000	3%	1.63	\$4-\$10	\$6.27			

Outer Clackamas

DEMOGRAPHICS

2008 Households	41,880	Median Income	\$65,800	Median Age	40.3
2008 Population	119,600	Average Income	\$79,400	Percent Non-White	9%
Average Household Size	2.84			Percent Hispanic	8%

RETAIL

Year Built	Large Format	Retail Types		Total SF	Built Environment		Rents	
		Centers	>35,000 SF		> 1 Story	Parking Ratio	Range	Average
Pre 2000	136,000	851,000	627,000	1,614,000	11%	3.53	\$7-\$22	\$14.30
Post 2000	-	50,000	122,000	172,000	0%	4.93	\$14-\$25	\$20.60
All Years	136,000	901,000	749,000	1,786,000	10%	3.79	\$7-\$25	\$16.29
Avg Rent/SF	\$0.00	\$17.91	\$15.86	\$16.29		(blank)		

OFFICE

Year Built	Square Feet by Building Class			Built Environment			Rents		
	A	B	C	Total	2-3 Stories	4+ Stories	Parking	Range	Average
Pre 2000	-	108,000	164,000	272,000	0	0%	314%	\$12-\$21	15.75
Post 2000	-	27,000	-	27,000	0	0%	425%	\$11-\$28	25.75
All Years	-	135,000	164,000	299,000	0	0%	326%	\$12-\$26	17.75
Avg Rent/SF	\$0.00	\$20.49	\$15.93	\$17.75	(blank)				

FLEX (50% office)

Year Built	SF	2+ Stories	Parking		Rents	
			Ratio	Range	Range	Average
Pre 2000	104,000	11%	1.82	\$11-\$12	\$11.16	
Post 2000	12,000	0%	2.32	0	\$0.00	
All Years	116,000	9%	2.15	\$11-\$12	\$11.16	

INDUSTRIAL

Year Built	SF	2+ Stories	Parking		Rents	
			Ratio	Range	Range	Average
Pre 2000	1,068,000	6%	2.19	\$1-\$20	\$12.28	
Post 2000	317,000	13%	2.08	\$5-\$7	\$6.43	
All Years	1,385,000	7%	2.17	\$1-\$20	\$10.98	

Outer I-5/205

DEMOGRAPHICS

2008 Households	52,110	Median Income	\$73,100	Median Age	37.2
2008 Population	140,690	Average Income	\$98,800	Percent Non-White	10%
Average Household Size	2.67			Percent Hispanic	8%

RETAIL

Year Built	Large Format	Retail Types			Built Environment		Rents	
		Centers	>35,000 SF	Other	Total SF	>1 Story	Avg Parking Ratio	Range
Pre 2000	475,000	2,391,000	1,281,000	4,147,000	9%	3.72	\$8-\$32	\$19.04
Post 2000	198,000	938,000	388,000	1,524,000	11%	4.37	\$19-\$32	\$27.28
All Years	673,000	3,329,000	1,669,000	5,671,000	10%	3.93	\$8-\$32	\$21.03
Avg Rent/SF	\$28.39	\$22.70	\$20.31	\$21.03	(blank)			

OFFICE

Year Built	Square Feet by Building Class				Built Environment				Rents	
	A	B	C	F	Total	2-3 Stories	4+ Stories	Parking	Range	Average
Pre 2000	164,000	1,890,000	707,000	3,000	2,764,000	44%	20%	3.91	\$4-\$63	\$18.54
Post 2000	457,000	351,000	18,000	-	826,000	58%	36%	3.91	\$11-\$32	\$23.99
All Years	621,000	2,241,000	725,000	3,000	3,590,000	47%	24%	3.91	\$4-\$63	\$19.78
Avg Rent/SF	\$27.59	\$20.90	\$16.67	\$0.00	\$19.78	(blank)				

FLEX (50% office)

Year Built	SF	2+ Stories	Parking			Rents		
			Ratio	Range	Average	Rents	Parking	Range
Pre 2000	1,523,000	40%	2.90	\$5-\$15	\$8.82			
Post 2000	447,000	28%	2.75	\$5-\$11	\$8.72			
All Years	1,970,000	37%	2.89	\$5-\$15	\$8.80			

INDUSTRIAL

Year Built	SF	2+ Stories	Parking			Rents		
			Ratio	Rents	Average	Rents	Parking	Range
Pre 2000	13,477,000	2%	1.79	\$5-\$20	\$7.09			
Post 2000	3,653,000	6%	2.31	\$5-\$8	\$6.13			
All Years	17,130,000	3%	1.89	\$5-\$20	\$6.86			

Outer Westside

DEMOGRAPHICS

2008 Households	52,110	Median Income	\$73,100	Median Age	37.2
2008 Population	140,690	Average Income	\$98,800	Percent Non-White	10%
Average Household Size	2.67			Percent Hispanic	8%

RETAIL

Year Built	Retail Types			Built Environment		Rents			
	Large Format	Centers	>35,000 SF	Other	Total SF	>1 Story	Parking Ratio	Range	Average
Pre 2000	298,000	1,616,000	1,433,000	3,347,000	12%	3.75	\$8-\$25	\$18.94	
Post 2000	481,000	716,000	295,000	1,492,000	2%	4.48	\$18-\$34	\$23.52	
All Years	779,000	2,332,000	1,728,000	4,839,000	9%	3.88	\$8-\$34	\$20.27	
Avg Rent/SF	\$14.35	\$18.66	\$20.73	\$20.27		(blank)			

OFFICE

Year Built	Square Feet by Building Class			Built Environment			Rents		
	A	B	C	Total	2-3 Stories	4+ Stories	Parking	Range	Average
Pre 2000	1,471,000	842,000	380,000	2,693,000	24%	4%	4.06	\$17-\$21	\$14.73
Post 2000	1,473,000	490,000	6,000	1,969,000	35%	60%	3.70	\$11-\$20	\$18.80
All Years	2,944,000	1,332,000	386,000	4,662,000	29%	55%	3.97	\$11-\$21	\$15.74
Avg Rent/SF	\$20.50	\$16.74	\$14.10	\$15.74		(blank)			

FLEX (50% office)

Year Built	SF	2+ Stories	Parking		Rents	
			Ratio	Range	Average	
Pre 2000	1,720,000	29%	3.66	\$9-\$12	\$10.61	
Post 2000	317,000	2%	3.66	\$5-\$6	\$5.40	
All Years	2,037,000	25%	3.46	\$5-\$12	\$10.03	

INDUSTRIAL

Year Built	SF	2+ Stories	Parking		Rents	
			Ratio	Range	Average	
Pre 2000	10,388,279	3%	2.24	\$4-\$17	\$7.39	
Post 2000	1,565,828	61%	2.20	\$7-\$11	\$8.20	
All Years	11,954,107	11%	2.41	\$4-\$17	\$7.48	

Bonnie Gee Yosick LLC

Economic and Policy Analysis

FINAL DRAFT

MEMORANDUM

TO: Malu Wilkinson
FROM: Bonnie Gee Yosick
DATE: January 23, 2009
SUBJECT: Task 2 Variables Affecting Location Decisions (Final Draft)

Metro has contracted with a consultant team headed by E.D. Hovee & Company, LLC to define a new paradigm for evaluating job needs and associated employment land demand for the urban area of the tri-county region. This paradigm is to respond not only to global drivers of what appear to be increasingly diverse if not unprecedented economic cycles, but also support the continued integrity of the region's unique land use structure and its goal of integrating economic, environmental and social objectives.

The employment and economic trends analysis is intended to serve as background for the *Urban Growth Report* Metro will complete in 2009. Other uses include land use and transportation modeling (including the MetroScope model), local jurisdiction information for Goal 9 comprehensive plan updates, and general information for business and economic development organizations throughout the region.

Six tasks have been outlined with this employment and economic trends analysis work program:

- Task 1 – Employment Demand Factors and Trends
- Task 2 – Variables Affecting Location Decisions (this memo)
- Task 3 – New Demand Assessment Paradigm
- Task 4 – New Capacity/Inventory Approach
- Task 5 – Frame Choices for Job Needs
- Task 6 – Focus Groups

As part of this analysis, the goal of Task 2 is to provide a qualitative assessment of regional, national, and global economic development perspectives. This research is aimed to identify existing and emerging factors that affect location decisions by type of business, both between and within metro areas comparable to the Portland-Metropolitan region. The focus of this memo is a targeted national literature survey, using prior results of RILS and GMELS research as a starting point.

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While presented as a stand-alone memo for the purpose of discussion, this document supports and is supported by the other documents being produced by the consulting team. In particular, Task 1 sets the stage by providing the quantitative benchmark that serves to drive the analysis. Task 3 crafts the demand-assessment paradigm, Task 4 evaluates the land and building capacity of the region, Task 5 frames the choices, allowing testing of various policy decisions' impact upon the region's land and development patterns, and finally, Task 6 presents the findings of the focus groups described above.

The focus of this literature survey is to identify *emerging drivers* affecting the relationship between changing employment patterns and associated building and site characteristics, including such attributes as parcel size and density of development by type of use and market area location preference. This memo presents findings of the literature survey, organized as follows:

- An overview of key global risks and opportunities to the Portland Metro regional economy,
- Followed by an overview of the commercial and industrial real estate environment for the Portland Metro region, reviewing the commercial and industrial land markets each in turn:
 - Industrial,
 - Office,
 - Retail,
 - Institutional, and
 - Mixed-Use;
- Concluding with an exploration of how these drivers might affect the regional economy and its resulting land use in the short, medium, and long term.

As noted earlier, the quantitative benchmark for the analysis is presented in the Task 1 work product. Data to specific sub-regions is presented in more detail in that memo. As the research presented in this Task-2 product is qualitative in nature, the findings are presented as they apply to the Portland Metropolitan region, referred to generally as the Metro region. Where it may support the findings, some region-wide empirical information is presented where it is available.

SUMMARY OF FINDINGS

Consumers are being cautious, companies are laying off employees, and businesses are keeping inventories lean. At the same time, baby-boomers are nearing retirement age, distinctions between traditional land uses are blurring, and technology for everything from telecommunications systems, inventory management, and on-line shopping is improving.

This sampling of existing and emerging trends will serve to influence decisions about the capacity of the Metro region to meeting employment needs and support a strong regional economy. This memo explores how these and other observations may affect the outlook for land use and development in the region—over 5-, 20- and even 50-year time horizons.

In the short term (of the next 5 years), lean, slow-moving inventories are resulting in weak demand for warehousing/distribution space. However, despite increasing availability, rents are holding steady and the Portland Metro region's industrial market is continuing to perform well. For the industrial market, the region has a price advantage over other west coast cities and is priced comparably to other similarly-sized cities inland, making it attractive to companies seeking industrial space with good access and a regional location with high-quality amenities and attractions for staff.

As job losses and other cost-cutting measures force employers to re-evaluate space needs, a steady increase in vacancy rates is putting downward pressure on rents, which will slow short-term development activity. As with industrial, the region's office market is faring this recession better than the rest of the nation, with vacancy rates just above those of the best-performing office markets. Though substantial new construction is now underway in Portland's Central Business District (CBD), with increasing vacancies, a slowdown in development is expected.

With relatively little retail space per-capita, the region's retail market is also expected to perform well relative to other regions. Retailers will be well-served to invest in both their physical space and their web presence, developing well-integrated, multichannel (web and stores) operating strategies.

With the exception of Research and Development (R&D) and administrative functions, services—particularly medical-office, education, and workforce training programs—are moving toward more stand-alone locations proximate to population and employment centers. Distinctions among traditional land uses are becoming increasingly blurred.

Over the longer term (of the next 20 years and beyond), employers may have difficulty filling positions as baby boomers retire and leave the already slow-growing labor market. Increased globalization and offshoring of some activities will continue as the wage differential between the domestic and international labor markets is expected to persist. Increasing levels of automation and highly effective supply-chain management enables this trend in industrial and manufacturing, while advanced telecommunications systems threaten traditional office jobs.

However, there may be opportunities to bolster employment growth by encouraging in-migration and strengthening the region's existing comparative advantages. The region has attracted recent attention as a leader in sustainable and renewable energy technologies, with significant industry clusters in apparel, creative services, biosciences, and metals as well. The extent to which the region can leverage its competitive position to augment key industry clusters will help determine its mid- to long-term industrial opportunities. To realize these opportunities, the region's economic potential is increasingly dependent on investing in a solid infrastructure system, securing a world-class presence in higher education linked to R&D, and attracting capital to convert promising new technologies to commercial applications.

GLOBAL RISKS AND OPPORTUNITIES TO THE PORTLAND METRO ECONOMY

After a surprisingly robust recovery after 9/11, it appears the inevitable economic slowdown has begun. Corrections in the housing and financial markets, combined with high volatility in energy prices, are causing widespread slowing across industries. These global and national factors have taken their toll regionally as well. The slowdown became undeniable midyear when the State of Oregon posted its first job losses in the 2nd quarter of 2008 after nearly 20 consecutive quarters of rising employment. The region's economy has also slowed as national and global concerns over credit availability and high energy prices have taken hold.

These and other macroeconomic issues represent risks to the regional economy, and—with it—regional employment and development patterns. Some of the key risks and opportunities are reviewed and discussed below.

Financial market instability is affecting business and consumer confidence, which will affect businesses' capital spending plans. In an attempt to bolster confidence and stimulate the economy, Congress has passed a massive "bailout" plan and the Fed has lowered interest rates. Continued access to credit is vital to putting a "floor" under the downturn and subsequent economic recovery.

Though the immediate credit crunch is currently perceived as primarily a short-term issue, the ramifications (i.e. the industrial makeup of the economy) will also play out through the mid-term of the next 10 to 20 years and possibly beyond. This may occur both as an intergenerational shifting of "repayment" responsibility of the current and continuing bailout into the next generation and to the extent that intensified global competition combines with demographic and geopolitical pressures creating a continually shifting playing field of global winners and losers.

Housing market: While not directly an economic development factor, housing values and credit availability affect household wealth and resulting decisions ranging from consumer purchases to job choices. Lax lending standards and low interest rates resulted in rampant overleveraging in the mortgage market. Home price declines and mortgage equity withdrawal declines have slowed consumer spending and impacted consumer net worth (including retirement funding). Oregon is particularly susceptible to a major housing correction in California and the rest of the nation due to dependence on forest products (more so for the rest of the state than the Portland Metro area).

Growth in employment and personal income will be needed to stabilize consumer spending. Oregon's relative advantage in housing cost is narrowing as prices in California fall faster than in Oregon. Additionally, weak residential building has resulted in a loss of construction employment. With economic recovery, a potential mid-term question is whether pricing will come back to levels needed to support development of urban-scale residential and mixed use projects, or—as experienced in the land-constrained economies in Asia—multi-story industrial development.

The current **fiscal environment** is forcing government to find more cost-effective ways to deliver services. On the revenue side, the economic slowdown, tax limitations, and the political challenge of increasing revenue streams are constraining local government revenues, while expenses related to provision of service—such as health benefits, energy and commodity costs, and pension benefit costs—are growing faster than the tax bases which support them.

Oregon's tax structure, with its initiative “reforms” of the 1990s (Measures 5 and 50), relies particularly heavily on the personal income tax. This system seemed to work during the high-tech boom and its resulting prosperity, but that algorithm proved problematic in the dot-com bust several years ago and appears even less sustainable today. Declining employment and personal income will result in declining tax revenues, and state and local governments will need to cut services and infrastructure investment which will affect business and consumer location decisions. For Oregon, this situation is exacerbated by the increasing disparity between economic health of the Portland metro/Willamette Valley area and other traditional resource-dependent regions of the state.

The **decline of the resource-based economy** most directly affects rural Oregon—but with it, the Portland Metro region. Rural parts of the state have experienced a decline as their resource-based economies have shrunk. As a result, downsized employees have—in some cases—retrained and moved to urban areas. Some have adjusted to a longer commute to the urban area, rather than moving outright, and still others have simply dropped out of the workforce altogether. These choices affect the Portland Metro region’s labor and housing markets.

Global Positioning

Key manufacturing sectors of the Pacific Northwest economy are increasingly dependent on international markets—as exemplified by high tech, aerospace and machinery. This dependence presents risks as well as opportunities:

- **Volatility of the dollar:** The recent decline of the U.S. dollar has helped the region’s economy by making exports more competitive on the international market, while at the same time making imported goods more expensive for consumers. A resurgent dollar lessens the manufacturing competitive advantage. Longer term, continued instability of exchange rates will increase risk to Portland-area companies dependent on staying globally competitive.
- **Global pathway cities:** The Urban Land Institute’s (ULI) *Emerging Trends in Real Estate 2009* report concludes that U.S. pathway cities “which have become investor favorites and global business magnets, reinforce their premier standings in the looming market correction.” The report highlights the coastal cities of Seattle, San Francisco, and Los Angeles along the pacific and New York, Boston, and Washington DC to the east, also noting Chicago, Dallas, and Atlanta as “three key metros in the middle of the country.” Portland is situated between what are currently the two top-ranked U.S. gateways of Seattle and San Francisco. However, without clear economic drivers, the ULI report notes that “Portland prospers in Seattle’s shadow, but increasingly plays second fiddle.”

- ***China & emerging economies:*** In recent years, the rapid growth of China and then India created incredible inflationary pressure, especially on basic commodity prices. While perhaps not sustainable as exemplified by the current economic downturn, global recovery could mean a return to increased competition for products ranging from steel and cement to food to oil—all with effects on the Portland metro economy. As India and other countries (including the African continent) become more significant on the global stage, competition for resources becomes more severe—as do potential climate and carbon effects. At the same time, increasing incomes in developing nations increase demand for Oregon's exports. Short term, global economic downturn can be expected to dampen demand for Oregon's manufacturing exports. Longer term, the reality of an increasingly global economy amidst constrained resources places increasing emphasis on sustainability as good business practice—and as perhaps a key source of competitive advantage for years to come.
- ***Outsourcing of manufacturing operations and professional services:*** Recently, the availability of advanced telecommunications networks has allowed the outsourcing of certain manufacturing operations and professional and technical jobs to regions of the world with lower labor costs. With the U.S. as a current leader in design and development, the need for rapid turnaround in terms of development of new product seems to support domestic labor, but the mid- to long-term impact of globalization remains unclear, especially as other countries move quickly up the education and technology curve.

Going green: Beginning as a response to the Great Depression, Portland and the Pacific Northwest have benefited from low-cost hydropower. However, as demand surpasses the available capacity of hydro generation, electric generation has moved to higher-cost sources such as coal and natural gas, resulting in higher energy prices and adverse carbon-footprint impacts, which put the region's transportation sector at risk. On the other hand, higher energy costs may encourage development of smaller and more disparate distribution centers, and the Portland Metro region may be well positioned for this role. On the development side, increasing energy costs and the vogue of green buildings has increased use of technology to control costs. Portland may benefit from its current position as a leader in green building with a concentration of Leadership in Energy and Environmental Design (LEED)-certified buildings and LEED-accredited professionals, allowing a concentration of a green-building niche. The region also has opportunity to focus on alternative energy with associated business investments in technologies such as wind and solar power. It will be critical that the region take advantage of this position, as other regions develop expertise to close this gap in the mid- and long-term. Urban core markets appear to be a potential beneficiary of increased energy costs.

Development Costs: Increased capitalization (cap) rates indicate higher levels of property income are needed to support new real estate development. From a real estate perspective, required income levels make it harder for industrial uses to compete for sites with commercial. In the short-term, construction materials become more affordable as commodity prices have eased, but the fear is that they will rise again as the global economy rebounds in the mid-term. This combination places more pressure on finding more cost effective ways of delivering higher-

cost urban than suburban development, but may also keep conditions ripe for redevelopment and renovation of existing buildings in developed areas.

Demographics: Aging baby boomers, smaller household sizes, flattened levels of labor force participation. These demographic trends have short-, medium-, and long-term implications to the labor market and levels of consumer spending, which will likely outlast the immediate financial situation.

According to an analysis by the Oregon Employment Department, Oregon's public-sector workforce has a higher proportion of older workers than the private sector, with about one in five workers in state and local government and education estimated to be 55 or older. State agencies are trying to accommodate older workers by allowing more flexible work options and allowing retirement-eligible employees to retain part-time work. Among private industries, the transportation sector has the highest proportion of older workers, with over one-third of the total workforce in transit and ground transportation 55 or older. Other industry sectors with a relatively higher proportion of older workers include other services, natural resources and mining, and health care and social assistance. Industry groups with moderate numbers of older workers include financial activities, professional and business services, wholesale trade, and manufacturing. Industry groups with the lowest proportion of older workers include retail trade; arts, entertainment, and recreation; administrative and waste services; construction; information; and accommodation and food services.

The potential economic and financial burdens posed by an aging population are offset, at least in part, to the extent that the U.S. remains attractive and facilitates continued in-migration. For example, a ULI analysis of a United Nations (UN) report indicates that North America—including the U.S.—has been the dominant recipient of the world's immigrants who intend to settle permanently. The UN further estimates that the U.S. population contains about six times as many foreign-born persons as Canada. Though the U.S. has a somewhat ambivalent view of immigration, Canada faces serious immediate labor shortages and anticipates a worsening of the situation, so therefore is actively recruiting immigrants, with an emphasis on skilled trades and professions. Expatriate professionals demand international-quality real estate product, including industrial, office, laboratories, and warehouses. All migrants generate housing and retail demand and generally contribute to the regional labor force (retirees excepted).

COMMERCIAL/INDUSTRIAL REAL ESTATE MARKET

Global economic conditions affect regional development patterns through changes in employment patterns which, in turn, affect commercial and industrial real estate development.

The slowdown in the economy has been evident in the real estate market through most of 2008. In the United States, property sales of significant office, industrial, retail, apartment, and hotel assets total just \$46.5 billion in the first quarter of 2008, down from over \$135.0 billion the previous year. And even more striking, the number of investors is down from over 150 different buyers last year to less than 50 this year.

Most of these commercial property investors are watching on the sidelines with their capital, waiting for the economic cycle to recover. With no better opportunities in stocks or other asset classes, equity capital flows into commercial property investments remains strong. Foreign buyers of U.S. property are also growing, facilitated by the relatively weak dollar. Availability of capital will facilitate the stabilization of financial markets.

Unemployment in the metro area increased to 7.2 percent for November 2008, up nearly 2 percent from 5.4 percent a year ago. The Oregon average was slightly higher, at 9.0 percent for December, up from 5.4 percent. The national average increased 2.2 percent to 7.2 percent for the same time period. Job gains continue to be led by healthcare, education, and other services, while losses occurred in construction, trade and transportation, financial, and manufacturing.

For the *short-term*, the financial crisis will add another drag to the weakened economy. Job cuts are expected in industries serving the financial sector, and the economy is expected to remain weak with low consumer confidence and elevated unemployment. To date, the Portland region has not suffered to the same degree as many other regions, with relatively low vacancy rates holding lease rates steady.

In the *mid-term*, the region's opportunities for growth are tied to its current competitive position and key decisions by major employers in concert with state and local governments. Investments in infrastructure will allow both established and emerging niche industries to develop sustainably. For the *long-term*, the region is remains dependent on its historic attractiveness for young creatives, global-pathway connections, and an emphasis on environmental and economic sustainability. Education—both in terms of a world-class higher-education system and workforce training—remains critical.

INDUSTRIAL TRENDS AND OUTLOOK

Previous multi-story buildings were abandoned with the advent of the assembly line in Henry Ford's era to accommodate horizontally-organized factories. Industrial development in the 1920s and 1930s clustered in areas well-served by rail, and the evidence of these development patterns are still evident in the region today. In the 1950s and 1960s, business parks introduced a mix of office, R&D and warehouse/distribution in suburban areas with good freeway and airport access. More recently, a hybrid of traditional industrial and office has evolved, responding to industry's need for a greater range of amenities and higher-quality finishes than traditional industrial, with corresponding higher rental rates as well. Though still a small portion of the total industrial market, this tech-flex segment is generally higher density than traditional industrial in suburban areas and serves an important function in high-tech areas, offering an appealing alternative to traditional office space.

Industrial development includes a broad range of product types and settings.

Warehouse/Distribution buildings generally provide storage and distribution of goods. These require large, flat sites with space for maneuvering trucks and access to transportation. They typically have low employee-to-area ratios so parking requirements are typically small. Some buildings may have 10 to 20 percent of their floor area allotted to office uses, to support the

administrative staff of a distribution or manufacturing company. Ceiling heights can be as high as 36 feet to provide for higher stacking, and buildings can be as large as 750,000 to 1 million square feet, though most buildings in the Portland Metro area are generally less than 250,000 square feet.

Manufacturing structures are large buildings designed to house manufacturing processes and can be more than 1 million square feet. Like warehouse/distribution space, ceiling heights are high and ample room for truck maneuverability is a necessity. Parking ratios are usually low, so the FAR is usually relatively high, despite the single-floor format.

Tech-flex space might be one- or two-story buildings ranging from 20,000 to 1 million square feet with internal space a combination of office and warehouse. The pattern of internal uses varies, though the CoStar data cited in the Task 1 Report defines it as 50 percent or more office space with the balance as warehouse space. This class includes buildings devoted exclusively to research and buildings which serve multiple uses, often with office and administration functions in the front of the building and R&D other high-tech uses in the rear. Offices in R&D buildings typically have open floor plans to promote teamwork and collaboration, and activities range from the creation and development of new technologies and products to the development, testing, and manufacture of products from existing technology. The design of tenant improvements is more important for R&D uses than for other industrial uses and is usually tailored to the needs of specific tenants.

National outlook

Employment in manufacturing, distribution, and related sectors drives the market for industrial space. Cautious consumers and inventory management practices are driving businesses to keep inventories lean, resulting in weak demand for warehousing/distribution space. However, despite increasing availability, rents are holding steady.

Historically, there has been a significant spread between regions in the vacancy rates of industrial properties. The national commercial/industrial real estate brokerage firm C. B. Richard Ellis (CBRE) compares the availability rates across metropolitan areas, which it refers to as “market areas.”¹ For the Portland market area—which includes Multnomah, Washington, Clackamas, Yamhill, and Columbia counties in Oregon, and Clark County in Washington—availability rates are one to two percent higher than the vacancy rates. According to CBRE, the five best performing cities have availability rates under 10 percent and the five worst experiencing much higher availability rates over 17.5 percent, as shown in Table 1.

¹ While conceptually similar to vacancy rates, availability rates include properties which may still be under construction or occupied, but which are expected to become available in the near future, and—as such—are being actively marketed.

Table 1
Industrial Market Availability Rates, 3rd Quarter 2008

Markets with Lowest Availability Rates	Markets with Highest Availability Rates
Tucson	4.4%
Las Vegas	6.5%
Houston	7.0%
Salt Lake City	7.6%
Long Island	7.6%
Portland	8.2%
Austin	23.8%
Stamford	19.9%
Boston	19.8%
Columbus	18.9%
Baltimore	17.4%

Source: C.B. Richard Ellis, United States National Industrial Availability Index, 3rd Quarter 2008.

Ranked 24th in size among the 44 market areas reported by CBRE, Portland has been experiencing vacancy rates just above those of the strongest industrial markets.

Until the more recent economic slowdown, the U.S. and Portland Metro region experienced a somewhat unexpected resurgence in some manufacturing sectors following 9/11. The manufacturing sectors enjoying this renaissance seemed to be technologically sophisticated, niche-oriented, leading edge (for their industry) and market responsive (i.e. with rapid turnaround to changing customer requirements). It is not clear whether this was an anomaly (brought about, for example, by the weak U.S. dollar) or represents a path for selectively reinventing our industrial base—as tech-savvy and market-focused.

Portland Metro Region Outlook

Regional job losses have occurred in the construction and financial sectors, and—notably for the industrial real estate market—manufacturing, and trade and transportation. Gains were seen in healthcare, education, government, and professional services—industry groups driving office and institutional space, but not typically industrial space users.

As of the second quarter of 2008, the region's industrial real estate market was continuing to perform well, despite economic uneasiness. With relatively low vacancies and with only about 500,000 square feet under construction, the industrial market is expected to continue to perform well, given the limited choice and room for movement in the market. And as noted in the national outlook, rental rates have been holding steady, between \$0.33 to \$0.41 per square foot in the region. In some cases, new construction is asking rates as high as \$0.45 per square foot. Flex space is renting in the \$0.85 to \$0.95 per-square-foot range.

These rates compare favorably to the Puget Sound area, our global-pathway neighbor to north, whose market area average lease rates are \$0.54 per square foot, with warehouse/manufacturing/business park space leasing at an average of \$0.45 per square foot while flex/tech space commands \$1.20 per square foot. Portland also maintains this price advantage over other portal cities on the west coast, with asking rates (for warehouse only) averaging \$0.69 per square foot in the Los Angeles market area, \$0.91 in San Francisco, and \$0.71 in San Diego.

Pricing in Portland's six-county market area is also comparable to Sacramento's market area which has asking rates of \$0.36 per square foot for warehouse, \$0.58 per square foot for light A&B, and \$0.84 per square foot for R&D space. Pricing for other similarly-sized metro areas is also comparable, with Austin's lease rates at \$0.54 for warehousing, \$0.51 manufacturing, and \$0.81 for flex/R&D.

Within the region, there is significant variability in vacancy rates in the markets subareas. According to Commercial Real Estate Brokerage Cushman & Wakefield, the vacancy rates varied across the region as of the 3rd quarter, 2008 from a low of 4.2 percent in the Southeast sector including Southeast Portland and Clackamas to a high of 8.4 percent in the Southwest sector, with the Hillsboro/Sunset Corridor subarea 12.7 percent vacant. However, one limitation with broker data is its omission of owner-developed or owner-occupied space.

Emerging Trends

Employment in manufacturing, distribution, and related sectors drives the market for industrial space. Though job gains are expected in the transportation/warehousing and wholesale trade sectors, the Bureau of Labor Statistics has forecast a loss of over 1.5 million U.S. manufacturing jobs between 2006 and 2016. Some job losses are the natural result of automation as employers substitute capital for labor. But job losses coupled with the turmoil of the financial markets will not bode well for businesses making capital investments. Key trends affecting the Portland region's industrial land uses are described below:

Offshoring: Continued movement of industrial operations overseas, including more high-tech manufacturing and R&D functions previously maintained in the U.S. The wage differential which drove the offshoring of certain manufacturing functions may be reaching the exhaustion point, according to some observers. Consulting firm McKinsey & Co. notes that other factors are changing global economics, including the high cost of oil, the falling dollar, rising overseas wages, and quality issues. According to a workshop summary of the Committee on the Offshoring of Engineering from the National Academy of Engineering, the overall business cycle and technological changes have a larger impact on the short-term engineering workforce. In addition, some foreign-based companies are now "onshoring" by increasing their engineering operations in the U.S. As globalization continues, an increasing number of workers likely will be vulnerable to the impacts—both negative and positive—of offshoring and other labor market shifts.

Globalization has also changed and ***consolidated industrial space across the U.S.***—with the areas of dominance the portal cities along the coasts and a few key inland nodes for distribution to the rest of the country.

Supply-Chain Management: Continued consolidation of corporate America and resulting consolidation of distribution facilities have fueled the trend in supply-chain management such as just-in-time inventory management, direct distributing (shipping goods directly from manufacturers to retailers, or—in some cases—consumers), and electronic inventory control. All of these developments in supply-chain logistics have undergone an evolution over the past

decade, and several key parts of the supply chain—warehousing and distribution—have been incorporated into the changes.

Success with ***Radio Frequency Identification (RFID)*** in today's retail supply chain has been mixed. Wal-Mart started its push for adoption of RFID technology in 2004 when it announced its goal to have 12 of its approximately 120 distribution centers outfitted for RFID by 2006; as of September 2008, only five were. Research released in August 2008 by the RFID Research Center at the University of Arkansas showed promise for the use of RFID tags on individual retail items, though there were several disconcerting challenges noted in the study. Of particular concern was the limited success rate of readers when scanning varying quantities of items; the more items the reader had to scan in one instance, the less successful it was—a serious impediment to a technology intended to streamline large quantities of merchandise in the supply chain. As a compromise to item-level tagging, Walgreens has recently deployed an approach which places its control tags on plastic tubs and cages that carry cases of products to shipping dock doors. Information on the contents of the containers is synched with Walgreens' warehouse system to ensure that product quantities and items are destined for the intended store.

The impact of RFID technology on land needs will depend on the ***physical layout of the distribution centers***. Distribution centers may now use multiple gates and trailers to minimize downtime for drivers and trucks. Empty trailers are then towed temporarily to the parking area until they are needed for preloading. Higher ceilings now observed allow increased stacking heights so more goods can be stored at one facility before they are shipped out. As at cross-dock trucking facilities, which allow loading and unloading at two or more sides of the terminal, many facilities run with bays on more than one side of the building.

Shortened Product Life Cycles—an indicator of a manufacturer's cost sensitivity—are speeding up. This phenomenon is most prevalent in semiconductors, other electronics, and apparel. Though development has traditionally occurred in the U.S., items are becoming commodified, and then manufactured elsewhere with lower costs of production. This change in production timing and location focuses on the need to accommodate these international supply chains. Similarly, recent volatility in fuel prices increases the dependence on well-integrated transportation networks.

Geographic concentration, specialization, and differential growth by industrial sectors: From real estate economics, the concept of the regional “anchor”—a large firm providing both stability and volume of ideas—helps to fuel start-ups and support their growth. As such, the capabilities of companies to coordinate will drive the degree of commercial success enjoyed within the region. Though a university is a critical component, research suggests that the existence of a world-class university is not, by itself, sufficient to promote an industrial cluster. To support the geographic concentration effort, the Oregon Business Plan has launched the **Oregon Cluster Network** to identify Oregon's mature, emerging, and potential industry clusters and assist cluster participants to accelerate innovation and growth of their industries. The clusters currently identified by this effort include the following:

Aerospace & Aviation
Agriculture & Food
Apparel & Sporting Goods
Creative Services & Arts
Defense & Security
Distribution & Logistics
Financial Services
Fisheries
Forestry Cluster
Green Development

Healthcare & Biosciences
High Tech
Metals & Transport Equipment
Outdoor & Recreation
Professional & Business Services
Renewable Energy
Software
Telecommunications
Tourism & Hospitality

Mass Customization: One opportunity to revive a timber resource-based economy is through the concept of mass customization, which typically involves high levels of mechanization and design and order-processing over the internet, with the goal of yielding higher quality than standard mechanized products. A number of ideas surface from the previous interviews and other research conducted for a previous forest cluster study conducted by E.H. Hovee & Company – suggesting how mass customization might be applied to a largely softwood-oriented industry in Oregon, including:

- Ability of Oregon producers to apply up to 200-300 veneers or different finishes to a commodity plywood or MDF core product – on a *made to order* basis. Some companies are able to alter production daily – maximizing wood value based on market prices the day before.
- Manufacture of extensive door and window products – using a range of wood, composite and non-wood materials.
- Milling of large logs – for a variety of customized, high-end architectural and engineering applications.
- Greater involvement of primary producers in retail packing and displays – ranging from displays at major “big box” retailers to customized customer graphics.
- Ability to mesh concepts of mass customization at the factory with *just in time* inventory control desired by the end-user or retailer.
- Prospective ability to mill certified lumber to market specifications – with *chain of custody* tracking letting the customer know the precise source and management practices of the forest from which the lumber originated.
- Future potential for development of forest bio-refineries that use a common pulp digester with ability to rapidly switch between different outputs – from traditional pulp/paper to bio-fuels and other bio-products – thereby optimizing market demand and pricing.

All of these concepts for mass customization will be predicated on the ability to bring large quantities of raw resources together with virtual market information and high technology capabilities – enabling an ever increasing array of customer choice and value opportunities. In addition to this example of wood products, this concept may be applied to other similar manufacturing opportunities. The opportunities which might easily be adapted would be those sectors that seem to involve some combination of higher-value niche products, customer-driven ordering capabilities, technological sophistication (even for small to medium size companies),

links to high quality or green design, and building from existing core strengths of the regional economy.

Table 2
Industrial Business Trends by Use Type

Industrial Segment	Trends	Land Use Implications	High Performing Regions
Heavy Industrial/ Manufacturing	Increasing off-shore production and decreasing U.S. employment share, especially in non-durable goods. Cost sensitivity varies with life cycle of the product, which is speeding up (e.g. semiconductors).	Requires larger sites (possibly with industrial sanctuary) and good transportation and utility systems, such as redundant power. Fast and certain permitting a more important factor in location decisions.	U.S. industrial space is clustered in key hub distribution markets, rather than in manufacturing centers within each town. These hubs are Los Angeles, Chicago, Northern New Jersey, Dallas/Fort Worth, San Francisco Bay Area, and Atlanta. Preference for large markets, access to suppliers.
Warehouse/ Distribution	Globalization, RFID and other forms of electronic warehousing, direct distribution, just-in-time inventory management, third party distribution. Merging functions with storefronts and siting in shopping centers (Costco). Low inventory/high turnover businesses will remain the most cost sensitive.	Regional/local trade markets (Portland) anticipated to need well located, affordable (vs. state of art) space. Adequate transportation infrastructure is critical. Less supply-chain real estate may be required in some industries. As business functions evolve, retailers may seek less expensive industrial space, rather than retail designated commercial space.	Key gateway cities for air transport distribution: Miami, New York/New Jersey, Los Angeles, Chicago, San Francisco, and—with the location of FedEx's DC—Memphis. Key gateway cities for maritime distribution: Seattle/Tacoma, Los Angeles, New York/New Jersey, San Francisco/Oakland, Miami, and—most comparably to Portland—Savannah and Charleston.
Tech-Flex	Provides campus-type setting desirable to some office users, and allows close siting of business functions (office, R&D, assembly). Encompassing increasingly diverse land uses as services for employees.	Pressure to provide more outlying greenfields along adequate major transportation corridors.	Centers viewed as competitive with Portland include San Diego, San Jose, Seattle, Phoenix, Salt Lake City, Denver, Austin. Other established regions include Boston, Research Triangle Park (NC), and Los Angeles.

Summary Portland Metro Region Outlook:

Short-Term (5-Year): Though still low relative to other regions, vacancies in the six-county Portland Metro area are rising—putting downward pressure on rental rates, especially over the time period that regional / statewide unemployment rates continue to trend upward. The Portland region has a price advantage over other west coast cities and is priced competitively to other similarly-sized cities inland, making it attractive to companies seeking industrial space

with good access and a location with high-quality amenities and attractions for staff. To the extent that the dollar remains comparatively weak over this time period, exports may continue as an important source of stability for the regional economy.

The region has attracted significant attention as a leader in sustainable and renewable energy technologies. Two recent developments include Denmark's Vestas Wind Systems—the world's largest windmill manufacturer—with its North American headquarters in Portland's Central Business District (CBD)—and SolarWorld—one of the largest producers of solar cells in the world—recently opening a 480,000-square-foot manufacturing facility in the former Komatsu plant in Hillsboro. Such developments are key to utilizing large campus industrial sites.

Mid-Term (20-Year): For the 20-year time horizon, the region's prospects are highly dependent on its current competitive position and decisions by major high-tech and Port-related industries within the Portland metro area relative to other U.S. and global alternatives.

The opportunity for the region to attract new growth lies with the region's existing industry clusters. Particular emphasis has been on the recent surge in sustainable and renewable energy, with the City of Portland and the State of Oregon negotiating with Vestas to expand its local operations, hoping to add another 850 jobs to its current employment of about 350 local jobs. The ability of one company—such as Vestas or SolarWorld—to "anchor" the region's sustainable industry cluster could pave the way for spinoff industries.

Other opportunities include building off the region's other industry groupings, including established and emerging industries such as apparel, metals, high-tech, biosciences, and others. Linkages to Oregon's historic natural-resource activities should also not be overlooked, as these resource-based activities may also shift with a nod to the region's current emphasis on sustainability, such as green forest products, and local and organic agriculture, with a preference to agricultural products from Oregon and Southwest Washington.

If RFID technology improves and delivers on its promise to provide critical logistical data to supply-chain and merchandising functions, it is likely that inventories will continue to fall, making distribution centers more highly-automated activity hubs and less passive warehousing space. Volatility in the energy market and fuel prices may encourage development of second-tier distribution locations, and Portland may be well-positioned to satisfy this role.

Long-Term (50-Year): For the long-term, the region is increasingly dependent on securing an internationally recognized higher-ed research presence coupled with venture capital for leading edge technology and commercial applications. Likely shift from large footprint industrial park and campus orientations to higher-density industrial (including for some wholesale-distribution functions both close-in and on the I-5 corridor). Multi-story industrial applications may be possible. Public investments in infrastructure will be crucial.

OFFICE COMMERCIAL TRENDS AND OUTLOOK

Office development is a highly segmented, highly diverse, and highly competitive segment of the development industry. They are categorized by class, building type, use, ownership, and location.

The three main classes are A, B, and C. *Class A* office spaces are investment-grade buildings with top-notch location, design, building systems, amenities, and management. They typically but are not always mid-high rise structures and command the market's highest rents and most credit-worthy tenants. *Class B* buildings also have good location, management, and construction with a little functional obsolescence or deterioration. This class is generally found in well-located buildings that have been well maintained. *Class C* buildings are typically substantially older and have not been modernized.

The office market can also be also categorized as high- (15 or more stories), mid- (four to 15 stories), or low-rise (one to three stories), and garden office (one to five stories with extensive landscaping). Related building product types (often classified by brokers as industrial space) include R&D (typically one or two stories with up to 50 percent office/dry laboratory space and the workshops, storage, and perhaps some light manufacturing), and tech-flex space (one- or two-story buildings often with a mix of warehouse and light industrial and offices).

Most urban areas classify office space by the location and the physical characteristics of the offices and their typical users. The CBD usually contains the largest concentration of major office buildings, though the CBD's share of metropolitan office space is declining in most cities. (More later) Typical tenants in downtown offices include law firms, insurance companies, and financial institutions that require high-quality space. Creative firms and even software are an increasing part of the tenant mix in some metro areas including Portland. Suburban areas have experienced office nodes clustering near freeway interchanges or major suburban shopping centers and executive housing areas.

Historically, suburban rents have been lower than those in the CBD and tenants have typically included regional headquarters offices and smaller companies and service organizations, but suburban locations have been attracting more major law firms, accounting firms and some corporate entities from the CBD, with construction quality, range of amenities, and rents increasing correspondingly. Neighborhood offices are typically oriented to serve the needs of local residents by providing space for service and professional business along arterial streets near residential areas. Business parks might include several buildings with a range of uses from light industrial to office and are typically in suburban locations.

National Outlook

Prospects for the office market are generally tied to financial-, technical-, and professional-services sector employment. The hit to the financial sector directly affects commercial real estate markets serving global financial markets (most particularly New York and London), as job losses and other cost-cutting measures force employers to re-evaluate their space needs. A

steady increase in vacancy rates is putting downward pressure on rents, which will result in less short-term development activity.

Compared to other metropolitan areas, the Portland region was still faring well as of the third quarter of 2008, as shown in the table below.² As in many other metro areas of the U.S., Central City office product appears to be holding its own better than suburban office product.³ This phenomenon reflects some back-to-the-City movement that is also being echoed in housing markets across the nation—driven, in part, by the appeal of urban amenities and efforts to reduce the cost of commuting.

Table 3
Best Performing Office Markets
3rd Quarter, 2008

Metropolitan	Vacancy Rate	Downtown	Vacancy Rate	Suburban	Vacancy Rate
Manhattan	5.9%	Charlotte	0.9%	Honolulu	8.8%
Honolulu	9.3%	Manhattan, Midtown	5.4%	Los Angeles & Miami	9.7%
Miami	9.9%	Boston Manhattan, Downtown	6.6%	Nashville	11.2%
Los Angeles	10.2%	Washington, DC	7.4%	Orlando St. Louis & Ft. Lauderdale	11.2%
Portland	10.7%	Portland	7.8%	Portland	11.6%
			8.0%		12.2%

Source: C.B. Richard Ellis, *United States National Office Vacancy Index, 3rd Quarter 2008*.

Table 4
Worst Performing Office Markets
3rd Quarter, 2008

Metropolitan	Vacancy Rate	Downtown	Vacancy Rate	Suburban	Vacancy Rate
Detroit	24.7%	Detroit	26.1%	Detroit	24.4%
Dallas/Ft. Worth	21.2%	Toledo	23.1%	Phoenix	21.4%
Phoenix	19.8%	Dallas/Ft. Worth	22.2%	Cincinnati	21.2%
Palm Beach County	19.6%	St. Louis	20.1%	Dallas/Ft. Worth	21.0%
Atlanta	19.3%	Wilmington	20.0%	Austin	19.7%
Portland	10.7%	Portland	8.0%	Portland	12.2%

Source: C.B. Richard Ellis, *United States National Office Vacancy Index, 3rd Quarter 2008*.

² As described earlier, CBRE defines the Portland market area as Multnomah, Washington, Clackamas, Yamhill, and Columbia counties in Oregon, and Clark County in Washington.

³ CBRE defines the downtown market as the office buildings in the central core of the largest city within the metropolitan area.

Portland Metro Region Outlook

As noted earlier, unemployment in the metro area increased to 6.4 percent for October 2008, comparable to the Oregon average of 6.8 percent, and the national average of 6.1 percent. Though losses were observed in construction, these losses were suffered mostly in residential building activity, as commercial activity is relatively strong with over 1.3 million square feet of office space under construction in the CBD, including MachineWorks, Ziba Design Headquarters, and Meier & Frank building in the Pearl and the ZGF Building, First & Main Equity Office, and Park Avenue West development downtown. The largest of these developments, First & Main and Park Avenue West, are not due for completion until 2010 and 2011. It is unclear whether the demand for these new buildings will be from net new demand or current CBD tenants looking to trade up into more efficient space—which helps justify the higher rents for new construction. If so, these new developments may have little impact on total market absorption, leading to increased vacancies, particularly of older Class B and C properties. Also of concern is the impending availability of some 106,000 square feet when the Port of Portland moves its headquarters to the airport. Suburban development activity was not indicated in available brokerage reports.

The vacancy rate in the CBD dropped to 8.5 percent for the 3rd Quarter 2008, from 9.1 percent from the 2nd Quarter and 9.2 percent one year ago. This contrasts with the suburban vacancy rate, which at 15.3 percent for the 3rd Quarter 2008, is the highest in the region, suffering from over 84,000 square feet in the Tektronix campus and nearly 94,000 square feet in the newly completed Pacific Highway Center.

Emerging Trends

Influence of technology: As tenants require more extensive and sophisticated telephone and computer network systems integrated into the design of buildings, “Smart Buildings” are the norm, with advanced telecommunications cabling and services including phone systems, computer networks, data transmission, voice- and videoconferences and other communication technologies. Energy technology is becoming more sophisticated as well with energy management systems that control heating and ventilation and cogeneration and off-peak cooling systems, remote monitoring and control of HVAC systems is common for lower operating costs and more efficient billing of tenants.

Green Building: Buildings account for nearly three-fourths of electricity consumption, and over one-third of all energy use, carbon dioxide emissions, and raw material use in the U.S. In response, the United States Green Building Council developed its Leadership in Energy and Environmental Design (LEED) building rating system to conserve natural resources, reduce operating costs, and provide a range of social and community benefits. Established in 2000, there are now 2,150 LEED certified projects nationwide, in all 50 states and 69 countries. By 2010, McGraw-Hill estimates 10 percent of new commercial construction will be green. Portland is seen as a leader in green building, with more buildings LEED-certified per capita than any other region. The City of Portland requires all new and major renovations of city

buildings meet LEED Gold green building standards. This year, *Popular Science* magazine rated Portland as America's greenest city with a population over 100,000, and Sustainlane.com, a San Francisco-based environmental group, last year ranked it as the greenest among the 50 largest U.S. cities.

Corporate Campuses: During the 1990s, Sears vacated its namesake tower in Chicago and relocated to a suburban campus. In southern California, the Disney Company continued to add to its corporate collection of buildings designed by renowned architects in suburban Burbank, with buildings designed by Robert Stern, Michael Graves, and Aldo Rossi. Sprint created a 240-acre headquarters campus in the suburb of Overland Park, near Kansas City. Though most market surveys of office space specifically exclude owner-occupied buildings from the inventory of commercial office space, these decisions obviously affect the local office market dramatically.

The past decade has revealed an overall **trend toward office decentralization** in urban areas—albeit with Central City cores also still experiencing strong office occupancies. Though downtowns across the United States are enjoying a renaissance with new sports and cultural facilities, restaurants and entertainment districts, old buildings are being converted into lofts and condominiums, and thousands of new residents moving in, one component of downtown's traditional livelihood has not generally enjoyed a similar surge: the office market. A review of central business district (CBD) inventories in 30 major U.S. cities by Integra Realty Services shows that nearly three-quarters of them experienced a net increase in office space between 2001 and 2007, but still continued to lose market share in their metropolitan areas to suburban office locations. According to Integra figures, the average metropolitan market share of these 30 CBDs dropped from 31.8 percent in 2001 to 28.4 percent in 2007. With an estimated 28.7 million square feet of office space outside the CBD, Portland's CBD share fell from 42 percent to 37 percent. However, with strong building activity noted in the CBD, the total impact of this trend is unclear.

Mergers and acquisitions: The trend toward business consolidation results in property surpluses as newly merged companies seek to realize the efficiencies that the merger intended. While efficient use of land is desirable, the resulting downsizing may result in adjustments in the real estate market, just as workforce downsizing often results in short-term labor market adjustments. The decline of the financial services industry and the collapse of Washington Mutual in Seattle will likely result in further consolidation, as evidenced by job losses in financial services.

Globalization: As with the movement of industrial operations overseas, professional services are being outsourced as well. The *Wall Street Journal* recently published an article highlighting the practice of offshoring legal services to India. Though such face-to-face tasks as appearing in court or handling witness depositions cannot currently be outsourced, routine legal research, due diligence and document review is being done in India at roughly half the cost as in the U.S. Though Indian lawyers often lack U.S. licenses, they are typically closely supervised by U.S. lawyers to comply with ethical concerns. Similar transitions are occurring in industries ranging from technology support centers to title insurance firms. As globalization continues, an increasing number of U.S. workers will be vulnerable to the negative impacts of offshoring and other labor market shifts.

Office-Space “Hoteling”: Improved technology and cost-cutting pressure is leading more companies to consider telecommuting and other strategies to reduce the amount they spend on office space. Besides increasing productivity and collaboration among their workers, companies are able to squeeze their operations into less space by adopting policies such as hoteling, in which a worker has no assigned desk but checks in when in the office and is assigned one. That helps mitigate the problem of "dark space" -- desks sitting empty when workers are on the road, working from home or on vacation. According to a 2005 survey, reported in the *Wall Street Journal*, Chicago real-estate office Jones Lang LaSalle Inc. asked the real-estate directors of 50 major corporations, who together control more than two billion square feet of office space, to rate their best options for cutting their real-estate costs. The top choice for 37 percent of the executives was telecommuting and hoteling. One potential drawback of this approach is that companies are running the risk that they may have more limited expansion opportunities when or if business picks up.

Businesses look for **strong education systems** that produce an educated workforce, a user-friendly development and regulatory bureaucracy, affordable workforce housing, and proximity to desirable amenities, including executive housing and recreational opportunities for employees.

Ownership in small businesses may continue to rise due to a variety of factors, including low interest rates, the conversion of leasable property to for-sale units motivated by high vacancy rates, the availability of below-market loans from the US Small Business Administration, retirement planning for small business owners, the tax benefits of property ownership, increasing numbers of professional women working part-time while caring for children, all of which might also point to opportunities for condominium- office development.

Following the trend to save time and commuting costs, the prevalence of **live-work space** seems to be increasing. For example, according to the *LA Times*, if all applications for mixed-use home-office types are approved, it would bring the total number of such units to over 10,000 in the LA region. An Urban Land Institute study indicated that local governments are attracted to the home-office model because it allows for higher levels of energy efficiency and potential for increased tax revenue.

Office Serving Non-Local Markets: Nationally, these *traded sector* office segments—including corporate headquarters, research and development, and back-office functions—have received the most attention, since they can readily move if the company perceives advantages to one location over another. Over the past two decades much of this corporate activity has gravitated to suburban office park and business park locations. Except in high profile corporate urban centers such as Manhattan, these can be difficult clients to attract into City Center locations.

An analysis by the Public Policy Institute of California concluded that net job loss from relocation is very small, and that in-migration largely offsets out-migration. For jobs in California in the 1992-2004 time period, out-migration accounted for 1.6 percent of all “job destruction”, and in-migration accounted for 1.0 percent of all job creation. Overall, jobs lost from net relocation accounted for an annualized rate of 0.06 percent of employment; in other

words, job loss from net relocation in California was only six out of every 10,000 jobs annually for the period 1992-2004.

Table 5
Summary of Trends of Office Serving Non-Local Markets

Office Segment	Trends	Land Use Implications	High Performing Regions
Headquarters	Central cities or strong first tier suburbs with good educational systems and air connections.	Requires good choice of office space or availability of land for build-to-suit. Often a stated preference for suburban campuses.	Washington DC, Atlanta, Charlotte, Dallas, Raleigh-Durham.
R&D	Proximity to universities, good K-12 and higher educational system, lifestyle amenities attractive to educated workforce.	Some preference for campus environment as buffer from neighboring uses and privacy. Sited in both traditional office and tech-flex space.	Route 1 in northern New Jersey, large metropolitan areas.
Back Office	Sensitivity to cost with respect to real estate, housing, telecommunications, taxes, wages.	Requires state of the art telecommunications and proximity to affordable workforce housing.	Domestically, medium & small sized cities – Tampa, Tucson, suburban areas. Globally, Bangalore, India.

Office Serving Local Markets: Outside of the traded-sector is another segment of the office market, more captive to the local community. This segment is generally comprised of law firms, Certified Public Accountants (CPAs), medical office, financial institutions, insurance providers, real estate professionals, architectural/engineering firms and others which serve the local business and consumer base of a particular region. As with retail commercial, this segment is driven by population growth and the general economic conditions in the region, but can vary by subarea, based on submarket population and incomes.

Table 6
Summary of Trends of Office Serving Local Markets

Office Segment	Trends	Land Use Implications	High Performing Regions
Central City	Despite a strong inner-city rebound, decentralization of office continues. Firm re-engineering generally favors suburban, exurban, second & third tier cities for back office functions. The central city is favored for high profile and client-oriented service firms.	National trend towards decentralization although 'urban recommit' relocations are documented nationwide.	Boston, New York City, Albuquerque, Las Vegas, Fresno, San Antonio, San Jose, Jersey City, Little Rock, Omaha, Portland.
Suburban	Campus offices can be part of supply chain cluster of an industrial firm and allow for greater integration between land uses and office functions.	Continued pressure for greenfield sites with adequate infrastructure. Need for regulatory accommodation of integration of functions for high-tech sector and other rapidly changing business sectors.	Ventura County, San Diego, Honolulu, Sacramento, Tucson.
Neighborhood	Typically Class B & C space, service-oriented, including medical-office.	Often occurs in retail strip commercial and Main Street locations. Customer-oriented firms such as insurance and real estate often prefer ground floor locations.	Oriented to serve local population, no major differences across major metro areas.

Office Segment	Trends	Land Use Implications	High Performing Regions
Home Office	More people with traditional jobs are working from home a portion of their week, requiring greater communications infrastructure.	Reduces demand for office space to extent that individuals telecommute full-time. Live-work space also seems to be growing.	Limited empirical research; may be correlated with metro areas having a high share of <i>creative class</i> individuals.

Summary Portland Metro Region Outlook:

Short-Term (5-Year): With relatively lower vacancy rates than comparable metro areas, the Portland region is expected to perform better than the national average. Even with uncertain economic conditions, building is continuing with over 1.3 million square feet under construction in the CBD, including the Pearl. Additionally, Vestas is considering investing about \$250 million to build 500,000 to 600,000 square feet of LEED-Platinum downtown space in the South Waterfront not yet on the books.

However, with increasing vacancies, a slowing of development is expected after projects in pipeline are completed. The duration of the slowdown depends on the extent of the global financial-sector consolidation now in process and statewide employment stagnation. Unlike many metro areas, there currently appears to be some opportunity for Central City (downtown plus Lloyd and Pearl) to recapture market share with more diverse products, attractive lease rates (in down market), increased transit premium, and LEED certifications. The greatest challenges are for much of the suburban market, including business/tech-flex parks with substantial office tenancies.

Mid-Term (20-Year): The future of the office market remains highly uncertain in the mid-term. The labor market—already growing slowly—is expected to further decelerate as baby boomers retire. An additional challenge is the Portland metro region’s perceived lack of “global-pathway” status, though increasing energy costs may represent an opportunity for the region even as a second-tier center. There are continued opportunities to build on the region’s appeal to young creatives and an entrepreneurial strengthening of business, tech-related and creative service sectors. Best opportunities are for transit-rich, higher density and increasingly urban locales marketed for green development. Portland’s position as a leader in sustainable and renewable energy in industry and manufacturing may be expanded to include professional services. With high numbers of LEED-accredited professionals currently in the marketplace, there may be opportunity for spinoff firms and other specialized professional services.

Long-Term (50-Year): For the long term, public investments in education and infrastructure will become even more important. Increased density and increased use of live-work options may affect the region’s need for traditional office environments, even in the face of uncertain job growth. Advanced telecommunications systems and globalization will make the prospects for office development even more uncertain. As a result, the region’s office development becomes increasingly reliant on the historical attractiveness of Portland metro area (extending well beyond the Central City) for migrants—particularly young creatives, and both environmental and economic sustainability. In addition to committed support of workforce training, achieving

world-class higher education and research status would be integral for sustained competitive advantage and improved incomes region-wide.

RETAIL TRENDS AND OUTLOOK

Retail developments are typically categorized by the commercial real estate brokerage and development communities based on market served and tenant characteristics. The following definitions reflect typical real estate nomenclature, and the language may or may not match local planning definitions. For example, what the industry defines as neighborhood centers are often viewed by zoning as community centers.

Convenience and Neighborhood Centers provide the convenience (food, drugs, and sundries) and personal services (laundry and dry cleaning, barbershop, etc.) for the needs for the immediate neighborhood. These centers are usually anchored by a supermarket or drug store, and contain up to 100,000 square feet of leasable area. The site is usually 3 to 10 acres in size and typically serves a population of between 3,000 and 40,000 people.

Community Centers provide many of the convenience and personal services by neighborhood center with a wider array of soft lines (apparel) and hard lines (hardware and appliances). Most of these centers are anchored by a junior department store or variety store in addition to a grocery store and ranges in size from 100,000 to 500,000 square feet. The site area is usually 10 to 30 acres and typically serves a population of between 40,000 and 150,000 people.

Regional and super regional centers provide the general merchandise, apparel, furniture, and home furnishings in depth and variety as well as a range of service and recreational facilities. Typically built around two or more full-service department stores (50,000 square feet each), they typically contain between 500,000 to 1 million square feet or more. The site area required ranges from 10 to 100 acres or more and serves a population of 150,000 to 300,000 or more.

In addition, there are several variations of the major types of shopping centers, including Power Centers, Lifestyle Centers, and Downtown or Urban (Street) Retailing. Specialization of shopping centers started in the 1970s, though the trend accelerated through the 1990s. The affects of these and other trends are explored in the Retail Trends section of this document.

National Outlook

With consumers tapped out on credit and unemployment numbers rise, retail has been hit hard. Large malls, typically owned by REITs, and high-income-area neighborhood shopping centers are generally expected to perform best, though even they will suffer through the unsettling jobs picture and housing woes. This ownership structure typically means remote decision-making and fiduciary responsibilities.

Decline in consumer spending prompted several regional mall stores to either file for bankruptcy protection or close some stores, including Circuit City, Sharper Image, Foot Locker, Pacific Sunwear of CA, and Zales. Retailers have been posting some of the largest year-over-year

declines in retail sales throughout 2008 including Dillard's, Kohl's, Limited Brands, American Eagle Outfitters, and Macy's. Stores that survive will still likely shelve expansion plans for the near term. The uncertainty has led to a flight to quality, with the newer or substantially upgraded regional malls with strong management faring the best.

Weakened consumer demand and inability to borrow to finance the purchase of merchandise are hitting some stores hard than others. Linens 'n Things filed for Chapter 11 bankruptcy protection and is set to close 120 of its 589 stores, including 27 closings in California. The Home Depot is also planning to close 15 stores (less than 1 percent of the company's store portfolio) scattered across ten states (none in Oregon or Washington), and cut its U.S. development pipeline by approximately 50 stores. Yet to be seen is whether this retail contraction is merely a short-term cyclical phenomenon or the start of a longer term transition in the national retail environment.

Portland Metro Region Outlook

A recent survey by Cushman & Wakefield's (C&W) Retail Specialty Group revealed that the Portland region has the second lowest amount of retail space per capita among the 25 largest U.S. metropolitan areas.⁴ Only New York City has less retail space per capita. As a result, the Portland region is expected to weather the national slowdown better than most major markets. It is also likely that the region experiences higher overall sales per square foot, which may enable retailers to provide higher-quality store design and amenities.

C&W noted that furniture stores seem to be particularly hard hit by the economic downtown, with Wicks, Levitz, and Linens 'n Things vacating space, enabling some updating and remodeling where the historically tight market may support a higher lease rate for higher quality space.

Despite the cautious economic conditions globally, many retailers are still conducting due diligence for future openings in the Portland region, including national clothier Rue 21 planning to open several Oregon locations in 2009, and Toys R Us planning to introduce a new hybrid concept in 2010. Much of the proposed retail development seems to be following anticipated "new rooftops"—as with over 900,000 square feet of development in four large projects in Clark County. Also planned is The Rivers near Oregon City, a lifestyle-type center of nearly 700,000 square feet.

Emerging Trends:

Some of the trends involve variations of the major types of shopping centers. Specialization of shopping centers started in the 1970s, though the trend accelerated through the 1990s.

⁴ Cushman & Wakefield includes Clark County in Washington in its retail analyses.

The **Power Center** is a specialized type of super community center which emerged in the 1980s. It usually contains at least four category-specific anchors of 20,000 square feet or more. These anchors typically emphasize hard goods, such as consumer electronics, sporting goods, office supplies, home furnishings, home improvement goods, specialty foods, toys, and personal computer hardware/software. They tend to be narrowly focused but deeply merchandised “category killers” together with the more broadly merchandised price-oriented warehouse clubs and discount department stores. Anchors in power center typically occupy 85 percent or more of the total leasable space.

Convenience-craving American consumers have driven even traditional department store chains to experiment with elements of the big-box format. Shopping carts—once exclusively in the realm of supermarkets and big-box discounters are now seen in midtier department stores as well. The Kohl’s chain set the pace, offering customers a virtual “racetrack” floor plan and other time-saving features such as centralized checkout. Sears and JCPenney have started developing and converting off-mall, big-box stores, emulating many of the speed-oriented elements that have helped Kohl’s expand so quickly. Despite these efforts, Sears and JCPenney were among many retailers reporting double-digit decline in same-store sales in November 2008. (Other stores reporting declines include Costco, Target, Macy’s Nordstrom, Gap, and Abercrombie & Fitch). Wal-Mart is the only national retailer to report a gain, raising the question of whether its good fortune is a result of the current economic condition (as shoppers trade down during a period of austerity) or an intensification of the long-term competitive of its low-cost, high-volume format.

Further boosting the strength of power centers is the addition of amenities and square footage. This new genre, sometimes referred to as a “**power town**” may contain 600,000 to 1 million square feet or more and feature expanded components beyond big-box retail anchors, such as lifestyle wings, mix of uses such as residential or office, or a entertainment or hospitality element. Examples in place now include the Alliance Town Center—a 300-acre center which will ultimately house a 1.35 million-square-foot power center/town center, plus an additional retail component anchored by Belk and J.C. Penney, the Village at Stone Oak—a 635,000 square-foot development that uses power-center tenants and lifestyle retailers in San Antonio, and Prairie Center—which will house up to 3 million square feet, including a 950,000 square-foot power center in Brighton, Denver.

Lifestyle centers are another specialized type of super community center. International Council of Shopping Centers (ICSC) in 2002 as defined a lifestyle center: a location near affluent residential neighborhoods, an upscale orientation, 150,000 to 500,000 square feet of gross leasable area (GLA), an open-air format, and at least 50,000 square feet of national specialty chain stores. The success of these centers, including the region’s BridgePort Village, appears to correspond with a downtown renaissance, with the lifestyle center emulating a man-made “town square.” With limited property available for retail development, it is likely that this trend will be beneficial to increased downtown and urban retailing.

Convenience-craving consumers’ quest for one-stop shopping has driven developers to acknowledge that today’s customer shops at both big-boxes and in-line boutiques, providing them together in a **Hybrid Center**. A pioneer of this combination of power and lifestyle is

Developers diversified with the 1999 Phase 1 opening of Riverdale Village in Coon Rapids (Minneapolis), MN, which featured a Costco, Best Buy, and a Main Street with small shops in an 875,000-square-foot open-air center which includes a man-made lake and pavilion for outdoor events.

Downtown or Urban Retailing: While the postwar suburban shopping centers grew, downtown retailing declined. The late 1970s and early 1980s saw the introduction of festival marketplaces in a few cities, such as the Faneuil Hall Marketplace in Boston, Harborplace in Baltimore, and South Street Seaport in New York. Regional shopping centers were built in a few downtown locations, such as Glendale Galleria in Glendale, CA and Hawthorne Plaza in Hawthorne, CA, and the Gallery at Market East in Philadelphia, and Eaton Centre in Toronto, continuing into the 1990s with the development of Circle Center in Indianapolis and San Francisco Centre. These new-generation centers form anchors within the downtown retail environment and encourage spillover of retail growth throughout the surrounding neighborhood.

Urban street retail is more difficult to track on a consistent basis as commercial brokerage firms do not typically include independent stand-alone retailers outside of larger shopping centers such as NW 23rd Avenue or SE Hawthorne Street. This type of “Main Street” retail is sometimes configured as neotraditional developments, with ground floor retail and residential and office uses on the upper floors. Local, independent shops are usually the first to “discover” a new urban street ripe for retail. As business builds, chains start to take notice, and move in, often building larger stores overshadowing their precursors. Unfortunately, as the economy slows, the pacesetting independents are typically the ones to close first, as has been observed on NW 23rd. According to Shelley Poticha and Gloria Ohland of Reconnecting America, “Portland is modeling a new kind of downtown neighborhood that appeals to the demographic groups (smaller, older neighborhoods) that are becoming the new majority in the United States.”

Retailers are being challenged to adapt successful suburban retail formulas to fit urban spaces, leading to the **Vertical Stacking of Tenants**. In addition to being more expensive to build than a conventional horizontal center, these projects need to draw shoppers from floor to floor and create the visual connections that allow circulation. Escalator and checkout placement can affect aisle width and loading areas may need to be adaptable to accommodate multiple retail users. There are numerous examples of vertically stacked retail, including Pioneer Place in downtown Portland.

Transportation-Integrated Retailing: Following the restoration of Union Station in Washington DC in the late 1980s demonstrated the potential for shopping centers in major transit stations. The restoration of Grand Central Terminal in New York has created the opportunity for high-end specialty shopping to serve commuters, tourists, and office workers in the Midtown area. Transit-oriented development along light-rail stations is Portland’s answer to this type of transportation-integrated retailing. As ridership continues to increase, station areas can expect to become increasingly visible and desirable retail locations. Despite suffering the incredibly poor timing of opening on September 10, 2001, CascadeStation has since re-tooled and en route to success with new specialty furniture anchor IKEA. Another example of transportation-integrated retailing is the Oregon Market, featuring local shops and restaurants in the Portland Airport

(PDX). PDX was reportedly the first major airport to adopt “fair retail pricing”—a requirement that airport retailers and restaurants sell at the same price as their off-airport outlets.

The popularity of **on-line shopping** has raised questions about the impact of internet sales on bricks-and-mortar stores. More than half of U.S. households regularly shop on the Web, but online purchases still make up only 7 percent of total retail sales, according to Forrester Research. This market share varies, based on consumers’ shopping patterns for different product types. For bigger-ticket items, consumers tend to research options online, and then go offline to buy (some who return to make the ultimate purchase online after satisfying their desire to see the product in-person, only if cost savings are present)—a practice found in just over half the customers purchasing consumer electronics. These **cross-channel shoppers** do make purchases online, with 5 out of 6 reporting online purchases within three months of the survey, likely on items like books—whose ubiquity, wide availability, and relatively low price helped amazon.com usher in the genre of on-line shopping. According to a survey of consumer book-buying habits conducted by Fairfield Research, chain stores accounted for just over one-third of book purchases (in units) in 2007; that figure, based on consumers' buying plans for 2008, is projected to fall to just marginally percent this year. In contrast, the percentage of books purchased online jumped from 23 percent in 2006 to 30 percent in 2007 and is projected to inch up to 30.5 percent in 2008. The increased integration between on-line and in-person shopping will heighten the demand for integrated transportation networks.

Summary Portland Metro Region Outlook:

Short-Term (5-Year): With relatively less square footage of retail space than other comparable metropolitan areas, the Portland Metro region should outperform the national average. However, global deleveraging will certainly affect this region with increasing retail vacancies, the likely exit of national retailers from the market, and dramatically slowed retail development (especially in outer suburban areas). The seeming potential for more center-related development may also be offset in this region by urban-growth-boundary management combined with opportunity for well-capitalized independents as with urban street corridors. Overall, the best investment opportunities are expected to be with major regional centers and grocery-anchored neighborhood centers, while older strip centers will face challenges and likely higher vacancy rates as the economic downturn results in a flight to quality. New developments will continue to employ the more population and lower-cost open-air format, in contrast to the former enclosed mall format.

Possible increase of on-line purchases, particularly for smaller, more ubiquitous products such as computer hardware and software, books, pet supplies, cosmetics and fragrances, and as price-sensitivite consumers are exposed to more direct-market channels. Continued price competition on bigger-ticket and widely-available items such as applicances, autos, and electronics.

Mid-Term (20-Year): As the economy recovers, development will be renewed but at a slower pace with the aging of the prime baby-boomer market. As a result, there may be increased emphasis on redevelopment or reuse of dated centers. Increasing consumer desire for open-air formats and limited real estate for new lifestyle developments may benefit urban street retail with mixed use, possibly including scaled-back infill grocery concepts.

Transit-oriented development is likely to benefit from increased ridership and lack of development sites. More vertical stacking of retail is also likely. As distribution becomes more centralized and automated, it will become increasingly dependent on public investments in transportation infrastructure.

There is opportunity for retailers with both websites and brick-and-mortar stores to respond to web-savvy consumers with well-integrated, multichannel operating strategies, including consistent pricing, ability to purchase and redeem gift cards online or in stores, and ability to accrue loyalty points across channels. Some retailers may invest in their web presence not only to sell merchandise directly, but to position their site as a research tool to increase sales at their stores.

Long-Term (50-Year): As large sites for traditional shopping center formats becomes more scarce and regional malls continue to age, there is an increased risk of physical and market obsolescence, yielding possible opportunities for the reconfiguration of outer ring retail to more urban, mixed-use, street and transit orientations. An important question mark is the long-term competitive position of large format national retailers – both in terms of community acceptance, adaptation to more urban footprints and potential trends toward shopping closer to home (as exemplified by Portland interests in achieving 20-minute neighborhoods).

In the long term, the overall impact of online shopping on traditional retail is unclear, though the main influencing factors seem to be consumer preference for handling merchandise versus value of time and the sophistication of retailer distribution technologies.

INSTITUTIONAL TRENDS AND OUTLOOK

National real estate literature is not oriented towards institutional users. More than any other employment related real estate product type, institutional users such as medical centers and universities tend to respond more to unique considerations associated with project funding and market demand.

However, universities and hospitals have increasingly become strong economic development drivers of their communities. In many cities they are major employers, bringing high-wage jobs to the communities in which they locate. Not only have these jobs been viewed as largely recession-proof, enrollment in higher education is often counter-cyclical, with residents returning to school when the jobs are scarce.

For outerlying areas without existing infrastructure or well-developed land use networks, a potential role for institutions might be as drivers of infrastructure or as “anchors” to other developing commercial or residential nodes.

Educational Institutions: As reviewed by Professor Heike Mayer, Margaret Pugh O’Mara chronicles the efforts of the Silicon Valley, Philadelphia, and Atlanta to create what she calls “cities of knowledge.” As she describes it, Stanford University played an active and largely successful role in real estate development and its entrepreneurial efforts in connecting with

industry. In contrast, O'Mara considers the University of Pennsylvania effort to create a critical mass of academia and industry a failure which she attributes to obstacles in the existing urban neighborhood, including an unfriendly business climate, urban problems, and a lack of support for entrepreneurial ventures. Efforts to utilize the Georgia Institute of Technology as a catalyst for high-tech development also failed, because 1) Georgia Tech failed to become involved in real estate development, 2) developers established technology parks not adjacent to Georgia Tech, and 3) government officials were focused not on a concentration of knowledge in Atlanta, but on building scientific industries statewide.

O'Mara concludes that key ingredients to the recipe for high-tech success include investments in science and technology, a world-class and politically-powerful university, control over land development in the right location, and the will to use high-tech economic development as an end, not as a means to solve other urban problems.

Health Care Institutions: Healthcare expenditures by those 65 and over represent the majority of healthcare spending in the U.S. And with the baby boomers reaching that threshold, the increased need for health care will be significant in the short, mid, and long term. However, though the demographics support growth, there will likely be significant challenges posed by increased funding uncertainty particularly related to Medicare and Medicaid (pending substantial health care reform), given that increasing costs for health care require an ever-increasing share of GDP.

The nature of the health care institution itself has changed from a one-stop shop for inpatient services to a collection of many organizations following the trend of specialization in medicine, with more procedures conducted on an outpatient basis. As a result, the medical office sector is expected to be a growth business for the foreseeable future. Medical office buildings are often developed on the campuses of existing hospitals, but can also be stand-alone buildings in downtowns or even suburban environments. From an investment perspective, analysts say they have historically been overlooked not only because they lack the pizazz of gleaming skyscrapers, but also because their complex operating structures can scare off traditional office investors.

Corrections Institutions: The Office of Economic Analysis produces a semi-annual Corrections Population Forecast which provides projections of the offender populations supervised by the Department of Corrections (DOC). The forecast uses a model which simulates the flow of inmates from intake to the prison through their sentence, and final departure as prisoners are released. Although criminal activity (measured by arrests) has generally decreased in Oregon over the past decade, the prison population has gradually increased, primarily due to increasing lengths of stay. The future rates will be influenced by changes in the Alternative Incarceration Program (AIP). The prison population at the beginning of July 2008 was approximately 13,550, or 0.5 percent higher than one year before. By mid 2018, the prison inmate population is expected to grow to just over 15,800. Unlike the historical NIMBY (Not-in-My-Backyard) image, modern correctional institutions are often viewed as a potential economic development strategy, bringing family-wage jobs with benefits. With existing capacity, however, observers do not expect development of significant additional correctional institutions in the immediate-term.

Other Public/Private Institutions: Many universities have embarked on large-scale redevelopment projects, often in partnership with real estate development firms, presenting opportunities for the private sector. These university-related projects are frequently extensive mixed-use developments that will serve both daily and visiting populations. For example, a new 345-acre development at Western Carolina University (WCU) in Cullowhee, North Carolina, will include not only academic buildings, but also private sector and government facilities, as well as multi-family housing. The projects, 40 percent of which will comprise the actual buildings, will be funded in part by a \$2.89 million investment by the state as part of series of projects costing about \$400 million. The catalyst for this development is WCU's Millennial Initiative, facilitated by state legislation that allows universities to enter into public/private partnerships with businesses that support both university development and economic development.

Emerging Trends:

Demographics: As the population continues to age, health-care institutions will continue to flourish. The first baby boomers will turn 65 in 2012, and their healthcare needs will be significant. From 2005 to 2020, the under-65 population is expected to grow by nine percent, while the 65-and-over population is expected to grow by 50 percent. This age shift is amplified by the fact that the 65-and-over population utilizes greater levels of physician services than those under 65 (about 4:1 for populations 65 to 74 and about 6:1 for populations 75 and older).

Inner-city school districts—which have faced declining enrollment for years—are now seeing their student populations stabilize and may even experience a bit of recovery in coming years. Though these declines are largely offset by gains in suburban school districts (for example, the Beaverton School District has been experienced gains which roughly offset losses in the Portland Public Schools), the flattening of the region's population pyramid is undeniable, resulting in impacts on institutional planning as students move through the K-12 system to higher education or workforce training programs.

Private redevelopment partnerships: As shown by Western Carolina University and the Stanford/Silicon Valley examples, universities can work in partnership with businesses that support both university development and economic development. These neighborhoods will allow students to attend class, then walk next door to apply their learning in related workplaces. Conventional models focused on research and began with incubators and research/technology parks sponsored by the largest research universities. The Silicon Valley example shows that adjacencies and integration have synergistic qualities.

Unconventional Sites: At a time when universities are running out of room to expand on their existing campuses, some are thinking beyond their ivy-covered walls and finding ways to use unconventional sites to their advantage. In the process, they are helping to revitalize neighborhoods and creating synergies with other uses. San Francisco State University's College of Extended Learning, MBA and Executive MBA programs joined the retail and office tenants at the Westfield San Francisco Centre, the largest urban shopping center west of the Mississippi River. Locally, University of Oregon's Portland satellite campus in the White Stag block of Old Town is an institutional example benefiting the urban area's revitalization efforts. And Oregon

Health and Science University's (OHSU) development of South Waterfront allowed much-needed expansion, despite severe land-capacity constraints.

Summary Portland Metro Region Outlook:

Short-Term (5-Year): Though the prospects are good for increased need for health care and education, the economic downturn will likely provide challenges of constrained funding for education, Medicare/Medicaid reimbursements, and public and nonprofit agencies. In the short term, there could be an emphasis on planning for mid-term development, and the opportunity to accommodate adults returning for added education.

Mid-Term (20-Year): In the mid term, substantially increased health care demand is anticipated with aging of baby boomers. There may be challenges posed by increased funding uncertainties for Medicare and Medicaid (pending substantial health care reform). Medical office buildings—traditionally located on hospital campuses—will likely need to expand to more stand-alone locations proximate to growing populations. Educational facilities may also be likely to focus development on satellite campuses, closer to the populations they serve. Workforce training programs will also need to be distributed with population. A South Portland expansion and strengthened linkage of OHSU/PSU campus development is anticipated. Inmate population and capacity of correctional institutions will need to be revisited.

Long-Term (50-Year): The institutional share of regional employment base (and resulting space needs) is expected to continue to increase. This growth may include greater ancillary opportunities ranging from R&D to supportive residential community options. There will be greater pressure for increased density of institutional development, including reconfiguration of existing facilities. Decentralized operations of institutional users are expected to follow population growth.

MIXED USE

Mixed-use design has advanced from the traditional main street approach—with residential above retail space—to a diverse mix of property types, users, and strategies to create true urban environments. The relative resurgence of many city cores and the desire of some metro areas to better manage or limit sprawl and increase sustainability have seen mixed use emerge as a major component of contemporary real estate strategy. This resurgence takes the traditional main-street-residential-over-retail approach to the next level by introducing other uses and forms to the urban—and even suburban—environment.

A key challenge with mixed use is to successfully conquer the conflicts sometimes inherent between uses. One designer sees mixed-use development being conceived of as ‘insertions’ into gaps in existing downtowns as opposed to greenfield sites. In most cases, a limited number of large new anchors are introduced to attract new customers to the edge of an existing retail area. The anchors then are surrounded by smaller retailers, and some office space that can be placed above retail. Housing is placed around these attractions in locations less central and in most cases is used as a buffer to surrounding residential districts.

Emerging Trends:

Some land use combinations which appeared in the literature included the following:

Suburban Office/Housing/Retail: The transformation of suburban business districts from poorly linked, auto-dependent, segregated-use projects into well-connected, pedestrian-friendly, mixed-use environments is a development trend gaining momentum in urban areas nationwide, with plans for suburban office parks transitioning to mixed-use developments, sometimes with nearly equal parts of office space, housing, and retail. Many of the same factors that influenced the resurgence of central business districts in the 1990s apply to the revival of suburban business districts. Such factors include: development density, improved spatial connection between buildings, pedestrian interconnections, street layout, opportunities for shared parking, and choice in mode of transit. However, because the building form and layout of suburban business districts have an independence and separation not found in downtown business districts, they can prove a major challenge to public transit, which is sometimes unable to serve lower density and fragmented development in a cost-effective manner.

Retail/Medical Office: As described in the office and institutional sections of this report, health care services were historically provided on hospital campuses, but began to move into freestanding medical office buildings—sometimes still in or near medical complexes, but increasingly in freestanding office buildings conveniently located near population and employment centers. Health care services moved from institutional to office—and now—to retail. Typically located inside drug store chains and staffed by nurse practitioners, *retail clinics* fulfill patients' demand for convenient routine medical care. The first retail clinic opened in August 2000, morphing a medical office use with a neighborhood retail use. In most cases, retail clinics operate under existing retail zoning, making them not a mixed-use per se, but a trend toward new combinations of retail and service uses that will affect land use needs for institutional, medical office, and retail.

Redevelopment of Obsolete Public Buildings: Obsolete facilities of all kinds can result in newly available parcels of prime land. These facilities might include public uses—decommissioned military bases, surplus school sites, hospitals closed due to demographic shifts and changes in health-care standards and delivery systems—or private uses—industrial sites and buildings intended for development which never occurred. The resulting sites—proximate to transportation infrastructure—are often ideal candidates for redevelopment. Hospital redevelopment in particular favors a combination of uses, as shown by the former Boston, Forborough, and Metropolitan State Hospitals in Massachusetts. Locally, the former Dammasch Hospital site in Wilsonville is an example now being developed by Costa Pacific Communities as Villebois. Smaller scale examples in this region include the McMenamins restaurant/brewpub redevelopments and the identification of two sites in Portland under the Department of Defense's Base Realignment and Closure (BRAC) process—the Lt. Alfred Sharff US Army Reserve Center located in the Portsmouth Neighborhood in North Portland at 8801 N. Chautauqua Boulevard and the Sgt. Jerome Sears US Army Reserve Center located in the Multnomah Neighborhood in Southwest Portland at 2730 SW Multnomah Boulevard. Disposition of these surplus military properties presents potential opportunities for creative re-use of these sites.

Summary Portland Metro Region Outlook:

Short-Term (5-Year): Likely slowdown in mixed use (beyond existing pipeline projects) due to overall economic contraction, greater financial feasibility challenges with urban density projects, and lender caution with what is often viewed as more challenging mixed use project finance. Maybe offset, at least in part, by public-private development programs (as with urban renewal where available).

Mid-Term (20-Year): Major rebound opportunity as core urban markets solidify emerging advantages over car-dependent outer ring alternatives. Substantially increased market share depends on extension of mixed use beyond the Central City, as with station area development and streetcar extension, and greater diversity of mixed use application, e.g. work-live, office/retail condos, and use diversification of ground floor space beyond retail.

Provision of health-care services will likely become increasingly specialized and geographically segmented as the bulk of baby-boomers reach retirement age. As the sector continues to grow and adapt to these needs, its growth will have implications across multiple land uses.

Long-Term (50-Year): Could emerge as the hallmark of the Portland Metro region as a legitimate but distinctive global pathway community, with substantial mixed-use throughout the region – focused on regional and town centers, corridors, and possibly selected high demand employment areas.

SUMMARY CONCLUSIONS

In addition to the industrial makeup of the economy—reviewed in the Task 1 report, existing and emerging trends will influence the capacity of the Portland Metro region to meet employment needs and support its regional economy. This memo reviews those emerging trends, and explores how they might affect the outlook for land use and development in the region—over 5-, 20- and 50-year time horizons.

In the short term, demand for warehousing/distribution space is expected to remain weak, due to lackluster retail sales. In the industrial real estate market, the Portland Metro region currently has a price advantage over other west coast cities which makes it attractive to companies seeking industrial space with good access and a regional location with high-quality amenities and attractions for staff. As job losses and other cost-cutting measures force employers to re-evaluate space needs, a steady increase in vacancy rates is putting downward pressure on rents, which will slow short-term development activity. But as with industrial real estate, the region's office market is faring this recession better than the rest of the nation.

With relatively little retail space per-capita, the region's retail market is also expected to perform well relative to other regions. Retailers expected to perform well are those who have well-integrated, multichannel (web and stores) operating strategies. Services—particularly medical-office, education, and workforce training programs—are moving toward more stand-alone locations proximate to population and employment centers. Distinctions among traditional land uses are becoming increasingly blurred.

Over the longer term (of the next 20 years and beyond), employers may have difficulty filling positions as baby boomers retire and leave the already slow-growing labor market. The public sector and certain transportation and health care sectors in particular will need to ensure adequate workforce training and flexible work options to allow older workers to remain in the workforce.

Increased globalization and offshoring of some activities will continue as the wage differential between the domestic and international labor markets is expected to persist. Increasing levels of automation and highly effective supply-chain management enables this trend in industrial and manufacturing, while advanced telecommunications systems threaten traditional office jobs. However, volatility in energy prices may slow this phenomenon somewhat, and may even create an opportunity for the region with its well-integrated and multi-modal transportation network. These and other implications are summarized in Table 7 on the following page.

There may also be opportunities to bolster employment growth by encouraging in-migration and building off the region's recent attention as a leader in sustainable and renewable energy technologies. Industry clusters in apparel, creative services, biosciences, and metals and others also continue to offer key opportunities. To realize these opportunities, the region's economic potential is increasingly dependent on investing in a solid infrastructure system, securing a world-class presence in higher education, and attracting the capital required to convert promising new technologies to commercial applications.

IMPLICATIONS FOR FUTURE TASKS

As noted at the beginning of this memo, the results of the Task 1 employment demand factors and trends analysis and this Task 2 survey will inform employment forecasting of Task 3 and the job choices of Task 5. The New Demand Paradigm associated with Task 3 will allocate employment forecast to the tri-county portion of the larger metro area by industry sector, subarea geography and design types using a range rather than point estimate approach. From there, Task 4 will evaluate the land and building capacity of the region, while Task 5 frames those choices in a policy context.

Questions raised in this memo about the region's role in supporting and cultivating certain emerging drivers may be explored in those future tasks. For example:

- How does the region compare to other parts of the country / world with respect to employer incentives (including the Oregon Department of Energy's Business Energy Tax Credits, known as BETCs)?
- How might the region support building re-use for new emerging industries?
- What types of infrastructure improvements will be most beneficial to employers?
- How might the region explore the role of institutions as drivers of infrastructure or as "anchors" to other developing commercial or residential nodes.
- How might the region further support workforce training and higher education to achieve world-class status?
- How might the region cultivate the development or redevelopment of unconventional sites?

- To what degree should the region consider or encourage development concepts for which there is no clearly demonstrated market at least in the Portland region to-date?

These are some of the questions which might be further explored as the new demand paradigm is developed and Metro and its partner jurisdictions explore implications of various policy decisions.



Table 7
Summary of Implications

Commercial-Industrial Land Use Segment	Short-Term (5-Year)	Mid-Term (20-Year)	Long-Term (50-Year)
Industrial	<p>The Portland Metro region's price advantage over other west coast cities continues to make it attractive to companies seeking industrial space with good access and a location with high-quality amenities and attractions for staff. To the extent that the dollar remains comparatively weak over this time period, exports may continue as an important source of stability for the regional economy. Attracting large industrial users is key to utilizing large campus industrial sites.</p>	<p>The opportunity for the region to attract new growth lies with the region's existing industry clusters including emerging applications (as with solar). Particular emphasis has been on the recent surge in sustainable and renewable energy. The ability of one company to "anchor" the region's sustainable industry cluster could pave the way for spinoff industries. Other opportunities to build off the region's other industry groupings, including established and emerging industries such as apparel, metals, high-tech, biosciences, and others. Volatility in the energy market and fuel prices may encourage development of second-tier distribution locations, and the region may be well-positioned to satisfy this role.</p>	<p>For the long-term, the region is increasingly dependent on securing an internationally recognized higher-ed research presence coupled with venture capital for leading edge technology and commercial applications. Likely shift from large footprint industrial park and campus orientations to higher-density industrial (including for some wholesale-distribution functions both close-in and on the I-5 corridor). Multi-story industrial applications may become more possible.</p>
Office-Commercial	<p>With relatively lower vacancy rates than comparable metro areas, Portland can be expected to perform better than the national average. However, with increasing vacancies, a slowing of development is expected after projects in pipeline are completed. There appears to be some opportunity for Central City (downtown plus Lloyd and Pearl) to recapture market share with more diverse products, attractive lease rates (in down market), increased transit premium, and LEED certifications.</p>	<p>The future of the office market remains highly uncertain in the mid-term. The labor market—already growing slowly—is expected to further decelerate as baby boomers retire. Continued opportunities are to build on the region's appeal to young creatives and an entrepreneurial strengthening of business, tech-related and creative service sectors. Best opportunities are for transit-rich, higher density and increasingly urban locales marketed for green development. Portland's position as a leader in sustainable and renewable energy in industry and manufacturing may be expanded to include professional services. With high numbers of LEED-accredited professionals in the marketplace, there may be opportunity for spinoff firms and other specialized professional services.</p>	<p>For the long term, public investments in education and infrastructure will become even more important. Increased density and greater use of live-work options may affect the region's need for traditional office environments, even in the face of uncertain job growth. Advanced telecommunications systems and globalization will make the prospects for office development even more uncertain. In addition to committed support of workforce training, achieving world-class higher education and research status will be integral for sustained competitive advantage and increased incomes region-wide.</p>

Commercial- Industrial Land Use Segment	Short-Term (5-Year)	Mid-Term (20-Year)	Long-Term (50-Year)
Retail- Commercial	<p>With relatively less square footage of retail space than other comparable metropolitan areas, the Portland Metro region should outperform the national average. The economic downturn will likely result in a flight to quality. Possible increase of on-line purchases, particularly for smaller, more ubiquitous products. Continued price competition on bigger-ticket and widely-available items such as appliances, autos, and electronics.</p>	<p>There may be increased emphasis on redevelopment or reuse of dated centers. Increasing consumer desire for open-air formats and limited real estate for new lifestyle developments may benefit urban street retail with mixed use, possibly including scaled-back infill grocery concepts. Transit-oriented development is likely to benefit from increased ridership and lack of development sites. More vertical stacking of retail is also likely. As distribution becomes more automated, it will become increasingly dependent on public investments in transportation infrastructure. Opportunity for retailers with both websites and brick-and-mortar stores to respond to web-savvy consumers with well-integrated, multichannel operating strategies.</p>	<p>Increased risk of physical and market obsolescence, yielding possible opportunities for the reconfiguration of outer ring retail to more urban, mixed-use, street and transit orientations. Overall impact of online shopping on traditional retail is unclear, though the main influencing factors seem to be consumer preferences for handling merchandise versus perceived value of time, desire for convenience, and the sophistication of retailer distribution technologies.</p>
Institutional	<p>Though the prospects are good for increased need for health care and education, the economic downturn will likely provide challenges of constrained funding for education, Medicare/Medicaid reimbursements, and public and nonprofit agencies. In the short term, there could be an emphasis on planning for mid-term development, and the opportunity to accommodate adults returning for added education.</p>	<p>Substantially increased health care demand is anticipated with aging of baby boomers. There may be challenges posed by increased funding uncertainties for Medicare and Medicaid (pending substantial health care reform). Medical office buildings—traditionally located on hospital campuses—will likely need to expand to more stand-alone locations proximate to growing populations. Educational facilities may also be likely to focus development on satellite campuses, closer to the populations they serve. Workforce training programs will also need to be distributed with population. A South Portland expansion and strengthened linkage of OHSU/PSU campus development is anticipated.</p>	<p>The institutional share of regional employment base (and resulting space needs) is expected to continue to increase. This growth may include greater ancillary opportunities ranging from R&D to supportive residential community options. There will be greater pressure for increased density of institutional development, including reconfiguration of existing facilities. Decentralized operations of institutional users are expected to follow population growth.</p>

Commercial- Industrial Land Use Segment	Short-Term (5-Year)	Mid-Term (20-Year)	Long-Term (50-Year)
Mixed-Use	Likely slowdown in mixed use (beyond existing pipeline projects) due to overall economic contraction, greater financial feasibility challenges with urban density projects, and lender caution with what is often viewed as more challenging mixed use project finance. May be offset, at least in part, by public-private development programs (as with urban renewal where available).	Major rebound opportunity as core urban markets solidify already emerging advantages over car-dependent outer ring alternatives. Substantially increased market share depends on extension of mixed use beyond the Central City, as with station area development and streetcar extension, and greater diversity of mixed use application, e.g. work-live, office/retail condos, and use diversification of ground floor space beyond retail. Provision of health-care services will likely become increasingly specialized and geographically segmented as the bulk of baby-boomers reach retirement age. Growth will have implications across multiple land uses.	Could emerge as the hallmark of Portland for a legitimate but distinctive global pathway community, with substantial mixed-use throughout the region – increasingly focused on regional and town centers, corridors, and possibly selected high demand employment areas.

APPENDIX 1

Industry Case Studies

The following are case studies of specific industry sectors with significant employment that could affect the Portland Metro employment and commercial/industrial development patterns over a 20- to 50-year period.

Oregon's Transportation and Warehousing Sector Case Study: The transportation and warehousing industry is an integral part of Oregon's economy. A comprehensive and efficient passenger and freight transportation system is essential to economic activity and contributes to the health and growth of Oregon businesses. This sector provides the state's manufacturers, wholesalers, retailers, farmers, tourists, and residents with air, road, rail, and water transportation, and storage services. As estimated by the Oregon Employment Department, Oregon's transportation and warehousing industry is expected to grow by 13 percent by 2016, or by 44,000 jobs to nearly 380,000 jobs. The state and structure of the regional economy will influence future growth in the sector. In addition to its role in supporting the efficient movement of passengers and freight, technological advancements will also propel growth as more firms use transportation and warehousing companies for logistical services such as inventory management and just-in-time shipping. According to a 2007 analysis commissioned by the Port of Portland, regional maritime and aviation activity supported nearly 78,000 jobs in the local economy, including approximately 45,500 jobs created directly by marine cargo and airport activity.

Oregon's Traditional Metals Sector Case Study: Though considered a mature industry, Oregon's metals manufacturing industry employs more than 25,000 workers, with about 17,000 in fabricated metals industries and over 8,000 in primary metals, according to the Oregon Employment Department. Although employment levels have declined from their recent peak in the late 1990s, the industry continues to provide many workers with stable high-wage jobs with benefits and considerable hiring has taken place in metals manufacturing since the recession of 2002-2003. Because the industry has a relatively large fraction of older workers, according to data from the U.S. Census Bureau's Local Employment Dynamics (LED) program, employers will soon lose many skilled workers as baby boomers retire. These retirements will create further job opportunities for workers with the appropriate skills. Primary metals had an average wage of more than \$5,000 per month while jobs in fabricated metals paid a little more than \$3,300 per month during the first quarter of 2006. The comparable wage for all private employers in Oregon was roughly \$3,200 per month. The 2006 to 2016 industry employment forecasts suggest the state's metals industry will see modest job increases between 2006 and 2016, adding over 1,900 jobs and growing by roughly 8 percent.

APPENDIX 2

Potential Emerging Trends: Specific Examples

The following are more specific examples of less tested but potentially emerging trends that could affect the Portland Metro employment and commercial/industrial development patterns over a 20- to 50-year period.

Supply-Chain Management and Logistics Analysis Example: Logistics analysis uses distribution network modeling to simulate the requirements of retail distribution centers. For example, Deloitte Consulting has developed a model for a prototypical national network of stores which suggests that 95 to 99 percent of the population can be served within one to two days with five distribution centers, located in Atlanta, Chicago, Dallas, Reno, and Scranton-Allentown, PA. Further consolidation may result in secondary hubs, presenting a possible opportunity for the Portland region.

Multi-Story Industrial Buildings Examples: The physical land constraints in the industrial hubs of Asia have precluded the U.S. trend of pushing industrial development to the perimeter. The need to maximize land use in island economies with high populations reveals that a multistory industrial development will pencil out when land values increase to more than half the value of the building. This is when it becomes reasonable to incur the extra construction complexities and costs associated with going vertical. The major Asian industrial hubs of Tokyo, Osaka, Singapore, and Hong Kong contain numerous examples of multistory distribution facilities. For example, AMB Kasugai Distribution Center in the city of Nagoya, Japan is a 1,298,000-square-foot distribution center comprised of six stories and two corkscrew truck ramps. The infill distribution facility is centrally located and building tenants are now closer to their customers, minimizing transportation-related impacts.

In Japan, where vertical development has long been common, zoning ordinances reflect the realities of scarce land. The typical FAR for distribution facilities is around 200 percent (meaning two square feet of building area for every square foot of land area), which enables developers to build vertically and still have ample room for trucks to maneuver around the facility. The seven-story AMB Ohta Distribution Center at the Port of Tokyo, for example, has a floor/area ratio in excess of 398 percent, unheard of in the U.S. Western urban planners have often argued that higher FARs simply allow too many warehouses in densely populated areas, when in fact multistory developments encouraged under higher FAR allowances are proving to be more eco-friendly and less costly to their communities.

Early adopters of multistory industrial facilities in the U.S. will likely be global shippers already operating in multistory facilities in Asia. Assuming that a combination of rising land prices, environmental pressures, and more enlightened urban planning will accelerate this trend, multistory industrial development may be on the mid- to long-term horizon in the U.S., despite its engineering and operational challenges. Fortunately, existing engineering and design best practices from Asia are available to be emulated and adapted to U.S. conditions.

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Employment & Economic Trends Analysis

Focus Group Research – February 2009

In cooperation with the business community, focus group research has been conducted to obtain business and industry perspectives on emerging trends in building space needs and changing regional competitive advantage. The following eight focus groups were conducted:

- Biotech/medical
- Distribution/logistics
- Food/beverage
- High tech
- Metals/machinery
- Business locators
- Regional services
- Retail

There were 47 participants with these eight groups. A list of participants is provided in the Appendix at the end of this research report.



FOCUS GROUP RESEARCH PURPOSE

Focus groups were conducted over the time period of December 2008 to February 2009 as part of an employment and economic trends analysis for the Portland tri-county region on behalf of Metro. The primary purpose of this trends analysis is to outline a *new paradigm* for evaluating job needs and associated capacity demand within the region over 5-, 20- and 40-50-year time horizons.

PARTICIPANTS

Funding support for this focus group research was provided by Metro in cooperation with City of Portland, Port of Portland and private funders through the auspices of an informal group of business groups and trade associations (as detailed in the Appendix). Seven of the eight groups were led by Adam Davis and John Horvick of the opinion research and consultation firm Davis, Hibbitts & Midghall.

Photos courtesy of Davis, Hibbitts & Midghall.

The retail group was led by economic and development consultant E. D. Hovee & Company, LLC in conjunction with Bonnie Gee Yosick LLC. Logistical support including invitations and space arrangements were provided by The Bookin Group on behalf of the Commercial Real Estate Economic Coalition (CREEC). Capacity Commercial Group, Greater Hillsboro Area Chamber of Commerce, and Commercial Realty Advisors hosted the groups.

While not designed to measure with statistical reliability the attitudes of a particular group, focus group research is valuable in providing the perspectives of the population from which the sample was drawn. In the interest of encouraging candid discussion, comments made are not attributed to specific individuals. This report provides an overview summary of findings, followed by more detailed results from each of the individual focus groups.

SUMMARY OF FINDINGS

Findings of the eight focus group discussions are organized to cover discussion of building and space needs, emerging trends, development patterns, advantages and disadvantages of doing business in the Portland metro area, and on-going competitive advantage for the region.

This summary is intended to cover major themes emerging from the eight groups collectively. Subsequent sections of this report provide results by focus group.

BUILDING & SPACE NEEDS

Focus group participants were asked separately about changes in building space and then location/site needs over the next 1-20 years. Key themes from discussion across the eight focus groups are noted as follows.

Building Space:

- Rapid industrial change – as land and building space becomes increasingly expensive
- Hi-cube distribution – on the horizon for mid-large firms
- “New-age shop” for manufacturing – as companies of all sizes invest in technology
- Diversity of office needs – but with common themes of more collaboration, space-sharing and conferencing
- Retail shift to smaller store concepts – especially grocery and for the near-term

Location/Site:

- Regional competition for industrial sites – extending at least from Woodland to Salem
- For sites of 20+ acres, increasing need to look outside the metro region
- Distribution requirement for freeway access (I-5 +)
- Clustering for competitive advantage – exemplified by clusters including high-tech, metals and professional services
- Labor force a growing driver of facility siting
- Customer / client businesses driven for closer proximity to population
- Little eagerness for brownfield redevelopment – due to liability issues
- Greater impetus for businesses to stay in the same site footprint – to mitigate neighborhood and cost issues

EMERGING TRENDS

As a follow-up question, participants were asked to identify other emerging trends that could impact building space and location/site needs 20 to perhaps even 50 years into the future. Major response themes:

- Transit now important across all business groupings – especially for employees

- Transit-oriented development (TOD) interest – but a source of frustration for at least some commercial/industrial firms in this region
- Auto orientation still critical for customer and patient access – with parking needed but a major cost and with recognition that auto reliance varies widely across the region
- Work force accessibility a critical concern – key to attracting young talent which is easier due to this region's quality of life draw.
- Going green of broad interest – especially when supported by customers, clients, workers and/or investors

DEVELOPMENT PATTERNS

A question framed for focus group participants was as follows:

A recent Metro 2060 forecast is that the region's employment base could essentially double from less than 1 million jobs in 2000 to about 2 million by 2060. About 70% of this job growth can be expected by 2035.

The Portland metro area has already shifted toward greater density of residential development. To accommodate the anticipated job growth at the lowest possible environmental cost to the Willamette Valley, similar approaches may be needed to encourage a “smaller footprint” of land need with each new job created. Over the next 20 years – what options could you see your business taking advantage of ...

This question evoked considerable and wide-ranging discussion among participants. Major themes resulting include the following key observations:

- Multi-story development works best for office / administrative functions
- Mixed opinions on retail suitability for 2+ stories – but most likely at higher value and urban or constrained sites
- Manufacturing typically holding at 1-2 floors – more for admin / R&D functions
- Multi-level economics are not workable for distribution yet (despite some global experience) – but hi-cube distribution accomplishes similar results of reduced land footprint
- Great impetus for more and more efficient building on site, adaptive reuse, and multi-level parking on constrained sites
- Continued strong and growing orientation to sites offering transit accessibility together with exploration of opportunities for improved site efficiency (including less land devoted to parking where supported by project economics and other transportation modes)

ADVANTAGES & DISADVANTAGES

Participants also were asked to identify advantages and disadvantages of conducting business in the Portland metro area. Items mentioned most frequently (across most or all focus groups) are distinguished from those less frequently mentioned – as outlined by the following chart.

<u>Advantages</u>	<u>Disadvantages</u>
<i>Most frequently mentioned</i>	
<ul style="list-style-type: none"> • Talented work force ('the cutting edge is out of Oregon') • Multi-modal access • Quality of life (urban, recreation) • Relationships (business-to-business & customer) 	<ul style="list-style-type: none"> • Poor market proximity (no critical mass) • Shallow labor pool (skill positions) • Limited, high cost sites • Transportation congestion (freight, passenger) • Public policy issues (taxes, fees, permitting, infrastructure)
<i>Less frequently mentioned</i>	
<ul style="list-style-type: none"> • Sustainability commitment (business, environmental, land use) • Reasonable cost of doing business • Population growth (good demographics) • Gateway location 	<ul style="list-style-type: none"> • Cost of doing business (cost of living) • Limited investment capital (with need for incentives) • Industrial encroachment & gentrification

COMPETITIVE ADVANTAGE

The last question raised in the focus group discussions was:

What message do you have for Metro and local jurisdictions about what to do in a changing world to assure that the Portland metro area remains competitive as a place for businesses in your industry group to expand or locate?

Key themes heard in both written responses and ensuing discussion are summarized to include:

- More land in the right place(s) – with in-place infrastructure
- Increased focus on sustainability – as a necessary cost of doing business
- Economic stability of Portland – a plus compared to the rest of the west coast
- Addressing issues of congestion – on local streets as well as the freeway system
- Taxes, fees, permitting – consider streamlining
- Value capture as a mechanism for infrastructure funding – for new employment land brought into the UGB
- Encouragement of high-end jobs
- Flexibility in policy application
- Paying attention to the short as well as long-term – take incremental steps to achieve the long-range vision

The remainder of this report provides a more detailed listing of results for each individual focus group.

BIOTECH / MEDICAL

Four people participated in the biotech/medical focus group. Three were leaders of small start-up businesses and one was a representative of a local university actively involved in bio-med research and university-commercial technology transfer (or commercialization).

SUMMARY OF FINDINGS

Building and location site needs are expected to change in next 10-20 years. All the participants expected their organizations to grow and need more space for offices, laboratories, and, perhaps, manufacturing.

Low-cost facilities important to startup companies. The participants felt that affordable space is critical for startup companies. Because they are not yet making profits and operate on investor money, they need to be especially careful with their funds. The OHSU Marquam 2 building and PSU Business Accelerator are viewed as important facilities because of their relatively low rents. One participant said that his company would not locate to Portland or Multnomah County because of high local taxes.

Proximity to other biotechnology companies, OHSU and PSU was essential. The participants wanted to be close to one another for collaboration, and near universities for access to researchers and facilities. Also, creating a cluster of biotechnology companies would help build a culture that is attractive to investors and perspective employees. Transit from downtown and the PSU campus to the South Waterfront and OHSU is critical to collaboration.

A “green” culture is valuable to recruit talent. The participants did not embrace green development for its own sake. If it lowered their costs, great. Otherwise they did not think their clients would judge them based on the commitment to sustainable practices. However, there was a belief that Portland’s reputation as a green community helps attract qualified employees to the region.

BUILDING SPACE NEEDS

a. Anticipated Changes in the Next 10-20 Years

“I think it will. We hope to take on more projects.”

“Definitely. The evaluation of the business plan is to establish a diagnostic laboratory and to expand that component of the business automatically requires more space.”

“All of this is hypothetical because we could be gone in a year. What I envision is that our company will continue to be involved in discovery research. To the extent we can get funding to carry that out is a big part of the ball game.”

“Don’t foresee qualitative changes, but quantitative changes (i.e., we will need more office space and more lab space). We will continue to have need for specialized space (BSL-3 lab at OHSU).”

“Increase in office space, with increase in patenting and industry collaboration.”

All four participants said they anticipated their building space would change in the next 10-20 years. They believed their companies would grow and need more office space for administration

and more specialized laboratory space. As the firms grow from Research & Development to production they may need space for manufacturing, but only if it is cost effective to do it themselves. Also, some of the companies operate in different locations throughout the region and consolidating was a long-term goal.

b. Building Space Needs for Biotechnology Companies

“At an earlier stage when you’re trying to develop the technology that’s where the public/private collaboration is ongoing and you need space that can be leased.”

“If you’re doing diagnostic service you need a couple of things. You need access. You have to be able to back in trucks...The space you need – part of it is manufacturing – but part of it is packaging. As well as the R&D laboratory.”

“For a therapeutic company you really need to have a CGMP [Current Good Manufacturing Practices] or access to that to develop pilot scale processes to have enough therapeutic compounds to conduct animal trials.”

“It’s doesn’t always make sense to set up your own manufacturing facility. When large pharma has extra capacity you partner with them.”

The participants said within the biotechnology sector, different companies have different building site needs. Medical devise and diagnostic companies need space for manufacturing, packaging, and access for trucks to deliver supplies and pick up finished products. Companies involved with Research & Development for pharmaceuticals and vaccines need access to specialized laboratories. Cost was also a concern, especially for start-up companies. Without capital to build specialized facilities, startups need affordable space to lease.

LOCATION/SITE NEEDS

a. Anticipated Changes in the Next 10-20 Years

“Currently occupying the Portland State University Business Accelerator, which is an incubator and by definition short-term. Perhaps be in better proximity to customers, i.e., Portland or Hillsboro.”

“Need to be closer to university faculty.”

“Will likely stay in leased space outside Portland and Multnomah County. Not likely to move office into Portland due to tax policy. As a money sink, we do not like to pay taxes on venture capital investments.”

“Don’t see need for major move but modest move to improve accessibility and/or consolidate operations might be attractive.”

Two participants thought their location needs would change in the next 10-20 years. One participant’s location is temporary by design and the other would like to move closer to OHSU and PSU. A third participant did not anticipate moving. Their present location was desirable because of low local taxes. The fourth participant thought his office might move to improve accessibility, but would stay in the same general area.

b. Location/Site Needs for Biotechnology Companies

"Marquam 2 is not a particularly presentable space but we're not bringing in clients there. We do work."

"Staying in the vicinity of PSU and OHSU makes sense because it's new technology. The stuff that's going to need that space is most likely to come out of those institutions."

"And it comes down to ease of access. If the collaborators have to drive an hour to be with each other, it's not going to work."

"You've got to build that culture. You can feel it starting to happen here. And I think bringing people together, providing services that are affordable, that can be centralized is part of that."

"One of the most important things to us is being adjacent to other companies. There are so many rules and regulations that the university has, that NIH has, that the FDA has, that it's really helpful to be able to walk next door to someone from another company who happens to have been through x, y, or z."

"If you take a look at what's happening around OHSU and PSU there is not a lot of space that is available. It's all built. How do you locate a business that needs proximity to an academic institution? You start going up and down the river saying, 'Where is there space?'"

"There is land out in North Portland by the race track. But the problem with that is ease of access."

"Looking 10 years down the road if the Life Science Collaboration building goes in [at OHSU], if the light rail tracks are built and extended to Clackamas County and linked to PSU and OHSU, that is integrated to allow this flow of people, you could easily see manufacturing in all the land that Clackamas County has available. If you link that up to Swan Island you've got the trucking as part of that."

Three of the four participants had experience with the Marquam 2 building, which OHSU leases out. It is desirable because of its affordability and proximity to both OHSU and PSU. In fact, all the participants agreed that being close to other biotechnology firms and universities is advantageous. Trimet buses (and future MAX extension at the South Waterfront), the Portland Streetcar, and the OHSU Aerial Tram help facilitate collaboration. Collaboration was more important for Research & Development than manufacturing.

There was discussion about whether OHSU plans for a new "Life Science Collaboration" building would have space for startup biotechnology companies. One participant said it depended on how much tax-exempt bond money paid for the facility because IRS rules limit the amount of space that can be used for commercial enterprises when tax-exempt bonds fund development.

ADVANTAGES OF THE PORTLAND METRO AREA

"Close to the money in the Bay Area."

"Quality of life makes it easier to recruit young talented people. People want to move here."

"Portland is an easy place to recruit people."

"OHSU/PSU"

“Proximity to OHSU.”

The main advantages to doing business in the Portland metro area are the quality of life and higher education institutes, particularly OHSU and PSU.

DISADVANTAGES OF THE PORTLAND METRO AREA

“Dearth of venture capital.”

“Not a prominent biotech/venture capital location.”

“The tax structure could be more flexible to start up companies. You feel different about paying taxes when you’re making a lot of money.”

“Lack of existent biotech culture.”

“Lack of seasoned, experienced, executive biotech management.”

“Lack of open space for building infrastructure for labs.”

“Culture. This is the first place that I’ve been where there are so many agencies trying to do the same thing without talking to each other.”

The participants said disadvantages to doing business in the region were a lack of venture capital for startup companies and high taxes. They suggested that this could be overcome with more grant and loan programs that encourage investment, and reducing taxes on startups that have not turned a profit. One participant’s said, “investments are not profits; research supplies are not product inventory.”

The participants also said that the local “culture” hindered the industry. They felt hopeful that the region is coming closer to having a “critical mass” of biotechnology firms, but they didn’t think it is there yet. Without that culture it is harder to collaborate, attract employees, and develop experienced management.

A final disadvantage was a lack of laboratory space – particularly affordable space. The participants recommended more efforts to facilitate the construction of laboratory space and providing rental subsidies to startup companies.

HOW TO BUILD A BIOTECHNOLOGY SECTOR

Two different perspectives on how to build a biotechnology sector in the Portland region.

“I think the way you build a biotech industry – and there are a lot of states trying to do this – it’s to look at the North Carolina model. First you got the universities united and mandated to be business friendly and all these constraints relaxed. And then they tried to recruit a big drug company. Once they got the big drug company and the university was there to support them, there was a biotech industry born.”

“We’re not going to be a North Carolina. We’re not going to be a San Diego, San Francisco, or Boston. But when I take a look at where we are today, we’re easily 15 years behind where Utah is, 15 years behind Colorado, and 20 years behind Washington in terms of development of the bioscience sector. When you take a look at Utah and Colorado it was growth within the state. The industry grew within the state. When I was in Utah we never recruited a large pharmaceutical company. We

just made it easy for companies to grow and locate next to each other. Once you have a co-location of companies good things happen. You share ideas, you get to know one everyone else, and you get spin-offs.”

CLIMATE CHANGE & GREEN DEVELOPMENT

“If it makes a more cost effective space, great. If makes it a more presentable space, great. But not a big concern. We’re not going to be judged by the space we rent. We’ll be judged by the quality of our science.”

“Climate change is of no consequence. Green development in Portland makes us attractive to creative, well-educated, bright people. So the more that Portland is perceived as the green capital of the world, the better it is for recruiting.”

“Climate change is going to make Portland more attractive than other parts of the country.”

“We’ve made a conscientious effort to go with LEED Platinum ratings for any new construction we do.”

For most of the participants, climate change and green development were not important values in and of themselves. One participant said that his company would not be judged on its commitment to sustainability or what type of facility they leased. On the other hand, he said if green development helps to lower costs that would be beneficial.

At least one person felt that green development and a commitment to slowing climate change are values particularly important to “creative, well-educated, and bright people,” and that Portland’s reputation as a “green” city makes the region more attractive to the type of employees that biotechnology companies desire.

SMALLER FOOTPRINT

“I’m not sure I subscribe to a smaller footprint. I’m not totally in favor of it because it hasn’t been adequately defined. Does it mean just selectively? Is it an overarching plan? At what expense? For what gain? You need to be careful.”

“If there is substantial difference in cost it is hard to accommodate.”

“The issue for more, when you construct an office building, you have about 1-1/2 feet of HVAC space per floor. In a wet lab you have about 3 feet of space – at least. That adds substantially to the cost if you’re thinking about density.”

The participants were asked if they would locate in taller buildings with greater urban density. Three participants said that they would consider 2- to 4-story building. One participant said he would consider a 3- to 5-story building. None would consider an 8-story or higher building.

The primary concern was cost. They were skeptical that their laboratory and manufacturing needs could be met in taller buildings without increasing construction or leasing costs. One participant questioned whether it was even possible to put specialized wet laboratories in high rise buildings.

DISTRIBUTION / LOGISTICS

Four people participated in the focus group. Three were representatives of trucking and logistic companies. One was a representative from the Port of Portland. Of the three trucking and logistic companies, one was a large “asset-based” company headquartered in Portland. It had five sites in the region, approximately 160 employees, and a fleet of trucks. The other two were national companies with operations in the region. One described his company as “asset light.” It had some administrative offices in Vancouver, two staging areas at the Port of Portland, but otherwise operated out of their vendors’ warehouses. The other was a large property owner in northwest Portland, where their finance and IT workforce are located. Additionally, it owned truck yards in Wilsonville and north Portland.

SUMMARY OF FINDINGS

Expect to need larger facilities and more land in the next 10-20 years. The participants expect the region’s population and demand for their services to grow in the next two decades. To accommodate growth, and in addition to an expanded marine and rail service, they believe they will need larger facilities for administrative staff, larger warehouses, and more land for truck yards. Furthermore, they said there is an inadequate land supply in the region partly due to land use restrictions and a social culture that doesn’t understand their industry.

Congestion along the I-5 corridor is a serious impediment to the distribution sector. All the participants said traffic congestion is a major problem. While they believed that solving the Columbia River Crossing is important, it is only one of several choke points through the metropolitan area. Congestion and access to I-5 are key to their location and site decisions.

Climate change and green development are relevant in so far as it affects profitability. The participants were not antagonistic to environmental policies, but they saw them through the lens of profitability. Most said their businesses have taken steps to reduce their energy and fuel costs, and that they support mass transit. They do worry, however, about environmental restrictions that are insensitive to their industry.

BUILDING SPACE NEEDS

“Logistics needs are changing. Constant reevaluation of modes.”

“Tied to growth of partners (i.e., increased freight will demand larger facilities).”

“Our needs are really dependent on what the Port is going to do and how that will increase.”

“The dramatic change we’ve seen in our business is we need more and more yard space.”

“Our new model is to make the building slightly smaller, maybe taller. But we are operating drop carriers 24 hours a day and need that yard space.”

All four participants said their building site needs would change in the next 10-20 years. They said that as the Portland metro area grows demand for their services will increase, and to meet demand they will need larger facilities.

The participants had difficulty distinguishing their building space needs from their land space needs, which were paramount. To the extent that they did, however, they felt that their building space needs would grow to accommodate more administrative staff and larger warehouses.

LOCATION/SITE NEEDS

“Because congestion over the Columbia Crossing is so problematic we needed another facility to manage stuff going north.”

“The key component is the I-5 corridor. For distribution to happen you have to have access to I-5.”

“Fundamentally on the marine side we see continued growth. We'll continue to look for waterfront land, for which there is a huge limitation--there is not much of it.”

“Since we're asset-based, industrial land is critical to what we do. Unfortunately, there is a lack of it in the Portland metro area. We need fairly good sized parcels.”

“We've developed an expertise in brownfield redevelopment. We recognized that because of Oregon land use laws, land is constrained. And that reuse of existing land that is adjacent to key transportation corridors is opportune. To the extent that we can develop brownfields that is attractive. And we see that as an opportunity.”

The participants described their location and site needs for the next 10-20 years. Again, they foresaw a need for more land. As the region's populations grows, demand for their services will grow, which in turn will mean more demand for trucks, ships, and rail to move goods. As one participant said, “You can't stack tractors on top of one another.”

However, the participants were of the opinion that available industrial land is running out. They attributed part of this to the Urban Growth Boundary and other land use restrictions. At least one participant also felt the social and political culture of the region looked down on the distribution sector as “dirty work” and didn't take its interests into account when developing public policy.

A bright spot was the Port of Portland's development of the Rivergate Industrial District. They praised it as having access for trucks, rail, and marine. One participant said, “It's got everything located there. It's a gem in terms of rich infrastructure.”

It was critically important to the participants to be both physically close to Interstate 5 and have easy access to it. They said the Portland metro region alone isn't a large enough market to support them. They all had a regional approach to business. And because the vast majority of the region's population is along the I-5 corridor, that's where they need to be. Additionally, access to the north and south is more important than access to the east.

The participants all said that I-5 choke points including the Interstate Bridge hampered their businesses. One participant said his company had to open a second truck yard in north Portland because it took too much time to get products into Washington from their yard in Wilsonville. Another said his company would consider relocating to Clark County if I-5 traffic didn't improve through Portland.

ADVANTAGES OF THE PORTLAND METRO AREA

- “Great place to live from an employee standpoint.”*
- “Quality of life.”*
- “Alternative to the Seattle/Tacoma choke point.”*
- “Potential for growth large because of excess capacity at Port of Portland. Their growth means our growth.”*

The participants said the region's quality of life is an advantage to doing business here because it attracts and retains employees. One participant said it is particularly important to recruiting IT and logistic workers.

As much as the participants complained about congestion in Portland, they said it is significantly better than Seattle and Tacoma.

The participants also believed that Portland's population would grow over the coming decades and that this is an opportunity to expand their businesses.

DISADVANTAGES OF THE PORTLAND METRO AREA

- “Small consumer base relative to other markets (e.g., Los Angeles/Long Beach and Seattle/Tacoma).”*
- “Transportation congestion.”*
- “We lack a vision and plan. We've been trying to get trucks off the street, which is not good for job creation.”*
- “Taxes, fees, and attitude of the city to industrial growth and business growth. Needs major work.”*

The participants said a significant disadvantage to the region is that it is not large enough to support a completely local operation. Also, traffic congestion along the I-5 corridor is a serious problem.

At least one participant didn't think the local political culture is friendly to or understands the needs of the distribution industry. He said, “The idea of freight needs to be expanded in the community. It is not just the trucks going from here to Fred Meyer.”

A participant suggested that changing when businesses receive products from trucks would go a long way to solving distribution and congestion problems. From his perspective, businesses in the Portland metro area expect and demand deliveries between 10:00 AM and 3:00 PM, which results in trucks being on the road during peak traffic hours. He said truckers and distribution companies would rather make deliveries between 10:00 PM and 8:00 AM. He admitted that many businesses don't have the scale to accept deliveries during these hours – and that it would take a change of business culture among those who do – but he pointed to the downtown

Nordstrom's as an example of a business that does accept deliveries during off-peak hours. For him, the demand for peak-hour deliveries harms both commuters and distribution companies and changing this should be part of the overall transportation plans for the region.

CLIMATE CHANGE & GREEN DEVELOPMENT

“We are concerned about reducing the cost of building operations and energy.”

“Sustainability important. Cost and availability of energy. It’s the right thing to do.”

“Green building requirements are hard to understand or implement. Very expensive with no return.”

“To the extent that there are tax credits and tax benefits are going to be huge.”

“We want to see things done for the right reasons and be economically effective. We use it as a way not only to be socially responsible but to increase our level of profitability.”

“One of my concerns is that we don’t have a cookie-cutter approach.”

All the participants were concerned about climate change and green development to a degree, but their concern was largely borne out of economic considerations. They saw “greening” their businesses largely as reducing their fuel and energy costs.

They were not antagonistic to green practices – a new Port of Portland building will be LEED certified and another company has a sustainability committee – but they were leery of how environmental regulations affected their businesses. One participant in particular was concerned that clean air requirements in California may be replicated in Oregon. He said this would “radically change” their business model, which relies on partnerships with independent operators who could not afford to upgrade their trucks. He felt that California-like regulations would drastically increase the price of trucks making his company less competitive. Another participant warned against environmental policy having a “cookie-cutter approach.”

SMALLER FOOTPRINT

“Multistory warehouses don’t work. Everything has to go up and down an elevator. It would create a choke point. We need more of a footprint, not less.”

“People aren’t going to move here, there’s not going to be jobs here if we don’t have the appropriate infrastructure.”

“We’re going to need more footprint not less. You can’t stack tractors.”

“People don’t want to live near industrial jobs. You’re going to have to go someplace for an industrial job.”

“This might work for commercial and residential, but it doesn’t really work for distribution functions that this city relies on.”

“We’re a big believer in high density and live/work environments.”

We asked the participants if they would locate to taller buildings with greater urban density. Only one participant said his business would consider locating in a 2- to 4-, 5- to 8-, or more than 8-story building. They didn’t believe that warehouses and other facilities that distribution companies need could be scaled upwards though one participant mentioned seeing such a facility in Singapore. Moreover, they anticipated that as the region’s population grows – and with it demand for their services – they will need more land not less.

However, most were open to the idea that office and other administrative workers could be in taller buildings. One of the participants, said that his business is actively trying to develop a high-density, mixed-use development on land they own in northwest Portland.

All four participants said that they would consider locating to sites that emphasize transit accessibility. They have a self-interest in this because they believe their businesses will be more successful if mass transit can help reduce traffic congestion. One participant stressed that from his perspective the freight community and transportation community share the same values. He said, “Every car that comes off the street is a good one. We like bicycles, we like transit because it gets cars off the street and cars are what cause congestion.”

FOOD / BEVERAGE

Four people participated in the focus group. Two were owners of small craft distilleries. One opened in 2005 in inner southeast Portland. The other is located in northwest Portland and has been in business for over twenty years. Between them they have three to eight employees and operate out of 5,000 to 18,000 square feet. The third participant is the president of a medium-sized maraschino cherry processor with production facilities in Forest Grove. It has approximately 70 employees that work in a 130,000-square foot building. The final participant was a representative of the Kraft food processing company in north Portland.

SUMMARY OF FINDINGS

Most expect to need more building space. Three of the four participants believed business growth will require more space. One participant, however, believed that improved manufacturing technology and equipment may allow them to decrease their space and increase output.

Residential encroachment affecting location site needs. Residential development is nearing the industrial space of some of the participants. This will impact their decision about how long to stay in their present locations.

Transportation costs and traffic congestion are a problem.

The region lacks skilled labor. It is difficult to find skilled mechanics, electricians, and other skilled employees. The participants recommended more programs to support the industrial arts in high schools and community colleges.

Regulations are costly, contradictory, and often poorly implemented. The participants were frustrated by local regulations and regulators. Their experience made them leery of additional regulations for green development.

Climate change not as important as green development. The participants were not motivated by concerns about climate change but they were supportive of practices that would lower their energy costs. They are, however, worried about administrative burdens.

BUILDING SPACE NEEDS

“We could have more building space needs but it would depend on consumer demand and population growth in the area.”

“There are two issues. One is simple growth. It is already beginning to look like we are running out of room. New product lines will require all our space fairly soon. The second issue is the impending gentrification.”

“So the question is how do we move to a smaller, more efficient space? Something we can maintain at a lower cost.”

“But for our natural growth and expansion we will need to have more room for equipment and barrels. Coming into this year we have an expansion plan, which will probably get us out of that building in 2010.”

All four participants said that their building space needs would change in the next 10-20 years. Three thought they would need more space and one believed that more efficient operations and improved technology would allow his company to reduce their space demands.

Distilleries have moved into their current locations in the last few years, but strong growth has already pushed them to maximize their space. Demand for their products is growing and they are expanding their product lines. A particular need for both of them is barrel storage. One said that his company is considering offsite storage. Another concern was appearance. Because the craft distilling business attracts tourists, there is a need for a more attractive space for walk-in customers.

One participant thought that eventually more space would be needed, but there are no immediate plans. When consumer demand and population growth push them to expand, the biggest issues will be more space for handling incoming materials and shipping finished product.

A processor said they currently occupy a building that is much too big for their operations – and that they will need even less space in the future. While he expects his company to grow, he believed that technology improvements would lead to more efficient processing with smaller or less machinery. The company has started to look for new locations, but one hindrance is the depreciating real estate market. He would like to sell the building they currently occupy but anticipates it taking a long time to find a buyer.

LOCATION/SITE NEEDS

“I would be a fool to reinvest in that space because I have an encroaching neighborhood around us.”

“We face a number of competitive pressures but at the end of the day our costs are lower at the Michigan facility. So we continue to push production to Michigan.”

“We’re right (close-in) so we have great access to transportation. We choose it for that fact. It has easy access for deliveries and pick-ups. Also it’s very inexpensive in that area. Right now it’s a great deal for us.”

“As long as I’ve good rail and good transportation it’d be okay [to move to Clackamas or Clark County].”

“From a workforce point of view, quality of life is a significant competitive advantage. The fact of the matter is that if we were going to build another (plant) it wouldn’t be here.”

“A major reason we are looking in the Portland region is that as a private business we get to make certain lifestyle decisions and I want to live in Portland.”

The participants were mixed on whether they expected their location site needs to change in the next 10-20 years. One reason for this is uncertainty about changes happening in the neighborhoods that surround their facilities – a significant concern for these businesses. Two of the businesses occupy land in areas that in recent years has become more residential. One participant said local political forces will continue to push for more housing near his facility. And yet another is concerned that a nearby firm may sell their property for residential development.

Whatever decisions these companies make about location in the future, easy access to transportation will be key factor. Each said that highway access, especially I-5, is critical. It was also important to be close to crops that supply them, particularly if it is fruit. Proximity to the Port was also important for grain supply and access to international markets.

In one way or another, the participants each indicated that they had options to do business in another region or even another country, but would like to stay here because of the quality of life. This is a desirable place to be for them personally and attractive to employees. Moreover, the local community is very supportive of local agriculture and specialty foods.

ADVANTAGES OF THE PORTLAND METRO AREA

“Recruiting talent. Desirable location to live.”

“Willing demographic. Excited and interested in local products.”

“Good employment pool.”

“Good access to raw materials.”

Quality of life was the most mentioned benefit of the Portland metro region. As one participant said, “as a private business we get to make certain lifestyle decisions and I want to live in Portland.” They each said they personally want to stay in the region and said that it is attractive to employees – especially high-paid, skilled employees.

A second significant benefit to being in this region is access to local crops. Three of the participants rely heavily on local agriculture to make their products. Being near the supply lowers transportation costs, makes maintaining relationships with suppliers easier, and is a way to support local farmers. For the distillers, a benefit of the region is that the community is interested in gourmet food and supportive of local products.

DISADVANTAGES OF THE PORTLAND METRO AREA

“Distance from larger population and cost of transportation.”

“Transit. Proximity to United States population base.”

“Contradictory regulatory and bureaucratic hoops.”

“What you have now is expensive regulatory efforts done by poor quality employees, badly managed, that produce mediocre results.”

“This workforce issue is big. My joke right now is I'll kill you for an electrician; I'll just maim you for a mechanic.”

Access to good transportation was important to all the participants, but especially important to those whose customer base is national and international. It is an issue of both distance from raw materials and customers. One participant said,

“We could do business elsewhere, and that has to do with population centers not being on the west coast. You could theoretically harvest here and ship to Kansas City. If you just want to do low-cost manufacturing and centralize to be close to key customers, it would not be in the Portland metro area.”

Also noted is that congestion on I-5 and delays at the Port of Portland increase their shipping costs.

The participants said that they are burdened by regulations that are costly, contradictory, and often poorly implemented by government employees. A participant complained that too often regulators do more to stop projects than working with business owners to help them work within the system. He said, “You can be signed off by everybody then some other agency comes in and puts it to a stop. And there is very little recourse. There is not a lot of innovation on the part of regulators. There seems to be a dogged motivation to say no rather than figure a problem out.”

To ease this problem, some participants would like state regulatory agencies, Metro and other regional governments to help businesses navigate the permitting process. They suggested “streamlining” regulations with less paperwork and less overlap among government agencies. They also recommended the governments work together to create some type of “one-stop permitting.”

The participants report different experiences with the region’s workforce. The two largest employers said that there is a dearth of skilled blue-collar workers in the region. They would like Metro and the region’s other governmental bodies to do more to support industrial education in the schools. “What we should do is invest in education and workforce training, but keep in mind not everyone is going to go to college. There is no shame in taking that electrical position or mechanical position. We should have specific programs for blue-collar positions.”

One participant, however, reports the opposite experience. He said because his company produces an artisanal product he is able to easily attract employees. “I have a lot of people doing blue-collar work who are not blue-collar people. That is my strategy. I’ve been lucky to hire very bright, very energetic, easily-trainable, highly-educated youngsters to work for me. They are the creative class.” For him the challenge hasn’t been hiring skilled workers, but retaining them.

CLIMATE CHANGE & GREEN DEVELOPMENT

“I worry more about the administrative hassle. If I've got to understand the carbon footprint of my building and have a tax or trade expense against that, how am I going to figure it out?”

“I'm all for sustainability. But it is more what the consumer is asking.”

“I would say that in terms of really well thought out green issues for sourcing, production, distribution, and sales, we are not much. We haven't brought a lot to the conversation. We're keeping our heads down.”

“We have a very extensive recycling program. When we go to a new location, I'm very concerned about water, heating, and cooling. I'm worried about cost, but I also don't like things to go to waste.”

We asked the participants how big a concern is climate change and green development relative to their building space and location/site needs in the future? For the most part they weren’t overly concerned about climate change per se but they were interested in how green development might help them lower their energy costs. “I don’t see climate change affecting my business directly

but green building is highly desirable to save on water, heat, natural gas, etc. Conservation and a subsequent decrease in cost are very important to our business.”

There were concerns, however, about the administrative and regulatory burdens of green initiatives. They worried that governmental policies would be costly and time consuming, which would make them less competitive in the national and international markets. One participant said, “If it gets to a point where the cost – whether if carbon trading or green energy – impacts our electrical or natural gas expense...if that pushes us to an uncompetitive position, then we're off to Turkey or we're out of business.”

One participant had a unique perspective. He said he started his business in part to help local farm growers. By using their crop locally, he was helping small, family growers.

SMALLER FOOTPRINT

“In our production facility gravity flow might work. A high-rise wouldn't work, but I could definitely see a 2- to 3-story building maybe working. Might work like a brewery.”

“The best model to look at are the wineries. Some of what they do is very creative with gravity.”

“I'd say going up would require the same sort of engineering challenges and creativity as it would be to increase your output with a smaller footprint by changing your processes. In fact that would be an easier goal.”

“In our industry it would be difficult. There would have to be a paradigm shift in over technology. Our (production equipment) is 300-350 foot long and 40-50 inches wide. You don't put those in a high rise.”

We asked the participants if they would locate to taller buildings with greater urban density. One participant said he would consider locating in a 2- to 4-story building and none said they would go taller. Interestingly, distillers indicate there might be some possibilities to go taller by taking advantage of gravity flows to move product. They thought that the breweries and wineries provide some examples of how it could work for them.

One participant thought the goal of reducing their footprint would be easier to accomplish with technological advancements (e.g., smaller more efficient boilers) that lessen their overall need for space. He added that he could imagine being on the first floor of an industrial space with upper floors leased to other tenants.

Another business representative said that they currently reside in a tiered facility with a maximum height of six stories. Product moves higher to lower levels during the (production) and packaging process. He said it would take a “paradigm shift in...technology” to be able to operate in a single high rise facility.

HIGH TECH

Six people participated in the technology focus group. Three were associated with the solar industry, either directly with a company or as a leader of a business association that represents the industry. Two were from multi-national semiconductor and computer technology businesses with a large presence in the region. One participant was from a software business association. The businesses owned several hundreds of acres of land and employed 500 to 15,000 people in the region. The focus group was held in Hillsboro and the participants came from businesses in Washington County.

SUMMARY OF FINDINGS

Building space needs will grow with time and technology changes, but some participants now have excess capacity. The participants in the solar industry are expanding, and have plans to build additional facilities to support their manufacturing. The participants from the semiconductor sector said their businesses have been contracting and they have excess capacity in the facilities they own. Technology changes quickly in the industry, and facilities with good access to move equipment in and out is important.

All the participants have side they own enough land for future expansion but there is not enough shovel ready industrial land in the region to attract new businesses. Because of prior planning, the businesses represented at the focus group had purchased enough land to meet their long-term expansion goals. However, they said the west side of the Portland metro region has run out of industrial land for new high-tech manufacturing businesses.

Congestion and public transportation's "last mile" are serious problems. The participants said that Shute Road and the intersections at Evergreen Street and Highway 26 are at the "cusp of failure." They were broadly supportive of public transportation, but complained that there is not enough bus service in Washington County. The MAX provides good east/west service but there is poor or non-existent bus service from the MAX station to the large employers. They described this as the "last mile" problem.

Multi-story facilities are not applicable to manufacturing, but some participants were open to more creative use of industrial land. There was agreement that multi-story buildings will not work for manufacturing, but lower-level buildings may be acceptable for office space, corporate housing, and other amenities at industrial sites. The participants, however, were concerned that building regulations will make the region less competitive when recruiting new businesses.

BUILDING SPACE NEEDS

"We'll add to existing facility and bring in more types of manufacturing (modeling)."

"Our (another state) facility is currently a third occupied. If there was going to be expansion it would probably not be in the Oregon facility – subject to incentive programs we could work out with local and state governments."

"What you want is a large straight building that has easy access on both sides so you do the equipment move ins. Because the technology changes very rapidly."

“The fact is that this is our largest operation. We don't want to put all our eggs in one basket.”

Over the long-term, the participants expected their building space needs to expand as their businesses grow and technology changes. The participants on the solar manufacturing side said they are now in a “ramp-up” phase. One plans to add space to their present building to handle “ancillary and logistic activity.”

Overall, the participants had a mix of building space needs, including large manufacturing facilities for solar panels and semiconductors, laboratories for research, and office space for administration. A couple of the participants also stressed that some of their work is highly confidential and that secure campuses are necessary.

For high-tech manufacturing, the participants said it is important to have a long, straight facility for manufacturing. Ideally, it would have access on both sides of the facility to ease the movement of equipment. Technology in the industry changes rapidly and they frequently update their equipment. Having a building with good access facilitates this.

One of the participants said they have seen a decline in business with the recession. Where just a few months ago their major manufacturing facility was running at capacity, now they have more capacity than they need. One representative indicated said that the company has a manufacturing facility at another location that is only at one-third capacity and when business picks up again it is most likely that they will increase production at this site rather than expand in the Portland region.

One high tech participant said that when they bought their land, they developed a master plan that included future construction. Although new construction isn't planned for the near term, this person expected at some point in the future new manufacturing, R&D, office, or other buildings would be built.

Software firms indicated that they cared less about the overall size or shape of their buildings than about access to band-width and transportation. A priority need is community space for meetings. Something with open spaces, meeting rooms, Internet access, and video conferencing. One participant suggested creating a collaborative space on the second floor of the Hillsboro Library.

LOCATION/SITE NEEDS

“Yes. Due to the expansion of the company industry.”

“Solar being the only industry that is going to be adding jobs to the Oregon economy over the next two to three years, we have three to five manufacturers that are kicking tires in the region.”

“The backend is the labor-intensive part. We would like to source, and have been sourcing where our customer base is.”

“One of the things that is interesting about the solar industry is the manufacturing side has a lot in alignment with the semiconductor side as far as needs in terms of industrial sites.”

“Probably the most pressing issue is congestion we expect at the intersection of Highway 26 and Shute Road.”

“There is no land on the corridor where light rail is. There is no bus service north of Highway 26.”

All the participants said they have adequate room on land they currently own for expansion. Some of the business are experiencing a decline in business because of the recession and have enough capacity to expand when the economy recovers.

All the participants said that transportation and congestion are significant problems for their businesses. They said that Shute Road and the intersections at Evergreen Street and Highway 26 are particularly problematic. They said it would only get worse as two existing firms in ramp up phase move into full operation.

Concern is also expressed with inadequate public transportation in Washington County. They described it as the “last mile” problem. They said with MAX there is relatively good east/west movement, but that employees cannot get from the MAX station to the work site because the plant facilities are a mile or two away and there are no buses serving them. One firm has a private shuttle service to pick employees up at MAX stations and transport them between campuses. Also noted is that there are conversations going on now between some of Washington County’s large employers about sharing shuttle services.

One participant cautioned about the limits of public transportation. A high-tech company has won national awards for its transit program – which include shuttle services, subsidized Trimet passes, carpool programs, and onsite showers for bike riders – but only 3-5% of employees take transit. For many employees public transportation, it still takes significantly more time than driving and there are too few routes serving the area.

At least one participant believed that the west side of the metro region needs a logistics facility of the scale what exists at PDX. Moving goods and materials across the region to PDX is costly and time consuming. The company represented has explored relocating some operations to (another state) where a new logistics facility was recently built.

Despite the fact that these participants said their companies had room to expand, there was agreement that the western side of the region does not have enough shovel ready industrial land to attract new businesses. One participant said, “There is no shovel ready land in the UGB. We've just used the last one. We're maxed out. We don't have one industrial, shovel ready site.”

ADVANTAGES OF THE PORTLAND METRO AREA

“Skilled silicon workforce.”

“The biggest thing we have going for us is our employee RD”

“Cost-effective energy.”

“Utilities. One of the reasons we're here is the power is very good because of the groundbreaking work the semiconductor business has done.”

“Local tax incentives.”

“Support of state and city.”

The participants said a principle advantage to the Portland metro area is the workforce. The cluster of high-tech companies has been able to “beg, borrow, and steal” the best intellectual talent from around the world. Other frequently mentioned benefits were the tax incentives provided by state and local government and cost effective energy.

DISADVANTAGES OF THE PORTLAND METRO AREA

- “*Distance from primary transportation hubs.*”
- “*Transportation gridlock.*”
- “*Portland-centric policies.*”
- “*Metro had their urban agriculture program and there wasn't the addressing of industrial needs and job needs.*”
- “*It doesn't seem like folks appreciate the natural and necessary difference we have out here.*”

Traffic congestion, especially on Shute Road and Highway 26, is a major disadvantage to the Portland metro area. As mentioned above, the participants said that there is a “last mile” problem with public transportation in Washington County. Another significant problem is that there is a lack of available shovel ready industrial land. The participants thought that part of the reason for this is that regional policy makers don’t understand the needs of high-tech manufacturing.

In various ways during the conversation, the participants expressed frustration about regulatory burdens. They said that they are discouraging companies from locating here. One participant put it this way:

“Flexibility is the word. I don't want a situation with a rigid set of rules and we end up losing the solar industry. Because we can't be flexible enough to adapt to get these industrial sites shovel-ready, sited, and built. There are more to come if we make it possible. And they're not choosing between Hillsboro and Gresham. They're choosing between Hillsboro, Albuquerque, Germany, Austin, and Korea. Governments are actively pursuing and competing for this investment. If Oregon becomes known as the place as 'Yeah we'd love to have you, but this is our list of ten demands', it's going to a real problem for us.”

CLIMATE CHANGE & GREEN DEVELOPMENT

- “*We are a green company and believe in influencing climate change.*”
- “*Enterprise funded partly on climate change concerns, so huge*”
- “*Due to chemicals used and substrate, concerned with regulatory controls.*”

Three of the participants represented the solar power industry. Not surprisingly, the group gave a high importance to green energy and climate change. Most of the participants also stressed the importance of public transportation to reduce their employees’ carbon footprint. They would like there to be more done to improve public transportation in Washington County and asked for more bus transportation to major employment sites. One participant said, “If we look out five to ten years, and this region wants do to more than market the lexicon of sustainability then they do have to look at how people get around and where people live and make policies that are relevant not to the world they would like to see but the what actually exists.”

SMALLER FOOTPRINT

“I see the ambition in this and where you'd ideally go, but it's not applicable out here.”

“I appreciate their vision. But when you look at manufacturing you got ugly buildings.

You can't build out onto the street.”

“Administrative and financial stuff could be on more than one floor.”

We asked the participants if they would locate to taller buildings. For manufacturing, the participants did not think multi-story facilities could ever work. Some participants did say that for office and other administrative buildings multi-story buildings are viable.

And one participant encouraged the others in the focus group to think more creatively about how to use space. This person elaborated: “Could we go to the street and have a parking garage, child care facility, a restaurant. Yes. Then I'm thinking of the second story we could have four or five corporate apartments? Could there be housing? I think the answer is yes. Let's take a different approach. Let's kick some ideas around.”

On the other hand, a couple of participants reacted strongly to being asked about higher density and multi-story buildings. They were concerned about regulations that didn't account for the realities of their operations. When asked if their businesses would consider multi-story buildings, one participant objected. “I don't read this and think you've got manufacturing in mind. It's not applicable. I see the ambition in this and where you'd ideally go, but it's not applicable out here.”

Software companies may have a different perspective. Businesses care less about the physical structure of their building space than the available bandwidth, access to amenities, and good transportation.

METALS / MACHINERY

Six people participated in the focus group. They ranged from local family-owned businesses to multi-national corporations with major operations in the region. The smallest company employed about 50 people locally and the largest employed 3,000 in Oregon. Several of the businesses had multiple facilities in the region, including northwest Portland, Clackamas, the Port of Vancouver, Swan Island, and Johnson Creek.

SUMMARY OF FINDINGS

Business growth and larger equipment will require larger facilities. Most of the participants said they will need more building space. They all expected demand for their services to grow. They will need more space to handle more business and, with that, bigger, heavier, and taller equipment.

Current sites/locations are too small for expected growth. The participants who said they will need larger facilities said their current sites will not suffice. They are more likely to locate in outlaying communities than the City of Portland.

Green development is important to control energy costs. The participants were not concerned about climate change, but did aspire to lower their energy costs. They supported green development to the extent that it helped them become more efficient.

Multi-story facilities are not an option for metals manufacturing. The participants said the size and weight of their equipment makes multi-story facilities impossible.

BUILDING SPACE NEEDS

“Need more space. Definitely expanding.”

“New markets have always been sought. Current markets come and go, but those that stay grow.”

“Your components become larger physically, they become heavier. So it's more height and more crane.”

“We're in an inefficient set up with three different small shops and it would be nice to combine into one area. To one nice, new facility.”

We asked the participants if their building space needs would change in the next 10-20 years. Five said yes and that they all will need more space and larger facilities. First, they expect demand for their services to grow and their businesses to expand. Second, growth will require them to purchase larger and heavier equipment, which will require more building space and height. They said they will need larger cranes, advanced conveyor systems, computer servers, furnaces, and more.

For some, in addition to growth, they would like to be in newer buildings. Older buildings are serviceable but lacking. One participant would like to be in a more modern building with better heat, lighting, and ventilation.

A participant who did not expect building space needs to change indicated that, in the last several decades, facilities have been underutilized and that they will be able to absorb growth for the foreseeable future.

LOCATION/SITE NEEDS

“No. Or minor incremental change.”

“The types of businesses that we move into will need more industrial area. The area we currently do business in is too expensive for the land that we need.”

“We've been there fifty years and now we're surrounded by residential and other industrial businesses.”

“I need property now. But where is it?”

“The big thing for us is acreage. For example, ...we'll need a test track. So we'll need maybe ten to twenty acres of space in the metro area.”

“Reasonable proximity to major highways is the important transport issue for us.”

Again, five of six participants said they expect their location or site needs to change in the next couple of decades. A primary reason for this was expected businesses growth. Several believed that they will outgrow their current locations and that they don't have room left at their sites for expansion.

Several participants said they are “land-locked” or that the property around them is not developable. Two said that over the years residential neighborhoods have encroached upon them. One has land near the firm's property that is protected by a water district. These are examples of situations indicated by participants who indicate they are currently looking or will have to look for new land to develop.

Transportation will be key to their location decisions. Some factors that they are considering are proximity to major highways and the Port of Portland, and also the ability to bring in a rail spur. Two of the larger businesses have facilities scattered throughout the metro area and they would like to either consolidate operations or least keep future facilities reasonably close to their present locations.

Looking forward, some said government support and incentives will drive their location decisions. There was a sense that the City of Portland was an unfriendly place for them to do business and that outlaying communities are doing more to attract metal manufacturers. For example, speaking of Portland one participant said, “It's tough to be convinced that anyone wants you here.” Another said, “We'll look anywhere. Whatever happens, it's going to be a huge investment so if someone comes to us and says here's \$50 million to come out to the boonies, it's possible we'll do that... It'll be what incentives and the full package when it comes together.”

To help make their location decisions, the participants suggested that Metro and regional governments create a database of shovel ready sites. They said the State of Oregon is already doing this and it would be helpful if it existed locally too.

The participants discussed the possibility of locating on brownfield sites, but they were not enthusiastic. More than one business representative indicated they would not consider brownfields because of public relation and liability problems.

One person commented, “We’re not eager to take on the problems associated with brownfields. We have enough issues with our own manufacturing processes and trying to keep those clean. We don’t need the complications of land that is already questionable.” Another said, “Our business is a little bit different with having a target painted on our back. So we’re probably a little bit more sensitive. I agree about brownfields. I can’t imagine doing that here. We’re very cautious.”

On the other hand, at least one participant would consider brownfields if several criteria are met. “We’re not anti-brownfields per se. It’s all bottom line cost effectiveness. If someone is going to pay for it, if it’s indemnified, if the city takes it, if the permitting process is expedited...I don’t really care where it is if all those bottom line costs are taken care of.”

ADVANTAGES OF THE PORTLAND METRO AREA

“Technical talent.”

“Highway access (trucking is main transportation).”

“Near the Port of Portland”

“Good political support.”

The participants named a range of advantages to doing business in the Portland metro area. Some of the most mentioned were the stock of talented employees and access to the Port of Portland. Other advantages included community services, political support, and personal history doing business in the region.

One participant made the point that manufacturing companies will have more long-term benefits to the region than industries associated with the “creative class.” The point made was that because of the equipment and capital investments that manufacturing companies make, they are unlikely to move. Or in this person’s words, “Everything we do is so big and so heavy we are not the type of companies that are going to pick up and move. I love the creative class, but all these people that are coming to work in office buildings and high-rises, they can move tomorrow.”

DISADVANTAGES OF THE PORTLAND METRO AREA

“Very few large, undeveloped land areas close to highways.”

“Not central to the United States—shipping costs to Midwest.”

“City interference with day-to-day operations.”

“Other industries get more attention”

More than anything else, the participants said that the lack of available industrial land is a disadvantage to doing business in the region. They said that what exists often is of poor quality, has limited access to transportation, or is expensive.

A few participants also said their industry isn’t supported by local governments. They thought land supply was overly regulated and biased against manufacturing.

CLIMATE CHANGE & GREEN DEVELOPMENT

“Climate change is more of a general community concern to us than a business concern. Green development is something we see as economic advantage to us.”

“Climate change and global warming built off models slanted to build case. Green concepts are fine.”

“There is a lot of potential in our industry. We use a lot of electricity and we have a lot of big flat roofs. If there were programs in place that help offset electric on a leases basis for solar. There is great potential there.”

As a group, climate change was not a factor in their decision-making. Those who expressed an opinion about it were skeptical or identified it as a “community concern” more than a “business concern.” But they were interested and supportive of green development as a means to lower their energy costs. As one participant said, “Just specifically about the facility it's really about energy efficiency. It's the cost of doing business.”

Being near a residential neighborhood has motivated one participant to be more concerned about their manufacturing emissions. One comment:

“In terms of emissions and environmental controls, we are very sensitive to the fact that a number of our manufacturing facilities are located in residential neighborhoods. So we really measure ourselves not just against regulator standards but the perception of the neighborhoods. It's not just altruism. Complaints take up time, effort, and energy.”

At least one participant was concerned about environmental regulations interfering with plant operations. The sentiment was expressed most clearly by a participant who said, “I could go from yellow to red real easily depending upon how DEQ responds to political pressure...”

SMALLER FOOTPRINT

“We deal with molten steel and molten titanium. Multi-story manufacturing is not feasible.”

“Everything we have to do is with bulk steel. So I can't imagine multi-stories for manufacturing.”

“In our current location we do have a second floor and we don't use it. It doesn't work for our industry. It just doesn't.”

“How are you ever going to do anything with cranes on multiple stories? It's never going to happen.”

We asked the participants if they would locate to taller buildings. They all agreed that multi-story buildings would not work for their businesses. They said the size and weight of their equipment made multi-story buildings impossible.

The only options they saw for multi-story were office space and structured parking. One participant said the business would consider a 2- to 4-story office building for engineering and R&D employees. Another participant said the business was considering building a multi-story parking structure because their current parking lot is threatened by a planned highway expansion.

Four participants said they would consider locating to sites that emphasize transit accessibility. One firm's representative noted: "We like to be on a transit line because ideally if someone is going to work for the streetcar it would be nice if they never had to take a car."

A business representative said that the December 2008 snowstorms made public transportation – especially light rail – more important. During the week of storms only 30-40% of employees were able to get to work. But public transportation was less important to others. Two people said that they already subsidize Trimet passes but few employees use them.

BUSINESS LOCATORS

Nine people participated in the focus group. Seven were from private firms that help industrial and distribution clients locate and purchase property in the Portland metro region. They represented local and national companies, and ranged in experience from 6 to 39 years. The other two participants came from the State of Oregon and the Port of Portland.

SUMMARY OF FINDINGS

Manufacturers and distributors will need larger single-story buildings in the future. Tends in technology, competitiveness, and fuel prices will result in businesses seeking larger facilities in the region.

Larger facilities will require more land. The participants said multi-story facilities could not work for distribution and manufacturing. Therefore, as building sizes increase there will be a corresponding demand for larger plots of industrial land. Factors that make industrial land useable are infrastructure (water, sewer, electricity, etc.), proximity to transportation, and the employment pool.

Current land inventory not adequate to meet needs. The participants said there are not enough large and contiguous pieces of industrial land in the region. They said the region needs new industrial parks with over 1,000 acres. They believed that the land is available if there is the political will to expand the Urban Growth Boundary.

Green development is increasingly important. The participants were mixed about whether businesses are willing to pay more for green development today, but they expect it to become more important in the future. They distinguished between a desire for reducing energy costs and concern about climate change.

BUILDING SPACE NEEDS

"I think the economies of scale drive larger and larger warehouse. But with fuel prices I think you'll see the reverse of that. There'll be smaller regional facilities servicing smaller areas."

"Vertical growth works at a very large scale. It doesn't work well for a 20,000 - 40,000 square foot user. It doesn't have the economy of scale when you're that small."

"The other thing is technology is replacing humans in distribution. And so to take advantage of vertical growth it is customize picking and conveyor systems that are replacing 20 guys on a fork lift."

"Even distribution users are getting into that very specific building type with technology and automatic picking because of the price of labor as a component of their overall budget is continuing to go up."

"Greater design focus on efficient logistics and energy efficiency."

The focus group began by asking the participants if they expected the building space needs of their clients to change in the next 10-20 years. Everyone said yes. They expected larger facilities with higher ceilings to accommodate modern equipment.

Some of the participants expected distributors to change their business models from very large centralized facilities to smaller regional facilities because of fuel costs. They said that as fuel costs increase, it will become more profitable to operate multiple facilities in smaller population centers than to truck goods from one central location. If this comes to be, then distributors will want to build or purchase facilities in Portland. However, they said that while these would be smaller facilities relative to some of the “mega” facilities that exist elsewhere, they would be large for this region – 150,000 square feet or more.

Some participants noted manufacturers and distributors are replacing people with machines – such as cranes, pickers, and conveyors – and that they expect this to continue. As the cost of labor increases and machines become more efficient, it is more cost effective for businesses to automate.

Moreover, tax laws incentivize equipment over labor because equipment depreciation is a tax deduction. In terms of building space needs, this means that companies will need more space with taller ceilings to have room for cranes and other equipment.

There were mixed feelings about environmental design and whether businesses are willing to pay extra for sustainable features in the current market. But a number of participants said in the written comments that they expected green building practices to become more important in the next couple decades.

LOCATION/SITE NEEDS

“Limited supply will push development out and to smaller communities. Not driven by users’ needs to be farther from city center.”

“Warehouses are getting bigger. The need for larger flat sites will increase.”

“We’re short of useable land and the economics of the less useable land is so far out of whack. It’s one of the reasons that it’s hard to get companies to expand and move here.”

“I agree that I-84 is important. But not in my lifetime the UGB is not going beyond the Sandy River. So for our discussion today it’s I-5.”

“I think east/west traffic in the metro area is a fundamental problem. It’s very difficult to go east/west.”

In the written comments, all the participants said their clients’ location site needs will change in the next two decades. They expected to need more land to accommodate larger facilities and bigger truck staging areas. But the participants felt that the region lacks the inventory to accommodate these needs. They expect businesses to look farther out for land to build their facilities – if they decide to locate in the region at all.

Business locators indicate that the importance of access to transportation differed by business and industry sector. For some sectors, particularly distribution, access to the I-5 is critical. But I-5 access was less important to manufacturers, as long as they could reach another major road, such as I-205 or US 26.

A couple of participants said that access to labor is important to a business's location and site needs. Companies that need a large labor pool will select sites near population centers. One participant said, "The problem with Damascus or being on either side of Estacada or Canby is they don't have a population base to support. That is the big disconnect." Another said, "What I tried to explain to people is yes you need transportation for trucks, but if you're looking for companies that hire knowledge based people, their employees have to get to it."

ADVANTAGES OF THE PORTLAND METRO AREA

- "Livability"*
- "Gateway to Asia."*
- "Strong land use laws."*
- "Educated and good workforce."*

We asked the participants to write what they considered the biggest advantages of the Portland metro area for their clients' businesses to grow. The top two responses were quality of life and a talented workforce. They said the region's recreational activities and "socially-aware culture" make this a desirable place to live and attractive to employees.

Some of the other advantages to the region included access to Asian markets, being a regional hub, relatively good transportation, the Port of Portland, and the low cost of power.

DISADVANTAGES OF THE PORTLAND METRO AREA

- "Limited industrial land."*
- "Government entities that don't care about business."*
- "Cumbersome jurisdictional approvals."*
- "Liberal attitude."*

The participants said a limited land supply and the difficulties doing business were the biggest disadvantages to their clients. They said that taxes are too high, that permitting takes too long, and that government is unfriendly to business.

Other disadvantages cited include not having a major university, expensive construction, and a small regional population base.

LAND INVENTORY

- "Our inventory at the Port has decreased quite a bit. So people are actually shocked when they learn the Port doesn't have a 35-acre site or a 50-acre site."*
- "And it's not just fifty acres here seventy five acres there. What you need is fifteen hundred acres in a large industrial park. Because then there is synergy."*
- "There are 'A,' 'B,' 'C,' and 'D' [grade] sites. 'A' sites are gone. 'B' sites are really tough to find. What you have are 'C' and 'D' sites with slopes and wetlands."*
- "One example is industrial land brought into Damascus where it has not been served, and is not where anybody wants to be. People want to be on I-5."*
- "There is plenty of available land, but there is a lack of political will."*

Throughout the focus group nearly all the participants stressed that the region is land constrained, in part, because of the Urban Growth Boundary (UGB). They said within the UGB it is very difficult to find large enough parcels for their clients. And if their clients need smaller parcels, what is available often doesn't meet their needs. For example, it is too far from the interstate, on sloped land, near environmentally-sensitive habitat, or not the right size.

Some participants said that what is needed are large – 1,000 to 1,500 contiguous acre – industrial parks with infrastructure and access to multiple modes of transportation. One participant said, “If I can make one point today it is that it can’t be 100 acres here and 150 acres there. It’s got to be a big move.” At least one participant believed that there are a couple hundred acres zoned for industrial in Wilsonville that aren’t utilized because of a lack of infrastructure. Another participant said that industrial land in Damascus isn’t ideal because it is too far from I-5.

The participants felt that the politics of the Urban Growth Boundary and local zoning are unfavorable to industrial users. They felt that there has been a lack of political will and a NIMBY-ism attitude. As one participant put it, “The government put a big ‘no’ around the city. And there is a political responsibility that comes with that. It means having the nerve to say ‘yes’ for the things you need. Otherwise you bring everything to a stop.”

We asked the participants where they would like to open more land for industrial uses. Some specific suggestions were Colwood National Golf Course (7313 NE Columbia Blvd.) and Broadmoor Golf Club (3509 NE Columbia Blvd.). More general suggestions were land north of I-205 merge near Ridgefield, Washington, and land between Wilsonville and Woodburn.

Suggested was a tax on windfall profits to help pay for infrastructure developments on industrial land. One person elaborated as follows:

“I don’t think a farmer today, who has enjoyed the advantages of low taxes outside of the Urban Growth Boundary, ought to be entitled to the total windfall profit of being brought inside. In terms of how you fund some of that infrastructure, I think when you come in the UGB and sell your property you owe a tax to pay for the infrastructure that is brought in.”

Not every comment about the UGB was negative. A couple participants said the UGB has helped support the region’s quality of life, which makes it attractive to companies and employees.

CLIMATE CHANGE & GREEN DEVELOPMENT

“It's important to people and their investors. It's the practical thing to incorporate into your site selection.”

“I'd say we've had one client that acted like they cared. I would be surprised if he thinks he kept any money in his pocket because of it.”

“I don't think it's worth anything on the lease rate. I think it is a tie breaker.”

“Green is good. LEED is bad.”

The participants had mixed feelings about the importance of climate change and green development. In the written comments some said that green is becoming more of an issue for their clients. Some examples were: “It’s getting more and more play.” “Historically most companies have not prioritized sustainability, but this is changing.”

There was a sense that green development is more important for commercial clients than those in manufacturing or distribution. One participant said, “In an office I don't think you can play unless it's LEED silver or better. But on industrial I think it's just nice to have.” Also, they distinguished between a concern for climate change per se and development practices that reduce energy costs. Only the latter drives development decisions.

Others were more critical of green development. One called it “marketing” and didn't think that businesses are willing to pay extra for it. Another complained that LEED certification is far too expensive. An anecdote is cited of the case where it cost a building owner \$2,500 to remodel a building to meet LEED standards but the certification process cost \$44,000.

SMALLER FOOTPRINT

As with the other groups, participants were asked if their clients would locate to taller buildings in areas with greater urban density. Two said they would consider 2- to 4-story buildings and 5- to 8-story buildings. Three said they would consider buildings eight or more stories. However, they qualified their answers by saying only their commercial clients would consider taller buildings.

The participants generally agreed that multi-story facilities for manufacturing and distribution are not feasible. Multi-story buildings are inefficient and cannot accommodate modern industrial equipment, such as cranes, pickers, and conveyor systems. In fact, they saw the trend working the other direction, with businesses moving out of multi-story facilities into larger single story units. One participant went so far as to say, “That these questions would be posed to a group like this scares me. You'd have to be somewhat removed.”

Five participants said their clients would consider reducing land site needs for parking by encouraging transit, shared parking, and/or structured parking. They cautioned, however, that this would not be popular and that expansions of transit infrastructure shouldn't come at the expense of industrial land. The participants who said no commented that trucking is dependent on freeways and that the “hub-and-spoke” model of transit clashes with the “satellite” model of manufacturing and distribution.

REGIONAL SERVICE PROVIDERS

Five people participated in the focus group. (A sixth person started and completed some written exercises but did not stay for any of the group discussions.) One of the participants represented a regional law firm with headquarters in downtown Portland that employs about 250 people. A second participant was from an international consulting firm with offices in downtown Portland with about 1,000 local employees.

Three participants represented the health care sector. Two were from large health care providers that have multiple clinics, hospitals, and administrative offices in the metro region. The other was an executive from a health insurer that leases three office spaces in downtown Portland. Each of their companies has several thousand workers in the area.

SUMMARY OF FINDINGS

For office settings, space per employee is decreasing. Professional workers are using smaller offices or cubicles. This will mitigate future space needs even as business expands. However, needs for conference and collaborative work space are increasing.

Health care providers expect to build more facilities as the population ages. As the population ages it will require more care. Health care providers expect to need more facilities to accommodate them.

Public transportation critical to service sector. It is important downtown businesses where parking is limited and to bringing patients to health care facilities.

Green development embraced. All the participants valued green development. Several are located in LEED buildings or will only consider LEED building for the future. The region's focus on sustainability draws young, creative talent to the region.

BUILDING SPACE NEEDS

"One thing a lot of law firms are looking at is single-sized offices regardless if you are a partner or associate. With the idea that you meet with your clients in a conference room."

"Your own personal workspace is getting smaller and smaller. One reason is employees are spending a lot less time there. They're in and out."

"If you look at health care financing, the role of government as we move into health care reform, you may see some of those functions taken over by the government and our sand box shrinking."

"Well the doctor patient nexus remains relatively unchanged. Patients are still going to come in. The change we see is with day surgery and ambulatory services. Overnight stays are not increasing."

There was a mix of expectations about future business space needs among the participants. In general, for office and administrative work they anticipated needing less space per employee. Individual offices have become smaller or disappeared all together. The representative from the

law firm said that it is becoming more common for partners and associates to have the same size offices and to use conference rooms for client meetings.

Several participants said that the majority of their employees work in cubicles and open spaces. This was true for low-level workers, such as claims processors, and becoming more common among professional staff.

One participant said, “The perfect space would be office, highly open, highly interactive, and accommodating for communication. A big part of our business is sharing communications, sharing ideas. Technically we do not have any offices. It's all open cubes. That's very important.”

A couple of participants commented that it is becoming more difficult to manage space because employees spend more time out of the office telecommuting, traveling, or at client meetings. One person estimated that on any given day 20-30% of employees are not at their desks. To better manage office space use in the future, employees may lose their permanent space altogether. Instead, the office would have fewer cubicles and employees would store their materials in cabinets and share common workspace on a first come first served basis. Not everyone agreed with this specific suggestion, but did agree that they will need creative solutions to manage space as more employees work outside the office.

Additionally, increased electronic filing was seen as further reducing space needs. This has already happened, for example, with a law firm where the library shrunk as more legal text became available online.

Among these participants, the health service providers had unique space needs. In particular, they said the aging population will require more health care services – both acute and chronic – and that this impacted how they thought about their expansion plans. They will need more facilities to care for the elderly, and they will have to consider where to locate and how to build them to accommodate a population with diminished mobility. For example, they were leery of taller facilities because they are less accessible to people with wheelchairs and walkers.

LOCATION/SITE NEEDS

“They've changed a little bit, but we're still committed to the central city. We went through the process of looking at the suburbs, but we felt more connected to downtown. More connected to the relationships, the cultural issues. And the rates were not significantly different.”

“Transit and the transit modes drive what we can do. It means you can drive your parking down and your land needs down, and your floor to area ratio goes up.”
“Consolidation of employee functions in regional claims and customer services.”

Three participants said they anticipated their location site needs to change in the next 10-20 years. Two thought growth and expansion will require them to add more facilities. But one participant expected the size of his company to decrease because of consolidation and government involvement in health care financing taking some functions out of the private sector.

The most mentioned issue in regards to location was access to public transportation. In one way or another all the participants said that this was important. One participant said that “it's a huge

issue for our front-line employees. Getting in and out of the downtown area and parking is a very costly thing. So to the extent that we can get them to use public transportation helps.” Another said that light rail is more important than buses. “Light rail is particularly important. We operate shuttles and are able to pick people up at light rail stops. That’s what sends our mode split so high.”

The health care providers expressed different experiences with patients using public transportation. One said it was critical to their patients and to decisions about where to build new facilities. The other said that in their experience most patients don’t use public transportation and that it was more important to employees.

Most of the participants had seen increases in the number of employees commuting by bicycle. One mentioned that the company expanded its onsite bike parking and it is full most days. However, they also agreed that public transportation and bicycles will never be able to fully replace the need for automobiles and parking. Employees that need to be out and about during the day don’t have the time for public transportation.

A few participants said their companies have experimented with car-share programs. The purpose of the programs has been to encourage employees to take public transportation to the office, but have access to company cars or Zip Cars during the day. One person said their program is little more than a “novelty.” Another said that their program hasn’t gained much traction because it’s cumbersome. Two more said they were aware their business has a program but didn’t know how many employees use it.

ADVANTAGES OF THE PORTLAND METRO AREA

“Availability of workforce and clients.”

“Positive demographic and employment trends.”

“Sustainability focus. Most important now and will be in the future. It points a picture that is important to our employees and actually important to our business. We’re doing a lot of work in that area.”

Advantages to the Portland metro area include a skilled and educated workforce, relatively stable population, and economic growth.

The region’s focus on sustainability is important to maintaining the region’s quality of life. It also makes it easier to recruit young, creative employees who place a high value on environmental sustainability.

DISADVANTAGES OF THE PORTLAND METRO AREA

“Expensive for front-line employees to park and commute.”

“Congestion limits access to our facilities.”

“Congestion around emergency rooms is an increasing concern for us. That is a situation where people have to get to us in a hurry.”

“Delays with the I-5 bridge are silly. Companies are not locating here because of traffic. It will probably be a bigger issue in the future.”

“Erosion of employment segments valuable to our growth.”

In the written comments, the participant named a variety of disadvantages to Portland including the cost of land and facilities, the decline of the manufacturing sector, and the relatively small population base. In the group discussion, the most mentioned disadvantage was traffic congestion.

One participant said that traffic congestion and the delay of reaching a solution to the I-5 bridge has caused businesses not to locate to the region. Another said that congestion near hospital emergency rooms is becoming a concern because the vast majority of emergency room patients drive their own cars. And another said that cost of commuting to downtown is expensive for frontline employees.

We asked the participants what Metro and local governments can do to assist their business and others in their industry sector. Five of six participants said improving transportation infrastructure and accessibility.

CLIMATE CHANGE & GREEN DEVELOPMENT

“Part of our organizational mission is community health. So environmentally-sensitive building is a contributor to that.”

“We’re looking at space to lease in Seattle now and it’s got to be LEED-certified.”

“The public service nature of what we do guides action. Our new hospital was the first LEED gold hospital in the country.”

“To get the best and brightest engineers and professionals we have to be in that area. It’s a recruiting issue.”

The participants were strongly supportive of green development and their individual companies have already taken steps to reduce energy use. One participant said his firm will only consider LEED-rated buildings for future leases. Others presently rent or built LEED-certified facilities.

The two health care providers said that community health is part of their organizations’ mission and therefore it’s important to have green buildings. And in addition to health benefits, they valued lower energy costs.

One participant said that his company works in the environmental field and that it was vital his company embrace those values. Customers and employees demand it.

SMALLER FOOTPRINT

“I think as a company as we get our technology issues sorted out, these mid-rise buildings will be more attractive. It would be less expensive office space in a geographic region where our employees can come and go more easily.”

“Two to four stories is just not big enough.”

“What we’re building now in the town centers are all 2-, 3-, and 4-story offices. They could be higher but the ambulatory issue is important to us. We try to keep the number of stories down.”

We asked the participants if they would locate to taller buildings in areas with greater urban density. Three said they would consider 2- to 4-story buildings, four said they would consider a 5- to 8-story buildings, and two said they would consider buildings eight or more stories.

Two of the three participants who have a large presence in downtown Portland desired taller buildings. These businesses have a relatively high ratio of professional employees. However, one participant, who currently has offices in a high-rise building, thought in the future the organization might prefer to relocate to a mid-rise building in the suburbs. In part, this is because of a labor profile with more low-wage workers for whom the cost of commuting and parking downtown are higher than it would be outside of the city center.

Health care providers indicated that mid-rise buildings tend to work better for their clinical space. They didn't rule out being in taller buildings and acknowledged that the OHSU Center for Health and Healing is an example of clinical space in a tall building. But they said that for standard care their patients do not want to travel far and therefore they need clinics in neighborhoods and town centers. They did agree that administrative operations could be in taller buildings.

RETAIL

Summarized are key points made during the retail focus group hosted by Bob LeFeber of Commercial Realty Advisors and facilitated by Eric Hovee and Bonne Gee Yosick. There were eight participants in this focus group including four representatives of grocery store operators, a specialty retailer, dining establishment, lending institution and personal services provider. “Facility reach” ranges from just one operation to 34 stores in the Portland metro area. Store size ranges from a few thousand to over 200,000 square feet.

SUMMARY OF FINDINGS

After a period of increasing store size, retailers are now looking to smaller and more infill store sites. The recent trend has been toward smaller-scale developments with a thinning of in-line stores (a combination of the economic situation and weeding out of weaker competitors). Also noted is that the backroom is shrinking; less storage is required since deliveries are more frequent, daily in some cases.

The Portland metro market may be slightly underserved, but this is a benefit as there is not excess store square footage with greater resiliency as retail spending slows. Because this region is perceived as generally a bit under-served, participants don’t expect the region to be as adversely affected as others in the U.S. will during the current economic downturn.

Multi-level stores work, but primarily in urban environments. Where they have been attempted in suburban environments; shoppers don’t go upstairs and those departments suffer. Larger footprint uses prefer free-standing versus in-line uses when possible but will accept in-line sites with urban development when supported by potential sales volume.

Retailer financial capacity varies depending on the customer market segment served. Opportunities are much different for 1st- versus 2nd- and 3rd-generation store formats. Reuse of existing space is more critical for lower rent in-line and 2nd-/3rd-generation stores.

Zoning and development regulations need to be manageable to allow for site use and redevelopment. Issues related to setbacks, street orientation, multiple entrances, corner versus mid-block appeal, and design review can make or break retail success. Also cited are zone change requirements affecting the way that new grocery stores replace previous grocery operations.

Multi-channel uses continue to increase; customers are using a combination of on-line and in-person shopping and banking. However, people still want a place to go where they can shop and sample merchandise in favorite departments or talk to their own personal service representative as in a financial institution.

Customers and employees expect retailers to be green. For retailers, sustainability includes greater emphasis on recycling, reduced energy use, more efficient lighting and HVAC systems. Energy savings are important and can be significant. However, green measures also need to pencil, a reason for concern with application of LEED standards to retail development.

BUILDING SPACE NEEDS

- "It was initially thought that on-line banking would take over, but people seem to want a place to go to, people to talk to, and drive-through facilities."*
- "Seems to be a trend toward the smaller (store) concept"*
- "The backroom is shrinking with less storage required since deliveries are more frequent, daily in some cases."*
- "Suspect a trend toward smaller shopping centers in general."*
- "Rehab of in-line space if a playground can be accommodated."*

There is general agreement that the Portland metro region is likely to see less suburban shopping center development than in the past. When development does occur, it may be on smaller sites than previously. More development of infill sites is also expected.

A firm that previously targeted 10- to 30-acre sites is now seeking more 9- to 12-acre sites. In their words, the "shopping centers are shrinking; in-line tenants are gone." This trend is partly but not solely a cyclical phenomenon of the economy and reflects a "weeding out of weaker players."

The trend toward smaller store sites is exemplified by the grocery industry. Examples of smaller grocery prototypes include Wal-Mart's MarketSite (more of a convenience-type concept), Tesco's Fresh and Easy store (being introduced first in the Southwest US), and similar Safeway smaller format stores.

For one retailer, a key to successful innovation is a full-scale emphasis on trying to get customers through transactions faster. The focus is on keeping labor low with self-bagging and other self-service functions.

LOCATION/SITE NEEDS

- "Grocers generally need parking. Planners talk about pedestrian and bike accessibility, but grocers need people buying 8 bags of groceries, not 1 or 2 bags of groceries."*
- "It was initially thought that on-line banking would take over, but people seem to want a place to go to, people to talk to, and drive-through facilities."*
- "Anytime we can do a free-standing building, it is preferred."*
- "... a second or third-generation space user, so need to look for the redevelopment opportunities."*
- "When people drink alcohol, they want to be closer to home."*
- "Other urban locations like NW 23rd will be sought out but probably not in the Portland metro area."*

As one participant, noted, the retail objective today is to create the "nodes of activity" such as a grocery store or bank around which other retailers will then also be attracted.

Parking remains a pivotal consideration for retailers. But retail parking needs can vary widely across the region. One retailer conducted a mode split study and found that only 2% of shoppers

arrived by non-car modes at a Beaverton store while 50% of shoppers came by means other than auto at a Hawthorne store site.

Secondary urban areas can perform well for retail but should not necessarily be expected to perform at urban levels. Areas ranging from Gateway to Orenco are cited as “well performing, but they are not urban.” This means that retail site and building planning can expect to differentiate between very intense central city, close-in urban street and more recently emerging suburban shopping areas throughout the metro area.

ADVANTAGES OF THE PORTLAND METRO AREA

“The region seems slightly underserved (with retail) but that is generally positive. Less choice is better than too much choice.”

“We are close to the customer and each store responds to its unique environment.”

“We are continuing to look for sites.”

The region’s population growth is viewed as a plus by area retailers. As one retailer commented, the Portland area continues to experience unmet market demand which is why they are continuing to expand.

Another retailer expressed optimism about market demographics more in the sense of being better able to survive the current economic downturn: “We won’t be hit the way others in the U.S. will be because we are generally a bit underserved.”

DISADVANTAGES OF THE PORTLAND METRO AREA

“Compared to the other metro areas, this is a tough place to go shopping.”

“Issue of jurisdictions working with developers collaborative versus antagonistically”

“Development regulations are a disincentive to move walls. It does not allow evolution of the space.”

“California has the worst state regulations to deal with, but Oregon is 2nd. ”

“It would be helpful if approvals were more administrative (by the Planning Director) instead of requiring several levels of hearings by Planning Commission and/or City Council.”

“Site design requirements are not responsive to current economic conditions.”

“... urban level requirements are difficult in suburban environments.”

“There is a need to accommodate cars.”

“Somewhere in recent history, we went from vision-driven planning to regulation-driven planning, and we need a return to the vision.”

Many of the perceived disadvantages of doing business in this metro area focus on aspects of the regulatory environment. These are perceived as being onerous from a variety of standpoints – including impact on development feasibility, store profitability, and comparison with other metro areas of the U.S.

A grocer gave an example of prior grocery store sites that had to be rezoned to allow redevelopment for a new grocery store. Another store operator cited an example of requirements

for pedestrian entrances in non-pedestrian environments, creating inefficiencies in design and problems with added shoplifting.

One retailer gave the example that “in the Albina plan, all stations were zoned high-density residential, but the HD residential won’t go in without the services to support it.” Also cited was an example of a competitor filing a LUBA appeal for only \$250 – after the project had already gone through an extensive public review process. The requirements need to be “clear and predictable.”

A store developer expresses concerns with the nexus between SDC charges and where the improvements are made, noting that “the improvements need to be made in the vicinity of the project.” Another commented that improvements made by the retailer need to be offset in fees.

As one successful retail operator noted: “Despite all the grousing, there is a recognition that it is this highly-regulated environment that has created the conditions that allow the company to be successful.”

A final suggestion: “There needs to be a phasing-in of the long-term vision which is not economically feasible yet.” When asked about the “single most important thing that Metro and local jurisdictions could (or should) do to best assure that this region remains competitive”, suggestions received include the following:

- Keep approvals process clear and predictable.
- SDC nexus needs to be clear; keep public improvements in the vicinity of the development.
- Don’t demonize the automobile. It’s part of our culture and society. People require it.
- Urban development standards don’t work in suburban environments.
- Ensure development requirements respond to existing market conditions. (For example, poorly planned pedestrian accesses can result in less efficient use of space within the establishment and/or end up being used nearly exclusively by shoplifters.)

CLIMATE CHANGE & GREEN DEVELOPMENT

“Customers and employees expect it (going green)”

“It’s ingrained and expected.”

“Energy savings are important and can be significant.”

“All our meals used to be on disposable serveware, now it’s down to about 25% disposable.”

“Access to transit is important for the staff”

“Energy-efficiency needs to pencil.”

One participant commented on the emphasis on green and sustainable development this way: “As a resident, it’s wonderful; but it shouldn’t be in conflict with industry.” A retailer looking at added sites noted that “new buildings apply LEED principles, but are not certified” due to high costs of certification, especially for smaller footprint buildings. Another retail business

comments that solar panels on light fixtures save money but were “harder to permit than the standard approval process.”

A food retailer comments that they “use no Styrofoam and are seeking energy savings.” And a service business representative observes that “better light and HVAC systems make for a better environment, which makes the experience better for the customer.”

A business that values transit access not only for those who work at store sites but in preparatory facilities. In addition to transit, walking and biking (including bike route access) are important.

SMALLER FOOTPRINT

“Allow master planning of sites to respond to market conditions.”

“When the environment demands it, there is no problem putting parking underneath.”

“The marriage of LRT and economic activity seems questionable. Dallas seems more successful, developed as public-private partnerships.”

“Recognize that we have a pro forma that we’re bound by.”

As with the other focus groups, participants were asked if they would locate to taller buildings with greater urban density. Opinions were mixed.

Among retail representatives, the general consensus seemed to be that multi-level retail and participation with mixed-use development makes most sense in higher demand urban and mixed use settings. One business representative noted that “development patterns have been established; it’s about redevelopment.”

However, in other less urban settings, an urban format with multi-level stores and reduced parking ratios may not work. With retail, one size does not fit all situations.

What is clear is that retail and service business patterns and customer demands are continually changing. A store that uses multi-channel marketing finds that its customers “still want to shop the deli, produce and other departments.”

Even functions like an ATM take on greater importance in a retail site. As one participant noted, the “ATM is becoming more of a multi-convenience center” where people can also make purchases – as for stamps, travelers’ checks, and gift cards.

In summary, the trends most favorable toward smaller footprints include a more conservative development environment favoring smaller store sites, growing emphasis on urban infill sites, and willingness to adjust parking requirements to the mode mix of traffic in a particular portion of the metro region. However, clear limits are also noted – a suburban setting may not immediately adjust to or support an overly urban retail development concept.

APPENDIX. FOCUS GROUP FUNDERS & PARTICIPANTS

This appendix provides a list of focus group funding partners and participants (by group).

PROJECT FUNDING

This focus group research has involved funding support from both public and private sector organizations including:

Clackamas County Business Alliance (CCBA)
Commercial Association of REALTORS® (CAR)
Commercial Real Estate Economic Coalition (CREEC)
East Metro Economic Alliance (EMEA)
Metro
Oregon Association of REALTORS® (OAR)
National Association of Industrial and Office Properties (NAIOP)
Port of Portland
Portland Bureau of Planning
Portland Business Alliance (PBA)
Providence Health & Services (PH&S)
Society of Industrial and Office REALTORS® (SIOR)
Westside Economic Alliance (WEA)

FOCUS GROUP PARTICIPANTS

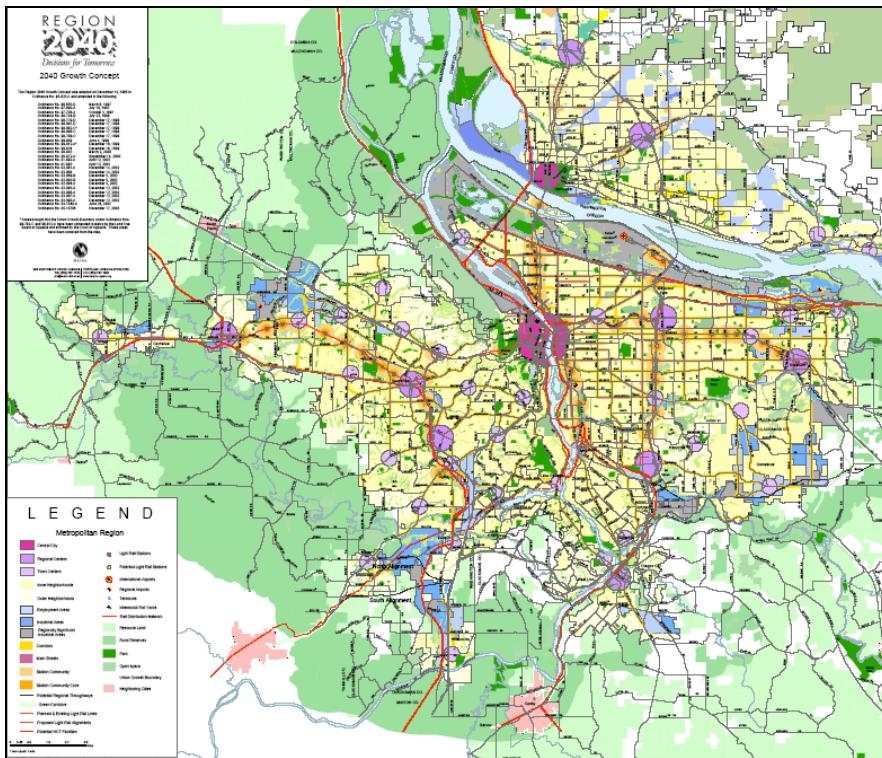
Listed below are names and business/organizational affiliations represented within the eight focus groups. This contribution of time and ideas by focus group participants is gratefully acknowledged.

Name	Position	Focus Group	Firm / Organization
Mike Becker	Director of Legislative and Regulatory Affairs	Regional Service Providers	Regence BlueCross/BlueShield
Bob Beisner	Board of Directors	High Tech	SolarWorld
Steve Benight	CEO	Biotech/Medical	Portland Bioscience, Inc.
Craig Boretz	Vice President of Corporate Development	Distribution/Logistics	Con-way
Paul Breuer	Senior Vice President	Business Locators	Colliers International
Chandra Brown	Vice President	Metals/Machinery	Oregon Iron Works, Inc.
Erin Carlson	---	Retail	Save-A-Lot Foods
Mark Childs	Principal	Business Locators	Integrated Corporate Property Services
Bob Currey-Wilson	---	Retail	Fred Meyer

Name	Position	Focus Group	Firm / Organization
Tom Dechenne	Senior Real Estate Broker	Business Locators	Norris, Beggs & Simpson
Eileen Drake	Vice President	Metals/Machinery	Precision Cast Parts/PCC Structurals, Inc.
Gary Eichman	President	Distribution/Logistics	Oregon Transfer Company
Patrick Flanagan	---	Retail	Key Bank
Glenda Hollenbeck	---	Retail	Kindercare
Dan Hossley	---	Retail	Moonstruck Chocolate
Wray Hutchinson	---	Retail	Buffalo Wild Wings
J. Isaac	Senior Vice President Business Affairs	Regional Service Providers	Portland Trailblazers
Jeff King	Director	Biotech/Medical	Virogenomic, Inc.
Susie Lahsene	Senior Manager Transportation and Land Use Policy	Distribution/Logistics	Port of Portland
Tim Leahy	President	Metals/Machinery	Calbag Metals
Dave Marks	President	Metals/Machinery	Marks Metal
Harvey Matthews	Executive Director	High Tech	Software Association of Oregon
Stephen McCarthy	Owner	Food/Beverage	Clear Creek Distillery
Doug MacGowan	Vice President Foundry Operations	Metals/Machinery	Esco Corporation
Lee Medoeff	Owner	Food/Beverage	House Spirits Distillery
Jill Miles	National Business Development	Business Locators	State of Oregon – Economic Development Department
Joe Mollusky	Real Estate Marketing Manager	Business Locators	Port of Portland
Clark Nelson	Human Resources Manager	Food/Beverage	Kraft Foods
Don Ossey	Principal	Business Locators	Capacity Commercial Group
Drew Park	---	Metals/Machinery	Columbia Wire & Iron
Arundeepr Pradhan	Director – Technology & Research	Biotech/Medical	Oregon Health & Science University
Donna Ragan	Director – Taxes and Economic Development	High Tech	TriQuint Semiconductor, Inc.
Morgan Randis	---	Retail	WinCo Foods
Josh Reynolds	President	Food/Beverage	Gray & Company
Brian Rohter	---	Retail	New Seasons Market
Ben Santarris	Public Affairs Manager	High Tech	SolarWorld
John Siemsen	Director of Planning and Strategy	Regional Service Providers	Kaiser Permanente
Stuart Skaug	Associate	Business Locators	CBRE
Greg Smith	Transportation Solutions	Distribution/Logistics	Road Link
Desari Strader	Executive Director	High Tech	Oregon Solar Energy Industries Association

Name	Position	Focus Group	Firm / Organization
Irfan Tahir	Broker	Business Locators	Grubb and Ellis
John Titteninton	Director of Research & Development	Biotech/Medical	Najit Techonologies, Inc.
Steve Wells	Principal, Development and Investment Group	Business Locators	Trammel Crow
Donald Williams	COO	Regional Service Providers	Schwabe, Williamson & Wyatt
Jonathan Williams	Government Affairs Manager	High Tech	Intel Corporation
John Willis	Area Vice President	Regional Service Providers	CH2M Hill
Ty Wyman	Attorney; Representative PH&S	Regional Service Providers	Providence Health & Services/Oregon

EMPLOYMENT & ECONOMIC TRENDS ANALYSIS



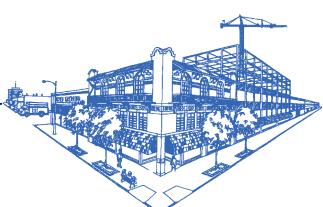
Interim Status Report

Prepared for:
Metro

March 2009

E. D. Hovee & Company, LLC – Economic & Development Services

Bonnie Gee Yosick Inc. FCS Group Davis, Hibbitts & Midghall, Inc.



INTRODUCTION

This is the interim report for an employment and economic trends analysis being conducted for the Portland metro region. The primary purpose of the analysis is to outline a *new paradigm* for evaluating job needs and associated capacity within the tri-county portion of the metro region.

Report Context. In 1995, the region endorsed the 2040 Growth Concept, an innovative blueprint that seeks to direct future population and employment growth into urban centers, transportation corridors and employment areas in a manner that uses land more efficiently and enhances the character and economic vitality of urban communities. In 2008 the Metro Council adopted six characteristics of a successful region that describe outcomes to guide the region's efforts to accommodate population and employment growth while enhancing quality of life for current and future residents. One outcome focuses specifically on the economy: *Current and future residents benefit from the region's sustained economic competitiveness and prosperity.*

State land use laws require Metro to produce an analysis of the region's capacity to meet the forecasted 20-year demand for jobs and housing by the end of 2009. Metro, in partnership with Clackamas, Multnomah and Washington counties, is also working to identify urban and rural reserves, which will define the shape of the region for the next 40 to 50 years.

Economic & Employment Trends Work. To support efforts to analyze demand and capacity and identify urban reserves, Metro is undertaking a fresh look at an employment methodology with the assistance of a consultant team led by Eric Hovee, E. D. Hovee and Company, LLC. The employment and economic trends work will provide the Metro Council with a new paradigm for evaluating job demand and associated employment land demand for the 5-, 20- and 50-year time horizons. The work will include:

- Economic trends focused on location decisions and development practices,
- An updated inventory of employment land across the region, and
- Policy options for assessing employment capacity needs.

Summary Overview. Work that has been completed to date includes:

- Employment Demand Factors & Trends (Eric Hovee & Tess Jordan)
- Variables Affecting Location Decisions (Bonnie Gee Yosick, LLC)
- Focus Group Research (Adam Davis – Davis, Hibbitts & Midghall, Inc.)

The purpose of this status report is to provide a *summary overview* of work completed to date and implications for next steps – notably the formulation of a new demand assessment paradigm, capacity inventory, and framing choices for regional job needs. More detailed draft technical reports are available for each of the topics described above.

This report begins with a brief overview of key findings from analysis completed to date. This is followed by discussion of research results from each individual project task – leading to implications for a new demand paradigm and resulting choices for regional job needs.

OVERVIEW FINDINGS

Drawing from research completed on employment trends, a literature search of factors affecting location decisions and industry focus groups, the following overall findings are outlined as being of particular importance to shaping a new employment paradigm for the tri-county region:

1. *Post-2000, the Portland region has experienced an economic recovery with modest job growth accompanied by migration of net added employment to outer ring suburban areas of the metro area.* Non-farm job gains were at much lower rates (averaging 0.5% annually) than were experienced in the 1990s. This post-2000 experience of more moderate job growth also appears consistent with expectations of slower labor force and employment changes over upcoming 5-, 20- and 50-year time horizons. While 75% of existing jobs remain concentrated in the region's center and inner rings, the outer rings experienced job growth at rates of approximately 3% per year – accounting for virtually all of the region's net added jobs.
2. *Increased intensity of development and employment activity has occurred for the central city, centers and corridors (urban 2040 design types) but with surprisingly weak job gains.* Floor area ratios (FARs) as an indicator of building intensity (measuring building square feet divided by site area) have increased substantially for regional centers, town centers and corridors. However, urban design type employment growth has increased at below region-wide rates for all but town centers.
3. *Conversely, industrial and employment areas have experienced strong jobs gains but at largely unchanged levels of development intensity.* While a substantial source of this job growth has occurred with industrial-related uses (especially in industrial areas), the majority of the employment gain realized across all employment land has come from service sector jobs. Development intensity as measured by FAR continues at just under 30% of site area.
4. *Building intensity (FAR) rather than job intensiveness of building space utilization can be expected to serve as the major driver of changing employment 'footprint' in the years ahead.* The standard measure of employment intensiveness – jobs per acre – is the mathematical product of jobs per square foot of building area multiplied by FAR of building development on-site. National literature, combined with experience of the Portland metro area, suggests that while there may be some shifts in employee use of building space, the major determinant of job density on site will come from increased FAR. This can occur via means such as greater building coverage of the site, more multi-level buildings, and improved utilization of higher ceiling (high-cube) buildings for industrial applications.
5. *Business community commitment is evident for realization of the region's 2040 vision accompanied by incremental change.* Focus group participation demonstrates a Portland metro area business culture that thinks long-term – more so than many business counterparts across the U.S. or globally. This commitment is evidenced by rapid adoption of green business and development practices and by support for maintaining the region's

livability to attract and retain labor force. Caution is also exemplified by the statement: “Don’t require the full-build now.” Rather, make incremental changes creating new market opportunities while staying the course toward achievement of the longer term 40-50 year vision.

6. *While a major focus of Metro’s urban growth report will be on assuring adequacy of development capacity for job growth, there are issues beyond land supply that will affect regional job outcomes.* Job characteristics of interest that have been identified but are beyond the direct scope of this research process include such metrics as wage levels, value of regional output, technological and capital intensiveness of the region’s industrial base, education levels, infrastructure readiness and ability to respond to as yet unforeseen opportunities.

Local jurisdictions may appropriately address many of these factors including jurisdiction specific aspirations through Goal 9 Economic Opportunity Analyses. Metro is charged with taking a broader regional view to assure that the full range of current and future job needs can be adequately addressed in a manner that also meets the adopted Region 2040 vision.

7. *Looking to the future, there appears to be no single economic driver of job growth for the Portland metro region.* While the Portland metro area experienced substantial high-technology growth in the 1990s, there is no similar readily discernable sector-driven source of job growth post-2000. However, some metro areas of the country can point to major traded sector activities or employers serving as engines for economic prosperity.

For example, Seattle has experienced substantial job growth driven with recognized employers in aerospace, software and internet retail, biotechnology, and national / international consumer retailing – and has an in-place public/private economic development strategy through the region-wide *Prosperity Partnership*. By contrast, the Portland metro area does not yet have in place a comprehensive economic development strategy with accompanying regional business cluster priorities.

Consistent with this overview, the remainder of this interim report now turns to more detailed discussion of employment demand factors and trends, variables affecting location decisions, focus group research, summary implications and next steps.

EMPLOYMENT DEMAND FACTORS & TRENDS

The first work task in the trends analysis was to review employment trends and associated site demand factors – by industry sector, market subareas and design types. This review covers much of the most recent cycle of the national and regional economy – over the 2000-2006 time period.

Results of this trends analysis are intended to serve as background considerations for a new demand assessment paradigm. This demand paradigm involves allocation of regional forecasts over 5-, 20- and 50-year time periods by market subarea and design types.

The trends analysis is conducted both from employment and development perspectives. While agricultural employment and land remains important to areas outside of the region's urban growth boundary (UGB), the focus of this analysis is on job sectors requiring urban land. Principal findings from this analysis are summarized as follows.

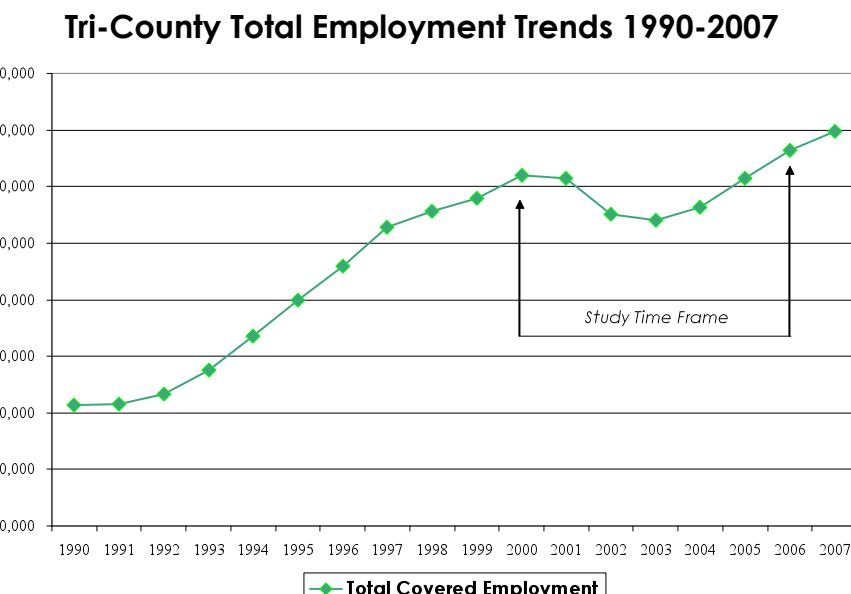
Employment Trends

As of 2006, the tri-county region had an estimated 842,000 non-agricultural jobs.

Employment in the tri-county area represents 83% of the job base for the seven-county Primary Metropolitan Statistical Area (PMSA), with the bulk of remaining jobs located in Clark County, Washington.

Between 2000 and 2006, the region added approximately 22,500 jobs – representing a

0.5% annual job growth over a period marked by an economic downturn and subsequent recovery. Employment growth was far weaker in this most recent cycle than the 2.9% annual job growth experienced during the previous decade of the 1990s. Job gains in the 1990s were also relatively high by comparative standards – about one-third higher than the rate of growth in the preceding decade of the 1980s.



Source: OLMIS, E. D. Hovee & Company, LLC.

Trends by Industry Sector. Industry shifts in the region's employment reflect the evolution of business job classification, as well as actual job losses and gains. Several key trends are noted:

- The service sector is associated with by far the largest growth and in 2006 accounted for 56% of the tri-county's covered employment.
- Health care and social assistance has dominated service sector job growth, with a net gain of 17,000 jobs.
- The industrial sector comprises 30% of tri-county jobs, a decline from this sector's 32% share in 2000. Manufacturing, a subset of the industrial sector, is indicated with a net loss of 6,700 jobs over the 2000-2006 time period.
- Jobs associated with retail (excluding dining) also declined – a reversal of prior experience in the 1990s.

Market Subareas. For this analysis, the three-county Metro region has been divided into nine geographic subareas and further aggregated to three overall *ring geographies*:

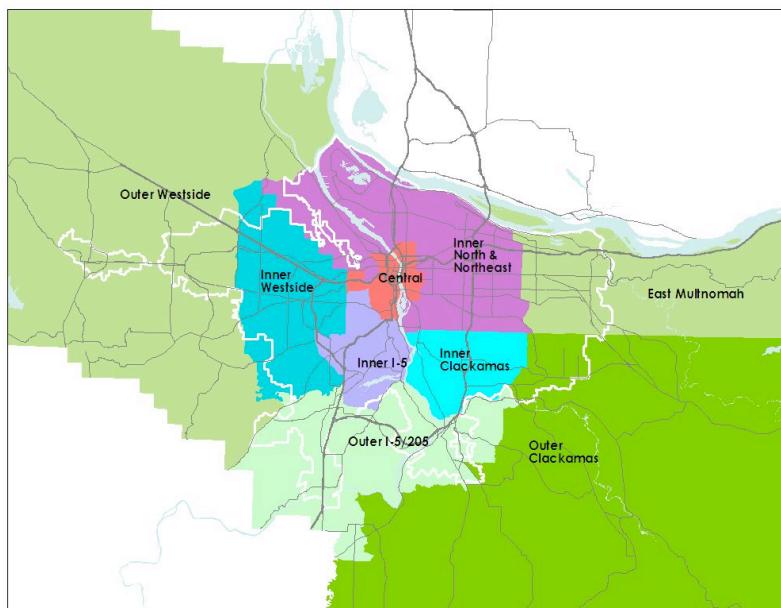
- ✓ *Central* (also a Subarea of its own)
- ✓ *Inner ring* (Inner North & East, Inner Westside, Inner I-5 and Inner Clackamas)
- ✓ *Outer ring* (Outer Westside, East Multnomah County, Outer Clackamas and Outer I-5/205).

Key trends for these market subarea geographies are noted as follows:

- About one-half of the tri-county region's 2006 employment is located within the largely developed inner ring geography, with the remainder divided between the central and outer rings.
- The central and inner ring geographies are losing jobs while outer ring geographies have added jobs at a pace above 3% per year.
- Within the inner ring, the Central and Inner North & Northeast subareas show the largest job loss, especially for industrial jobs.
- In contrast, outer ring subareas added industrial jobs – enough to off-set about 65% of inner/central ring losses (but still resulting in a Portland tri-county region industrial employment decline).
- Retail job growth also appears to be migrating to the outer ring subareas (+3,200 jobs), enough to off-set about 50% of inner/central ring employment decline.
- While outside of the direct purview of this report, Clark County also reported rapid job growth during this time period of 2.2% annually, well above the overall job growth rate indicated for the Oregon side of the tri-county region.

Employment by Design Type. The region's 2040 Growth Concept calls for development to be focused in centers and corridors and with employment and industrial lands. To better understand how successful current policies have been and to develop a basis for further policy discussion we analyzed job growth by 2040 Design Types:

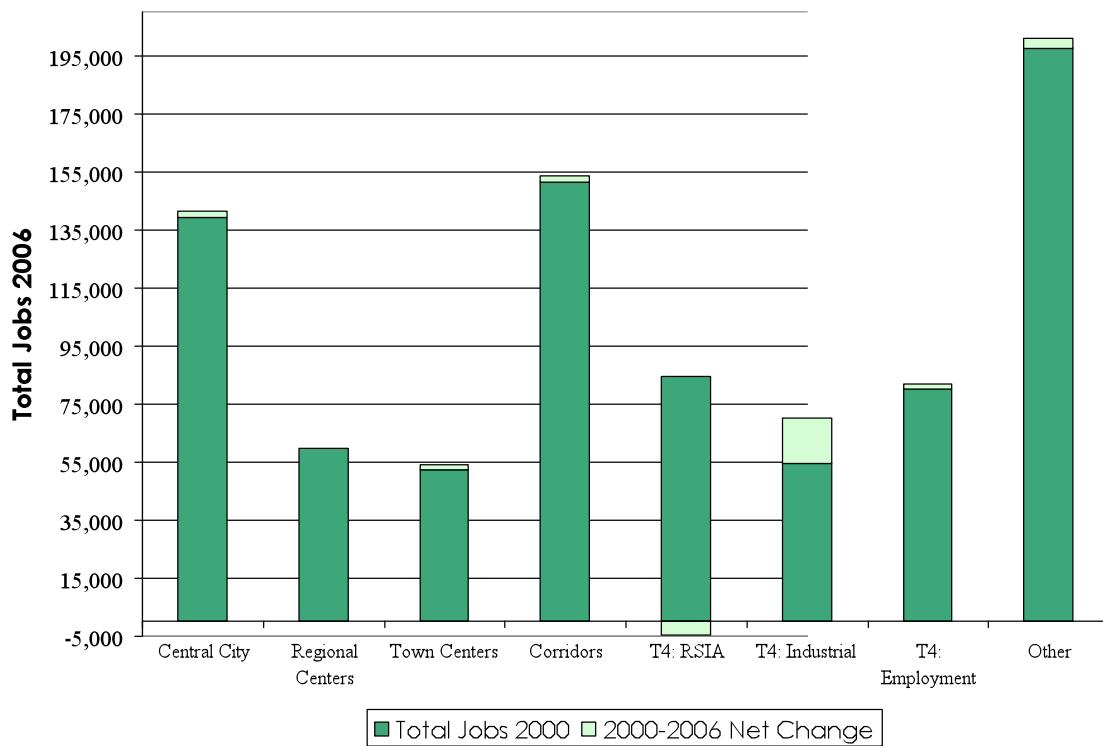
Tri-County Market Area Geographies



Legend: With the above map, tri-county *inner ring* geographies are indicated by purple/blue shades with *outer ring* geographies shown in green shades. The urban growth boundary (UGB) is indicated with the white line.

- *Urban-focused* 2040 Design Types report job growth, but at rates below the 0.5% annual growth rate experienced region-wide. An exception is noted for Town Centers which grew at an equivalent pace. Service and public sector jobs fueled the job growth occurring in the other 2040 Design Types (city center, regional centers and corridors).
- Industrial Areas are associated with the strongest growth rates, averaging 4.5% per year. The largest share of the growth has occurred for industrial jobs. About 30% of net new jobs locating in Industrial Areas were non-industrial (primarily service sector) jobs. Employment Areas experienced slower job growth and Regionally Significant Industrial Areas (RSIAs) reported some job base erosion from 2000-2006.
- *Other areas* (not covered by 2040 design types) currently account for about one-quarter of all metro area employment but very little of the job growth experienced post-2000.

Jobs by Design Type (2000-2006)



Note: The central city, regional centers, town centers and corridors represent adopted 2040 urban design types. Regionally significant industrial areas (RSIAs), industrial areas and employment areas are part of the Title 4 industrial and employment lands process.

Source: Metro, E. D. Hovee & Company, LLC.

Development Trends

Development of industrial, commercial and mixed use building space for employment use has been evaluated at a subregional level using proprietary CoStar real estate industry data.

Industrial & Commercial Development Trends. As of January 2009, the Portland metro region has an estimated 275 million square feet of industrial and commercial building space (as tracked by the national/regional real estate data organization CoStar):

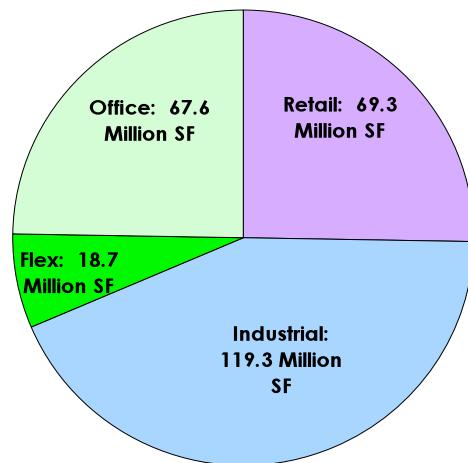
- An estimated 34 million square feet has been added post-2000 – with industrial and retail sectors increasing their respective shares of the total identified space inventory.
- Industrial space represents 43% of the region's total employment space inventory and 51% of new construction. Flex space (typically with 50%+ office use) remains a small component of the over-all industrial market, with about 16% of the overall industrial inventory.
- The single largest share of new office product – 41% of all recent development – has located within the inner ring.
- Retail space has also become an increased share of the region's employment building inventory. New retail development has favored outer ring subareas, which have captured close to 50% of post-2000 retail development
- Overall, this analysis suggests that the development of industrial and commercial *real estate product* has outpaced job gains since 2000 throughout the region.

Intensity of Employment Development.

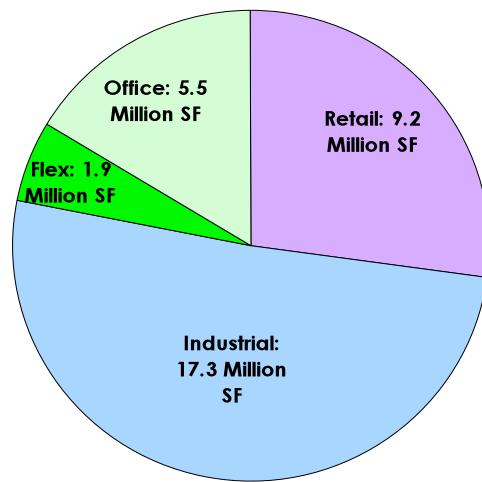
An important focus of this analysis has been on floor area ratios (FARs) as a measure of industrial/commercial development density. FARs are calculated by dividing building square footage by land square footage:

- Densities for urban focused design types have increased since 2000 across the region. However, only the Central area of the region currently achieves FARs averaging above 1.0.
- Industrial and employment area densities have experienced little overall FAR change since 2000 – but remain relatively stable at close to 0.30.

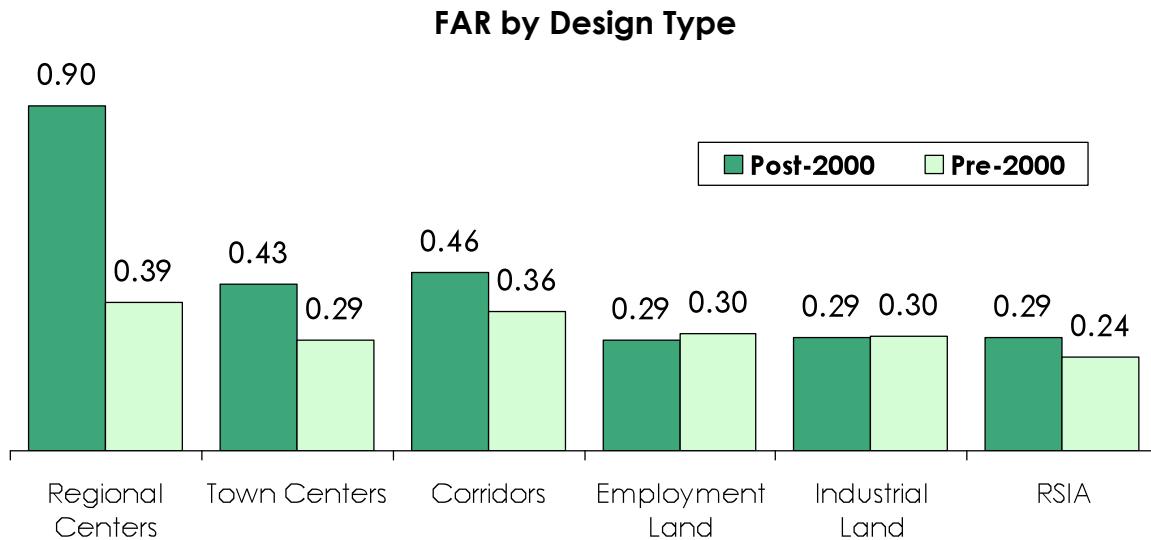
Employment Real Estate Inventory (January 2009)



Inventory Additions (Post-2000)



Source: CoStar, E. D. Hovee & Company, LLC.



Source: Metro Data Resource Center RLIS and E. D. Hovee & Company, LLC.

Demand Factors

Several added and related demand factors have been considered with this trends analysis:

- Based on a partial sampling of tax lots developed since 2000, more than one-half (53%) occurred on previously developed sites (with 47% on vacant sites). *Redevelopment rates* appear to be greatest for central and inner ring geographies.
- Within the larger four county metropolitan region (including Clark County), *retail demand and supply* appear to be in near balance – with the region about 4% below national retail standards as of 2008. Of specific note is that this metro region deviates from national norms with respect to spending patterns by specific retail category.
- The Metro 2035 forecast indicates that about 20% of net new jobs can be expected in institutional categories of *health care and education*. Between 60-80% of this demand is expected to be accommodated by larger employers of 50+ jobs. Substantial growth is anticipated for outer ring geographies in response to patterns of population growth.
- *Industrial building and site utilization* appears to be increasingly oriented to warehouse and distribution – accounting for an estimated 45% of industrial job growth. High tech uses are currently expected to account for another 45%, construction 39% and other manufacturing 4% of net job increases to 2035.

VARIABLES AFFECTING LOCATION DECISIONS

A key component of this research has been to identify existing and emerging factors that affect business location decisions. This has been a primarily qualitative assessment conducted as a literature review – from regional, national and global perspectives. The analysis includes risks and opportunities to the Portland metro area economy, followed by real estate product specific assessments and then looks out over 5-, 20- and 50-year time horizons.

Global Risks & Opportunities

As the events of the last two years demonstrate, there are new and increasingly global risks as well as opportunities that can be expected to shape the metro area economy in the years ahead. While the current severity of the challenge is viewed as short-term, it is increasingly clear that longer term prospects are altered as well.

Key risks and opportunities are summarized as including:

- Financial market instability (including the risk of on-going global instability beyond the current economic downturn)
- Housing market recovery (likely affecting consumer wealth, spending and job choices over at least the next five years)
- Fiscal environment (including issues related to federal and state tax structure and a state that is still highly resource dependent)
- Global positioning (including issues related to dollar volatility, the growing importance of global pathway cities, changing role of China and emerging economies, and outsourcing)
- Going green (addressing issues including climate change, energy and water conservation)
- Development costs (relative to supportable market values both short and longer term)
- Demographics (related both to an aging population and effects of migration)

Industrial & Commercial Real Estate

Trends and outlook for industrial, commercial office and retail development have been assessed in the context of these global risks and opportunities.

Industrial. Key real estate products encompassed by industrial development include warehouse/distribution, manufacturing and tech-flex space. The Portland metro area has the advantage of being positioned at close to the top tier of the strongest industrial markets in the U.S. (with moderate levels of vacancy as of 2008). A competitive advantage is that the Portland metro area remains price competitive with other major west coast and other comparable communities – less so with central/southeast U.S. and offshore alternatives.

Emerging trends that can be expected to affect industrial development globally and in this metro area include:

- Continued off-shoring of commodity production, less so for high value niche products (including some indications that off-shoring may be reversed)
- Supply-chain management to further reduce inventory costs
- Radio frequency identification (RFID) as a means to better track inventory supporting more high-cube distribution and cross-dock freight handling
- Shortened product life cycles with more rapid transition from R&D to prototype testing and commodity production with increasingly international supply chains
- Geographic concentration and specialization of industry sectors with regional anchors

- Mass customization that is reliant on virtual market information and high technology applications even for small lot, niche product manufacturers
- Early global interest in opportunities for vertical manufacturing and distribution, especially in high cost international locales of Asia and Europe

Office Commercial. Office space has traditionally been characterized as comprising Class A (investment grade), Class B (smaller/older) and Class C (including historic) properties. Compared to the rest of the U.S., the Portland metro area has maintained relatively strong occupancy. As in other metro markets, central business district (CBD) properties are generally faring better than suburban counterparts.

Emerging trends of potential importance for office space in the years ahead include:

- Continuing emphasis of technology (with smart buildings, now green design)
- Impetus for corporate campuses and office decentralization
- Business mergers and acquisitions coupled with globalization
- More aggressive consideration of techniques to reduce square footage per employee such as office “hoteling”
- Link to education for a well-trained, creative class workforce
- Small business space including growth of alternative concepts such as work/live

Retail Commercial. For more than a generation, the real estate industry has classified retail centers by size and market area served, including convenience/neighborhood, community and regional centers. Different variations of these center types have also developed. Until recently there has been less attention on urban street retailing which is of growing importance in the Portland metro area.

While the Portland region has the second smallest amount of retail space per capita among the 25 largest metro areas in the U.S., total retail sales are roughly in balance with demand. Over at least the short term, store closings currently being experienced may well be accompanied by longer term consolidation of national chains. There is a flight to stores offering value (by customers) and to retail spaces offering quality with value (by store tenants).

The literature review suggests several broader trends of continuing importance longer-term:

- Continued morphing of retail centers into power, lifestyle, hybrid center and transportation-integrated retail concepts
- Greater acceptance of downtown and urban retailing, including more vertical stacking
- Growing importance of cross-channel shopping and continued impact of on-line shopping, which currently account for about 7% of retail sales

Institutional. Education, health care, corrections, and other public/private (including non-profit) institutional activity represents a form of real estate development that is often overlooked and not well-tracked with no readily definable market activity. While much of the national literature takes on more of a case study approach, overall trends of importance to watch include:

- Changing demographics – notably the aging of the population and extent to which growth continues in suburban fashion or is re-directed to existing urbanized areas
- Private redevelopment partnerships – including potential for broader economic development roles by major metro area institutions
- Redevelopment of unconventional sites – especially as many education and health care facilities are in quasi-residential settings or near major employment nodes

Mixed Use. As with institutional use, mixed use is not yet well-tracked as a separate market or investment product. Product types include residential with retail, office with retail and unconventional/niche opportunities including:

- Growing acceptance of suburban mixed use at high-demand locations – especially combinations of office, retail and/or housing
- Retail and medical office mixed use – as when more medical activities move into a pharmacy or multi-shop setting as retail clinics
- Redevelopment of obsolete public (as well as private) property – ranging from decommissioned military bases to surplus school sites and hospital facilities

Summary Outlook (5-, 20-, 50-Year Horizons)

A summary of the 5-, 20- and 50-year outlook for these product types is provided by the following matrix chart. As is becoming increasingly apparent, the next five years can be expected to be largely about economic recovery, setting the stage for a longer term path of more sustainable growth and development.

Mid-term (20-year) prospects take advantage of significant pending demographic changes and required public-private implementation (as with infrastructure reinvestment). Long-term (40-50 year) prospects, while least certain, offer the widest set of opportunities for reinvention of the jobs/land paradigm necessary to accommodate substantially greater regional job base but with less development and land “footprint” per job.

Reaching to 2040 and beyond represents an appropriate time frame for full realization of the region’s growth concept vision. This is also the time frame over which an intentional strategy could serve to solidify a Portland metro sustained advantage as a distinctive, sustainable global pathway for jobs meeting shared region-wide needs and aspirations.

Summary Outlook (5-, 20-, and 40-50 Year Horizons)

Real Estate Type	5-Year	20-Year	40-50 Year
Industrial	<ul style="list-style-type: none"> • Price advantage • Export driven • Large sites a bonus? 	<ul style="list-style-type: none"> • Build from existing clusters (green) • 2nd tier distribution 	<ul style="list-style-type: none"> • World class higher ed • Multi-level industrial?
Office	<ul style="list-style-type: none"> • Slowed development • Urban market recapture • LEED bonus 	<ul style="list-style-type: none"> • Depends on young creatives • More mixed use / TOD 	<ul style="list-style-type: none"> • Flexible live-work • Education link for income growth
Retail	<ul style="list-style-type: none"> • More stability than nation? • Flight to quality & value 	<ul style="list-style-type: none"> • Reuse of dated centers • TOD opportunity 	<ul style="list-style-type: none"> • Outer ring urban formats • Online & multi-channel integration
Institutional	<ul style="list-style-type: none"> • Constrained funding • Plan for mid-term 	<ul style="list-style-type: none"> • Aging boomers • Satellite facilities 	<ul style="list-style-type: none"> • Increased share of job base • Densification of use
Mixed Use	<ul style="list-style-type: none"> • Slowed development • Public-private stimulus? 	<ul style="list-style-type: none"> • Rebound opportunity • Extension beyond Central City 	<ul style="list-style-type: none"> • Portland's global pathway opportunity

FOCUS GROUP RESEARCH

Metro, in cooperation with the business community, commissioned focus group research to obtain business and industry perspectives on emerging trends in building space needs and changing regional competitive advantage. The following eight focus groups were conducted and led primarily by Adam Davis of Davis, Hibbitts & Midghall:

- Biotech/medical
- Distribution/logistics
- Food/beverage
- High tech
- Metals/machinery
- Business locators
- Retail
- Regional service providers

There were 47 participants with these eight groups. While not designed to measure with statistical reliability the attitudes of a particular group, focus group research is valuable in providing the perspectives of the population from which the sample was drawn.



Photos courtesy of Davis, Hibbitts & Midghall.

Findings are organized to cover discussion of building and space needs, emerging trends, development patterns, advantages and disadvantages of doing business in the Portland metro area, and on-going competitive advantage for the region.

Building & Space Needs

Participants noted the following needs, first for building space, then location and site needs:

Building Space:

- Rapid industrial change – as land and building space is increasingly expensive
- Hi-cube distribution – on the horizon for mid-large firms
- “New age shop” for manufacturing – as companies of all sizes invest in technology
- Diversity of office needs – but with common themes of more collaboration and conferencing
- Retail shift to smaller store concepts – especially grocery and for the near-term

Location/Site:

- Regional competition for industrial sites – extending at least from Longview to Salem
- For sites of 20+ acres, increasing need to look outside the Portland tri-county region
- Distribution requirement for freeway access (with I-5 as the preferred corridor)
- Clustering for competitive advantage – exemplified by clusters including high tech, metals and professional services
- Labor force as a growing driver of facility siting decisions
- Customer/client businesses driven for closer proximity to population
- Little eagerness for brownfield redevelopment, due to liability issues
- Greater impetus for businesses to stay in the same site footprint in order to mitigate neighborhood and cost issues

Emerging Trends

- Transit now important across all business groupings, especially for employees
- Transit-oriented development (TOD) interest – but a source of frustration for at least some commercial/industrial firms in this region
- Auto orientation still critical for customer and patient access, with parking needed but a major cost and with recognition that auto reliance varies widely across the region
- Work force accessibility a critical concern – key to attracting young talent which is easier due to this region’s quality of life draw
- Going green of broad interest – especially when supported by customers, clients, workers and/or investors

Development Patterns

- Multi-story development works best for office and administrative functions
- Diverse opinions on retail suitability for 2+ stories – but most likely at higher value and urban or constrained sites
- Manufacturing typically holding at 1-2 floors – more for admin / R&D functions
- Multi-level economics are not workable for distribution yet (despite global experience), but hi-cube distribution accomplishes similar results of reduced land footprint
- Great impetus for more and more efficient building on site, adaptive reuse, and multi-level parking on constrained sites

Advantages & Disadvantages

Focus group participants were asked a two-part question: *What are the primary advantages (and disadvantages) of the Portland metro area as a place for your business to grow?*

Responses are organized in terms of comments most frequently heard across most or all of the focus groups. Also identified are less frequently mentioned items that are nonetheless of great importance in at least some of the focus group discussions.

Advantages	Disadvantages
Most frequently mentioned	
<ul style="list-style-type: none">• Talented work force ('the cutting edge is from Oregon')• Multi-modal access• Quality of life (urban, recreation)• Relationships (business-to-business & customer)	<ul style="list-style-type: none">• Poor market proximity (no critical mass)• Shallow labor pool (skill positions)• Limited, high cost sites• Transportation congestion (freight, passenger)• Public policy issues (taxes, fees, permitting, infrastructure)
Less frequently mentioned	
<ul style="list-style-type: none">• Sustainability commitment (business, environmental, land use)• Reasonable cost of doing business• Population growth (good demographics)• Gateway location (especially Port-related)	<ul style="list-style-type: none">• Cost of doing business (cost of living)• Limited investment capital (and need for incentives for some industries)• Industrial encroachment & gentrification

Competitive Advantage

The last question raised in the focus group discussions was: *What message do you have for Metro and local jurisdictions about what to do in a changing world to assure that the Portland metro area remains competitive as a place for businesses in your industry group to expand or locate?*

Key themes heard in both written responses and ensuing discussion are summarized to include:

- More land in the right place(s) – with in-place infrastructure
- Increased focus on sustainability – as a necessary cost of doing business
- Economic stability of Portland – a plus compared to the rest of the west coast
- Addressing issues of congestion – on local streets as well as the freeway system
- Taxes, fees, permitting – consider streamlining
- Value capture as a mechanism for infrastructure funding – as for new employment land brought into the UGB
- Encouragement of high end jobs – with greater focus on wage levels
- Flexibility in policy application
- Paying attention to the short as well as long-term – taking incremental steps to achieve the long-range vision

SUMMARY IMPLICATIONS & NEXT STEPS

While the results of the employment trends analysis, national literature on factors affecting location, and focus groups can be viewed separately, the real value lies in looking for broad themes and implications suggested from multiple avenues of research. Of special importance to the work ahead are implications for a new employment paradigm, intensity of employment land use, and resulting next steps.

Implications for a Regional Employment Paradigm

Key implications of work completed to date for the remainder of this employment and economic trends analysis are summarized by the following chart. These implications are particularly relevant for the formulation of a new demand paradigm: to address needs for substantial job growth in the years ahead but with less *footprint* impact for each job created on the metro region's urban landscape.

Each of the three research paths taken with this trends analysis project suggests both opportunities and challenges ahead for improved intensity of employment use. The data analysis helps to identify trends that are most distinct to the Portland metro region while the literature review draws on emerging national and global themes that can be expected to serve as external forces shaping local and regional opportunities. Business outreach exemplified by the focus groups and business roundtable can yield results in suggesting options for refining and achieving the 2040 vision on the ground, one step at a time.

<u>Drawn From</u>	<u>Implication</u>
Employment Demand Factors & Trends	<ul style="list-style-type: none"> Less NAICS/sector focus – more on market subareas & design types Capacity <i>feedback</i> loop – affecting tri-county/UGB capture Job to site demand driven by FAR Good opportunity for urban/commercial FAR increase; not proven for industrial Stronger refill opportunity for central & inner ring geographies
Variables Affecting Location Decisions	<ul style="list-style-type: none"> Building reuse and unconventional site use for emerging industries Role of incentives and infrastructure investment Institutions as <i>anchor</i> for outer ring development Role of <i>world class</i> work force training and higher education
Focus Groups	<ul style="list-style-type: none"> Multiple ways to less site footprint (including industry) Reserving capacity for major planned industrial campus <i>Green</i> as a distinct competitive edge (transportation, design, operating efficiencies, a way of doing business)

Intensity of Employment Land Use

The data, literature and focus group research for this employment and economic trends analysis has identified multiple factors that affect employment land use. While some factors are of perhaps greater importance to the Portland metro region, most are being played out in other metro regions across the U.S. or globally, albeit in varying ways.

Some factors point toward opportunities for increased density of employment while others may provide impetus to reduced on-site density. Examples include opportunities for more multi-level development and improved jobs capture for 2040 urban design types.

Also noted is that some factors are common across all industrial, commercial and mixed-use real estate while others are specific to individual project types. For example, employment intensity of industrial use is specifically linked to factors such as the proportion of manufacturing, warehouse/distribution, administrative and R&D jobs at a particular plant site.

A preliminary review of factors identified to date is provided by the matrix chart on the following page. Added discussion of these or other detailed factors will be important to achieve a new demand paradigm as the next step of an updated jobs forecast allocation process for the metro region. While some features can be built into a scenario encouraging greater intensity of employment activity than has been the case in recent years, further research and policy discussion can be expected beyond the completion of this trends analysis.

Factors Affecting Density of Employment Land Use

<u>Increased Density</u>	<u>Reduced Density</u>
Across all Real Estate Product Types	
<ul style="list-style-type: none"> • Attract an increased percentage of jobs to urban design types (especially office / institutional) • Multi-story development • Change from surface lot to structured parking • Reduction in auto dependence (with more transit, bike, pedestrian options) • Reduced landscaping / open space buffer • Higher land cost or existing site constraints • Green design goal for reduced carbon footprint • UGB triggers (large served sites for employers otherwise not accommodated in metro region) 	<ul style="list-style-type: none"> • Increased per square foot cost of construction for multi-story development (especially when construction type changes) • Employer substitution of capital / equipment for labor • Campus-oriented development • Environmental / open space set asides
Industrial Development	
<ul style="list-style-type: none"> • Increase in proportion of administrative versus production and/or warehouse space • Multi-story business park / flex space • Going vertical (even within one story – for distribution &or manufacturing) • Process re-engineering for increased efficiency per square foot of building area • Just-in-time inventory management • Supportive mixed use on or near site (e.g. child-care, dining, fitness) 	<ul style="list-style-type: none"> • Vintage relocation from older multi-story to modern single level industrial facilities • Process automation with more production output per worker & per square foot of floor area • Land-banking (to protect future expansion options) • Security issues (for separation from other uses) • Buffering needs (with nearby incompatible uses as with residential)
Office Development	
<ul style="list-style-type: none"> • Transition from private office to open space layout (reduced office space per employee) • Telecommuting / shared office space (hoteling) 	<ul style="list-style-type: none"> • Increased allocation of conference & collaborative work space • Ground floor use for customer visibility & access • Office uses moving to lower density, less costly building types (e.g. retail, business park space)
Retail Development	
<ul style="list-style-type: none"> • Reduction in back of house storage requirements (e.g. just in time inventory) • Transportation-integrated & cross-channel retail 	<ul style="list-style-type: none"> • Warehouse style store formats • Automated checkout
Institutional Use	
<ul style="list-style-type: none"> • Improved profile / customer appeal of more urban multi-story facilities • Greater use of unconventional & adaptive reuse sites 	<ul style="list-style-type: none"> • Required auto accessibility for substantial ground floor customer uses (as with reception/ emergency areas in medical institutions)
Mixed Use	
<ul style="list-style-type: none"> • Encouragement of customer-oriented service / office uses to locate above ground floor retail • Shared parking opportunity • Live-work options 	<ul style="list-style-type: none"> • Residential displacement of zoned job capacity • Primary or exclusive focus on residential mixed use options (with less emphasis on job development)

Findings & Policy Questions

Substantive work steps remaining with this employment and economic trends analysis will assess options covering the following regional priorities:

- New Employment Paradigm
- New Development Capacity & Inventory Approach
- Framing Choices for Job Needs

Based on the work completed to date, a major challenge with a changing jobs paradigm is to determine market and policy mechanisms that can be effective with improved jobs performance for 2040 urban design types while concurrently achieving better site utilization with industrial and employment lands. This discussion can be expected to engage multiple groups and constituencies. Policy discussion may be focused on two main questions:

1. What is the vision for the region's economy? Key aspects of this question useful to frame this region-wide discussion include:

- Recognition that issues extending beyond regional and local jurisdiction land supply also affect job outcomes – in terms both of the number and characteristics of future regional employment. These issues range from questions of appropriate job metrics (such as wage levels) to priority business clusters important for regional economic vitality.
- Appropriateness of global/national benchmarking for the Portland tri-county region. More specifically, the question posed is whether and how this region aims to conform to standards of other comparable regions or forge ahead to create and sustain its own unique market niche in the U.S. and internationally.

2. How are economic opportunities best realized in the context of the 2040 regional vision? Findings pertinent to this second question include observations of:

- No clear economic driver for long-term job demand. In a period of slower short and long-term growth, an important question is whether the region would benefit from a more intentional strategy that targets characteristics of desired jobs – reaching beyond current Metro metrics of job numbers and industry (or sectoral) mix.
- Continued if not enhanced opportunity to focus on strategies for achieving better job performance in the central city, centers and corridors while focusing on more efficient site use in employment and industrial areas. These strategies not only coincide with the adopted Region 2040 vision but also offer prospects for a more carefully articulated regional advantage. Playing to the metro area's strengths is important for the task of economic recovery over the next five years and for sustained vitality extending toward longer term 20- and even 40-50 year time horizons.

To: Malu Wilkinson, Metro and Eric Hovee
From: Todd Chase, AICP, LEED
CC: Justin Healy, Real Urban Geographics
RE Revised Draft Employment Areas Vacant Land Supply Findings, revised

Introduction

This memorandum provides revised draft preliminary land supply findings and current land inventory estimates for land that has been considered by Metro to be available for potential employment growth. The preliminary land supply findings are intended to provide a draft estimate of the gross buildable land area for areas within the Urban Growth Boundary (UGB) area (tri-county area) that are planned for industrial, employment, commercial, public facilities, or mixed-use developments (per the 2040 Regional Framework Plan and local zoning codes).

This land inventory includes an analysis of tax lots that were characterized as vacant or partially vacant by Metro Regional Land Information System. While this land supply tabulation is intended to be an approximate indicator of vacant and partially vacant employment lands within the existing UGB, it is not intended to reflect vacant land absorption over a fixed time period. Comparisons with prior UGB land supply estimates and studies are difficult to make due to changes in tax lot boundaries (i.e., tax lot line boundary adjustments), zoning changes, and corrections made to prior vacant land mapping assumptions. This analysis includes adjustments to the prior 2007 Metro Vacant land inventory database, with current assumptions as of December 2008. Attempts have been made to remove tax lots from the vacant buildable land inventory if construction has been completed (as of December 2008), but not for tax lots with construction underway or development applications approved or pending approval.

The steps used to conduct this analysis are generally laid out as follows.

Step 1 Meet with Metro staff to confirm current GIS data assumptions, and available GIS analysis layers that should be used in this analysis.

Step 2 Prepare draft buildable lands maps for the tri-county UGB region that depict prior 2007 vacant and part vacant land inventory assumptions for industrial, employment, commercial, public facilities, and or mixed-use areas.

Step 3 Distribute draft buildable land maps to local jurisdictions and the Port of Portland for review and comment. Reviewers were asked to provide comments on specific tax lots, and to define any areas that are deemed to be “special planning areas” with expected levels of future development and employment growth. Please refer to separate Memorandum from Miranda Bateschell of Metro to local jurisdictions dated November 26, 2008.

Step 4 Compile comments from local jurisdictions for each tax lot, and incorporate comments into the GIS data base. Note, 22 of 23 jurisdictions along with the Port of Portland did provide some level of review and comment on the draft employment land inventory assumptions. This effort resulted in comments that helped to verify new development projects with buildings that have been constructed as of December 2008. Map reviewers also provided comments regarding current zoning, and ownership considerations (such as whether the tax lot is owned a school or parks district), and noted whether tax lots should be “added” or removed” from the vacant land inventory.

Step 5 Estimate the buildable land area for each tax lot by analyzing GIS data pertaining to environmental features that would constrain the amount of potential site development on vacant and part vacant areas. For purposes of this analysis, the City of Portland and Washington County identified vacant tax lots to be included in this analysis. The City of Portland and Washington County also identified environmental constraints, which is used for this work to calculate net buildable land area. For areas, outside Washington County and the City of Portland, the environmental constraints were calculated for each site using estimates for land area that is constrained by the following: Metro Title 3 designation (waterways, wetlands, riparian buffers) or applicable local significant resource overlay zone (applicable to Wilsonville); slopes over 10% for tax lots with industrial land use classifications, or 25% for tax lots with other employment and mixed use land use classifications.

Step 6 Remove “developed” tax lots and tax lots that no longer have an “employment land use” classification inventory (based on comments). Also, remove tax lots with less than 0.2 buildable acres after accounting for environmental constraints¹. This step resulted in a total of 649 tax lots with 1,127 net buildable acres being removed from the draft land supply inventory. The primary reason for removing vacant lands in tax lots with less than one acre in size was most often attributed to adjustments needed to be made to delete “slivers” of vacant lands that resulted after accounting for environmental constraints. For tax lots over one acre in size, the land being removed from the inventory primarily reflects recent construction of public, private and non-profit developments, and some local zone changes (noted and recorded as of December 2008). Additional analysis of the tax lots over one acre, reveals that approximately 20% of the land removed is attributed to public and non-profit development activity (churches, schools, etc.) and 80% to private development activity. The

¹ Unlike the prior Regional Industrial Land Study for the Portland-Vancouver Region (1999-2003) reports, and subsequent vacant industrial land supply updates (2007), this analysis has been expanded to include all types of employment land (industrial, commercial, mixed-use, public facilities, etc.) and includes tax lots of less than 1.0 acre in size.

amount of land removed or added due to changes in land use zoning is not known at this time because of the methodology used to assimilate the data.²

As indicated in **Table 1**, after accounting for the inventory being removed, the amount of remaining vacant employment land inventory includes approximately 3,286 tax lots with a total of 12,151 net buildable acres inside the existing Metro UGB area.

Table 1
Portland Metropolitan Region (tri-county) Urban Growth Boundary
Estimated Employment Land Supply, December 2008
 (net buildable acres including land within flood plains)

	Less than 1 ac.		More than 1 ac.		Total	
	Tax lots	acres	Tax lots	acres	Tax lots	acres
Estimated Inventory Before Analysis	1,327	691	2,608	12,587	3,935	13,278
Inventory Removed*	386	83	263	1,044	649	1,127
Remaining Inventory After Analysis	941	608	2,345	11,543	3,286	12,151

* represents tax lots removed from Metro's draft vacant and part vacant land supply inventory based on jurisdiction input, or size thresholds (removes tax lots with less than 8,712 square feet of buildable land area). Compiled by FCS GROUP based on Metro GIS data and jurisdiction/Port input.

Step 7 Sort tax lots into Tiers based on an analysis of tax lot location, existing building and land value, environmental development constraints, infrastructure availability, transportation access, local land use designation and “land banking” issues. For purpose of this analysis, a transportation deficiency was noted for tax lots within 1/4 mile of major arterial roadway with a peak-hour volume-capacity ratio greater than 1.0 ($V/C > 1.0$ as defined by the current Metro Regional Transportation Plan traffic model). Land use policy constraints were identified for tax lots that have not been annexed or zoned by local jurisdictions, and for sites with identified restrictions (based on map review comments reflecting brownfields, aviation flight protection overlay zone, or marine-use restrictions). The current assessed market value for building improvements helped determine if a site is considered as vacant or part vacant. For purposes of this analysis, tax lots with less than \$25,000 in building valuation are assumed to be vacant, and tax lots with more than \$25,000 are assumed to be part vacant.

The general land use classifications included in this vacant employment land analysis include tax lots that have the following local land use classifications, which are defined within the Metro Regional Land Information System, GIS database as “GEN ZONE CLASS” or 2040 Design Type “DESGNTYP” if no local urban zoning has been established.

² It should be noted that jurisdictions did not provide a consistent set of comments for all tax lot that were to be removed from the land supply inventory nor provided a consistent means to measure the amount of land removed due to re-zoning vs. new development. However, based on the comments that we did receive, the vast majority (over 90% of the land area of all removals) were attributed to new developments, not land banking nor re-zoning.

A summary of the relevant 2040 Design classifications considered in this vacant land inventory are provided in **Table 2**.

Table 2
2040 Design Types Evaluated in this Vacant Land Analysis

2040 Design Type	Expected/Planned Uses
Central City	Includes Downtown Portland and portions of the South Waterfront and Lloyd District, which function as the major regional center. Expected uses include a broad mix of high-rise development for employment, housing, and institutional uses; with urban amenities and public open spaces.
Regional Centers	There are 7 regional centers outside the Central City, including: Hillsboro; Gresham; Gateway (east Portland); Downtown Beaverton; downtown Oregon City; Washington County Town Center; and Clackamas Town Center. Expected uses include a broad mix of low and mid-rise developments with employment, housing, and institutional uses; and urban amenities and public open spaces.
Town Centers	Town Centers are located in small to mid-size cities, and provide local shopping, employment, cultural and recreational opportunities. Expected uses include low- to mid-rise developments for retail, employment, housing and institutional uses, and public open spaces. Examples include: downtown Lake Oswego, Forest Grove, Hillsdale and Gladstone.
Corridors	Located along transit routes, Corridors are less dense than centers, but can include nodes of relatively higher density developments. Expected developments include row-houses, duplexes and low- to mid-rise office buildings, along with neighborhood retail/services.
Station Communities	Generally located within 1/2 mile from light-rail, commuter rail or high capacity transit, these areas include nodal developments with excellent pedestrian and transit access. Expected uses include a mix of mid- to high rise developments, with retail, employment and housing.
Main Streets and Neighborhood Centers	Traditional "main streets" served by transit with a strong business and civic community that generally serves local neighborhoods and travelers. Expected uses include a mix of low- to mid-rise developments, with a mix of retail, services, employment, and housing. Examples are found in Hillsboro, Milwaukie, Oregon City, and Gresham.
Employment Areas	Areas set aside or planned for a mix of light industrial and office developments, with good transportation access. Expected uses include light industrial and "flex" developments, campus office, and medical office, with ancillary retail/services.
Industrial and Regionally Significant Industrial Areas (RSIA)	Areas set aside or planned primarily for industrial uses and activities. Located near existing/planned highways, rail corridors, and marine/air freight handling areas, these industrial areas are critical for regional commodity flows and access to national and international markets. Expected uses include low- to mid-rise industrial developments (warehousing distribution, manufacturing, processing, etc.), corporate headquarters, and ancillary retail/services. RSIA has more restrictive limitations on non-industrial activities than found in Industrial Areas.
Inner and Outer Neighborhoods	Primarily includes low-rise residential neighborhoods with public parks and open spaces. May include neighborhood retail/services and institutional uses (ie., schools and churches) in low-rise environment.

Relevant local general zoning classifications considered in this vacant employment land inventory are listed in **Table 3**.

Table 3
General Local Zoning Classifications Evaluated in this Vacant Land Analysis

Land Use Classification		Expected/Planned Uses
CC	Central Commercial	Range of mid to high-rise commercial uses; typically associated with CBD's and downtowns, including retail, service and/or office uses.
CO	Office Commercial	Range of low-rise offices and businesses, such as professional and medical offices, often in "campus" settings.
COM	Commercial	Retail, service and/or office uses.
IH	Heavy Industrial	Light and heavy industrial uses with intensive activity, such as chemical and food processing, heavy manufacturing, assembly, and intermodal shipping; uses may have noxious externalities.
IL	Light Industrial	Light industrial uses, such as warehousing distribution, light manufacturing, processing, fabrication and assembly. May allow corporate headquarters and ancillary commercial services.
IND	Industrial	Light and/or heavy industrial uses, such as manufacturing, fabrication, processing, assembly and warehouse distribution.
MUE	Multiple Use Employment	Broad range of uses, including office, retail, warehouse distribution, and light industrial activities.
MUR	Mixed Use Residential	Low to high-rise residential housing, with ancillary retail, service and office uses
PF	Public Facilities	Broad range of government buildings, public facilities and institutions, such as public works yards, treatment plants, and schools.

Step 8: In addition to deducting selected environmental constraints from the gross buildable land supply (please refer to Step 7), this vacant land analysis also deducted land for future public right-of-way (streets and pedestrian corridors). The analysis utilized current Metro Urban Growth Report assumptions for planned future right of ways to be: 18.5% of gross buildable area for tax lots larger than one acre; 10% of gross buildable area for tax lots between 3/8 acre and one acre; and 0% for tax lots under 3/8 acre.

The current 2009 Employment Land Supply Tier classifications and applicable constraints are summarized in **Table 4**.

Table 4
2009 Vacant Employment Land Supply Classifications

Tier	Title	Applicable Constraints	Development Readiness
A	Vacant, Unconstrained	Must be over 1 net buildable acre with no known constraints*	Great
B	Vacant, Constrained	Must be over 1 buildable acre, and have one or more constraints listed in Note 1.	Good
C	Infill, with 0.2 to 1 acre in size (Vacant or Part Vacant)	Tax Lots with 0.2 to 1 acre, and already annexed.	
D	Part Vacant, with constraints	Portion of existing tax lot that is (net of existing building and parking), over 1 acre, and be already annexed**	
E	Vacant, but lacks urban services, infrastructure and current zoning	Vacant, over 1 acre, but lacks needed infrastructure, and requires annexation and current zoning before development can commence*	Fair
F	Part Vacant or Redevelopable, but lacks urban services, infrastructure and current zoning	Part vacant land, over 1 acre, but lacks needed infrastructure, and requires annexation and current zoning before development can commence**	
G	Infill, with 0.2 to 1 acre in size, but lacks urban services and infrastructure and current zoning (Vacant or Part Vacant)	Small areas of vacant or part vacant land outside existing service district, lacks needed infrastructure, and requires annexation and current zoning before development can commence.	Poor

Notes:

1) applicable constraints include one or more of the following: Title 3 Environmental designation (waterways, wetlands, riparian buffers, etc.) or applicable local significant resource overlay zone; slopes over 10% for industrial lands or 25% for other employment and mixed use lands; transportation deficiency (within 1/4 mile of major arterial roadway with V/C>1.0 (defined by Metro RTP); lack of adequate sewer or water infrastructure, lack of local zoning consistent with urban employment-related development, or known land use/policy constraints (such as sites designated as "brownfields", aviation flight protection overlay zone, or marine-use restrictions); or tax exempt tax lot status.

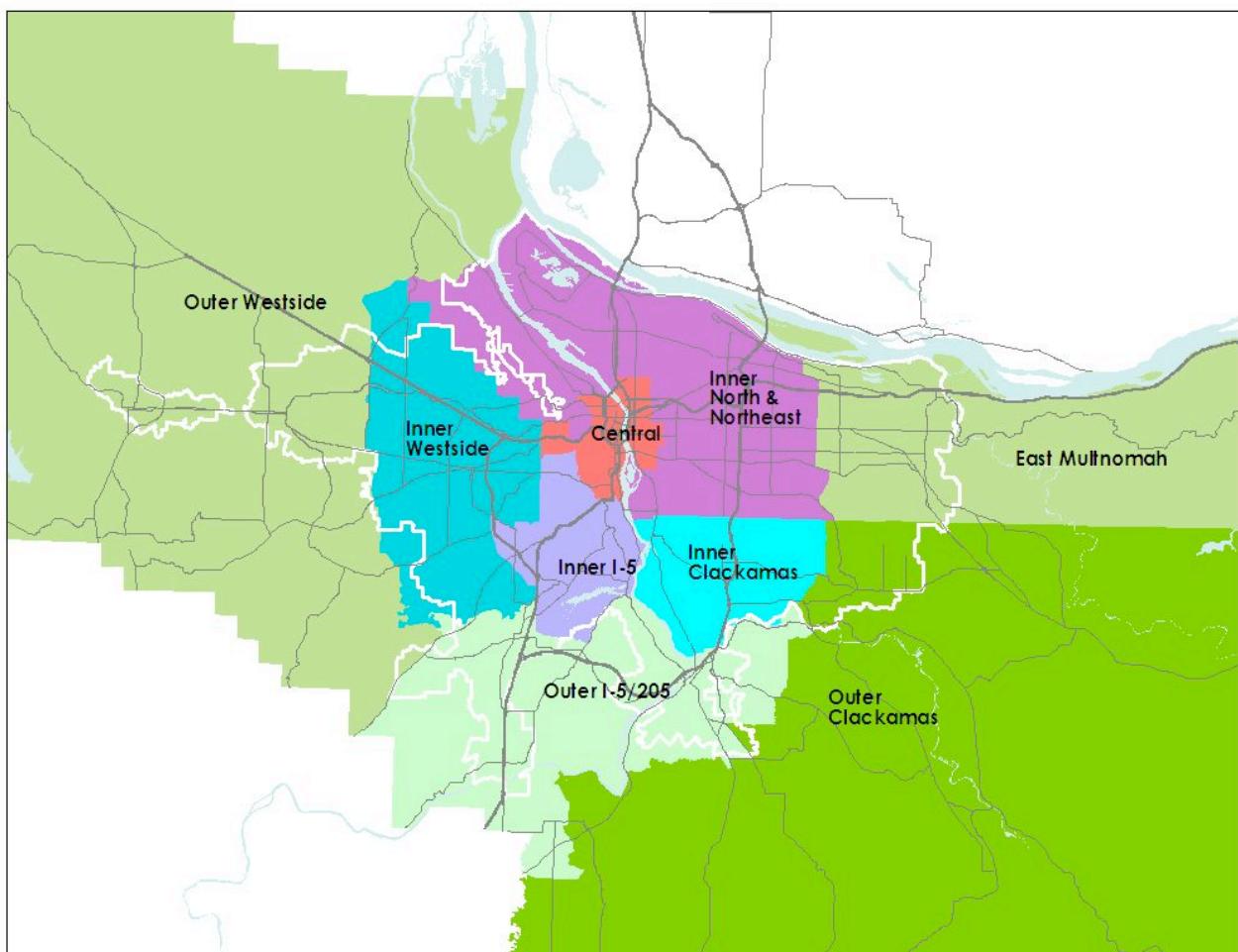
* Tax lot building market value is less than \$25,000, according to County Assessor records, 2008.

*** Tax lot building market value is more than \$25,000, according to County Assessor records, 2008.*

Preliminary Findings

In addition to the work undertaken to derive Tier designations, this vacant employment land supply analysis groups vacant lands by generalized land use classification, parcel size, and market geography. This approach provides a useful means for understanding the amount of land supply as well as its ability to accommodate near-term and long-term employment growth throughout the region. The vacant land supply is reported for nine tri-county market geographies. These areas are depicted in **Figure 1**.

Figure 1 Tri-County Market Geographies



The draft land supply findings are reported in the following tables:

Table 5: Regional UGB Area Total Vacant Land Supply by Tier

Table 6: Tier A Vacant Land Supply by Market Geography

Table 7: Tier B Vacant Land Supply by Market Geography

This document provides more emphasis on the Tier A and Tier B land supply because that is the vacant land supply that is deemed to be ready for new development in the short-term. The other land supply Tiers (C-G) may also be developed, but offer additional challenges or impediments to development relative to the Tier A and Tier B land. Hence, the majority of the Tier C-G tax lots are most likely to develop after the short-term period (after year 5). Please refer to **Appendix A** for a more detailed breakdown of estimated net buildable land area for each of the market areas shown in Figure 1.

It should be noted that the vacant employment land supply estimates contained in this memorandum and Appendix A are limited to the land use classifications listed in Table 1 and Table 2. In addition to these employment land use classifications, we have also identified approximately 238 net acres of “Rural” land use classifications within the Inner North & East Market Geography. These lands are primarily concentrated in West Hayden Island, and were previously classified as “Regionally Significant Industrial Area 2040 Design Type” in 2002, but that designation was subsequently amended to a “Rural Design Type.” Planning decisions regarding the future use of West Hayden Island are still pending local and regional review and approvals.

Next Steps

The next steps in the vacant employment land analysis includes estimating the near-term development capacity potential that could be accommodated on vacant Tier A and Tier B lands within the existing tri-county UGB.