

## Appendix 4: Forecast-based large employer / large lot analysis

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### Introduction

A strong regional economy that provides job choices and prosperity is an important part of quality of life. The economic position of the Portland metropolitan region is partially dependent upon global factors as the world shifts towards new market realities. However, local and regional choices can shape this region's place in the global economy. In addition to job capacity, factors that contribute to a strong regional economy include, an educated workforce, high value added businesses, wage levels, the mix of jobs, the success of economic development efforts, the transportation system, infrastructure investments and quality of life.

This appendix is intended to provide more detailed information than found in the urban growth report about how the relationship between demand for employment capacity and parcel formats and configurations may change over the next 20 years. The analysis approaches the topic from several angles to help inform growth management decisions.

This report includes the following contents. Some of the reports contents are strictly informational and do not impact the demand analysis:

- Inventory of existing large employers (by number of employees)
- Inventory of existing large parcel users (over 25 acres)
- Forecasted large lot demand (years 2010 to 2030)
- Reconciliation of large lot supply and demand
- Policy questions

### Inventory of existing large employers<sup>1</sup>

This analysis provides information on both large lot users and the region's large employers. An inventory of existing large employers (in 2006) suggests that not all large employers use large parcels of land. This portion of the analysis also draws attention to the region's many Oregon-originated, large employers that have been in the region for decades. Existing employers play a critical role in supporting the region's economy, and their needs should not be forgotten amongst efforts to attract the next big employer.

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<sup>1</sup> This large employer portion of the analysis uses United States Bureau of Labor Statistics data (ES-202) from 2006. This data includes only those employees that are covered by unemployment insurance (about 98 percent of all non-farm employees). This data set is deemed confidential by the federal government, requiring that it be presented in a generalized format that does not identify individual employers.

### Methodology and results (large employers)

Different industries require different human resources. For instance, industrial uses typically require fewer employees per square foot than retail uses. This report's definition of a large employer recognizes these differences by varying employment minimums for each building type. To identify large employers, each North American Industry Classification System (NAICS) code<sup>2</sup> was first assigned to one of six building types.<sup>3</sup> A minimum employee number was applied to each building type, assuming that the building is on a 20-acre site (to control for parcel size). The large employer definitions are described in Table 1Table 1.

Table 1: definition of large employers by building type

Building type	NAICS codes	Number of equivalent jobs on 20 acres
Office	information finance real estate professional services management administration, waste	excluded from this large employer analysis because office uses would have too many employees on a 20-acre site to provide a means of identifying large employers
Flex	hi tech	600
General industrial	manufacturing (non high tech) transportation, warehouse, and utilities	400
Warehouse and distribution	wholesale	200
Retail	retail arts, entertainment, recreation accommodation and food service other services	700
Institution	education health and social services government	1,000

Using the definition of large employers found in Table 1 results in a list of 89 large employers inside the current urban growth boundary (UGB).

<sup>2</sup> NAICS codes are self-reported by firms and in a few cases do not appear to accurately represent the activities of the business on these particular sites. For instance one employer's NAICS code is in the wholesale category, placing them in the warehouse and distribution building type when most of their activities at this site appear to be office uses.

<sup>3</sup> This differs from the general methodology used in the urban growth report, which assigned each NAICS code to several building types. This difference in methodology does not appear to influence the results of this large lot/large employer analysis.

The original list of 89 large employers is described as follows:

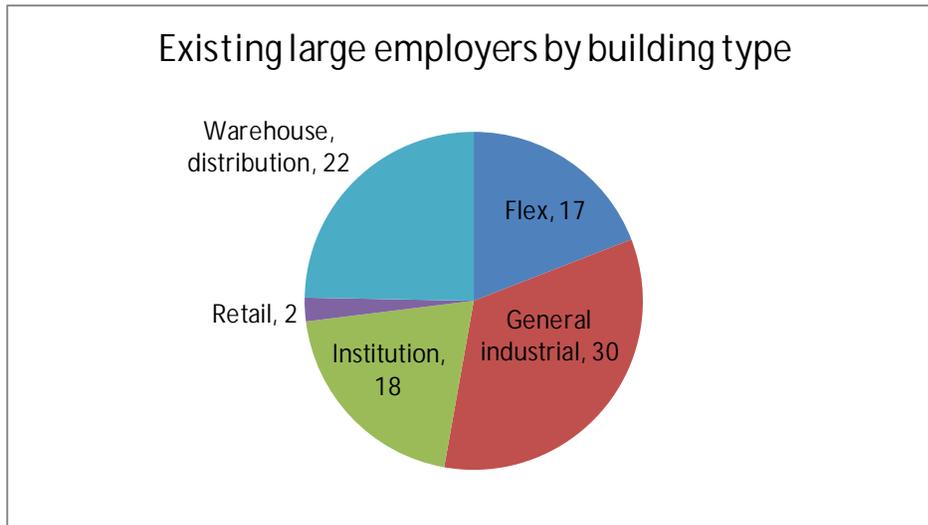


Figure 1: number of large employers inside the Metro UGB in 2006 by building type

- 16 percent of large employers are public sector
- 10 percent of large employers are in the central city
- 6 percent of large employers are in town centers or regional centers
- 9 percent of large employers are in corridors
- 61 percent of large employers are in Title 4 Employment, Industrial or Regionally Significant Industrial Areas (in some cases, these areas overlap with centers and corridors)

Nineteen of these 89 large employers are duplicates (same firm with multiple locations), leaving 70 unique large employers inside the UGB. Of these, 14 are public sector employers, leaving 56 large, unique, private-sector employers. Thirty-seven of these private firms (66 percent) originated in the Portland region. When public sector firms are included, 71 percent of the region's large employers originated in the Portland region (50 out of 70 employers).

As shown in Table 2, the 56 large, private employers have emerged in our region over the course of a century and a half. Many of them started as a small business that grew over time.<sup>4</sup>

This data is for information purposes only and does not impact the 2010 – 2030 large lot demand analysis.

Table 2: decade of origin of existing (year 2006) large, private employers in the Metro UGB

Decade	Number of existing (in 2006) large, private-sector employers by decade of origin in the Metro region	Number that are Oregon Originated
1850	1	1
1860	0	0
1870	2	2
1880	0	0
1890	1	1
1900	1	1
1910	4	4
1920	4	2
1930	4	4
1940	9	9
1950	3	2
1960	2	2
1970	8	5
1980	2	1
1990	6	4
2000-2006	3	0

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<sup>4</sup> Additional information about these 56 firms as well as a description of methodology is available as Attachment 1 to this report.

## Existing large parcel users

In addition to identifying existing large employers, this study identifies existing large parcel users in the region. This provides an idea of what attributes future users may be looking for in large parcels. Large parcels were defined as 25 acres or larger.

### Methodology and results (existing large lot users)

To find existing large parcel users, taxlots larger than 25 acres that are being used for industrial or commercial purposes were identified. Other large employers (the 89 large employers as defined earlier in this report) that are located on an assemblage of more than 25 acres were added to this inventory. This survey finds a total of 60 existing firms inside the Metro UGB that are located on a parcel of land (or group of parcels) of at least 25 acres. Figure 2 shows the geographical distribution of these large parcels throughout the region. These large parcel users accounted for 8.1% of total employment in the region in 2006.

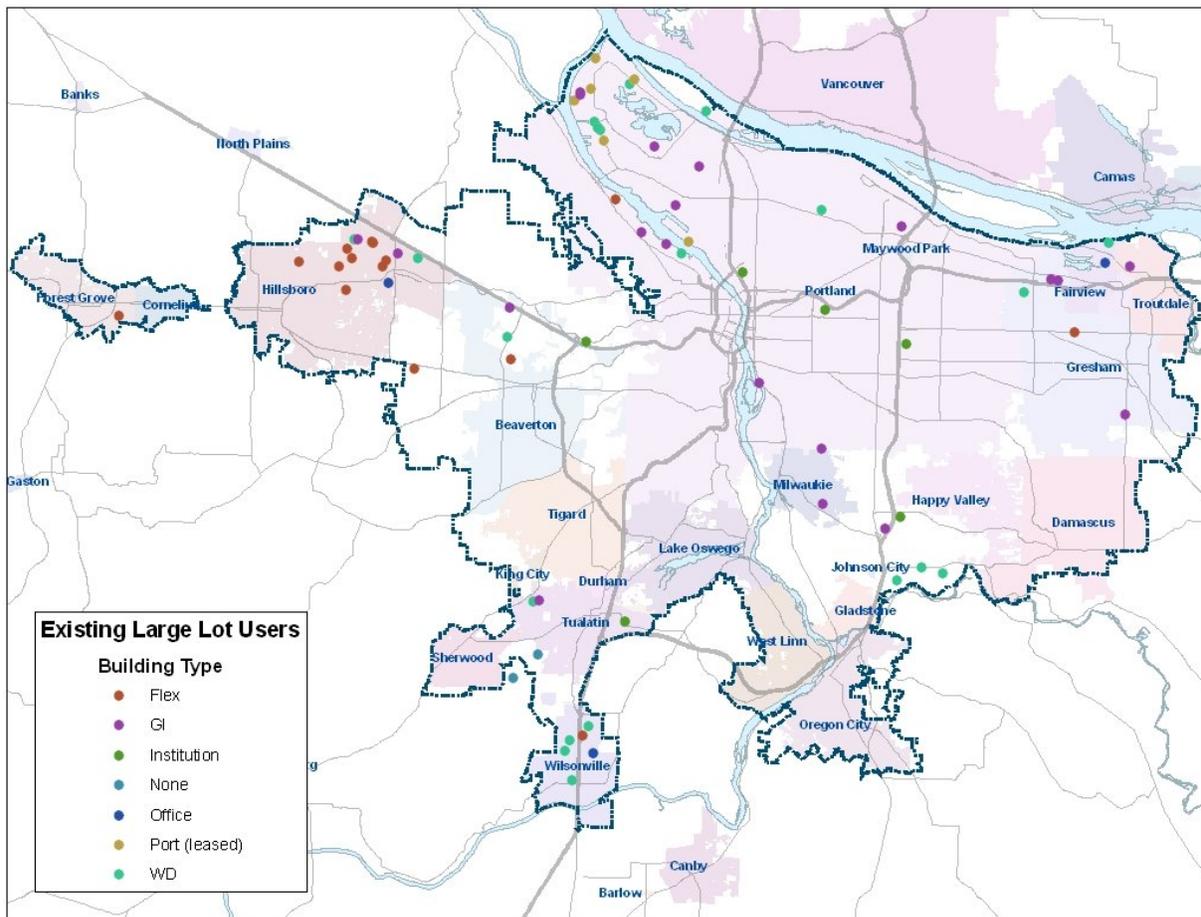


Figure 2: current large lot users by building type

GIS analysis indicates that these large parcels tend to be fairly flat. They may have some areas of slopes greater than 7% or even 15%, but these steep areas are usually small and scattered. Large parcel users with multiple buildings, like a hospital facility, are more likely to work around steeper slopes than a user

building a large warehouse or industrial building. There is evidence that all building types can work around small environmental limitations when necessary. Many of the parcels in the survey have areas that are protected by Title 3 or Title 13, usually in the form of a single stream corridor running through the property or protected areas along the edges of the parcel. Many large lot users have only developed a portion of their property, evidence of their preference for future expansion opportunities. Some basic attributes of these large parcels/users, organized by building type, are shown in Table 3. Additional information about employers on large parcels is included as Attachment 2.

Table 3: summary statistics for existing large lot users

Building type	Number of large employers	Total employees in building type	Proportion of regional employment	Average acreage per large employer	Average number of taxlots	Average employees per acre
Institutional	6	19,567	2.4 %	54.3	31.5	60.0
GI	21	10,475	1.3 %	53.2	3.0	9.4
WD	16	11,028	1.4 %	48.8	2.7	14.1
Flex	14	22,887	2.8 %	111.8	3.1	14.6
Office	3	1,635	0.2 %	82.2	5.0	6.6
Total	60	65,592	8.1 %			

#### Institutional large lot users

The six institutional employers inventoried here are all hospitals and related facilities. Together, they employed almost 20,000 people in 2006. There is strong evidence of taxlot assembly at these facilities, particularly those located in areas of higher density development. The total number of taxlots for each user ranges from 6 to 60 and total acreage ranges from 31 to 75 acres. For the large lot demand forecast section of this report, only medical uses are forecasted for the institutional building type. This is because other institutional large lot needs (e.g. schools) are better handled through the major UGB amendment process, which specifically addresses public facility needs.

#### General Industrial (GI) large lot users

There are 21 employers on large lots in the General Industrial category. The total lot sizes for these employers range from 25 to 164 acres, with an average of about 53 acres. There seems to be less taxlot assembly in this category. Eight of these employers are located on a single taxlot and the average number of taxlots for all GI large lot users is 3.0. GI buildings tend to be mostly one story, so coverage ratios provide a good indication of what the FARs might be on these lots. Coverage ratios were calculated for a sample of these employers and range anywhere from 0.16 to 0.67, with an average of 0.31. This is fairly consistent with the assumption in the preliminary employment urban growth report of an average FAR of 0.26 for the GI building type.

### Warehouse and Distribution (WD) large lot users

There are 16 examples of WD employers located on large lots. Taxlot sizes range from 25 to 112 acres with an outlier (Nike<sup>5</sup>) at 452 acres on an assembly of 17 taxlots. Most of these companies own fewer than five taxlots. A sample of coverage ratios for these lots provides a range of 0.07 to 0.58 and an average of 0.29.

### Flex large lot users

There are 14 examples of Flex employers located on large lots. Flex buildings tend to be located on the largest parcels, with an average of 112 acres per employer. However, there is evidence that these companies are holding land for future business expansion opportunities, as indicated by vacant taxlots and low coverage ratios where lots have been developed. Coverage ratios for a sample of developed lots range from 0.07 to 0.23 with an average of 0.13. Eight of these employers are located on a single taxlot while the rest are located on between two and 11 taxlots.

### Office large lot users

Because office uses are well-suited to denser development, office building types are rare on large parcels. Counter intuitively, in this sampling of large parcel users, the office building type has the lowest average employee density per acre. There are three Office employers located on lots larger than 25 acres. Their total land area ranges from 44 to 123 acres on 3 to 6 taxlots.

### Additional large lot users

There are some other examples of large lot users in the region that do not fit into our building type analysis. These include industrial users like sand and gravel mining as well as companies that are leasing large lots from the Port of Portland. The Port of Portland currently leases six large waterfront lots (or groups of taxlots) for warehouse and distribution use, one large lot for retail use and one for office use.

## Correlation between past preferences for large lots and future employment demand

This analysis was conducted to examine the relationships between jobs capacity and the types of firms that use large parcels. This analysis, as with the general employment analysis found in the UGR, is based on employment projections for the period 2010 to 2030. Two different growth scenarios, high growth and low growth were examined.<sup>6</sup> These employment projections, by NAICS sector, are shown in Tables 4 and 5.

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<sup>5</sup> Nike's self-reported wholesale NAICS code places them in the warehouse and distribution building type. They more correctly would be placed in the office building type. Because it is beyond the scope of this analysis to double-check each building type, Nike has been kept in the WD building type for consistency. This does not affect projected demand for future large lot office or WD uses.

<sup>6</sup> The 2010 to 2030 range forecast is available as a separate document.

Table 4: High growth employment projections by sector in thousands of jobs

<b>NAICS codes</b>	<b>Sector</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
11, 21	Ag, Mining	1.9	1.8	1.7	1.6	1.5
23	Construction	77.9	85.0	93.6	104.0	117.1
334	Manufacturing - Hi tech	39.2	43.6	46.5	48.9	51.6
31,32,33 (except 334)	Manufacturing - non-hi tech	98.5	105.9	108.9	110.5	111.4
42	Wholesale	61.4	67.9	74.1	80.0	85.9
44,45	Retail	120.6	132.3	136.3	142.1	149.4
22, 48,49	Transp, Warehouse & Utilities	40.8	48.3	53.0	56.7	60.7
51	Information	26.9	31.5	36.6	41.7	47.1
52	Finance	48.1	56.6	62.3	67.6	72.5
53	Real Estate	28.5	31.5	34.7	37.6	40.6
54	Professional Services	60.8	71.8	81.9	90.9	100.3
55	Management	26.8	33.6	39.7	46.0	52.7
56	Admin, Waste	77.0	95.3	108.9	121.2	132.8
61	Education	25.9	29.0	33.2	37.4	41.7
62	Health & Social Services	119.8	143.6	170.6	194.5	219.9
71	Arts, Entertain, Rec	15.2	16.8	19.0	21.0	22.9
72	Accomm & Food Service	88.1	98.1	108.1	117.2	126.5
81	Other Services	41.9	51.2	60.2	68.2	76.1
92	Government	161.9	165.5	175.6	185.7	195.4
	<b>Total</b>	<b>1,160.9</b>	<b>1,309.3</b>	<b>1,444.8</b>	<b>1,572.6</b>	<b>1,706.1</b>

Table 5: Low growth employment projections by sector in thousands of jobs

<b>NAICS codes</b>	<b>Sector</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
11, 21	Ag, Mining	1.5	1.4	1.3	1.2	1.2
23	Construction	43.9	45.6	44.7	43.3	41.3
334	Manufacturing - Hi tech	24.9	26.3	27.5	28.3	29.1
31,32,33 (except 334)	Manufacturing - non-hi tech	71.4	72.7	71.9	70.7	69.5
42	Wholesale	55.8	61.8	67.6	72.9	78.3
44,45	Retail	101.3	107.9	108.1	110.4	114.7
22, 48,49	Transp, Warehouse & Utilities	36.2	43.1	47.3	50.4	53.9
51	Information	19.2	20.6	22.9	25.5	28.3
52	Finance	41.4	47.7	52.0	56.5	60.9
53	Real Estate	24.1	26.1	28.7	31.2	33.6
54	Professional Services	48.0	54.5	61.6	68.3	75.8
55	Management	17.6	19.4	21.3	23.6	26.7
56	Admin, Waste	44.9	49.1	51.7	54.4	57.1
61	Education	21.7	24.0	27.1	30.1	32.9
62	Health & Social Services	107.5	126.7	149.8	169.7	190.8
71	Arts, Entertain, Rec	12.2	13.4	15.2	16.8	18.3
72	Accomm & Food Service	82.7	92.1	101.4	109.9	118.5
81	Other Services	30.5	35.6	41.3	46.5	51.7
92	Government	149.0	151.2	160.0	168.9	177.3
	<b>Total</b>	<b>933.6</b>	<b>1,019.1</b>	<b>1,101.4</b>	<b>1,178.5</b>	<b>1,260.0</b>

Employment was distributed by real estate type using a set of density assumptions about the relationship between land area and employment for each building type.

Table 6 shows the sectors (by NAICS codes) that are expected to occupy each of the six building types. These assumptions are slightly different than the methods used to assign sectors to building types in the UGR. For simplicity, each sector has been assigned to one building type as opposed to the proportional assignment used in the UGR. Assumptions about the average square foot per employee (SFE) and average floor to area ratio (FAR) were made for each building type, also shown in Table 6. These numbers allow for a calculation of the average number of jobs per acre for each building type. These values are the same as the Outer Ring density assumptions used in the broader UGR analysis, as most large lot development is expected to take place in Outer Ring subareas. As shown in the UGR's buildable land inventory, most of the existing large lot supply is located near the outer edges of the current urban growth area.

Table 6: Building type and density assumptions

Building Type	NAICS codes	Average SFE	Average FAR	Average Jobs per Acre
Warehouse/Distribution (WD)	22, 42, 48, 49	1,850	0.32	7.5
General Industrial (GI)	23, 31, 32, 33 (except 334)	600	0.26	18.9
Tech/Flex (TF)	334	990	0.31	13.6
Office	51, 52, 53, 54, 55, 56	375	0.75	87.1
Retail	44, 45, 71, 72, 81	550	0.44	34.8
Medical	62	650	0.66	44.2

The next step is to determine how future job growth will be distributed among firm sizes. For this analysis, it is assumed that the proportional distribution of jobs by firm size will be the same as that observed in the 2006 employment data (for the Metro region). This distribution is shown in Table 7.

Table 7: Proportional distribution of employment by firm size for each building type

Firm size by jobs	WD	GI	TF	Office	Retail	Medical
<b>less than 10</b>	12%	15%	1%	17%	18%	13%
<b>10 to 49</b>	26%	30%	5%	26%	41%	24%
<b>50 to 99</b>	14%	17%	4%	14%	16%	13%
<b>100 to 149</b>	9%	9%	4%	7%	8%	6%
<b>150 to 199</b>	5%	6%	4%	5%	5%	4%
<b>200 to 499</b>	15%	14%	25%	14%	10%	9%
<b>500 to 999</b>	5%	5%	17%	9%	1%	5%
<b>1,000 to 1,999</b>	6%	5%	34%	5%	0%	7%
<b>2,000 to 2,999</b>	0%	0%	6%	2%	0%	6%
<b>3,000 or more</b>	7%	0%	0%	0%	0%	13%
<b>Total</b>	100%	100%	100%	100%	100%	100%

Finally, employment projections are run through this set of assumptions with the additional assumption of a 75% capture rate for the Metro UGB<sup>7</sup>. Tables 8 and 9 show the forecast of the number of new firms expected from 2010 to 2030 by firm size and building type. Note that in the low growth scenario, employment projections show a decline in employment in the General Industrial category, so the number of new firms and area of land for this building type have been set to zero.

Table 8: High growth forecast of new firms by firm size and building type, 2010 to 2030

Firm size by jobs	WD	GI	TF	Office	Retail	Medical	Total
less than 10	778	1,140	14	4,518	2,976	2,016	11,442
10 to 49	290	393	15	1,149	1,130	603	3,580
50 to 99	63	87	5	249	172	126	702
100 to 149	25	28	3	76	55	34	221
150 to 199	10	14	2	40	24	15	105
200 to 499	14	16	7	55	24	20	136
500 to 999	2	3	2	17	1	5	30
1,000 to 1,999	1	1	2	4	0	4	12
2,000 to 2,999	0	0	0	1	0	2	3
3,000 or more	1	0	0	0	0	3	4
<b>Total</b>	<b>1,184</b>	<b>1,682</b>	<b>50</b>	<b>6,109</b>	<b>4,382</b>	<b>2,828</b>	<b>16,235</b>

Table 9: Low growth forecast of new firms by firm size and building type, 2010 to 2030

Firm size by jobs	WD	GI	TF	Office	Retail	Medical	Total
less than 10	704	0	4	2,216	2,086	1,680	6,690
10 to 49	263	0	5	563	792	502	2,125
50 to 99	57	0	2	122	120	105	406
100 to 149	23	0	1	37	38	28	127
150 to 199	9	0	1	20	17	13	60
200 to 499	13	0	2	27	17	17	76
500 to 999	2	0	1	8	1	5	17
1,000 to 1,999	1	0	1	2	0	3	7
2,000 to 2,999	0	0	0	1	0	1	2
3,000 or more	1	0	0	0	0	2	3
<b>Total</b>	<b>1,073</b>	<b>0</b>	<b>17</b>	<b>2,996</b>	<b>3,071</b>	<b>2,356</b>	<b>9,513</b>

<sup>7</sup> The capture rate used in this UGR is applied to a larger 7-county area than past UGRs, which used a 4-county capture rate. This change is due to the U.S. Office of Management and Budget's changed definition of the primary metropolitan statistical area.

Using the assumptions about jobs per acre from Table 6, the forecast of firms is correlated to parcel size and building type, shown in Tables 10 and 11.

Table 101: High growth lot correlation by lot size and building type, 2010 to 2030

Lot size (acres)	WD	GI	TF	Office	Retail	Medical	Total
<b>25 to 50</b>	11	4	4	1	0	4	24
<b>50 to 100</b>	7	1	2	0	0	5	15
<b>100 plus</b>	3	0	1	0	0	0	4

Table 11: Low growth lot correlation by lot size and building type, 2010 to 2030

Lot size (acres)	WD	GI	TF	Office	Retail	Medical	Total
<b>25 to 50</b>	10	0	1	1	0	3	15
<b>50 to 100</b>	6	0	1	0	0	3	10
<b>100 plus</b>	3	0	1	0	0	0	4

Large lot demand for marine and rail terminal use is not included in this analysis. These types of facilities may have relatively few employees and little building square footage. Consequently, a job forecast may be an inadequate means of forecasting land demand for these uses. Furthermore, these uses are extremely location specific and cannot be accommodated through UGB expansions.

## Policy questions

1. Some of the region’s existing large lot employers appear to hold vacant land for future local expansion opportunities. Should it be a regional policy to provide capacity for future business expansions that may exceed the twenty-year need? What are the risks of not doing so?
2. Given the inherent uncertainty of the range forecast, what are the risks and opportunities of providing too much or too little large-lot employment capacity?
3. This analysis identifies potential demand for one 25-to-50-acre lot for office uses. Office uses are well-suited to multi-story buildings. Should it be regional policy to expand the UGB to provide large lots for office uses? What are the risks of not doing so?
4. Should the cyclical UGR capacity analysis include large lot institutional uses (medical, education, government) or should they be handled on an as-needed basis?
5. Since they need to be located close to where people live, should we expect that future institutional uses will occur in smaller building formats that don’t require large lot UGB expansions?
6. Should we assume that potential land assembly can help address large lot demand?
7. What strategies can be put in place to ensure that industrial land is used for job generating industrial purposes in order to protect public investments made to support industrial uses (such as transportation investments and planning efforts) and enhance regional competitiveness?

## Reconciliation of large lot supply and potential demand

It is likely that many future large parcel needs will need to be accommodated on vacant land rather than refill. Refill would appear to be a more likely source of capacity for smaller lot needs. The buildable land inventory for employment uses was amended by Metro's regional partners to incorporate local knowledge of available land. Details about the large lot buildable land inventory and a reconciliation of supply and potential demand are included in the urban growth report.

Attachment 1: Existing large employers (2006)

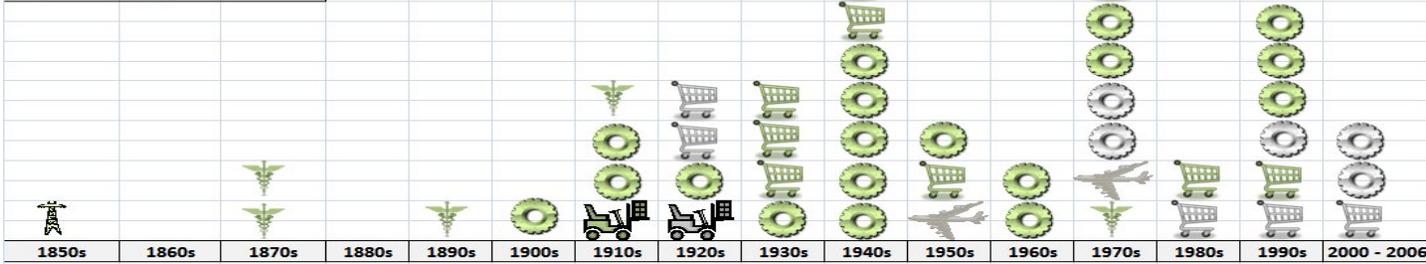
**Origins of the Portland metropolitan region's large, private sector employers by sector and decade (through 2006)**

Each icon represents one large private sector employer

Icons shaded green represent firms that originated in the Portland region

Large employers with unknown dates of origin in the Portland region

KEY (based on NAICS codes)	
	Utilities
	Hospital
	Manufacturing
	Warehouse/distribution </td
	Retail and wholesale
	Airline



**Caveats and methods:**

- This analysis has no effect on the forecast for future large lot demand. It is included to provide more information about how frequently large employers have emerged in the past.
- Identifying when an employer originally went into business in the Portland region requires some judgement calls. Some firms have relocated here while others originated here, but have undergone mergers, renaming, or relocation within the region. Other firms have been in existence in the region for many decades, but have substantially changed the nature of their business over the years.
- Spinoffs are listed in the year that the spinoff was founded
- Firms whose names have changed are listed under the year they originally went into business in the region
- Firms that bought out a pre-existing business and have continued to perform a similar business function are listed under the earlier business' date of origin
- Large employers are defined on the opposite side. Office uses are excluded for the reasons cited on the opposite side.
- Data sources: U.S. Bureau of Labor Statistics-2006 ES202 and various corporate websites (federal law prohibits identification of individual employers from ES202 data)

NAICS code	Building Type	Number of equivalent jobs on 20 acres																		
Ag, Mining																				
Manufacturing - Hi tech	Flex	600																		
Manufacturing - non-hi tech	Gen. Industrial	400																		
Wholesale	Warehouse, distribution	200																		
Retail	Retail	700																		
Transportation, Warehouse & Utilities	Gen. Industrial	400																		
Information	Office	Not included																		
Finance	Office	Not included																		
Real Estate	Office	Not included																		
Professional Services	Office	Not included																		
Management	Office	Not included																		
Admin, Waste	Office	Not included																		
Education	Institutional	1000																		
Health & Social Services	Institutional	1000																		
Arts, Entertain, Rec	Retail	700																		
Accomm & Food Service	Retail	700																		
Other Services	Retail	700																		
Government	Institutional	1000																		

**Method of defining "large employers"**

- Each North American Industry Classification System (NAICS) code is assigned to one of six general building types.
- A minimum employee number is assigned to each building type, assuming a 20-acre site (to control for site size).
- Employers listed in the 2006 ES202 data are analyzed using the above filter to identify those that qualify as large employers.
- Employers that emerged after 2006 are not included here

## Attachment 2: existing large lot employers

This section is included for information purposes only

### Existing large lot employers

This is a list of employers located on a taxlot or assemblage of taxlots of at least 25 acres. They were collected by looking at three different sources:

First, we looked at a set of "large employers" based on the 2006 ES-202 employment data to see if they were located on more than 25 acres of land. Different large employer criteria were established for each building type. We checked the area surrounding each employer to be sure to account for employers located on multiple taxlots. Next, we searched the current taxlot data for lots greater than 25 acres. Again, we checked the surrounding area for any additional taxlots being used by the employers associated with these large lots. We also checked the list of Industrial Cluster Employers from the City of Hillsboro (June 2009) for any additional large lot employers. Finally, this inventory includes additional large lot users on Port of Portland properties that were submitted by the Port.

\* Note: Coverage ratios were calculated for a sample of employers from each building type by measuring building footprints from aerial photographs by hand. These building areas were then compared to total land area for the employer, regardless of whether the individual taxlots were developed or not. There may be some error in the building footprint measurements, and the coverage ratios will be skewed downward for employers that own a lot of vacant land. This is particularly a problem with Flex employers, so FARs have been provided where available (see # below.)

# Note: Adjusted floor to area ratios (FARs) have been provided by the City of Hillsboro for selected employers. These data have been calculated based only on the developed parcels of land (excluding vacant parcels), so they should be more indicative of building density for these records than coverage ratios.

Institutional

NAICS (3 digit)	NAICS Description	Name	Market area	Acres	Number of Taxlots	Coverage ratio *	Adjusted FAR #
623	General Medical and Surgical Hospitals	Providence Portland Medical Center	inner north and east	31	45	-	-
622	General Medical and Surgical Hospitals	PROVIDENCE ST VINCENT MEDICAL CTR	inner westside	40	15	0.33	-
622	General Medical and Surgical Hospitals	LEGACY EMANUEL HOSPITAL & HLTH CNTR	central city	41	60	-	-
622	General Medical and Surgical Hospitals	Legacy Meridian Park Hospital	outer I-5 / I-205	68	10	-	-
622	General Medical and Surgical Hospitals	SUNNYSIDE HOSPITAL	outer clackamas	71	6	0.20	-
622	General Medical and Surgical Hospitals	PORTLAND ADVENTIST MEDICAL CENTER	inner north and east	75	53	-	-
				Total	326	189	
				Average	54.3	31.5	0.27

General industrial

NAICS (3 digit)	NAICS Description	Name	Market area	Acres	Number of Taxlots	Coverage ratio *	Adjusted FAR #
331	Iron and Steel Pipe and Tube Manufacturing from Purchased Steel	NORTHWEST PIPE COMPANY	inner north and east	25	1	-	-
331	Steel Investment Foundries	PCC STRUCTURALS, INC.	outer clackamas	28	2	0.16	-
311	Coffee and Tea Manufacturing	BOYD COFFEE COMPANY	east multnomah co	28	1	-	-
332	Fabricated Pipe and Pipe Fitting Manufacturing	TUBE SPECIALTIES CO INC	east multnomah co	28	1	-	-
324	Asphalt Shingle and Coating Materials Manufacturing	HERBERT MALARKEY ROOFING COMPANY	inner north and east	28	2	-	-
327	Lime Manufacturing	ASH GROVE CEMENT COMPANY	inner north and east	29	1	-	-
333	Optical Instrument and Lens Manufacturing	LEUPOLD & STEVENS INC	inner westside	29	5	0.25	-
331	Steel Investment Foundries	PCC STRUCTURALS, INC.	inner north and east	29	11	0.38	-
336	Heavy Duty Truck Manufacturing	FREIGHTLINER OF PORTLAND LLC	inner north and east	33	3	0.67	-
332	Saw Blade and Handsaw Manufacturing	OREGON CUTTING SYSTEMS	inner clackamas	35	4	0.23	-
322	Paper (except Newsprint) Mills	GEORGIA PACIFIC	east multnomah co	36	1	-	-
325	All Other Basic Inorganic Chemical Manufacturing	TOKYO OHKA KOGYO AMERICA INC	outer westside	39	1	-	-
335	Current-Carrying Wiring Device Manufacturing	JAE OREGON INC	outer I-5 / I-205	40	1	-	-
324	Asphalt Paving Mixture and Block Manufacturing	PARAMOUNT OF OREGON INC	inner north and east	42	3	-	-
327	Glass Container Manufacturing	OWENS BROCKWAY GLASS CONTAINER INC	inner north and east	48	6	-	-
336	Railroad Rolling Stock Manufacturing	GUNDERSON, INC.	inner north and east	55	6	0.39	-
331	Steel Foundries (except Investment)	COLUMBIA STEEL CASTING CO., INC.	inner north and east	80	5	-	-
336	Other Aircraft Parts and Auxiliary Equipment Manufacturing	THE BOEING COMPANY	east multnomah co	86	3	0.27	-
327	Other Structural Clay Product Manufacturing	MUTUAL MATERIALS CO. - PORTLAND OR	east multnomah co	88	2	-	-
331	Iron and Steel Mills	EVRAZ OREGON STEEL MILLS INC	inner north and east	147	1	0.17	-
327	Ready-Mix Concrete Manufacturing	ROSS ISLAND SAND & GRAVEL CO.	inner north and east	164	2	-	-
				Total	1,118	62	
				Average	53.2	3.0	0.31

Warehouse and distribution

NAICS (3 digit)	NAICS Description	Name	Market area	Acres	Number of Taxlots	Coverage ratio *	Adjusted FAR #
424	General Line Grocery Merchant Wholesalers	SYSCO FOOD SERVICE OF PORTLAND	outer I-5 / I-205	25	2	0.27	-
423	Metal Service Centers and Other Metal Merchant Wholesalers	LAMPROS STEEL	inner north and east	25	1	-	-
493	General Warehousing and Storage	G.I. JOES	outer I-5 / I-205	26	1	-	-
484	General Freight Trucking, Long-Distance, Less Than Truckload	USF REDDAWAY, INC.	outer clackamas	27	3	0.07	-
423	Construction and Mining (except Oil Well) Machinery and Equipment Merchant Wholesalers	THE HALTON COMPANY	inner north and east	29	2	0.19	-
493	Other Warehousing and Storage	G-P CONSUMER PROD NW LP	inner north and east	30	1	-	-
424	Men's and Boys' Clothing and Furnishings Merchant Wholesalers	COLUMBIA SPORTSWEAR USA CORPORATION	inner north and east	32	3	0.58	-
423	Other Professional Equipment and Supplies Merchant Wholesalers	VWR CORPORATION	outer I-5 / I-205	33	1	-	-
425	Wholesale Trade Agents and Brokers	PORTLAND AUTO AUCTION	inner north and east	38	2	-	-
493	General Warehousing and Storage	ALBERTONS	east multnomah co	54	2	-	-
493	General Warehousing and Storage	SAFEWAY STORES, INC.	outer clackamas	70	7	0.37	-
424	General Line Grocery Merchant Wholesalers	KROGER INC	outer clackamas	75	1	0.49	-
424	Drugs and Druggists' Sundries Merchant Wholesalers	GENENTECH INC	outer westside	75	5	-	0.19
488	Marine Cargo Handling	Oregon Paper Fiber		77	5	-	-
488	Other Support Activities for Road Transportation	SCHNITZER STEEL PRODUCTS	inner north and east	112	5	-	-
424	Footwear Merchant Wholesalers	NIKE, INC.	inner westside	452	17	0.06	-
				<b>Total</b>	<b>1,179</b>	<b>58</b>	
				<b>Average</b>	<b>73.7</b>	<b>3.6</b>	<b>0.29</b>

Flex

NAICS (3 digit)	NAICS Description	Name	Market area	Acres	Number of Taxlots	Coverage ratio *	Adjusted FAR #
334	Semiconductor and Related Device Manufacturing	Integrated Device Technology Inc (IDT)	outer westside	25	1	-	0.37
334	Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals	FEI CO	outer westside	27	1	0.13	0.39
333	Semiconductor and Related Device Manufacturing	MAXIM INTEGRATED PRODUCTS	inner westside	33	1	0.23	0.22
334	Semiconductor and Related Device Manufacturing	Triquint	outer westside	47	4	0.08	0.15
334	Semiconductor and Related Device Manufacturing	INTEL CORPORATION (Hawthorn Farm)	outer westside	53	1	-	0.27
334	Semiconductor and Related Device Manufacturing	INTEL CORPORATION (Aloha)	outer westside	59	7	-	-
334	Printed Circuit Assembly (Electronic Assembly) Manufacturing	MERIX CORPORATION	outer westside	68	3	-	-
334	Semiconductor and Related Device Manufacturing	SILTRONIC CORPORATION	inner north and east	79	1	0.13	-
0		Solarworld	outer westside	94	1	-	0.32
334	Semiconductor and Related Device Manufacturing	INTEL CORPORATION (Jones Farm)	outer westside	116	1	-	0.18
334	Other Computer Peripheral Equipment Manufacturing	XEROX CORPORATION	outer I-5 / I-205	136	2	0.15	-
334	Semiconductor and Related Device Manufacturing	MICROCHIP TECHNOLOGY INC	east multnomah co	140	2	0.07	-
334	Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals	TEKTRONIX, INC.	inner westside	166	7	0.13	-
334	Semiconductor and Related Device Manufacturing	INTEL CORPORATION (Ronler Acres & vacant)	outer westside	522	11	-	0.27
			<b>Total</b>	<b>1,565</b>	<b>43</b>		
			<b>Average</b>	<b>111.8</b>	<b>3.1</b>	<b>0.13</b>	<b>0.27</b>

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Office

NAICS (3 digit)	NAICS Description	Name	Market area	Acres	Number of Taxlots	Coverage ratio *	Adjusted FAR #
511	Software Publishers	Synopsys	outer westside	44	6	-	-
541		NMHG OREGON INC	east multnomah co	79	3	-	-
541	Computer Systems Design Services	MENTOR GRAPHICS CORP	outer I-5 / I-205	123	6	-	-
				<b>Total</b>	<b>246</b>	<b>15</b>	
				<b>Average</b>	<b>82.2</b>	<b>5.0</b>	

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No building type

NAICS (3 digit)	NAICS Description	Name	Market area	Acres	Number of Taxlots	Coverage ratio *	Adjusted FAR #
212	Other Crushed and Broken Stone Mining and Quarrying	NORTHFORK EXCAVATING, INC	outer I-5 / I-206	67	1	-	-
212	Construction Sand and Gravel Mining	ROGERS NORTHWEST INC	outer I-5 / I-205	213	13	-	-

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Large Hillsboro employers (from Industrial Cluster list) on smaller lots

NAICS (3dig)	NAICS Description	Employer (Notes)	MAname	Acres	Number of Taxlots	Btype	FAR
0		Should be Applied Materials?	outer westside	15	1	Flex	0.45
334	Other Computer Peripheral Equipment Manufacturing	Epson	outer westside	21	2	Flex	0.39
423	Industrial Supplies Merchant Wholesalers	Tokyo Electron America	outer westside	6	1	WD	0.31
334	Electronic Computer Manufacturing	Sun Microsystems	outer westside	12	2	Flex	0.29
334	Electronic Computer Manufacturing	Radisys	outer westside	11	2	Flex	0.43
334	Semiconductor and Related Device Manufacturing	Lattice Semiconductor Corporation	outer westside	16	5	Flex	0.41
333	Semiconductor Machinery Manufacturing	Novellus	outer westside	13	2	Flex	-

Port of Portland large lot users

493	Other Warehousing and Storage	G-P CONSUMER PROD NW LP	Port of Portland	55	2	WD	
494	Other Warehousing and Storage	GEORGIA-PACIFIC CONSUMER PRODUCT LLC	Port of Portland	54	2	WD	
424	Grain and Field Bean Merchant Wholesalers	COLUMBIA GRAIN	Port of Portland	38	1	WD	
		CASCADE STATION RETAIL	Port of Portland	27	1	Retail	
811	Car Washes	TOYOTA MOTOR SALES USA	Port of Portland	74	2		
493	Other Warehousing and Storage	AUTO WAREHOUSING INC	Port of Portland	120	1	WD	
425	Wholesale Trade Agents and Brokers	HUNDAI MOTOR AMERICA	Port of Portland	49	1	WD	
551	Corporate, Subsidiary, and Regional Managing Offices	FREIGHTLINER LLC	Port of Portland	27	2	Office	
		PORTLAND BULK TERMINALS	Port of Portland	83	4		
		BNSF/Portland Terminal		120			
		Willbridge/Lake Rail Yard		193			
		Union Pacific Albina Rail Yard		98			
		Union Pacific Brooklyn Rail Yard		37			
		Union Pacific Barnes Rail Yard		36			
		BNSF Ford lead		80			
		Portland Bulk Terminals/Canpotex @ Terminal 5					

Toyota @ Terminal 4	82
Freightliner Headquarters	27
Portland Shipyard on Swan Island	60
Shipyard Commerce Center on Swan Island	64
Knife River	48