

**Market Demand Analysis Report
for the
Citywide Industrial Lands
Inventory and Assessment**

Prepared for

**Portland Development
Commission**

by

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Summary

BACKGROUND

The *Market Demand Analysis Report* provides an economic context for the *Citywide Industrial Lands Inventory and Assessment* (Industrial Lands Report) and the *Employment Sites Predevelopment Analysis* (the Site-Evaluation Report) for the City of Portland.

The Industrial Lands Report was initiated because the Portland Development Commission (PDC) and the City of Portland are concerned about the availability of development-ready land for industrial uses in the City of Portland. The Industrial Lands Report identifies barriers to industrial development and suggests ways that public policy and investment can remove those barriers. Those policies, and the conceptual plans for different industrial and commercial sites evaluated as case studies in the Site-Evaluation Report, are the key products of the collective studies.

The *Market Demand Analysis Report* addresses the following questions:

- What is the demand (in terms of employment growth) for industrial and employment land in the region and in Portland?
- What is the supply of vacant industrial land in the region and in Portland?¹
- Is there adequate supply of vacant industrial and employment land to accommodate projected growth until 2010?
- What do recent vacancy and absorption rates of industrial and employment space suggest about the uses that will be seeking sites in the near future—sites that need to be ready for development?

FINDINGS

SUPPLY OF INDUSTRIAL LAND

- While the City of Portland has about 2,000 acres of vacant, buildable industrial land, Metro estimates that only 210 acres are “ready-to-build” (Tier A) in the near future.
- The districts with the most buildable vacant land (1,708 acres or 86% of the supply of vacant industrial land in the City of Portland) in the widest range of sizes are Columbia Corridor and Rivergate. However, Port policies that only allow leases of sites, or river-dependent sites,

¹ The data on land supply provided by PDC and the Bureau of Planning staff covers only land whose zoning allows what they define as industrial users. Thus, we did not have the data to do an evaluation of all employment land.

may make these locations less desirable compared to other districts in the City, and other cities in Oregon.

- There are 14 sites of vacant, buildable land between 20 acres and 50 acres, of which only six sites are outside of the Rivergate or Columbia Corridor districts. There are six sites above 50 acres, all of which are in the Columbia Corridor district.
- Only 278 vacant, buildable acres in 221 sites exist outside of the Rivergate and Columbia Corridor industrial districts.
- The URAs as a whole appear poised to accommodate a significant share of the City's employment growth, as 42% of vacant buildable industrial land in the City of Portland is located within the URAs.

DEMAND FOR INDUSTRIAL LAND

- There is a need for 700 acres of industrial land in the mid-term (2000-2010) and about 1,700 acres in the long-term (2000-2025). This equates to an average need of approximately 70 acres per year.
- This short-run assessment is based on findings of a speculative industrial and office market with a significant amount of excess space, reflected in unusually elevated vacancy rates and a high level of sublease space.

COMPARISON OF SUPPLY AND DEMAND

- While it may appear that the City has 300% more buildable industrial land than it will absorb over the next 10 years, and 25% more than it will absorb over the next 25 years, a number of constraints and less than desirable amenities reduce the apparent surplus.

Constraints include several policy issues that further limit the supply of land: Environmental protection zoning, environmental issues (unidentified and identified brownfield areas), land-lease only for Port-owned land, and existing river-dependent restrictions on many riverfront properties.

- The aggregate numbers do not address the diverse demands of different development types and users. What this study cannot address directly is whether the sites that are available will accommodate the type of firms that want to locate in Portland. If firms want to locate in Portland, but cannot find a suitable site for a price they can afford, or available in a timeframe they can accept, they will be more likely to turn to adjacent communities, or even to different states. This possibility increases over the long-term, as vacant industrial land in the City of Portland is developed, and industrial land in the newly expanded UGB is annexed and becomes development-ready in jurisdictions other than Portland.

- The current supply of land may not offer enough large parcels to meet the demand for large parcels. (A need for small parcels would be less of a concern, as most vacant land can be subdivided as needed.) Larger firms contain a significant amount of employment and require a significant amount of land in large parcel sizes. In other words, large parcels account for a higher share of total land need and employment than of the total number of parcels or firms.

IMPLICATIONS FOR POLICY

- **Few easily developed industrial sites, in all size categories.** Most of the easy to develop sites have already been developed. Many of the remaining sites have environmental, use, and ownership barriers. While these barriers are not insurmountable, they often make development more expensive, and in some cases, the financial implications in the context of the current market make the parcels undevelopable in the short-term.
- **Lack of large industrial sites.** Numerous studies (RILS and Metro's Urban Growth Report) have documented a lack of large (50+ acre) sites in the Portland Metro area. On one hand, the City may want to consider initiating activities that result in land assembly creating large, vacant, industrial sites. On the other hand, brokers warned of adding additional restrictions on properties, though they recognized the need to preserve large industrial sites to secure major employers. This may continue to be a controversial issue for all parties involved.
- **Lack of clarity about the uses and purposes of industrial land.** Clarifying what uses the City wants to get on industrial land, why those uses are desirable (and, potentially, worthy of City investment to ensure that they locate in the City), and to what degree the supply of development-ready industrial land is a constraint on their location decisions would help target the City's investments.
- **Uncertainty in the permitting process.** Developers need to know what they can do with their land. Permitting time, costs, and uncertainty all add costs to the development. City departments (such as the Bureau of Development Services, Bureau of Planning, and PDC) could make use determinations on sites that currently have zoning and entitlements ambiguities, as well as agreement on transportation access and offsite improvement requirements.
- **Creating industrial development opportunities through redevelopment is expensive, and may be cost prohibitive in the current market.** As vacant land is developed in Portland, the City will have to rely on redevelopment to retain and expand existing business, and attract new employers. Redevelopment is often much more expensive than Greenfield development. A sample of redevelopment costs include the costs of brownfield cleanup,

environmental protections, seismic upgrades, parking requirements, and the costs of replacing or upgrading degraded infrastructure.

A detailed discussion of these and related public policy and investment issues, and recommendations for actions, is contained in the final Industrial Lands Report (ECONorthwest for PDC, July 2003).

BACKGROUND

The *Market Demand Analysis Report* (the Market Demand Report) provides an economic context for the *Citywide Industrial Lands Inventory and Assessment* (Industrial Lands Report) and the *Employment Sites Predevelopment Analysis* (the Site-Evaluation Report) for the City of Portland.

The Industrial Lands Report was initiated because the Portland Development Commission (PDC) and the City of Portland are concerned about the availability of development-ready land for industrial uses in the City of Portland. Such uses include heavy and light industry, and warehouse and distribution. These uses typically occupy buildings that are specialized for heavy or light industrial uses, warehouses, or flex space (which allows a combination of industrial and office uses, often in an industrial park).

The purpose of the Industrial Lands Report is to increase the supply of industrial land (primarily) in Portland that the private market perceives as ready for development. It attempts to achieve that purpose by identifying barriers to development and suggesting ways that public policy and investment can remove those barriers. Those policies, and the conceptual plans for different industrial and commercial sites evaluated as case studies in the Site-Evaluation Report, are the key products of the collective studies.

The Industrial Lands Report consists of three documents:

- *Summary Report*. This report summarizes the findings of the following two technical reports, and expands on strategies and policies that the City and PDC might consider to make more job-supporting land available for development faster. The technical reports are:
- *Market Demand Analysis Report*. This document. Its main purposes are to provide (1) an economic context for evaluating land-supply issues in general, and (2) market information to ensure that the concept plans for the case-study sites are informed by likely market demand.
- *Employment Site Predevelopment Analysis Report*. This document provides data on each site selected for evaluation and identifies site, urban renewal area, and policy issues that impact development potential for a particular site or area. A Site Summary is provided for each site which includes a code and site analysis, improvements recommended to make the site more 'project ready,' conceptual site plan(s) illustrating potential development and the number of jobs that could be generated, and information regarding costs associated with infrastructure improvements and the proposed concept plan(s). Site constraints and policies that impact or direct development are identified and recommendations on strategies to make each site more 'project ready' are discussed.

This document, the *Market Demand Analysis Report* addresses the following questions:

- What is the demand (in terms of employment growth) for industrial and employment land in the region and in Portland?
- What is the supply of vacant industrial land in the region and in Portland?¹
- Is there adequate supply of vacant industrial and employment land to accommodate projected growth until 2010?
- What do recent vacancy and absorption rates of industrial and employment space suggest about the uses that will be seeking sites in the near future—sites that need to be ready for development?

ECONorthwest (ECO) prepared this report, with assistance from Johnson Gardner and Group Mackenzie. Staff at the Portland Development Commission and the City of Portland Bureau of Planning provided data for and commented on drafts of this report.

METHODS

This study uses the following methods:

- **Review of previous reports.** ECO reviewed several reports for this study (e.g., PDC's Economic Development Strategy, the Regional Industrial Lands Study, Metro's Urban Growth Report) to get regional and City information about land supply and demand conditions.
- **Employment analysis.** ECO used data from the Oregon Employment Department and the U.S. Bureau of Labor Statistics to describe national, state, and regional employment by sector. ECO also used covered employment data from the Oregon Employment Department to describe employment at the County level. For forecasting demand, the analysis then relied primarily on official regional employment forecasts by Metro for years 2000 to 2025, with unofficial sub-regional allocations as suggested by Metro's integrated land use and transportation model, "Metroscope."
- **Industrial and office market analysis.** Current market conditions and trends were derived from a variety of sources. Current inventory data was derived from CoStar, with historical data trends provided by RealNet and Norris, Beggs & Simpson. Information on projects either under construction or planned and proposed was provided by Norris, Beggs & Simpson. Land sales comparables were provided by CoStar.
- **Short-term demand models.** The short-term demand models for industrial and office space utilized employment distribution information from the Oregon Employment Department's covered

¹ The data on land supply provided by PDC and the Bureau of Planning staff covers only land whose zoning allows what they define as industrial users. Thus, we did not have the data to do an evaluation of all employment land.

employment data. Interim forecasts of employment growth by sector through 2007 are based on forecasts by Johnson Gardner.

- **GIS analysis.** The City of Portland provided a preliminary version of its industrial land inventory. The database includes data from several sources. The primary source is the Metro RLIS database. Tax lot attributes as well as acreages were derived from RLIS. The vacant land is based on Metro's inventory.
- **Real estate broker input.** Real estate brokers specializing in industrial land from Norris, Beggs & Simpson were consulted throughout this study. They provided information on specific sites, and professional guidance regarding concept plans and policy issues.
- **Preliminary site analysis.** Preliminary site analysis review by consultants and PDC staff raised a number of policy issues that are explored in Chapter 5.

ORGANIZATION OF THIS REPORT

The remainder of this report is organized as follows:

- **Chapter 2: Industrial Land Supply** reviews the buildable vacant industrial and employment land supply from RLIS data at the regional level and the Bureau of Planning's Industrial Inventory database at the City level, assessing the ability of the City's industrial land supply to accommodate forecasted employment.
- **Chapter 3: Long-term Economic Outlook for the Region and the City** provides context for how much employment growth of what type is going to demand built space and, therefore, land in the region and the City.
- **Chapter 4: Short-term Demand Forecasts** analyzes the past and current market information including prices, vacancy, absorption, mix of uses, and tenants to provide short-term forecasts of absorption.
- **Chapter 5: Implications for Industrial and Employment Development** makes the base forecast of demand, discusses qualitatively (and quantitatively when applicable) how that demand is likely to disperse itself in Portland and describes market demand policy issues raised by the analysis.
- **Appendix A: Industrial Database: Detailed Tables** provides detailed tables of the City of Portland Bureau of Planning's Industrial Inventory database.
- **Appendix B: Short-term Industrial and Office Space Demand Analysis** provides detailed tables of employment trends in the Portland-Vancouver Metropolitan area.

This chapter presents an overview of the *industrial* land supply in the region and an industrial land inventory for the City of Portland. Thorough understanding of the current conditions of the City's industrial land will provide a critical foundation on which to base local, regional, and state efforts to ensure that there is adequate development-ready land. The reason for the concern about land supply is straightforward. Without an adequate supply of *buildable* land (land that is vacant and without natural or policy constraints that preclude development by making it uneconomical or illegal), the economic growth that is forecasted for the region and the City is unlikely to occur: the cost of building space to accommodate all that growth will increase to levels that inhibit the growth.

The main issues for the industrial land inventory are:

- What is the total industrial land, in the region and in the City by district and by site size?
- How much vacant industrial land is there in the region and in the City by district and by site size (= total acres – developed acres)?
- How much buildable industrial land is there, by district, by site size (= vacant acres – acres constrained by environmental or policy factors)?
- How much development-ready industrial land is there, and where is it located in the City? (buildable acres – acres that cannot be serviced in 6-12 months, or that is being held off the market for other reasons).
- Where are potentially redevelopable sites, and how many?

This chapter is a review of the regional and local industrial land supply. Regional land supply, which includes Metro estimates and the RILS study, is covered in the following section. The regional summary is followed by the preliminary findings of the City of Portland industrial database. It concludes by summarizing the supply of vacant buildable acres to accommodate the forecasted employment.

METHODS

This chapter produces the desired description of regional and City industrial land supply by summarizing from two recent efforts to describe that supply.

- Regional industrial land supply information is available from both Metro and from the 1999 Regional Industrial Land Supply (RILS) Study. Some of the demand for industrial and employment land for the City of Portland may spill over into nearby communities if they provide the amenities firms are looking for at a more competitive price than Portland sites. This is not a study of Portland's relative

competitiveness compared to neighboring communities, however competitive pricing is a critical factor in understanding supply.

- Metro Analysis of UGB impact on Industrial and Employment Lands. ECO used the Metro Memorandum titled “Evaluating the Industrial Land Supply with Projected Demand”¹ and the Urban Growth Report: An Employment Land Needs Analysis² for information regarding the impact of UGB expansion.
- The City of Portland has recently (June 2003) developed an Industrial Land Inventory. The database represents all industrial sites in Portland and includes 6,736 tax lots and 4,022 sites (combinations of one or more tax lots) that are fully or partially designated for industrial use.

A more detailed discussion of data sources and their limitations follows.

REGIONAL LAND SUPPLY

METRO ESTIMATES OF BUILDABLE NON-RESIDENTIAL LAND

Metro estimates the amount of buildable non-residential land for all areas within the regional UGB. Metro’s definition of **buildable land** is *vacant land* (including portions of built tax lots where the unbuilt portion is greater than one-half acre), *minus* (a) *environmentally constrained land*, including land in floodplains (covered by Title 3 of the regional framework plan), with wetlands, or with steep slopes; (b) *government-owned land*; (c) *church and fraternal organization-owned land*; (d) *lots less than 3/8-acre*; and (e) *major utility easements*.

The theory and practice of measuring buildable land is well developed in Oregon. Definitions are extremely important. Here are some things to note about Metro’s definition:

- Land in floodplains is not considered buildable. Nonetheless, we know that things get built in flood plains. There are risks, and federal flood insurance programs may not cover the development, but with proper site preparation (e.g., raising foundations above the administratively defined flood level) development can occur. Such development is more likely to be lower-value, land-intensive use, but that describes many industrial uses.
- Beyond the 3/8 acre threshold, tax-lot size or configuration is not part of the definition.
- The proximity or future availability or cost of public services is not part of the definition.

¹ Memo to David Bragdon, Metro Council President from Lydia Neill, Principal Regional Planner, “Evaluating the Industrial Land Supply with Projected Demand,” May 14, 2003.

² Metro, “2002-2022 Urban Growth Report: An Employment Land Need Analysis,” Portland, OR, August 2002.

- Ownership characteristics or owner preferences are not part of the definition.

Metro's definition is consistent with state law and a good one for long-run planning purposes, given the cost of data collection. But it does not address well the current concerns about the *short-run availability of development-ready sites*. That readiness obviously depends on attributes that Metro has not used to define buildable land:

- Parcel size and configuration
- Service availability
- Ownership patterns
- Development preferences of owners.

The Metro data must be interpreted in that context. The idea that buildable land can be in different states of readiness for developments was introduced in the RILS Study (Tiers A – D) and tries to address some of these issues.

Metro's estimate as of April 2002 (Table 2-1) was that the UGB contains about 8,200 gross acres of buildable industrial land, 1,700 acres of buildable commercial land, and 1,400 acres of buildable mixed-use land. Multnomah County has over half the buildable industrial land in the region, and Portland has over 60% of the buildable industrial land in Multnomah County. The estimate of 8,200 acres of vacant, buildable industrial land is within range of a subsequent estimate by Metro in its Urban Growth Report (UGR 2002) of 8,677 acres of gross vacant, buildable acres of industrial land.³ The total gross vacant, buildable acres in Table 2-1 of 11,347 for all employment land is also within range of the 12,061 acres in the UGR 2002.

³ Each of the adjectives is important. *Gross* means before buildable land is reduced to account for streets other public facilities. *Vacant* means not developed. *Buildable* means that the vacant land does not have major physical or policy constraints that are typically considered in planning studies to make the land unbuildable.

Table 2-1. Buildable non-residential land (acres), Metro region, April 2002

Jurisdiction	Industrial	Commercial	Mixed Use	Total
Washington Co. Total	3,240	1,213	903	5,355
Beaverton	169	69	125	362
Cornelius	91	0	38	130
Durham	0	4	0	4
Forest Grove	179	34	1	214
Hillsboro	1,530	635	332	2,497
King City	0	7	0	7
Sherwood	209	96	0	305
Tigard	86	73	30	188
Tualatin	523	71	0	594
Wilsonville	255	136	0	391
Washington Co. (unincorp.)	198	89	376	663
Multnomah Co. Total	4,380	372	373	5,124
Fairview	111	15	57	183
Gresham	1,152	62	206	1,420
Portland	2,682	215	83	2,980
Troutdale	248	72	27	347
Wood Village	50	3	0	53
Multnomah Co. (unincorp.)	136	5	0	141
Clackamas Co. Total	597	163	107	867
Gladstone	66	18	0	84
Happy Valley	0	4	0	4
Lake Oswego	0	45	4	49
Milwaukie	10	12	0	23
Oregon City	80	38	0	118
West Linn	10	36	0	46
Clackamas Co. (unincorp.)	430	10	103	544
All Jurisdictions	8,216	1,748	1,383	11,347

Source: ECONorthwest, based on data from Metro Data Resource Center, April 2002.

Note: "Commercial" includes zones that allow primarily office and retail uses. "Industrial" includes zones that allow industrial uses, including "industrial mixed use" zones, which allow office and retail uses in addition to industrial uses, but exclude residential uses. The "Mixed Use" category includes zones that allow residential uses in addition to office and retail uses; they generally exclude industrial uses.

REGIONAL INDUSTRIAL LAND STUDY

The regional and County totals from the Metro analysis may seem like a lot of buildable land, but most of it is in smaller parcels rather than sites of 50 acres or greater. Moreover, land that is technically buildable may not actually be ready to develop because of various constraints.

Phase 2 of the *Regional Industrial Land Study*, completed in December 1999, found that only about 25% of the region's *buildable* industrial land supply (i.e., the site constraints like slopes and floodplains had already been backed out of the inventory) was categorized as "**Tier A**," which might be considered an approximation of "**development-ready**" land. Tier A includes vacant sites over one acre (after primary environmental constraints are deducted) that are competitively priced and have the least number of known

development constraints. Sites of this type total about 2,400 acres—half of which was in Clark County, Washington. Table 2-2 shows the findings by county. According to RILS, only 20% of Multnomah County’s land that is technically buildable may be ready to develop without serious constraints.⁴

Table 2-2. Industrial land supply, with and without constraints, December 1999

County	Total Net Buildable Acres	“Tier A” (most likely to develop) Acres
Clackamas	865	47
Multnomah	2,572	442
Washington	1,766	483
Columbia	883	70
Yamhill	243	0
<i>Oregon Subtotal</i>	<i>6,329</i>	<i>1,042</i>
Clark	2,869	1,345
Total	9,198	2,387

Source: Otak, Regional Industrial Land Study, Phase 2, December 1999.

The constraints that keep the majority of buildable acres from being “ready-to-develop” were classified by the RILS study in three tiers.

- **Tier B** lands are defined as vacant sites that are constrained by unstable soils, transportation access, farm tax deferral, corporate ownership (for internal expansion only) and or/lease-only provisions by the property. This category also includes land that is being held by port authorities with lease/sale constraints tied to specific uses that are marine- or aviation-related. This tier picks up corporate properties that have “land banked” for internal expansion, such as Nike and Intel.
- **Tier C** lands are defined as vacant infill sites (greater than one-half acre and less than one care) and “commercial valued” sites (greater than one-half acre) that are currently assessed above \$4.40 per square foot of land area. This category would tend to pick up industrial land that is actively being planned for commercial or mixed use. In the context of the Industrial Lands Report, that may reduce its potential as industrial land, but it is still land available to support employment growth.
- **Tier D** lands are defined as redevelopable land, with more than \$1,000 in improvements, but overall land and improvement value that equates to \$3 or less per square foot of parcel land area. Only parcels five acres or larger are included. This includes large sites that have not been partitioned. A property participation adjustment of 33% was

⁴ Note that the amount of buildable land in Table 2 differs from that in Table 1 because of methodology differences. For example, Table 1 includes vacant land from tax lots that are only partially vacant, while Table 2 does not; also, the analysis in Table 2 excludes land with steep slopes, while Table 1 does not. Both these factors lead to a greater supply of buildable acres in Multnomah County in Table 1 (Metro’s vacant land analysis) than in Table 2 (the Regional Industrial Land Study).

assumed to account for owners who are unwilling (or unable to afford) to redevelop their properties for industrial reuse despite being included in Tier D.

In Tiers A, B, and D, a net-gross adjustment factor of 27% was applied to account for public uses (primarily, the amount of the land that would be used for streets), and in Tier C (infill) a 15% factor was included.

Table 2-3 shows the share of land in each of the Tiers considered by RILS.

Table 2-3. Industrial land supply, by Tier, Metro region, December 1999

County	Tier A	Tier B	Tier C	Tier D
Clackamas	47	651	0	166
Multnomah	442	1,960	87	83
Washington	483	1,205	26	53
Columbia	70	590	0	223
Yamhill	0	238	0	5
<i>Oregon Subtotal</i>	<i>1,042</i>	<i>4,644</i>	<i>113</i>	<i>530</i>
Clark	1,345	1,163	71	290
Total	2,387	5,807	184	820

Source: Otak, Regional Industrial Land Study, Phase 2, December 1999.

According to the RILS analysis, Multnomah County has more “ready-to-build” land than some other Oregon counties in the region, but 442 acres is not very much, especially considering that this is not all contiguous land. Table 2-4 shows the distribution of parcels by size, according to RILS. It shows that there is a paucity of large developable parcels. However, RILS focused on tax lots regardless of ownership; that is, it did not consider the fact that adjacent tax lots under the same owner could be considered as a larger parcel. Thus, all else being equal, the RILS analysis may tend to understate the prevalence of larger developable parcels. On the other hand, the recent trend has been for large parcels of contiguous tax lots under one ownership to be further subdivided into smaller tax lots, often with multiple ownership.

Table 2-4. Distribution of buildable industrial parcels by size (acres) and location, Metro region, December 1999

County	1 or less	1 to 5	5 to 10	10 to 20	20 to 50	50 to 75	75 to 100	100 to 200	200 or more
Clackamas	69	133	55	16	7	1	0	0	0
Multnomah	122	248	107	62	41	4	3	4	0
Washington	35	133	57	40	30	2	1	2	0
Clark	132	229	120	50	38	6	4	2	1
Total	358	743	339	168	116	13	8	8	1
<i>Distribution</i>	<i>20%</i>	<i>42%</i>	<i>19%</i>	<i>10%</i>	<i>7%</i>	<i>1%</i>	<i>0.50%</i>	<i>0.50%</i>	<i>0.10%</i>

Source: Otak, Regional Industrial Land Study, Phase 2, December 1999.

2002 URBAN GROWTH BOUNDARY EXPANSION

Metro expanded the Portland Metropolitan UGB in December 2002. The Land Conservation and Development Commission approved the expansion in June 2003. Metro added 2,671 gross vacant buildable industrial acres. When added to a previous total of 6,578 gross vacant buildable acres (GVBA) of industrial land, it creates a total regional supply of 9,249 GVBA of industrial land.⁵

The starting point of 6,578 GVBA (pre-UGB expansion) is lower than the 8,200 to 8,700 GVBA from Metro cited earlier in this chapter. Based on ECO's review of the supporting spreadsheet and discussions with Metro staff, it appears that Metro began with roughly 8,200 GVBA, subtracted 3,146 GVBA for commercial encroachment, then added 1,553 back GVBA as a "regional significant industrial area assumption"—that is, an assumption that ongoing discussions on Title 4 (protecting industrial lands from commercial encroachment) will lead to less industrial land being consumed by commercial uses.

In follow-up work, Metro estimated⁶ that of this 9,249 GVBA of industrial land in the region, 2,131 GVBA are in census tracts roughly corresponding to Portland (Table 2-5).

It is unlikely that industrial and employment lands brought into the UGB will be available in the short-term (within the next three years), as jurisdictions need to annex these lands, and provide services.

Table 2-5. Total supply of vacant, buildable industrial land (in gross acres), Portland Metro UGB, 2003 (includes Dec. 2002 UGB expansion areas)

	under 1	1 to 5	5 to 10	10 to 25	25 to 50	50 to 100	100	Total Supply
Sunrise	77	595	510	659	237	127	0	2,204
East Metro	68	569	309	435	381	141	0	1,904
Portland	150	496	480	438	498	69	0	2,131
South Metro	52	280	287	219	172	0	0	1,011
Westside	53	449	303	407	476	199	111	1,998
Total	400	2,388	1,889	2,159	1,765	536	111	9,249

Source: Metro, Lydia Neill memo to David Bragdon, May 14, 2003.

Note: The Portland Metro UGB includes 24 cities and unincorporated areas identified for urban expansion that comprise the urban areas in Clackamas, Multnomah, and Washington Counties.

PORTLAND LAND SUPPLY

This section characterizes the supply of industrial land in the City of Portland. Since much of the base information comes from the City's Industrial Land Inventory, we start with a description of that database and some of its limitations. We then describe the industrial land supply,

⁵ From spreadsheet "UGR_UGBa.xls" from Dennis Yee of Metro's Data Resource Center, June 30, 2003.

⁶ Metro, Memo from Lydia Neill, Principal Regional Planner to David Bragdon, Metro Council President, May 14, 2003.

supplementing the information from the database with information from other sources.

PORTLAND INDUSTRIAL LANDS DATABASE

The buildable land inventory for the City of Portland presented in this chapter is based on an industrial lands inventory database developed by the City of Portland. Our analysis of the database includes only vacant and buildable *industrial* land and potentially redevelopable industrial land. Chapters 3 and 4 review past, current, and forecasted demand for industrial land where data is available, but in places they deal with demand for *total employment* land. Also, Chapter 4 deals primarily with demand for building space rather than demand for land. Land demand can be inferred from building space demand, but the two are not identical.

The definition of industrial land used in the inventory requires explanation. It is *not* the narrow definition typical of most buildable lands studies in Oregon: i.e., land that has an industrial plan or zone designation. The City broadened it to include land that is in some of its “E” zones (Employment) where many types of industrial uses would be permitted. That is a reasonable way to answer the question “How much land do businesses engaged in industrial activities in the City have to choose from?” but it will clearly result in a much larger estimate of industrial land in the City than Metro estimates, because Metro bases its analysis on the underlying zone name (i.e., just “industrial”).

The site database under development by the City of Portland was not final at the time this study was completed. The preliminary version provided to ECO, however, has data that are relevant to this study. The database represents all industrial *sites* in Portland. Sites, as represented in the City’s database, are one or more adjacent tax lots in a single ownership.⁷ The City identified sites by using the ArcView “dissolve” procedure, which allows contiguous polygons (in this case, tax lots) to be merged into a single polygon. The database includes 6,736 tax lots and 4,022 sites (combinations of one or more tax lots) that are fully or partially designated for industrial use.

ECO worked closely with City and PDC staff in reviewing and verifying the database. PDC staff provided ECO with updates of the database as their work progressed. The summaries in this chapter represent the preliminary Portland Industrial Land Inventory, as it existed in early June 2003. Those limitations notwithstanding, it is ECO’s assessment that the database is relatively clean and is adequate for the purposes we put it to in this chapter: not site-specific analysis, but a broad overview of land supply (with some limitations, to be noted).

⁷ The City’s definition of sites stems from the practicalities of the dissolve feature in ArcView rather than what might be considered by a developer as a site. In short, ownership is not the only criteria that could be used to define an industrial site.

The database includes data from several sources. The primary source is the Metro RLIS (Regional Land Information System) database. Tax lot attributes as well as acreages were derived from this Metro database. The vacant land is based on Metro's vacant land inventory. Metro's process only looks at vacant areas with a minimum of .5 acres and includes portions of tax lots with development that could accommodate additional development. While Metro's approach to vacant lands inventory has limitations, it is the most sophisticated applied in any jurisdiction we have worked with. Moreover, our use of Metro's vacant land coverage ensures consistency with the regional studies that Metro has completed.

ECO estimated *vacant, buildable* land by subtracting areas with floodplain, wetland, and slope constraints on the vacant portions of sites. Note that these constraints may not be absolute in the sense that they may not be backed by policies that prohibit development. Under any circumstance, however, they will increase development costs, making development of constrained areas less attractive.

Another issue is the relationship of this database to the Regional Industrial Lands Study (RILS). That study included detailed classifications of industrial lands in the Metro region. The City included the RILS tier classifications in the database.

It is challenging to make an assessment of how well the RILS data and the City data correspond, because they are measuring different things in somewhat different ways. The City study looks at all industrial land, including land with non-industrial zoning when the zoning is judged to accommodate by right most industrial uses, while RILS focuses only on land that is industrially zoned. Also, the City study estimates both buildable vacant land and total vacant land, while RILS only presents information on buildable vacant land. Moreover, RILS has a different definition of vacant land; as discussed above, it does not include vacant portions of tax lots that are partially developed. The comparison that follows should be viewed with those differences between RILS and the City study in mind.

RILS estimated a supply of buildable land (Tiers A-D) as 2,572 for Multnomah County. RILS did not report information for the City of Portland. But the database Metro provided the City includes Metro's own implementation of the RILS tier definitions. Using that information, the database yields an estimate of 1,931 acres vacant, buildable land in the City of Portland. These numbers do not seem contradictory, as the City is smaller than Multnomah County. Moreover, the City's database allows it to use various estimates of acres of constrained land, by site, to make an independent estimate of the amount of vacant, buildable land (total vacant – constrained vacant = buildable vacant). The result: 1,987 acres.

These estimates are all close to one another and give us some confidence to say that *there are roughly 2,000 acres of land that is zoned to allow*

*industrial uses, is vacant, and is not constrained by floodplains, wetlands, riparian buffers, or steep slopes.*⁸

The “Tier” designations are a further refinement on just how buildable this 2,000 acres of buildable land is. In terms of “Tier A” land (the most ready-to-build, as opposed to merely “eventually buildable”), RILS estimated that Multnomah County had 442 acres. Applying the RILS definitions to the City’s database gives 210 acres in the City of Portland. This suggests that while Portland has about three-quarters of Multnomah County’s buildable land, it has less than half of the Tier A land. These comparisons seem reasonable, despite the methodological differences between the RILS definition of what is considered vacant, and Metro’s definitions (which are used in the City’s database).

The City merged employment data from the Employment Security (ES) 202 database. The ES-202 data allow firms and employees to be geographically coded to sites.

ECO used the database to estimate land and total value per square on vacant sites. The value data in the database comes from the Multnomah County Assessor. While this is the best available data source, these data should be interpreted with caution. We found considerable variability in value data—even among sites within the same geographic area.

Our conclusion is that using this preliminary version of the database at this point to create a ranking of the “readiness” of sites for development would not be worthwhile. The database does not contain all the relevant utility data and other key site characteristics. When complete, it would be relatively easy to develop algorithms that could be used to classify and rank land in terms of its readiness for development

INDUSTRIAL LAND SUPPLY

CITY-WIDE TOTALS

The previous section provides ample warning about the potential limitations of the data that follow. Given those limitations, however, this section presents a summary of the preliminary industrial land inventory for City of Portland. Appendix A includes detailed tables of industrial land derived from the database.

The City of Portland estimates that there are 4,022 industrial sites containing a total of 16,623 acres, as shown in Table 2-6. Of those acres 4,262 acres are vacant (about 25%). But over half (2,274 acres) of those vacant

⁸ Going back to Metro’s analysis reported in Table 2-1, it estimated 2,682 gross vacant, buildable acres for the City of Portland. This is farther from the mark (about 33% higher). There are many possible explanations. Given the scope of this study, we interpret that number to support an estimate of around 2,000 gross vacant, buildable acres of industrial land in the City of Portland.

acres are constrained by floodplain, wetlands, steep slopes (>10% grade), or with a historic or conservation designation. That leaves 1,987 vacant, buildable acres for industrial development. This is similar to the 1,931 acres that would be included in RILS definition of Tiers A through D (that is, all buildable land, with various non-prohibitory constraints), as we might expect given that the starting point is the same (vacant land in the City according to Metro).

Table 2-6. Summary of industrial land size, Tier, and value, City of Portland, June 2003

Number of Sites	4,022.0
Total Acres	16,622.7
Developed Acres	12,361.2
Vacant Acres	4,261.5
Vacant Const Acres	2,274.4
Vacant Buildable Acres	1,987.1

Acres by Classification

Tier A - > 1 ac vacant parcels, most ready to build	209.9
Tier B - vacant with various issues	1,302.2
Tier C - < 1 acre (refill) or valued @ 33% above market	293.7
Tier D - Redevelopable	125.6

Land Value

Average Land Value/Sq Ft	\$8.54
Average Vacant Land Value/Sq Ft	\$4.93
Average Total Value/Sq Ft	\$23.41

Source: Preliminary data from the City of Portland Industrial Inventory, June 2003. Analysis by ECONorthwest.

Note: Acres by classification do not sum to vacant acres. "Const" equals "constrained" and "ac" means "acres."

Even if one accepts the database as perfectly accurate (it cannot be, for several reasons) or close enough, some of the results are debatable because of the assumptions. For example, the database assumes that a slope of less than 10% is buildable; that may be true for office uses; that may not be true for warehouse and distribution uses. For another example, the assumption is that all land in the floodplain is absolutely unbuildable: in fact, under certain conditions building can (and does) occur in the floodplain.

The City of Portland is currently updating environmental overlay zones. It is highly likely that the proposed E-Zones⁹ will constrain additional land and reduce the total amount of vacant, buildable industrial and employment land in the future. The policy issues related to the proposed E-Zones are

⁹ Since 1989, the City of Portland has protected approximately 19,000 acres of environmentally sensitive areas with an environmental overlay zone. The City is proposing to increase the application of the overlay zones to additional properties and change the regulations to enhance protections for Portland streams and natural areas. Approximately 5,100 acres will be added to the overlay zones, though the City has not determined how much of this area would be in industrial areas.

discussed further in Chapter 5 of this report, in the Site Evaluation Report, and in the Industrial Lands Report.

The RILS report identified 442 Tier A acres in Multnomah County, almost half of which is located in the City of Portland. Applying the RILS Tier method to the City of Portland database yields 210 Tier A acres in the City of Portland. If all 210 Tier A acres in the City of Portland fall within the roughly 2,000 buildable vacant acres identified by the City of Portland,¹⁰ then only about 10% of the supply of buildable acres fall into the easiest category to develop. Methodological differences notwithstanding, it seems clear that Tier A lands (those that are most ready for development) make up a relatively small portion of the City's vacant buildable land.

Based on assessment data, developed industrial land averages \$8.54 per square foot, and vacant industrial land averages \$4.93 per square foot. The average total value of land with improvements in industrial areas is \$23.41 per square foot. This is an interesting finding, given that the RILS Tier C definition includes vacant infill sites (greater than one-half acre and less than one acre) and "commercial valued" sites (greater than one-half acre) that are currently assessed above \$4.40 per square foot of land area. About 470 of the 745 vacant tax lots with land values above \$0 have assessed values below \$4.40 per square foot. These 470 sites account for about 908 buildable acres, or about 45% of the total buildable area. Thus, a significant number of sites would be classified as Tier C using the RILS definition.

DISTRICT SUBTOTALS

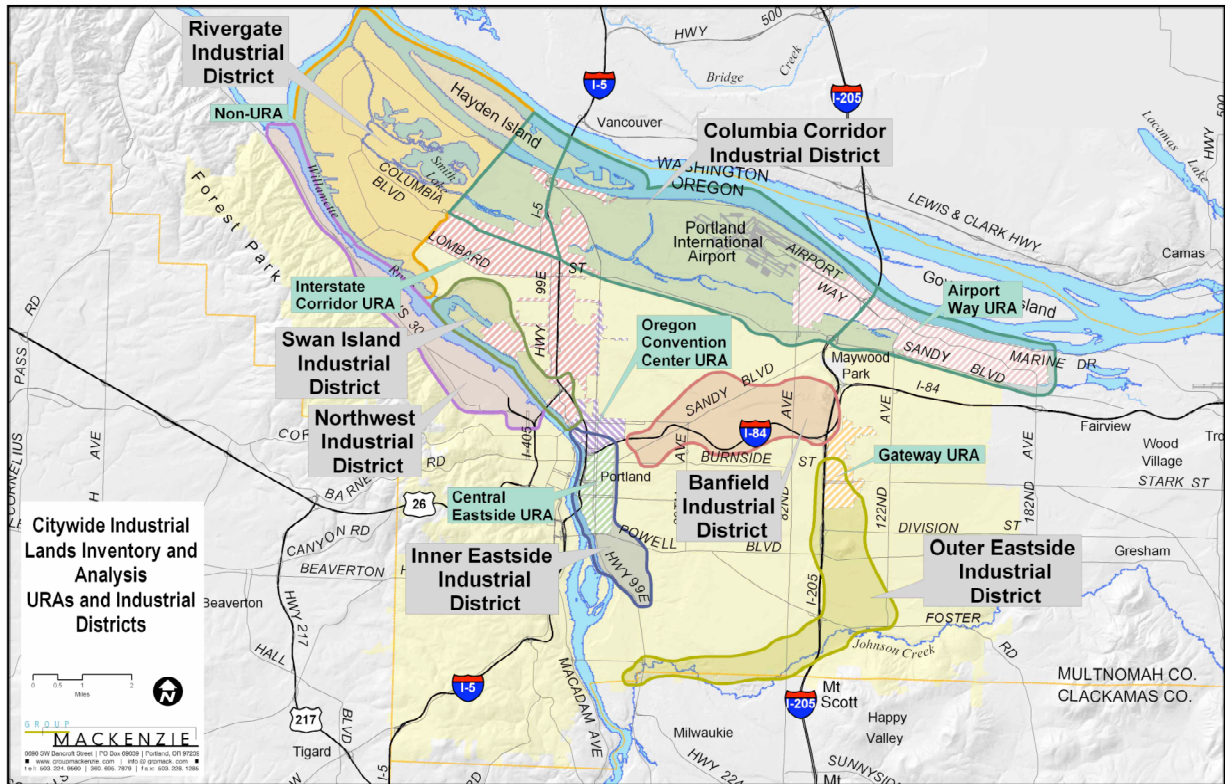
The distribution of the vacant, buildable acres of land that can be developed for industrial purposes varies widely across the City. Figure 2-1 shows the distribution of districts and intersecting urban renewal areas (URAs) that contain case study sites.¹¹ Table 2-7 shows vacant buildable lands by district. Columbia Corridor, located in the far Northeast corner of the City, is the largest district with over half of the total industrial land (8,428 acres). Rivergate accounts for 4,154 acres of industrial land, followed by Northwest Industrial district (1,759 acres), and Swan Island (1,042 acres). The Inner Eastside and Swan Island are largely built out, with only 2% and 3% of their total acreage (respectively) classified as buildable vacant land.

¹⁰ It is reasonable that they would, as the application of Tiers A through D to the City's vacant land database yields 1,790 buildable vacant acres—a number very close to 1,987,

¹¹ Urban renewal areas (URAs) are designated by the City Council are areas that show evidence of some degree of blight, demonstrated by conditions such as poorly constructed buildings, faulty planning, lack of open spaces, deteriorated properties, an incompatible mix of uses, and improper utilization of land. PDC uses a wide variety of tools—such as creation of parks, streetscape improvements, community centers — to help community property owners improve and redevelop the area. Funds come from tax-increment financing.

Begun over five decades ago as a federal program to improve inner-city housing, urban renewal has evolved from a top-down effort characterized by large-scale clearance efforts to a more collaborative effort that aims to strengthen existing communities by relying on input from people in those communities. In Portland, urban renewal has contributed to the development of streets and streetcars; parks and greenways, and plazas and community facilities. It has provided incentives for private investments that have created jobs, revitalized neighborhoods, and provided housing.

Figure 2-1. Industrial districts and URAs, City of Portland, June 2003



Source: Preliminary data from the City of Portland Industrial Inventory, June 2003. Analysis by Group Mackenzie.

Table 2-7. Status of vacant, buildable industrial land by district, City of Portland, June 2003

District	Number of Sites	% of Total Sites	Total Acres	% of Total Acres	Vacant Build Ac	% of Total Vacant Build Ac
Banfield	80	2%	117.1	1%	21.5	1%
Columbia Corridor	1,518	38%	8,428.0	51%	1,238.7	62%
Inner Eastside	890	22%	633.0	4%	11.0	1%
NW Industrial	605	15%	1,759.4	11%	168.2	8%
Outer Eastside	303	8%	471.9	3%	43.6	2%
Outlier	13	0%	16.8	0%	1.8	0%
Rivergate	330	8%	4,154.3	25%	468.8	24%
Swan Island	283	7%	1,042.2	6%	33.5	2%
Total	4,022	100%	16,622.7	100%	1,987.1	100%

Source: Preliminary data from the City of Portland Industrial Inventory, June 2003. Analysis by ECONorthwest.

The majority of buildable vacant acres are located in the Columbia Corridor area (62%). Another quarter of total vacant, buildable acres are in the Rivergate area. All other areas account for less than 280 buildable vacant acres combined.

Approximately 26% of vacant, buildable acres are located in urban renewal areas, as shown in Table 2-8. The Airport Way URA, which is located

within the Columbia Corridor industrial district, accounts for the over 85% of the total industrial vacant, buildable acres in all URAs.

Table 2-8. Number of sites, acres, and vacant, buildable acres by URA, City of Portland, June 2003

Urban Renewal Area	Number of Sites	% of Total Sites	Total Acres	% of Total Acres	Vacant Build Ac	% of Total Vacant Build Ac
Airport Way	314	8%	2,659.1	16%	722.7	36%
Central Eastside	597	15%	298.8	2%	8.1	0%
Convention Center	20	0%	20.4	0%	0.8	0%
Gateway	73	2%	33.6	0%	3.0	0%
Interstate	348	9%	1,017.8	6%	61.6	3%
Interstate/Convention Cntr	1	0%	0.1	0%	0.0	0%
Lents Town Center	159	4%	295.9	2%	31.6	2%
North Macadam	4	0%	1.7	0%	0.0	0%
River District	16	0%	12.8	0%	0.0	0%
Total in URAs	1,532	38%	4,340.1	26%	827.9	42%
Total not in URAs	2,490	62%	12,282.6	74%	1,159.2	58%
TOTAL	4,022	100%	16,622.7	100%	1,987.1	100%

Source: Preliminary data from the City of Portland Industrial Inventory, June 2003. Analysis by ECONorthwest.

Almost one-fifth of industrial sites representing 12% of total industrial land area is vacant, buildable industrial land (Table 2-9). The Columbia Corridor area has not only the largest amount of buildable vacant acres, but also the most vacant acres in all size categories. The Columbia Corridor area has the largest repository of large sites, with 10% of sites representing 7% of vacant, buildable acres located in 50+ acre sites.

Table 2-9. Distribution of vacant, buildable acres by site size (gross vacant, buildable acres) and by district, City of Portland, June 2003

District	Acres								Total	% of Total Vac Build	
	<0.50	0.50-0.99	1.00-1.99	2.00-4.99	5.00-9.99	10.00-19.99	20.00-49.99	50.00+			
Number of Sites											
Banfield	6	2			1	1				10.0	1%
Columbia Corridor	213	68	48	43	19	9	6	6	412.0	54%	
Inner Eastside	24	2	4						30.0	4%	
NW Industrial	60	15	7	8	3	4	1		98.0	13%	
Outer Eastside	31	4	2	3			1		41.0	5%	
Outlier	3	1	1						5.0	1%	
Rivergate	48	15	22	21	12	5	6		129.0	17%	
Swan Island	27	6	2	1		1			37.0	5%	
District Total	412	113	86	76	35	20	14	6	762.0	100%	
Acres											
Banfield	0.4	1.2			5.6	14.3			21.5	1%	
Columbia Corridor	33.7	49.1	70.3	148.9	142.9	134.2	155.6	504.1	1,238.7	62%	
Inner Eastside	2.9	1.4	6.7						11.0	1%	
NW Industrial	8.9	10.2	9.1	28.9	23.9	52.0	35.2		168.2	8%	
Outer Eastside	3.7	2.9	2.9	10.3			23.8		43.6	2%	
Outlier	0.1	0.6	1.1						1.8	0%	
Rivergate	6.9	10.7	30.2	67.4	88.9	77.3	187.3		468.8	24%	
Swan Island	3.1	4.3	2.9	4.0		19.2			33.5	2%	
District Total	59.7	80.4	123.2	259.5	261.3	297.1	401.8	504.1	1,987.1	100%	
% of Sites by Size	54.1%	14.8%	11.3%	10.0%	4.6%	2.6%	1.8%	0.8%	100.0%		
% of Acres by Size	3.0%	4.0%	6.2%	13.1%	13.2%	14.9%	20.2%	25.4%	100.0%		

Source: Preliminary data from the City of Portland Industrial Inventory, June 2003. Analysis by ECONorthwest.

There is significant variation in the amount of parcel sizes typically required for industrial employment. While most firms are small and require relatively small parcels, the large users account for a significant portion of employment and require a significant amount of the vacant land supply to be in relatively large parcels. As mentioned in Chapter Three, the Regional Industrial Lands Study (RILS) estimated the share of industrial land in the Portland region needed for sites of three acres or less as anywhere from 40 percent (based on current firm sizes) to as low as 7 percent (based on a continuation of recent trends toward larger firm sizes). The share of land needed for sites greater than 50 acres ranged from 10 percent (based on current firm sizes) to 28 percent (accounting for landbanking). The current distribution of vacant, buildable sites generally fit within these ranges.

The Port of Portland's ownership and subsequent use restrictions on their properties may affect the marketability of medium (20 acres to 49.99 acres) and large (50+ acres) sites. The Port of Portland owns approximately 40% of vacant, buildable industrial land in the City, almost all of it in the Columbia Corridor and Rivergate districts. Table 2-10 shows 808 vacant, buildable acres in the City of Portland that are in Port jurisdiction.

Port properties have a number of constraints that affect marketability. Almost all Port lands available for development are only available for lease, not for sale.¹² A small number of vacant, buildable properties are along the Willamette River and have river-use, river-dependent restrictions. According to the Portland Industrial Harbor Study, 1,704 acres in the City of Portland are river-use, river-dependent, of which 310 acres are vacant, buildable acres. All buildings have height restrictions, of which the lowest is a maximum of 45 feet in a few locations close to the Portland Airport. Height restrictions are 65 to 100 feet in all other Port-owned locations, and are generally not considered an impediment to development by the Port.¹³

Table 2-10. Industrial acres owned by the Port of Portland by district, City of Portland, June 2003

District	Number of Sites	Total Acres	Avg Acres	Vacant Acres	Const Vacant Ac	Vacant Buildable Ac
Columbia						
Corridor	30.0	3,171.6	105.7	939.2	412.0	527.2
NW Industrial	10.0	81.1	8.1	10.5	5.5	5.0
Rivergate	42.0	1,768.2	42.1	578.3	321.5	256.7
Swan Island	32.0	123.8	3.9	45.0	25.1	19.9
TOTAL	114.0	5,144.8	45.1	1,572.9	764.1	808.9

Source: Preliminary data from the City of Portland Industrial Inventory, June 2003. Analysis by ECONorthwest.

Table 2-11 shows the average assessed value per square foot for all sites and sites with buildable lands. As with any assessment data, the figures

¹² The Port has approximately 17 acres ranging from 2.3 to 4.1 acres for sale. These sites tend to be part of older subdivisions.

¹³ Personal telephone interview, Peggy Krause, Port of Portland. June 12, 2003.

serve as baseline estimates and may deviate from actual market values. The large degree of variation that exists underscores this point.

Table 2-11. Land value by district, City of Portland, June 2003

District	Number of Sites	Land Value				Total Value			
		Average	Max	Min	St Dev	Average	Max	Min	St Dev
All Sites									
Banfield	80	\$9.03	\$27.45	\$1.01	5.6	\$24.59	\$72.41	\$1.13	16.6
Columbia Corridor	1441	\$5.82	\$624.62	\$0.00	19.6	\$16.15	\$3,199.82	\$0.00	91.5
Inner Eastside	854	\$13.79	\$38.46	\$0.00	4.1	\$39.81	\$201.78	\$0.00	23.9
NW Industrial	562	\$10.52	\$43.99	\$0.00	6.8	\$26.25	\$196.94	\$0.00	23.9
Outer Eastside	295	\$7.16	\$69.51	\$0.24	6.1	\$16.84	\$123.18	\$0.24	14.4
Outlier	12	\$11.56	\$28.23	\$0.68	11.3	\$36.32	\$130.39	\$1.15	41.0
Rivergate	292	\$4.03	\$126.96	\$0.00	7.4	\$10.89	\$252.57	\$0.00	17.4
Swan Island	263	\$8.47	\$39.11	\$0.06	4.2	\$24.23	\$274.88	\$0.11	27.5
Total/Avg	3799	\$8.54	\$624.62	\$0.00	13.3	\$23.41	\$3,199.82	\$0.00	59.9
Vacant Sites									
Banfield	11	\$4.90	\$9.59	\$1.01	3.1	\$8.56	\$28.45	\$1.13	8.2
Columbia Corridor	405	\$4.81	\$219.78	\$0.00	12.1	\$10.18	\$803.51	\$0.00	41.2
Inner Eastside	29	\$12.38	\$19.86	\$0.00	5.5	\$16.25	\$39.58	\$0.00	9.2
NW Industrial	91	\$4.10	\$25.31	\$0.00	3.6	\$7.02	\$63.61	\$0.00	9.1
Outer Eastside	45	\$5.49	\$16.53	\$0.24	4.2	\$8.88	\$23.99	\$0.24	6.1
Outlier	4	\$1.89	\$2.88	\$0.68	1.1	\$7.53	\$15.14	\$1.15	7.1
Rivergate	125	\$3.37	\$6.73	\$0.00	1.5	\$7.39	\$57.21	\$0.00	9.0
Swan Island	35	\$7.62	\$39.11	\$0.06	7.2	\$12.71	\$81.21	\$0.11	15.2
Total/Avg	745	\$4.93	\$219.78	\$0.00	9.4	\$9.57	\$803.51	\$0.00	31.1

Source: Preliminary data from the City of Portland Industrial Inventory, June 2003. Analysis by ECONorthwest.
Note: Total Value equals land value plus improvement value.

The data suggest that the Columbia Corridor and Rivergate have some of the lowest average industrial developed and vacant land values in the City. Rivergate developed land value is an average of \$4.03 per square foot and Columbia Corridor is \$5.82 per square foot. These districts also have some of the lowest average total price per square foot. Without further analysis, it is difficult to determine exactly what is causing the low land values and higher vacancies. One possibility is that the Port owns a significant amount of property in this area. Their property is only available to water dependent uses, and only available for lease (not for sale), both of which may depress land values. The high vacant land rates and low land and improvement values suggest that these areas are relatively undesirable compared to other industrial areas in the City. The ranking of the least expensive locations of vacant land¹⁴ places Rivergate as the least expensive (\$3.37/square foot), followed by NW Industrial (\$4.10/square foot), and then Columbia corridor (\$4.81/square foot).

While the NW Industrial district has some of the lowest priced vacant land, it ranks as a district with some of the most expensive land value and total developed value. This may be due to problems with the assessor data.

The Inner Eastside has the highest average developed (\$13.79/square foot) and vacant (\$12.38/square foot) land values, and the highest total value

¹⁴ “Outlier” refers to small sites that are not within an industrial district, yet are zoned industrial. Less than 17 acres have been identified in Outlier areas, of which 1.8 is vacant and buildable. While Outlier’s land values were the lowest in the city at \$1.89, the small size and scattered locations make these sites nearly irrelevant in an overall land supply inventory.

(\$39.81 per square foot). Competition is likely to be high for the 633 total acres (4% of total industrial and employment acres) in this close-in location.

REDEVELOPABLE LAND

Redevelopment potential can be an important factor in a land inventory. Redevelopment can (but doesn't always) expand the supply of land. The type of redevelopment that is relevant to a buildable lands study is the type that increases the intensity of uses on a site (and thus, employment densities), or that results in a change of use (to industrial from some other use).

Assessing redevelopment potential presents challenges. Redevelopment potential can be thought of as a continuum — as market factors become more favorable, higher intensity, high value uses can replace lower intensity, low value uses.

Another way to think about the redevelopment continuum is to consider the land value in relationship to the improvement value. As the land value increases because of a demand for land, there is more pressure to increase the improvement value. Table 2-12 shows the improvement to land value ratio by size. Land value with a low ratio is under more pressure to redevelop.

Table 2-12. Improvement to land value ratio by site size, City of Portland, June 2003

Imp/Land Value Ratio	Acres								Total Sites	% of Total
	<0.50	0.50-0.99	1.00-1.99	2.00-4.99	5.00-9.99	10.00-19.99	20.00-49.99	50.00+		
0.00	35.7	32.8	49.8	79.0	100.2	143.6	119.5	886.2	1,446.8	12%
0.01-0.25	34.0	49.1	64.1	82.7	83.1	93.3	199.3	1,903.0	2,508.6	20%
0.26-0.50	18.1	28.4	31.4	89.7	79.8	166.9	112.9	328.8	856.0	7%
0.51-1.00	42.2	55.8	85.2	184.0	187.0	118.0	67.3	623.7	1,363.2	11%
1.01-2.00	107.7	122.4	167.0	333.8	145.4	312.2	270.9	918.0	2,377.4	19%
2.01-3.00	74.8	68.9	106.6	232.6	175.0	245.9	186.2	0.0	1,090.1	9%
3.00 and higher	45.3	65.4	118.6	307.0	397.0	460.3	302.2	331.9	2,027.7	16%
No Data	14.1	29.4	30.4	59.8	67.0	161.1	88.7	240.9	691.5	6%
Acres	372.0	452.3	653.1	1,368.7	1,234.5	1,701.3	1,346.9	5,232.5	12,361.2	100%

Source: Preliminary data from the City of Portland Industrial Inventory, June 2003. Analysis by ECONorthwest.

Redevelopment potential will likely become increasingly important in the City of Portland as vacant land is developed. Redevelopment is the only viable option for expansion or location of new firms into heavily developed districts, such as the Inner Eastside and Swan Island. However, costs of redeveloping industrial areas tend to be significantly higher than vacant sites due to removing obsolete buildings and constructing new buildings (most common) or retrofitting buildings (less common). Industrial uses are highly specialized and cannot easily reuse the same building and equipment. For example, a food processing plant cannot use an electrical parts manufacturing plant; they have vastly different needs for built space, utilities, and site circulation.

DETAILED ANALYSIS OF SITES WITH MORE THAN FIVE ACRES OF VACANT LAND

Probably the biggest concern with respect to industrial land is this: *Is there an adequate supply of large parcels that are development ready?* The Portland Industrial Inventory suggests that there might be: Table 2-9 shows that there are about 75 sites in the City of Portland that have five or more buildable, vacant acres.

That finding, however, was inconsistent with the experience of people we interviewed who had substantial experience with industrial land in Portland (both public and private sector). The inconsistency is the same one that the RILS study and the Tier data identify: it may look like a lot of vacant land, but when one examines the details, one finds reasons that the land is not ready for development. That is one interpretation of the finding that the amount of Tier A land is only 10% of the estimated vacant, buildable land.

CONCLUSIONS

While the City of Portland has over 4,000 vacant employment acres, more than half of the supply is constrained. According to the preliminary results of the Portland's Industrial Land Inventory, the City has a total of about 2,000 buildable, vacant acres.

That number is just a starting point for several reasons:

- *The constraints are not absolute.* We noted, for example, that some industrial development might occur in floodplains. At the extreme, some industrial development (if it is primarily office) might occur on land with slopes of over 10% (or might, at least, use such land to satisfy buffering and open-space needs).
- *Classifying land as "buildable" is not the same as classifying it as "development ready."* In general, planning rules in Oregon have treated buildable land as a long-run (20-year) concern. Metro's inventory will show the undeveloped part of the parcel as buildable industrial land based on the assumption that in the next 20 years it is likely to be used. That is appropriate in the context of Oregon land use laws (particularly, as they have commonly been applied with respect to estimating the need for amendments to an Urban Growth Boundary), but it can miss *the short-run problem*: that the land cannot support new development within a period of one to three years. That may be because of corporate needs for buffers, land banking, speculations, owner preferences, lack of adequate public services or the ability to fund them quickly enough, and so on.
- *The problem of industrial land supply looks different not only depending on whether it is viewed from a long-run or a short-run perspective, but also when it is viewed as a total or a disaggregated problem.* Specifically, it is possible to have enough land in the aggregate, but not have enough of the right kind of land, of the right

size, in the right locations. Thus, the finding that there are 2,000 acres of vacant, buildable industrial land in Portland will seem wrong to state and local development professionals whose job it is to market industrial land in Portland. Anecdotal evidence suggests that there may be on the order of five to 15 sites of over 20 acres that Portland has to offer. The data in Table 2.9 are consistent with that estimate. If Rivergate is discounted (because, as discussed above, the Port of Portland makes that property available only to industries that support the Port's mission), then essentially all buildable industrial land that is on sites larger than 20 acres is in the Columbia Corridor.

- *Implementation of the proposed E-Zoning will further reduce the amount of vacant, buildable acres of industrial land.* The case studies (another part of the overall study) suggest that some industrial sites may be so restricted that warehousing or large manufacturing may no longer be viable. Impacts of the proposed zoning will not be known until the City finishes its inventory, but the direction is clear: it will reduce the supply of land, and will do so in the Columbia Corridor, where the only large sites are.

Other findings of our analysis of the supply of industrial land are:

- *The districts with the most buildable vacant land in the widest ranges of sizes are Columbia Corridor and Rivergate.* Current land prices and significant supply of vacant land imply that these are less desirable locations for firms to expand or locate, compared to other districts. Some of the vacant land in the Rivergate area may be restricted to river-dependent, river-related uses, reducing the overall vacant, buildable land. Vacant, buildable land owned by the Port (roughly one-quarter of Portland's supply of industrial vacant, buildable land) is restricted to land-lease only.
- *Industrial uses that are land intensive and do not need a central city location will probably locate in neighboring communities.* In the long term, this effect will increase as newly expanded UGB industrial lands are annexed and become development ready.
- *Redevelopment will become increasingly more important in the City of Portland as vacant, buildable acres are developed.* The City of Portland needs to be concerned about the industrial land supply in the region as well as in the City. The City probably wants to do what it reasonably can do (and do cost effectively) to make existing industrial land ready for development: that is the focus of the Industrial Lands Report. But Portland is surrounded by either physical barriers or other cities. It is one of the few cities in Oregon that has no possibility of increasing its own land supply by expanding its UGB. Its only chance to increase its land supply is to redevelop land, and redevelopment can be expensive, especially relative to greenfield development at the urban fringe.

Long-term Economic Outlook for the Region and the City

Chapter 3

This chapter reviews existing and forecasted economic conditions in the region and the City. The goal of the analysis is to get an estimate of the amount of land that will be developed in the region and the City to support non-retail business growth in general, and industrial growth in particular. It seeks to answer the question “How much development-ready land is needed?” It does so over a long-term horizon (2000-2025), to set the stage for the shorter-term, site-specific forecasts in Chapter Four.¹

The methods used to forecast land demand is standard for planning studies in Oregon. The methods derive from the assumption (intuitively plausible and corroborated by empirical work) that (1) vacant land gets developed because new buildings need vacant land, (2) new buildings are needed because business activity is growing, (3) growth in business activity is highly correlated with growth in employment, and (4) therefore employment data—which is relatively easy to obtain, well reported, standardized, and forecasted—can be used to forecast the demand for vacant, buildable land in the region and the City.² Such a forecast provides a check on how well the employment land supply in the Urban Renewal Areas and the City (development ready, or not) matches the likely demand for that land.

The chapter reviews existing conditions in the state, region, and City, (including employment by sector, and comparative advantages), then discusses employment growth forecasts from 2000-2010 and 2000-2025 for the region, the City, and areas within the City containing the URAs. It concludes by converting employment growth to potential building space absorption and vacant land need within those areas. In doing so, it takes into account the fact that some employment growth will go on already-developed land. This redevelopment and infill (or “refill”) will be a key component of the City’s employment growth, since the City is “landlocked” and has few expanses of vacant land relative to outlying suburban jurisdictions.

¹ The forecasts presented in this chapter are based on Metro regional forecasts for the 2000-2025 time period. The shorter-term forecasts in Chapter 4 are for 2003-2006 and are based on regional employment forecasts by the Oregon Department of Administrative Services, adjusted by Johnson Gardner for the sub-regional areas discussed in that chapter. In general, the long-term Metro forecasts in this chapter are not inconsistent with the short-term forecasts in Chapter 4, though the Chapter 4 forecasts distribute growth differently in the shorter term (2003-2006) than the first part of the Metro forecasts (2000-2010) suggests. Our view is that the Metro forecasts are useful long-term forecasts, but that the Johnson Gardner forecasts most accurately reflect short-term trends that will affect absorption in the study sites over the short-term (2003-2006).

² Chapter Two provides a description of the supply of vacant and vacant, buildable land, as well as definitions of those terms.

RECENT TRENDS AND EXISTING CONDITIONS

EMPLOYMENT

The analysis that follows is primarily based on covered employment³ (for which relatively accurate and consistent statistics are available). Most of the implications are drawn from an assessment of the relative importance of different sectors, so the fact that totals by sector are slightly underestimated is less of a problem.⁴

TOTAL EMPLOYMENT

In April 2003, total nonfarm payroll employment in the six-county region⁵, was about 922,400, a drop of nearly 50,000 jobs since 2000.

Employment data are not available at the county level any more recently than 2000. In 2000, Multnomah County's total covered employment was 453,254—about 47% of the regional total of 969,831.

While publicly available data are not available at the City level, ECO's previous analysis of confidential ES-202 data (from the Oregon Department of Revenue) suggests that about 90% of Multnomah County's covered employment is located in the City of Portland.

EMPLOYMENT BY SECTOR

Table 3-1 shows employment by sector in April 2003 for the U.S., Oregon, and the 6-county region using the main industry sectors of the North American Industrial Classification System (NAICS).⁶ It shows that the shares of employment in various sectors are fairly similar among the nation, the state, and the region. The region has a slightly higher share of employment in wholesale trade and in professional/business services than does the state. The state has a higher share of employment in government than does the nation.

³ *Covered employment* counts those who work for pay and are covered by unemployment insurance. It does not include the self-employed, the military, most farm employees, and unpaid family workers. In some cases, we refer to "total nonfarm payroll employment," which is similar but not quite the same; it excludes all farm employees and includes payroll employees even if they are not covered by unemployment insurance.

⁴ In general, covered employment is about 85% to 90% of total employment. It understates sectors that tend to have high numbers of self-employed workers, such as transportation, agriculture, retail (small shops), and some professional services like graphic designers and business consultants. It does not significantly understate the manufacturing sector. This could lead to a very slight over-stating of the size of the manufacturing sector relative to other sectors.

⁵ The 6-county region (called by the U.S. Census a Primary Metropolitan Statistical Area, or PMSA) consists of Clackamas, Columbia, Multnomah, Washington, and Yamhill counties in Oregon and Clark County in Washington State.

⁶ See footnote 5 below.

Table 3-1. Nonfarm payroll employment by sector, U.S., Oregon, and Portland-Vancouver PMSA, April 2003

	U.S.	Oregon	Portland-Vancouver PMSA
Total nonfarm employment	100.0%	100.0%	100.0%
Goods-producing	17.9%	17.7%	18.1%
Manufacturing, Natural Resources and Mining	12.9%	13.0%	12.9%
Construction	5.0%	4.7%	5.3%
Service-Producing	82.1%	82.3%	81.9%
Trade, transportation, and utilities		19.8%	20.1%
Wholesale Trade		4.7%	5.8%
Retail trade		11.6%	10.5%
Transportation, warehousing, and utilities		3.5%	3.8%
Information		2.3%	2.6%
Financial activities		6.0%	7.2%
Professional and business services		11.0%	12.9%
Educational and health services		12.2%	12.4%
Leisure and hospitality		9.5%	8.8%
Other services		3.8%	3.7%
Government	16.4%	17.8%	14.1%

Note: Not all sectors shown for U.S. because data not yet available in NAICS categories.

PMSA is six-county region.

Source: U.S. Bureau of Labor Statistics and Oregon Employment Department

Employment totals by sector are not available at the county level any more recently than 2000. Table 3-2 shows employment by sector in 2000 for the Oregon portion of the Portland PMSA (that is, minus Clark County in Washington) and Multnomah County, using the main industry sectors of the Standard Industrial Classification (SIC) system.⁷

⁷ Most of these sectors are self-explanatory, but some are not. “Services” includes a variety of services: business services (consulting, equipment leasing, etc.), health services, legal services, repair services, and hotels/motels, among others. “Retail trade” includes restaurants and bars as well as other types of retail outlets. “Wholesale trade” includes non-retail trade in both “durable goods” (e.g., auto parts) and “non-durable goods” (e.g., fruit and vegetables). “Transportation, Communication, and Utilities” includes all types of transportation services as well as communications (e.g., phone and internet) and utilities like electricity and natural gas service. “Finance, Insurance, and Real Estate” is an agglomeration of banks, credit unions, insurance services and real estate services; it is not included in the main “Services” sector. These standard sectors have been revised to what many observers see as a more logical system, the North American Industrial Classification System (NAICS), but historical covered employment data has not yet been converted to the NAICS categories in most cases, so these SIC sectors are still used in many places.

Table 3-2. Covered employment by sector, Oregon portion of Portland PMSA and Multnomah County, 2000

Sector	Portland PMSA (OR portion)	Multnomah County
Agriculture, Forestry, Fishing, and Mining	2.2%	0.8%
Construction	5.3%	4.8%
Manufacturing	15.1%	11.4%
Transportation, Communication, and Utilities	5.7%	7.4%
Wholesale Trade	7.4%	7.1%
Retail Trade	17.5%	16.3%
Finance, Insurance, and Real Estate	6.4%	7.1%
Services	28.3%	30.9%
Government	12.0%	14.0%
Total	100%	100%

Source: Oregon Employment Department

About one-quarter of the region's jobs were in the services sector⁸ in 2000, compared with 1980 when the largest employment sector was manufacturing; this mirrors state and national trends. Nearly every other sector's share of regional employment declined from 1980 to 2000, including government, wholesale trade, utilities and transportation, and FIRE (finance, insurance and real estate).

Over the past two decades, specific industries within the larger sectors did better than others. The region attracted an increasing share of a flat national high-tech manufacturing sector, but lost wood and paper jobs along with the nation. Many of its other manufacturing, trucking, warehousing, and other industrial jobs held their ground to varying degrees in the 1990s but declined in the recent recession. Wholesale and retail trade employment grew slightly faster than the nation's employment in those sectors, tracking the Portland region's slightly higher rate of population and employment growth, as well as income growth and tourism growth.

Compared to the region, Multnomah County's employment is more concentrated in the services and transportation / communication / utilities sectors and less in the manufacturing and retail sectors.

Within Multnomah County, previous analysis of ES-202 data from 2000 shows that Portland has a higher share of employment in wholesale trade, transportation / communication / utilities, finance / insurance / real estate, and services / government, and a lower share of employment in manufacturing and retail trade, than the County as a whole.

⁸ The services sector includes professional services (business, legal, health, educational), lodging, recreation and amusement, automotive, and many other types of services.

UNEMPLOYMENT

Oregon's unemployment rate in April 2003, seasonally adjusted, was 8.0%, significantly higher than the nation's rate of 6.0%. The unemployment rate for the Portland-Vancouver region was roughly that of Oregon as a whole.

BUILDING MARKETS

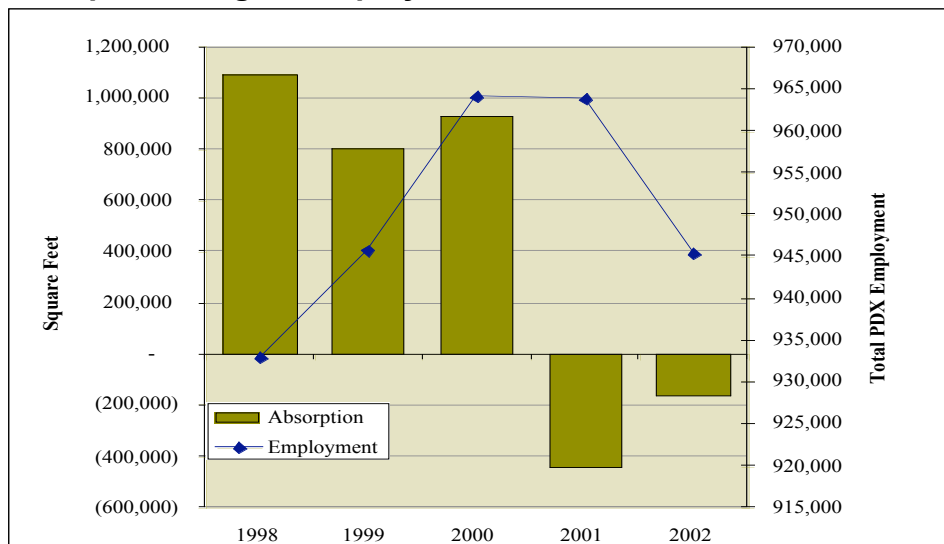
The current markets for building space reflect the recent downturn in the regional economy.⁹

INDUSTRIAL MARKET

Industrial space

During the last five years, the Metro area's Eastside markets¹⁰ have absorbed over 2 million square feet of space. However, the absorption dropped off significantly after 2000, and has, in fact, been negative over 2001 and 2002. More firms abandoned their leased space, while no new firms took it over, increasing the vacancy rate for industrial space. This drop in absorption corresponds with a drop in Portland metro area total employment, as shown in Figure 3-1.

Figure 3-1. Recent Eastside industrial absorption and Portland metropolitan region employment trends, 1998-2002



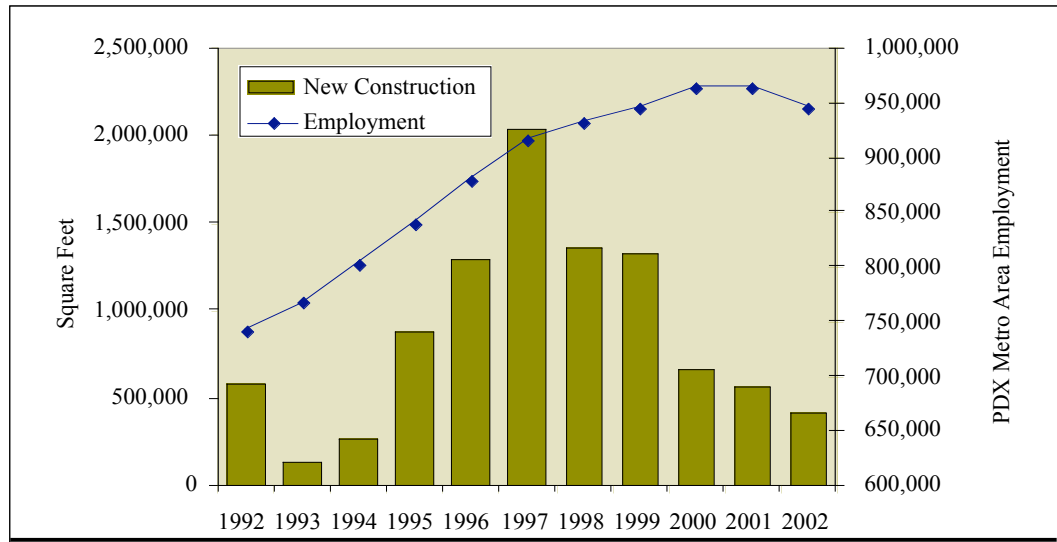
Source: Real-Net and US Department of Labor

⁹ Information on building markets is presented rather than information on land markets, because data available on land transactions often does not reflect actual utilization of the land. Land absorption (market activity) is not the same as land consumption (actual use of the land). In the context of this study we are most interested in actual land use than in market activity.

¹⁰ These include the Northeast and Southeast markets shown in Table 3-3, including eastern Portland as well as other parts of Eastern Multnomah County and Clackamas County.

Looking back over the course of the last decade, as shown in Figure 3-2, new industrial construction peaked in 1997. While employment continued to grow steadily after that, construction of new industrial product on the eastside declined every year. The vacancy rate for industrial space has climbed steadily since the end of 2000, when it was below 5%. Currently vacant industrial space in the Eastside markets totals approximately 5,799,000 square feet, and the vacancy rate is nearly 18%.

Figure 3-2. Eastside Industrial construction and Portland metropolitan region employment, 1992-2002



Source: CoStar and US Department of Labor

There is an additional 432,000 square feet of space expected to enter the market in the next year, with 382,000 slated to be completed in the Airport Way submarket and the remainder to enter the Clackamas submarket. This should push vacancy rates slightly higher, as demand over the next year is forecasted to be fairly limited. Chapter Four provides more detail on short-term real estate forecasts.

Table 3-3 shows the current industrial inventory and vacancy rates in the region, as of the first quarter 2003. Among the five industrial subregions in the Portland metro area, the Northeast and Southeast are two of the smallest in terms of square footage (Vancouver is the smallest).¹¹ There are just under 20,000,000 square feet of speculative inventory in the Northeast, and just over 13,000,000 square feet in the Southeast.¹² The Southeast market

¹¹ These subregions extend beyond the City of Portland: that is, “Northeast” refers to the northeast Metro area (Multnomah County east of I-5), and “Southeast” refers to Clackamas County east of the Willamette. The more specific market areas within these subregions, as listed in Table 3-3, are more self-explanatory: for example, Tualatin/Sherwood refers to the Tualatin and Sherwood areas. Maps of these areas are not electronic and therefore are not easily converted into graphics for this report.

¹² Speculative space is in contrast to “build-to-suit” or “end-user” space. That is, it is built in advance of knowing who the tenant(s) will be. In that sense, the developer is “speculating” that it will find tenants to fill the space at the rents it desires.

recorded the highest vacancy rate in the Portland metro area during the first quarter of 2003 at 21.4%. This equated to over 2,850,000 square feet of vacant industrial space. Although forecasted demand in the Southeast market for the coming year is over 100,000 square feet, there is an additional 50,500 square feet slated to enter the market, which will keep the vacancy rate over 20%.

The Northeast subregion had the lowest vacancy rate in the metro area during the first quarter of 2003. The subregion's rate of 14.9% translated to over 2,949,000 square feet of vacant industrial space. Over the coming year demand is forecasted to increase by roughly 262,000 square feet. However, there is approximately 382,000 square feet of new industrial space anticipated to enter the Airport Way submarket during the next year. The forecasted demand is not enough to cover the additional space, and, as a result, the vacancy rate is expected to rise slightly by the first quarter of 2004.

Table 3-3 summarizes vacancy rates. After the first quarter of 2003, the overall vacancy rate for the Portland Metro area was 17.8%, leaving roughly 18,000,000 square feet of industrial space vacant. Demand over the next year is expected to be fairly low, and the additional industrial space under construction in the Eastside subregions will prevent any significant changes to the vacancy rates over the coming year. There is currently no anticipated new construction between the 2nd quarter of 2004 and the 1st quarter of 2005, which would allow the market to begin to recover.

Table 3-3. Industrial vacancy rates and inventories, Portland Metropolitan Area, 1st Quarter 2003

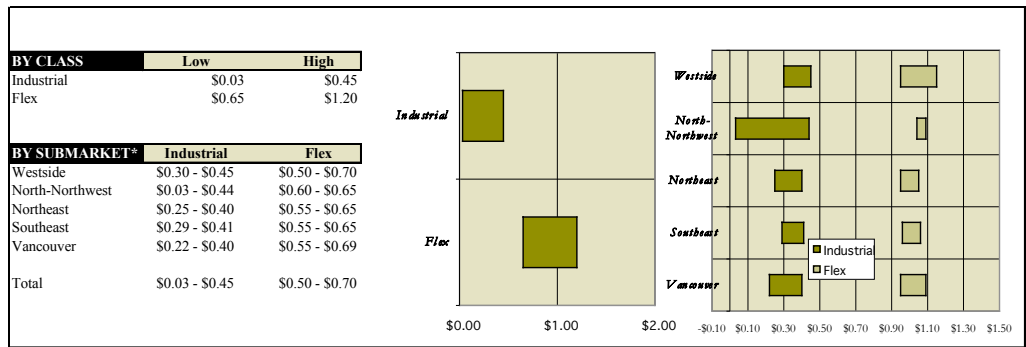
Subregion <i>Submarket</i>	1st Quarter 2003	
	Speculative Inventory	Vacancy Rate
Westside	38,363,829	17.0%
<i>Aloha/Hillsboro</i>	15,545,475	20.8%
<i>Beaverton</i>	7,683,763	20.2%
<i>Lake Oswego</i>	582,577	9.5%
<i>Tigard</i>	4,045,518	7.9%
<i>Tualatin/Sherwood</i>	5,966,224	16.0%
<i>Wilsonville</i>	4,540,272	8.8%
<i>Inner Southwest</i>	155,121	0.0%
North/Northwest	20,758,514	18.4%
<i>Guilds Lake</i>	5,784,674	11.19%
<i>Swan/Hayden Islands</i>	5,292,012	16.85%
<i>Rivergate</i>	7,589,137	23.87%
<i>N.W. Industrial District</i>	313,256	14.06%
<i>Central Business District</i>	1,779,435	24.01%
Northeast	19,793,449	14.9%
<i>Airport Way</i>	6,955,584	14.5%
<i>Columbia Boulevard</i>	8,628,226	15.3%
<i>Close-In Northeast/I-84</i>	2,041,358	26.6%
<i>Gresham/Rockwood</i>	2,168,281	3.6%
Southeast	13,346,569	21.4%
<i>Clackamas</i>	5,511,394	22.0%
<i>Close-In Southeast</i>	2,132,812	22.4%
<i>Milwaukie</i>	4,476,609	21.3%
<i>Oregon City</i>	488,377	12.9%
<i>Other</i>	737,377	20.8%
Vancouver	8,937,745	19.1%
Metropolitan Area Total	101,200,106	17.8%

Source: CoStar and Johnson Gardner

Industrial rents

Rents for traditional industrial space in the Northeast ranged from \$0.25 to \$0.40 per square foot, while rents in the Southeast were slightly higher, from \$0.29 to \$0.41 per square foot during the first quarter of 2003. These rents are shown in Table 3-4.

Table 3-4. Industrial Rents in Portland metropolitan region, 1st Quarter 2003



Source: Real-Net

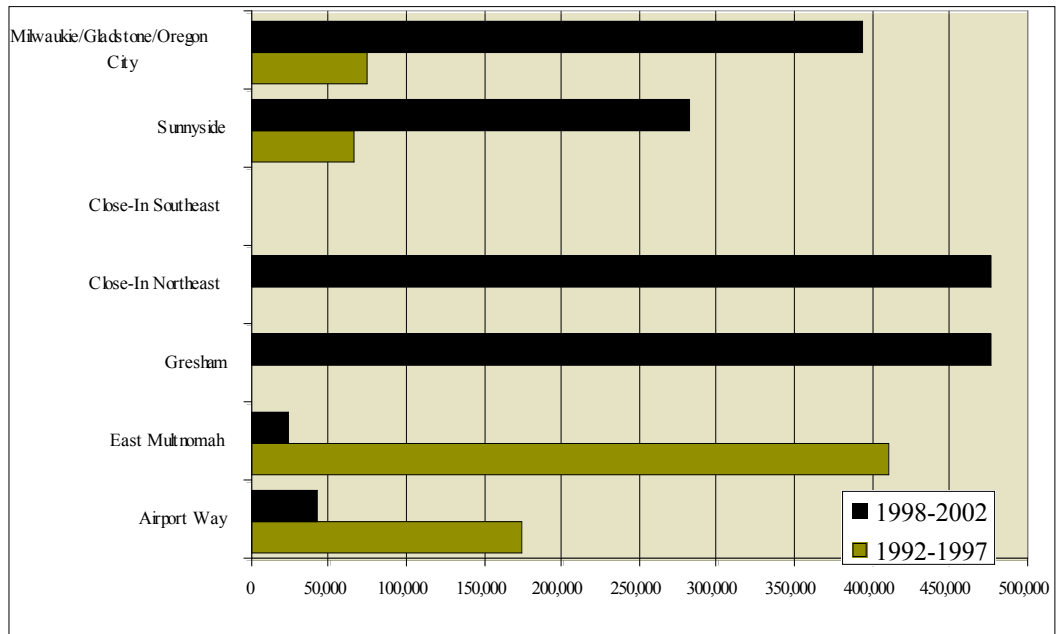
Flex space rents were identical in the Northeast and Southeast submarkets, ranging from \$0.55 to \$0.65. Flex space refers to the group of commercial property types that include showrooms, business service buildings, research and development buildings, or flexible space that can be used for a range of industrial to office activities. Generally flex properties are less than three stories with a minimum of 25%, but less than 75%, office space. Lease rates for flex space, which is generally cheaper than office space, have been negatively affected by the area's weak office market. As the office market continues to see high vacancy rates, lease rates have dropped, making it more economically feasible for firms to locate in traditional office locations rather than flex space.

OFFICE MARKET

Office space

The office market in the Portland Metro area is very overbuilt, and the Eastside markets, comprised of the Close-In Eastside, East Multnomah County, Sunnyside, and Oregon City/Milwaukie submarkets, prove to be no exception. Vacancy for the metro area is nearly 15%, and the Eastside markets have a vacancy rate of roughly 18%. Much of the construction has come over the course of the last five years, as shown in Figure 3-3. With the recent economic downturn, demand was not strong enough to keep up with the new supply.

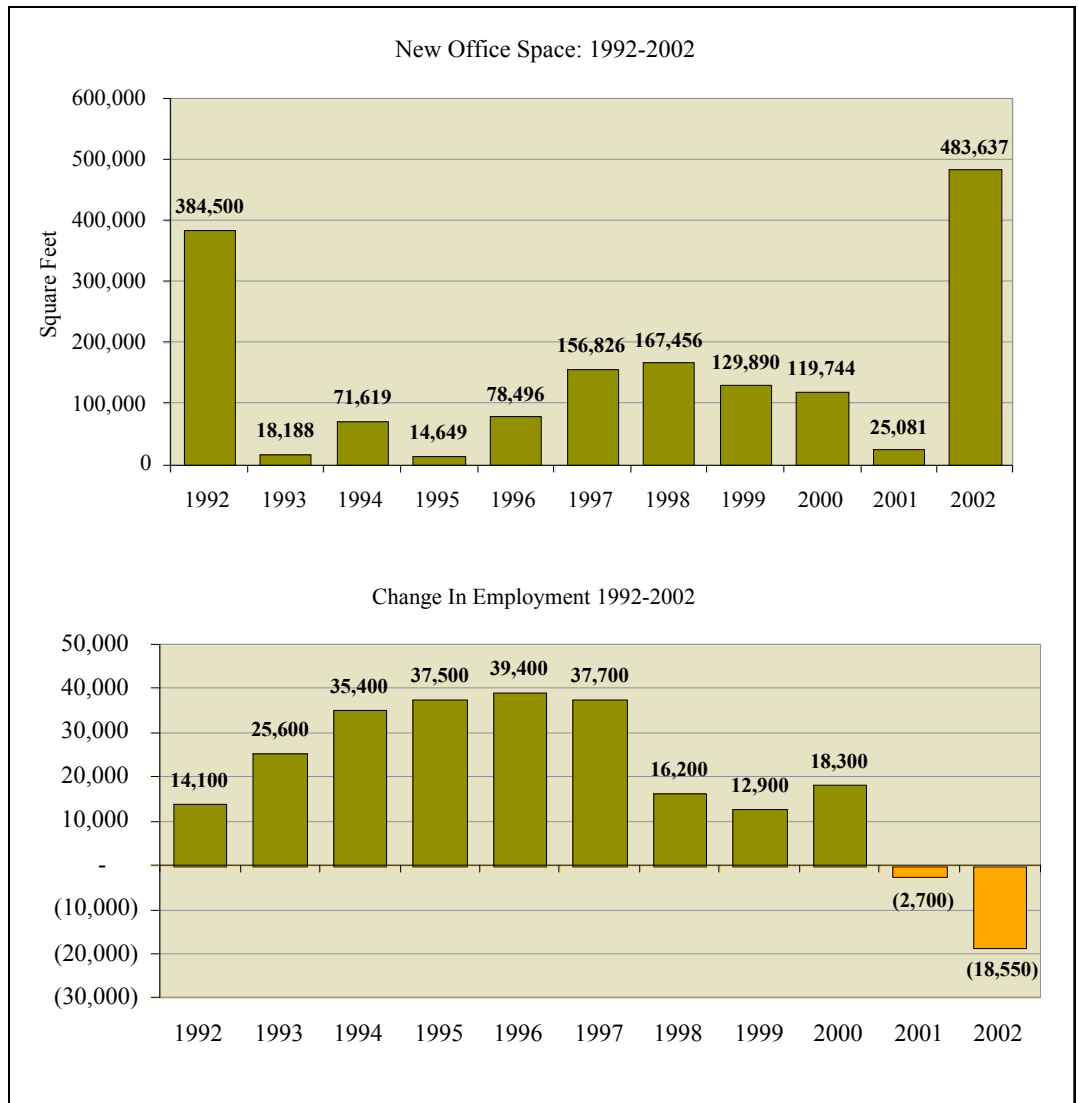
Figure 3-3. New office construction, by submarket, 1992-1997 and 1998-2002



Source: CoStar

The timing of much of the new construction was a large part of the problem. A large amount of new office space hit the market just as the downturn began, and in 2001 and 2002, when Portland lost over 20,000 jobs, the Eastside markets added over 500,000 square feet of office space, as shown in Figure 3-4.

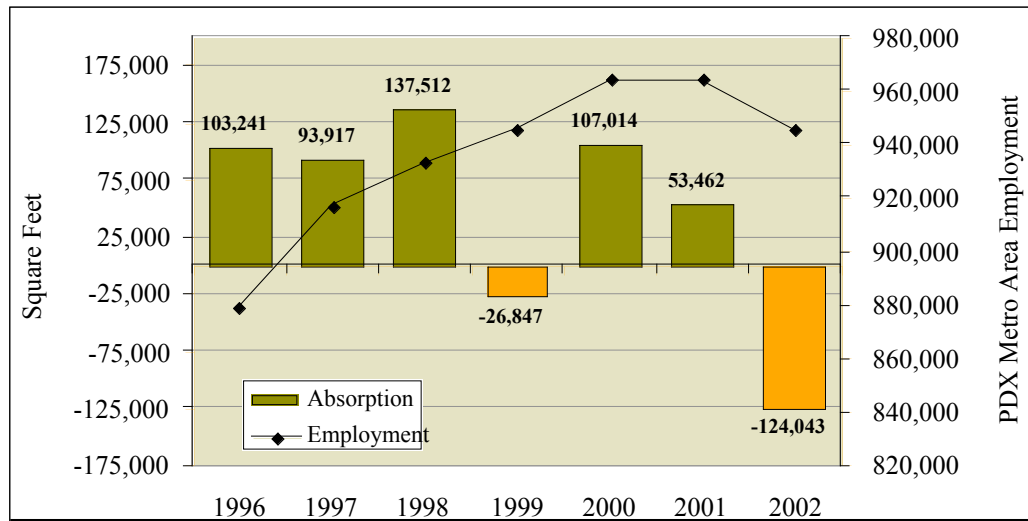
Figure 3-4. New Eastside office space and Portland Metro area employment, 1992-2002



Source: Norris Beggs & Simpson, US Department of Labor

As a result of the overbuilding and the shrinking employment base, absorption for the Eastside markets declined significantly during 2001 and 2002, as shown in Figure 3-5.

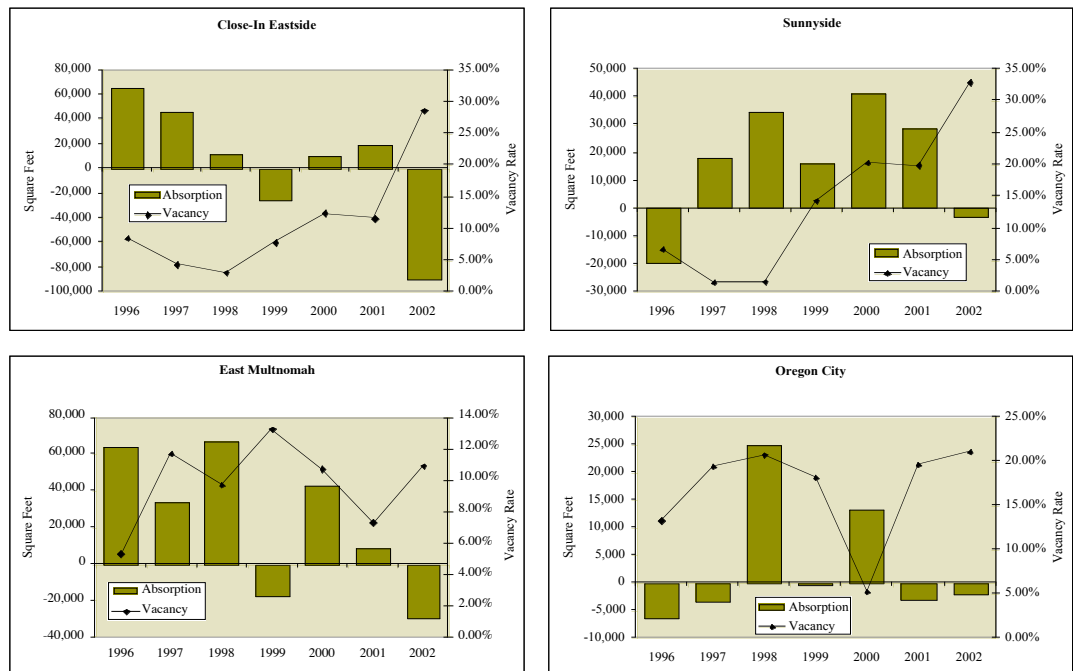
Figure 3-5. Eastside office space absorption and Portland metro area employment trends, 1996-2002



Source: Norris Beggs & Simpson

All four of the subregions on the Eastside saw skyrocketing office vacancy rates due to the falling absorption levels, as shown in Figure 3-6. Currently, there is over 1,129,000 square feet of vacant office space in the Eastside market.

Figure 3-6. Absorption and vacancy, Portland Eastside office market, 1996-2002



Source: Norris Beggs & Simpson, Johnson Gardner

The current condition of the Portland metro area office market is shown in Table 3-5.

Table 3-5. Office occupancy rates and inventories, Portland metropolitan area, 1st Quarter 2003

Subregion <i>Submarket</i>	1st Quarter 2003	
	Speculative Inventory	Vacancy Rate
Central City	23,333,081	12.4%
<i>CBD</i>	18,775,744	11.5%
<i>CBD Perimeter</i>	2,086,764	16.1%
<i>Lloyd District</i>	2,470,573	16.6%
Inner Westside	2,412,625	13.9%
<i>Barbur Blvd</i>	1,003,752	13.4%
<i>Johns Landing</i>	969,565	18.0%
<i>Sylvan</i>	439,308	5.8%
Kruse Way/Washington Sq.	6,946,278	14.3%
<i>Kruse Way</i>	1,713,600	11.3%
<i>Tigard</i>	2,351,705	9.3%
<i>Washington Square</i>	2,880,973	20.2%
I-5 South Corridor	2,520,422	8.5%
<i>Lake Oswego/West Linn</i>	814,025	7.0%
<i>Tualatin/Wilsonville</i>	1,706,397	11.5%
Beaverton/217 Corridor	4,920,004	19.2%
<i>Beaverton/Cedar Hills</i>	3,362,494	17.1%
<i>Beaverton-Hillsdale/Canyon</i>	1,557,510	23.8%
Sunset Corridor/Hillsboro	4,326,998	12.8%
Clark County	4,232,171	26.2%
<i>Vancouver CBD</i>	1,321,403	19.7%
<i>Suburban</i>	2,910,768	29.2%
Close-In Eastside	2,076,292	13.2%
<i>Close-In Northeast</i>	1,287,824	3.0%
<i>Close-In Southeast</i>	788,468	29.9%
E. Multnomah Co.	2,096,709	14.2%
<i>Airport Way</i>	538,760	23.7%
<i>Gresham</i>	276,492	29.5%
<i>I-205 Corridor</i>	1,281,457	7.0%
Sunnyside	1,098,839	24.7%
Oregon City/Milwaukie	1,048,252	27.2%
Metropolitan Area Total	55,011,671	14.9%

Source: Norris Beggs & Simpson

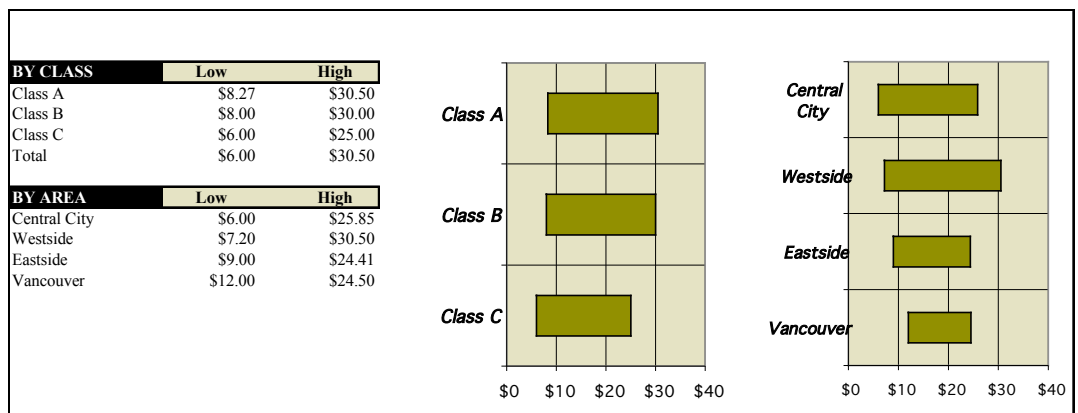
The Portland metro area office market is dominated by the Central City subregion, which accounts for over 42% of the speculative inventory. The Eastside submarkets (Close-In Eastside, East Multnomah County, Sunnyside, and Oregon City/Milwaukie) have a speculative inventory of roughly 6,320,000 square feet, roughly 73% less space than the Central City region. The Eastside subregions have a combined vacancy rate of nearly 18%, which equates to approximately 1,129,000 square feet of office space. The subregions currently have individual vacancy rates ranging from 13.2% to 27.2%. In the smaller submarkets, Close-In Southeast and Gresham both have vacancy rates exceeding 29%.

There is no anticipated new supply entering the market over the course of the next year, so any additional demand should slowly reduce the vacancy rate. The office market will not show significant recovery until the local economy begins to rebound from its current slump.

Office rents

Table 3-6 shows that, among the four subregions (Central City, Westside, Eastside, and Vancouver), Eastside offered the most affordable rents on the High end of the spectrum, at \$24.41 per square foot during the first quarter of 2003. The low end for the Eastside was \$9.00, which was higher than both Central City and the Westside. The Eastside market generally proved to have office space rates lower than the metro area average.

Table 3-6. Office rents by class and subregion, 1st Quarter 2003



Source: CoStar and Johnson Gardner

Table 3-7 details the rent ranges for office space on the Eastside separated by class.

Table 3-7. Office rent by class, Portland Eastside markets, 1st Quarter 2003

Lloyd District		
BY CLASS	LOW	HIGH
Class A	\$20.50 - \$24.00	
Class B	\$12.00 - \$19.00	
Class C	\$13.50 - \$18.00	
Northeast		
BY CLASS	LOW	HIGH
Class A	\$17.50 - \$21.50	
Class B	\$10.00 - \$17.00	
Class C	\$11.00 - \$20.00	
Southeast		
BY CLASS	LOW	HIGH
Class A	\$18.00 - \$23.50	
Class B	\$12.00 - \$18.50	
Class C	\$12.00 - \$15.25	
Sunnyside/Clackamas		
BY CLASS	LOW	HIGH
Class A	\$10.00 - \$25.00	
Class B	\$13.50 - \$19.50	
Class C	\$12.00 - \$16.50	

Source: Norris Beggs & Simpson, Johnson Gardner.
Rents shown are annual gross rents (landlord pays expenses).

Class A buildings are the most desirable; they feature high-grade finishes and amenities which offer status to the businesses located inside. Class B and Class C buildings are often older properties that have not kept up with modern trends in design or features. The vast majority of office space in the Eastside market is comprised of Class B and Class C office space.

COMPARATIVE ADVANTAGES AND DISADVANTAGES¹³

A discussion of the region's and the City's comparative advantages and disadvantages provides useful context for interpreting the employment growth forecasts presented later in this chapter. For example, a region with competitive advantages on factors that matter to manufacturing firms would be expected to have a manufacturing employment growth rate exceeding that of other regions; competitive disadvantages would suggest a manufacturing employment growth rate lagging that of the region as a whole.

WHAT FACTORS MATTER TO FIRMS?

The attractiveness of a region to businesses derives in large part from the region's ability to provide some **local factors** of production better than competing regions. These local factors are the following:

¹³ This section draws heavily on prior work conducted as part of PDC's Economic Development Strategy, 2002.

- **Building space**, including the price and availability of land as well as built space, and the availability of utility infrastructure (water, sewer, etc.) to service the development.
- **Workforce**, including labor costs and skills.
- **Access to markets**, including proximity to markets, and transportation and telecommunications systems to bridge the distance.
- **Business climate**, including customer service quality of the local government, regulations and taxes, and the cost of utilities.
- **Business formation and acceleration**, including three main components: innovative capacity represented by universities and other research centers, access to capital, and economies of concentration (known as “clusters”).
- **Quality of life**, including the quality of the educational system, the crime rate, the cost of living, and recreational opportunities.

The four main considerations for each factor are:

- **Quantity.** There needs to be sufficient amount and availability of the direct factors of production (e.g., workers, building space, public services).
- **Quality.** The direct and indirect factors need to be provided well; cheap and plentiful inputs are not useful if they cannot meet the requirements of business operations.
- **Price.** Quality must be found at a reasonable price that allows businesses to remain profitable.
- **Location.** In some cases, this means widespread availability so that businesses can have a lot of choice in how to optimize their location decision; in other cases, it means using resources to make the factors available where businesses find them most valuable.

COMPARATIVE ADVANTAGES AND DISADVANTAGES OF THE PORTLAND REGION

In its previous work for the Portland Development Commission on an economic development strategy for the City of Portland, ECONorthwest compared the Portland region on its performance with respect to these location factors with other metropolitan regions of similar size in the western U.S. (see sidebar). Compared to these regions, the Portland region is solidly middle-of-the-road on many characteristics.

Comparison Regions	
Austin	Denver
Las Vegas	Minneapolis-St. Paul
Phoenix	Sacramento
Salt Lake City	San Diego
San Jose	Seattle

Portland is medium-sized relative to the other regions. As a result, Portland is in the middle of the comparison regions on characteristics like the size of the labor force, total earnings, retail sales, and industrial and office space inventory.

Portland is also in the middle with respect to many characteristics that are not related to regional size, such as the educational attainment of the workforce; the prevalence of professional, executive, and technical occupations; and the distribution of employment in the various industry sectors. Most utility costs (except sewer) are moderate relative to those of the other regions, as are business taxes and property taxes, rents and housing prices, crime rates, and various K-12 educational statistics like class size and drop-out rates.

Following is a summary of the region's comparative *advantages*. In parentheses is the location factor that each advantage relates to.

- **Low lease rates.** Office and industrial lease rates are relatively low. (*Building space*)
- **Good transportation.** The region is served by more trucking companies and more Class One railroads than most of the comparison regions. With its Pacific Rim location, its seaport, and inland barging capability, the region has more waterborne commerce than most of the comparison areas. The airport has better cargo service than other metropolitan areas of comparable size and more cargo carriers than most of the airports in the comparison regions. Transit ridership is relatively high. Portlanders lose less time and money to congested roads than most of the comparison cities: though congestion seems bad to people in Portland, it is worse in other regions. (*Access to markets*)
- **No sales tax.** The lack of a sales tax is a business advantage, though the fairly high personal income tax counters that. (*Business climate*)
- **Strong central city.** Portland's industrial and office markets are less suburban and more concentrated in the central business district than most other regions; this is a strength in that CBDs tend to offer a sense of place and urban amenities that suburban areas lack. (*Quality of life*)
- **Recreational and cultural opportunities.** There are many recreational, arts, and cultural activities in the Portland region, especially considering its size. Also important is the vast array of outdoor activities and beautiful natural settings that are within a short distance of the region. (*Quality of life*)

The Portland region's relative *disadvantages* were identified as:

- **Distance from markets.** Like Seattle, the amount of U.S. population within 400 miles, and especially 800 miles, is low compared to other regions. (*Access to markets*)
- **Relatively small airport.** Relative to comparable regions, the airport is in the lower tier in terms of the number of passenger enplanements. While PDX provides direct or nonstop service to most of the domestic destinations sought by the region's passengers, direct passenger service to Asia and most major European cities is not currently available. (*Access to markets*)

- **Possible need for new infrastructure to maintain competitiveness of marine port.** The seaport-related advantages Portland has over the comparison regions (other than Seattle) could decrease if the Columbia River channel is not deepened to accommodate today's larger ships. Similarly, the traditional Portland advantage of rail infrastructure to the East could decline if Oregon fails to make improvements to its rail and highway systems comparable to those Washington and California are now making. *(Access to markets)*
- **Lack of large, vacant tracts of land available for industrial and commercial development.** At the regional level, there is a shortage relative to other regions, even in the suburban areas. Businesses that need large tracts of land face problems not only of price, but of availability. *(Building space)*
- **High income tax and sewer costs.** The personal income tax rate is fairly high, like that of Minneapolis-St. Paul, and sewer costs are also high. *(Business climate)*
- **Lack of large research universities.** Perhaps the most striking disadvantage is the fact that, despite having several four-year colleges, the colleges are generally small, and very few undergraduates are enrolled relative to within other regions. This is related to the disadvantage of having no large research university. *(Business formation and acceleration)*
- **Low patent rate and R&D activity.** Patents are an indicator of high-tech innovation and critical mass. Despite the patent activity of high-tech companies like Intel, the Portland region has a low patent rate compared to Austin and San Francisco/San Jose, and it ranks only above Las Vegas and Phoenix in the amount of academic R&D activity. *(Business formation and acceleration)*

COMPARATIVE ADVANTAGES AND DISADVANTAGES OF THE CITY OF PORTLAND

The previous section looked at *the region's* comparative advantages and disadvantages to set the context for analyzing official forecasts for economic

Comparison Local Jurisdictions

Beaverton	Camas
Clackamas County	Clark County
Gresham	Hillsboro
Multnomah County	Tualatin
Vancouver	Washington County

growth for the region. In this section, we ask, What are the advantages and disadvantages of *the City of Portland* relative to those of the region in general, or other parts of the region. If, for example, the advantages are strongly dominant, then one would have more confidence in predicting that the historical share of regional growth capture by the City of Portland would increase in the future.

Portland competes against other local communities within Multnomah County and in adjacent counties when firms that have already decided to locate in the Portland metropolitan region choose their site within the region. The quality of the workforce is less important at this stage of the location decision process, because workers can commute across a metropolitan area.

Firms are more likely to focus on cost of land, tax rates, and regulations. A firm may locate where its owners or top executives wish to live, so cities with low crime, good schools, and other amenities will have an advantage.

Portland's biggest advantage is that it is bigger than its local competitors. It has more of everything, including industrial space, office space, housing, and entertainment. It is more likely to meet the needs of a firm looking for a site, simply because it has more to offer. But, similarly, it has more of some of the bad things associated with big cities, such as lower measures of educational performance, crime, and congestion.

Following is a summary of the city's comparative *advantages*. In parentheses is the location factor that each advantage relates to.

- **More industrial and office space.** There is substantially more industrial space and office space in the city of Portland than in neighboring communities (though *vacant land* is not as ample as in some adjacent counties). (*Building space*)
- **Moderate development fees.** Portland's development fees for office and industrial buildings lie in the middle of the range of fees across the region. (*Business environment*)
- **Range of housing.** Portland's owner-occupied housing is more evenly distributed over a range of prices. Other communities in the region are more likely to have prices concentrated in a low or high range. Rents are also more evenly distributed in Portland. (*Quality of life*)
- **Extensive entertainment.** Portland has more restaurants, theaters and museums than neighboring communities. (*Quality of life*)

The City's comparative *disadvantages* relative to the rest of the region were identified as the following:

- **Limited supply of buildable industrial land.** The issues here are almost identical to the ones that disadvantage the region. Relative to competing local jurisdictions, the industrial land that does exist in the City is developed, in small parcels, or primarily owned by the Port with restrictions to get cargo-related business. The cost of redevelopment can be high: brownfield sites may require expensive environmental remediation; historic buildings require seismic upgrades. Moreover, the region is short on large industrial sites, which affects Portland's ability to capitalize on its role as a provider of professional and business services. **Chapter 2 discusses land supply in more detail.** (*Building space*)
- **Expensive sewers.** Portland's sewer rates are substantially higher than those of neighboring cities. (*Business environment, Building space*)
- **Development review and permit process.** Portland's permit review is considered an impediment to timely development and is an added cost for developers. Surrounding communities show a much greater ability and willingness to respond quickly, consistently and

creatively to state building codes and Metro regulations. (*Business environment*)

- **High taxes.** The City of Portland and Multnomah County have levied a business tax that has made Portland's business taxes the highest in the region. (*Business environment*)
- **Deficient schools.** Student test scores in Portland are below the region's average, although class size is lower and spending per pupil is higher. Portland's school system has a higher portion of impoverished students. (*Quality of life*)
- **Higher crime.** Portland has more crime than nearby communities, particularly violent crimes. (*Quality of life*)
- **Older housing.** Most of the single-family homes sold in Portland are older. Relatively few new homes are built in Portland. The same is true of rental housing; while multi-family rental units tend to be newer than single-family housing, they are generally older in the City than in the suburbs. (*Quality of life*)
- **More congestion.** The same growth and concentration of activities that creates economic vitality also creates congestion. (*Quality of life*)

EMPLOYMENT FORECASTS

The information in the previous section provides a context for evaluating job-growth forecasts for the City of Portland. It is that job growth that drives the demand for building space to accommodate jobs, and for land (the focus of the Industrial Lands Report) to accommodate those buildings. In other words, it is the comparative advantages described above that allow the region to attract the business growth (as measured by increases in employment) that creates the demand for built space and land.

LIKELY BOUNDS ON EMPLOYMENT GROWTH

Official and unofficial forecasts for various geographic areas provide useful context for estimating how much employment growth of what type might be attracted to the Urban Renewal Areas (URAs) over various timeframes. The relevant geographic areas for which forecasts are available or can be generated are: the U.S., Oregon, the Portland metropolitan region, the City of Portland, and areas within the City of Portland containing the URAs.

The projected employment growth for each of these geographic areas provides a potential "envelope" for job growth at the URAs. With each successive narrowing of the geographic area, the "envelope" becomes smaller. With an idea of the amount of employment growth that is expected in a certain area, we can estimate what share of that growth the URAs might attract, given their attributes and significance relative to all other sites in the area.

The most relevant geographic areas, in our opinion, are the Portland metropolitan region, and possibly the City of Portland. While it is possible that the URAs might attract employment growth that is currently forecasted to occur outside the region, we believe that the regional forecasts are accurate enough that they can be used as a starting point. Moreover, trying to estimate the URAs' share of forecasted employment growth for larger areas like the entire state of Oregon and the U.S. is a daunting task that would probably not yield very accurate results.

The City of Portland forecasts provide a smaller envelope that may initially seem more relevant than regional forecasts, but may also have more potential for error. This is even more true for the forecasts we present for Metro's Employment Zones within the City of Portland. Generally, within a region, the smaller the area for which forecasts are made, the more likely it is that the forecasts will differ from reality. While firms' location decisions among metropolitan regions can be predicted by considering regional labor pools, distance from suppliers and customers, and so on, actual location decisions by firms *within a region* are made on the basis of a host of other factors that are difficult to model and will be different for different firms. Some firms for some expansions may have flexibility to choose among regions, but then have relatively few choices once a region is selected (e.g., because they want to be in a downtown; near an airport; or near a freeway on a big site). Others (e.g., smaller local firms) may know that they have to stay in the region, but may be willing to be in any of a number of places.

For this reason, though we present forecasts for the U.S. and Oregon at the macro level and for Employment Zones containing the URA sites within the City of Portland at the micro level, we think the regional and City of Portland forecasts are the most useful reference points for thinking about the potential "envelope" of job growth from which the URAs can try to attract employment.

It is also generally true that forecasts covering longer time periods are more accurate than mid-term forecasts, at least for total employment growth. This may initially seem counter-intuitive, but cyclical variations in the economy that occur over the short-run are difficult to predict. Over a 10- or 20-year period, however, average annual growth rates are probably similar regardless of when cyclical downturns and upturns are predicted to occur within that period. As opposed to cyclical changes, *structural* changes in the economy, which result in permanent downturns or improvements for certain sectors, are more difficult to predict long-term than medium-term. For example, we probably know more about how the electronics manufacturing sector will perform in the region in the next 10 years than in the next 25 years.

U.S. AND OREGON

Despite the fact that the unemployment rate in Oregon is currently higher than that of the U.S., employment is expected to grow at a faster rate in Oregon than in the U.S. in the next several years, as shown in Table 3-8.

Table 3-8. Total nonfarm payroll employment and annual change, U.S. and Oregon, 2000-2009

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
U.S.	131.7	131.9	130.8	131.2	133.4	135.2	136.4	137.5	138.7	140.0
% Chg	2.2	0.2	-0.9	0.3	1.7	1.3	0.9	0.8	0.9	0.9
Oregon	1,606.8	1,593.7	1,572.3	1,579.0	1,605.4	1,636.7	1,665.0	1,694.1	1,721.1	1,745.8
% Chg	2.0	-0.8	-1.3	0.4	1.7	2.0	1.7	1.7	1.6	1.4

Note: Oregon figures are in thousands; U.S. figures are in millions. Does not include self-employment.
Source: Oregon Department of Administrative Services, Economic and Revenue Forecast, May 2003.

REGION: OFFICIAL METRO FORECASTS

The current national and state forecasts above predict long-term growth despite near-term setbacks. If one accepts the general thrust of these forecasts (as most forecasters do), then a question regarding the Portland economy is: Are there any substantial reasons to believe that the Portland region would not grow in a world where both the U.S. and Oregon economies are growing? We believe the answer to that question is “No.”

In fact, there are reasons to believe just the opposite. West Coast metropolitan areas have been growth areas for 50 years for both strict economic and quality-of-life reasons that should continue. Moreover, it is difficult to perceive how a state economic forecast of growth could be correct at the same time that the Portland economy (with over half the people and employment in the state) was stagnating. Metropolitan Portland serves as an employment, commercial, and service center for most of Oregon and southwest Washington. It provides retail shopping, wholesale distribution, and business, financial, and health services. Specialized manufacturing in the Portland region includes high-tech equipment, software, primary and fabricated metals, and transportation equipment.

Thus, despite short-term economic problems for certain sectors and households, the long view for the Portland economy, from today’s viewing point, is a healthy one. Based on national and state forecasts of employment growth, the Portland region should expect employment growth beyond 2002 in excess of national job growth, after an initially slower recovery from the current recession.

If one disagrees with the conclusion that the Oregon and Portland economy will grow in the long-run (because, for example, the current fiscal and economic state of the state is so bad that it will take a long time for it to recover), then all the forecasts described below would need to be scaled back. It is unlikely that many forecasters today would argue that the forecasts are too low.

In September 2002, Metro released an update of its official employment forecasts for the five-county region¹⁴ and for the four-county region.¹⁵ The four-county forecast from 2000 to 2025 is presented in Table 3-9.

Table 3-9. Forecasted nonfarm payroll employment (thousands), 4-County Region, 2000-2025

Employment Sector	2000	2010	2025	Total Jobs Added		Annual Avg. Growth Rate	
				2000-2010	2000-2025	2000-2010	2000-2025
Total Nonfarm Payroll	930.4	1,134.0	1,469.0	203.6	538.6	2.0%	1.8%
Total Non-Retail Nonfarm Payroll	768	934	1,211	166	444	2.0%	1.8%
Total "Industrial"	312	368	427	56	115	1.7%	1.3%
Agriculture, Forestry, Fishing, and Mining	0.7	0.8	1.0	0.2	0.3	2.7%	1.7%
Construction	51.7	65.3	78.0	13.6	26.3	2.4%	1.7%
Manufacturing	139.4	158.6	169.1	19.2	29.7	1.3%	0.8%
Nondurable Manufacturing (less Paper)	29.5	31.5	32.5	2.0	3.0	0.7%	0.4%
Durable Manufacturing (+ Paper)	52.9	52.7	50.6	-0.2	-2.3	0.0%	-0.2%
Hi-tech Manufacturing	57.0	74.4	85.9	17.4	29.0	2.7%	1.7%
Transportation & Warehousing	37.5	43.8	54.5	6.3	17.0	1.6%	1.5%
Communication & Utilities	17.0	19.8	24.7	2.8	7.7	1.6%	1.5%
Wholesale Trade	66.5	80.6	100.3	14.1	33.9	1.9%	1.7%
Retail Trade	162.7	200.3	257.6	37.5	94.8	2.1%	1.9%
Finance, Insurance, and Real Estate	63.4	73.0	88.7	9.7	25.3	1.4%	1.4%
Services	268.9	356.8	529.9	87.9	261.1	2.9%	2.8%
Consumer Services	127.5	169.4	254.0	41.9	126.6	2.9%	2.8%
Health Services	84.8	112.2	163.3	27.4	78.5	2.8%	2.7%
Business and Professional Services	56.7	75.2	112.6	18.5	55.9	2.9%	2.8%
Government (less K-12 Education)	67.5	74.2	90.9	6.8	23.4	1.0%	1.2%
K-12 Education	55.2	60.7	74.3	5.5	19.1	1.0%	1.2%

Source: Metro Sept. 2002 Official Forecasts

Nonfarm payroll is based on Bureau of Labor Statistics (BLS) definitions

Industrial includes the sectors of Construction, Manufacturing, Transportation and Warehousing, Communication and Utilities, and Wholesale Trade

Four County Region: Multnomah, Clackamas, Washington, Clark

Nondurable manufacturing includes Food, Textiles, Apparel, Printing and Publishing, Chemicals and Petroleum, Rubber, Plastics, Leather

Durable manufacturing includes Lumber, Furniture, Paper, Stone/Clay/Glass/Concrete, Primary Metals, Fabricated Metals, Transp. Equipment, Misc. Mfg

Hi-tech manufacturing include Industrial machinery and equipment, Electrical and electronic equipment, Instruments

Consumer Services include SIC sectors 70-79; Health Services include SIC sectors 80 and 83; Business and Professional Services include all other services.

Table 3-9 shows non-retail employment growing at approximately 1.8% annually over the entire 2000-2025 period, and at 2.0% annually during the shorter-term 2000-2010 period. The current state of the economy, and its performance since 2000 at least raise the possibility that the 2000–2010 annual growth may prove high.

The service sector is forecast to be the strongest overall in terms of job growth for the region. Indeed, the strong, forecast growth in service sector employment drives the regional average, as employment in all other industry

¹⁴ The same as the PMSA, but without Columbia County: that is, Clackamas, Multnomah, Washington, and Yamhill Counties in Oregon and Clark County in Washington.

¹⁵ The same as the five-county region described above, but without Yamhill County; that is, Clackamas, Multnomah, and Washington Counties in Oregon and Clark County in Washington.

sectors (except high-tech manufacturing and retail trade) are forecast to grow slower than the regional average over the 2000-2025 period. The “industrial” sectors (construction, manufacturing, transportation/ communication/ utilities, and wholesale trade) are expected to grow more slowly than total employment. Among the industrial sectors, non-high-tech manufacturing is expected to have virtually no employment growth in the region.

In the context of the advantages and disadvantages outlined earlier in this section, Metro’s forecasts for the region generally seem reasonable. While Metro may not have explicitly taken all these advantages and disadvantages into account, its use of recent historical trends in conjunction with other factors is not unreasonable, since most of the comparative advantages and disadvantages of the region are not new.

Part of our assignment is to speculate about these forecasts. In the context of this study, which is focused on industrial land, we think the forecasts may overestimate employment growth in the high-tech manufacturing sector. One reason is that the forecasts were based to a large degree on the high-tech employment growth in the 1990s, and the recent economic downturn in that sector was not weighted as much in comparison. We also think that, within the “high-tech” sector, electronics manufacturing may not be the wave of the future for the Portland region. Individual companies that are already in the Portland area may continue to expand, since they have a considerable investment in their current facilities and location. Still, many electronic parts can be made overseas and shipped to Oregon cheaper than they can be made here, so new and expanding electronics companies may begin looking overseas for manufacturing locations. Programming and software work, because of the Internet, is also becoming cheaper to do overseas.

High-tech industries with a high intellectual content (such as scientific instruments and specialized software like security software), and existing industries with products that would be physically costly to ship from elsewhere (like industrial machinery), are the high-tech industries with the most growth potential. Existing industries that need quick feedback from the consumer markets (such as outdoor clothing design/manufacture) are also potential growth sectors.

We also suspect that the growth in health services employment during the past two decades cannot continue at the same level, because the capacity of consumers to pay for the ever-rising costs is waning. While the population is in fact aging, the efficiency of medicines and cost pressures could slow the growth in health care revenues.

Another demographic consideration is that many of the aging population in the region may leave the region after they retire. The Portland region has a competitive advantage in attracting young people because of various attributes, and that therefore industries that cater to this demographic (music venues, theaters, outdoor stores, etc.) have more growth potential.

CITY OF PORTLAND: METROSCOPE ALLOCATIONS

Metro has not yet released updated official forecasts for sub-regional employment growth; its existing sub-regional allocations date to 1997 regional control totals. Metro is planning on using its integrated transportation and land use model, “Metroscope,” to produce sub-regional allocations (at the traffic analysis zone or “TAZ”-level) towards the end of 2003. In the meantime, Metro has used the Metroscope model to produce sub-regional allocations to about 60 Employment Zones, which are larger than TAZs. The City of Portland includes Employment Zones 1 through 20, and Zone 26.

Because the most recent Metroscope allocations of employment growth to sub-regional Employment Zones use older regional control totals from February 2001, we have scaled the Metroscope suballocation to the more recent regional control totals from September 2002. For example, if the City of Portland had 20% of the region’s employment in a certain industrial sector in the February 2001 forecasts, we assume it will have the same share of the region’s employment in that sector in the September 2002 forecasts.

Table 3-10 shows that Metro expects employment growth in the City of Portland to be slower than the regional growth in Table 3-9. Total non-retail nonfarm payroll employment is expected to grow at an annual average rate of 1.5% in 2000-2010 and 1.3% in 2000-2025, compared with regional rates of 2.0% and 1.8%, respectively. The gap is especially pronounced in the manufacturing sector. As shown in Table 3-9, the region is expected to gain manufacturing jobs at an annual average rate of 1.3% in 2000-2010 and 0.8% in 2000-2025—not a high rate of growth, but significantly better than the City’s projected rate of 0.0% during those time periods. The “industrial” sectors as a whole fare better than manufacturing alone, but still are expected to grow more slowly than total employment.

Table 3-10. Forecasted nonfarm payroll employment, City of Portland, 2000-2025

Employment Sector	2000	2010	2025	Total Jobs Added		Annual Avg. Growth Rate	
				2000-2010	2000-2025	2000-2010	2000-2025
Total Nonfarm Payroll	403,303	464,351	555,698	61,048	152,395	1.4%	1.3%
Total Non-Retail Nonfarm Payroll	342,149	395,720	477,702	53,571	135,554	1.5%	1.3%
Total "Industrial"	120,706	131,231	146,179	10,526	25,473	0.8%	0.8%
Agriculture, Forestry, Fishing, and Mining	165	241	277	76	112	3.9%	2.1%
Construction	17,864	20,809	23,153	2,945	5,288	1.5%	1.0%
Manufacturing	43,014	42,970	42,665	-44	-349	0.0%	0.0%
Nondurable Manufacturing (less Paper)	12,450	12,005	10,815	-445	-1,635	-0.4%	-0.6%
Durable Manufacturing (+ Paper)	22,848	20,249	17,111	-2,600	-5,737	-1.2%	-1.1%
Hi-tech Manufacturing	7,716	10,717	14,739	3,000	7,023	3.3%	2.6%
Transportation & Warehousing	20,786	22,293	24,200	1,507	3,414	0.7%	0.6%
Communication & Utilities	11,272	13,161	16,707	1,889	5,434	1.6%	1.6%
Wholesale Trade	27,769	31,998	39,455	4,229	11,686	1.4%	1.4%
Retail Trade	61,154	68,631	77,995	7,477	16,841	1.2%	1.0%
Finance, Insurance, and Real Estate	32,867	36,258	41,426	3,391	8,558	1.0%	0.9%
Services	127,765	158,083	210,979	30,318	83,214	2.2%	2.0%
Consumer Services	55,108	69,080	93,539	13,972	38,431	2.3%	2.1%
Health Services	42,780	51,684	65,496	8,904	22,716	1.9%	1.7%
Business and Professional Services	29,877	37,319	51,944	7,442	22,068	2.2%	2.2%
Government (less K-12 Education)	41,642	43,698	51,260	2,055	9,618	0.5%	0.8%
K-12 Education	13,813	15,318	18,644	1,504	4,831	1.0%	1.2%

Source: ECONorthwest, based on Metro Sept. 2002 Official Forecasts and Metroscope sub-regional allocations.

Nonfarm payroll is based on Bureau of Labor Statistics (BLS) definitions

Industrial includes the sectors of Construction, Manufacturing, Transportation and Warehousing, Communication and Utilities, and Wholesale Trade.

City of Portland: includes Employment Zones 1-20, 26

Nondurable manufacturing includes Food, Textiles, Apparel, Printing and Publishing, Chemicals and Petroleum, Rubber, Plastics, Leather

Durable manufacturing includes Lumber, Furniture, Paper, Stone/Clay/Glass/Concrete, Primary Metals, Fabricated Metals, Transp. Equipment, Misc. Mfg

Hi-tech manufacturing include Industrial machinery and equipment, Electrical and electronic equipment, Instruments

Consumer Services include SIC sectors 70-79; Health Services include SIC sectors 80 and 83; Business and Professional Services include all other services.

The Metroscope model for allocating growth within the region is generally considered to be a good model. It takes several factors into account that previous models did not. Previous models tended to consider primarily the availability of vacant or developable land, and historical development patterns. Metroscope considers other important factors like the price of land and the availability of existing or planned transportation infrastructure. While the specific way these various factors are incorporated into the model can be debated, the fact that they are included in the model at all suggests that the model has the potential to be an improvement over earlier models. Perhaps the most significant factors that Metroscope and any other model find it difficult to include are unpredicted public policies or subsidies that favor certain locations for development, and the level of willingness of property owners to sell their land for development.

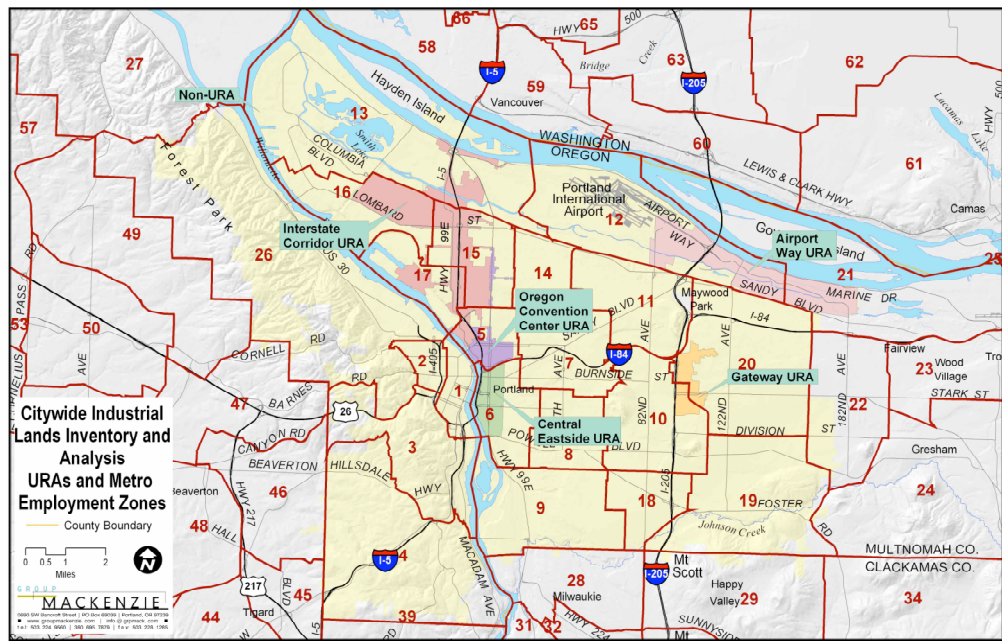
Regardless of the exact workings of the model, we can consider whether the general story that the forecasts tell is in keeping with our understanding of the city's economic strengths and weaknesses. In the context of the comparative advantages and disadvantages described above, Metro's forecasts for the City of Portland seem reasonable as a baseline from which to start evaluation. At the end of this chapter we address the implications of that conclusion for the demand for industrial and non-retail employment land.

Our experience is that it is common for local economic development specialists to see their local areas as specially endowed with advantages. But if all subareas have special endowments or incentives, then no subarea has any special advantage relative to others. Obviously, the advantages are in the details. Having only one advantage (e.g., having available, serviced, and inexpensive land when all other subareas have little) may be enough to tilt the direction of development. We consider some of these issues in the next chapter.

EMPLOYMENT ZONES CORRESPONDING TO URAS

ECONorthwest identified eleven Employment Zones that contain the URAs considered in this study: 5, 6, 10 to 13, 15 to 17, and 20 to 21. They are shown in Figure 3-7. These Employment Zones include much of the north and east side of Portland, but exclude downtown, the west side of Portland, and some residential/retail areas on the east side (e.g., the Hawthorne District).

Figure 3-7. Urban Renewal Areas and Metro’s Employment Zones



Source: Metro and Group Mackenzie

Our forecasts for these Employment Zones, using the MetroScope model as with the Citywide forecasts above, are shown in Table 3-11. The same sector patterns are shown as with the City of Portland as a whole, with services leading the pack in terms of absolute job growth, followed by wholesale and retail trade and high-tech manufacturing.

These Employment Zones are not projected to shed non-high-tech manufacturing jobs as rapidly as the City of Portland as a whole. These Employment Zones are also expected to have positive overall manufacturing growth, compared with a loss of manufacturing jobs in the City as a whole as shown in Table 3-10. It follows that the Metro forecasts predict other

Employment Zones (those not corresponding to the URAs) to lose manufacturing jobs.

Table 3-11. Forecasted nonfarm payroll employment, Employment Zones containing URAs, 2000-2025

Employment Sector	2000	2010	2025	Total Jobs Added		Annual Avg. Growth Rate	
				2000-2010	2000-2025	2000-2010	2000-2025
Total Nonfarm Payroll	179,145	211,366	247,892	32,221	68,747	1.7%	1.3%
Total Non-Retail Nonfarm Payroll	147,459	174,659	205,912	27,200	58,453	1.7%	1.3%
Total "Industrial"	76,681	89,646	100,711	12,965	24,030	1.6%	1.1%
Agriculture, Forestry, Fishing, and Mining	97	149	176	52	79	4.4%	2.4%
Construction	10,169	12,958	14,625	2,790	4,457	2.5%	1.5%
Manufacturing	29,743	33,032	33,304	3,288	3,560	1.1%	0.5%
Nondurable Manufacturing (less Paper)	6,479	6,772	6,405	292	-75	0.4%	0.0%
Durable Manufacturing (+ Paper)	18,663	19,169	17,254	506	-1,410	0.3%	-0.3%
Hi-tech Manufacturing	4,601	7,091	9,645	2,491	5,044	4.4%	3.0%
Transportation & Warehousing	15,064	16,996	18,961	1,931	3,896	1.2%	0.9%
Communication & Utilities	2,040	2,081	2,137	41	98	0.2%	0.2%
Wholesale Trade	19,665	24,580	31,684	4,915	12,019	2.3%	1.9%
Retail Trade	31,685	36,707	41,980	5,022	10,294	1.5%	1.1%
Finance, Insurance, and Real Estate	7,209	8,264	9,290	1,054	2,081	1.4%	1.0%
Services	45,702	58,195	77,506	12,494	31,804	2.4%	2.1%
Consumer Services	21,750	27,767	37,735	6,017	15,985	2.5%	2.2%
Health Services	16,423	20,610	26,322	4,186	9,898	2.3%	1.9%
Business and Professional Services	7,528	9,818	13,450	2,290	5,921	2.7%	2.3%
Government (less K-12 Education)	12,911	13,556	15,131	645	2,220	0.5%	0.6%
K-12 Education	6,947	8,196	8,871	1,249	1,924	1.7%	1.0%

Source: ECONorthwest, based on Metro Sept. 2002 Official Forecasts and Metroscope sub-regional allocations.

Nonfarm payroll is based on Bureau of Labor Statistics (BLS) definitions

Industrial includes the sectors of Construction, Manufacturing, Transportation and Warehousing, Communication and Utilities, and Wholesale Trade.

Employment Zones containing URAs: 5, 6, 10-13, 15-17, 20-21

Nondurable manufacturing includes Food, Textiles, Apparel, Printing and Publishing, Chemicals and Petroleum, Rubber, Plastics, Leather

Durable manufacturing includes Lumber, Furniture, Paper, Stone/Clay/Glass/Concrete, Primary Metals, Fabricated Metals, Transp. Equipment, Misc. Mfg

Hi-tech manufacturing include Industrial machinery and equipment, Electrical and electronic equipment, Instruments

Consumer Services include SIC sectors 70-79; Health Services include SIC sectors 80 and 83; Business and Professional Services include all other services.

As mentioned above in the context of the City of Portland forecasts, we believe that Metroscope is generally a good model. As discussed at the beginning of this forecast section, however, it is probably the case that the forecasts are less of a constraint at greater levels of geographic detail. It is more likely that the Metroscope has missed something at the level of specific Employment Zones corresponding to URAs, than at the level of all Employment Zones aggregated to the Citywide level. As-yet-unplanned transportation improvements, new unexpected land supply, major unforeseen utility issues, or future public investment are all more likely to vary within the City than at the citywide level.

In any case, the employment that is forecasted for the Employment Zones containing the URA sites is only a guide. Much depends on the competitiveness of the individual sites. Some may be hard-pressed to attract a share of forecasted City or regional employment that is proportional to some easily measurable attribute (say, vacant land). Others may have advantages that allow them to attract more than a proportional share. These

attributes and advantages are considered more in Chapters 3 and 4 to draw conclusions in Chapter 5 about absorption at the specific sites.

OTHER FORECASTS

The forecasts above for the region and the City are different from those that have been used in previous studies. For example, the previous Metro forecasts from 1998 that were used in the Regional Industrial Lands Study (RILS) showed a lower regional growth rate than the current forecasts. The current forecasts are similar, though, to those used in ECONorthwest's 2002 work on an Economic Development Strategy for the City of Portland. Those forecasts were based on Metro's February 2001 regional control totals. The main difference between those and the current Metro forecasts is that the current forecasts show a higher rate of growth in the manufacturing sectors than the previous forecasts.

ECONorthwest does short-term employment forecasts for the 4-County Region (excluding Clark County and including Yamhill County, in contrast to Metro's scope) using a proprietary economic model. ECO's October 2002 forecast for Tri-Met predicts that regional employment between the third quarter of 2002 and the fourth quarter of 2005 will increase at an annual average rate of 2.97% for total employment, and 0.25% for manufacturing. This is a more optimistic view for total employment and a more pessimistic view for manufacturing employment than the official Metro forecasts suggest during this short-term timeframe.

The state of Oregon's Department of Administrative Services (DAS) also releases short-term employment forecasts for the state and its metropolitan regions. It is these short-term forecasts from DAS on which the short-term forecasts presented in Chapter 4 are based. Footnote One discusses the relation of these forecasts to the longer-term forecasts in this chapter. The short-term forecasts are not generally inconsistent with the long-term Metro-based forecasts; though the numbers may differ over a certain timeframe, the cyclical patterns reflected in the short-term forecasts are conceivable given the longer-term Metro forecasts.

In terms of land need (discussed later in this chapter), Metro's August 2002 Employment Urban Growth Report (UGR) forecasted a need for a total of 9,366 net acres of industrial land for the Metro region over the 2000-2022 period, estimated the available industrial supply at 3,681 net acres, and summarized the resulting need for *new* industrial land (i.e., for vacant, buildable land planned and zoned for industrial uses) at 5,685 net acres. In December 2002, 1,968 net acres of buildable industrial vacant land were added to the UGB.¹⁶ Metro's estimate of a need for 9,366 net acres of industrial land (not counting existing supply) is higher than our estimate below, mostly because it assumes that over 3,000 acres of vacant land will be needed by industrial firms who are relocating, and who find that building

¹⁶ Memo from Lydia Neill, Principal Regional Planner, to David Bragdon, Metro Council President, May 14, 2003.

space vacated by other industrial firms has been used by commercial firms. The fact that we use nonfarm payroll employment rather than total employment is also a reason for the difference. These issues are discussed in more detail later in this chapter.

Following up on the UGR, recent analysis by Metro planners¹⁷ suggests that 70% of the industrial land need will be for warehouse and distribution use, 17% will be for tech/flex use, and 13% will be for general industrial use. Comparing demand to supply, Metro's analysis found that the region has a deficit of 2,707 gross acres of vacant, buildable industrial land. The deficit is particularly pronounced for larger lot sizes (between 50 and 100+ acres) that are needed for tech/flex and warehouse/distribution uses and for smaller lot sizes (less than 10 acres). The need for large lot sizes is described further below.

SUMMARY: INTERPRETING THE FORECASTS

The Metro regional forecast is a baseline forecast that considers not only national and state growth projections, but also the region's past trends and current economic strengths. While the forecast considers major public policy decisions like changes in the urban growth boundary, it does not anticipate specific economic development efforts. In other words, the future reality can differ from these forecasts, depending on what is done to alter the region's comparative strengths and weaknesses.

The same is true, but even more so, for the sub-regional forecasts for the City of Portland and its various Employment Zones corresponding to URAs. Metro's allocation of job growth to various parts of the region through its Metroscope model is heavily based on existing land uses and zoning, transportation access, and available land supply and price. Existing land uses reflect past development trends that have occurred based on an area's strengths and weaknesses. The future reality can differ from these forecasts, depending on what is done to alter the City's comparative strengths and weaknesses, including the availability of developable land.

In short, the past is not destiny, and even forecasts that try to consider past trends and future directions are just a guide. The base forecasts do, however, provide a benchmark that PDC should consider. They are a useful starting point in establishing the size of the potential job growth "envelope" that the URAs are working with. And that envelope of job growth can be used to create an envelope for land absorption, which we do in the next section.

Chapter 4 considers the unique characteristics of the URAs, as well as applicable short-term regional and sub-regional forecasts, to describe growth prospects for the URAs themselves in the short-term. Chapter 5 considers the long-term demand envelope, the short-term forecasts of Chapter 4, and the supply characteristics in Chapter 3, to draw conclusions about how much

¹⁷ Neill to Bragdon memo, *ibid.*

employment growth and land absorption is actually likely to occur in the URAs.

IMPLICATIONS FOR LAND CONSUMPTION

The industrial employment growth that is forecasted for various areas can be converted to estimates of forecasted building space absorption and land consumption. We focus on industrial employment growth because the land supply data in Chapter 2 are available only for industrial land, and because PDC has indicated a particular interest in industrial sectors.

There are two basic methods for forecasting land need (or, more specifically and in economic terms, the likely development of vacant land for industrial uses): one is a step-by-step conversion of employment growth to building space and land; and the other is an empirical look at historical building absorption and land consumption trends.

METHOD ONE: STEP-BY-STEP CONVERSION

This method involves a step-by-step conversion of industrial employment growth to building space absorption and land consumption. First, it is assumed that some jobs in industrial sectors will not actually need industrial land (for example, headquarters offices), and some jobs in non-industrial sectors will require industrial land (for example, auto repair). Based on findings for the Regional Industrial Lands Study (RILS), we assume that the total number of jobs needing industrial land is 90% of jobs forecasted for industrial sectors.

Second, we assumed that some employment growth will locate on non-vacant land. Metro calls this “refill” (for *redevelopment* and *infill*). It includes, implicitly, everything that will occur that will reduce the need to use vacant land to accommodate employment growth: for example, handling employment growth by using existing space that now has a higher than frictional vacancy rate, by adding employment shifts within existing buildings, by adding employment within existing buildings (increasing density), or by adding building space on non-vacant lots. Metro conducted a Refill Study in 1999 that estimated a factor of 40% for non-residential uses (21% for industrial and 52% for commercial). For the Regional Industrial Lands Study, ECONorthwest adjusted the industrial rate downward to 15% to account for the fact that the Refill Study was conducted during an economic downturn when there was much vacant building space that could accommodate employment growth. Since that time, Metro’s August 2002 Employment Urban Growth Report has raised the industrial refill rate to 35%, but for the purposes of this analysis we continue to use 15% (which would cause our estimate of land need to be higher than Metro’s, other things being equal).

Third, the employment that needs vacant land is converted to square feet of building space by using employment density (gross square feet per employee). These conversion factors differ by building type (office, flex,

warehouse/distribution, or general industrial), and building types can be partially correlated with industry types. Using findings for RILS Phase 3 (which were in part based on Metro’s 1999 Employment Density Study) and weighting the figures for the amount of growth in each industry sector during 2000-2025, we think a reasonable average for all industrial employment growth in the region is 830 gross square feet per employee. There is, of course, a lot of variability in this average number.

Fourth, the amount of needed building space is expanded to account for structural vacancy that exists in a healthy market. A reasonable estimate might be 7%.

Fifth, the amount of building space absorption is converted to net land consumption by applying a floor-to-area ratio (FAR). Based on RILS Phase III and our review of Metro’s 1999 Employment Density Study, we believe that a FAR of 0.29 is a reasonable regional estimate for industrial development. The resulting acreage is net of any public right of way needed; the actual amount land needed to provide for transportation and utilities would be greater.¹⁸

Finally, the amount of industrial land needed is expanded by 25% to account for the observed fact that non-industrial uses often use industrial land where permitted by zoning. This factor is consistent with RILS Phase 3.

Table 3-12 illustrates this method using the example of forecasted industrial employment growth in the City of Portland from 2000 to 2010 (per Table 3-10 above). It predicts a need for 711 net acres of vacant industrial land during that time, or an annual need of 71 net acres.

Table 3-12. Potential vacant industrial land need, City of Portland, 2000-2010

New Industrial Jobs in Portland, 2000-2010			
	Factor	Result	Units
Industrial Employment		10,526	employees
Share needing industrial land	90%	9,473	employees
Share needing vacant land	85%	8,052	employees
Convert to square feet using employment density	830sf/emp	6,683,207	square feet
Adjust for vacancy	7%	7,186,244	square feet
Convert to net acres using floor-to-area ratio	0.29	569	net acres
Increase for non-industrial usage	0.25	711	net acres
Yearly Average	divide by 10	71	net acres

Source: ECONorthwest, based in part on Metro employment forecasts and RILS Phase 3 assumptions.

As shown in Table 3-13, the same method predicts a need for 3,787 net acres to accommodate industrial employment growth in the four-county region from 2000-2010, and 876 net acres to accommodate industrial

¹⁸ These calculations result in an average employment density of 14 employees per net acre. Calculations of actual densities in the URAs and in the City as a whole reveal an average density of 9 to 12 employees per developed acre, but these acres include constrained land that cannot actually be developed. Actual employment densities in the City and the URAs are probably closer to what we are assuming in this section for future employment.

employment growth in the Employment Zones containing the URA sites. The industrial land need for the entire City is less than that for the Employment Zones containing the URA sites, because Metro expects other Employment Zones in the City to lose jobs over the 2000-2010 period.

Table 3-13. Potential vacant industrial land need, various areas, 2000-2010 and 2000-2025

	4-County Region		City of Portland		Employment Zones containing URAs	
	2000-2010	2000-2025	2000-2010	2000-2025	2000-2010	2000-2025
Industrial Employment Growth	56,050	114,597	10,526	25,473	12,965	24,030
Building Space Required (sf)	38,267,512	78,240,257	7,186,244	17,391,438	8,851,946	16,406,521
Annual Avg. Need (sf)	3,826,751	3,129,610	718,624	695,658	885,195	656,261
Industrial Land Required (net acres)	3,787	7,742	711	1,721	876	1,623
Annual Avg. Need (net acres)	379	310	71	69	88	65

Source: ECONorthwest, based in part on Metro employment forecasts and RILS Phase III assumptions.
Note: only nonfarm payroll employment is included.

Table 3-13 is an estimate that is illustrative of future industrial land need. The amount of actual building space and land needed depends on many assumptions, including employment density, floor-to-area ratios, and the extent to which employment is able to locate on previously developed land. Though not directly relevant to this study, note the estimate for the need for vacant industrial land in the *four-county* area for *25 years* is *less than* Metro’s estimate for the *three-county* (UGB) area for *20 years*, despite the fact that our estimates use much less aggressive assumptions about the percentage of employment growth that will be accommodated through refill (in other words, that will not need to use vacant industrial land). This difference is partly explained by the fact that we are considering only nonfarm payroll employment, and partly by Metro’s assumptions about commercial use of land that has been vacated by relocating industrial firms. We discuss these issues in more detail below.

METHOD TWO: HISTORICAL DATA

A second method for forecasting the absorption of industrial land is more direct: it uses historical data on industrial building space absorption and industrial land consumption as a cross-check with the step-by-step method above.

Table 3-14 shows that in the six-county PMSA, the average amount of industrial building space absorbed per year from 1991 through 2002 was about 4.4 million square feet. This is about 15% higher than our 2000-2010 projection in Table 3-13 for the four-county region.¹⁹ We think that the 1991-2002 historical average is slightly higher than what we expect in the future for two reasons. The main one is that the 1991-2002 period only had a few years at the beginning and end that were not “boom” years in the economic

¹⁹ The difference between the four-county region and the six-county region is not much of an issue, since the two counties that make up the difference are Yamhill County and Columbia County, which probably make up a small share of the six-county absorption.

cycle. The other is that we might expect employment densities to increase in the future, as industrial land supply remains tight and policies are designed to encourage high employment density.

Table 3-14. Historical industrial building space absorption (net square feet), Portland PMSA, 1991-2002

Year	Net Industrial Absorption (square feet)
1991	5,540,877
1992	278,190
1993	5,829,737
1994	3,965,297
1995	7,826,970
1996	7,152,263
1997	7,826,970
1998	7,152,263
1999	4,426,108
2000	4,509,853
2001	-1,116,059
2002	-388,644
Ann. Avg. '91-'02	4,416,985

Source: CB Richard Ellis, Norris Beggs & Simpson, and Johnson Gardner
 Note: PMSA includes Clackamas, Columbia, Multnomah, Washington, and Yamhill Counties in Oregon and Clark County in Washington.

Built space, of course, is not the same as vacant land. Unfortunately, land consumption is generally not tracked by market analysts (who tend to track land transactions, which do not correlate well with actual use of the land), and few municipalities have linked their permitting systems to their systems for monitoring changes in their estimates of land supply. Thus, we use an indirect method to estimate historical industrial land consumption in the Portland area.

Metro’s 1997 Urban Growth Report reported that in 1994 there were 10,870 gross acres of vacant, buildable land planned for industrial uses within the Urban Growth Boundary (containing the urban portions of three counties). By 2000, this amount was reduced to 8,146 gross acres of vacant, buildable industrial land.²⁰ No new vacant, buildable industrial land was added to the supply during 1994-2000. These facts (and some additional assumptions, to be noted shortly) allow the following estimate: 2,724 gross acres of vacant, buildable industrial land were consumed in the Metro UGB over a six-year period, an average of 454 gross acres per year.

²⁰ This figure is part of the background analysis for the 2002 UGR and was provided via e-mail from Dennis Yee at Metro’s Data Resource Center on 24 June 2003. It is slightly (6%) less than the 8,677 acres reported in the UGR itself. If we were to use the 8,677 acres, the resulting annual industrial land consumption would be even closer to our forecasts for annual industrial land consumption.

To see how well that estimate corresponds to the one in Table 3-13, we first convert the average of 454 gross acres per year to roughly 300 net acres by using the net-to-gross assumptions from the 1997 Metro Urban Growth Report. Assuming a 62% capture rate by the Portland UGB of 4-County growth (as assumed in the 2002 UGR), this 300-net-acre figure translates to about 480 net acres per year in the 4-County area from 1994-2000. This is roughly 40% to 55% higher than the forecasts in Table 3-13 for the annual need for net vacant industrial acres: we estimated an annual average need of 379 net acres from 2000-2010 and 310 net acres from 2000-2025. This difference can probably be explained by the fact that employment grew more per year in 1995-2000 than it is expected to grow in the next 10 to 25 years.

COMPARISON WITH METRO URBAN GROWTH REPORT

The findings in Table 3-13 for the 4-County Region differ from that of the Metro's 2002 Employment Urban Growth Report (UGR). Table 3-13 suggests that the 4-county region will need 7,742 net acres of industrial land between 2000 and 2025 while Metro's UGR forecasted a need for 9,366 net acres of vacant industrial land for the area within the Metro urban growth boundary (UGB) from 2000-2022. The UGR provides some information that allows us to hypothesize the reasons for the difference.

One key reason for the difference is that Metro assumes roughly 3,000 additional net acres will be needed for industrial firms who are relocating, and who find that building space vacated by other industrial firms has been used by commercial firms. This is a phenomenon that our model does not consider, because we assume that space vacated by industrial firms will be used by other industrial firms, so that no new demand for vacant land is created by relocation. We include a factor in our model for commercial encroachment on vacant land, but not for commercial use of developed space vacated by relocating industrial firms.

Our point here is not that one set of assumptions, and the consequent forecast of land need, is "right" and the other wrong: Metro's factors for commercial use of vacated industrial space are based on extensive modeling. Rather, it is that the future is uncertain in general, and for land markets in particular. Future land absorption will be influenced not only by uncertain market conditions, but by public policy, which clearly changes over time.

At the same time, we feel more comfortable using a factor in our analysis that is more reflective of the RILS technique; that is, no accounting for commercial use of land that has been vacated by relocating industrial firms. Rather than resolving the methodological differences here, we instead show the effect of the differences. If Metro had not assumed any commercial use of space vacated by relocating industrial firms, Metro's industrial land need would have been roughly 6,360 net acres, rather than the 9,366 acres they estimated using their factors.

This 6,360 net acres would have been less than our 7,742-acre forecast above, for two reasons. The first and most important is that Metro's report

excluded Clark County, Washington, which is expected to account for a significant share of the 4-County Region's future employment. The other main difference is that the Metro UGR uses a time period that is three years less than that of Table 3-13. Assuming a capture rate of 75% for Clark County (consistent with the UGR) and accounting for the time difference, Metro's UGR forecast converts to 9,636 net vacant industrial acres in the four-County area over the 2000-2025 period. This is higher than our 7,742-acre estimate from Table 3-13. Part of the reason is the fact that Metro used total employment forecasts, while we used nonfarm payroll forecasts (that is, excluding self-employment). In the industrial sectors, self-employment is not as substantial as in the service sectors; total employment is only 4% to 14% higher than payroll employment, depending on which industrial sector is considered. Nevertheless, this would explain some of the remaining differences between our forecast for the region and Metro's.

There are other methodological differences between Metro's UGR and our projection above, including minor differences in employment densities, FARs, the share of each sector that require industrial land, and the amount of industrial refill. These could explain why, after accounting for differences in commercial use of vacated industrial land, geographic boundaries, the time period covered, and the difference between payroll employment and total employment, the end result is that the land need reported in the Metro UGR still seems high compared to our estimates in Table 3-13. Without a detailed step-by-step examination of the way in which Metro estimated land need for the UGR, beyond what is written in the UGR itself, we cannot resolve the differences here.

We do note that our forecasted demand for 310 net acres of vacant industrial land per year for the four-county area in 2000-2025 is very close to the 303 net acres per year forecasted in Phase II of the Regional Industrial Lands Study for the same four-county area.

In summary, the differences between our forecasts and the Metro UGR forecasts are a result of a combination of many factors, summarized in Table 3-15.

Table 3-15. Different assumptions on industrial land need for the region, Metro UGR and ECO method

Factor	Metro assumption	ECO assumption	Effect on ECO forecasts relative to Metro forecasts (all else equal)
<i>Geographic area</i>	3-County UGB	Entire 4-County area	Higher
<i>Time period</i>	2000-2022	2000-2025	Higher
<i>Commercial use of land vacated by relocating uses</i>	Significant	Not considered	Lower
<i>Type of employment</i>	Total employment	Nonfarm payroll employment	Lower
<i>Employment densities, FARs, share of each sector that is "industrial," amount of industrial refill</i>	Varies	Varies	Varies: total effect unknown

DEMAND BY PARCEL SIZE

Overall, the vast majority of firms are small and require small parcel sizes, but the larger firms contain a significant amount of employment and require a significant amount of land in large parcel sizes. In other words, large parcels account for a higher share of total land need and employment than of the total number of parcels or firms.

For Phase 3 of the Regional Industrial Lands Study (RILS), ECONorthwest and Otak estimated the number of sites that would be required for the Portland region in 2000-2025 in various size ranges, as shown in Table 3-16.

Table 3-16. Demand for sites of various sizes, Portland region, 2000-2025, from RILS

Size (net acres)	No. of sites	% of sites
Under 3	2,169	88%
3 to 11	235	9%
11 to 50	58	2%
50 to 100	9	0%
100 +	6	0%
Total	2,477	100%

Source: Otak and ECONorthwest, Regional Industrial Lands Study, Phase 3, October 2001

Notes: Demand is for 2000-2025 period for six-county PMSA. Sites are not the same as tax lots; a site can be composed of more than one tax lot, especially under common ownership.

Phase 3 of RILS also estimated the share of industrial land (as opposed to the share of the number of sites) in various size ranges. It estimated the need for sites of three acres or less at anywhere from 40% (based on current firm sizes) to as low as 7% (based on a continuation of recent trends toward larger firm sizes). The share of land needed for sites greater than 50 acres ranged from 10% (based on current firm sizes) to 28% (accounting for landbanking).²¹

Metro’s August 2002 Employment Urban Growth Report (UGR) also projected future needs for different parcel sizes. The findings are similar, partly because the methods used by Metro borrow from the RILS methods. Table 3-17 summarizes the UGR findings. It shows that small parcels (less than 5 acres) are the most common type of parcel needed. The greater amount of land per parcel of the larger parcel types, however, means that a significant amount of land will be needed in larger parcels.

Table 3-17. Demand for sites of various sizes, Portland UGB, 2000-2022, from Metro Urban Growth Report

Size (net acres)	No. of sites	% of sites	Acreage	% of acreage
Under 1	3,007	73%	1,504	16%
1 to 5	743	18%	2,230	24%
5 to 10	240	6%	1,803	19%
10 to 25	114	3%	2,000	21%
25 to 50	20	0%	740	8%
50 to 100	10	0%	724	8%
100 +	4	0%	365	4%
Total	4,138	100%	9,366	100%

Source: Metro Employment Urban Growth Report, August 2002.

Notes: Demand is for 2000-2022 period for area within Metro Urban Growth Boundary (UGB).

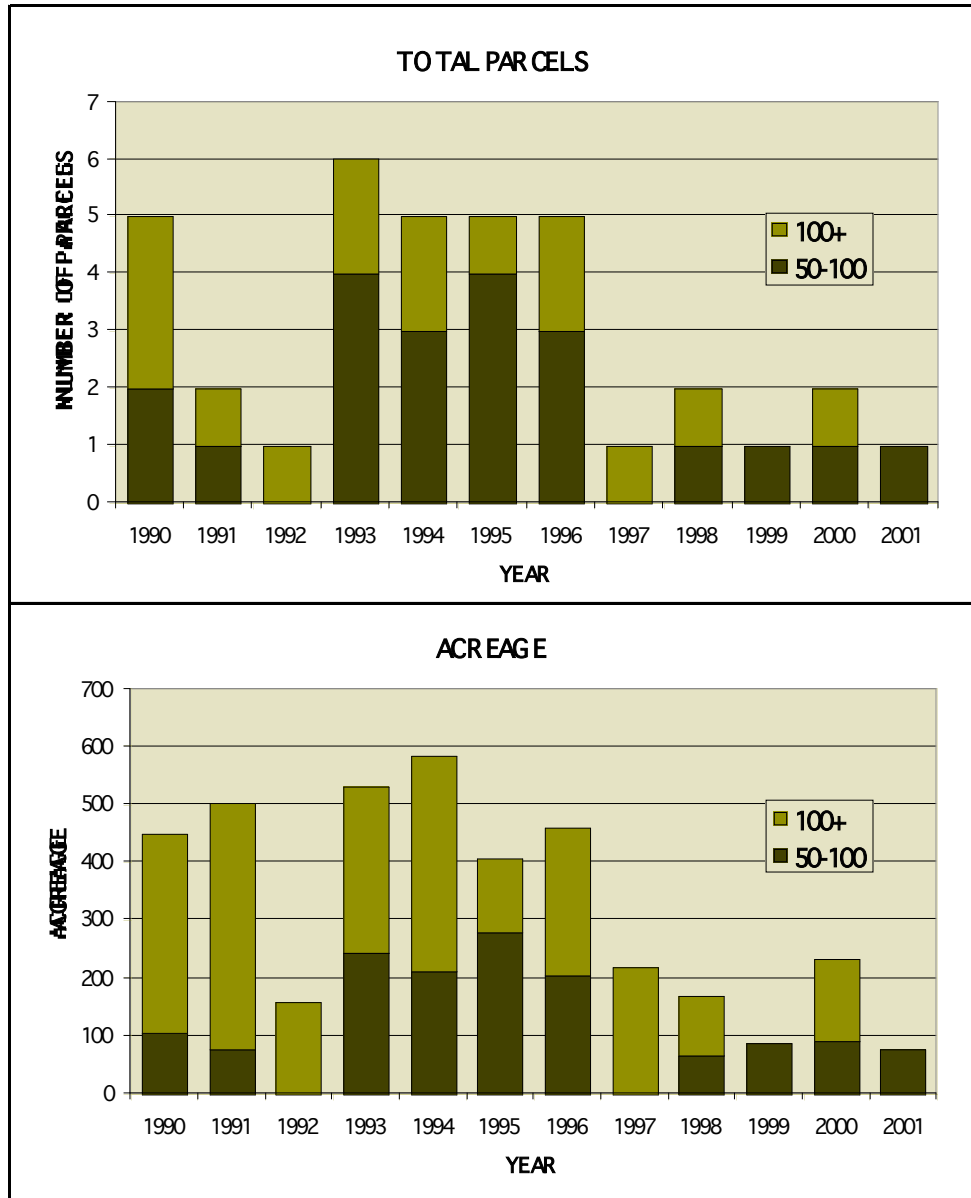
MARKET TRENDS FOR LARGE SITES

Recent sales data on industrial land parcels in Clackamas, Multnomah, and Washington Counties were collected from CoStar Realty Information. These data indicated that 35 industrial land parcels of 50 acres or more have been sold in that area since 1990. Of these parcels, 15 were greater than 100 acres in size. The City of Hillsboro accounted for 43% of all large-lot transactions, and 49 of total large-lot acreage purchased during this period.

During the mid-1990s expansion period, five to six large-lot parcels were sold per year, as shown in Figure 3-8. The overall volume of industrial land purchased during the high-tech expansion period from 1988 through 1996 averaged 1,144 acres per year. The lack of 100+ acre transactions in the last few years reflects that fact that there are effectively no parcels available in this size range.

²¹ The RILS analysis considered industrial land, rather than commercial (office/retail) land. When office and retail employment is considered, the distribution of demand is probably shifted towards smaller sites.

Figure 3-8. Large lot parcel sales by year



Source: CoStar

The sale of land is not equivalent to the net absorption or use of that land, and transaction volume will typically exceed net absorption. Both end-user firms and speculative developers purchase land in advance of their intended use of the property. Market pricing and availability of industrial land is a function of the land supply available in the market during any discrete period.

High-tech firms in the area have demonstrated a propensity for “land banking”, or purchasing property in excess of their anticipated immediate term needs in order to assure on-site expansion potential. A recent sample of 18 owner/user occupied buildings was prepared, totaling 8,460,328 square feet of space on 1,505 acres of land. The average coverage ratio for these users was only 12.9%, reflecting the impact of land banking for potential

future expansion on land consumption. Owner/users have a tendency to land bank for several reasons. First, they perceive they will actually use the land for future expansion and do not want to be faced with the inefficiencies of multiple locations in the future. Second, they often desire a campus environment with major landscaping and open space.²² Operational characteristics of high-tech employers also contribute to a relatively high propensity to land bank in the industry. Raw industrial land cost is a relatively small component of a high-tech employer's overall capital improvement budget and operational costs. The cost of buildings and equipment is very high relative to general industrial improvements, as is the cost of labor. The industry is also highly cyclical with unpredictable growth, as observed in the recent downturn. As a result, there is a large premium placed on ensuring flexibility in a location.

²² ECONorthwest, 2040 Means Business: Industrial Market Working Paper, November 1996.

This chapter moves from the broad considerations in Chapter 3 (long-term and regional) to more specific ones (short-term and subareas of Portland). Rather than the 10- and 20-year forecasts in Chapter 3, this chapter presents forecasts over the 2003-2007 period.¹ It also draws conclusions about likely absorption at the individual URAs, in contrast to the predominantly regional and citywide perspective presented in Chapter 3.

In summary, over the next several years the current excess of speculative space in both the office and industrial markets will largely accommodate projected business expansion and employment growth of firms looking for speculative space in Portland. What it does not address is the need for firms that want to own their site and cannot be accommodated within the speculative inventory, or firms that have locational needs or space requirements inconsistent with the existing speculative inventory. When the markets recover to a point adequate to support new construction, the pipeline of planned and proposed projects (already announced) will meet most of the short-term need for speculative space. The important qualifier is that the City should continue its work to provide a selection of sites available in the short-term that are appropriate for an end-user who may have specific needs that cannot be met by the current and projected speculative space inventory (e.g., large parcels).

FACTORS INFLUENCING SHORT-TERM DEMAND

The long-term demand for industrial and office space can be forecasted with some level of certainty on the basis of broad trends in sectoral employment and space usage patterns. Short-term demand, in this case over the next three years, is substantively impacted by a number of factors that are less significant over a longer-term horizon.

Demand in the short term reflects the time-sensitive nature of space demand, and requires an estimation of an annual clearing and allocation of market demand.

An example of this would be a firm deciding that it needs additional distribution space in the Portland metropolitan area by mid-2004. Such a firm would be able to describe the physical and locational requirements

¹ The 2003-2007 period in this chapter overlaps with a portion of the 2000-2010 increment considered in Chapter Three. The forecasts are not identical: as pointed out in a footnote in Chapter Three, the Chapter Three forecasts are based on Metro forecasts, while the shorter-term forecasts in this chapter are based on regional employment forecasts by the Oregon Department of Administrative Services, adjusted by Johnson Gardner for sub-regional areas. While the two sets of forecasts are not identical, they are not generally inconsistent. Our view is that the Metro forecasts are useful long-term forecasts, but that the Johnson Gardner forecasts in this chapter most accurately reflect short-term trends that will affect absorption in the study sites over the short-term (2003-2007).

associated with this need, and would begin an active search for available options. Important factors in this decision include the following:

- Available land supply. This would need to be suitable for immediate development to meet the short-term need for space. The property would also need to be available for purchase or a turnkey development. The definition of “available” land supply in this use is similar to what is referred to as “shovel ready” (as opposed to planning concepts of buildable lands).
- Available built space. Existing buildings that meet the identified need, that are or will be available for lease or sale within the time period. These can address the demand, and are often available at costs below replacement cost, particularly in a soft market.

The result of this search—construction or lease of appropriate space and end utilization—would be categorized as “realized demand,” as opposed to “underlying demand.” Underlying demand is a hypothetical estimate of what the market would desire; realized demand reflects actual market activity. If in the previous example the firm would have preferred a location on Airport way within a quarter mile of Interstate 205, but the best location it could find was at 181st and Interstate 84, the first site would reflect underlying demand, while the second site would reflect realized demand. This is an important factor in predicting short-term demand characteristics, as the allocation of short-term demand is a function of available supply as well as underlying demand. The final demand forecasts presented in this chapter represent realized demand, and reflect the current and anticipated supply of space in the market.

MACROECONOMIC FACTORS

Broad macroeconomic trends impact industrial and office space absorption directly on a metropolitan area basis, and often less directly on a submarket or individual project level. The demand for space remains a function of shifts in space-using employment, and the market for both industrial and office space is subject to significant fluctuations in occupancy and marginal lease rates. While planning models typically deal with point-to-point projections, the short-term market is subject to pronounced business and real estate cycles.

The market for speculative space is cyclical, with periods in which the market is both over- and under-supplied with space. The real estate cycle can be generally characterized by the following phases:

Initial Growth Phase	Early expansion portion of the business cycle. Market is typically working off excess inventory, with little new construction initiated.
Economic Expansion	Sustained economic growth drives demand for product, market is relatively tight, and achievable lease rates can support new construction.
Late Stage Expansion	Market continues to expand, with new supply pipeline full.
Downturn	Economic growth either halts or recedes, reducing demand levels and raising vacancy rates. A significant amount of space remains in the pipeline, underwritten during the expansion phase.
Market Bottom	New supply that was in the pipeline continues to be delivered, prolonging the overbuilt condition of the market.

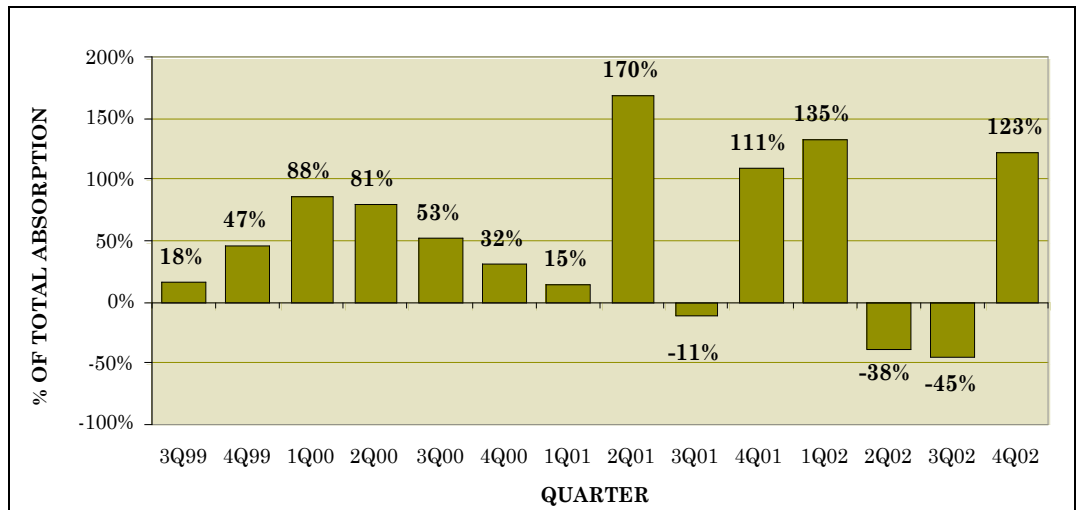
The Portland metropolitan area is currently at the market bottom phase, and has a significant level of over-supply to work off before new speculative construction can be underwritten. This does not preclude new development activity—speculative space is only part of the overall market—but it does reduce the amount of new development that will occur.

OWNER-OCCUPIED AND SPECULATIVE SPACE

The preponderance of available data regarding the office and industrial markets is for only the *speculative* portion of the market. That portion of the market contains buildings that are leased to tenants, with vacancy levels and lease rates therefore tracked by the commercial brokerage firms. While speculative space represents the bulk of office development, it accounts for only about a quarter of all industrial space. The remaining space is *owner-occupied* (also referred to as *end-user*) and is not typically tracked by brokerage firms.

From the perspective of forecasting demand, therefore, limiting the analysis to speculative space will under-estimate demand levels. Figure 4-1 shows that the share of net absorption of industrial space accounted for by speculative space varies widely when viewed on a quarterly basis. Over a longer time period, the share of speculative space absorption is more stable.

Figure 4-1. Speculative industrial share of overall net absorption, Portland Metropolitan Area, 1999-2002



Source: CB Richard Ellis

OTHER FACTORS

There are a number of additional factors that influence the short-term demand for industrial and office space. Two important ones:

- Reductions in the cost of space will tend to increase space usage per employee. The high vacancy rates currently in the market will depress rent levels, creating an incentive to consume more space per employee. The current softness in the market will lead to lower effective lease rates on the margin, increasing demand beyond what an employment-driven model will forecast. Our model addresses this phenomenon by increasing space usage per employee in soft markets, and returning the market to an underlying demand level when markets recover.
- Multi-year lease commitments will reduce the ability of employers to change space usage rapidly as employment shifts. While the need for space can vary month by month, lease terms are typically of a longer duration. This leads to tenants over-consuming for anticipated growth, as was rampant for technology firms, or under-consuming as they defer new space until a lease renewal. Firms with lease commitments for unneeded space often introduce sublease space into the market, which is currently a significant issue in the Portland metropolitan area. The market currently has an estimated 2.7 million square feet of industrial sublease space available, representing 12.9% of all available space. While the short-term forecast addresses the impact of this space on demand, this space also impacts achievable lease rates, as it is often leased at a discount.

PRODUCT TYPES

The real estate cycle often varies by product type: softness in demand for one product type may have little impact on demand for another type.

Industrial space is typically split out into a number of alternative product types, such as warehouse/distribution, manufacturing, and flex/incubator. Since the physical characteristics of these products vary substantively, they are not interchangeable.

Manufacturing and general industrial space is often designed to meet the specifications of a specific user, and the specialized nature of these facilities may pose problems when tenants move out or owners decide to end operations. As a result, absorbing vacant manufacturing or research and development (R&D) space can take longer than warehouse space.

Within both the office and industrial markets, there are also variations in tenant types. While many tenants serve a broad region from their location, some tenants are more localized in their locational needs. These types of tenants often serve a particular industry concentration, medical facility or population concentration. Since the space needs of these tenants are geographically specific, the space needs are less likely to be impacted by softness in alternative locations. Medical office space is a common example of this type of tenant. Physician practices are likely to locate close to either a served population concentration or a medical facility such as a hospital.

FORECASTING METHODS

GENERAL

The short-term forecasting model used by Johnson Gardner incorporates a forecast of underlying demand similar to the longer-term models used by Metro and found in the Regional Industrial Land Study (RILS), but factors in available space by type, construction activity and short-term impediments to market response.

INDUSTRIAL SPACE

The industrial space market is segmented into three broad categories of space for the purposes of this forecast:

- **Warehouse/Distribution:** While some firms own and operate their own warehouses, this type of space is often speculative with multiple tenants.
- **Manufacturing/General:** Often built to user specifications, these buildings may have a limited re-use potential without a substantial retrofit cost. As a result, a relatively small percentage of this type of space is speculative multi-tenant.
- **Incubator/Flex:** This type of space often is often characterized by a relatively high level of office build-out, and is suitable for multi-tenant speculative development.

The demand for both manufacturing and warehouse/distribution space are assumed to be relatively discrete, while incubator/flex space demand is often related to the speculative office space market.

The model used establishes demand at the metropolitan area level, allocates that demand to five subregions on the basis of historical market and employment trends, and further allocates demand to 21 submarkets on the basis of trends and available space.

OFFICE SPACE

TRADITIONAL OFFICE

The demand for traditional office space is closely correlated with expansion in office space using employment sectors. The model established demand at the metropolitan level utilizing forecasts of employment by sector. A subregional allocation is made based on employment forecasts and observed market trends, while the allocation to more geographically-specific submarkets is based on existing and anticipated supply.

MEDICAL OFFICE

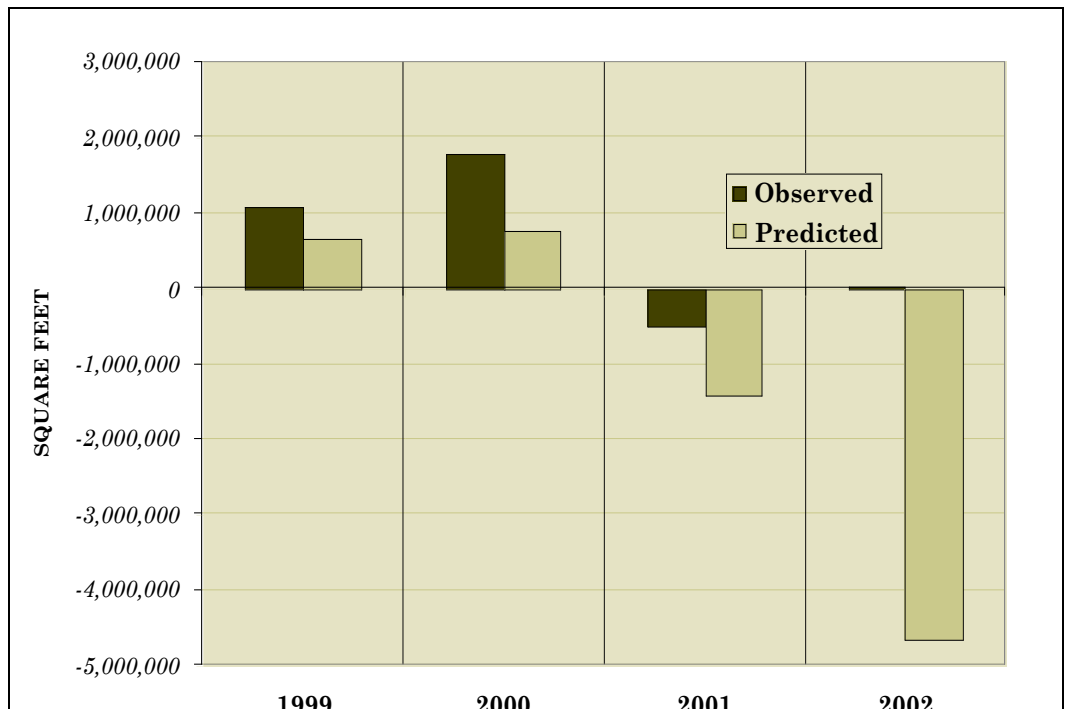
Medical office space demand is a function of expansion in medical practices and associated needs, which is related to growth in population. While population growth trends are associated with economic trends, the fluctuations are less pronounced and demand for this market segment is considered to be less cyclical. The demand for this type of space is typically highly specific geographically, with the tenants less cost-sensitive than more footloose tenant types.

SHORT-TERM DEMAND FORECASTS

INDUSTRIAL SPACE

In assessing the short-term demand for industrial space, we tracked underlying demand estimates produced by Johnson Gardner based on historical employment trends against observed absorption trends in the metropolitan area as well as Multnomah County. As shown in Figure 4-2, predicted, or underlying, demand has declined to a greater extent than observed in net absorption trends. This suggests that current market softness is greater than what is reflected in vacancy rates, as the underlying need for space has declined at a significantly higher level than occupied space. Some of the reasons for this discrepancy may be that the need for space has declined in owner-occupied facilities that are not being actively leased, or that the space no longer being used is too specialized for ready retrofitting. The implication for the demand model is that a portion of the forecasted demand may be met by space that is either not being utilized or is under-utilized.

Figure 4-2. Net absorption by year, Multnomah County

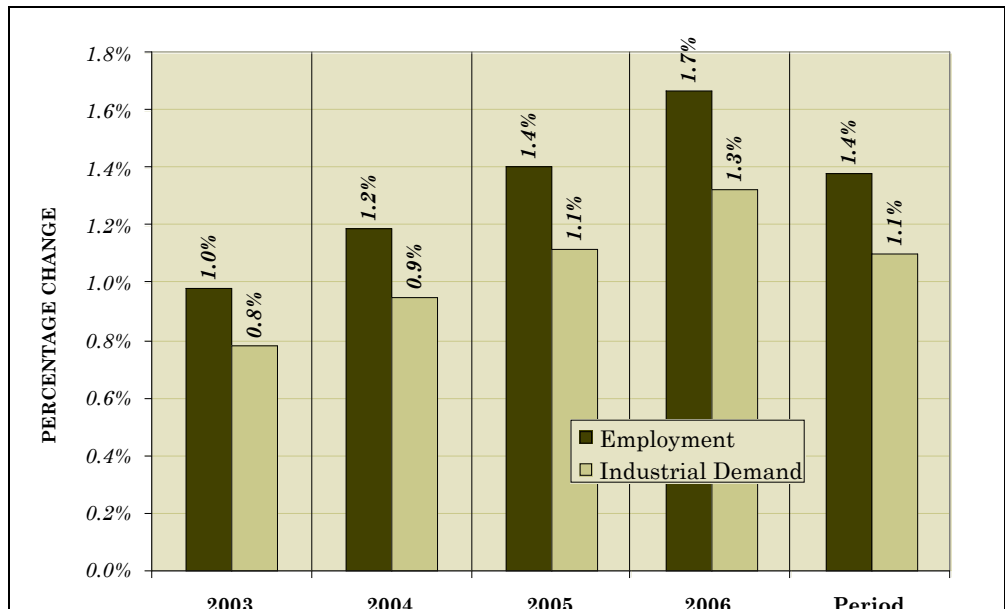


Source: CB Richard Ellis and Johnson Gardner

Over the next several years, we expect that the metropolitan area economy will emerge from the current downturn, although at a lower rate than observed during the previous expansion. Assuming an expansion of overall employment at the metropolitan area level averaging about 1.1% per year over the next five years, the underlying demand for industrial space is expected to expand at a rate ranging from 1.0% to 1.7% during the period, as shown in Figure 4-3.² This would reflect net absorption rates of 2.3 to 3.4 million square feet per year in the metropolitan area, and 1.0 to 1.4 million in Multnomah County. The current inventory of occupied industrial space in the region is estimated at 206 million square feet, based on our employment-driven model summarized in Appendix B, Table B-5.

² Johnson Gardner has provided the short-term employment forecasts.

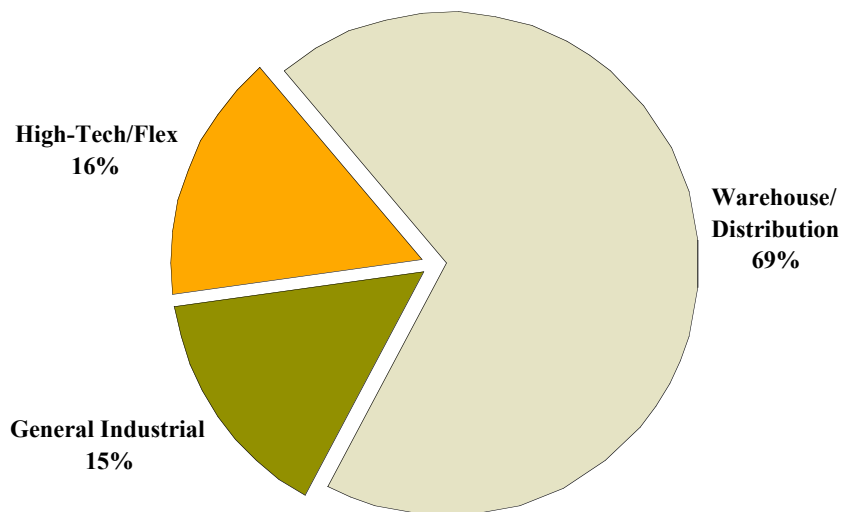
Figure 4-3: Projected rate of change for employment and industrial demand, Multnomah County, 2003-2006.



Source: Johnson Gardner LLC

The projected distribution of demand by type anticipates a majority of demand to be for general industrial space, much of which will be owner-occupied. Warehouse/distribution space is projected to account for 69% of new demand during this period, while incubator/flex space accounting for 16% and general industrial accounting for 15%.

Figure 4-4. Distribution of projected demand for industrial space, by type, Multnomah County, 2003-2006



Source: Johnson Gardner LLC

The Johnson-Gardner short-term model is based on a regional forecast, which is then allocated to major subregions and then submarkets.³ The allocation is primarily employment- and trend-driven at the subregional level, while supply-driven at the smaller submarket level. The analysis focuses on the speculative component of the market, and is intended to forecast overall occupancy rates over the next few years.

For the purposes of our analysis, the metropolitan area is broken into five major subregions, with twenty-one submarkets. Table 4-1 outlines the relationship between the subregions and submarkets delineated in the demand analysis with the Urban Renewal Areas (URAs) being evaluated. The Oregon Convention Center and Gateway URAs are not included in this summary, as they are being evaluated as employment as opposed to industrial sites.

Table 4-1. Relationship of industrial subregions, submarkets, and URAs, City of Portland, 2003

Subregion	Submarket	URA
North/Northwest	Swan/Hayden Islands Rivergate	Interstate Corridor URA Time Oil Site
Northeast	Airport Way Columbia Boulevard Close-In Northeast	Airport Way URA Central Eastside URA
Southeast	Close-In Southeast	Central Eastside URA

Source: Johnson Gardner LLC

Forecasted speculative demand levels over the next four years were generated at a subregional and submarket level, as shown in Table 4-2. These forecasts anticipated realized demand levels for speculative space ranging from 33% to 46% of underlying demand forecasts on an annual basis. The model anticipates that soft market conditions will elevate speculate demand levels over the next few years, as the cost of available space declines. Of the relevant submarkets, Airport Way is expected to realize the greatest share of industrial net absorption over the forecast period.

³ The short-term employment model is broadly based on State of Oregon sectoral forecasts, adjusted by Johnson Gardner to reflect annual employment levels.

Table 4-2. Projected speculative industrial space net absorption, Portland region, 2003-2007

Subregion <i>Submarket</i>	Forecasted Demand			
	2Q03- 1Q04	2Q04- 1Q05	2Q05- 1Q06	2Q06- 1Q07
Westside	417,852	706,612	453,549	684,689
<i>Aloha/Hillsboro</i>	195,212	335,814	225,805	341,372
<i>Beaverton</i>	72,126	157,822	92,685	139,713
<i>Lake Oswego</i>	2,951	6,783	0	0
<i>Tigard</i>	17,826	41,615	24,258	36,032
<i>Tualatin/Sherwood</i>	74,046	107,527	72,642	109,497
<i>Wilsonville</i>	55,692	57,051	38,158	58,075
<i>Inner Southwest</i>	0	0	0	0
North/Northwest	171,155	144,640	243,320	144,369
<i>Guilds Lake</i>	35,420	95,208	116,365	68,267
<i>Swan/Hayden Islands</i>	45,347	38,454	62,287	36,682
<i>Rivergate</i>	88,080	9,000	61,467	37,540
<i>N.W. Industrial District</i>	2,307	1,978	3,201	1,880
<i>Central Business District</i>	20,761	17,285	28,054	16,588
Northeast	225,897	129,613	207,889	133,529
<i>Airport Way</i>	135,618	49,367	88,058	56,665
<i>Columbia Boulevard</i>	61,315	54,458	84,625	54,270
<i>Close-In Northeast/I-84</i>	23,452	20,243	31,558	20,364
<i>Gresham/Rockwood</i>	5,511	5,544	13,895	8,831
Southeast	134,346	85,791	136,578	106,823
<i>Clackamas</i>	70,243	37,128	59,630	46,666
<i>Close-In Southeast</i>	18,427	13,946	22,060	17,257
<i>Milwaukie</i>	37,055	28,112	44,455	34,759
<i>Oregon City</i>	2,641	2,064	3,253	2,527
<i>Other</i>	5,980	4,542	7,181	5,614
Vancouver	130,784	79,751	123,415	71,113
Metropolitan Area Total	1,080,033	1,146,407	1,172,301	1,146,038

Source: Johnson Gardner LLC

The model anticipates that market conditions in the relevant submarkets will remain soft over the next few years, limiting new construction primarily to end-user space, turn-key (build-to-suit) developments or projects with substantial pre-lease commitments. New speculative industrial space is unlikely to be initiated under these conditions without a tenant in-hand. Identified new supply and demand is introduced to the market, solving for an end-of-period overall vacancy rate by submarket. New supply assumptions have been limited to projects currently under construction unless average market vacancy within a submarket fall below 15%. Table 4-3 summarizes projected industrial vacancy rates in the Portland region and individual submarkets over the next four years.

Table 4-3. Projected industrial vacancy rates, Portland region, 2003-2007

Subregion Submarket	1st Quarter 2003		Projected			
	Speculative Inventory	Vacancy Rate	Vacancy Rate			
			1Q04	1Q05	1Q06	1Q07
Westside	38,363,829	17.0%	16.5%	14.9%	14.5%	14.0%
<i>Aloha/Hillsboro</i>	15,545,475	20.8%	20.1%	17.9%	16.5%	16.8%
<i>Beaverton</i>	7,683,763	20.2%	19.3%	17.2%	16.0%	15.2%
<i>Lake Oswego</i>	582,577	9.5%	9.0%	7.9%	7.9%	7.9%
<i>Tigard</i>	4,045,518	7.9%	7.5%	6.4%	5.8%	5.0%
<i>Tualatin/Sherwood</i>	5,966,224	16.0%	15.7%	15.6%	15.5%	13.7%
<i>Wilsonville</i>	4,540,272	8.8%	9.2%	7.9%	12.5%	11.4%
<i>Inner Southwest</i>	155,121	0.0%	0.0%	0.0%	0.0%	0.0%
North/Northwest	20,758,514	18.4%	17.6%	16.9%	15.7%	15.0%
<i>Guilds Lake</i>	5,784,674	11.19%	10.6%	8.9%	6.9%	5.7%
<i>Swan/Hayden Islands</i>	5,292,012	16.85%	16.0%	15.3%	14.1%	13.4%
<i>Rivergate</i>	7,589,137	23.87%	22.7%	22.6%	21.8%	21.3%
<i>N.W. Industrial District</i>	313,256	14.06%	13.3%	12.7%	11.7%	11.1%
<i>Central Business District</i>	1,779,435	24.01%	22.8%	21.9%	20.3%	19.4%
Northeast	19,793,449	14.9%	14.7%	14.9%	13.8%	13.2%
<i>Airport Way</i>	6,955,584	14.5%	15.2%	15.6%	16.7%	17.4%
<i>Columbia Boulevard</i>	8,628,226	15.3%	14.6%	14.0%	13.0%	12.4%
<i>Close-In Northeast/I-84</i>	2,041,358	26.6%	25.4%	24.5%	22.9%	21.9%
<i>Gresham/Rockwood</i>	2,168,281	3.6%	3.3%	7.3%	6.7%	6.3%
Southeast	13,346,569	21.4%	20.8%	20.4%	19.4%	18.6%
<i>Clackamas</i>	5,511,394	22.0%	21.6%	21.5%	20.5%	19.7%
<i>Close-In Southeast</i>	2,132,812	22.4%	21.5%	20.9%	19.8%	19.0%
<i>Milwaukie</i>	4,476,609	21.3%	20.5%	19.9%	18.9%	18.1%
<i>Oregon City</i>	488,377	12.9%	12.4%	11.9%	11.3%	10.8%
<i>Other</i>	737,377	20.8%	20.0%	19.4%	18.4%	17.7%
Vancouver	8,937,745	19.1%	18.5%	17.6%	16.3%	17.7%
Metropolitan Area Total	101,200,106	17.8%	17.3%	16.4%	15.6%	15.1%

Source: CoStar and Johnson Gardner LLC

As shown, excess inventory in the market is forecast to keep overall vacancy rates elevated in most submarkets throughout the forecast period. The general softness in the market will limit increases in effective lease rates, which will leave new speculative development unviable. Over the long term, market lease rates will mirror what is required to underwrite new supply to the market. If rates rise above this level, the level of new supply will increase until rates fall. The Portland metropolitan area is currently in the overbuild phase of the real estate cycle, in which an excess of new supply keeps lease rates below what is required to justify new construction.

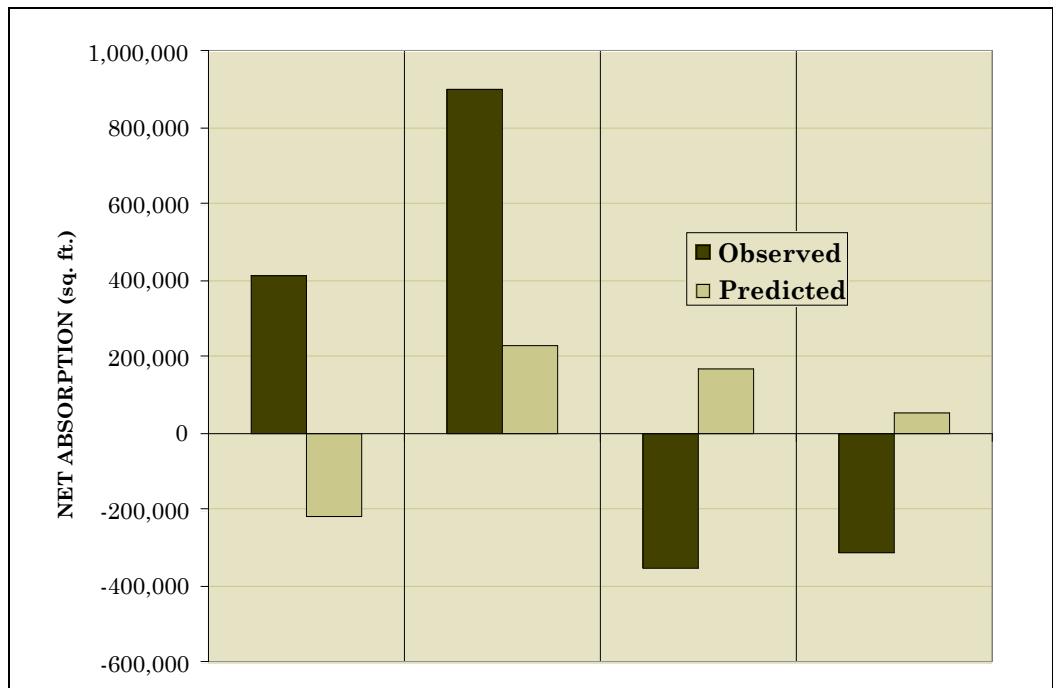
The primary opportunities for new industrial development over the next several years in this market will be tenant-driven, with owner-occupied or build-to-suit projects providing the primary development form. Firms needing new space will typically have physical and operational requirements that are not well met by the existing speculative inventory.

OFFICE SPACE

The short-term demand model utilized for office space is similar to that used for industrial space. As shown in Figure 4-5, our analysis indicates that

net absorption outpaced the underlying demand for space in 1999 and 2000, which was followed by two years of negative net absorption in 2001 and 2002. Office space absorption reflects not only current but anticipated space needs, as the lessee is forecasting his space needs through the lease term. During the previous expansion, this led to an over-consumption of space. When projected growth did not materialize, this led to a more pronounced impact on the speculative office market during the recent downturn.

Figure 4-5: Net speculative office space absorption by year, observed and predicted, Multnomah County

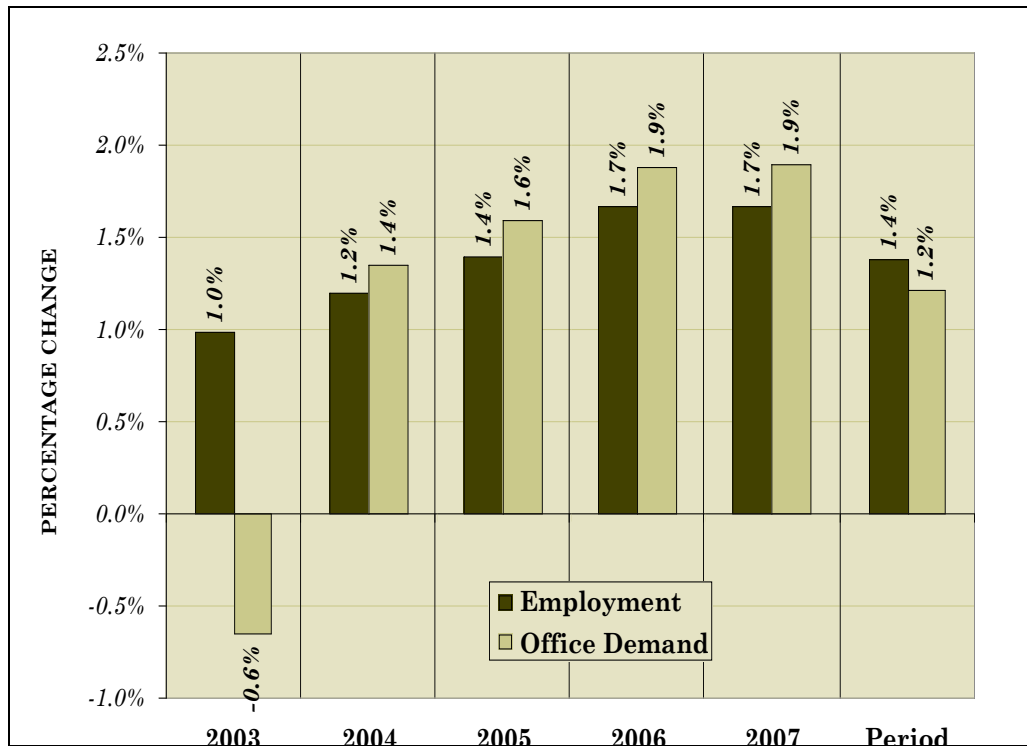


Source: Norris Beggs & Simpson and Johnson Gardner

Over the next several years, we expect that the metropolitan area economy will emerge from the current downturn, although at a lower rate than observed during the previous expansion. Assuming an expansion of overall employment at the metropolitan area level averaging about 1.1% per year over the next five years, the underlying demand for office space is expected to expand at a rate ranging from 1.2% to 1.9% during the period, as shown in Figure 4-6.⁴ This would reflect net absorption rates of 770,000 to 1.1 million square feet per year in the metropolitan area, and 350,000 to 515,000 in Multnomah County. The current inventory of occupied office space is estimated at 47 million square feet in the metropolitan area, of which 54% is in Multnomah County.

⁴ Johnson Gardner has provided the short-term employment forecasts.

Figure 4-6. Projected rate of change for employment and office space demand, Multnomah County, 2003-2006



Source: Johnson Gardner LLC

As with the industrial forecast, our short-term model is based on a regional forecast, which is then allocated to major subregions and then submarkets.⁵ The allocation is primarily employment- and trend-driven at the subregional level, while supply-driven at the smaller submarket level. The analysis focuses on the speculative component of the market, and is intended to forecast overall occupancy rates over the next few years.

For the purposes of our analysis, the metropolitan area is broken into eleven major subregions, with twenty submarkets. Table 4-4 outlines the relationship between the subregions and submarkets delineated in the demand analysis with the Urban Renewal Areas (URAs) being evaluated for potential office development.

⁵ The short-term employment model is broadly based on State of Oregon sectoral forecasts, adjusted by Johnson Gardner to reflect annual employment levels.

Table 4-4. Relationship of employment subregions, submarkets, and URAs, City of Portland, 2003

Subregion	Submarket	URA
Central City	Lloyd District	Oregon Convention Center URA
Close-In Eastside	Close-In Northeast Close-In Southeast	Central Eastside URA
East Multnomah County	Airport Way I-205 Corridor	Airport Way URA Gateway URA

Source: Johnson Gardner LLC

Forecasted speculative demand levels over the next four years were generated at a subregional and submarket level. These forecasts anticipated realized demand levels for speculative space approximating underlying demand forecasts on an annual basis. Of the relevant submarkets, the Lloyd District is expected to realize the greatest share of office demand over the forecast period, with significant demand also realized in the Central Eastside URA. While the Airport Way URA is also expected to see significant office demand, this tends to be reflected in the industrial flex market.

Table 4-5. Projected speculative office space net absorption, Portland region, 2003-2007

Subregion Submarket	1st Quarter 2003		Forecasted Demand			
	Speculative Inventory	Vacancy Rate	2Q03-1Q04	2Q04-1Q05	2Q05-1Q06	2Q06-1Q07
Central City	23,333,081	12.4%	92,079	282,712	453,665	308,603
<i>CBD</i>	18,775,744	11.5%	70,594	216,328	343,206	142,154
<i>CBD Perimeter</i>	2,086,764	16.1%	9,731	30,055	47,496	22,160
<i>Lloyd District</i>	2,470,573	16.6%	11,754	36,329	57,391	27,025
Inner Westside	2,412,625	13.9%	13,791	29,322	62,801	31,767
<i>Barbur Blvd</i>	1,003,752	13.4%	5,608	11,914	25,367	8,271
<i>Johns Landing</i>	969,565	18.0%	6,605	14,126	29,976	10,758
<i>Sylvan</i>	439,308	5.8%	1,578	3,282	7,062	1,576
Kruse Way/Washington Sq.	6,946,278	14.3%	300,865	164,809	101,305	156,271
<i>Kruse Way</i>	1,713,600	11.3%	290,907	158,781	101,388	155,730
<i>Tigard</i>	2,351,705	9.3%	3,311	1,981	1,192	1,026
<i>Washington Square</i>	2,880,973	20.2%	6,647	4,048	2,416	2,730
I-5 South Corridor	2,520,422	8.5%	3,843	24,406	22,474	26,098
<i>Lake Oswego/West Linn</i>	814,025	7.0%	1,029	6,479	5,993	5,877
<i>Tualatin/Wilsonville</i>	1,706,397	11.5%	2,813	17,927	16,481	20,221
Beaverton/217 Corridor	4,920,004	19.2%	-254	75,002	60,814	83,690
<i>Beaverton/Cedar Hills</i>	3,362,494	17.1%	-160	47,100	38,235	50,860
<i>Beaverton-Hillsdale/Canyon</i>	1,557,510	23.8%	-94	27,902	22,579	32,830
Sunset Corridor/Hillsboro	4,326,998	12.8%	28,078	69,284	113,995	78,412
Clark County	4,232,171	26.2%	314,860	111,495	176,434	141,570
<i>Vancouver CBD</i>	1,321,403	19.7%	275,326	21,705	153,019	123,685
<i>Suburban</i>	2,910,768	29.2%	39,535	89,790	23,415	17,885
Close-In Eastside	2,076,292	13.2%	4,800	40,951	29,772	47,630
<i>Close-In Northeast</i>	1,287,824	3.0%	1,524	12,538	9,281	6,617
<i>Close-In Southeast</i>	788,468	29.9%	3,276	28,413	20,491	41,012
E. Multnomah Co.	2,096,709	14.2%	6,912	76,492	46,990	39,601
<i>Airport Way</i>	538,760	23.7%	2,543	386	1,142	751
<i>Gresham</i>	276,492	29.5%	1,542	75,690	44,597	38,326
<i>I-205 Corridor</i>	1,281,457	7.0%	2,827	417	1,251	523
Sunnyside	1,098,839	24.7%	1,881	22,640	21,428	25,888
Oregon City/Milwaukie	1,048,252	27.2%	1,311	22,117	21,902	25,255
Metropolitan Area Total	55,011,671	14.9%	768,165	919,230	1,111,580	1,140,200

Source: Johnson Gardner LLC

The short-term forecast anticipates a steady recovery in the region's speculative office markets over the next several years. The soft market conditions will negatively impact effective lease rates in the projects during the interim. Reduced rent levels in combination with relatively low occupancy rates will make it very difficult to underwrite new speculative office space construction over the next few years. As a result, new construction during that period is expected to be limited to build-to-suit developments or medical office space. Table 4-6 summarizes projected office vacancy rates in the Portland region and individual submarkets over the next four years:

Table 4-6. Projected office vacancy rates, Portland region, 2003-2007

Subregion <i>Submarket</i>	1st Quarter 2003		Projected Vacancy Rate			
	Speculative Inventory	Vacancy Rate	1Q04	1Q05	1Q06	1Q07
Central City	23,333,081	12.4%	12.1%	10.8%	8.9%	7.6%
<i>CBD</i>	18,775,744	11.5%	11.1%	10.0%	8.1%	7.4%
<i>CBD Perimeter</i>	2,086,764	16.1%	15.7%	14.2%	11.9%	10.9%
<i>Lloyd District</i>	2,470,573	16.6%	16.1%	14.7%	12.3%	11.2%
Inner Westside	2,412,625	13.9%	13.3%	12.1%	9.5%	8.2%
<i>Barbur Blvd</i>	1,003,752	13.4%	12.8%	11.6%	9.1%	8.3%
<i>Johns Landing</i>	969,565	18.0%	17.3%	15.9%	12.8%	11.7%
<i>Sylvan</i>	439,308	5.8%	5.5%	4.7%	3.1%	2.8%
Kruse Way/Washington Sq.	6,946,278	14.3%	12.3%	10.5%	9.1%	7.0%
<i>Kruse Way</i>	1,713,600	11.3%	4.6%	-1.6%	-6.8%	-14.8%
<i>Tigard</i>	2,351,705	9.3%	9.2%	9.1%	9.0%	9.0%
<i>Washington Square</i>	2,880,973	20.2%	20.0%	19.9%	19.8%	19.7%
I-5 South Corridor	2,520,422	8.5%	8.4%	7.4%	6.5%	5.5%
<i>Lake Oswego/West Linn</i>	814,025	7.0%	6.9%	6.1%	5.3%	4.6%
<i>Tualatin/Wilsonville</i>	1,706,397	11.5%	11.3%	10.3%	9.3%	8.1%
Beaverton/217 Corridor	4,920,004	19.2%	19.2%	17.7%	16.5%	14.8%
<i>Beaverton/Cedar Hills</i>	3,362,494	17.1%	17.1%	15.7%	14.6%	13.0%
<i>Beaverton-Hillsdale/Canyon</i>	1,557,510	23.8%	23.8%	22.0%	20.6%	18.5%
Sunset Corridor/Hillsboro	4,326,998	12.8%	12.1%	10.5%	7.9%	6.1%
Clark County	4,232,171	26.2%	22.1%	19.5%	15.5%	12.3%
<i>Vancouver CBD</i>	1,321,403	19.7%	9.8%	8.4%	-2.0%	-10.3%
<i>Suburban</i>	2,910,768	29.2%	28.2%	25.2%	24.4%	23.8%
Close-In Eastside	2,076,292	13.2%	12.9%	11.0%	9.5%	7.2%
<i>Close-In Northeast</i>	1,287,824	3.0%	2.8%	1.9%	1.1%	0.6%
<i>Close-In Southeast</i>	788,468	29.9%	29.5%	25.9%	23.3%	18.1%
E. Multnomah Co.	2,096,709	14.2%	13.9%	12.1%	9.9%	8.1%
<i>Airport Way</i>	538,760	23.7%	23.3%	23.2%	23.0%	22.8%
<i>Gresham</i>	276,492	29.5%	28.9%	15.0%	1.1%	-10.8%
<i>I-205 Corridor</i>	1,281,457	7.0%	6.7%	6.7%	6.6%	6.6%
Sunnyside	1,098,839	24.7%	24.6%	22.5%	20.6%	18.2%
Oregon City/Milwaukie	1,048,252	27.2%	27.1%	25.0%	22.9%	20.5%
Metropolitan Area Total	55,011,671	14.9%	14.1%	12.5%	10.5%	8.5%

Source: CoStar and Johnson Gardner LLC

The current glut of space on the market is expected to require several years to be worked off, with overall average vacancy rates expected to exceed 10% until the second quarter of 2006. There remains over 6.3 million square feet of speculative office space proposed but not under construction in the metropolitan area, of which 1.75 million is in Multnomah County. This backlog of projects represents approximately six years of demand. With approximately three years of excess inventory on the market and an additional six years worth of supply currently proposed, supply is not expected to be a limiting factor in realizing office demand.

The analysis indicates a limited market for new office space over the next several years, as the speculative market remains largely oversupplied. The most promising opportunities for new office space construction are likely to be led by end-users or neighborhood-serving office types such as medical office space. The historically low interest rate climate is supportive of large firms moving to an ownership position for their space, although a firm may be able to purchase an existing building at a preferential rate at this period in the real estate cycle. Neighborhood serving office users tend to be geographically limited in their location options, and are less impacted by general softness in the market.

IMPLICATIONS FOR SPECIFIC AREAS

While it is possible to forecast shifts in underlying demand for space and general market conditions for large areas, site-specific forecasts require a detailed understanding of the project proposed. Site-specific analysis is not part of this report.⁶ As this is not available for the study sites, this section addresses the implications of current market conditions and our forecasts with respect to the development potential within the URAs and to a limited degree at specific sites.

INTERSTATE CORRIDOR URA

URA Characteristics

The Interstate Corridor URA is contained within the North/Northwest subregion, with the relevant submarkets including Swan Island/Hayden Island and Rivergate. The URA does not correspond well with any significant concentration of industrial space, but does include prime properties along Columbia Boulevard in the northern portion of the area. The Columbia Boulevard area is largely built-out, with a number of properties having improvements that are obsolete or largely depreciated, which may provide redevelopment opportunities.

The inventory of speculative space in the area is limited, with 54% of the tracked space represented by general industrial uses. Warehouse space accounts for 31% of tracked speculative space. The overall direct vacancy rate is estimated at 26.1%.

⁶ In the companion report to this one, produced by Group Mackenzie, Johnson Gardner will draw on the information in this report to prepare a pro forma financial analysis for the sites evaluated.

Table 4-7. Speculative industrial conditions, Interstate URA, 1Q03

Type	Rentable SF	Vacant Space		Vacancy Rate		SPACE BY TYPE
		Direct	Sublease	Direct	w/Sublease	
<i>Distribution</i>	0	0	0	0.0%	0.0%	<p>A pie chart titled 'SPACE BY TYPE' showing the distribution of industrial space. The largest slice is 'General' at 54%, followed by 'Whse' at 31%, 'Man' at 8%, and 'Dist.Other' at 0% (with a sub-label of 7%).</p>
<i>Flex</i>	30,480	0	0	0.0%	0.0%	
<i>Industrial</i>	355,343	58,100	0	16.4%	16.4%	
<i>Manufacturing</i>	53,330	21,650	0	40.6%	40.6%	
<i>Service</i>	14,040	0	0	0.0%	0.0%	
<i>Truck Terminal</i>	0	0	0	0.0%	0.0%	
<i>Warehouse</i>	202,861	91,715	0	45.2%	45.2%	
Total/Average	656,054	171,465	0	26.1%	26.1%	

Source: CoStar and Johnson Gardner LLC

Demand Profile

There is little historical demand trend information to consult in this area, as it has seen a negligible amount of new construction. The profile of existing space is disproportionately manufacturing and warehouse, with a concentration of industrial equipment showrooms on Columbia Boulevard east of Interstate 5.

Supply Pipeline

There is currently no speculative office or industrial space construction either underway or planned in the URA.

Land Assets

Undeveloped parcels are limited, with few vacant industrial properties of any scale in the URA. The Portland Industrial Lands Database indicates a total of 61.6 vacant buildable industrial acres in the URA.⁷

URA and Site-Specific Conclusions

From an industrial perspective, the Interstate Corridor URA covers several distinct submarkets. The primary industrial concentrations are found on Swan Island, in Albina, along Columbia Boulevard and along North Williams/Vancouver. The Swan Island and Columbia Corridor areas generally have larger sites and better regional access, while the sites in Albina and along the Williams/Vancouver corridor are more limited in size.

Four sites were identified by PDC within the Interstate URA for further analysis: the Simpson Lumber, Fletcher Food, Columbia Ventures, and BES Swan Island sites. Two of these represent redevelopment opportunities, in which the existing structures are highly depreciated and of negligible value. Both sites have frontage on Columbia Boulevard, which provides strong regional access. The sites are probably most suitable as end-user sites⁸, with

⁷ Supply statistics for the URAs are based on data shown in Chapter 2.

⁸ End-user sites are developed by or for a specific user, who chooses not to occupy speculative space.

the Fletcher Food site offering excellent exposure, which would be supportive of a showroom function. Either site could support distribution, manufacturing, and limited office functions. Columbia Ventures was discovered to have an existing use, with expansion potential that was analyzed. BES Swan Island site, which is vacant, could support distribution uses.

Challenges at the Simpson Lumber site include a number of existing structures that are likely to have limited economic value, as well as access to and exposure from Columbia Boulevard. The site is separated from Columbia by a rail line, which limits access. In addition, it offers only limited frontage along Columbia, hampering visibility.

The Columbia Ventures site offers very good visibility, with existing structures that appear to be sound. The property may require only cosmetic changes to increase its marketability.

The BES Swan Island site is located at the terminus of the lagoon, and as such has no real value for water-dependent uses. The site has exposure and access from N. Basin and N. Lagoon, and is of an attractive size for a wide range of development forms.

AIRPORT WAY URA

URA Characteristics

The Airport Way URA has attracted a significant level of development, and provides one of the most significant concentrations of vacant and developable industrial property within the City of Portland. The area's outstanding access to I-205 and I-84 has made it an attractive site for warehouse/distribution activity, with a higher level of office build-out prevalent closer to I-205.

Table 4-8. Industrial conditions, Airport Way URA, 1Q03

Type	Rentable SF	Vacant Space		Vacancy Rate		Average Rent	SPACE BY TYPE
		Direct	Sublease	Direct	w/Sublease		
<i>Distribution</i>	3,110,043	601,263	28,740	19.3%	20.3%	\$0.40	
<i>Flex</i>	356,050	30,071	0	8.4%	8.4%	\$0.43	
<i>Industrial</i>	4,884,537	269,466	36,500	5.5%	6.3%	\$0.59	
<i>Manufacturing</i>	302,607	159,107	0	52.6%	52.6%	\$0.48	
<i>Service</i>	19,501	0	0	0.0%	0.0%		
<i>Truck Terminal</i>	139,453	88,943	10,000	63.8%	71.0%	\$0.82	
<i>Warehouse</i>	6,771,619	1,182,510	181,257	17.5%	20.1%	\$0.46	
Total/Average	15,583,810	2,331,360	256,497	15.0%	16.6%	\$0.49	

Source: CoStar and Johnson Gardner LLC

A survey of over 15.5 million square feet of industrial space in the URA indicates a direct vacancy rate of 15.0%, rising to 16.6% if sublease space is included, as shown in Table 4-8. Warehouse and distribution space account for 64% of leaseable area, which also includes almost 4.9 million square feet of general industrial space.

Table 4-9. Office conditions, Airport Way URA, 1Q03

	Rentable S.F.	Vacant Space		Vacancy Rate		Wgtd. Avg. Rent
		Direct	Sublease	Direct	w/Sublease	
<i>Class A</i>	186,326	21,138	3,099	11.3%	13.0%	\$20.33
<i>Class B</i>	200,836	11,801	0	5.9%	5.9%	\$17.00
<i>Class C</i>	151,598	94,889	0	62.6%	62.6%	\$10.67
<i>Overall</i>	538,760	127,828	3,099	23.7%	24.3%	\$16.37

Source: CoStar and Johnson Gardner LLC

Traditional office market conditions reflect a current direct vacancy rate of 23.4%, rising to 24.3% if sublease space is included (Table 4-9). Office space represents a relatively small component of the overall market in the URA, with only 538,000 square feet of space tracked.

Demand Profile

While the historical profile of demand in the area has been disproportionately warehouse/distribution, the product that has been performing best in the last year has been incubator/flex space. This type of space has both dock and at-grade loading doors, and can be subdivided for typical tenants needing between 4,000 and 7,000 square feet. Warehouse/distribution space remains a strong use category in this area, but is unlikely to be done on a speculative basis over the next few years without a tenant commitment.

Supply Pipeline

Catellus Corporation currently has 180,800 square feet of space in two buildings under construction in their Southshore Corporate Park, which is located at the NE corner of 185th and Riverside Parkway. This is distribution space, with asking lease rates of \$0.35 for shell space and \$0.65 for office build-out. A 36,000 square foot multi-tenant building is also under construction south of the URA at NE 178th and San Rafael. Quoted rents are \$0.30 for shell and \$0.50 for office build-out.

A large amount of space remains planned in the district. This includes the following:

- Insignia, 475,000 square feet of distribution, light manufacturing and flex office space at the SE corner of NE 181st and Sandy
- Columbia Corporate Park, 200,000 square feet at NE 166th and Airport Way
- Catellus, 140,000 square feet of space in two buildings at the Southshore Corporate Park
- Troutdale Industrial Project, 222,000 square feet in four buildings
- Opus Northwest, an estimated 810,000 square feet of flex/office space in 1 to 3 story buildings on 84 acres, as well as a distribution building.

The project is being marketed for build-to-suit tenants. Rental rates are expected to range from between \$13 and \$14 net.

- The Cascade Station development is currently working on pre-leasing 122,000 square feet of speculative office space in two buildings.

Land Assets

On an aggregate basis, land is relatively plentiful in this district. Most of the property is either controlled by speculative developers or has constraints to development. The Portland Industrial Lands Database indicates a total of 722.7 vacant, buildable industrial acres in the URA.

URA and Site-Specific Conclusions

The Airport Way URA represents one of the City of Portland's most promising development opportunities, with an inventory of relatively large sites and outstanding regional access.

Four sites were identified by PDC in the Airport Way URA for site analysis. These include the Airport Way Radio Tower site, the Marine Drive Radio Tower site, the Trapold property, and the Holman Street site. Our analysis indicates that short-term options for these sites would likely include flex/incubator space, tenant-driven distribution space or an end-user site.

The usable depth of the Airport Way radio tower site will limit the viability of distribution space on that site, with flex/incubator probably representing the highest and best use. The Marine Drive radio tower site will need to overcome access problems, particularly to the eastern portion of the site. Assembly or coordination between owners will be necessary to develop the eastern portions of the site. If this can be done, the site is significant in terms of size.

The Trapold property represents a strong development opportunity, and is one of the few large sites remaining within the City. The site would likely configure well for an industrial/business park plat, but may be more valuable as a relatively rare large contiguous site.

The Holman Road site has exposure from I-205, and is adjacent to a successful multi-tenant flex/incubator project. This same use is probably the highest and best use of the site, particularly over the short-term. There is a potential contamination issue on the site.

GATEWAY URA

URA Characteristics

The Gateway URA has industrial uses currently, but is not considered to be a long-term industrial concentration. The Gateway area has been

designated as a Regional Center, and has development density objectives that are probably inconsistent with industrial development forms.

The office market in the URA is relatively limited in size, and has a disproportionate level of medical and neighborhood-serving office uses. None of the buildings tracked are classified as Class A buildings, with most buildings wood frame with surface parking. The market’s local orientation has largely sheltered it from the soft market conditions in the regional office concentrations, with the overall vacancy rate estimated at 7.0% (Table 4-10). Rent levels are relatively low, reflecting the age and quality of the space.

Table 4-10. Office conditions, Gateway URA and surrounding area, 1Q03

	Rentable S.F.	Vacant Space		Vacancy Rate		Wgtd. Avg. Rent
		Direct	Sublease	Direct	w/Sublease	
<i>Class B</i>	733,226	18,901	3,000	2.6%	3.0%	\$18.58
<i>Class C</i>	548,231	70,174	0	12.8%	12.8%	\$14.17
<i>Overall</i>	1,281,457	89,075	3,000	7.0%	7.2%	\$16.69

Source: CoStar and Johnson Gardner LLC

There is a significant amount of relatively low-intensity development, primarily south of Burnside, north of Stark, west of 102nd and east of I-205. The URA is anchored by major retail as well as medical concentrations at the northern and southern boundaries, with 102nd Avenue providing the primary north/south route. Regional access is available via Interstate 205, which serves as the western edge of the URA.

Demand Profile

The most likely short-term opportunity for office space development in the area would be neighborhood-serving or medical office. This is consistent with the current profile of development in the area, and reflects the significant local population base as well as the area’s two hospitals.

Supply Pipeline

There are no identified speculative office or industrial projects either under construction or planned in this URA. A 25,160 square foot speculative building is planned at 10020 SE Division, which will provide parking at 3 spaces per thousand and is quoting full service rents of \$17.50.

Land Assets

The Portland Industrial Lands Database indicates a total of 3.0 vacant, buildable industrial acres in the URA. Much of the land is zoned for office rather than industrial use.

URA and Site-Specific Conclusions

Viable non-retail development forms are largely limited to office development, with achievable rent levels limited. The most likely short-term development module would be either medical or neighborhood-serving office space with surface parking. Achievable lease rates would likely support Class B space with surface parking. The most marketable sites for this type of development would offer frontage from a major arterial, and potentially be within walking distance of a light rail or other transit stop.

Two sites were identified by PDC in the Gateway URA for site analysis, both of which are located in an underdeveloped area south of Burnside and west of 102nd. The Bitar site has frontage on Burnside, and may offer an opportunity for office space development. The Bauer site has frontage on Ankeny, and the limited exposure may preclude office space development without assembly to gain exposure from 102nd.

CENTRAL EASTSIDE URA

URA Characteristics

The Central Eastside URA has a diverse mix of industrial employers, as well as significant commercial and office developments. The area contains a relatively large number of multi-story warehouse and manufacturing facilities, which are largely functionally obsolete for their original use.

A total of 3.5 million square feet of space is tracked in the URA and surrounding areas. Almost half (48%) of the leaseable area tracked in general industrial, with 44% classified as warehouse space, as shown in Table 4-11. The current direct vacancy rate is estimated at 23.7%, increasing to 28.4% when sublease space is included.

Table 4-11. Industrial conditions, Central Eastside URA and surrounding area, 1Q03

Type	RentableSF	Vacant Space		Vacancy Rate		Average Rent	SPACE BY TYPE
		Direct	Sublease	Direct	w/Sublease		
<i>Distribution</i>	7,281	0	0	0.0%	0.0%		<p>Detailed description: A pie chart titled 'SPACE BY TYPE' showing the distribution of space types. The largest slice is 'General' at 48% (yellow), followed by 'Whse' at 44% (dark green), 'Man' at 5% (white), 'Other' at 3% (light green), and 'Dist' at 0% (grey).</p>
<i>Flex</i>	49,843	1,450	0	2.9%	2.9%		
<i>Industrial</i>	1,706,267	266,312	0	15.6%	15.6%	\$0.44	
<i>Manufacturing</i>	188,720	0	157,170	0.0%	83.3%	\$0.29	
<i>Service</i>	30,900	6,600	0	21.4%	21.4%		
<i>Truck Terminal</i>	14,700	0	0	0.0%	0.0%		
<i>Warehouse</i>	1,547,526	565,761	10,000	36.6%	37.2%	\$0.44	
Total/Average	3,545,237	840,123	167,170	23.7%	28.4%	\$0.42	

Source: CoStar and Johnson Gardner LLC

Demand Profile

The Central Eastside offers an outstanding location for industrial, office and residential uses. Much of the URA is classified as an industrial sanctuary, sharply limiting allowed uses. The primary advantage this location provides for an industrial location is its central location and access.

Supply Pipeline

There are no identified speculative office or industrial projects either under construction or planned in this URA.

Land Assets

The Portland Industrial Lands Database indicates a total of 8.1 vacant, buildable industrial acres in the URA. Redevelopment is a key to further utilization of this area.

URA and Site-Specific Conclusions

The Central Eastside URA offers an outstanding location for a wide range of uses. While retail commercial uses are appropriately concentrated along the arterial network, industrial and office uses represent the primary demand generators in the district. The variety of available structures and the economics of redevelopment have led to an unusually diverse mix of uses in the district. There are very few clear field sites in the area, which limits the availability of direct comparables for development.

Two sites were identified by PDC in the Central Eastside URA for site analysis. The Harold's Automotive site at the NEC of 7th and Division offers excellent access and exposure for the district. The site is well suited for industrial development, and could likely support some level of commercial development if allowed.

The second site, American Waters (at SE Caruthers at SE Water Avenue) has extensive frontage on the Willamette River, offering outstanding views. The view potential of this site would indicate strong demand for non-industrial uses such as office and residential, which are limited under the industrial sanctuary designation. The final development of this site will be largely dependent upon required setbacks from the Willamette River, as the site has limited depth. The upcoming expansion of SE McLoughlin and the required condemnations associated with the expansion may provide an unusual opportunity for assembling a larger development site.

OREGON CONVENTION CENTER URA

URA Characteristics

The Oregon Convention Center URA includes the Lloyd District as well as frontage along NE Martin Luther King Jr. Boulevard north of Broadway. The URA is well established as an office, commercial and entertainment concentration, and is included in Tri-Met's fareless square program. Anchored by the Rose Quarter to the west and the Lloyd Center to the east, the area is surpassed only by the Central Business District in terms of intensity of development. In addition, NE Broadway has emerged as a strong main street commercial concentration. The URA's primary marketing

strengths are its range of amenities, proximity to the CBD and outstanding regional access.

A total of 2.4 million square feet of office space is tracked in the URA and surrounding areas, as shown in table 4-12. Over half of the URA's office market is Class A space, which reports a direct vacancy rate of 18.7%. The overall direct vacancy rate is estimated at 16.6%, increasing to 20.5% when sublease space is included. The 1201 Lloyd Boulevard Building, completed in 2002 and 96% vacant, accounts for over half of the overall vacancy in the district.

Table 4-12. Office market conditions, Oregon Convention Center URA, 1Q03

	Rentable S.F.	Vacant Space		Vacancy Rate		Wgt. Avg. Rent
		Direct	Sublease	Direct	w/Sublease	
<i>Class A</i>	1,404,924	262,047	0	18.7%	18.7%	\$21.85
<i>Class B</i>	506,216	73,768	85,085	14.6%	31.4%	\$12.81
<i>Class C</i>	559,433	74,362	11,025	13.3%	15.3%	\$12.92
<i>Overall</i>	2,470,573	410,177	96,110	16.6%	20.5%	\$17.97

Source: CoStar and Johnson Gardner LLC

Demand Profile

The demand for office space in the Lloyd District is closely related to that in the CBD. The cost of space is similar in both areas, but the convenience of the CBD location is offset by the availability of lower-priced parking in the Lloyd District.

Supply Pipeline

There are no identified speculative office or industrial projects either under construction or planned in this URA.

Land Assets

The Portland Industrial Lands Database indicates a total of 0.8 vacant, buildable industrial acres in the URA. The URA is primarily zoned for office rather than industrial uses.

URA and Site-Specific Conclusions

The Oregon Convention Center URA offers a strong office location with outstanding regional access. The Lloyd District office concentration is currently considered over-built, and little speculative activity would be expected until the market vacancy drops substantially. The district has been successful in attracting end-users such as Liberty Mutual, and a strong anchor tenant of that magnitude could lead to a rapid recovery in the district.

While the Lloyd District has proven able to command the rents necessary to justify Class A construction, achievable parking rates have made providing structured parking challenging. To-date, solutions have included decks and stand-alone parking structures, which are less expensive per-space than subterranean options. The district's transit accessibility should allow it to attract tenants with a relatively high proportion of transit users, reducing parking requirements and enhancing viability.

Key marketing advantages in the district are viewed as exposure from Interstate 84 or Interstate 5, proximity to a light rail station and views of the CBD and Mount Hood.

CONCLUSIONS

Our analysis indicates that over the next several years, the current excess of speculative space in both the office and industrial markets will largely capture projected absorption. When the markets recover to a point adequate to support new construction, an ample pipeline of planned and proposed projects has been announced to meet the short-term need.

Potential short-term development opportunities include:

- Space for end-user firms that have requirements that cannot be met by the existing inventory of available speculative space; and
- Medical and neighborhood-serving office space, which serves a localized population base.

While a significant level of new speculative development is unlikely to be initiated over the short-term horizon, there remains a need for the City to maintain an inventory of available sites appropriate for an end-user that may have specific needs that cannot be met by the current and projected speculative space inventory.

Implications for Industrial and Commercial Development

Chapters 2, 3, and 4 provide information about the supply of vacant, buildable land, and the likely long-term and short-term employment growth that such land will have to accommodate. This chapter draws from the conclusions contained in Chapters 2, 3, and 4 to discuss their implications for the aspects of industrial and commercial development that PDC cares about, can hope to influence, and wants this study to address. It is organized to address four key questions:

- Is the total supply of industrial land in the City adequate to accommodate forecasted demand for industrial land over the long run?
- How well can the supply of land in different Urban Renewal Areas (URAs) meet expected long-run *and short-run* demand?
- What does the demand analysis suggest about the site-specific development concepts that should be pursued at the selected case-study sites?
- What does the demand analysis suggest about actions that the City and PDC could take to better facilitate the availability of development-ready land in the City to support desired employment growth?

THE MATCH OF DEMAND FOR AND SUPPLY OF LAND

The questions addressed in this section are (1) Is the total supply of industrial land in the City adequate to accommodate forecasted demand for industrial land over the *long run* (20 years or more, the typical horizon for land use planning in Oregon)? And (2) How well can the supply of land in different Urban Renewal Areas (URAs) meet expected long-run *and short-run* demand?

The questions focus on comparing the supply and demand for industrial land over different time periods. The long-run is 2000-2025, using Metro-based forecasts from Chapter 3. The short-run is the next three or four years, using forecasts from Chapter 4. The Metro forecasts are also presented for the “medium-run” of 2000-2010. The questions focus on industrial land primarily, because the supply data in Chapter 2 are available for industrial land only, and because the City is focused on providing land for the industrial sectors.

The first question is more of a planning question for Metro than an implementation question for PDC. It is Metro’s responsibility, as monitor of the regional Urban Growth Boundary, to ensure that the region meets state

land-use law requirements to have a 20-year supply of buildable land inside the UGB. Because Metro does the planning for the *regional* UGB, and because Portland does not have its own UGB or any easy way to expand its city limits through an expansion of the regional UGB, Portland does not have much direct responsibility for meeting these state requirements.

Nonetheless, it is useful to consider the long-run match between demand and supply to see whether Metro's allocations to Portland make sense, because the City is required to plan for the growth that Metro allocates to it. In the Central Eastside, for example, Metro has allocated more employment growth than the area is likely to be able to accommodate if it maintains, per existing City policy, large amounts of its land in industrial zoning ("industrial sanctuary"). PDC and the Central Eastside Industrial Council have been working together over several years to consider policy changes that would allow more office development. Metro's employment allocation to that area assumes that kind of transition will occur.

CITYWIDE, LONG RUN

Chapter 2 found that there are about 2,000 acres of vacant, buildable industrial land in the City of Portland. Forecasts in Chapter 3 predict a need for 711 net acres of industrial land in the mid-term (2000-2010) and about 1,700 net acres in the long-term (2000-2025). This equates to an average need of approximately 70 net acres per year. Taken at face value, that result means that the City has 300% more buildable industrial land than it will absorb over the next 10 years, and 25% more than it will absorb over the next 25 years.

Chapter 2 also explains why these surpluses must be viewed with caution. First, they are derived from a generalized database, not from detailed field work. Second, they do not consider several policy issues that further limit the supply of land: E-Zoning, environmental issues (unidentified and identified brownfield areas), land-lease only for Port-owned land, and existing river-dependent restrictions on some Port-owned properties are all constraints on the ability to develop vacant, buildable land that reduce the apparent surplus.

Third, the aggregate numbers do not address special needs. The aggregate comparisons implicitly assume that all buildable land is in the right locations and configurations to allow it all to contribute to the diverse demands of different development types and users. But even if there is a perfect match of the total amount of industrial land needed and the total amount of industrial land available in the aggregate, there may not be enough large parcels to meet the demand for large parcels. (A need for small parcels would be less of a concern, as most vacant land can be subdivided as needed.) Overall, the vast majority of firms are small and require small parcel sizes, but the larger firms contain a significant amount of employment and require a significant amount of land in large parcel sizes. In other words, large parcels account for a higher share of total land need and employment than of the total number of parcels or firms.

Chapter 2 provides information on site sizes¹ of vacant buildable industrial land in Portland. The City's preliminary database shows over 25% of all buildable land in sites greater than 50 acres. Phase 3 of the Regional Industrial Lands Study (RILS) estimated the share of industrial land needed for sites greater than 50 acres as between 10 percent (based on current firm sizes) and 28 percent (accounting for landbanking).

That finding suggests, without taking into account any of the attributes of the larger vacant sites in Portland, that there may be enough vacant land in large parcels. Do these large sites have the diversity, flexibility, location, and other attributes to meet the needs of firms looking for large sites? The anecdotal evidence from economic development specialists working on the siting of such firms is that the existing supply of large sites is too small, and the site attributes are not adequate to accommodate the end-users that might be looking for such sites. Future work on the Industrial Land Inventory, however, should be able to provide a better answer by, among other things, improving: (1) the definition of "industrial" (addressed again later in this chapter), (2) the database definitions and measurement of sites and consolidated sites (see previous footnote), and (3) the field work on the sites in the database, especially with respect to attributes that may make the land unavailable in the short run (e.g., owner intentions) or unlikely to develop in the longer run (e.g., severe site contamination, development restrictions, and so on).

BY SUBAREA, LONG RUN AND SHORT RUN

It is difficult to project employment demand for small areas within the City of Portland, such as individual URAs, or even for all URAs combined, for reasons discussed in Chapter 3. The narrower the area considered, the more potential there is for error. We therefore consider the forecasts for the City of Portland to be the most useful "envelope" for considering the ability of URAs to capture a share of the surrounding area's employment growth.

Also on the demand side, we refer to our land need forecasts from Chapter 3 to cover the medium-run period of 2000-2010 and the long-run period of

¹ As noted earlier, one needs to be careful about terminology when discussing land supply: it makes a difference. The Metro database on which the Portland Industrial Lands Inventory and the RILS study are based is a *tax lot* database from county assessors. Tax lots are not necessarily *parcels*, which we define here as legally exchangeable amounts of land under a single ownership. A parcel may be composed of many tax lots. No agency in Portland has a parcel database, despite the fact that many planners refer to Metro, county, and city databases as parcel files. Moreover, parcels touch each other may be owned by a single person, or by related people, in which case multiple parcels could be treated as if they were a single *site*: that is how the Portland Industrial Lands Inventory defines a site: single or related ownership. But several sites of largely vacant, industrial land could touch one another: in an aerial photograph, without lot lines to show ownership, those contiguous sites would look like one big vacant, buildable area. For our purposes here, we'll call that a *consolidated site*. Such consolidated sites exist, for example, in one of the Airport Way case-study areas.

Those definitions lead to the conclusion that an assessment of "parcel" size based on tax lot data clearly understate the amount of buildable land that is in sites or consolidated sites. By looking at sites, the Portland Industrial Lands Inventory finds much more land in contiguous, developable pieces than the RILS study did.

2000-2025, and we refer to URA-specific opportunities, trends, and projections from Chapter 4 to cover the short-run period of 2003-2007.

On the supply side, we consider only industrial land in the URAs. We consider primarily the *amount* of vacant, buildable industrial land, rather than its various other attributes (site size, location, utilities, access, topography, etc.), but where those attributes are known we discuss them.

Also on the supply side, we have to consider the big picture: Is there an overall shortage of vacant, buildable industrial land, or a surplus? A shortage would suggest that most, if not all, of the vacant, buildable industrial land in the URAs will be used. A surplus, in contrast, would suggest that URAs will compete with each other and non-URA land, and that not all the vacant, buildable industrial land will be used. Our initial comparison in the previous section suggests that there is a surplus from 2000-2010 and 2000-2025, but that this surplus could be eroded by a variety of constraints.

Future policy could move land supply in either direction. On the one hand, some policies may reduce supply (e.g., expansions of the E-Zone, especially in the Columbia Corridor area). On the other hand, if any of the constraints are relaxed, the City may be able to find ways to accommodate additional employment.

What this study cannot answer definitively is whether the sites that are available will accommodate the type of firms that want to locate in Portland. If firms want to locate in Portland, but cannot find a suitable site for a price they can afford, or available in a timeframe they can accept, they will be more likely to turn to adjacent communities. This possibility increases over the long-term, as vacant industrial land in the City of Portland is developed, and industrial land in the newly expanded UGB is annexed and becomes development-ready in jurisdictions other than Portland.

Our assessment is that URAs will probably not have trouble finding users for their vacant, buildable industrial land in the long-term (2000-2025), but the land must be made truly “development-ready” and must have the necessary attributes firms will be seeking. While the preliminary industrial land inventory does not provide enough information to be able to assess the readiness for development of sites (field work in the next phase of that inventory should provide that information), the combination of what appears to be substantial buildable land, a sluggish market, and an over-supply of speculative industrial space (Chapter 4) suggests that industrial land supply is not a crisis for the City in the short-run.

This short-run assessment is based on findings of a speculative industrial market with a significant amount of excess space, reflected in unusually elevated vacancy rates and a high level of sublease space. While steady growth is expected to resume in the latter half of 2003 and continue through 2007, the market currently has approximately three years of excess space at projected absorption levels. The primary opportunities for new industrial development over the next several years in this market will be tenant-driven,

with owner-occupied or build-to-suit projects providing the primary development form. When the markets recover to a point adequate to support new construction, an ample pipeline of planned and proposed projects have been announced to meet the short-term need.

The districts with the most buildable vacant land in the widest range of sizes are Columbia Corridor and Rivergate. Port policies that only allow for leased property may make these locations less desirable compared to other districts. A small portion of Port land is restricted to river-dependent uses, reducing the overall vacant, buildable land supply for all non-river dependent uses. More attractive locations in other districts are likely to experience high demand for the relatively small percent of total buildable industrial acreage they contain (less than 20% of the City total). As the more desirable districts are developed, Columbia Corridor and Rivergate may become more attractive locations.

ALL URAS COMBINED

The URAs as a whole appear poised to accommodate a significant share of the City's employment growth, at least on the basis of their vacant buildable land. Chapter 2 pointed out that 42% of vacant buildable industrial land in the City of Portland is located within the URAs.²

On the basis of a rough "fair-share" analysis, one might expect the URAs, with their 42% of the City's vacant buildable industrial land, to provide for 42% of the City's projected industrial employment growth. This would translate into demand for 299 acres of industrial land in the medium-run of 2000-2010 and 723 acres in the long-run of 2000-2025. The supply of 828 acres in the URAs would be adequate for this demand, assuming the available land is sufficient not only in amount but also in other attributes like site size, utilities, access, etc.

The share could be even higher if the URA land is more attractive than non-URA land. Chapter 3 points out that the Employment Zones containing URAs are expected to require even more land in the 2000-2010 period (876 acres) than the City as a whole (the rest of the City is expected to shed industrial jobs). But there is a lot of non-URA land in these Employment Zones. The actual share depends on the attributes of the URA sites relative to the available land outside URAs, particularly within the surrounding Employment Zones that are expected to gain industrial employment. This non-URA land includes much of the Rivergate area and the Columbia Corridor.

In the short-run (over the next four years), the same conclusions about the adequacy of the current supply in the City apply to the combined URAs.

² Note: this includes three URAs not considered in the rest of this report: Lents Town Center, North Macadam, and River District. Those three URAs together only account for 2% of the City's vacant, buildable industrial land, consisting of 31.6 acres in the Lents URA.

Because of a current excess of speculative space in both the office and industrial markets, as well as a significant amount of planned and proposed projects, the short-term land and building space need is expected to be adequately met by the available supply within the URAs as a whole. In fact, excess inventory in the market is forecast to keep overall vacancy rates elevated in most submarkets throughout the forecast period.

That said, the City should continue its work to provide a selection of sites available in the short-term that are appropriate for an end-user who may have specific needs that cannot be met by the current and projected speculative space inventory (e.g., large parcels). The individual URAs, as described below, are equipped to various degrees to meet the needs of these end-users. Some have very little vacant buildable land, while others have more; some have ideal locations for industrial job growth in the short-term, while others do not.

INTERSTATE CORRIDOR URA

The Interstate Corridor URA has much of its industrial land at the northern end, in the Columbia Boulevard area. Its industrial land is largely built out, but there are redevelopment opportunities. The URA's 62 acres of vacant, buildable industrial land compose about 3% of the total vacant buildable acreage in the City of Portland, so this URA is likely to provide only a small share of the 711 acres needed in the City of Portland from 2000-2010, and an even smaller share of the 1,721-acre need from 2000-2025. Short-run opportunities depend on the extent to which any potential new end-user seeks space not available within the 1.3 million square feet of speculative industrial space that is currently vacant in the Columbia Boulevard Corridor. The larger sites available on Swan Island and along Columbia Boulevard are potentially more attractive than the smaller sites in Albina and along the Williams/Vancouver corridor.

AIRPORT WAY URA

The Airport Way URA is the most promising URA in terms of short-run and long-run industrial job growth, because of its outstanding access to I-205 and I-84 and the availability of some large sites. The Airport Way URA is expected to provide the most industrial building space absorption of the URAs in the short-run period of 2003-2007. Incubator/flex space, which has done particularly well in the URA lately, will continue to do so. Warehouse/distribution space remains a strong use category in this area, but is unlikely to be done on a speculative basis over the next few years without a tenant commitment. Office uses are expected to locate close to I-205 rather than elsewhere in the URA.

The supply of vacant, buildable industrial land in the Airport Way URA is estimated at 723 acres, or 36% of the City's total. It is therefore expected to provide for a significant share of the City's projected short-run and long-run employment growth. The actual share depends on the extent to which the attributes of good access and large sites are outweighed by the fact that much

of the land is controlled by speculative developers and subject to other constraints such as lease-only development.

GATEWAY URA

The Gateway URA has some industrial development but is expected to transition to more office-oriented uses, now that it is designated as part of a Regional Center, with accompanying density requirements that are unlikely to translate into industrial use. The estimated 3.0 acres of vacant buildable industrial land are unlikely to accommodate much of the City's projected industrial employment growth. The Gateway URA could, however, support employment growth in medical or neighborhood-serving office uses. In the short-run, achievable rent levels are likely to be limited, supporting Class B space with surface parking. The most marketable sites for this type of development would offer frontage from a major arterial, and potentially be within walking distance of a light rail or other transit stop.

CENTRAL EASTSIDE URA

The Central Eastside URA currently hosts a diverse group of industrial and office users. There are only an estimated 8.1 vacant buildable industrial acres within this URA, reflecting its older, primarily built-out nature. Employment growth in the URA in both the short-run and the long-run will need to result in part from the conversion of functionally obsolete warehousing and manufacturing buildings to new uses with higher employment densities. This is likely to consist of a mix of industrial and office uses.

OREGON CONVENTION CENTER URA

This URA represents a strong location for office use. It has less than one acre of vacant, buildable industrial land. Its outstanding regional access gives it potential to attract a significant share of the City's non-industrial employment growth.

NON URA

Over half the vacant, buildable industrial land in the City of Portland is outside of the URAs: URAs are a significant but incomplete part of the effort to provide for industrial job growth.

Non-URA industrial land includes significant portions of the Rivergate and Columbia Corridor areas. The Columbia Corridor area and the Rivergate area have most of the vacant buildable industrial land, but there are potential constraints related to ownership, and to a lesser extent, river-dependent designations.

IMPLICATIONS FOR CASE-STUDY CONCEPT PLANS

The question addressed in this section is, What does the demand analysis suggest about the site-specific development concepts that should be pursued at the selected case-study sites?

ECONorthwest and Johnson Gardner Associates provided input into the Site Selection and Concept Plan Design conducted by Group Mackenzie. In addition to informal communication on the results of the Market Demand Analysis, there were two meetings to exchange information:

- **Site Selection Workshop.** On May 19, 2003, staff from ECO, Johnson Gardner, Group Mackenzie, Norris Beggs & Simpson, PDC, and the Bureau of Planning met to review preliminary economic data and determine final site selection criteria³ and sites. PDC's general site selection characteristics and Group Mackenzie's suggested sites were reviewed by group members, who then made recommendations for final sites.
- **Draft Concept Plan Meeting.** On June 3, 2003, staff from ECO, Johnson Gardner, Group Mackenzie, Norris Beggs & Simpson, and PDC met to review draft concept plans and provide market input for uses at each site.

The recommendations for design concepts are too numerous to describe here: it would require repeating much of what is already in the Group Mackenzie report: refer there for details.

POSSIBLE AREAS FOR CITY ACTION

The question addresses in this section is, What does the demand analysis suggest about actions that the City and PDC could take to better facilitate the availability of development-ready land in the City to support desired employment growth?

The full answer to questions about policy will be in the final report for this project. It will draw not only from this report, but also from the companion site-evaluation, case-study report that will also identify problems that actions by the City might be able to reduce. Thus, the purpose of this section is more limited and provisional: to create a preliminary list of problems that might merit City action, and that should be addressed in the final report.

GENERAL PROBLEMS

- **Lack of large industrial sites.** Does the City of Portland want to treat large industrial sites differently than smaller industrial sites? Metro Code Title 4 allows jurisdictions to place restrictions on large

³ A full description of site selection criteria is covered in the Employment Opportunity Lands Study Final Report.

parcels (50+ acres) of land identified as “regionally significant industrial lands.”

Numerous studies (RILS and Metro’s Urban Growth Report) have documented a lack of large (50+ acre) sites in the Portland Metro area. On one hand, the City may want to consider initiating activities that result in land assembly creating large, vacant, industrial sites. On the other hand, brokers warned of adding additional restrictions on properties, though they recognized the need to preserve large industrial sites to secure major employers. This may continue to be a controversial issue for all parties involved. Moreover, the basic economics of land development (given current markets, incentives, and government policies) strongly favor large-site development in greenfield areas near the urban fringe rather than on redevelopment sites in the central city.

- **Barriers to development on Port of Portland lands.** The main barriers to development on lands at Rivergate owned by the Port of Portland are (1) some of the Port property is only available for development via ground lease (similar to land at the Portland Airport and Hillsboro Airport), and (2) requirements that the land developer must be an acceptable marine user (for select properties). The Port is a facilitator of development on their lands.

According to brokers at Norris, Beggs & Simpson, the reason why real estate developers do not seek land at Rivergate and the other Port-owned properties rests with the above listed barriers, market demand, and lack of ownership on some lands.

- **Property-owner expectations.** Property owners are sometimes unwilling to develop their land, or have visions of use that are not in line with market realities. Some properties will not develop until property-owner outlooks change, which may take a change in personal circumstances, education, incentives, or may not happen at all. Another way to look at it is that the property-owner’s best interest is not always in the public’s best interest. Government-offered incentives often help the property owner’s and the public’s interests coincide, particularly if the incentives are financial in nature.
- **Long-term job-growth strategy.** What happens when there is no more vacant industrial and employment land left in the City of Portland? While the region may continue to expand the UGB and add additional industrial and employment acres, at some point the City of Portland will absorb all vacant land. Once vacant sites are developed, economic strategies will have to adapt to an environment where redevelopment is the primary option.
- **Lack of clarity about the uses and purposes of industrial land.** The general logic goes like this: industrial jobs are better for the economy than many other types of jobs because they bring income into

the region (they are in the “traded sector”); for the City to get industrial jobs, it must have development-ready industrial land. That simple state may be approximately correct, but it is certainly incomplete. All jobs in standard industrial classifications do not have high exports; other jobs not classified as industrial can also have high exports; industrial jobs can and do locate on non-industrial land; non-industrial, traded-sector jobs can and do locate on industrial land; new traded-sector businesses *outside* of the city limits of Portland can be as helpful to the City economy and fiscal situation as ones that locate inside the City; land is a relatively small part of the production (cost) function of any business.

Clarifying what uses the City wants to get on industrial land, why those uses are desirable (and, potentially, worthy of City investment to ensure that they locate in the City), and to what degree the supply of development-ready industrial land is a constraint on their location decisions would help target the City’s investments.

LAND REGULATION AND ENTITLEMENT PROCESS

- **Reduced industrial land from proposed E-Zone buffer.** Since 1989, the City of Portland has protected approximately 19,000 acres of environmentally sensitive areas with an environmental overlay zone. The City is proposing to increase the application of the overlay zones to additional properties and change the regulations to enhance protections for Portland streams and natural areas. Approximately 5,100 acres will be added to the overlay zones, though the City has not determined how much of this area would be in industrial areas.
- **Uncertainty in the permitting process.** Developers need to know what they can do with their land. Permitting time, costs, and uncertainty all add costs to the development. This point overlaps with issues of environmental remediation: as appreciation of the extent and complexity of environmental problems associated with land development has grown, so has the public policy to deal with it. Some of that policy is still in flux (e.g., riparian buffers), which creates uncertainty. City departments (such as the Bureau of Development Services, Bureau of Planning, and PDC) could make use determinations on sites that currently have zoning and entitlements ambiguities, as well as agreement on transportation access and offsite improvement requirements.

The amount of time it takes to process permits adds costs to a developer’s time. A shortened building season in the Portland Metro region can compound costs when permits are delayed, pushing construction into the next building season. The City may want to consider simultaneous processing, instead of consecutive processing of permits.

- **Title 4 requirements.** How will Title 4⁴ requirements allowing the City to designate “regionally significant industrial land” affect (applicable) sites throughout the industrial districts?
- **River-related, river-dependent uses.** How will river-related, river-dependent restrictions on property along the Willamette River affect supply of industrial land?

COST OF PREPARING SITES FOR DEVELOPMENT

- **Costs of environmental (brownfield) clean-up and other environmental protections.** Some industrial sites identified as vacant, buildable sites may have unidentified environmental issues that they are not “development-ready” without significant investment. Environmental issues increase the return risk for developers. Contamination—in particular, contamination that has led to the Superfund status of lands in the Portland harbor area—is a substantial barrier to the redevelopment of these sites. In economic terms, previous owners of these sites (either purposely or out of ignorance) have made their operations more profitable by effectively using up some of the attributes of their sites (e.g., its clean soil, ability to handle surface runoff, etc.). Thus, the sites are not worth much until those attributes are restored, which can be very expensive: so expensive (considering the present value of the cost of future liability) that the sites are not competitive with other land. Activities that help identify the extent of contamination and provide an acceptable regulatory solution will reduce the perceived risk of developing the site; in many cases, we expect government underwriting of the cleanup costs will be required.

Even sites without contamination may have trouble developing given other legitimate public concerns about environmental problems, and the resulting policies to reduce those problems. For example, site development may require the use or development of swales, landscaping, bank treatment and setbacks, and stormwater management and treatment.

- **Parking restrictions.** How do parking regulations affect the density and intensity of development in Oregon Convention Center and Central Eastside? Increasing the density and intensity of uses often means increasing the parking requirement. While the City may wish to decrease parking available, building owners (and their lenders) may be unwilling to provide less than the industry standard parking,

⁴ The Metro Code 3.07.410-3.07.440 addresses protection of industrial and other employment areas. It instructs city and county municipalities to designate regionally significant industrial areas (3.07.420) within their boundaries and adopt implementing ordinances to limit development in these areas to industrial (or industrial accessory or supportive) uses. The regulations also stipulate subdivision restrictions for parcels larger than 50 acres, with a few narrowly defined exceptions, and more subdivision flexibility for parcels less than 50 acres.

fearing competition from office buildings that provide the industry standard.

- **Seismic upgrades.** Will seismic upgrades restrict the reuse of buildings that would otherwise redevelop? Older warehouses are often functionally obsolete (for industrial uses) when developers start looking into redevelopment. They can sometimes be used for residential (lofts) or office space, if the zoning allows such use. Often it is more cost effective to demolish the building instead of providing seismic upgrades.
- **Decaying infrastructure and the cost of replacement.** Infrastructure, such as sewer, water, and roads, is aging throughout the City and numerous locations are in need of repair or replacement.

Industrial Database: Detailed Tables

Appendix A

The City of Portland's preliminary (June 2003) Industrial Land Inventory Database represents all industrial sites in Portland and includes 6,736 tax lots and 4,022 sites (combinations of one or more tax lots) that are fully or partially designated for industrial use. The site database under development by the City of Portland was not final at the time this study was completed. The City of Portland's Bureau of Planning is analyzing the database and the final report should be complete in July 2003. Thus, *the data in this report are preliminary and do not necessarily reflect the final assessment of the staff at PDC or the Bureau of Planning.* ECO was allowed to present them here and elsewhere in this report to provide a broad overview of land supply issues.

ECO estimated *vacant, buildable* land by subtracting areas with floodplain, wetland, and slope constraints on the vacant portions of sites. Note that these constraints may not be absolute in the sense that they may not be backed by policies that prohibit development. Under any circumstance, however, they will increase development costs, making development of constrained areas less attractive.

As part of its work on this project, ECONorthwest reviewed preliminary methods and output for the developing inventory, and contributed to its improvement and documentation. ECO's comments are contained in staff memoranda from ECO to PDC.

See Chapter 2 for a complete description of sources of the database, assumptions, and limitations.

CITY OF PORTLAND INDUSTRIAL LAND TABLES

Table A-1. Vacancy status of Industrial lands by district, City of Portland, June 2003

District	Total Acres	% of Total Acres	Vacant Acres	Vacant Const Ac	Vacant Build Ac	% of Total	
						Vacant Build Ac	% Vacant Build of Total Acres
Banfield	117.1	1%	28.9	7.4	21.5	1%	18%
Columbia Corridor	8,428.0	51%	2,567.3	1,328.6	1,238.7	62%	15%
Inner Eastside	633.0	4%	17.4	6.4	11.0	1%	2%
NW Industrial	1,759.4	11%	315.9	147.6	168.2	8%	10%
Outer Eastside	471.9	3%	112.2	68.6	43.6	2%	9%
Outlier	16.8	0%	3.4	1.7	1.8	0%	10%
Rivergate	4,154.3	25%	1,137.2	668.4	468.8	24%	11%
Swan Island	1,042.2	6%	79.3	45.8	33.5	2%	3%
Total	16,622.7	100%	4,261.5	2,274.4	1,987.1	100%	12%

Source: Preliminary data from the City of Portland Industrial Inventory, June 2003. Analysis by ECONorthwest.

Table A-2. Vacancy status of industrial lands by URA, City of Portland, June 2003

Urban Renewal Area	Number of Sites	% of Total Sites	Total Acres	% of Total Acres	Dev Acres	Unconst Developed Acres	Vacant Acres	Const Vac Acres	Vacant Build Ac	% of Total Vacant Build Ac
Airport Way	314	8%	2,659.1	16%	1,450.7	1,251.6	1208.5	485.8	722.7	36%
Central Eastside	597	15%	298.8	2%	286.5	257.8	12.2	4.1	8.1	0%
Convention Center	20	0%	20.4	0%	19.5	11.7	0.9	0.1	0.8	0%
Gateway	73	2%	33.6	0%	30.6	30.6	3.0	0.0	3.0	0%
Interstate	348	9%	1,017.8	6%	860.1	627.0	157.7	96.1	61.6	3%
Interstate/Cnvtn Cntr	1	0%	0.1	0%	0.0	0.0	0.1	0.1	0.0	0%
Lents Town Center	159	4%	295.9	2%	215.1	130.0	80.8	49.2	31.6	2%
North Macadam	4	0%	1.7	0%	1.7	1.6	0.0	0.0	0.0	0%
River District	16	0%	12.8	0%	12.8	12.8	0.0	0.0	0.0	0%
Total in URAs	1,532	38%	4,340.1	26%	2,876.8	2,323.1	1463.3	635.4	827.9	42%
Total not in URAs	2,490	62%	12,282.6	74%	9,484.4	7,924.9	2798.2	1,639.2	1,159.2	58%
TOTAL	4,022	100%	16,622.7	100%	12,361.2	10,248.0	4262	2,274.6	1,987.1	100%

Source: Preliminary data from the City of Portland Industrial Inventory, June 2003. Analysis by ECONorthwest.

Table A-3. Industrial site vacancy status by district and site size (acres), City of Portland, June 2003

District	Acres								Total Sites	Percent of Total
	<0.50	0.50-0.99	1.00-1.99	2.00-4.99	5.00-9.99	10.00-19.99	20.00-49.99	50.00+		
Number of sites										
Banfield	4	1	1	3	1		1		11	1%
Columbia Corridor	88	58	64	91	39	49	25	20	434	54%
Inner Eastside	16	5	4	4		1	1		31	4%
NW Industrial	38	9	15	16	11	6	5	4	104	13%
Outer Eastside	18	7	4	3	7	5		1	45	6%
Outlier		1	2	2					5	1%
Rivergate	23	12	11	22	25	14	19	11	137	17%
Swan Island	18	8	1	3	5	4	1	2	42	5%
Total	205	101	102	144	88	79	52	38	809	100%
Total Acres										
Banfield	0.5	0.8	1.8	10.0	6.0		21.8		40.9	0%
Columbia Corridor	22.8	42.4	89.6	299.5	270.5	692.0	717.7	3657.3	5791.7	57%
Inner Eastside	3.2	3.3	6.3	14.0		11.4	45.2		83.4	1%
NW Industrial	9.3	6.4	21.0	48.2	76.3	77.7	164.0	353.1	756.1	7%
Outer Eastside	4.5	5.3	5.7	12.1	46.1	66.5		102.6	242.8	2%
Outlier		0.6	3.8	7.9					12.3	0%
Rivergate	6.7	8.7	16.9	72.6	181.1	193.3	604.9	1748.9	2833.0	28%
Swan Island	3.3	6.1	1.4	8.6	35.9	45.4	24.2	253.3	378.2	4%
Total Acres	50.2	73.5	146.5	473.0	615.9	1086.2	1577.8	6115.2	10138.4	100%
Vacant Acres										
Banfield	0.3	0.1	0.0	2.8	6.0		19.7		28.9	1%
Columbia Corridor	18.1	33.8	60.0	175.5	179.2	380.3	480.3	1240.1	2567.3	60%
Inner Eastside	1.7	1.5	2.6	9.3		2.3	0.0		17.4	0%
NW Industrial	7.5	5.3	12.6	33.3	36.0	32.2	55.9	133.1	315.9	7%
Outer Eastside	3.2	2.8	1.6	8.7	16.3	25.1		54.4	112.2	3%
Outlier		0.0	1.4	2.0					3.4	0%
Rivergate	6.3	7.0	10.0	52.0	97.3	85.5	359.2	519.9	1137.2	27%
Swan Island	3.0	3.9	1.4	4.2	14.3	14.0	1.2	37.1	79.3	2%
Vacant Acres	40.1	54.5	89.7	287.7	349.2	539.4	916.4	1984.6	4261.5	100%
Buildable Acres										
Banfield	0.2	0.1	0.0	1.3	5.6	0.0	14.3		21.5	1%
Columbia Corridor	11.7	20.2	31.9	98.3	83.2	177.4	228.9	587.1	1238.7	62%
Inner Eastside	1.3	1.3	1.5	6.7	0.0	0.2	0.0	0.0	11.0	1%
NW Industrial	4.0	2.3	6.5	11.7	17.9	22.8	35.1	67.9	168.2	8%
Outer Eastside	1.9	1.4	1.1	1.2	5.0	9.2		23.8	43.6	2%
Outlier	0.0	0.0	0.6	1.1					1.8	0%
Rivergate	2.9	2.9	4.6	33.0	50.8	45.2	172.3	157.1	468.8	24%
Swan Island	1.2	2.6	1.1	1.1	6.7	0.5	1.0	19.3	33.5	2%
Buildable Acres	23.1	30.8	47.3	154.5	169.2	255.2	451.7	855.2	1987.1	100%
% of sites	25%	12%	13%	18%	11%	10%	6%	5%	100%	
% of total acres	0%	1%	1%	5%	6%	11%	16%	60%	100%	
% of vac acres	1%	1%	2%	7%	8%	13%	22%	47%	100%	
% of build acres	1%	2%	2%	8%	9%	13%	23%	43%	100%	

Source: Preliminary data from the City of Portland Industrial Inventory, June 2003. Analysis by ECONorthwest.

Table A-4. Industrial land improvement to land value ratio by site size class, City of Portland, June 2003

Imp/Land Value Ratio	Acres								Total Sites
	<0.50	0.50-0.99	1.00-1.99	2.00-4.99	5.00-9.99	10.00-19.99	20.00-49.99	50.00+	
Number of Sites									
0.00	329.0	78.0	61.0	56.0	37.0	27.0	17.0	8.0	613.0
0.01-0.25	133.0	77.0	53.0	41.0	20.0	14.0	11.0	12.0	361.0
0.26-0.50	72.0	41.0	25.0	37.0	13.0	12.0	7.0	3.0	210.0
0.51-1.00	162.0	82.0	69.0	67.0	32.0	13.0	3.0	5.0	433.0
1.01-2.00	485.0	175.0	127.0	115.0	27.0	27.0	12.0	9.0	977.0
2.01-3.00	314.0	96.0	76.0	78.0	29.0	20.0	9.0		622.0
3.00 and higher	206.0	89.0	83.0	93.0	59.0	35.0	13.0	5.0	583.0
No Data	78.0	50.0	29.0	31.0	11.0	14.0	5.0	5.0	223.0
Total Sites	1,779.0	688.0	523.0	518.0	228.0	162.0	77.0	47.0	4,022.0
Total Acres									
0.00	64.1	55.8	85.5	182.6	270.5	368.3	539.0	1,351.8	2,917.7
0.01-0.25	36.3	56.2	75.0	117.2	134.9	176.4	299.2	2,696.3	3,591.4
0.26-0.50	18.8	31.5	34.6	108.2	96.7	183.3	195.2	486.1	1,154.5
0.51-1.00	43.7	60.5	98.8	224.0	217.2	168.7	114.9	634.1	1,561.9
1.01-2.00	110.3	127.6	178.5	367.0	178.3	371.3	343.7	1,143.7	2,820.4
2.01-3.00	75.7	70.9	107.5	244.5	198.7	283.1	280.8		1,261.2
3.00 and higher	45.4	67.3	122.1	312.8	415.5	485.9	354.3	415.5	2,218.9
No Data	17.8	36.9	40.8	100.1	71.9	203.7	136.2	489.5	1,096.8
Total Acres	412.1	506.8	742.8	1,656.4	1,583.7	2,240.7	2,263.3	7,217.0	16,622.7
Developed Acres									
0.00	35.7	32.8	49.8	79.0	100.2	143.6	119.5	886.2	1,446.8
0.01-0.25	34.0	49.1	64.1	82.7	83.1	93.3	199.3	1,903.0	2,508.6
0.26-0.50	18.1	28.4	31.4	89.7	79.8	166.9	112.9	328.8	856.0
0.51-1.00	42.2	55.8	85.2	184.0	187.0	118.0	67.3	623.7	1,363.2
1.01-2.00	107.7	122.4	167.0	333.8	145.4	312.2	270.9	918.0	2,377.4
2.01-3.00	74.8	68.9	106.6	232.6	175.0	245.9	186.2		1,090.1
3.00 and higher	45.3	65.4	118.6	307.0	397.0	460.3	302.2	331.9	2,027.7
No Data	14.1	29.4	30.4	59.8	67.0	161.1	88.7	240.9	691.5
Total Developed Acres	372.0	452.3	653.1	1,368.7	1,234.5	1,701.3	1,346.9	5,232.5	12,361.2
Vacant Acres									
0.00	28.4	23.1	35.7	103.6	170.2	224.8	419.5	465.6	1,470.8
0.01-0.25	2.4	7.0	10.8	34.5	51.9	83.0	99.9	793.3	1,082.8
0.26-0.50	0.6	3.1	3.3	18.5	17.0	16.4	82.3	157.3	298.5
0.51-1.00	1.5	4.7	13.6	40.0	30.2	50.7	47.6	10.4	198.7
1.01-2.00	2.6	5.2	11.6	33.2	33.0	59.1	72.8	225.7	443.1
2.01-3.00	0.8	2.0	0.9	11.9	23.6	37.1	94.7		171.0
3.00 and higher	0.1	1.9	3.5	5.8	18.5	25.6	52.1	83.7	191.2
No Data	3.7	7.5	10.3	40.3	4.8	42.6	47.5	248.6	405.3
Total Vacant Acres	40.1	54.5	89.7	287.7	349.2	539.4	916.4	1,984.6	4,261.5
Buildable Acres									
0.00	16.0	10.5	14.8	51.2	91.4	97.4	233.2	56.0	570.4
0.01-0.25	1.8	4.4	6.6	20.6	18.9	39.9	37.6	418.6	548.5
0.26-0.50	0.3	2.3	2.4	9.5	10.1	4.4	46.2	99.6	174.8
0.51-1.00	1.4	3.5	8.5	20.7	10.5	29.1	2.6	3.0	79.3
1.01-2.00	1.5	3.8	7.0	17.3	15.8	27.0	46.6	112.0	230.9
2.01-3.00	0.5	0.5	0.5	7.8	9.1	27.3	40.8		86.5
3.00 and higher	0.1	0.8	2.2	2.6	9.1	9.4	14.1	39.6	77.9
No Data	1.6	5.0	5.3	24.8	4.4	20.7	30.4	126.5	218.8
Total Buildable Acres	23.1	30.8	47.3	154.5	169.2	255.2	451.7	855.2	1,987.1

Source: Preliminary data from the City of Portland Industrial Inventory, June 2003. Analysis by ECONorthwest.

Table A-5. Number of employees by site size class (acres) by industrial district, City of Portland, June 2003

District	Acres								Total Emp	Percent of Total
	<0.50	0.50-0.99	1.00-1.99	2.00-4.99	5.00-9.99	10.00-19.99	20.00-49.99	50.00+		
Employment										
Banfield	141	651	89	454	462	152	17		1,966	2%
Columbia Corridor	928	2,251	3,453	8,062	5,886	8,904	2,626	8,882	40,992	38%
Inner Eastside	5,986	4,235	1,878	1,760	1,121	2,788	1,941	14	19,723	18%
NW Industrial	968	2,044	3,487	3,666	2,158	1,059	2,494	1,783	17,659	16%
Outer Eastside	418	433	407	476	508	1,447		159	3,848	4%
Outlier	179	79	60	25					343	0%
Rivergate	94	442	161	1,460	1,902	1,465	994	2,791	9,309	9%
Swan Island	386	704	602	2,055	2,162	5,005	2,957	1,107	14,978	14%
Total	9,100	10,839	10,137	17,958	14,199	20,820	11,029	14,736	108,818	100%

Source: Preliminary data from the City of Portland Industrial Inventory, June 2003. Analysis by ECONorthwest.

Table A-6. Number of employees per unconstrained developed acre by industrial district, City of Portland, June 2003

District	Number of Sites	Total Acres	Unconst Dev Ac	No Firms	Total Emp	Avg Emp	Emp/Unconst Dev Ac
Banfield	80	117.1	77.1	227	1,966	56	25.5
Columbia Corridor	1,518	8,428.0	4,953.2	4,041	40,992	64	8.3
Inner Eastside	890	633.0	551.5	2,098	19,723	42	35.8
NW Industrial	605	1,759.4	1,227.8	1,511	17,659	63	14.4
Outer Eastside	303	471.9	218.5	827	3,848	36	17.6
Outlier	13	16.8	12.3	26	343	38	27.9
Rivergate	330	4,154.3	2,461.9	780	9,309	79	3.8
Swan Island	283	1,042.2	745.6	743	14,978	122	20.1
Total	4,022	16,622.7	10,247.9	10,253	108,818		

Source: Preliminary data from the City of Portland Industrial Inventory, June 2003. Analysis by ECONorthwest.

Table A-7. Acres and vacant acres by site plan, City of Portland, June 2003

Site Plan Name	District	Number of Tax Lots	Total Acres	Vacant Acres
Albina Community Shore	Swan Island	14	15	1
Cascade Station/Port. Intl Center	Columbia Corridor	6	755	415
Central City	Columbia Corridor	9	90	28
Central City	Inner Eastside	612	313	12
Central City	NW Industrial	11	10	0
Central City	Swan Island	129	298	8
Columbia South Shore	Columbia Corridor	409	3,255	817
Gateway	Outer Eastside	73	34	3
Guild's Lake Industrial Sanctuary	NW Industrial	368	1,377	180
Guilds Lake/Northwest Hills	NW Industrial	1	0	0
Johnson Creek Basin	Inner Eastside	3	5	1
Johnson Creek Basin	Outer Eastside	153	383	107
Johnson Creek Basin	Outlier	7	14	3
Kenton	Columbia Corridor	1	0	0
North Cully	Columbia Corridor	29	98	22
Northwest	NW Industrial	51	32	0
Northwest Hills	NW Industrial	76	65	20
Swan Island	Swan Island	18	254	51
TOTAL		1,970	6,998	1,669
Area with no site plan	Banfield	80	117	29
Area with no site plan	Columbia Corridor	1,064	4,229	1,285
Area with no site plan	Inner Eastside	275	315	4
Area with no site plan	NW Industrial	98	275	116
Area with no site plan	Outer Eastside	77	56	3
Area with no site plan	Outlier	6	3	0
Area with no site plan	Rivergate	330	4,154	1,137
Area with no site plan	Swan Island	122	476	19
TOTAL		2,052	9,625	2,593
GRAND TOTAL		4,022	16,623	4,262

Source: Preliminary data from the City of Portland Industrial Inventory, June 2003. Analysis by ECONorthwest.

Short-term Industrial and Office Space Demand Analyses

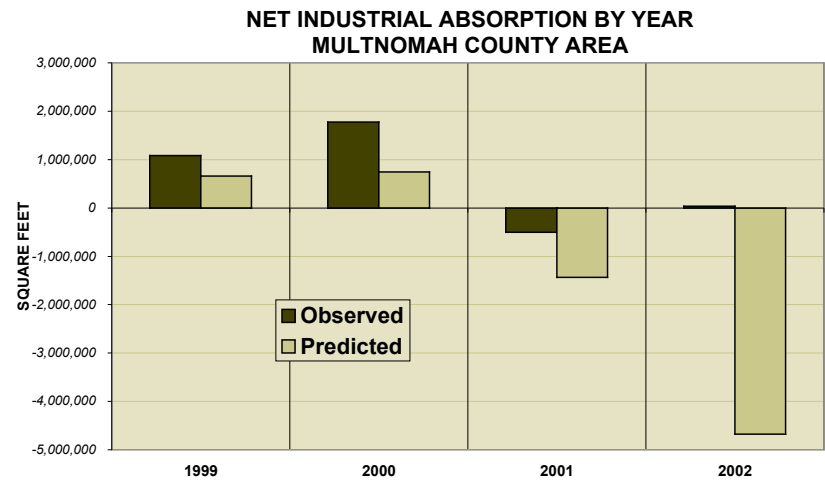
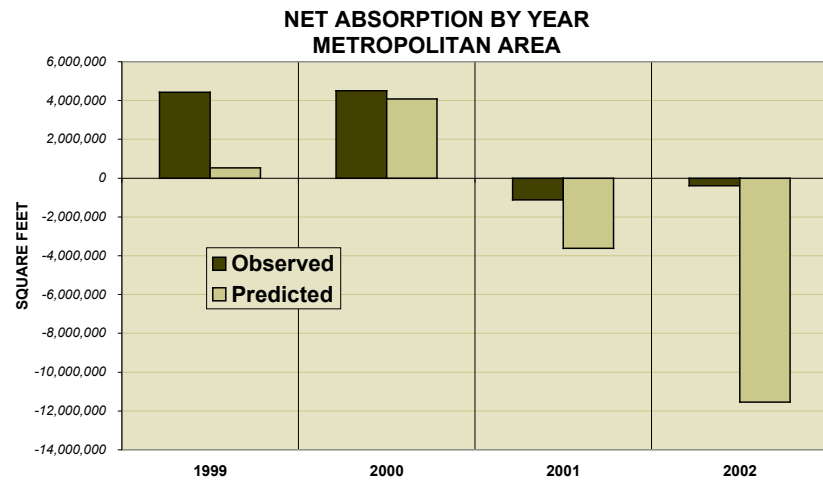
INTRODUCTION

The following tables provide information relevant to conclusions about the short-term demand for industrial and office space in the Portland metropolitan area (at the regional, subregional, and submarket level). For the purposes of this analysis, Johnson Gardner divided the metropolitan area into subregions and smaller submarkets. These forecasts are driven largely by employment projections at the metropolitan and subregional levels, while allocations at the submarket level are based more on recent trends and anticipated supply conditions.

The information presented in this Appendix is described in more detail in Chapter 4.

Table B-1. Historical industrial space demand by SIC, Portland PSMA and Multnomah County, 1998-2002

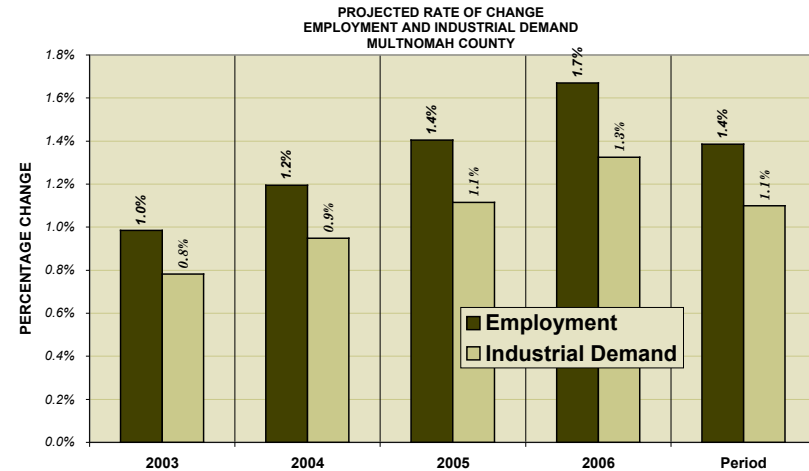
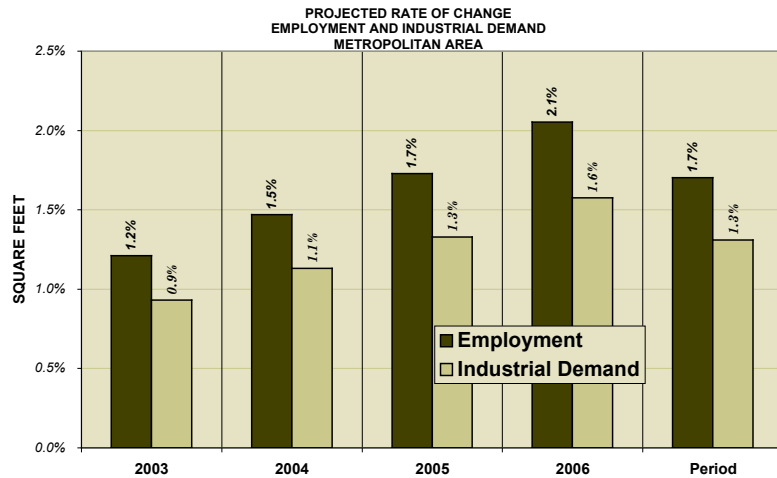
Employment Sector	Capture Factor	S.F./ Employee	Total Employment					Predicted Occupied Space				
			1998	1999	2000	2001	2002	1998	1999	2000	2001	2002
Metropolitan Area												
Construction & Mining	25%	559	43,779	43,805	45,951	45,351	43,589	6,014,955	6,018,527	6,313,374	6,230,938	5,988,894
Manufacturing	97%	559	128,943	127,018	128,275	125,475	112,615	69,711,524	68,670,795	69,350,378	67,836,590	60,883,830
T.C.P.U.	68%	1,025	47,031	47,745	48,651	48,251	44,551	32,773,803	33,271,357	33,902,708	33,623,966	31,045,927
Trade	42%	1,101	205,788	207,311	211,666	207,466	203,414	95,983,503	96,693,859	98,725,116	96,766,154	94,876,284
Services	9%	533	223,195	230,770	240,178	244,778	247,421	10,468,320	10,823,604	11,264,859	11,480,609	11,604,549
Total			648,736	656,649	674,721	671,321	651,590	214,952,105	215,478,143	219,556,435	215,938,258	204,399,485
Multnomah County												
Construction & Mining	25%	559	20,089	19,863	21,929	21,688	20,981	2,760,100	2,729,049	3,012,905	2,979,830	2,882,597
Manufacturing	97%	559	52,377	51,722	51,732	50,712	46,022	28,317,012	27,962,894	27,968,300	27,416,908	24,881,360
T.C.P.U.	68%	1,025	33,901	34,075	33,668	33,465	31,580	23,624,092	23,745,345	23,461,725	23,319,952	22,006,757
Retail/Wholesale Trade	42%	1,101	103,347	105,151	106,278	104,541	102,861	48,203,039	49,044,460	49,570,114	48,759,784	47,976,342
Services	9%	533	133,699	135,365	139,945	142,033	143,229	6,270,768	6,348,907	6,563,718	6,661,655	6,717,766
Total			439,481	441,464	449,386	448,599	441,219	109,175,012	109,830,655	110,576,763	109,138,130	104,464,821



Source: OLMIS and Johnson Gardner, LLC

Table B-2. Projected industrial space demand by SIC, Portland PMSA and Multnomah County, 2003-2007

Employment Sector	Capture Factor	S.F./ Employee	Total Employment					Projected Occupied Space				
			2003	2004	2005	2006	2007	2003	2004	2005	2006	2007
Metropolitan Area Forecast												
Construction & Mining	25%	559	43,930	44,350	44,840	45,430	46,030	6,035,702	6,093,407	6,160,730	6,241,792	6,324,228
Manufacturing	97%	559	113,050	113,580	114,200	114,940	115,690	61,119,160	61,405,698	61,740,894	62,140,966	62,546,445
T.C.P.U.	68%	1,025	44,980	45,510	46,140	46,890	47,650	31,344,552	31,713,886	32,152,904	32,675,546	33,205,156
Retail/Wholesale Trade	42%	1,101	205,820	208,760	212,260	216,480	220,790	95,998,428	97,369,701	99,002,169	100,970,458	102,980,726
Services	9%	533	251,700	256,970	263,290	270,960	278,850	11,805,266	12,052,440	12,348,861	12,708,601	13,078,658
Total			659,480	669,170	680,730	694,700	709,010	206,303,107	208,635,131	211,405,558	214,737,363	218,135,213
Multnomah County Forecast												
Construction & Mining	25%	559	21,118	21,287	21,484	21,722	21,963	2,901,473	2,924,726	2,951,829	2,984,430	3,017,542
Manufacturing	97%	559	46,182	46,376	46,604	46,875	47,150	24,967,711	25,072,829	25,195,765	25,342,450	25,491,063
T.C.P.U.	68%	1,025	31,802	32,075	32,400	32,785	33,174	22,161,153	22,351,770	22,577,864	22,846,347	23,117,611
Retail/Wholesale Trade	42%	1,101	103,860	105,080	106,530	108,275	110,054	48,442,523	49,011,479	49,687,776	50,501,752	51,331,356
Services	9%	533	145,164	147,541	150,383	153,820	157,343	6,808,500	6,919,968	7,053,262	7,214,492	7,379,702
Total			445,563	450,884	457,220	464,852	472,641	105,281,359	106,280,771	107,466,497	108,889,471	110,337,275



Source: Johnson Gardner, LLC

Note: 1/ Capture factors vary because of differences in markets.

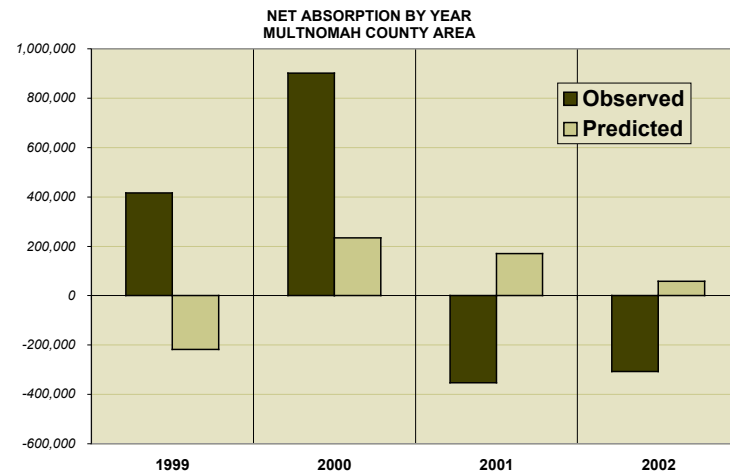
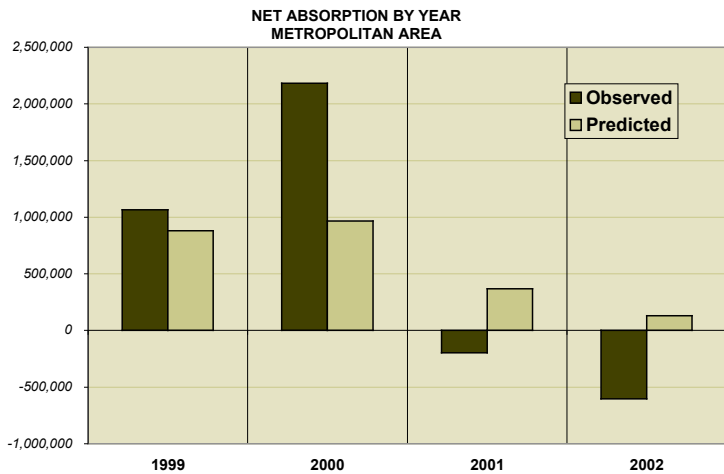
Table B-3. Forecasted four-year speculative industrial demand by submarket, Portland-Vancouver PMSA, 2003-2007

Subregion Submarket	1st Quarter 2003		New Supply				Forecasted Demand				Projected Vacancy Rate			
	Speculative Inventory	Vacancy Rate	2Q03- 1Q04	2Q04- 1Q05	2Q05- 1Q06	2Q06- 1Q07	2Q03- 1Q04	2Q04- 1Q05	2Q05- 1Q06	2Q06- 1Q07	1Q04	1Q05	1Q06	1Q07
Westside	38,363,829	17.0%	254,548	120,250	361,200	548,838	417,852	706,612	453,549	684,689	16.5%	14.9%	14.5%	14.0%
<i>Aloha/Hillsboro</i>	15,545,475	20.8%	108,000	0	0	460,756	195,212	335,814	225,805	341,372	20.1%	17.9%	16.5%	16.8%
<i>Beaverton</i>	7,683,763	20.2%	0	0	0	88,082	72,126	157,822	92,685	139,713	19.3%	17.2%	16.0%	15.2%
<i>Lake Oswego</i>	582,577	9.5%	0	0	0	0	2,951	6,783	0	0	9.0%	7.9%	7.9%	7.9%
<i>Tigard</i>	4,045,518	7.9%	0	0	0	0	17,826	41,615	24,258	36,032	7.5%	6.4%	5.8%	5.0%
<i>Tualatin/Sherwood</i>	5,966,224	16.0%	66,308	120,250	75,200	0	74,046	107,527	72,642	109,497	15.7%	15.6%	15.5%	13.7%
<i>Wilsonville</i>	4,540,272	8.8%	80,240	0	286,000	0	55,692	57,051	38,158	58,075	9.2%	7.9%	12.5%	11.4%
<i>Inner Southwest</i>	155,121	0.0%	0	0	0	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%
North/Northwest	20,758,514	18.4%	0	0	0	0	171,155	144,640	243,320	144,369	17.6%	16.9%	15.7%	15.0%
<i>Guilds Lake</i>	5,784,674	11.19%	0	0	0	0	35,420	95,208	116,365	68,267	10.6%	8.9%	6.9%	5.7%
<i>Swan/Hayden Islands</i>	5,292,012	16.85%	0	0	0	0	45,347	38,454	62,287	36,682	16.0%	15.3%	14.1%	13.4%
<i>Rivergate</i>	7,589,137	23.87%	0	0	0	0	88,080	9,000	61,467	37,540	22.7%	22.6%	21.8%	21.3%
<i>N.W. Industrial District</i>	313,256	14.06%	0	0	0	0	2,307	1,978	3,201	1,880	13.3%	12.7%	11.7%	11.1%
<i>Central Business District</i>	1,779,435	24.01%	0	0	0	0	20,761	17,285	28,054	16,588	22.8%	21.9%	20.3%	19.4%
Northeast	19,793,449	14.9%	216,800	189,000	0	0	225,897	129,613	207,889	133,529	14.7%	14.9%	13.8%	13.2%
<i>Airport Way</i>	6,955,584	14.5%	216,800	89,000	200,000	140,000	135,618	49,367	88,058	56,665	15.2%	15.6%	16.7%	17.4%
<i>Columbia Boulevard</i>	8,628,226	15.3%	0	0	0	0	61,315	54,458	84,625	54,270	14.6%	14.0%	13.0%	12.4%
<i>Close-In Northeast/I-84</i>	2,041,358	26.6%	0	0	0	0	23,452	20,243	31,558	20,364	25.4%	24.5%	22.9%	21.9%
<i>Gresham/Rockwood</i>	2,168,281	3.6%	0	100,000	0	0	5,511	5,544	13,895	8,831	3.3%	7.3%	6.7%	6.3%
Southeast	13,346,569	21.4%	65,600	42,819	0	0	134,346	85,791	136,578	106,823	20.8%	20.4%	19.4%	18.6%
<i>Clackamas</i>	5,511,394	22.0%	65,600	42,819	0	0	70,243	37,128	59,630	46,666	21.6%	21.5%	20.5%	19.7%
<i>Close-In Southeast</i>	2,132,812	22.4%	0	0	0	0	18,427	13,946	22,060	17,257	21.5%	20.9%	19.8%	19.0%
<i>Milwaukie</i>	4,476,609	21.3%	0	0	0	0	37,055	28,112	44,455	34,759	20.5%	19.9%	18.9%	18.1%
<i>Oregon City</i>	488,377	12.9%	0	0	0	0	2,641	2,064	3,253	2,527	12.4%	11.9%	11.3%	10.8%
<i>Other</i>	737,377	20.8%	0	0	0	0	5,980	4,542	7,181	5,614	20.0%	19.4%	18.4%	17.7%
Vancouver	8,937,745	19.1%	97,600	0	0	249,250	130,784	79,751	123,415	71,113	18.5%	17.6%	16.3%	17.7%
Metropolitan Area Total	101,200,106	17.8%	634,548	352,069	361,200	798,088	1,080,033	1,146,407	1,172,301	1,146,038	17.3%	16.4%	15.6%	15.1%

Source: Johnson Gardner, LLC

Table B-4. Historical office space demand by SIC, Portland PMSA and Multnomah County, 1998-2002

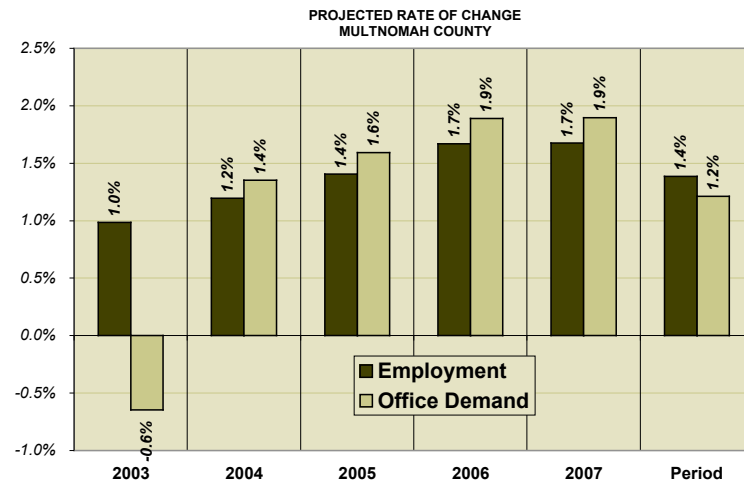
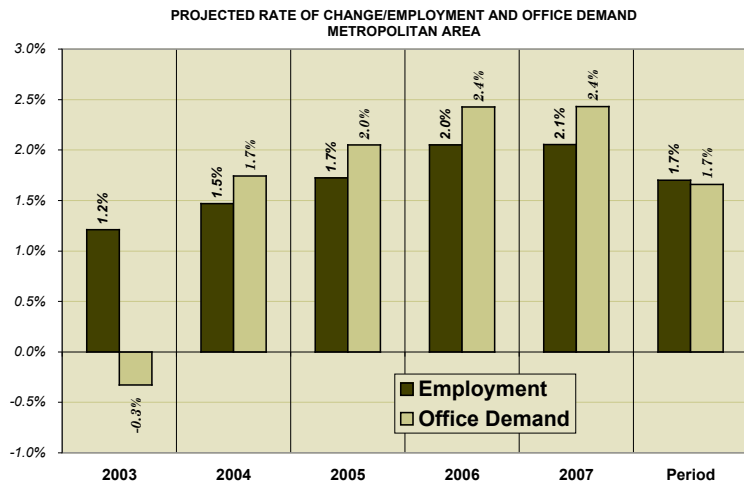
Employment Sector	Capture Factor	S.F./ Employee	Total Employment					Predicted Occupied Space				
			1998	1999	2000	2001	2002	1998	1999	2000	2001	2002
Metropolitan Area												
Construction & Mining	2%	225	43,779	43,779	45,951	45,351	43,589	197,006	197,006	206,780	204,080	196,152
Manufacturing	5%	200	128,943	127,018	128,275	125,475	112,615	1,289,430	1,270,180	1,282,750	1,254,750	1,126,147
T.C.P.U.	30%	225	47,031	47,745	48,651	48,251	44,551	3,174,593	3,222,788	3,283,943	3,256,943	3,007,224
Trade	5%	200	205,788	207,311	211,666	207,466	203,414	2,057,880	2,073,110	2,116,660	2,074,660	2,034,141
F.I.R.E.	90%	215	55,166	55,168	54,404	54,804	57,094	10,674,621	10,675,008	10,527,174	10,604,574	11,047,725
Services	40%	200	223,195	230,770	240,178	244,778	247,421	17,855,600	18,461,600	19,214,240	19,582,240	19,793,642
Government	35%	200	95,077	98,349	101,697	101,997	100,588	6,655,390	6,884,430	7,118,790	7,139,790	7,041,136
Total			798,979	810,140	830,822	828,122	809,272	41,904,519	42,784,121	43,750,336	44,117,036	44,246,167
Multnomah County												
Construction & Mining	2%	225	20,089	19,863	21,929	21,688	20,981	90,401	89,384	98,681	97,597	94,413
Manufacturing	5%	200	52,377	51,722	51,732	50,712	46,022	523,770	517,220	517,320	507,121	460,222
T.C.P.U.	30%	225	33,901	34,075	33,668	33,465	31,580	2,288,318	2,300,063	2,272,590	2,258,857	2,131,656
Retail/Wholesale Trade	5%	200	103,347	105,151	106,278	104,541	102,861	1,033,470	1,051,510	1,062,780	1,045,407	1,028,610
F.I.R.E.	90%	215	36,320	33,735	32,406	32,590	33,644	7,027,920	6,527,723	6,270,561	6,306,198	6,510,019
Services	40%	200	133,699	135,365	139,945	142,033	143,229	10,695,920	10,829,200	11,195,600	11,362,649	11,458,357
Government	35%	200	59,748	61,553	63,428	63,570	62,902	4,182,360	4,308,710	4,439,960	4,449,923	4,403,139
Total			439,481	441,464	449,386	448,599	441,219	25,842,158	25,623,809	25,857,492	26,027,753	26,086,415



Source: Johnson Gardner, LLC

Table B-5. Projected office space demand by SIC, Portland PMSA and Multnomah County, 2003-2007

Employment Sector	Capture Factor	S.F./ Employee	Total Employment					Projected Occupied Space				
			2003	2004	2005	2006	2007	2003	2004	2005	2006	2007
Metropolitan Area Forecast												
Construction & Mining	2%	225	43,930	44,350	44,840	45,430	46,030	197,685	199,575	201,780	204,435	207,135
Manufacturing	5%	200	113,050	113,580	114,200	114,940	115,690	1,130,500	1,135,800	1,142,000	1,149,400	1,156,900
T.C.P.U.	30%	225	44,980	45,510	46,140	46,890	47,650	3,036,150	3,071,925	3,114,450	3,165,075	3,216,375
Retail/Wholesale Trade	5%	200	205,820	208,760	212,260	216,480	220,790	2,058,200	2,087,600	2,122,600	2,164,800	2,207,900
F.I.R.E.	90%	200	57,920	58,930	60,140	61,600	63,100	10,425,600	10,607,400	10,825,200	11,088,000	11,358,000
Services	40%	200	251,700	256,970	263,290	270,960	278,850	20,136,000	20,557,600	21,063,200	21,676,800	22,308,000
Government	35%	200	101,670	102,990	104,560	106,450	108,370	7,116,900	7,209,300	7,319,200	7,451,500	7,585,900
Total			819,070	831,090	845,430	862,750	880,480	44,101,035	44,869,200	45,788,430	46,900,010	48,040,210
Multnomah County Forecast												
Construction & Mining	2%	225	21,118	21,287	21,484	21,722	21,963	95,031	95,792	96,680	97,748	98,832
Manufacturing	5%	200	46,182	46,376	46,604	46,875	47,150	461,819	463,763	466,037	468,751	471,499
T.C.P.U.	30%	225	31,802	32,075	32,400	32,785	33,174	2,146,612	2,165,076	2,186,976	2,212,982	2,239,258
Retail/Wholesale Trade	5%	200	103,860	105,080	106,530	108,275	110,054	1,038,605	1,050,803	1,065,303	1,082,754	1,100,541
F.I.R.E.	90%	200	34,021	34,482	35,033	35,695	36,374	6,123,798	6,206,752	6,305,888	6,425,162	6,547,293
Services	40%	200	145,164	147,541	150,383	153,820	157,343	11,613,119	11,803,247	12,030,605	12,305,612	12,587,407
Government	35%	200	63,416	64,043	64,786	65,679	66,583	4,439,147	4,482,989	4,535,029	4,597,528	4,660,844
Total			445,563	450,884	457,220	464,852	472,641	25,918,130	26,268,422	26,686,517	27,190,537	27,705,675



Source: Johnson Gardner, LLC

Table B-6. Projected demand by subregion and submarket, Portland-Vancouver Metropolitan Area, 2003-2007

Subregion Submarket	1st Quarter 2003		New Supply				Forecasted Demand				Projected Vacancy Rate			
	Speculative Inventory	Vacancy Rate	2Q03-1Q04	2Q04-1Q05	2Q05-1Q06	2Q06-1Q07	2Q03-1Q04	2Q04-1Q05	2Q05-1Q06	2Q06-1Q07	1Q04	1Q05	1Q06	1Q07
Central City	23,333,081	12.4%	0	0	0	0	92,079	282,712	453,665	308,603	12.1%	10.8%	8.9%	7.6%
<i>CBD</i>	18,775,744	11.5%	0	0	0	0	70,594	216,328	343,206	142,154	11.1%	10.0%	8.1%	7.4%
<i>CBD Perimeter</i>	2,086,764	16.1%	0	0	0	0	9,731	30,055	47,496	22,160	15.7%	14.2%	11.9%	10.9%
<i>Lloyd District</i>	2,470,573	16.6%	0	0	0	0	11,754	36,329	57,391	27,025	16.1%	14.7%	12.3%	11.2%
Inner Westside	2,412,625	13.9%	0	0	0	0	13,791	29,322	62,801	31,767	13.3%	12.1%	9.5%	8.2%
<i>Barbur Blvd</i>	1,003,752	13.4%	0	0	0	0	5,608	11,914	25,367	8,271	12.8%	11.6%	9.1%	8.3%
<i>Johns Landing</i>	969,565	18.0%	0	0	0	0	6,605	14,126	29,976	10,758	17.3%	15.9%	12.8%	11.7%
<i>Sylvan</i>	439,308	5.8%	0	0	0	0	1,578	3,282	7,062	1,576	5.5%	4.7%	3.1%	2.8%
Kruse Way/Washington Sq.	6,946,278	14.3%	184,000	41,815	0	0	300,865	164,809	101,305	156,271	12.3%	10.5%	9.1%	7.0%
<i>Kruse Way</i>	1,713,600	11.3%	184,000	41,815	0	0	290,907	158,781	101,388	155,730	4.6%	-1.6%	-6.8%	-14.8%
<i>Tigard</i>	2,351,705	9.3%	0	0	0	0	3,311	1,981	1,192	1,026	9.2%	9.1%	9.0%	9.0%
<i>Washington Square</i>	2,880,973	20.2%	0	0	0	0	6,647	4,048	2,416	2,730	20.0%	19.9%	19.8%	19.7%
I-5 South Corridor	2,520,422	8.5%	0	0	0	0	3,843	24,406	22,474	26,098	8.4%	7.4%	6.5%	5.5%
<i>Lake Oswego/West Linn</i>	814,025	7.0%	0	0	0	0	1,029	6,479	5,993	5,877	6.9%	6.1%	5.3%	4.6%
<i>Tualatin/Wilsonville</i>	1,706,397	11.5%	0	0	0	0	2,813	17,927	16,481	20,221	11.3%	10.3%	9.3%	8.1%
Beaverton/217 Corridor	4,920,004	19.2%	0	0	0	0	-254	75,002	60,814	83,690	19.2%	17.7%	16.5%	14.8%
<i>Beaverton/Cedar Hills</i>	3,362,494	17.1%	0	0	0	0	-160	47,100	38,235	50,860	17.1%	15.7%	14.6%	13.0%
<i>Beaverton-Hillsdale/Canyon</i>	1,557,510	23.8%	0	0	0	0	-94	27,902	22,579	32,830	23.8%	22.0%	20.6%	18.5%
Sunset Corridor/Hillsboro	4,326,998	12.8%	0	0	0	0	28,078	69,284	113,995	78,412	12.1%	10.5%	7.9%	6.1%
Clark County	4,232,171	26.2%	177,595	0	0	0	314,860	111,495	176,434	141,570	22.1%	19.5%	15.5%	12.3%
<i>Vancouver CBD</i>	1,321,403	19.7%	160,000	0	0	0	275,326	21,705	153,019	123,685	9.8%	8.4%	-2.0%	-10.3%
<i>Suburban</i>	2,910,768	29.2%	17,595	0	0	0	39,535	89,790	23,415	17,885	28.2%	25.2%	24.4%	23.8%
Close-In Eastside	2,076,292	13.2%	0	0	0	0	4,800	40,951	29,772	47,630	12.9%	11.0%	9.5%	7.2%
<i>Close-In Northeast</i>	1,287,824	3.0%	0	0	0	0	1,524	12,538	9,281	6,617	2.8%	1.9%	1.1%	0.6%
<i>Close-In Southeast</i>	788,468	29.9%	0	0	0	0	3,276	28,413	20,491	41,012	29.5%	25.9%	23.3%	18.1%
E. Multnomah Co.	2,096,709	14.2%	0	44,000	0	0	6,912	76,492	46,990	39,601	13.9%	12.1%	9.9%	8.1%
<i>Airport Way</i>	538,760	23.7%	0	0	0	0	2,543	386	1,142	751	23.3%	23.2%	23.0%	22.8%
<i>Gresham</i>	276,492	29.5%	0	44,000	0	0	1,542	75,690	44,597	38,326	28.9%	15.0%	1.1%	-10.8%
<i>I-205 Corridor</i>	1,281,457	7.0%	0	0	0	0	2,827	417	1,251	523	6.7%	6.7%	6.6%	6.6%
Sunnyside	1,098,839	24.7%	0	0	0	0	1,881	22,640	21,428	25,888	24.6%	22.5%	20.6%	18.2%
Oregon City/Milwaukie	1,048,252	27.2%	0	0	0	0	1,311	22,117	21,902	25,255	27.1%	25.0%	22.9%	20.5%
Metropolitan Area Total	55,011,671	14.9%	361,595	85,815	0	0	768,165	919,230	1,111,580	1,140,200	14.1%	12.5%	10.5%	8.5%

Source: Johnson Gardner, LLC