
Metropolitan Industrial Lands Inventory Report

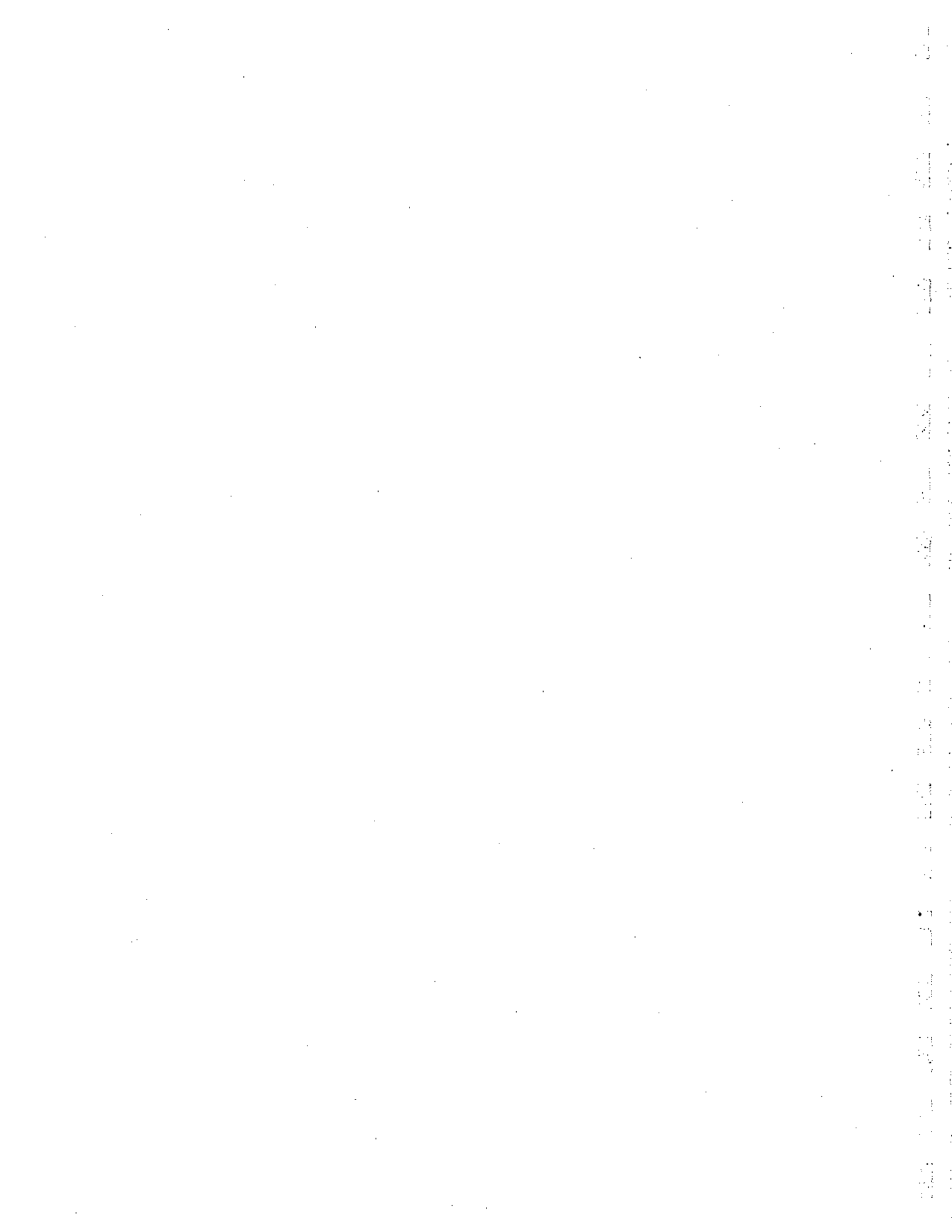


July 1993

METROPOLITAN INDUSTRIAL LANDS INVENTORY REPORT

Lane Council of Governments
125 East 8th Avenue
Eugene, Oregon 97401

July 1993



ERRATA SHEET

This inventory represents industrial lands vacant as of January 1, 1989. The Plan designation and zoning of these properties are current to January 1, 1990, the date the inventory was completed.

This draft report was prepared in September, 1990. Since that time, corrections were made to the data for individual sites following additional analysis by staff and the Special Studies Advisory Committee. The description of these sites in the inventory report text has not been changed. All corrections to and updates of the inventory report are noted in the individual printed site summaries and are reflected in the site evaluations in the Metropolitan Industrial Lands Policy Report, July 1993 (Policy Report). The site information in that document is current to October, 1992.

In addition to the corrections noted below, slight adjustments were made to acres, designation and zoning of other sites based on additional information provided during the evaluation of the sites. All of these changes are reflected in the Site Evaluation Matrix in the Policy Report. These changes were incorporated into the maps at the back of this document. They were not incorporated into the text because the net impact of these changes is about -50.76 acres or 1.3 percent of the total inventory of vacant industrial land, and therefore would not alter the findings, conclusions or recommendations of the study.

Modifications To Industrial Lands Site Maps

Some of the original maps prepared for this study were revised based on the following corrections. For the convenience of the reader, the revised maps were placed at the back of this report. These changes are not reflected in the text.

(Region-Site)

- 1-25: Site was deleted because it was previously developed (-8 acres)
- 5-1: Portion of site north of Chad Drive was deleted (-49 acres).
- 5-3: Site was deleted because it is designated Residential not Industrial as shown in this report (-1.8 acres). Note: sites 4 and 5 were renumbered.
- 6-7: Site was expanded to include additional vacant industrial land to the north (+24.9 acres)
- 6-8: Site was expanded to include additional vacant land to the west of the site (+6.3 acres)
- 6-12: Site was expanded to include additional vacant land to the north (+3.5 acres)
- 7-31: Site was deleted because it was previously developed (-3.7 acres)

ACKNOWLEDGEMENTS

The Metropolitan Industrial Lands Special Study was initiated in 1989. The study produced two documents: the Metropolitan Industrial Lands Inventory Report (Inventory Report) and the Metropolitan Industrial Lands Policy Report (Policy Report). The inventory data in the Inventory Report are current to January 1, 1989.

This study was conducted by an intergovernmental staff team from the Cities of Springfield and Eugene and the Lane Council of Governments. This staff team conducted field work and data and policy analysis and wrote the documents produced as part of the study. L-COG provided project management and prepared and printed the documents.

A Special Studies Advisory Committee (SSAC), a citizen group appointed by Lane County and the Cities of Springfield and Eugene, reviewed and recommended the report to the Joint Planning Commissions Committee (JPCC). The JPCC and, subsequently, the individual planning commissions recommended approval of the study to the elected officials of the three jurisdictions.

Special Studies Advisory Committee

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City of Eugene Appointments

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Lane County Appointments

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In 1992, the Eugene City Council, the Springfield City Council and the Lane County Board of Commissioners approved the Metropolitan Industrial Lands Inventory and Policy Reports and adopted the four Eugene-Springfield Metropolitan Area General Plan amendments recommended in the Policy Report. The specific ordinance numbers and the dates of action by the three jurisdictions are as follows.

- Eugene City Council amended and approved the Draft Inventory and Policy Reports and adopted the Metropolitan Plan text amendments on July 27, 1992, Ordinance No. 19866.
- Springfield City Council approved the reports, as amended, and adopted the Metropolitan Plan text amendments on September 21, 1992, Ordinance No. 5652.
- Lane County Board of Commissioners approved the reports, as amended, and adopted the Metropolitan Plan text amendments on October 21, 1992, Ordinance No. PA 1022.

This report contains background information and policy and technical analyses for the study. An updated inventory of vacant industrial land and recommended changes to the Metropolitan Area General Plan text and diagram, and other recommendations for improving industrial development opportunities in the metropolitan area are contained in a companion document, Metropolitan Industrial Lands Policy Report. The methodologies used in these analyses are consistent with the requirements of Statewide Planning Goal 9, "Economy Of The State."

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Composite Map Of Subregions

- Subregion #1: Hwy 99/River Road/Santa Clara
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Subregion #4: Central University
Subregion #5: Willakenzie
Subregion #6: Glenwood
Subregion #7: West Springfield
Subregion #8: East Springfield

Note: There is no map for subregion #3 because there are no vacant industrial sites in this subregion.

Glossary

Acres

Number of vacant industrial acres within the UGB. Acres not designated or zoned industrial and acres outside the UGB, even when part of a tax lot that is otherwise industrial and within the UGB, are excluded. Source: Tax Assessor's maps; L-COG plots; field check.

Constraint-free

Street access to the site. Buildable land with no potential physical constraints: flood plain, known wetlands, hydric soils, greenway or potentially significant riparian or upland areas.

Contiguous

Adjacent parcels or parcels separated only by a local street. Parcels separated by railroads, major drainageways or arterial or collector streets are considered separate sites.

Contiguous Uses

Those uses physically contiguous to the site or separated from the site by a local street. Uses separated from the site by a collector or arterial street, railroad, or major drainageway were not considered contiguous. Source: Field checks, refinement plans, L-COG files

Contiguous Vacant Zoning

Zoning applied to vacant contiguous parcels. Source: Refinement plans, L-COG files

Floodplain

100 year floodplain as defined by FEMA. Source: LCOG "Prohibitions and Limitations" map prepared for the Metropolitan Plan.

Floodway

Defined by Federal Emergency Management Administration (FEMA) Source: LCOG "Prohibitions and Limitations" map

Greenway

Source: LCOG Greenway map

Highway Access

Good: Less than 2 turns; less than 3/4 mile away from highway.

Moderate: 3-4 turns; 3/4 - 1 1/2 miles away from highway.

Fair: Greater than 4 turns; 1 1/2 - 2 1/4 miles away from highway.

Poor: Greater than 2 1/4 miles from highway.

Source: Street maps, L-COG plots

Hydric Soils

Source: LCOG Hydric Soils map prepared from 1987 soil survey maps.

Number Of Owners

Parcels within a site were considered owned by the same owner if the last name was the same and/or the owners' address was the same. Source: Tax Assessor's files.

Percent Of Site Affected (potential physical constraints and prohibitions):

Each of the site characteristics was mapped at the scale of 1" = 950'. The percent of the site affected by each constraint (or prohibition) was then estimated visually to be within one of the following ranges: 0%; 0-20%; 20-40%; 40-60%; 60-80%; 80-100%; 100%. The mid-range value was entered except in the case of 0% and 100%. Maps of individual prohibitions and physical constraints were overlaid to derive percent of site affected by at least one physical constraint.

Percent Of Site Affected (publicly owned)

Source: Tax Assessor's files.

Publicly Owned

Source: Tax Assessor's files.

Public Services

Services were considered to be at the site (0 feet from site) if they are crossing the site or in the street adjacent to the site. Source: Eugene Public Works Dept. maps: sewer, storm, and water. Springfield Public Works Dept. maps: sewer and storm. Springfield Utility Board and Rainbow Water District maps: water.

Rail Access

A railroad track is adjacent to or crosses the site. There was no attempt to evaluate the feasibility of actually constructing a rail spur to the site. Source: Field checks, street maps, Tax Assessor's maps

Riparian And Upland

Includes all riparian and upland areas identified as potentially significant in the Natural Resources Special Study. Source: Lev Study

Severe Slopes

Slopes greater than 15%. Source: USGS maps.

Severe Soils

Source: Metro Plan Update Natural Assets and Constraints Working Paper on Soil Constraints for Development (1978) updated from data in the 1987 Soil Conservation Service (SCS) Soil Survey of Lane County.

The Working Paper on Soil Constraints for Development was prepared using engineering data available from SCS Soil Interpretation Forms and field mapping sheets. A computer model was prepared that listed the incidence of a severe rating in each of the following categories: 1) dwelling unit construction, 2) road construction, 3) underground utility installation, and 4) runoff potential. The model was then used to geographically plot the soil units and assign them a rating of 0 through 4, with 4 indicating a severe rating in all four categories and 0 indicating no severe ratings in any of the categories. Further study revealed that three soil types experience a more severe constraint with a higher incidence of foundation failure than other soils with a "4" rating. These three soil types were assigned a rating of 5 and plotted separately. The three soil types were: 1) Panther Urban Land Complex, 2-12% slopes; 2) Hazelair Silty Clay Loam, 2-7% slopes; and 3) Hazelair Silty Clay Loam, 7-20% slopes.

These three soil types also appear in the 1987 SCS Soil Survey for Lane County, which was updated for this study by the SCS Soil Interpretation Forms. Information obtained from the Soil Survey, Soil Interpretation Forms, and consultation with a soil scientist indicates that the three soil types identified in the Soil Survey possess the same characteristics as those assigned a most severe rating in the Working Paper on Soils Constraints for Development.

The occurrence of these three soil types in the Industrial Lands study area was recorded onto maps of the study's subregions by referring to the updated soil unit maps contained in the Soil Survey. The subregion maps were used to visually estimate the percentage of each vacant industrial site which may be affected by severe soils constraints to industrial development.

Site

Contiguous parcels within a Plan designation, except in a few cases where contiguous parcels with different Plan designations were defined as a single site.

Site Access

Local, collector or arterial provides direct access to the site.

Unbuildable

Includes floodway, severe soils, severe slopes, publicly owned land (except the Riverfront Research Park), approved wetland mitigation sites and officially protected wetlands.

Wetland

Includes all wetland areas identified as regulated wetlands. Source: Preliminary Inventory of Eugene and Springfield Wetland, Riparian and Upland Areas for Wildlife Habitat Value (Lev Study), West Eugene Wetlands Special Area Study (WEWSAS)

Wetland Mitigation Site

Includes only sites approved by state and federal regulating agencies. Source: WEWSAS

Chapter I: Introduction

The Metropolitan Industrial Lands Special Study was initiated in January, 1989 by the Metropolitan Policy Committee (MPC), at least partly in response to the discovery of about 700 acres of regulated wetlands on vacant industrial land in West Eugene. It also serves to update the industrial lands portion of the Metropolitan Area General Plan. The study was coordinated by Lane Council of Governments (L-COG) with financing provided by Eugene and Lane County. The project team contained staff from L-COG and the cities of Eugene and Springfield.

Purpose

The purpose of this study is to provide a data base and policy recommendations for industrial lands, including potential changes to the Metropolitan Plan text and diagram and to the Public Facilities Plans of the respective jurisdictions. The goal of the project is to assure plan designation of an adequate and appropriate supply and distribution of industrial land, reflecting the economic development objectives of the metropolitan community.

Citizen Involvement

The Draft Metropolitan Industrial Lands Special Study was reviewed by a citizen advisory committee referred to as the Special Studies Advisory Committee (SSAC) whose members were appointed by Eugene, Springfield and Lane County. An interested parties mailing list was prepared and maintained throughout the study and all meetings of the SSAC were advertised and open to the public.

The draft report was forwarded to the Joint Planning Commissions Committee (JPCC) for release to the public. The document will be reviewed and revised by the JPCC based on input received from the public and the planning commissions of the individual jurisdictions. Additional review will occur at the city council and county board level with the Metropolitan Policy Committee (MPC) providing dispute resolution.

Background

The Metropolitan Area General Plan, acknowledged by the Land Conservation and Development Commission (LCDC) in 1982, allocated vacant land to four industrial plan categories based on a set of specific criteria. The amount of land allocated to meet the need for Light-medium industrial uses was identified in the demand analysis. In addition, policy decisions were made to allocate vacant land based on site criteria and policies to encourage economic diversification. The inventory was designed to meet the economic development objectives of the community and the needs of industries desired by the community and likely to locate, expand or develop in the metropolitan area. The policy basis for allocating industrial acres to Plan categories is reflected in the description of the industrial categories in the Metropolitan Area General Plan and in the allocation criteria used for industrial plan designation in the Plan (Metropolitan Plan

Draft Technical Supplement, June 1982), described below for each industrial Plan category.

Heavy Industrial

This designation was amended in 1990 to read as follows.

"This designation generally accommodates industries that process large volumes of raw materials into refined products and/or that have significant external impacts. Examples of heavy industry include: lumber and wood products manufacturing; paper, chemicals and primary metal manufacturing; large-scale storage of hazardous materials; power plants; and railroad yards."

Lumber mills are an example of this type of industry. This designation generally reflects existing uses because heavy industrial demand projections indicate no need for additional acres. However, additional acres were allocated for vacant land zoned M-3 and owned or adjacent to an existing industrial use to meet Plan goals which promote expansion of existing businesses. Areas no more than twice the size of the existing site were so designated.

Special Heavy Industrial

This designation was amended in 1989 to read as follows.

"This designation accommodates industrial developments that need large parcels, particularly those with rail access. Although a primary purpose of this designation is to provide sites for heavy industries, any industry which meets the applicable siting criteria may make use of this designation.

Three areas are designated Special Heavy Industrial. Listed below are the names of the three areas and applicable land division standards, use limitations, and annexation and servicing provisions...."

The 3 areas designated Special Heavy Industrial are: the Natron site in southeast Springfield, Enid/Awbrey in north Eugene, and north of Awbrey Lane in north Eugene. These areas are large, flat (0-5 percent slope) contiguous areas with a minimum of 40 acres parcel size (to protect large parcels) with a variety of parcel sizes and good transportation access (rail or highway). Firms may be allowed to provide on-site necessary minimum level of key urban services subject to applicable regulations because city services are not available to these areas in the short-term. Other factors included existing zoning and Plan designations, compatibility with existing and planned uses, resulting commuting patterns and long-term ability to extend urban services or provide on-site alternatives.

Light-Medium Industrial

This designation was amended in 1990 to read as follows.

"This designation accommodates a variety of industries, including those involved in the secondary processing of materials into components, the assembly of components into finished products, transportation, communication and utilities, wholesaling and warehousing. The external impact from these uses is generally less than heavy industrial, and transportation needs are often met by truck. Activities are generally located indoors, although there may be some outdoor storage."

Transportation access (rail or highway or both), existing adjacent land uses, existing zoning and existing 1990 Plan designation were factors considered in allocations to this category.

Special Light Industrial

This designation was also amended in 1990 and it currently reads as follows.

"The primary objective of this designation is to provide opportunities for diversification of the local economy through siting of light industrial firms in a campus-like setting. The activities of such firms are enclosed within attractive exteriors and have minimal environmental impacts, such as noise, pollution and vibration, on other users and on surrounding areas. Large-scale light industrial uses, including regional distribution centers and research and development complexes, are the primary focus of this designation. Provision should also be made for small and medium scale industrial uses within the context of industrial and business parks which will maintain the campus-like setting with minimal environmental impacts. Complementary uses such as corporate office headquarters and supporting commercial establishments serving primary uses may also be sited on a limited basis.

Conceptual development planning, industrial park standards and site review processes shall be applied to ensure adequate circulation, compatibility of uses and availability of large sites for light industrial firms. A 50-acre minimum lot size shall be applied to protect undeveloped sites from piecemeal development until a site development plan has been approved by the city."

The Special Light Industrial (SLI) designation was created in response to local elected officials' desire to diversify the metro area economy by providing large, campus-like sites for high technology firms. When the Metro Plan was being prepared in 1977, no sites had been reserved for large high-tech manufacturing or research firms. Local policy makers were concerned that this lack of sites would cause firms to locate elsewhere, in areas with development-ready land protected from incompatible uses.

The SLI designation was originally entitled "Large Scale Special Light Manufacturing" and targeted toward manufacture or assembly of high technology items. SLI sites were intended to be preserved for very specialized uses that could not be provided for in other Plan designations. During the development of Metro Plan drafts from 1979 to 1982, the SLI concept was expanded from high-tech manufacturing to include:

1. other compatible industrial uses,
2. research and development activities, and
3. office uses, when in a supporting role and complimentary to the primary SLI purpose of high-tech manufacturing and research and development (R&D).

Some members of the development community expressed a preference for providing broad development guidelines for certain areas, defining an SLI designation similar in intent to the old 1990 Plan's "Opportunity Areas." The version of the SLI that was eventually adopted by the governing bodies targeted specific uses which were not addressed by other Plan designations. This designation was defined in keeping with the requirements of the statewide land use planning goals and guidelines created after adoption of the 1990 Plan.

For example, the City of Eugene has developed and amended the I-1 zone to implement the Metro Plan SLI designation. The I-1 zone is intended to:

1. accommodate uses with high quality physical environment requirements;
2. provide opportunity for siting of activities with large land requirements; and
3. provide for uses with high employee/acre ratios.

The initial draft of the I-1 zone was adopted by the Eugene City Council in 1982 following more than a year of intensive debate, with revisions adopted in 1985. In brief, the I-1 zone addresses uses as follows:

- | | |
|---------------|--|
| Primary | High-tech industrial, regional offices and distribution centers |
| Secondary | Industrial or business parks which include support services (such as advertising) for primary uses, wholesaling of high-tech items, restaurants and banks with specific limitations and conditions |
| Not Permitted | Other wholesaling, warehouses, retail, general offices as primary use |

Commercial and industrial uses such as general wholesaling, retail, and office uses were not included in the I-1 zone because they were felt to be incompatible with the general intent of the SLI designation. In addition, at the public hearings held during the I-1 amendment process, Planning Commissioners and City Councilors mentioned that other commercial and industrial Metro Plan designations and zones were available for these uses.

Spectra Physics is an example of a Special Light industry. Allocation criteria include: large scale sites over 50 acres with five or fewer ownerships, good access to transportation facilities, especially highways. These areas were to be buffered from detracting surrounding urban uses, in a campus-like atmosphere. A number of sites were

allocated within the urban growth boundary to provide a selection in order to attract firms because anticipated industries in this category would add to the diversification of the local economy.

Other Industrial Plan Designations

The Metropolitan Plan provides for local jurisdictions to apply a "Small-Scale Light Industry" designation (not shown on Plan diagram) to sites and uses that fit the description and criteria in the Plan. These uses emit no smoke, noise, glare or other impacts beyond property boundaries; pursue their activities within buildings; and do not generate a large amount of vehicular trips. Site criteria include "access to arterial streets, normally without use of residential streets; and up to five acres, with sufficient parking areas and frontage to accommodate structures, parking areas, and access in character with adjacent nonindustrial properties."

In addition, industrial uses are allowed in areas designated University/Research and Mixed Uses. Industrial uses also may be located in areas with industrial zoning but a non-industrial Plan designation; and in areas that are neither designated nor zoned industrial (e.g., industrial uses with a Commercial Plan designation zoned C4 in Eugene).

The University/Research category is "primarily intended to accommodate light industrial, research and development, including a limited range of retail and service uses and multiple-family dwellings. Commercial activities in this category are intended to serve the day-to-day needs of employees working in and near University/Research area. Activities, such as general retail and office, will continue to be located in other appropriately designated areas."

The Mixed Use category "represents areas where more than one use might be appropriate, usually as determined by refinement plans on a local level. For example, the Whiteaker Refinement Plan includes several areas where a mix of compatible uses, based in part on existing development, are designated. In the absence of a refinement plan, the underlying plan designation shall determine the predominate land use."

Vacant Industrial Land Added To The Inventory

Since adoption of the Metro Plan, policy decisions were made to designate additional vacant land industrial. For example, two Plan amendments were adopted resulting in the addition of about 246 acres of industrial land to the inventory. As part of the 1987 Plan update, about 46 acres were allocated for industrial uses (the Riverfront Research Park) and a special Plan category was adopted, University Research; and a 200 acre Special Heavy Industrial site (the Awbrey-Meadowview urban growth boundary expansion) was approved in 1989.

Chapter II: Study Methodology

The Metropolitan Industrial Lands Special Study produced two separate documents. The Inventory Report describes the overall study methodology and contains the supply and demand analysis and the findings and conclusions derived from the analysis. The policy analysis and recommendations based on that analysis are contained in the Policy Recommendations Report.

The supply and demand analysis is both quantitative and qualitative. The procedures used to produce information for each portion of the analysis are described below; findings produced from these methods are included in the appropriate sections of the report.

Literature, Document And Policy Review

1. Review community economic development objectives. This includes a review of Plan and zoning provisions and other documents to describe community objectives and to identify types of industrial uses allowed in industrial plan and zoning categories.
2. Analyze national, state and local economic trends and local demographic trends.
3. Review Goal 9 LCDC industrial lands requirements. The inventory and the supply and demand analysis meet the requirements of OAR 660, Division 9.

Goal 9, Economy of the State, provides that local plans and policies shall contribute to a stable and healthy economy in all regions of the state and requires local governments to prepare an economic development strategy that includes an inventory of local economic development needs and land available to meet those needs. Goal objectives include the following:

1. To provide adequate opportunities throughout the state for a variety of economic activities that generate employment, products and services, consistent with the availability of human and natural resources.
2. To encourage desired economic growth and activity in areas characterized by chronic unemployment or a narrow economic base, but with the capacity and resources to support additional economic activity.
3. To assure that adequate land resources are available for desired commercial and industrial development.

Administrative Rule Summary

LCDC adopted an industrial and commercial development rule, effective October 10, 1986, which applies to all areas within urban growth boundaries at the time of periodic reviews beginning in February, 1987. The rule was adopted to help communities prepare realistic economic development objectives and ensure that zoning and availability of serviceable land are not obstacles to expanded development in urban areas, consistent with other statewide goals. The rule requires local jurisdictions to assess community economic potential, include policies in the plans stating economic development objectives, identify the number and acreage of needed sites in each category, provide a long-term supply of land (meet 20 year need in each site category), and protect sites with appropriate planning and zoning. There are additional requirements for providing public facilities to the sites in jurisdictions with a population of 2,500 and above.

The purpose of the rule is to implement the requirements of Goal 9 to assure that comprehensive plans and land use regulations are updated to provide adequate opportunities for a variety of economic activities and to assure that plans are based on available information about state and national economic trends. The analysis requires a review of the best available or readily collectable information about these trends; identification of site requirements of industries likely to locate or expand; inventory of vacant and underdeveloped commercial and industrial parcels one acre and larger; and an assessment of community economic potential.

Plan policies are required to address economic development objectives and, for areas with populations of 2,500 and above, to identify types of industry and commercial uses anticipated and desired, as well as policies to commit adequate sites and facilities to these uses. The rule requires that the number and acreage of needed sites be designated in the plan, sufficient to meet the long-term need (20 year) in each site category and that urban areas with populations of 2,500 and above provide serviceable sites for the next five years. This may require amendments to the public facilities plan. The rule also requires that these sites be protected for uses with special siting requirements with appropriate planning and zoning.

4. Review existing working papers and plans and coordinate with on-going planning activities. Coordination occurred among a variety of planning studies conducted within the timeframe of this study, including the Metropolitan Natural Resources Special Study, the Eugene Commercial Lands Study and the West Eugene Wetlands Special Area Study, among others.

Demand Analysis

The following steps were used to develop a forecast, through 2010, of the future demand for industrial land.

1. Conduct a survey of other jurisdictions and the literature. This was done to refine the general demand forecasting methodology and the employee-per-acre (EPA) ratios used.
2. Develop employment projections for the metropolitan area. Develop growth rates for various types of industries and apply the growth rates to current employment conditions to project future employment by industry type. These projections were developed using the following techniques (Table 1).
 - Long-term trend analysis
 - Analysis of the historic and projected relationship between the Lane County economy and the Oregon, Pacific Northwest and national economies, and
 - A trend analysis of the proportion of Lane County employment in the metropolitan area.

Chapter IV describes employment trends that provide the basis for this analysis. For more detailed information on this portion of the methodology, refer to Lane Council of Governments Population and Employment Working Paper.

3. Analyze existing patterns of employment by Standard Industrial Classification (SIC) sector across land in all plan designations. The analysis includes the following.
 - The percent of industrial employment that occurs on non-industrial land,
 - The percent of non-industrial employment that occurs on industrial land,
 - The breakdown of employment by sector into office-related and non-office-related components.

TABLE 1
EMPLOYMENT GROWTH AND PROJECTIONS FOR
EUGENE-SPRINGFIELD, 1970-1987 AND 1987-2010

SECTOR	PROJECTED			
	AARG% 1970-87	AARG% 1979-87	AARG% 1982-87	AARG% 1987-2010
Total Wage & Salary	2.4	-0.2	2.8	1.7
Manufacturing	0.4	-1.0	3.1	0.7
Lumber & Wood Products	-1.2	-3.2	0.9	-0.9
Other Durable	5.3	2.2	9.8	2.2
Food Products	0.2	0.8	1.3	0.8
Other Non-Durable	3.5	4.0	4.4	3.0
Non-Manufacturing	3.0	0.1	2.8	1.9
Construction	0.5	-7.0	2.7	1.7
TCU	0.1	-2.9	-1.8	1.3
Trade	3.5	0.1	3.2	1.8
Wholesale	4.2	-0.7	3.3	1.7
Retail	3.4	0.4	3.2	1.8
FIRE	2.9	-1.5	1.3	2.1
Services	5.2	2.6	5.4	2.6
Government	1.8	-0.1	1.2	1.2
Federal	2.5	0.0	0.0	0.1
S&L Education	1.3	0.9	1.8	1.5
S&L Administration	2.8	-1.4	0.7	0.7

AARG%: Average Annual Rate of Growth (Percent)
TCU: Transportation, Communications, and Utilities
FIRE: Finance, Real Estate, and Insurance
S&L: State and Local
Source: Historical growth rates compiled from data from the Oregon State Employment Division. Projections are from L-COG.

Employment in each individual sector was analyzed for office-related and other employment (Table 2). For most sectors, the information contained in the Program Year 1988 & 1989 Business & Employment Outlook: JTPA District 5 published by the Oregon Employment Division on the 1985 occupational mix of major industries was used (JTPA: Job Training Partnership Act; District 5 is Lane County). An estimate of the percent of office-related employment in each sector was calculated by assuming that the managers and administration, sales related, clerical and administrative support, and 70 percent of the service occupations in each sector would be based in offices. (The 70 percent of service occupations figure comes from the analysis of office based employment in the service sector described below.) In the service sector, employment was disaggregated to the most detailed level possible (four-digit SIC codes), and allocated to either the office or non-office category, based on the likely location of such employment. In the Finance, Insurance and Real Estate (FIRE) sector, professional and technical occupations were also assumed to be office based.

TABLE 2
ESTIMATED PERCENT OF SECTOR EMPLOYMENT
THAT IS OFFICE BASED

	Lumber & Wood Products	Other Durable	Food Products	Other Non-Durable	Mining	Construction	TCU	Wholesale Trade	Retail Trade	FIRE	Services	Government	Education
% Office Based	14.5	14.5	31.0	31.0	NA	24.1	32.6	4.0	4.0	92.8	70.0	77.0	77.0

In the wholesale and retail trade sectors, the occupational mix was analyzed from a different source, allowing for a more precise allocation of office employment in those sectors. This was done because the JTPA publication does not differentiate between wholesale and retail. It is important to differentiate the two for this study because most wholesale trade employment is located on industrial land, while little retail trade employment locates on industrial land. Also, in retail trade, most of the sales related employment (classified in other sectors as office-related) is not located in an office, but on the sales floor of a retail establishment.

The methodology for determining the amount of office-related employment in the trade sectors used the 1986 Oregon County Business Patterns, published by the U.S. Bureau of the Census. For Lane County, the wholesale and retail trade sectors were analyzed for the percent of "administrative and auxiliary" employment, as well as the likely location (office or other) of the remaining employment. Wholesale and retail trade are similar in that approximately four percent of the employment in each sector is office-related, but the two sectors differ in the location of the other 96 percent. Most of the balance in wholesale is located on industrial land, while the majority of the remainder in retail trade is not.

The methodology for the service sector was essentially the same as for the trade sectors. Using the County Business Patterns, each sub-sector (or service occupation) was analyzed to determine whether it is office or other based. Service occupations such as business or legal services were designated as office based, while occupations such as personal services, auto repair services and amusement and recreation services were designated as non-office based.

4. Develop employee-per-acre (EPA) ratios and apply them to the forecasted employment.

The last study in the Eugene area to address the demand for industrial land (the Metro Plan Update Economic Working Paper) analyzed the then-current actual EPA ratios associated with existing development in the area. Basic assumptions regarding future ratios were employed:

. . .the amount of land and numbers of employees associated with each activity were obtained, (and) employee per acre ratios were derived. These were then examined and, where necessary, modified to more accurately reflect anticipated future labor/land relationships.

Unfortunately, it is not possible at this time to accurately and comprehensively update the local EPA ratios, nor is this necessarily the preferred method for determining EPA ratios. The future demand for land comes from employment that is not yet located in the local area, and therefore may have different EPA characteristics than existing employment.

The EPA ratios used in this study are the result of analyzing the ratios currently in use in other jurisdictions, the ratios suggested by the professional literature, and information gathered at the local level from the just completed Eugene commercial land analysis and recent directions in local development (e.g., increasing development of multi-story, higher density office buildings). The major sources include two studies completed by the Metropolitan Service District

(Metro) in Portland in which EPA ratios were developed using two different approaches. The first study derived EPA ratios for three major categories of employment: Office Commercial, Retail Commercial (disaggregated into regional retail and other) and Industrial (disaggregated into high, medium and low density). The second and more recent study developed existing and projected future (year 2000) EPA ratios for all but one standard employment sector based on an analysis of actual development densities in the Portland metropolitan area. For the Government sector, an average of the other office-related EPA ratios was utilized.

Another major source is the Oregon Economic Development Department's Growth Industries Survey. As discussed earlier, several other jurisdictions also have completed studies of EPA ratios that attempted to predict the ratios of firms likely to locate in the area in the future.

For this study, EPA ratios were developed for each employment sector and, within each sector, for office-related employment and other employment. The ratios were held constant over the entire study period, consistent with recent literature suggesting that growth in employment densities is slowing down if not stopping, although some types of employment in certain locations have experienced a lowering of the average EPA densities, e.g., office employment locating in campus-like business parks. The office and non-office EPA ratios were applied to the projected new employment in proportion to the estimated breakdown of office and non-office employment in each sector.

5. Perform sensitivity analyses on the two most variable and sensitive inputs to the model: the EPA ratios and the patterns of employment by type of land.

Sensitivity analysis refers to the process of changing the value of one or more variable to determine how "sensitive" the results are to the values used. This methodology uses sensitivity analysis to generate high and low acreage estimates and alternative scenarios based on different values and assumptions. First, the values of the EPA ratios were changed. Higher ratios were used to produce acreage estimates at denser development levels than anticipated; and lower ratios were used for development at less dense levels.

Second, different scenarios were prepared based on different assumptions about the amount of industrial employment locating on industrial land. Existing employment patterns by plan designation reflect the fact that much of the current employment in the metropolitan area was in its current location before the plan designations were in effect. This leads to a fairly large amount of industrial employment showing up on land that is not designated industrial. We conducted two additional runs of the model to project the demand for industrial land under

the assumption that more industrial development would locate on land designated industrial than the existing pattern would suggest. The first run assumed that half as much industrial employment would locate on non-industrial land as the current pattern predicts. (For example, the current pattern of lumber and wood products employment shows that 12.6 percent of the sector's employment is on land designated Community Commercial. This run of the model assumed only 6.3 percent of the sector's employment would locate there. The other 6.3 percent was shifted to land designated Industrial.)

The second sensitivity analysis assumed that all further industrial employment would locate on land designated industrial.

6. Estimate the gross industrial acreage required. This study used the methodology used in the Metro Plan to estimate the gross acres required:
 - 1) the net acres are increased by 20 percent to account for land required for public right-of-way and other uses;
 - 2) that figure is then increased by an additional 25 percent to account for land held at any point in time for expansion or other reasons.

Industrial Firm Site Requirements

Site requirements were identified through an extensive literature review, discussions with economic development professionals and a survey of industrial realtors recently conducted by the City of Eugene.

There is an abundance of current literature on site requirements of firms in the market for a place to locate. The most recent research on this topic pertinent to Oregon is summarized in the Oregon Industrial Real Estate Handbook prepared in April, 1988 by the Oregon Economic Development Department (OEDD) and the Society of Industrial and Office Realtors. Another source is the Growth Industries Survey which is part of the Oregon Economic Trends Project prepared in December 1986 by the OEDD.

Vacant Industrial Lands Inventory Update

Vacant industrial lands are parcels one acre or larger that are zoned or designated in the Metro Plan for industrial use. Both vacant (vacant, agricultural and forest lands) and underdeveloped lands are defined as vacant. Underdeveloped lands are the vacant portion of parcels that have a structure on the lot.

1. Field Check. A field check of over 50 percent of the vacant industrial parcels and acres revealed that the existing data base was about 99 percent accurate with regard to land use. Secondary sources were used to provide data for the

remaining data items for parcels not field checked. In addition, all parcels with known development activity since the last update in 1986 were field checked.

2. Desk Review. A desk review was completed for each site in the inventory. The data and sources used are listed in the Glossary to this report. The data are contained in an on-line file that is available for on-going planning and economic development reference.

Supply Analysis

1. Identify the number of acres of vacant industrial land by plan designation and zoning district category. The UGB was divided into 8 subregions which were digitized to facilitate data analysis. The area included in the Awbrey-Meadowview plan amendment was included in the inventory.
2. Describe vacant industrial sites (contiguous parcels). A survey was conducted of other jurisdictions in the state on supply methodology. The supply methodology used in this study is more comprehensive and detailed than those surveyed. A list of data items was developed and incorporated into a Site Data Worksheet. A separate worksheet was completed for each vacant industrial site. These data were entered into a computer file and aggregated for the metropolitan area, by city and by region. The individual Site Data Worksheets are included in a technical supplement under separate cover.
3. Indicate the approximate total acreage and percent of sites within each plan or zone district that are serviceable and free from site constraints. For sites five acres and larger and parcels larger than one acre not contiguous to other vacant industrial parcels, indicate site constraints that physically limit development of the site for designated uses. Site constraints are: the site is not serviceable; there is inadequate access; and environmental constraints (floodplain, steep slopes, weak foundation soils).
4. Evaluate the inventory to determine acres and sites that fall into the following categories: 1) land that is available and suitable for industrial development; 2) land that is available for development, but not suitable for industrial development due to its location or other factors; and 3) land that is not suitable for development due to severe physical constraints or other factors.

Supply And Demand Analysis

This step involved the comparison of supply to demand.

Chapter III: Community Objectives

The metropolitan community's industrial development objectives are reflected in the policy direction in local governments' policies, programs and industrial zoning districts. This direction guides local government efforts to balance land allocations among industrial, commercial and residential land uses and to plan public facilities, contributing to cost-effective, efficient delivery of public services. It also provides predictable guidance to industrial firms and developers so that new business development and business retention, expansion and relocation can occur in an efficient and timely manner.

Policies And Programs

Local government policies and programs encourage and facilitate economic diversification, quality industrial development and compact urban growth. The policies in each section are included as examples.

1. Economic Diversification

Policies encouraging economic diversification have been adopted reflecting the community's goal of providing appropriate industrial land for new business development and business retention, expansion and relocation.

Policies

Provide existing industrial activities sufficient land for future expansion. (Metro Plan, page III-B-5, policy 5)

Demonstrate a positive interest in assisting local businesses and in attracting new businesses and industry. (Eugene Community Goals and Policies, page 6, policy 1.0)

Work with the private sector to market and develop sites in the Central Eugene Project, West Eugene Enterprise Zone, and Riverfront Research Park, and other areas as requested where public involvement can facilitate private development of property. (Eugene Economic Development Strategic Plan, page 14, strategy 3 for Marketing and Recruitment)

Support existing major industries and businesses complementing them. (Springfield Economic Development Plan, page 17, objective 6)

Local government programs have emphasized activities that promote the following objectives.

- 1) providing for the continued operation of existing industry;
- 2) creating industrial parks;
- 3) encouraging energy efficient industry;
- 4) diversifying the area's industrial economy;
- 5) meeting the needs of relatively larger firms; and
- 6) recruiting industry which enhances the area's regional status.

One of the first examples of the metropolitan area's commitment to encouraging industrial development was the creation of the Special Light Industrial Metro Plan designation in 1982. The area had little experience with high-technology manufacturing development at the time. This new Plan designation was created and numerous sites were allocated in an effort to respond to the community's objective to diversify the local economy.

Examples of local government efforts to facilitate economic diversification are: 1) the Metro Plan amendment adding 200 acres of industrial land in the Awbrey-Meadowview area; and 2) initiating the West Eugene Wetlands Special Area Study to facilitate industrial development in West Eugene and maintain the metropolitan area's vacant industrial land inventory.

2. Quality Industrial Development

The community, through its economic development objectives, has expressed the desire to improve the quality of industrial sites to better meet the needs of existing firms, and to be more successful in attracting new ones. Factors which effect both the internal quality of sites (such as appearance and adequate parcel size) and their relationship to their surroundings (such as buffering from adjacent uses) are considered important. Environmental values such as water quality and wetlands protection are considered compatible with properly designed industrial development.

Policies

Encourage the improvement of the appearance of existing industrial areas, as well as their ability to serve the needs of existing and potential light industrial development. (Metro Plan, page III-B-5, policy 8)

Encourage compatibility between industrially zoned lands and adjacent areas in local planning programs. (Metro Plan, page III-B-5, policy 13)

Recognize that Eugene's natural environment is a major factor in the community's attraction as a place to live and work, and therefore, efforts to expand the economic base should be compatible with efforts to maintain

and enhance the natural environment. (Eugene Community Goals and Policies, page 12, policy 1.0)

Improve the appearance and safety in and around commercial and industrial areas. (Springfield Economic Development Plan, page 17, objective 8)

Maintain and enhance the compatibility of adjacent land uses through the use of appropriate buffering mechanisms, such as landscaping standards. (River Road-Santa Clara Urban Facilities Plan, page 2-18, policy 1.0)

Industrial land quality was one of the factors addressed in the creation of the Special Light Industrial designation. High-technology firms wanted attractive, campus-like sites in compatible surroundings, which could not be guaranteed by other industrial designations. In addition, many neighborhood refinement plans address industrial compatibility, through residents' desire to minimize the potential impacts from adjacent industry.

3. Compact Urban Growth And Efficient Land Use

Industrial development, to be consistent with the basic planning principles of the Metro Plan and other local plans, will be located so as to support the compact and orderly growth of the metropolitan area. Adopted policies commit the metropolitan area to planning and maintaining urban services, such as streets and sewers, which are needed for industrial development, and to protecting potential industrial land outside the urban growth boundary from premature development.

Industrial development takes place in the same regulatory and policy structure as all other forms of urban development. The Metro Plan has recognized that all types of industrial development need to be provided with urban services and located within the urban growth boundary, as required by State planning goals.

Policies

The Plan and most of its elements are oriented to and require that urban development occur in a compact configuration within a prescribed urban service area. (Metro Plan, page II-1, fundamental principle 3)

Support compact urban growth and encourage development in an orderly manner. (Eugene Community Goals and Policies, page 10, policy 1.0)

Plan for public improvements and maintain existing facilities needed for industrial and commercial development. (Eugene Community Goals and Policies, page 7, policy 7.0)

Zoning Districts

The four Metro Plan industrial categories of Special Light, Light Medium, Heavy and Special Heavy each have implementing zones. In addition, a number of local zoning classifications permit industrial uses in combination with other types of development. These regulations interpret and implement the industrial development policy direction in each jurisdiction.

1. Special Light Industrial

Eugene: Special Industrial District (I-1)
Springfield: Special Light Industrial District (SLI)

The Special Light Industrial zoning districts were designed to provide relatively large sites for individual or groups of specialized industries who want to be protected from uses which are visually and/or operationally incompatible. They have the most extensive site development standards of any industrial zone and are intended to facilitate high quality development which would diversify the metropolitan area economy. The community is interested in maintaining the quality of these sites, as expressed by the preparation of more extensive I-1 development standards for the Willakenzie area.

2. Light Medium Industrial

Eugene: Light-Medium Industrial District (I-2)
Springfield: Light-Medium Industrial District (LMI)

These zoning districts are used for the majority of industrial land in the metropolitan area and permit the widest range of land uses. Their broad scope and wide distribution act to encourage industrial development.

3. Heavy Industrial

Eugene: Heavy Industrial District (I-3)
Springfield: Heavy Industrial (HI)

Heavy industrial zones protect the most intensive industries by providing locations which can be buffered from adjacent, less intensive uses, thereby insuring compatibility. These zones provide for expansion of existing heavy industrial firms.

4. Special Heavy Industrial

Eugene: Special Heavy Industrial District (I-4 outside city limits); I-2, I-3 (inside City with PUD or SR suffix)
Springfield: Special Heavy Industrial (SHI)

The Special Heavy Industrial zones provide large sites for new heavy industrial firms who want to locate in the metropolitan area and also provide locations for existing heavy industries who want to relocate from their present sites. Through their use, these zones provide for the continued presence and operation of basic manufacturing industries.

5. Mixed Uses and Special Districts

Eugene: Whiteaker Residential Mixed Use District (MU-R)
Riverfront Park Special Development District (Riverfront SD)
Commercial-Industrial District (C-4)
Springfield: Booth-Kelly Mixed Use District (BKMU)

These zones apply to areas with unique circumstances, involving either a pre-existing mix of land uses (MU-R and BKMU) or a specialized development form (Riverfront SD).

Chapter IV: Economic Trends

This chapter presents trends in the Eugene-Springfield metropolitan economy since adoption of the 1982 Metropolitan Area General Plan. The text summarizes long and short term economic trends in the Eugene-Springfield metropolitan area and in Lane County; and overall economic trends, including major structural changes to the national, state and local economies.

These trends provide a framework for policy discussions and indicate potential changes to the Plan text. They also provide background information for the development of the demand analysis. For more information on this topic, refer to Chapter II.

Summary

The structure of the metropolitan area economy has experienced significant change since the 1982 Metropolitan Area General Plan was prepared. Unemployment has been halved and employment increased by 15 percent.

Major changes have occurred in the metropolitan area's economy which may alter or contradict the overall analysis of the 1982 Metropolitan Plan's Economic Element. The four structural trends of the 1982 Plan which **no longer hold true** are as follows.

1. *A decline in the lumber and wood products industry as a source of employment.*

Lumber and wood products have remained a dominant force in the economy and have provided increased employment opportunities.

2. *Limited increase in employment in other manufacturing activities.*

Diversification of Other Manufacturing continues to occur and provides increasing employment opportunities. Manufacturing employment has not declined in absolute employment numbers nor significantly in relative terms. Non-manufacturing continues to add jobs, but not enough to alter the mix of Manufacturing/Non-manufacturing.

3. *Diversification of the non-manufacturing segments of the local economy, primarily in trade, services, finance, insurance, and real estate.*

Diversification within Non-manufacturing has been in the Service sector but not the Trade sector.

4. *The development of the metropolitan area as a regional trade and service center serving southern and eastern Oregon.*

The metropolitan area has not continued to expand its Trade drawing area in southern and eastern Oregon.

Some of the major historical relationships and recent issues that are assumed to be influential over the planning horizon to the year 2010 are listed below.

1. The Oregon and Lane County economies are strongly linked to the national economy. Thus, positive and negative shocks to the national economy will likely continue to be rapidly transmitted to the state and local economies.
2. In the long run, employment and population growth will continue to be higher than the national rate; however, these growth rates will likely be lower than those for the state of Oregon.
3. The long-term deterioration of the average earnings per job relative to the state and nation has been a disincentive to labor migration to Lane County and the Eugene/Springfield Metropolitan area; but local economic development efforts are working on changing this trend.
4. The explosive growth in trade between Pacific Rim countries and the major West Coast port cities offers potentials for local economic growth if aggressively pursued.
5. Tourism stimulated by the strong economic growth occurring in neighboring states and other parts of Oregon offers some potential local economic growth if targeted properly.
6. The year-to-year volatility of employment growth will continue because of the dominance of the lumber and wood products industry which is significantly affected by national business cycles; but the driving force for economic expansion will no longer be the traditional lumber and wood products industry.
7. Non-manufacturing employment growth in the traditional trade and services sectors will continue to be influenced and constrained by anticipated job losses in the lumber and wood products industry and the low average earnings per job locally.
8. Non-lumber manufacturing industries offer a continuing bright prospect for job replacement for the anticipated losses in the lumber and wood products industry as well as net new job creation. The machinery, transportation equipment, metals fabrication, electric and electronic equipment, printing and publishing, and specialty food processing appear to offer the best potentials.

9. Secondary wood products also offers potential job and industry replacement due to the large timber base in Lane County.

Metropolitan Area Economic Structure

In examining the nature of the economic structure of the Eugene-Springfield economy, an understanding of economic base theory is helpful. In economic base theory, the industrial structure of the economy is defined in terms of three types of industries: basic, secondary and tertiary. Basic industries provide the base for local economic activity. Increases or decreases in basic industries or sectors have multiplier effects that affect the health of the economy.

Basic industries export products or services, thereby bringing in dollars to the local economy. Secondary industries sell goods or services to the basic industries. Tertiary industries provide the goods and services that people buy when spending their incomes.

Typically, most Manufacturing industries are considered to be basic industries, while Non-manufacturing industries are secondary and tertiary. In reality, portions of all industrial sectors may be basic even though a particular industrial sector may be principally secondary or tertiary. For example, a Retail Trade firm that sells a portion of its goods or services outside the local economy is engaged in exporting and, therefore, that portion of the business is basic.

In the Eugene-Springfield metropolitan area, there are basic industry jobs outside of the traditional Manufacturing sector. For example, employment at the University of Oregon is basic employment due to tuition and other payments for the enrollment of students whose residences are not in the local area. In a similar manner, the sale of accounting and legal services to clients outside the area creates basic employment. The spending of retired individuals is a basic industry since the physical source of spendable income (e.g., Social Security, pension funds, etc.) is from outside the area. The spending by tourists creates basic employment.

In examining the structure of the Eugene-Springfield economy, the understanding of economic base theory will aid in interpreting the changes that have occurred to the structure of the local economy. Growth in an economy may occur from either: 1) expansion of basic jobs, or 2) creating industries (import substitution) that capture spendable income that is leaving the area (e.g., having retail shopping facilities locally keeps trade dollars from being spent in other areas, thereby creating local trade employment). Growth in basic industries can and usually does lead to growth in secondary and tertiary industries. On the other hand, growth in secondary and tertiary industries does not create additional basic industries.

Metropolitan Area Economic Trends

Since adoption of the Metropolitan Area General Plan in 1982, the Eugene-Springfield metropolitan economy has experienced significant change in some aspects of its industrial structure and stability in others. Wage and salary employment in 1988 was up 21 percent from the low level of the 1982 recession. The unemployment rate is one-half the 1982 figure. At the same time, the relative proportions of Manufacturing to Non-manufacturing employment has remained at a one-to-four ratio. Between 1979 and 1987, the latest available data, per capita income in Eugene has increased faster than Lane County and the State of Oregon, but Springfield has lagged behind both.

The dominant basic industry, Lumber and Wood Products, has maintained and increased employment opportunities in absolute numbers but declined in relative terms, based on countywide data. However, the portion of the industry within the metropolitan area has increased. Other basic Manufacturing employment has increased in the metropolitan area in Other Durables (Electric and Electronic Equipment) and Non-durables (Printing and Publishing).

Additional basic job gains have occurred within the Non-manufacturing sector. Gains have occurred in State and Local Education and probably in some portions of the Service sector. These gains in basic jobs have contributed to the increased secondary and tertiary jobs in Manufacturing and Non-manufacturing. Increased diversification has been the end result.

The Metropolitan Area's Share of Lane County Employment

The Eugene-Springfield metropolitan area contains about 82 percent of the covered wage and salary employment of the Lane County economy. Roughly four out of every five wage and salary jobs are located in the metropolitan area.

Based upon census tract evaluation of Lane County employment, the Eugene-Springfield area has increased slightly in terms of percentage of Lane County covered wage and salary employment from 82.1 percent in 1982 to 82.2 percent in 1988. Manufacturing concentration increased from 68.5 percent to 69.5 percent. Non-Manufacturing Employment also increased slightly from 85.2 percent in 1982 to 85.4 percent in 1988.

Within the Manufacturing sector, there was a slight increase in the concentration of Lumber and Wood Products employment (from 57.4 percent in 1982 to 57.6 percent in 1988) and Food Products (from 76.8 percent in 1982 to 79.6 percent in 1988). The metropolitan share of Other Durable and Other Non-Durable Goods sectors decreased.

In the metropolitan area, Eugene is experiencing an increasing concentration of employment in the lumber and wood products. Springfield's share is declining. In fact, between 1982 and 1988, Eugene had nearly 61% of the net increase in lumber and wood products.

Within the Non-Manufacturing sector, Service and State and Local Education (Government) showed slight increases in metropolitan share. All other sectors decreased slightly. Within the Trade sector, Wholesale Trade decreased more than Retail Trade.

The implication of the steady share of the metropolitan area's portion of Lane County Non-Manufacturing employment is that other areas of the County, and possibly southern and eastern Oregon, are not losing trade to the Eugene-Springfield area. In particular, the trade drain apparent in earlier years did not continue into the 1980s. In fact, from the earliest available figures in 1976, it appears that the metropolitan area's portion of trade employment has not changed since the mid-1970s.

Lane County Economic Trends

Changes in employment for the county as a whole tend to be reflective of events occurring within the metropolitan area, although industry sectors differ in their concentration within the county as a whole and within the metropolitan area.

In 1982, the bottom of the last U.S. recession, Lane County's economy hit bottom with 12.5 percent unemployment compared to 8.2 percent unemployment in 1979, the peak employment year. By 1989, the unemployment rate had dropped to 5.7 percent, less than half the 1982 rate, with total non-agricultural wage and salary employment reading 114,800, 87% above the 1979 peak year.

From 1982 through 1989, wage and salary employment increased by nearly 27 percent. All industry sectors grew except one. Employment in the two broadest sectors (Manufacturing and Non-manufacturing) grew at nearly the same rate with Manufacturing employment increasing at 25 percent and Non-manufacturing at 27%. This similarity of growth rates runs somewhat contrary to popularly-held beliefs. There were wide variations even within these two sectors. All sectors experienced growth with the exception of Transportation, Communications and Utilities which declined due to deregulation of the communications industry.

The number of job gains during the past seven years mirrors the overall distribution of jobs between Manufacturing and Non-manufacturing. Approximately 18 percent of the 24,075 job gains were in Manufacturing (4211), while 82 percent (19,864) were in Non-manufacturing.

In 1982, Manufacturing jobs represented 18.5 percent of wage and salary employment, slightly less than the 20.2 percent in 1979 and the 26.4 percent in 1970. From 1983 through 1989, Manufacturing averaged 19 percent with a variation high of 20.0 percent and a low of 18.2 percent. The 1989 figure was 18.4 percent.

The Non-manufacturing employment share showed similar stability during the past five years, with an average of 81 percent, a high of 81.9, a low of 79.9 percent, and a 1989 figure of 81.6 percent. This compares to 1982 with 81.5 percent, 79.7 percent in 1979, and 73.6 in 1970.

Overall, most of the structural change between Manufacturing and Non-manufacturing occurred between 1970 and 1979. Since 1979, there has been little variation, even with the major 1982 general recession and the subsequent economic recovery.

1. Lumber and Wood Products Employment

From 1970 to 1982, employment in the dominant Lumber and Wood Products industry declined in relative terms, but not in absolute numbers. In 1970, employment in this industry accounted for nearly 20 percent of all wage and salary employment. By 1979, this employment share dropped to under 14 percent, and by 1982 it had fallen to nearly 11.5 percent. Absolute employment in this industry had also fallen to a near record low. These facts, coupled with the trend for increasing labor productivity, led to the 1982 conclusion that there was a decline in this industry as a source of employment.

Since the 1982 general recession, employment in this sector has fluctuated around an annual average of 10,900, with 1989 employment higher than 1982 and the previous five-year average. Growth in this industry has been moderate, with slight increases in sawmill, plywood and other mill jobs as the industry has modernized and labor productivity has improved. In the seven year period since 1982, employment in this sector has averaged 10.9 percent of the wage and salary employment total with only minimal variation during the time period (12.2 percent high and 9.8 percent low). In 1989, this sector had 10.5 percent of wage and salary employment. By 1989, the share of lumber and wood products jobs had declined to 9.8%.

2. Other Manufacturing Employment

The growth and diversification of the non-lumber manufacturing sectors is one of the most significant events of the Eugene-Springfield metropolitan and Lane County economies. Nearly four of every five new manufacturing jobs created since the 1982 recession have been in the non-lumber sectors. The top five non-lumber manufacturing sectors are machinery, transportation equipment, printing and publishing, electric and electronic equipment and rubber and plastic products.

Since 1982, most of the diversification within Manufacturing sectors has occurred in Other Durable Goods Manufacturing. Of the 4,211 increase in Manufacturing employment, 2,576, over 61 percent, occurred in the other durable sectors of Electric and Electronic Equipment, Transportation Equipment, and Machinery. For the

metropolitan area, the major increase has occurred in the Electric and Electronic Equipment and Machinery sectors. Nearly 19% of the net manufacturing job gain occurred in the other non-durables sector with most of the gain concentrated in the printing and publishing sector.

Non-lumber manufacturing sectors provide an important stabilizing effect on Lane County's economy which historically has been buffeted by the highly cyclical wood products industry. As the non-lumber manufacturing sectors continue to grow, the area's economy will become more stable.

3. Non-Manufacturing Employment

During the 1982-1989 economic expansion, employment levels in the non-manufacturing sectors in Lane County have increased by nearly 19,900, or a 27% increase over the period. These jobs represent nearly 83% of the increase in wage and salary employment. Almost 3 of every 4 new non-manufacturing jobs created were in the services and retail trade sectors. The service sector alone accounts for 45% of the total increase in these jobs. Of these, medical services and business services account for half of the total. Retail trade created about 28% of the new non-manufacturing jobs during the recovery period.

These non-basic sectors have been the beneficiary of increased employment in the basic manufacturing sectors. The dollars brought into Lane County's economy by the manufacturing sectors stimulate business expenditures for raw materials and supplies and increase retail trade and services spending by the workers in the basic industries.

In addition, the services and retail sectors provide basic employment in business services, hotels and motels, and medical services, portions of the government sector, especially the University of Oregon, and portions of the trade sector, including wholesale trade that serves southern and central Oregon and tourism-related trade, such as restaurants.

The one sector that has added to the diversification of Non-manufacturing employment jobs is the Service sector. In 1970, its share of the wage and salary employment was 14.4 percent. This increased to 18.4 percent by 1979 and 20.2 percent in 1982. It continued to increase and stood at 22.8 percent of wage and salary employment in 1987. Since 1982, Service jobs have gained 49 percent, a rate much higher than the 31% gain of the Retail Trade Sector.

The gain in Services may be misleading. Most of the gain has occurred in health care services and business services. Included in the business services sector are temporary help agencies. A significant number of people employed by these agencies work in Lumber and Wood Products jobs. If individuals working in these jobs were hired

directly by the Lumber and Wood Products sector rather than by temporary service agencies, their employment would be recorded in the Manufacturing sector. Unfortunately, no data exist on the magnitude of this.

The job growth that did take place in Trade merely maintained the position of Trade, particularly Retail Trade, relative to total wage and salary employment. As secondary jobs, these jobs were created due to the expansion of overall basic jobs in the manufacturing sector. The catch up (import substitution) in Trade jobs, both Wholesale and Retail, occurred during the 1970s when their share of wage and salary employment went from 21.0 percent, 3.8 percent, and 17.2 percent, respectively, to 24.8 percent, 5.3 percent, and 19.5 percent, respectively, in 1979. In the 1980s, the Trade sectors have not added significantly to the diversification of non-manufacturing jobs. In 1989, the distributional share of trade, wholesale trade and retail trade relative to total wage and salary employment were 25.4%, 4.8% and 20.6%, respectively. One possible implication of this is that the metropolitan area is no longer expanding its trade area.

Other major Non-manufacturing sectors have added jobs, but not enough to alter significantly their share of wage and salary employment. Included in this grouping are Construction, which has increased to 3.4 percent share in 1989, and Government, which has decreased its share from 23.0 percent in 1982 to 20.2 percent in 1989, and Finance, Insurance and Real estate which decreased to 4.8% of wage and salary employment.

4. Per Capita Income

Compared to Oregon as a whole, Lane County had slightly higher growth in per capita income during the 1983 to 1987 period and slightly slower growth during the 1979 to 1987 period. Within the metropolitan area, both Eugene and Springfield increased at almost the same rate from 1983 to 1987 (26.5% and 26.1%), which exceeded Lane County (25.6%) and the State of Oregon (24.9%). Eugene and Springfield only lagged behind Junction City, which had a 27.7 percent increase.

In absolute terms, per capita income in 1987 shows Eugene (\$11,636) higher than Lane County (\$10,627), the State of Oregon (\$11,045), and Springfield (\$9,233). Nearby Junction City (\$9,787) and Florence (\$9,625) were lower than Eugene but higher than Springfield.

Overall Economic Trends

Since 1970, the world and U.S. economies have undergone radical transformation. This transformation has been described as the transition to a global economy, an information-based economy, and the service economy. This transformation has been spawned by a wave

of new technologies-- telecommunications, microelectronics, information systems, robotics, genetic engineering and advanced synthetic materials.

1. The Global Economy

The global economy refers to the integration of national economies into a singular worldwide economy. The development of new technologies, especially in advanced telecommunications and information systems, has allowed the development of worldwide mass markets where consumer expectations and behavior are becoming similar around the globe.

Rising worldwide wealth, increased goods production, shifts in comparative advantage in manufacturing location, and the explosive growth in the volumes of international trade flows are the hallmarks of this new global economy. The U.S. consumer who once bought finished manufactured products made in the U.S.A. is now just as likely to buy goods made overseas.

The change in consumer buying preferences has led to the loss of high paying blue collar jobs in manufacturing industries at the same time increased low paying trade jobs were being created. Oregon industries were not immune to this change.

2. The Information Economy

The emergence of the information economy is intricately linked to the application of new technologies, such as microelectronics, telecommunications, robots, genetic engineering and advanced materials. The availability of these technologies has fostered the move away from mass markets, characterized by standardized goods, resource-based, centralized production processes dependent on dedicated machinery to mass produce standard items at one location and requiring unskilled or dedicated machinery skills.

Specialized products and markets made possible by the new technologies places emphasis on the generation, processing, and storage of information. Production at decentralized locations requiring skilled technicians and few laborers, and not dependent on the location of natural resources, epitomizes the information economy. Production locational decisions in the information economy seem to be shifting to major consumer and transportation centers where a quality skilled labor force resides.

3. The Service Economy

The rapid growth of the number and share of jobs in the service-producing sectors has occurred at the same time that manufacturing jobs in the goods-producing sectors has shrunk in numbers and share in the U.S. economy. Production of goods increased in

other nations, particularly the Far East and Third World countries, as population growth created new workers and consumers. Worldwide production of commodities, such as cars, previously produced only in the industrialized west, shifted to other nations as these nations developed comparative advantages in their production.

Economic theory explains the shift from almost exclusive production of goods to production of goods and services as a natural occurrence as individuals and nations become wealthier. As incomes increase, much of the additional spending power is spent on services previously considered luxuries, or beyond the means of the buyer. The shift to a service economy in the U.S. is a shift that would have occurred in the absence of the industrialization of the Third World. The fact that this industrialization has occurred has hastened the shift to a service economy in the U.S.

This shift to a service economy at the expense of manufacturing sectors means the loss of manufacturing jobs has been replaced by service jobs, split between skilled high-wage jobs and unskilled low-wage jobs.

Chapter V: Industrial Lands Demand

The amount, type and location of industrial land that will be needed in the metropolitan area in the next twenty years is determined from a combination of quantitative and qualitative analyses. The policy direction that stems from these analyses forms the basis for determining land needs by industry type and for allocating existing vacant industrial land into appropriate Plan categories.

The quantitative analysis, described below as the Industrial Lands Demand Analysis, computes the number of acres that will be needed based on employment forecasts by industry sector and employee per acre ratios. This analysis produces a range of total acres that will be needed to satisfy the need for industrial land in the year 2010.

The qualitative analysis describes demand in terms of the location and characteristics of industrial land that will most likely serve the community's objectives and meet the needs of existing businesses and those likely to locate, expand or develop here. This analysis is based on a review of "Community Economic Development Objectives" summarized in Chapter III and on the site requirements of firms in the metropolitan area or likely to locate or develop here. In addition, the qualitative analysis considers "market choice," or the provision of a sufficient number and variety of sites to assure that available sites are within a reasonable price range.

Industrial Lands Demand Analysis

The demand portion of the Metropolitan Industrial Lands Special Study is designed to forecast the future demand for land within the Metropolitan Urban Growth Boundary (UGB) that is suitable for development as industrial land. While the supply side of this study includes the inventory of parcels that are zoned Industrial, as well as land designated Industrial, this demand analysis estimates the demand for land that is specifically designated Industrial.

Based solely on projected employment estimates, estimates projecting the need for industrial land show no demand for heavy industry. However, options for allocating land to heavy industrial categories may result from policy decisions to provide sites as explained in the discussion of projected demand later in this Chapter. However, all of the demand for industrial land represented in the demand analysis is for land that will meet the needs of medium and light industries. This is consistent with the demand analysis conducted for the Metro Plan.

Three possible scenarios were proposed, each producing a projected demand for vacant industrial acres (Table 3). The scenarios are the result of the sensitivity analysis described in the Methodology section of the report. The three scenarios differ in their

TABLE 3
FINAL DEMAND FOR INDUSTRIALLY-DESIGNATED ACRES

SCENARIO*	ACRES DEMANDED								
	Likely EPA Ratios			High EPA Ratios			Low EPA Ratios		
	Net	Gross 1**	Gross 2***	Net	Gross 1	Gross 2	Net	Gross 1	Gross 2
Scenario 1	378	453	567	291	350	437	600	721	901
Scenario 2	434	520	650	338	406	507	701	841	1,052
Scenario 3	465	557	697	368	441	551	782	938	1,172

- * Scenario 1 assumes existing patterns of employment by designation.
Scenario 2 assumes one-half less industrial employment would locate on non-industrial land than the current pattern suggests.
Scenario 3 assumes no future industrial employment would locate on non-industrial land.
 - ** Gross 1 multiplies the net acres by 1.20, allowing a 20 percent factor for public right-of-way and other uses.
 - *** Gross 2 multiplies the "Gross 1" acres by 1.25, allowing a 25 percent factor for market choice and future expansion.
- See the text for more details on each scenario and each assumption.

assumptions about the amount of industrial employment that will locate on non-industrial land in the future.

Three acreage estimates are presented for each scenario. In each case, the high number is produced from low EPA ratios which assume low densities for industrial employment in the future; the middle figure is produced from "likely" EPA ratios which were calculated from the process described in the Methodology; and the low number is produced from high EPA ratios which assume high densities for industrial employment in the future. The most likely EPA ratios are presented in Table 4.

The figures presented are for "net acres." In order to allow sufficient land for right-of-way and other public uses, the net figures are increased by 20 percent, producing the "gross 1" figures in Table 3. This right-of-way allowance is the percent increase used in the original demand analysis for the Metro Plan.

In addition, the "gross 1" figures were increased by 25 percent to account for land holdings, producing the "gross 2" figures in Table 3. The addition of 25 percent of the total to the inventory is based on analysis conducted for the Metro Plan which calculated that about 25 percent of vacant industrial land is not available at any point in time

TABLE 4
MOST LIKELY EMPLOYEE-PER-ACRE RATIOS

Sector	Office Employment	Other Employment
Lumber and Wood Products	85	25
Other Durable Manufacturing	85	25
Food Products	85	25
Other Non-Durable Manufacturing	85	25
Mining	55	35
Construction	55	35
TCU	141	25
Wholesale Trade	85	25
Retail Trade	55	25
FIRE	48	44
Services	101	25
Government	85	25
Education	55	25

because it is held for some reason, e.g., for expansion, because the owner is waiting for market conditions to improve or for other reasons.

Scenario One

This scenario produced an estimated need for 437, 567 and 901 gross acres of vacant land; the 567 estimate uses the "most likely" EPA ratios. The estimates assume that existing patterns of employment will continue, i.e., that the same amount of industrial employment locating on non-industrial land in the past will continue in the future. For example, 12.6 percent of the lumber and wood products employment is currently located on land designated Community Commercial. This scenario assumes that this pattern will continue.

It is doubtful that past development patterns across land use categories will continue, especially patterns of industrial uses locating on non-industrial land. This is because the existing industrial development patterns predate current policies and regulations, e.g., the Metro Plan designations, which require more industrial uses to locate on industrial land.

Scenario Two

This scenario produced an estimated need for 507, 650 and 1,052 gross acres of vacant land, with 650 using the "most likely" ratios. These estimates are based on the assumption that one-half of the industrial employment locating on non-industrial land in the past would locate on industrial land in the future. This is a more likely occurrence than scenario one because current policies and regulations most likely will have approximately this impact on industrial development location. The result would be an increased need for vacant industrial acres to accommodate these uses.

Scenario Three

This scenario produced an estimated need for 551, 697 and 1,172 gross acres of vacant land, with 697 using the "most likely" ratios. The underlying assumption for all three figures is that all future industrial employment will locate on industrial land. This is unlikely because some industrial employment will continue to locate on non-industrial land under the current policies and regulations.

Examples of industrial employment that tend to locate on non-industrial land include the following: services, wholesale, transportation, communications and utilities (TCU), small manufacturing (woodworking shops), non-durable manufacturing (textiles, printing and publishing, glass and ceramics, apparel and small electronics) and industrial office employment.

Vacant Industrial Acres: Projected Demand

The most likely estimated need for industrial land is projected to be 650 gross acres, based on the following assumptions.

- 1) About one-half of the industrial employment locating on non-industrial land in the past will locate on industrial land in the future (Scenario 2).
- 2) Use of the "most likely" EPA ratios, calculated from the methodology described in Chapter Two.

The 650 acre estimate falls within a range of estimates that is sensitive to EPA ratios used and the amount of industrial employment locating on non-industrial land. It is more likely that the actual acres demanded will be greater than 650 acres than less. The

most likely EPA ratios are based on current policies and regulations, including Plan industrial allocations. The following three tools can be used to affect the demand and would justify lower EPA ratios.

1) Metropolitan Plan Policies

Plan policies are described in Chapter III. These policies could be reviewed in light of the trends described in Chapter IV and the information provided on target industries later in this Chapter (see "Site Requirements," below). Based on this review, policies could be proposed that would create the need for more industrial land. For example, policies could give greater emphasis to businesses that tend to use more land, like Spectra Physics, than other, denser forms of industrial development; or policies could be proposed to require all industrial employment to locate on industrial land.

2) Metropolitan Plan Diagram

The Plan diagram could be changed so that industrial land use categories are redefined to accommodate more land consumptive industrial uses than the present categories; and land could be allocated appropriately to those categories. For example, if Plan categories provide for more campus-like industrial parks, which are more land consumptive than some other industrial sites, this would lower the EPA ratios and create a need for more vacant industrial land.

3) Implementation Measures

Changes in local zoning and development standards could affect demand for industrial land in a number of ways. For example, if industrial sites incorporate natural features, open space, buffering, and more extensive landscaping, this would leave greater portions of the site undeveloped. Land uses allowed within an industrial zone also would affect demand for industrial acres. For example, if policies presented as examples in #1, above, were adopted, the land uses allowed in individual zones and all industrial zones would need to be altered, resulting in the need for more industrial land.

The projected demand falls within the range of 650 to 1,172 acres, as described above. The number of acres demanded in the next twenty years may be closer to the higher of these two figures if the jurisdictions decide to amend their Plan policies or implementing ordinances in one or more of the ways suggested.

Industrial Firm Site Requirements

Information about industrial firms likely to locate or expand in the area provides the necessary background for the discussion of needed types and locations of industrial sites.

The site requirements of these firms address the issue of quality industrial development which will help in the development of effective policy options.

Statewide Growth Industries and Location Factors

The OEDD developed a Growth Industries List that identifies growth industries for statewide industrial recruitment and expansion in both metropolitan and non-metropolitan areas of Oregon. The industries were selected based on a detailed ranking methodology. The Department developed and administered a nationwide Growth Industries Survey to provide communities with the specific location factors required by each of the targeted industries included in the list. The objective is for communities to compare their assets to the factors to make an initial determination as to the suitability of the industries to specific communities.

Inquiries made to the state Industrial Property Inventory System are another source of information about the types of firms interested in locating in Oregon and their locational requirements.

Metropolitan Area Growth Industries And Site Requirements

In 1986, the Eugene-Springfield Metropolitan Partnership commissioned the Fantus Company to conduct a nationwide study of industries expected to grow and which would likely locate in the metro area. The study based its analysis on several criteria including the educational quality of the labor force, availability of centers for advanced education in electronics and chemistry, physical environment, total population of the area and quality of air-freight services.

In selecting "target" industries, the study matched the location requirements of the industries with the assets of the metro area and the area's goals for a stable, diversified economy. The report set five standards to identify target firms:

1. Industry growth must be expected.
2. Selected industries should be of sufficient size to be worthy of the proposed development effort.
3. Regional location patterns should favor the Pacific Northwest.
4. The prime locational advantages of Eugene-Springfield should correspond with industry site selection requirements.

5. Requirements for which the Eugene-Springfield area is not strongly competitive should be minimal. (Fantus Report, page 3)

Ten manufacturing industries met the criteria and were identified as either primary or secondary targets as follows:

Primary Targets

Scientific Instrumentation
Biotechnology
Miscellaneous Plastics Products
Medical Equipment
Electronic Components

Secondary Targets

Process Control Instruments
Electronic Computing Equipment
Industrial Controls
Communications Equipment
Miscellaneous Publishing

The Alternative Industrial Growth Areas Study analyzed the land characteristics of these and other industries, based on a survey of forty-four industrial firms throughout the U.S. and other information contained in then current studies on characteristics most important to industrial firms. The information provided in that report was updated, based on additional and recent information obtained for this study. The major findings derived from the research are listed as follows.

1. Site Size

The majority of firms locating in the metropolitan area are small (50 employees or less), although larger industries also have been attracted to this area and we may see more in the future once a "critical mass" of technical support industries and an employment pool is achieved. Types of industries showing interest in this area tend to be high tech (mostly electronics firms), lumber and wood products manufacturing (secondary and value added, not lumber mills), metal fabrication, food products, printing and publishing and plastics.

- 1) Small firms are primarily interested in locating in an existing building in an industrial park with high quality setting, services in place, adjacent uses screened with landscaping and restaurants close by. Small firms have a short timeframe and often prefer to be operational in as little as 6 months. An established industrial park makes this possible. Large firms and industrial park developers are attracted to large green field sites (flat areas of undeveloped land that is serviceable).
- 2) If no buildings are available, most small firms want parcels that are 3 to 10 acres in size within a quality environment; anywhere from 3 to 20 acres would be desirable to allow for expansion potential.

- 3) The visual quality of the environment is key. Larger firms and industrial park developers prefer parcels within a larger, undeveloped area so that the environment can be controlled. The total size of the industrial park should be within the range of 50 to 200 acres, in order to provide flexibility in the size of firms that could locate there.

2. Ownership

One owner is preferred, but, lacking that, the fewer the owners the better. Multiple ownerships are more acceptable to industrial park developers who are more comfortable with assembling land from multiple owners.

3. Access

Airport

A business park adjacent to the airport would be considered very attractive for industries. However, there are no sites so far from the airport that access is an issue with regard to a location decision.

Freeway

A lot of companies prefer close proximity because distance to the freeway in terms of driving time is an issue. Truck-dependent industries and industries that desire high visibility like to be right next to the freeway to save money and time; but, otherwise, firms are satisfied if they are in relatively close proximity. Documented plans for road improvements and expansions are meaningful to firms looking to locate or expand.

Railroad

Few companies want railroad access for transporting finished products. However, some industries rely on rail to transport raw materials. Examples are plastic companies and chemical, especially pharmaceutical, firms. According to recent assessments, this is not an issue for the metro area.

4. Physical Qualities Of Sites

Large firms and industrial park developers are attracted to large, well-drained, flat areas with services at or close by the site, and land still in large parcels. The cost of land also can be an important factor. These are considered "green field" sites. It is critical that services are either already there or readily available. These sites are most desirable for firms because they reduce the start-up costs, especially

time. Firms coming into an area want to be operational within nine months to a year. Clearing land takes time. Green field sites can be created; but, it adds to the cost of development.

5. Surrounding Uses

- 1) Some firms do not want to locate in an area that is close to residential areas because there has been a tradition of residents having an adverse response to industrial development close by homes. However, in other parts of the state with more industrial development in place, mixed uses are becoming common.
- 2) Firms want convenient commercial uses and support services (day care, banks, athletic clubs, doctors, etc.) close by and sit-down restaurants within the park.
- 3) Firms desire to have other industrial firms within the park to have a critical mass. Observed patterns in other areas indicate that the pace of development picks up after the first few firms locate there and set high development standards.
- 4) Firms are not too concerned about the types of industrial land uses that are located within the park or even on adjacent property, although heavy industrial uses with external impacts (noise, dust, odor, outside storage, heavy truck traffic, etc.) would be incompatible with quality industrial settings demanded by light industries.

6. Plan Designations And Zoning

Almost all of the firms interested in locating in this area could fit into the Light-medium industrial category in the Metro Plan. On the other hand, they favor the environmental controls in the Special Light category, but the title of the designation reportedly scares firms away because it is perceived as an inhibitor.

Industrial Site Design Options

The quality of industrial site design is an important stimulus to industrial development. Economic development professionals emphasize the demand for high quality sites in their recruitment and business assistance communications with industry representatives. The quality of industrial sites is affected by a number of factors, some of which can be shaped by local government policies, regulations and their administration. A slide show on industrial site design characteristics was prepared to illustrate some site design elements.

There are market conditions outside of local government control that may ultimately determine when industrial development will occur; there are some actions that local government can take to encourage quality industrial development; and there are environmental conditions which can provide an opportunity for private industry and local government to work together to achieve quality industrial development.

Market Conditions

Market conditions are beyond the control of local government but have a significant impact on the quality of industrial development. If demand for quality industrial sites is high, developers are encouraged to provide a product in response, as illustrated by the experiences of Hillsboro and other areas in Washington County. This can promote self-regulation by the development community because competitively priced locations with the best, most attractive designs lease out faster than less desirable sites, thereby encouraging developers to include additional landscaping and imaginative site planning for other sites in the future.

High demand can also reduce the amount of price-sensitive development taking place, which can make it easier for the developer to provide additional site amenities (landscaping, attractive building design). Imaginative and economical site planning is possible but more difficult than either poor quality/inexpensive or high quality/more costly site designs.

Policies and Regulations

The following local government policies and regulations define a minimal level of site improvements which serve as a starting point for quality development.

1. Comprehensive Plan Policies

Comprehensive plan policies provide general development guidelines which can be translated into specific development standards through zoning standards and/or the site plan review process. These policies, if consistently supported, provide a predictable environment for the development community.

2. Comprehensive Plan Designation

The plan diagram can designate industrial lands in locations which will provide opportunities for site enhancements (e.g., green field sites, areas with natural amenities).

3. Zoning

Zoning districts help in implementing comprehensive plan policies by insuring internal and external compatibility of industrial areas; by determining whether site plans for industrial development need to be reviewed; and by requiring specific lot sizes and configurations that will provide opportunities for aesthetic and functional enhancements.

Internal compatibility of industrial areas can be increased by specifying compatible uses permitted within zoning districts, and by defining building setbacks and other general site design requirements so that industrial firms can maintain a good neighbor relationship with each other. External compatibility involves the same type of site standards, designed to buffer industrial areas from adjacent uses and minimize conflicts between the two.

Site plan review can be required as part of zoning standards. This provides an opportunity for more detailed review of a development's design than is otherwise possible. For example, the cities of Hillsboro and Springfield require site plan review for all industrial development. The City of Eugene requires site plan review when the Site Review suffix is applied during the rezoning process and for industrial parks in the I-1 (Special Industrial) Zone.

4. Site Design Standards

The standards used to review site plans can be either general or specific. There are advantages and disadvantages to each approach. Specific standards can be clearly administered, but lack the flexibility of general standards. General standards lend themselves to a more performance-based approach, but require clear policy direction in order to be implemented effectively. For example, Hillsboro uses general standards based on plan policies supporting quality development. These standards are implemented through specific requirements created as part of negotiations during the site plan review process.

Environmental Site Enhancement Opportunities

Local governments and private industry can work together to achieve high quality industrial development. Development area size and environmental conditions protected by local governments can be used by private industry to improve the appearance and function of sites.

Characteristics of industrial areas influence the quality of development taking place within them. Relatively larger development areas tend to provide a greater variety of site sizes and designs and are better able to ensure overall compatibility. Larger sites

also concentrate high quality industrial development and maximize its visual benefits, rather than diluting its effect through smaller, isolated sites.

Topographic and vegetative features such as waterways, wetlands, and prominent trees have been incorporated as design features in industrial site plans to improve appearance, and, in the case of wetlands, to satisfy federal requirements. In addition, the use of natural features for site enhancement reduces development costs because these amenities would be costly, if feasible, to create. The slide show illustrates examples of industrial developments in other communities that incorporate natural features in site designs. These illustrations demonstrate the positive impact natural enhancements provide to industrial settings.

Market Choice

The term "market choice" refers to the inclusion of vacant industrial land in the inventory to provide a sufficient number and variety of sites in each Plan category in which there will be potential future demand for land. This, in theory, keeps land prices within a marketable range and assures a variety of available sites.

There are several ways in which the existing inventory of industrial land provides adequate sites for market choice.

- 1) The allocation of vacant industrial land to the four Plan categories described in the Background section of Chapter I provides vacant land in response to the community economic development objective to diversify the local economy;
- 2) The 25 percent factor included in the demand analysis provides vacant land that may become available at some point in the next 20 years if the market improves, the owner decides to expand or other conditions change;
- 3) Land that is available for redevelopment and vacant industrial parcels under one acre are not included in the supply inventory, but they do provide alternative development opportunities; and
- 4) The inventory of vacant industrial land is a 20 year supply. Assuming the inventory is updated on a regular basis, there will be a continual surplus of vacant land.

Chapter VI: Industrial Lands Supply

The supply analysis, like the demand analysis, is both quantitative and qualitative. The Industrial Lands Supply Analysis measures the amount of vacant industrial land in acres and sites that are available and suitable for industrial development. The inventory then is examined in the description of sites in Regional Profiles. In both sections of the Chapter, the industrial lands inventory is evaluated in terms of the following characteristics.

- * Prohibitions (unbuildable acres and sites);
- * Constraint-free acres and sites (street access; no physical constraints; not publicly owned); and
- * Industrial firm site requirements: Site size, ownership, access, physical qualities, surrounding uses, services availability, Plan designations and zoning and incorporation status.

The supply of industrial land in this inventory is vacant industrial land (as of January 1, 1989) that is either zoned or designated industrial (as of January 1, 1990). The analysis is conducted for vacant industrial parcels one acre and larger. Vacant parcels are undeveloped and underdeveloped properties (the vacant portion of a tax lot containing a structure). In addition to the inventory described in this chapter, there are about 300 acres of vacant industrial lands, about 7 percent of the total inventory, that are less than one acre in size; and there are industrial properties that are available for redevelopment. The supply analysis excludes these sites from the inventory, but they are available for industrial use.

Industrial Lands Supply Analysis

The supply analysis identifies the number of acres of buildable industrial land within the urban growth boundaries (UGB) of the metropolitan area and the individual cities of Eugene and Springfield. The analysis also evaluates the quality of the inventory in terms of constraint-free acres and sites and industrial firm site requirements.

Buildable Industrial Acres

This section identifies the amount of vacant industrial land that is buildable, i.e., available for development. The inventory of industrial land includes only buildable land; unbuildable acres are excluded from the supply and demand analysis.

Buildable industrial land is defined as vacant land that is free from all of the following prohibitions to development: floodway, severe soil constraints, severe slopes, approved wetland mitigation site or officially protected wetlands and public ownership (except for the Riverfront Research Park which is considered buildable).

There are about 3,604 acres of buildable industrial land in the Eugene-Springfield UGB, out of a total of 4,039 vacant industrial acres (Table 5). About 709 acres, one-fifth of the total buildable land, are in Springfield's UGB; the remainder, about 2,895 acres, are in Eugene's.

Four hundred and thirty-five unbuildable acres were subtracted from the inventory. Eighty-nine percent of these acres are designated Special Light or Light Medium and 87% are in zoning districts consistent with these designations.

The majority of the buildable acres in the metropolitan UGB are designated Light Medium, 1,430 or 40%, and Special Light, 990 or 28%. Of the remainder, 26% are designated Heavy or Special Heavy; about 6% have Plan designations that allow industrial uses or other Plan designations. The "other" category includes acres that are zoned industrial, but have a nonindustrial Plan designation.

Roughly the same distribution of acres applies among zoning districts (Table 6). The majority of acres are zoned Light Medium or Special Light. Some of the acreage figures for Plan designations do not match those for zoning (comparing Tables 5 and 6). Part of the reason for the discrepancy is that it was not possible to match zoning to Plan designation for all parcels designated Special Heavy. Land labeled Special Heavy in Table 6 includes only parcels zoned I-4 (Special Heavy Industrial in the county within the Eugene UGB) or SHI (Special Heavy in Springfield). Parcels in Eugene with a Special Heavy Plan designation are not given this label in Table 6 because they are zoned I-2 (Light Medium) or I-3 (Heavy) with SR (Site Review) or PUD (Planned Unit Development) procedures and requirements regarding minimum lot sizes and, thus, they appear in Table 6 in the zoning district categories of Heavy (for I-3) or Light Medium (for I-2).

Table 5
 Number of Buildable Industrial Acres
 By Parcel Plan Designation

	Heavy	Special Heavy	Light Medium	Special Light	Mixed/ University	Non Industrial	Total
Buildable Acres							
Eugene UGB	254.18	500.41	1230.78	734.52	43.12	132.48	2895.49
Springfield UGB	198.34	0.00	198.77	255.17	4.22	52.29	708.80
Metro UGB	452.52	500.41	1429.55	989.69	47.34	184.77	3604.29
Unbuildable Acres	4.90	1.79	183.03	211.23	4.62	29.08	434.65
Total Acres	457.42	502.20	1612.58	1200.92	51.96	213.85	4038.93

Table 6
 Number of Buildable Industrial Acres
 By Parcel Zoning District

Zoning: Eugene/Springfield	Heavy I-3/HI	Special Heavy I-4/SHI	Light Medium I-2/LMI	Special Light I-1/SLI	Mixed/ University MUR,SD, C4/BKMU	Non Industrial	Total
Buildable Acres							
Eugene UGB	788.76	265.77	1084.36	489.65	5.12	261.83	2895.49
Springfield UGB	216.30	0.00	210.10	260.44	9.44	12.52	708.80
Metro UGB	1005.06	265.77	1294.46	750.09	14.56	274.35	3604.29
Unbuildable Acres	14.74	1.79	186.19	189.00	0.45	42.47	434.65
Total Acres	1019.80	267.56	1480.65	939.09	15.01	316.82	4038.93

Table 7
 Number of Vacant Industrial Sites
 Site Size By Site Plan Designation

Size (Acres)	Heavy		Special Heavy		Light Medium		Special Light		Mixed/ University		Non Industrial		Total		All
	Eug	Spr	Eug	Spr	Eug	Spr	Eug	Spr	Eug	Spr	Eug	Spr	Eug	Spr	
0 - 4	8	11		1	42	7	3		1	2	9	5	63	26	89
5 - 9	3	8			15	2					3	2	21	12	33
10 - 19	4	2			10	4					2		16	6	22
20 - 49	4	2			15	2	1		1		2	1	23	5	28
50 - 99	1	1			3	1	1	1					5	3	8
100+			2		2		4	1					8	1	9
Total Sites	20	24	2	1	87	16	9	2	2	2	16	8	136	53	189

Buildable Industrial Sites¹

There are 189 vacant industrial sites within the Eugene-Springfield UGB (Table 7). One third of these sites (53) are in Springfield's UGB; the remainder (136) are in Eugene's. The sites range in size from over 100 acres (9 sites) to less than five acres (89 sites). Most of the sites (103) are designated Light Medium. Eight of the largest sites are Special Light, Light Medium or Special Heavy sites in Eugene; one Special Light site is the only one in Springfield that is 100 acres or larger.² Nine sites are 100 percent unbuildable; 7 because the entire site is in public ownership and 2 due to steep slopes or severe soil constraints. All of these sites are under 20 acres in size.

Constraint-Free Acres And Sites³

Constraint-free sites are identified because they are considered development-ready for all types of industrial firms. These acres and sites are serviceable, are not in public ownership, have no known physical constraints and have local, arterial or collector roads providing access to the site.

There are about 1,688 acres within the UGB that are constraint-free in all Plan designation categories (Table 8). The largest number of constraint-free acres are designated Light Medium (598) and Special Light (423), followed by Heavy (352), Special Heavy (208), Nonindustrial (101) and Mixed/University (6).

There are 48 constraint-free sites, one-quarter of the total 189 (Table 9). Half of these are in Springfield's UGB. There are constraint-free sites in all site size categories except 100 acres and larger. Generally, the larger the size, the smaller the number of constraint-free sites. None of the sites 100 acres or larger are completely constraint-free.

¹"Sites" are defined as contiguous parcels with the same Plan designation. However, there are a few cases in which parcels within a site have different Plan designations. A Site Plan designation was assigned to each site which corresponds with the Plan designation of parcels which contain the largest number of acres within the site.

²Site size categories reflect total site acres (i.e., they include unbuildable portions of sites).

³Constraint-free sites have adequate street access (local, arterial or collector to the site), have no portion in public ownership (except the Riverfront Research Park) and have no potential physical constraints. Sites are not constrained by serviceability issues because all sites within the UGB are considered serviceable within the planning period.

Table 8
Serviceable, Constraint-Free Industrial Acres
By Plan Designation

Heavy	Special Heavy	Light Medium	Special Light	Mixed University	Non Industrial	Total
352.22	207.54	598.49	422.77	5.76	100.78	1687.57

Table 9
Serviceable, Constraint-Free Industrial Sites
By Site Size And Site Plan Designation

Size (Acres)	Heavy		Special Heavy		Light Medium		Special Light		Mixed University		Non Industrial		Total		All
	Eug	Spr	Eug	Spr	Eug	Spr	Eug	Spr	Eug	Spr	Eug	Spr	Eug	Spr	
0 - 4	4	5			6	2	2		1	2	3	3	16	12	28
5 - 9	1	4			3	1						1	4	6	10
10 - 19		1			1	2					2		3	3	6
20 - 49		2			1								1	2	3
50 - 99								1						1	1
Total Sites	5	12			11	5	2	1	1	2	5	4	24	24	48

Thirteen percent of sites 50-99 acres, 11% of sites 20-49 acres and 27%, 30% and 31% of the sites in the size categories under 20 acres are constraint-free.

All Plan categories except Special Heavy have constraint-free sites. About the same number of constraint-free sites are designated Heavy (17) as Light Medium (16). Nine of the 24 sites that are zoned for industrial uses but are not designated Industrial are constraint-free.

Industrial Firm Site Requirements

This section evaluates the inventory in terms of suitability for industrial development.

Chapter Five includes a discussion of the site characteristics desired by various industrial firms. Site needs will differ among individual firms, depending on whether they are a new business, relocating, or an existing business that intends to expand. Other variables that partially determine individual firm needs are firm size, types of products (outputs), and characteristics of the work force and raw materials (inputs). Due to these differential requirements, factors that may limit the suitability of a site for one type of industry (e.g., Heavy Industrial) may not be limiting and may in fact be an amenity for another type (e.g., Light Medium Industrial). For this reason, it is important to maintain a variety of sites with different attributes.

1. Site Size

As shown in Table 7, there are 189 sites in all site size categories. Comparing the range of sites by size in the inventory to the discussion of needs in Chapter V, it is evident that the existing inventory is sufficient to satisfy the site size requirements of a variety of industrial firms. However, the quality of the sites in each size category is a critical part of the evaluation.

Physical constraints may impact the size of available and suitable sites. For example, we know that the 48 constraint-free sites fall in all size categories except 100 acres or more. The largest constraint-free sites are an 86 acre site in Springfield's UGB and a 74 acre site in Eugene's. The 9 sites 100 acres or larger are the following acres in size: 326, 288, 249, 225, 215, 210, 125, 116 and 103. Eight of these are in Eugene and one is in Springfield (the 249 acre site). None of these 9 sites are totally free from constraints; but 3 of them contain more than 100 constraint-free acres (See regional maps at the end of the report for site 3 in region 1; site 25 in region 7; and site 84 in region 2). These three sites are considered "development ready" large sites, i.e., they are large sites with street access containing over 100 acres unconstrained by physical constraints.

The remainder of the evaluation closely examines the characteristics of sites by site size in order to ascertain whether the quality of sites in all size categories indicates suitability for industrial development.

2. Ownership

Ownership patterns do not appear to be a major factor restricting the quality of the inventory. All but 7 sites have five or fewer owners; and these 7 sites have 10 or less owners. Four of the 7 sites are Light Medium; 2 are Special Light; and 1 is Special Heavy. Four are 100 acres or larger (leaving 5 of the largest sites with 5 or fewer owners); two are between 20-49 acres and 1 is between 50-99 acres in size.

3. Access

Access does not appear to be a major limiting factor (Table 10). There is an adequate supply of sites with street access, rail access, and good to moderate quality highway access. Airport access was not evaluated because all sites within the UGB are considered to be within sufficient distance from the airport.

Table 10
Access Quality Of Vacant Industrial Sites
Number Of Sites By Site Size

Size (Acres)	Inadequate Site Access	Poor Highway Access	Good Rail Access
0 - 4	7	17	21
5 - 9	5	6	10
10 - 19	1	3	11
20 - 49	3	7	9
50 - 99		2	4
100+		2	3
Total	16	37	58

Site Access

All but 16 sites have local, collector or arterial street access. All 16 are under 50 acres in size; 3 are between 20-49 acres; 1 is 10-19 acres; and 12 are less than 20 acres. Eight of the 16 are designated Heavy Industrial; 7 are Light Medium; and 1 has a non-industrial designation.

Highway Access

All but 37 sites have adequate highway access. The quality of the highway access for the remaining sites ranges from good to moderate to fair. Access to only 37 sites was considered poor. Of the 37, 17 are under 5 acres; 6 are 5-10 acres; 3 are 10-19 acres; 7 are 20-49 acres; 2 are 50-99 acres; and 2 are 100 acres or more.

Rail Access

Fifty-eight of the sites in all size categories do have rail access. A minimum of three sites in each size category have rail access; the smaller the size, the more sites with access. For example, 21 of the sites under five acres have rail access while three of the sites 100 acres or more have access. Sites with rail access are predominantly designated Heavy (25) and Light Medium (22).

4. Physical Qualities

This section examines the extent of constraint on the inventory created by physical qualities and evaluates the impact of individual physical characteristics.

Physical qualities fall into two categories: prohibitions, which classify a site or portions of a site unbuildable, and potential constraints, which have varying degrees of impacts on a site. Physical characteristics frequently overlap one another. To evaluate the cumulative impact of physical characteristics, individual characteristics were mapped and the portion of each site with at least one characteristic was estimated by overlaying each of these maps. The results of the analysis indicate the extent all physical characteristics potentially constrain the inventory.

It is important to consider the size of the site as well as the percent of the site constrained when evaluating the impact of physical constraints on the inventory. For this reason, the number of acres constrained gives a better indication than site data of the actual impact of constraints on the overall inventory of industrial land. Another important consideration is the type of constraint, because some constraints (e.g., potential physical constraints) pose less of an impediment to development than others (e.g., prohibitions).

Extent Of Constraint On The Inventory

About 55% of the total inventory of vacant industrial acres (2,242 acres of the total 4,039) is affected by one or more potential physical constraint. Physical constraints have the greatest potential impact on the inventory in the 10 to 20 acre site size range and the least impact in the 20 to 50 and 50 to 100 acre ranges. About 50 to 63 percent of the acres in the remaining site size categories have potential physical constraints to development (Table 11).

Fifty-six sites have no physical constraints. One hundred and thirty-three sites, 70% of the inventory, have some portion of the site constrained by one or more prohibition or potential physical constraint, 41 of these sites have 100% of the site constrained. All of the sites 100 acres or more in size are constrained as are the majority of the sites in each of the other site size categories (Table 12).

Some of the sites with a major portion constrained by physical characteristics may not be suitable for industrial development and may be candidates for redesignation or rezoning to allow other uses (e.g., residential), depending on the type of constraint.

Table 11
Vacant Industrial Acres
Number Of Acres With Physical Constraints By Site Size

Size (Acres)	5 - 24 % Of Site Constrained	25 - 50% Of Site Constrained	Over 50% Of Site Constrained
0 - 4	21.31	23.42	64.31
5 - 9	5.66	52.89	88.92
10 - 19	13.45	114.95	146.88
20 - 49	0.00	112.76	241.24
50 - 99	0.00	62.66	115.28
100+	0.00	376.37	802.20
Total	40.42	743.06	1458.82

Table 12
 Vacant Industrial Sites
 Number Of Sites With Physical Constraints By Site Size

	5 - 24 % Of Site Constrained	25 - 50% Of Site Constrained	Over 50% Of Site Constrained
0 - 4	8	13	35
5 - 9	4	4	13
10 - 19	5	4	7
20 - 49	4	11	9
50 - 99	1	3	3
100+		5	4
Total	22	40	71

Impact Of Individual Physical Qualities

Physical qualities have varying degrees of impact on the inventory. The most extreme differences are between prohibitions and potential physical constraints.

1. Prohibitions

Prohibitions to development were discussed in the section on buildable lands in this chapter. Steep slopes, severe soil constraints, floodway, approved wetland mitigation site and officially protected wetlands are prohibitions.

Severe soil constraints affect the greatest number of acres of all prohibitions, followed by steep slopes and floodway (Table 13). At present, none of the vacant land in the inventory is prohibited by wetlands status. One 23 acre site (Spectra Physics) was excluded from the inventory as unbuildable because it is an approved wetland mitigation site.

Table 13
Industrial Land With Development Prohibitions
Number Of Industrial Acres By Site Size

Size (Acres)	Floodway	Severe Slopes	Severe Soil Constraints	Wetland Mitigation Site	Officially Protected Wetland
0 - 4	8.13	11.24	10.60		
5 - 9		18.75	6.33		
10 - 19		40.17	52.15		
20 - 49		21.50	56.68	22.55	
50 - 99	74.73		64.51		
100+					
Total	82.86	91.66	190.27	22.55	0.00

2. Potential Physical Constraints

Potential physical constraints are wetlands and hydric soils, the 100 year flood plain, potentially significant riparian and upland areas, and the Willamette Greenway.

As noted earlier, the physical qualities of a site have varying degrees and types of impacts on sites, depending on the specific characteristic and how it interacts with the site. For example, hydric soils, flood plain and wetlands are the most prevalent physical qualities; but they each have different effects on the development potential of a site.

Wetlands may prohibit, restrict, or add to the cost of development. A permit must be obtained from the state and federal government to develop a regulated wetland. The permit may prohibit all development on a site; or it may include a plan for developing around the wetland or for mitigation, both of which may add to the cost of development. The potential impact of hydric soils is less certain than that of wetlands. Hydric soils were included as potential constraints because some of these areas may be agricultural wetlands (which have not been delineated for the metro area) or designated for mitigation sites. Agricultural wetlands must undergo the same regulatory procedure as other types of wetlands. In contrast, property within the flood plain may be developed, but, depending on the location, costs of development may be higher.

Hydric Soils

Hydric soils affect the greatest portion of the inventory, 1,620 acres in 107 sites (Tables 14 and 15). For this reason, we identified the acres and sites constrained only by hydric soils. As discussed in more detail in the Regional Profiles, 245 acres in 56 sites are constrained only by hydric soils. Hydric soil areas outside West Eugene have not been inventoried to determine whether they are disturbed agricultural wetlands. Such a determination could have a significant impact on the availability of these sites for industrial development, because some of the land may be unbuildable. In the long term, hydric soils are not a constraint to development if a determination finds no regulated wetlands.

Wetlands

Potentially regulated wetlands affect 723 acres in 35 sites. Wetlands may be identified as unbuildable if they are prohibited from development as a result of federal and state permit processes. However, no regulated wetlands on industrial land in the metro area currently have this official status. For this reason, they are considered a potential physical constraint. It is possible that the recommendations produced from this study will help in the identification of appropriate strategies for meeting the regulatory requirements (i.e., mitigation v. partial development).

Table 14
Industrial Land With Potential Physical Constraints
Number Of Industrial Acres By Site Size

Size (Acres)	Flood Plain	Known Wetlands	Hydric Soils	Riparian Area	Upland Area	Greenway
0 - 4	59.95	23.42	99.93	24.27	4.49	8.18
5 - 9	43.66	38.66	128.83	16.21	10.62	0.00
10 - 19	63.70	95.37	189.15	36.74	10.31	0.00
20 - 49	110.98	106.98	198.17	86.38	41.58	46.20
50 - 99	387.46	92.80	305.32	0.00	0.00	0.00
100+	124.55	365.94	699.09	0.00	0.00	0.00
Total	790.31	723.17	1620.49	163.60	67.00	54.38

Table 15
 Industrial Sites With Potential Physical Constraints
 Number Of Industrial Sites By Site Size

Size (Acres)	Flood Plain	Known Wetlands	Hydric Soils	Riparian Area	Upland Area	Greenway
0 - 4	16	6	46	9		2
5 - 9	7	6	12	6		2
10 - 19	1	6	14	1	2	
20 - 49	12	9	21	5	2	1
50 - 99	5	4	6	1		
100+	6	4	8	5	1	
Total	47	35	107	27	5	5

Flood Plain

About 790 acres in 47 sites are in the 100 year flood plain. The location of the flood plain relative to these sites may increase the costs of development.

Upland And Riparian

All potentially significant upland (67 acres in 5 sites) and riparian (164 acres in 27 sites) areas were included as potential physical constraints. If all of these areas are fully protected through the Goal 5 process now underway, these acres will not be available for development and they will be excluded from the inventory as unbuildable land. However, if some or all of these areas are only partially protected or are not protected, portions may be available for industrial development. The conclusions in this report as to the long term need for this land for industrial development may be one of the considerations in determining the protection of natural resource sites.

Willamette Greenway

The Willamette Greenway (54 acres in 5 sites) is the physical quality with the least impact on the inventory. Development is not prohibited in this

area, but it must comply with site design criteria which may or may not add to the cost of development.

5. Surrounding Uses

The uses surrounding vacant industrial sites can add or detract from their suitability for industrial development. Data on this characteristic were collected and are available on a site specific basis in the appendix titled, Metropolitan Industrial Lands Inventory: Site Summaries. A full description of the surrounding uses is not feasible for this report, but the data will be useful for determining suitability of individual sites over time. For example, if some of the sites are identified as unsuitable for industrial development for other reasons, this additional information may help determine more appropriate uses for these sites.

6. Services Availability

All land within the UGB is considered serviceable within the twenty year planning period. As a way of describing short-term availability, sites without water, sanitary sewer or storm sewer facilities within 1000 feet of the site were identified (Table 16). Additional data in the appendix are the size of lines and their actual distance from each site. Additional information on the short-term availability of services is presented in the discussion of planned services and facilities in the Regional Profiles section of this chapter.

Table 16
Industrial Sites More Than 1000 Feet From Public Facilities
Number Of Industrial Sites By Site Size

Size (Acres)	Water	Sanitary Sewer	Storm Sewer
0 - 4	3	16	15
5 - 9	2	5	12
10 - 19	2	2	5
20 - 49	3	2	7
50 - 99	1	1	1
100+	2	2	
Total	13	28	40

Service availability is not a major factor affecting the quality of the inventory. Storm sewers are not available to 40 sites; sanitary sewers to 28; and water service to 13. A majority of the sites in all size categories have services available within 1000 feet of the site.

7. Plan Designations And Zoning

A total of 1,131 acres in 82 sites have potential plan-zone conflicts. There are several reasons why this is such a large part of the inventory.

- 1) Special Heavy sites and acres were identified as having a conflict if they were not zoned I-4 or SHI although other zoning districts in Eugene (I-2, I-3) may be designated Special Heavy (see discussion in section on buildable acres and sites).
- 2) Some parcels will need to be redesignated or rezoned consistent with the site definitions in the data file, in part because some sites contain parcels with more than one Plan designation and zoning district.
- 3) In some cases, the jurisdictions need to rezone parcels to conform to Plan designations (usually part of the refinement planning process).

A determination will need to be made as to how to designate sites that fall into the following categories: sites with more than one designation or zoning; sites that are zoned industrial but have a non-industrial Plan designation; and sites that are zoned for non-industrial uses but have an industrial Plan designation. This will be especially important for sites identified as constraint-free that have a nonindustrial Plan designation (101 acres).

8. Outside City

Sites with portions located outside city limits will require annexation to be developed to urban levels. This is technically not a constraint to development, but it provides additional data to describe the inventory. About 1,670 acres in 63 sites are outside of an incorporated city.

Regional Profiles

The Industrial Lands Study has divided the Eugene-Springfield metropolitan area (or metro area) into eight subregions (see composite and subregion maps). One region (Region 3 in South Eugene) lacks industrially zoned or designated land. This section discusses the characteristics of each industrial region, including the acreage and number of industrial sites that are available, and the development constraints that are present. Unique regional characteristics, such as a higher than average percentage of constrained sites, are mentioned.

Constraint-free sites are discussed by region.⁴ Industrial firm site requirements also are discussed, including physical qualities (prohibitions and potential physical constraints). Sites that have at least 25 percent of their area affected by a prohibition are individually mentioned. Other site requirements are discussed, including the availability of public services, conflicts between plan designations and zoning, and whether sites are located outside city limits.

This section does not mention site characteristics which are not unique to specific regions. For example, if the acreage and number of sites with severe soil constraints in a region is close to the metro area average, it is not mentioned. For the same reason, site size, ownership patterns, and percentages of sites with constraints usually are not mentioned because there is little variation between regions.

Regional Summary

There is a choice of constraint-free sites in all regions. These sites are dispersed throughout the metro area, with over half in the Highway 99 and West Eugene regions (Table 17). As noted earlier, sites sometimes contain parcels with different Plan designations. The Metro Plan designations for these sites have been determined by whatever designation covers the largest area of the site.

Hydric soils are present on some sites in all regions but region 4. Hydric soils affect 40 percent of the total industrial land inventory and they are the only constraint for 6 percent (Table 18). If some of these lands are not regulated wetlands or the wetland definition changes, this could significantly increase the amount of constraint-free industrial sites in the metro area.

⁴Constraint-free sites are identified by a "site Plan designation." This designation was assigned to each site based on the designation of the largest area within each site. In some cases, redesignation of some parcels are necessary in order to make actual Plan designation of the entire site consistent with the site Plan designation.

Table 17
 Number of Serviceable, Constraint-Free Industrial Sites
 By Plan Designation And Region

	Heavy	Special Heavy	Light Medium	Special Light	Mixed/ University	Non Industrial	Total
Region							
1	1		2			2	5
2	4		6			2	12
4					1		1
5				2			2
6			3			1	4
7	12		4	1		3	20
8			1		2	1	4
All	17	0	16	3	3	9	48

Table 18
 Industrial Land With Hydric Soils The **Only** Physical Constraint
 Number of Acres And Sites By Region

	Sites	Acres
Region		
1	14	48.29
2	28	70.33
5	2	77.81
7	11	47.80
8	1	1.14
All	56	245.36

The West Eugene and East Springfield regions particularly are affected by development constraints. West Eugene is affected by potential wetlands and hydric soils. In East Springfield, sites in the Natron area are constrained by development prohibitions and access limitations.

Region 1: Highway 99/River Road/Santa Clara

The Highway 99 region has the second largest amount of industrial land. It has 898 acres of vacant industrial land which is 22 percent of the metro area's industrial land inventory. The region has 32 sites or 17 percent of the site inventory. Of this amount, 56 percent (499 acres) is in sites that are 100 acres or larger (sites 1 and 3). This is the highest proportion of large sites of any region. The Highway 99 region is somewhat free from physical constraints. No sites in the region have any constraints that are prohibitions to development.

1. Constraint-Free Sites

The Highway 99 region has 5 constraint-free industrial sites. Two are designated Light Medium, one is Heavy and 2 have a nonindustrial Plan designation.

2. Industrial Firm Site Requirements

Access

Highway access constrains a higher than average percentage of acreage and sites in the Highway 99 region. This constraint affects 63 percent of the vacant industrial acreage (563) and 28 percent of the sites (9). There are few access points onto Highway 99, which is the primary access road for the region.

Physical Qualities

1. Potential Physical Constraints

A majority of the sites (23 of 32) in this region have some hydric soils. In this area these soil types often follow old stream beds.

Services Availability

Storm sewers are not immediately available to 11 sites, which are 34 percent of the region's total. The Metro Area Public Facilities Plan and the River Road-Santa Clara Urban Facilities Plan both call for the construction of storm drainage facilities in the area. As additional land is annexed to Eugene, storm drainage facilities will be more readily available.

Outside City

Most of the Highway 99 region's vacant industrial acreage is outside the Eugene city limits. This is 835 acres, or 93 percent of the region's total amount of vacant industrial land. This property would need to be annexed before development can take place.

Region 2: West Eugene

The West Eugene region has the largest amount of vacant industrial land within it. It has 1,913 acres of vacant industrial land, which is almost half (47 percent) of the metro area industrial inventory. The region has 84 sites which is 44 percent of the metro area inventory. When combined with the Highway 99 region, both areas have 70 percent of the metro area's vacant industrial land area on 61 percent of its sites, and 58 percent of its constraint-free industrial land. West Eugene has the largest amount of land and sites over 100 acres in size (986 acres in 5 sites).

1. Constraint-Free Sites

There are 12 constraint-free sites in West Eugene; six are designated Light Medium, 4 are Heavy and 2 have a nonindustrial designation.

2. Industrial Firm Site Requirements

Access

The West Eugene region has the only planned and funded limited access highway improvements in the metro area; the West Eugene Parkway and the extension of Belt Line from West 11th to West 18th. The West Eugene Parkway will be built across or next to 12 of the region's sites. The Belt Line extension will cross one industrial site.

Physical Qualities

The West Eugene region has the highest percentage (54 percent) of sites that have potential physical constraints on over half their area (45 sites). Potential wetlands and hydric soils are the constraints affecting most of these sites.

1. Prohibitions

There are three sites in the West Eugene region (41, 42, and 50) that have a prohibition to development on 50 percent of their area. All of these prohibitions are due to severe soil constraints. In addition, site 84 has

severe soil constraints on between 25 to 50 percent of its area. A small portion of site 38 is being used as a wetland mitigation area and will be prohibited from development.

2. Potential Physical Constraints

Hydric Soils

Hydric soils are present on 1150 acres, 60 percent of the vacant industrial land in West Eugene. Most of these hydric soil areas do not present an additional constraint to development beyond the acres identified as wetlands because disturbed agricultural wetlands have been inventoried in most of this region (West Eugene Wetlands Special Area Study, L-COG).

Wetlands

Almost all (98 percent) of the wetland acreage in the metro area industrial inventory is in this region. There are 711 acres, or 37 percent of the region's acreage, which have been identified as potential wetlands, including disturbed agricultural wetlands.

Flood Plain

A higher than average percentage of West Eugene's sites (30 percent) are partially within the 100 year flood plain of the Amazon Channel. This is 25 of the region's 84 industrial sites.

Services Availability

The region is well-served by public improvements and has fewer improvement-related constraints than most of the metro area's regions.

Outside City

A small amount of West Eugene's industrial acreage and sites are outside the Eugene city limits. Only 271 acres (14 percent) of the region's land is outside the city limits. With the exception of the Central/University of Oregon region, this is the smallest percentage of the regions.

Region 4: Central/University of Oregon

The Central/University of Oregon region has 48 acres of vacant industrial land on two sites, which provides only 1 percent of the metro area's vacant industrial land inventory.

It has fewer sites and acreage than other regions. The Riverfront Research Park site (2) has 46 of the 48 total acres in this region. The University of Oregon has prepared a development plan for this site.

1. Constraint-Free Sites

One 2 acre site in the region is constraint-free. It is designated in the Metro Plan for mixed uses.

2. Industrial Firm Site Requirements

Physical Qualities

All 46 acres of site 2 are affected by at least one physical constraint. These are all due to the presence of the Willamette River.

1. Potential Physical Constraints

Flood Plain

Between 25 to 50 percent of site 2 is within the 100 year flood plain of the Willamette River.

Upland and Riparian

Over 50 percent of site 2 has either upland or riparian habitat areas.

Willamette River Greenway

Over 50 percent of site 2 is within the Willamette River Greenway.

Services Availability

Existing public improvements need to be extended in order to develop a portion of site 2. These improvements have been identified during the site's development planning process, and are included in the City of Eugene's Capital Improvement Program. The State of Oregon is providing a portion of the funding for these improvements.

Region 5: Willakenzie

The Willakenzie region has 199 acres of vacant industrial land, which is 5 percent of the metro area inventory. The region has 5 sites, which is 3 percent of the site inventory.

(Note: site 3 was deleted leaving 4 sites in this region. Sites 4 and 5 were renumbered. See Errata Sheet.)

All but one of the sites are located in the Coburg/Crescent area. All of the Coburg/Crescent area is designated for Special Light Industrial use. It has the best access and highest visibility of all metro area sites with this designation. The Willakenzie region is well-served by public improvements and has fewer improvement-related constraints than most of the metro area's industrial regions.

1. Constraint-Free Sites

Two Special Light sites in this region are constraint-free.

2. Industrial Firm Site Requirements

Physical Qualities

Hydric Soils

Hydric soils are the only physical constraint that has a significant effect on this region. The Willakenzie region has the largest amount of land (78 acres) that is solely constrained by hydric soils. Three of the region's five sites have hydric soils on a portion of them.

Plan Designations and Zoning

All of the sites in the Willakenzie area have some form of plan/zone conflict. Of the total acreage in the region, 59 percent (118 acres) has a plan/zone conflict. A refinement plan is currently being prepared for the area and when implemented will help resolve these conflicts.

Region 6: Glenwood

The Glenwood region has 123 vacant industrial acres, which is 3 percent of the metro area inventory. There are 13 sites in the area, which is 7 percent of the total site inventory.

1. Constraint-Free Sites

There are four sites in the region that are constraint-free; three are designated Light medium and one has a non-industrial designation.

2. Industrial Firm Site Requirements

Access

This region has the best highway and rail access of all areas. The main line and Medford line of the Southern Pacific Railroad both traverse the region.

Physical Qualities

1. Prohibitions

Site 7 has a prohibition to development on 50 percent of its area due to steep slopes and the Willamette River floodway. Site 11 has a prohibition to development on over 50 percent of its area due to steep slopes.

Services Availability

It appears that all 13 sites in the Glenwood region are more than 1000 feet from storm drainage facilities. According to the Glenwood Refinement Plan, "there are many types of drainageways within Glenwood, ranging from natural water courses to private drainage systems and public facilities. In many areas, existing drainageways are inadequate." Seven sites are over 1000 feet from a sanitary sewer. Storm and sanitary sewer improvements are planned for the region, but only a portion of the sanitary sewer improvements is funded at this time.

Plan Designations and Zoning

A higher than average percentage of the sites in this region have a plan/zone conflict. Eight of Glenwood's 13 sites have some form of a plan/zone conflict. Implementation of the recently completed Glenwood Refinement Plan will help resolve these conflicts.

Outside City

A portion of most industrial sites (12 of 13) in Glenwood is outside the Eugene city limits. Site 3 is completely within the City.

Region 7: West Springfield

The West Springfield region has 627 vacant industrial acres, which is 16 percent of the metro area inventory. It has 40 sites, which is 21 percent of the total inventory. It has the fewest potential constraints and most constraint-free sites (20) of all regions. The region generally is well-served by public improvements.

1. Constraint-Free Sites

The West Springfield region has 20 constraint-free industrial sites, more than any other region. Twelve of these sites are designated Heavy; 4 are Light Medium; 1 is Special Light; and 3 have a nonindustrial Plan designation.

2. Industrial Firm Site Requirements

Access

Eight of the 40 sites do not have site access, a higher proportion than other regions. Twelve of the sites have poor highway access. All West Springfield sites that are served by Main Street are considered to have a highway access constraint, due to its distance from limited access highways. No limited access highways are currently planned or funded for the region.

Physical Qualities

1. Prohibitions

There are two sites in the West Springfield region that have a significant area affected by physical prohibitions to development. Between 25 to 50 percent of site 25 is within the floodway of the McKenzie River. Site 1 has steep slopes on 50 percent of its area.

2. Potential Physical Constraints

The 100 year flood plain is the only physical constraint affecting a significant amount of industrial acreage in West Springfield. There are 125 acres, or 20 percent of the region's industrial land supply, that are within the 100 year flood plain of either the Willamette or McKenzie Rivers. Sites 25 and 35 are affected by this constraint.

Region 8: East Springfield

The East Springfield area has 232 vacant industrial acres, which is 6 percent of the metro area industrial inventory. There are 13 sites within the region, 7 percent of the site inventory. The area has the greatest concentration of public improvement constraints of any region. Most site constraints in this region apply to the sites located along Jasper Road in the Natron area (sites 9 through 13).

1. Constraint-Free Sites

There are 4 constraint-free industrial sites in this region, all of which are north of Main Street. Two are designated Mixed Uses, one is Light Medium, and one has a nonindustrial designation.

2. Industrial Firm Site Requirements

Access

A higher than average percentage of sites in the East Springfield region has site or highway access constraints, mostly in the Natron area. Four sites in this region, 80 acres, are constrained by site access, and seven sites, 201 acres, are constrained by highway access. All five Natron area sites have poor highway access because of their distance from limited access highways. The regional transportation plan (TransPlan) includes a proposed limited access highway project to improve access to the area. No funding sources have been identified for this project.

In contrast, sites 3 through 8, north of Main Street, have all services at the site, have street access and good to fair highway access.

Physical Qualities

1. Prohibitions

All five Natron area sites are affected by development prohibitions due to steep slopes, severe soil constraints, or both. Site 11 (11.4 acres) is completely prohibited from development due to steep slopes; site 12 (1.8 acres) is completely prohibited from development due to severe soil constraints. Portions of sites 9, 10 and 13 are unbuildable due to slopes and soils constraints. Of the 80.3 acres in site 9, 24.1 have these prohibitions, as do 11.7 acres of the total 39 acres in site 10 and 14.8 acres of the total 29.6 in site 13.

2. Potential Physical Constraints

Fifty-six acres of the total 80.3 in site 9 have no physical constraints as do 27.3 acres of the total 39 in site 10.

Services Availability

The five sites in the Natron portion of this region are more than 1000 feet from the nearest storm or sanitary sewer facilities. No facilities that would serve this

area are currently planned or funded. However, in the Metro Plan amendments adopted in 1989, the Plan text was changed to provide that industrial firms are allowed to provide self-contained sewage disposal facilities subject to regulatory standards.

Plan Designations and Zoning

Seven of the region's 13 sites have a plan/zone conflict. These seven sites total 99 acres in size. Almost half (47 percent) of this acreage is on sites 2 and 3, on the boundary between industrial designations.

Outside City

All five sites in the Natron area are outside the Springfield city limits.

Chapter VII: Supply And Demand Analysis

The methodology and assumptions used in this inventory report identify 3,604 acres of buildable industrial land, of which about 185 acres have a non-industrial Plan designation. The report also identifies about 1,688 constraint-free industrial acres. Vacant industrial land is either designated or zoned industrial. This supply exceeds the projected demand over the next twenty years, which is between 650 to 1,172 acres.

Presenting demand as a range allows the figures to account for past trends while accounting for: 1) variations in land use efficiency or intensity and associated employee per acre ratios, and 2) the degree to which future industrial employment will locate on non-industrial lands.

The 1,688 constraint-free acres may be the best suited to meet short-term industrial demand. This portion of the supply also exceeds the twenty year demand projection. Both the short and long-term supply figures exceed the demand figures, thereby providing some market choice.

Given the supply and demand figures, any additions to the industrial inventory would need to be based on other factors. These factors and other industrial land issues are explored and addressed in the Policy Recommendations Report portion of the study.

Long Term Supply And Demand

There are 4,039 acres of land on 189 sites that are industrially designated or zoned within the metropolitan UGB. Of this total inventory, about 3,604 acres on 180 sites are considered buildable, of which 709 acres are in Springfield's UGB and the remainder are in Eugene's. This supply exceeds the projected demand of between 650 and 1,172 acres. The 2,432 to 2,954 acre surplus of buildable land provides a degree of market choice. It also provides land for future policy-based industrial uses that are not anticipated from past trends. Special Light industrial uses are an example of these policy-based uses.

The demand analysis shows no demand for heavy industry, based on past employment trends. Because of this, the demand figures are for light medium industrial uses. A total of 2,420 buildable acres are designated Light Medium or Special Light. In addition, there are 453 buildable acres designated Heavy. These may remain in the inventory to satisfy a need not shown by past trends or they may be partially available for other uses. There are an additional 500 acres designated Special Heavy that meet a portion of the need for large sites. Another 185 acres are zoned for industrial uses but do not have an industrial designation.

Constraint-free Acres And Sites

Approximately 1,688 acres and 48 sites within the UGB are constraint-free. Constraint-free land is privately owned, lacks physical constraints, has a local, collector or arterial street providing site access and is serviceable in the planning period. The constraint-free definition does not cover those constraints that can be eliminated by public actions, such as plan/zone conflicts. For example, there are 9 "constraint-free" sites in the inventory with a nonindustrial Plan designation. There are constraint-free acres and sites in all Plan categories, except Special Heavy. Half the constraint-free sites are within Springfield's UGB.

There are constraint-free sites in all site size categories except 100 acres and larger. However, when acres with constraints are subtracted from sites in this category, there are three sites with over 100 constraint-free acres each.

Industrial Site Quality

The analysis examined all the industrial firm site requirements identified in Chapter V except surrounding uses. Data for this site characteristic are available in an appendix and may be used in a detailed evaluation of the suitability of specific sites for nonindustrial uses. Site characteristics included in the analysis were: size, ownership, access, physical qualities, services availability, Plan designations and zoning, and incorporation status.

Potential physical constraints are present within a portion of most industrial sites in all site size categories. There are 189 sites ranging from less than 5 acres to over 100 acres in size. Sites tend to have 5 or fewer owners. They usually have adequate site and highway access, with 58 sites located next to rail lines. Water services are available to all but 13 sites, sanitary sewer to all but 28, and storm sewer to all but 40. Some adjustments to Plan designations and zoning will be needed, primarily as a housekeeping measure. Annexation will be required for parcels in 63 sites, but this is not considered a development constraint.

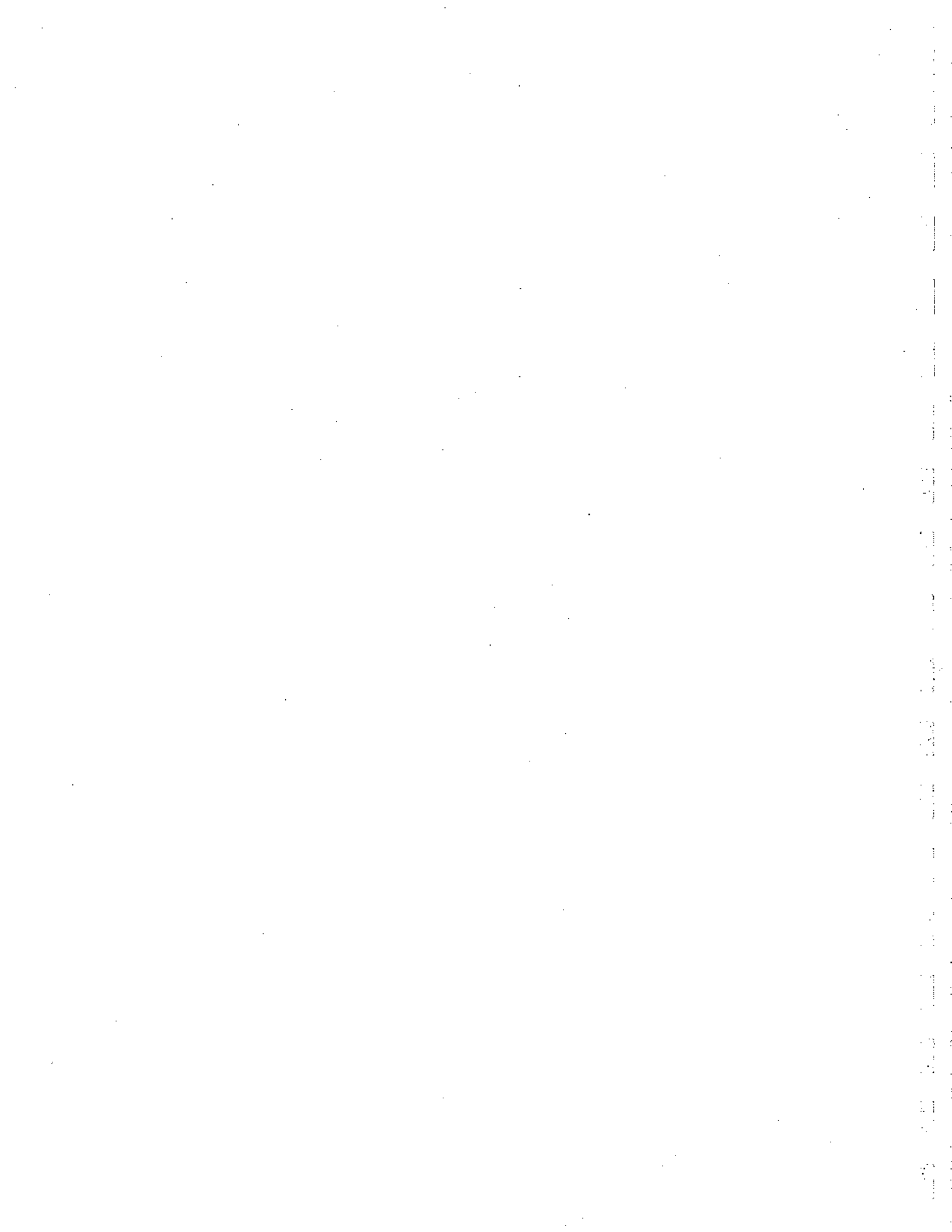
Physical qualities present the greatest constraint on the existing inventory. These qualities may show that some surplus buildable industrial land may be more appropriate for uses other than industrial. A list of sites that are appropriate for redesignation could result from a coordinated effort combining the findings of this study with the findings of the Eugene Commercial Lands Study, Metropolitan Residential Lands Study, Natural Resources Special Study, and the West Eugene Wetlands Study now underway.

Physical prohibitions or potential physical constraints affect about 55% of the total inventory (2,242 acres of 4,039). The greatest potential impact is on sites in the 10 to 20 acre range and the least impact is on sites in the 20 to 50 and 50 to 100 acre ranges. At

least 50% of the acres in all site size categories are constrained or potentially constrained by physical characteristics.

Of all potential physical constraints, hydric soils have the greatest single impact on the inventory, followed by location within the flood plain and wetlands. About 1,620 acres in 107 sites contain hydric soils, about 790 acres in 47 sites are in the flood plain, and about 723 acres in 35 sites contain wetlands. The physical qualities of a site have varying degrees and types of impacts, depending on the characteristic and how it interacts with the site. For example, some land with constraints, such as property in the flood plain, may still be suitable for industrial development. In addition, some land with potential constraints, such as wetlands, may eventually be officially prohibited from development through the permit process, or protected locally as an LCDC Goal 5 resource and be excluded from the inventory as unbuildable land.

The development potential of a site also may be constrained by a lack of fit between the site characteristics and its industrial designation. The Policy Recommendations Report will provide direction for appropriate industrial designations for the industrial land supply and other industrial land quality issues.



Appendix A

Zoning Districts By Metro Plan Category



SPECIAL LIGHT INDUSTRIAL

The Special Light Industrial zoning districts were designed to provide relatively large sites for specialized industries who want to be protected from uses which are visually and/or operationally incompatible. They have the most extensive site development standards of any industrial zone and are intended to facilitate high quality development which would diversify the metropolitan area economy.

Eugene: Special Industrial District (I-1)

Purpose:

This zone is designed to protect and enhance special light industrial sites to accommodate specialized light industrial uses that have relatively large numbers of employees per acre, have no negative external impacts, cannot tolerate noise or other forms of pollution, and require good access and attractive settings.

Permitted Uses:

Light industrial uses, research and development complexes, and regional distribution centers. The district permits smaller-scale light industrial and ancillary uses under the provisions for industrial parks. Offices are limited to large-scale tenants, such as a corporate office headquarters, and are limited to a maximum of ten percent of the area. Further, the extent that smaller scale light industrial uses can develop in industrial parks is limited to a maximum of the lesser of 40 acres or 30 percent of the area zoned I-1. Commercial establishments, such as restaurants and banks, are permitted in industrial parks with explicit limitations and conditions.

Minimum Lot Size:

Within a contiguous area of at least 50 acres, 10 acres for individual non-office uses. For industrial parks where building permits have been issued, lot sizes are determined through the site plan review process. For offices with issued building permits, a minimum area of 2 acres is required, not to exceed 10 percent of the I-1 area.

Industrial Parks:

Require a development plan prepared by an architect, engineer, and landscape architect which is subject to specific site review standards.

Springfield: Special Light Industrial District (SLI)

Purpose:

The SLI District ensures that Springfield's prime campus industrial sites retain their suitability and are available for large concentrations of specialized light industrial development and supporting uses. Special Light Industrial sites are intended primarily for developments that require 5 acres or more of land for immediate and future expansion needs. A smaller portion of each site is intended for industrial parks and corporate headquarters.

Permitted Uses:

Certain "campus" industrial uses are considered "Primary Uses," and are permitted subject to Site Plan Review approval. Examples of such uses are manufacture and assembly of electronic equipment and components, and multi-use office and special light industrial structures. The following are examples of industrial uses considered "Secondary Uses", and are permitted in industrial parks in the SLI District, provided that the development area occupied by secondary uses in the district does not exceed the development area occupied by primary uses: wholesale distribution of computers and other 'high tech' equipment, and; preparation of advertising copy, art work, graphics, and other creative work.

Minimum Lot Size:

The minimum development area for the SLI District, with the exception of office complexes, is 5 acres. The minimum development area for office complexes is 2 acres. The minimum lot size for unincorporated SLI land that does not have City Site Plan Review approval is 50 acres. With Site Plan Review approval, the minimum lot size is 10,000 square feet, with 75 feet of frontage.

Industrial Parks:

Require a development plan prepared by an architect, engineer, and landscape architect which is subject to specific site review standards.

LIGHT MEDIUM INDUSTRIAL

The zoning districts are used for the majority of industrial land in the metropolitan area and permit the widest range of land uses. Their broad scope and wide distribution act to encourage industrial development.

Eugene: Light-Medium Industrial District (I-2)

Purpose:

This zone is intended to permit a wide range of manufacturing and other industrial uses with controlled external impacts. It is applied in areas designated for light-medium industry in the Metro Plan, refinement plans, and special area plans.

Permitted Uses:

Includes manufacturing of lumber and wood products, paper, chemicals, metal, and fabric, and motor vehicle repair and service.

Minimum Lot Size:

6000 square feet with a minimum of 50 feet of street frontage (both can be reduced with Planning Director approval).

Industrial Parks:

Require a minimum of 5 acres and a comprehensive development plan to insure compatibility.

Eugene: Commercial Industrial District (C-4)

Purpose:

This district is oriented towards automobile-oriented commercial activities and complementary light-medium industrial uses that do not involve manufacturing. It's limited to sites with a preexisting mix of commercial and industrial uses, direct frontage on arterials, and designated for strip commercial use in the Metro Plan.

Permitted Uses:

All non-manufacturing I-2 uses are permitted in this zone, as well as a variety of commercial activities.

Minimum Lot Size:

6000 square feet with a minimum of 50 feet of street frontage (both can be reduced with Planning Director approval).

Industrial Parks: Not applicable.

Springfield: Light-Medium Industrial District (LMI)

Purpose:

Light and medium industries are generally involved in the secondary processing of materials into components, the assembly of components into finished products, transportation, communication and utilities, wholesaling, and warehousing. The external impact from these uses is minimal. The need for transportation is usually met by truck. Manufacturing and processing activities are located indoors.

Permitted Uses:

Examples of light-medium industrial uses allowed in the LMI Districts are: automotive and heavy equipment repair and service, and manufacturing and assembly of metal, fabric, finished wood products, and appliances. Also permitted in the LMI district are uses characterized as "Campus Industrial", such as the manufacture and assembly of 'high tech' equipment.

Minimum Lot Size:

10,000 square feet with a minimum of 75 feet of street frontage.

Industrial Parks:

Subdivisions in the LMI District must conform to special environmental design standards for industrial parks. Industrial parks are allowed upon approval of a Development Area Plan. Industrial parks require a minimum of 5 acres and a comprehensive development plan to insure compatibility.

HEAVY INDUSTRIAL

Heavy industrial zones protect the most intensive industries by providing location which can be buffered from adjacent, less intensive uses, thereby insuring compatibility.

Eugene: Heavy Industrial District (I-3)

Purpose:

This zone is designed for heavy industrial uses that could be incompatible with activities permitted within other industrial zones. It is located in areas designated for heavy industry in the Metro Plan, refinement plans, and special area plans.

Permitted Uses:

Incinerators, wrecking yards, and all uses permitted in the I-1 and I-2 zones.

Minimum Lot Size:

6000 square feet with a minimum of 50 feet of street frontage (both can be reduced with Planning Director approval).

Industrial Parks:

Require a minimum of 5 acres and a comprehensive development plan to insure compatibility.

Springfield: Heavy Industrial (HI)

Purpose:

Heavy industries are generally involved in the primary processing of large volumes of raw materials into refined materials. Processing usually generates liquid or solid wastes; air pollutants; and other emissions. These industries require heavy transportation.

Permitted Uses:

All light-medium and "campus" industrial uses permitted in the LMI district are permitted in this district. Examples of heavy industrial uses permitted are: lumber and wood products; paper; chemicals and primary metal manufacturing; large-scale storage of hazardous materials; power plants; and railroad yards. Certain heavy industrial uses are deemed "Discretionary Uses". They may or may not be permitted, based upon the application of general criteria, and may be subject to special locational and siting standards. Some examples of "Discretionary" HI uses are auto wrecking and the manufacturing and distribution of explosives.

Minimum Lot Size:

Lot size standards are the same as for the Light-Medium Industrial District.

Industrial Parks:

Require a development plan prepared by an architect, engineer, and landscape architect which is subject to specific site review standards.

SPECIAL HEAVY INDUSTRIAL

The Special Heavy Industrial zones provide large sites for new heavy industrial firms who want to locate in the metropolitan area, and also provide locations for existing heavy industries who want to relocate from their present sites. Through their use, these zones provide for the continued presence and operation of basic manufacturing industries.

Eugene Urban Transition: Special Heavy Industrial District (I-4)

Purpose:

These areas are designated to accommodate relocation and expansion of existing heavy industrial uses, and to accommodate a limited range of other heavy industries, in order to broaden the manufacturing base of the metropolitan economy and to take advantage of the natural resources of this region. These industries require large areas for processing, preparing and storing raw materials. The I-4 district applies to property in Lane County that is within the Eugene UGB. Special Heavy Industrial sites inside the City will have an I-2 or I-3 zoning.

Permitted Uses:

Agricultural processing, Lumber and wood products manufacturing, asphalt plants, food processing, and other similar uses are conditionally permitted.

Minimum Lot Size: 40 acres

Industrial Parks: Not applicable.

Springfield: Special Heavy Industrial (SHI)

Purpose: Same as in Eugene

Permitted Uses:

"Campus industrial" uses, permitted in the LMI District, are not permitted in the SHI District. All light-medium and heavy industrial uses permitted in the LMI and HI Districts are permitted in the SHI District, with some exceptions, including: automotive and heavy equipment repair and auto wrecking. Certain light-medium industrial uses, however, are deemed "Special Uses", and are subject to special locational and siting standards. Examples of such "special uses" are: manufacture and assembly of metal, fabric, wood, paper, chemical, and metal products and feed. Similarly, certain heavy industrial uses are deemed "Discretionary Uses", which may or may not be permitted, based upon the application of general criteria, and may be subject to special locational and siting

standards. Some examples of these are bulk plants, manufacture and distribution of explosives, and foundries and stamping plants.

Minimum Lot Size:

Lot size standards for the SHI District are the same as for the LMI and HI districts except that until annexed to the City, the minimum lot size is 40 acres.

Industrial Parks:

Industrial park standards are the same as in the HI District.

MIXED USES AND SPECIAL DISTRICTS

These zones apply to areas with unique circumstances, involving either a pre-existing mix of land uses (MU-R and BKMU) or a specialized development form (Riverfront SD).

Eugene: Whiteaker Residential Mixed Use District (MU-R)

Purpose:

This special mixed use zone is intended to encourage a mix of residential and other complementary neighborhood scale uses, and to allow continuation of existing industrial uses. It is located in three areas within the Whiteaker neighborhood.

Permitted Uses:

Residential uses are emphasized, but new industrial uses allowed in I-1 and I-2 zones can be conditionally permitted in existing industrial buildings.

Minimum Lot Size: Not applicable.

Industrial Parks: Not applicable.

Eugene: Riverfront Park Special Development District (Riverfront SD)

Purpose:

This special zone has been created and applied to the area planned for the University of Oregon's Riverfront Research Park, and is intended to facilitate the successful development of a research and development park consistent with the policies of the Riverfront Park Study. It provides for activities and uses which complement the research and educational

functions of the University of Oregon.

Permitted Uses:

Laboratories and other non-manufacturing facilities for research and development, and activities of the Oregon State System of Higher Education. Manufacturing is permitted if it is directly related to a primary use and if it takes up no more than 40 percent of the gross floor space devoted to the related primary use. Accessory activities such as a specialized machine shop and related storage and distribution facilities are permitted if they do not take up more than 25 percent of the gross floor area within any one development site.

Minimum Lot Size: Not applicable

Industrial Parks:

The Riverfront Research Park is designed to be developed as a type of industrial park.

Springfield: Booth-Kelly Mixed Use District (BKMU)

Purpose:

The BKMU District encourages a variety of commercial, industrial, recreational and residential land uses in a pedestrian-oriented setting that takes advantage of the district's natural features.

Permitted Uses:

"Campus Industrial" uses similar to those allowed in LMI, HI & SLI are permitted in the BKMU District. Most light-medium industrial and warehousing uses permitted in the LMI district are permitted in the BKMU district. Some LMI uses, with greater external impacts, such as heavy equipment and automotive repair, are not permitted. Wholesaling and warehousing activities are permitted only when secondary to a manufacturing use.

Minimum Lot Size:

The minimum development area for major redevelopment or new construction is 10 acres, except for lots fronting South "A" Street or the minor expansion of existing structures. The minimum lot size in the BKMU District is 10,000 square feet for industrial uses. No land division is allowed prior to approval of a Conceptual Development Plan.

Industrial Parks: Not applicable.

Appendix B

City of Eugene Industrial Survey 1989



The City of Eugene is presently attempting to replace 100 to 200 acres of wetland-impacted industrial land. As part of this process, staff developed a survey questionnaire concerning industrial land development needs and sent it to 17 local commercial/industrial real estate agents doing business in Eugene-Springfield. The 11 responses were received and are summarized below.

1. PARCEL SIZE

The majority of firms locating here are not particularly large (50 employees or less) so they prefer not to invest in and develop raw property.

Comments * agree (9 responses)

They generally look for development-ready sites of three to ten acres in high quality industrial parks.

Comments * agree (8 responses).

- * these sites need to be truly development-ready (2 responses).
- * most firms want existing buildings and do not want to build, as they are concerned about the time needed to obtain necessary permits and construct buildings.
- * sites in industrial parks are not always desired, sometimes a C-1 or C-2 type location is preferred.
- * with one or two exceptions there are no high-quality industrial parks in Eugene.
- * a wider range of site sizes is needed.
- * most firms want sites under 1 acre, few want from 1 to 5 acres, hardly any want 5+ acres.

Small firms typically look for existing buildings of 4,000 to 10,000 square feet on about one acre of industrial park land so there is room to expand.

Comments * agree (9 responses).

- * most firms want existing buildings and don't build, as it's less expensive.
- * buildings of 10,000 to 20,000 square feet on 1 to 2 acre sites are also needed.
- * smaller firms usually lease, and move when it's time to expand.

2. SURROUNDING ENVIRONMENT

Firms are attracted to industrial parks because sites are development ready (utilities, streets, and the like are there). They prefer parks of between 50 and 200 acres; in other words, large enough to screen out visually adverse existing and potential neighbors.

- Comments * development ready sites are needed
* price and location are more important considerations than any of the factors mentioned in this section.
* industrial parks are not that important: many firms are willing to locate outside of industrial parks, access is more important than location in an more important than location in an industrial park.

Heavy industrial neighbors are acceptable if they generate a positive visual impact.

- Comments * some heavy industrial uses are not at all compatible.
* noise is a concern of some light industrial firms.

3. OWNERSHIP

Those parties that are interested in developing raw land prefer to deal with single ownerships, but two or three contiguous owners are acceptable if they all want to sell. On the other hand, industrial park developers sometimes find it advantageous to work with multiple owners in packaging a site. Holdouts, particularly a property with a home on it, are always avoided.

- Comments * agree (3 responses).
* never desirable to deal with more than one owner (4 responses), and especially when they aren't represented by professionals (1 response).
* difficult to generalize as processes are unique.
* land assembly can be a relatively minor issue.

4. ACCESS

Airport - no sites are so far from the airport that access is an issue with regard to location decisions.

- Comments * agree (5 responses).
* highway access is much more important than air (3 responses).
* need 4 lane access roads to airport.

Railroad - few companies need direct rail access to ship finished products. A few may rely on rail to transport raw materials, but this is not characteristic of firms coming to Eugene.

- Comments * wood products firms are an exception (2 responses).
* inventory of sites with rail is needed.

Freeway - truck dependent firms like direct freeway access. Others would be satisfied with quick access to Interstate 5 by way of Beltline and similar access routes. Most important is that it not take too long to get to and from the freeway.

Comments * agree (9 responses).

- * sites need to be located away from congested streets with restricted turning for trucks, like West 11th (2 responses).
- * good 4 lane access roads to sites are needed.
- * good visibility from highways is important.
- * there should be as few turns as possible between sites and I-5
- * Beltline provides good regional and I-5 access for many sites

5. PHYSICAL SITE QUALITIES

For those interested in developing raw land, flat, well-drained sites with services close at hand are favored. Sites can be prepared, but that takes time and money. Firms like to be operational within nine months.

Comments * agree (10 responses).

- * firms prefer to be in operation faster than 9 months.
- * there is a shortage of desirable sites; it has taken as much as 6 months just to find a suitable site.
- * land use issues need to be resolved in advance of development.
- * some firms choose sloping sites for aesthetics.

6. SURROUNDING USES

Again, visual impact is often more important than actual uses. Also, many firms want convenient commercial uses, particularly restaurants, close by. They like to be near other industrial users to attain critical mass.

Comments * agree (5 responses).

- * only a small number of firms are concerned about image.
- * price and location of sites are more important than these factors.
- * these factors are not a problem here.
- * there is a need for an attractive industrial/office park here.
- * some firms prefer isolation.
- * desire to be close to suppliers, vendors, and financial services.

7. ZONING

Eugene's I-2 zoning would accommodate nearly every prospective firm. It allows a wide range of uses. The best situation would be an industrial park in an I-2 zone. The I-1 (Special Light Industrial) district includes desired environmental controls, but the name is seen as an inhibitor.

Comments * agree (6 responses).
* a business park is needed (3 responses).
* there shouldn't be a bias in favor of industrial parks.
* work is needed on commercial zones as well.

I-2

* expand I-2 and make less restrictive.
* industrial parks limited to I-2 uses will not be successful.
* I-2 should be more performance based and flexible; only state what's unacceptable uses.
* add the versatility of the C-4 zone to I-2.
* firms which perform fabrication or partial assembly can find I-2 uninviting.

I-1

* the I-1 zone is unrealistic for Eugene because of its limited range of uses, creates most problems.
* need more office, some service retail.
* many firms don't want to pay for the required site improvements in I-1
* I-1 name isn't inhibiting.
* change I-1 name to Light Industrial.

8. CENTRAL EUGENE INDUSTRIAL AREA

Is the area responding to industrial needs on its own, or are there steps the City should be taking to improve its development and redevelopment potential?

Comments * Chambers Connector will help, although other industrial areas have larger and cheaper parcels available.

Examples previously discussed include encouraging gradual relocation of heavy industrial uses to other areas.

Comments * 5 respondents did not support this idea, commenting that it wasn't feasible and that the relocation areas were unknown.

Redesignating and rezoning some heavy industrial portions to light and medium industrial.

- Comments * yes, on a case-by-case basis (2 responses).
* yes, from I-3 to I-2.
* yes, but don't create any more I-1.

Street improvements.

- Comments * yes, integrated with the West Eugene Parkway.
* yes, and take other actions that will improve visual quality.
* yes, provided they are sized adequately.
* take no action (2 responses).

Removing unneeded rail spurs.

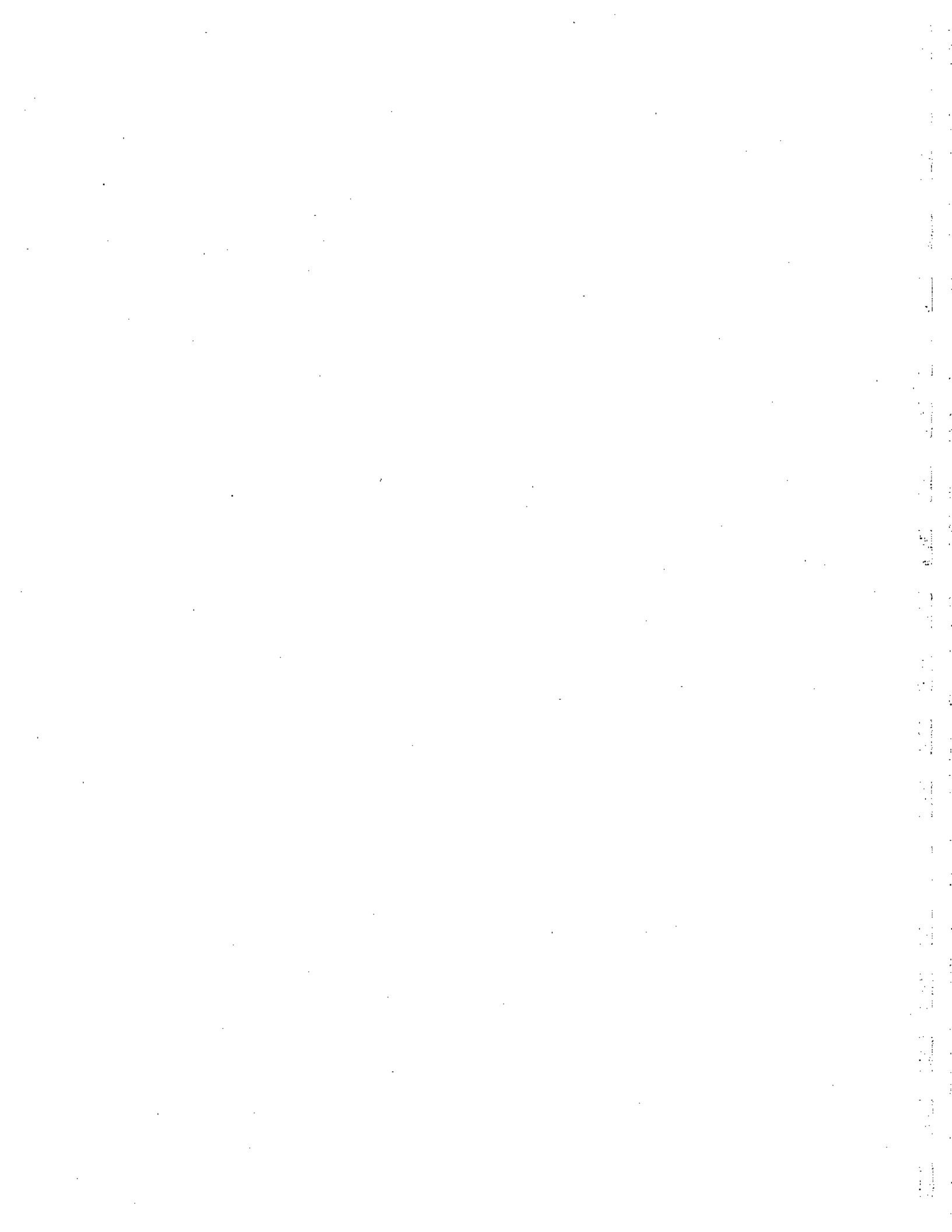
- Comments * take no action (2 responses).
* unimportant.
* not until potential uses are sited.
* yes.

Encouraging consolidation and redevelopment of vacant and underdeveloped parcels.

- Comments * agree (3 responses).
* be sensitive to downzoning.
* take no action.
* can be costly and difficult.

9. ADDITIONAL COMMENTS

- * the industrial vacancy rate is currently low, but space doesn't lease fast enough to warrant new speculative construction.
- * development of a business park is needed; similar to Willow Creek, but in a better location.
- * concentrate resources to develop solutions for wetland mitigation problem.
- * maintain contact with industrial real estate brokers.
- * consider creating a computerized inventory of industrial parcels.
- * provide assistance with permit process and financing.



Appendix C

Industrial Lands Demand Methodologies Survey



TABLE 1
LIST OF CONTACTS FOR INDUSTRIAL LAND
DEMAND METHODOLOGIES SURVEY

<u>Jurisdictions Contacted</u>		
<u>Oregon</u>	<u>Washington</u>	<u>Idaho</u>
* Metropolitan Service District (Portland)	* Vancouver	Boise
* Salem	Centralia/Chehalis	
Hillsboro		
Beaverton		
Corvallis		
Roseburg		
* Washington County		
* Gresham/East Multnomah County		
* Oregon District 4 Council of Governments		
* Bend/Redmond/Sisters/Deschutes County		

Consultants/Organizations Contacted

- * CH2MHill (Corvallis)
- ECO Northwest (Eugene)
- Urban Land Institute
- * Economic Development Services (Vancouver)
- Lewis County (Washington) Economic Development Council
- * - Completed a recent study on industrial land demand

- a. Conducting a survey of industries in the study area to determine actual EPA ratios at the time of the study.

Example: Portland Metropolitan Service District (METRO), which surveyed industries in the Greater Portland area.

- b. Surveying targeted industries in other jurisdictions to identify EPA ratios for those industries desired in the study area.

**EMPLOYEE-PER-ACRE (EPA) RATIOS IDENTIFIED IN INDUSTRIAL
LAND DEMAND METHODOLOGIES SURVEY**

EPA RATIOS USED BY OTHER JURISDICTIONS

JURISDICTION	METHOD	DATE	INDUSTRY CLASSIFICATION	EPA RATIOS	
				STUDY YEAR	YEAR 2000
Metropolitan Service District (Metro) Portland	Survey of Industries in greater Portland area*	1982	High (High-tech)	50	50
			Medium (Assembly, fabrication)	18	18
			Low (Warehouse, etc.)	9.7	9.7
City of Salem	Regional survey of targeted Industries	1981	Light (Electronic and electric, instrument, transportation and equipment, printing and publishing)	24	24
			Heavy (Machinery, fabricated metal, paper and allied products, food and allied products)	10	10
Washington County	Survey of Industries within county**	1988	Wholesale Trade	8	8
			Selected High-Tech	40	N/A
			Other Light Industries	26	N/A

Continued...

EMPLOYEE-PER-ACRE (EPA) RATIOS IDENTIFIED IN INDUSTRIAL LAND DEMAND METHODOLOGIES SURVEY

EPA RATIOS USED BY OTHER JURISDICTIONS

JURISDICTION	METHOD	DATE	INDUSTRY CLASSIFICATION	EPA RATIOS	
				STUDY YEAR	YEAR 2000
Gresham/East Multnomah County	"Heavy/Moderate" and "Light" developed by Economic Development Services, all others provided by Metro	1987	Construction and Mining	35	35
			Electrical Manufacturing (Electronic and electric, measuring equipment)	25	25
			Other Manufacturing	13	13
			-Light (Food and allied products, printing and publishing)	15	15
			-Heavy/Moderate (Textiles, lumber and wood products, paper and allied products, chemical products, primary and fabricated metals, machinery, transportation equipment)	8	8
Oregon District 4 Council of Governments	Survey of industries in Linn, Benton, and Lincoln Counties	1980	Electronics	31-35	31-35
			All Light (Including electronics)	22-24	22-24
			Primary Metals	6-7	6-7
			Wood Products	2-4	2-4
Bend/Redmond/Sisters/Deschutes County	Developed by Economic Development Services	1986	All Heavy (Including primary metals and wood products)	2-4	2-4
			Light	15	15
			General	10	10
			Heavy	5	5

Continued...

TABLE 2, continued

EMPLOYEE-PER-ACRE (EPA) RATIOS IDENTIFIED IN INDUSTRIAL
LAND DEMAND METHODOLOGIES SURVEY

EPA RATIOS USED BY OTHER JURISDICTIONS

JURISDICTION	METHOD	DATE	INDUSTRY CLASSIFICATION	STUDY YEAR	EPA RATIOS YEAR 2000
Joseph De Chiara and Lee Koppelman, <u>Planning Design Criteria</u>	-Same-	1976	Light Industrial Park Heavy	28 18 8	22 16 8
Eugene-Springfield Metro Plan Update	Developed by L-COG from data provided by Oregon State Employment Division and Lane County Geographic Information System	1975	Light Heavy	25 10	25 10
Institute of Transportation Engineers	Based on data reported by numerous jurisdictions nation-wide from 1965-1987	1987	Manufacturing (Conversion of raw materials or parts into finished products. Includes space used for office, warehouse, and other associated functions) Industrial Park (Areas containing a number of industrial and related facilities) Light (Printing, material testing, data processing equipment assembly) Warehouse (Primarily devoted to storage of materials) Heavy (Manufacturing of large items)	20.1 19 17.4 14 7.6	N/A N/A N/A N/A N/A

Continued...

TABLE 2, continued

EMPLOYEE-PER-ACRE (EPA) RATIOS IDENTIFIED IN INDUSTRIAL
LAND DEMAND METHODOLOGIES SURVEY

EPA RATIOS USED BY OTHER JURISDICTIONS

JURISDICTION	METHOD	DATE	INDUSTRY CLASSIFICATION	EPA RATIOS	
				STUDY YEAR	YEAR 2000
Oregon Economic Development Department (OEEDD) Growth Industries Survey	Survey of 750 companies nationwide which were identified by OEEDD as part of 25 growth industries. Survey performed by GMA Research.	1986	Manufacturing of Durable Goods	54.2	N/A
			-Telephone and telegraph equipment	15.1	N/A
			-Industrial controls	14.5	N/A
			-Radio and TV communications equipment	13.2	N/A
			-Plastic products	13.1	N/A
			-Semi-conductors and related devices	13	N/A
			-Electronic coils and transformers	12.3	N/A
			-Paper, coating and glazing	11.5	N/A
			-Electronic computing equipment	11.1	N/A
			-Other electronic components	11.1	N/A
			-Book publishing	10.6	N/A
			-Aluminum castings	9.8	N/A
			-Printing machinery	9	N/A
			-Surgical appliances and supplies	8.6	N/A
-Machine tools, metal cutting	8.1	N/A			
-Metal coating and allied services	7.9	N/A			
-Engraving and plate printing	7.3	N/A			
-Measure and control instruments					

Continued...

TABLE 2, continued

EMPLOYEE-PER-ACRE (EPA) RATIOS IDENTIFIED IN INDUSTRIAL
LAND DEMAND METHODOLOGIES SURVEY

EPA RATIOS USED BY OTHER JURISDICTIONS

JURISDICTION	METHOD	DATE	INDUSTRY CLASSIFICATION	EPA RATIOS	
				STUDY YEAR	YEAR 2000
Oregon Economic Development Department (OEED) Growth Industries Survey (continued)			-Plastic materials and resins	6.0	N/A
			-Non-ferrous roll and draw	5.3	N/A
			-Upholstered furniture	5.3	N/A
			-Transportation equipment	3.6	N/A
			-Periodicals	3.4	N/A
			Manufacturing of Non-Durable Goods	5	N/A
			Food Products -Dehydrated food products	3.9	N/A

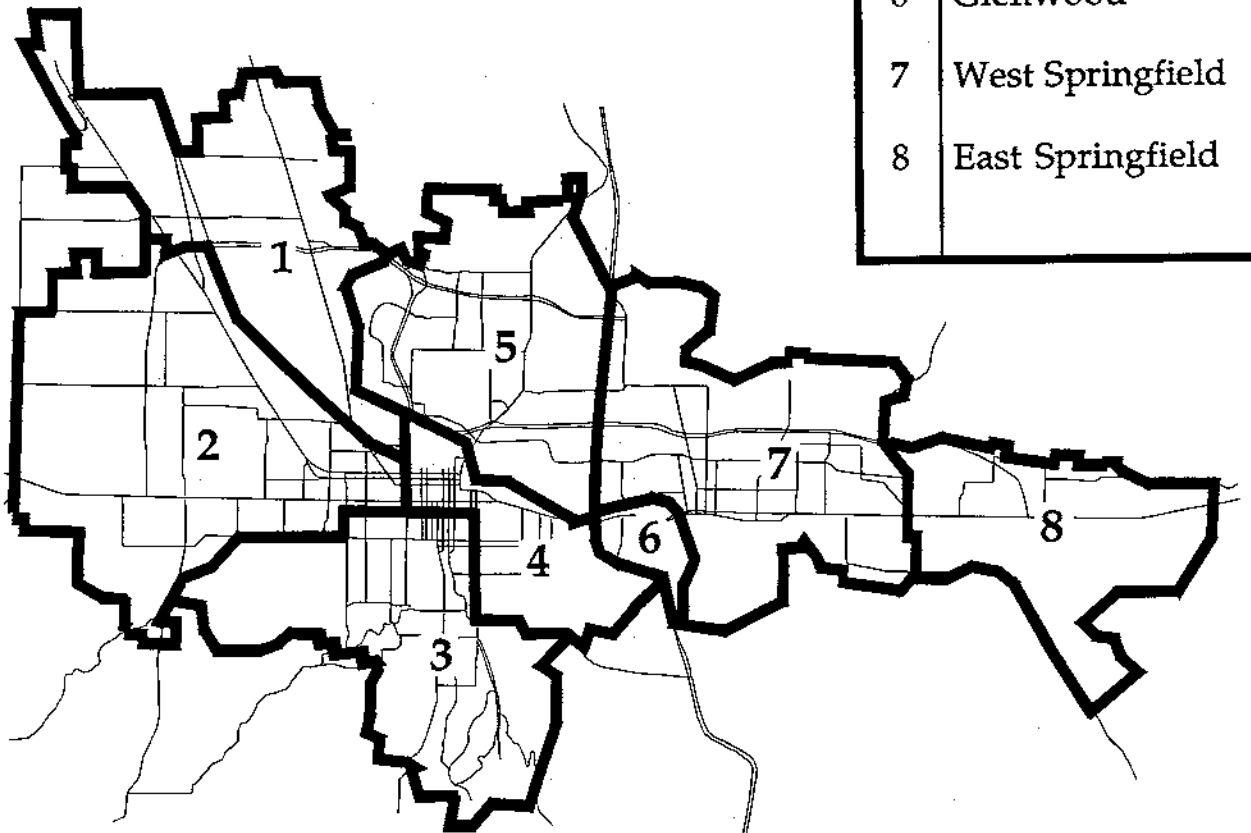
* Results of Metro's survey were used by CH2MHill to conduct a study for a Portland-area jurisdiction, and by other jurisdictions and organizations. They are also reflective of results obtained for Vancouver, Washington.

** Results of Washington County's survey included a range in EPA ratios from a low of 4 to a high of 60. The survey included only light and high-tech industries.

Metropolitan
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COMPOSITE MAP

#	Sub Region
1	Hwy 99/River Road/Santa Clara
2	West Eugene
3	South Eugene
4	Central University
5	Willakenzie
6	Glenwood
7	West Springfield
8	East Springfield

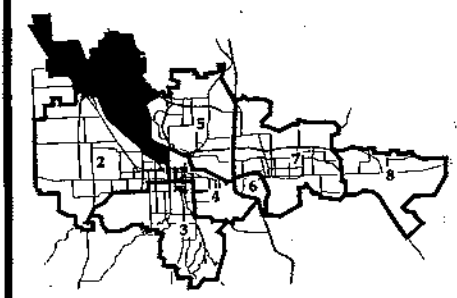




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 LANDS
 SPECIAL STUDY**

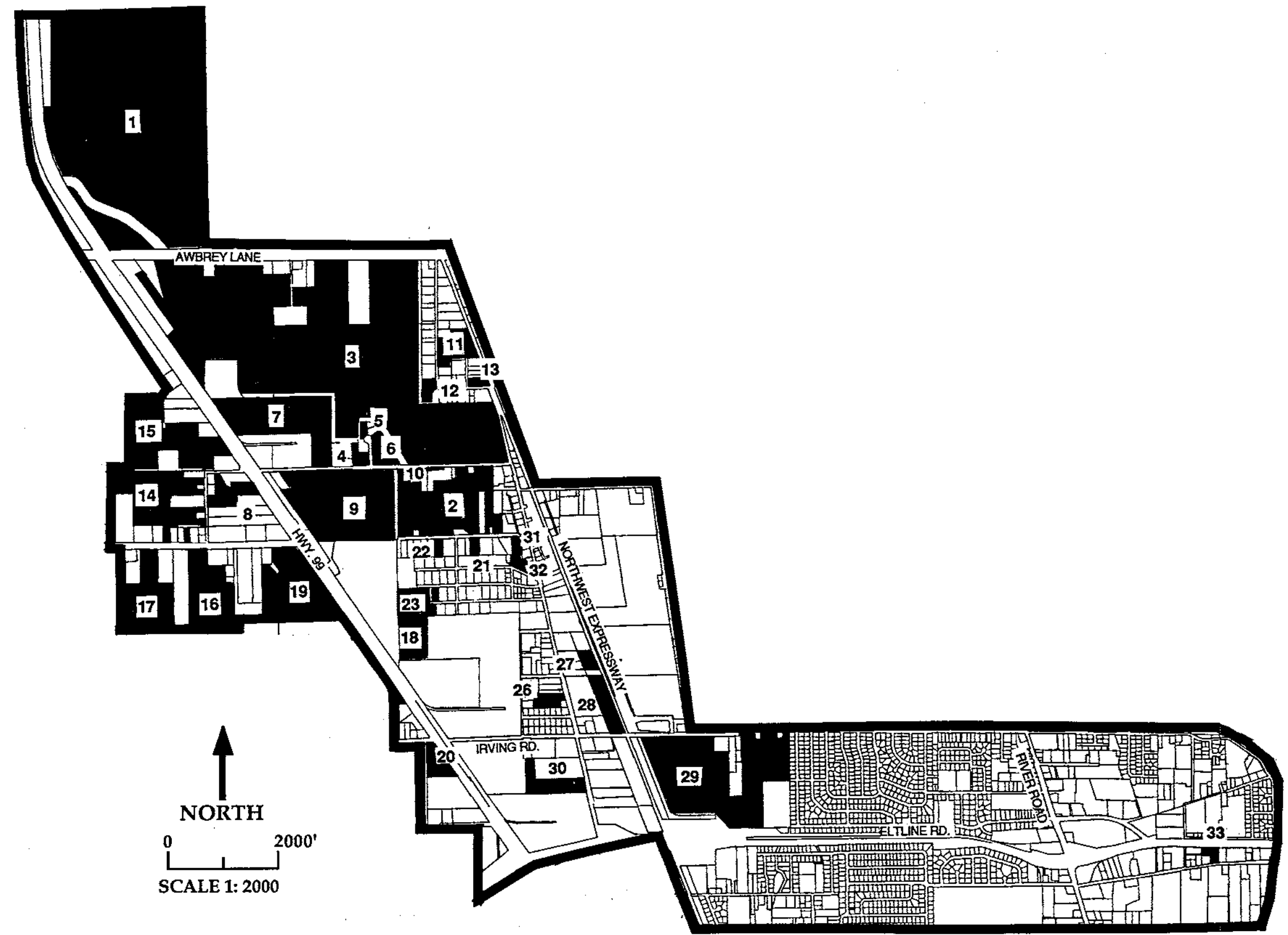
Plan Designation	Site # 's
Light Medium	2, 3, 5, 6, 8, 10 thru 22, 26 thru 31
Heavy	4, 7, 9
Special Heavy	1
Non-Industrial	23, 32, 33

Vicinity Map

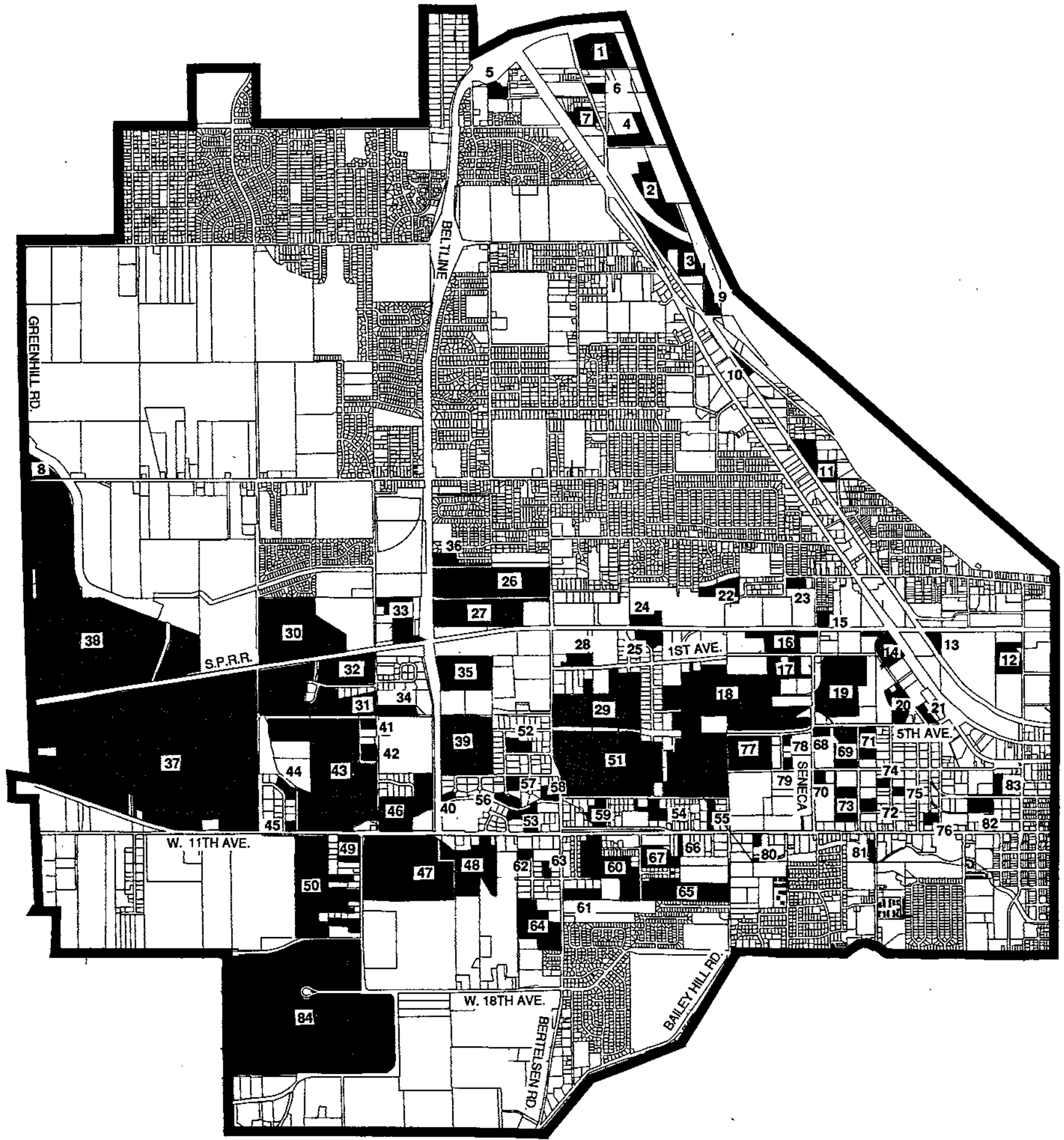


Vacant as of January 1989

Sites in
**SUBREGION
 #1**
 HWY 99/ RIVER
 ROAD/SANTA CLARA

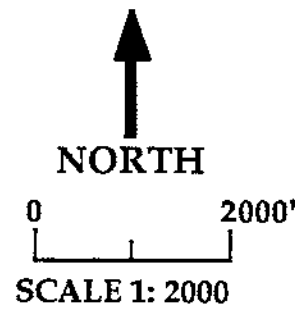


↑
 NORTH
 0 2000'
 SCALE 1: 2000

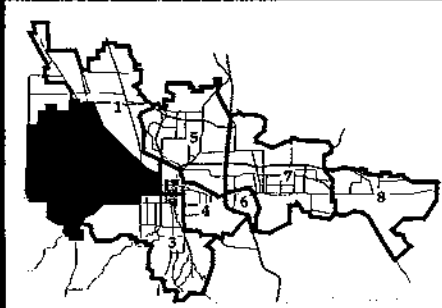


Metropolitan INDUSTRIAL LANDS SPECIAL STUDY

Plan Designation	Site # 's
Light Medium	1 thru 3, 6, 8, 15, 18, 22 thru 26, 28, 31 thru 36, 38 thru 42, 45 thru 47, 49 thru 65, 67 thru 79, 82, 83
Special Light	37, 43, 44, 84
Heavy	4, 7, 9, 10, 12 thru 14, 16, 17, 19 thru 21, 27, 30, 32, 33
Non-Industrial	5, 11, 29, 48, 66, 80, 81
Publicly Owned	9, 40, 56, 77 thru 79



Vicinity Map



Vacant as of January 1989

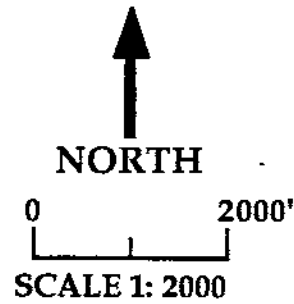
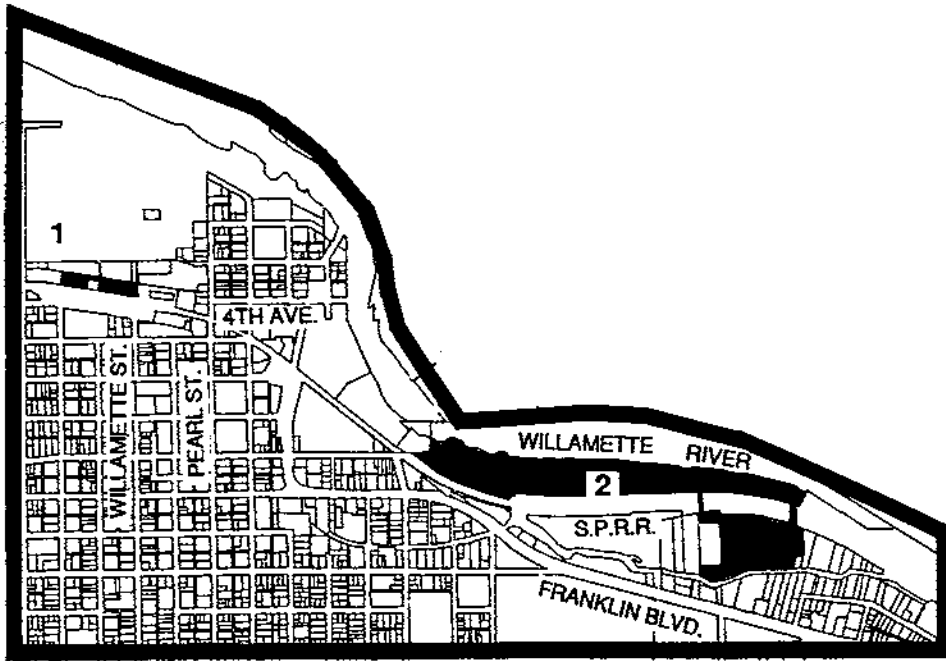
Sites in
**SUBREGION
#2**

WEST EUGENE

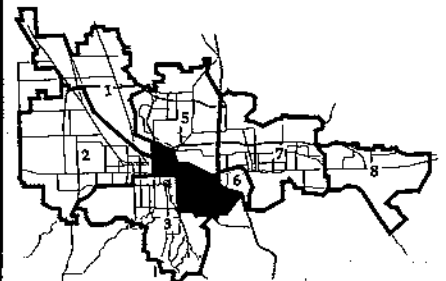
Metropolitan
**INDUSTRIAL
 LANDS
 SPECIAL STUDY**

<i>Plan Designation</i>	<i>Site # 's</i>
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Mixed/University	1, 2
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Vicinity Map

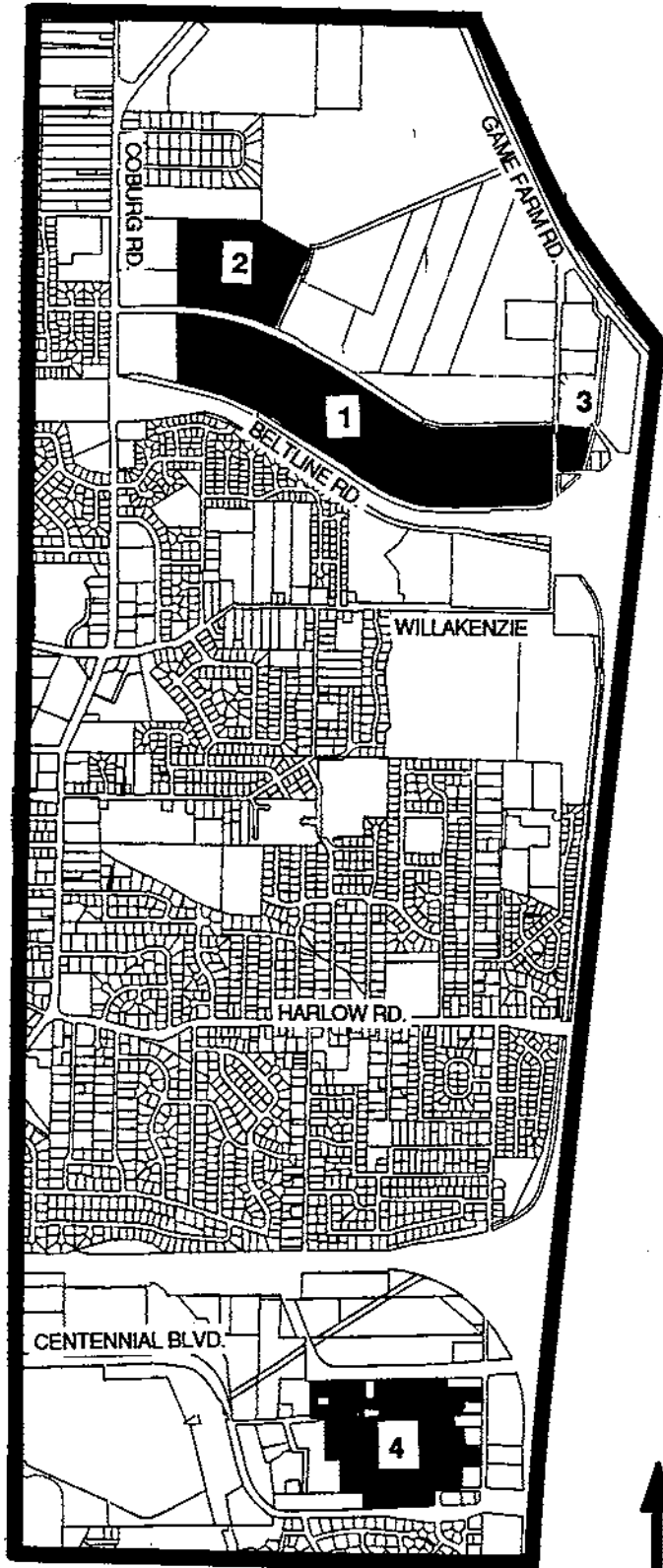


Vacant as of January 1989

Sites in
**SUBREGION
 #4**

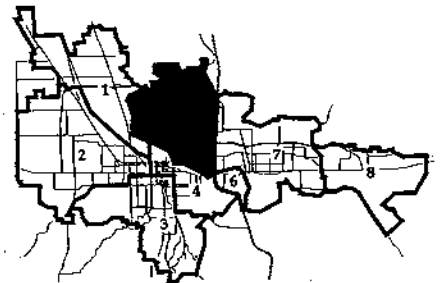
CENTRAL UNIVERSITY

Metropolitan INDUSTRIAL LANDS SPECIAL STUDY



Plan Designation	Site # 's
Light Medium	4
Special Light	1 thru 3

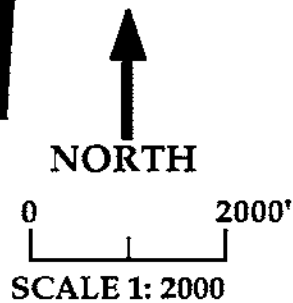
Vicinity Map



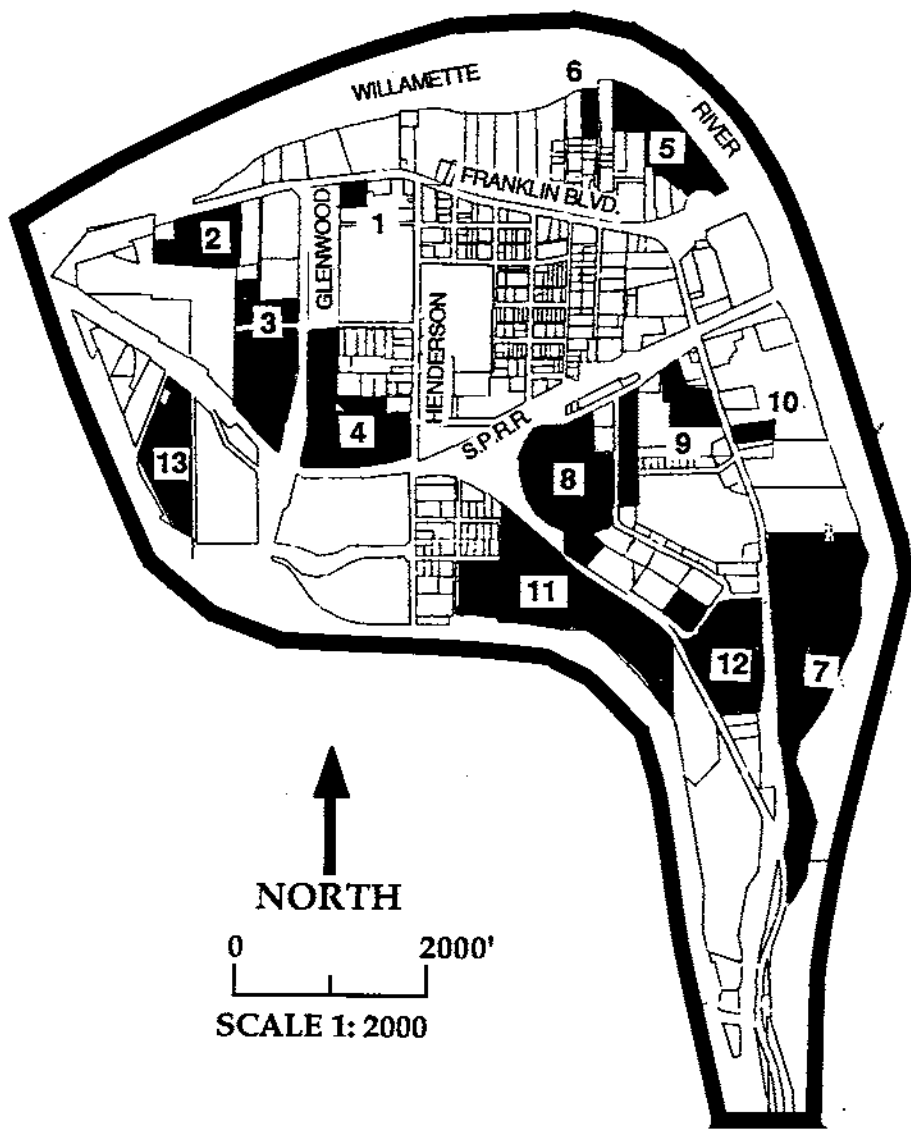
Vacant as of January 1989

**Sites in
SUBREGION
#5**

WILLAKENZIE

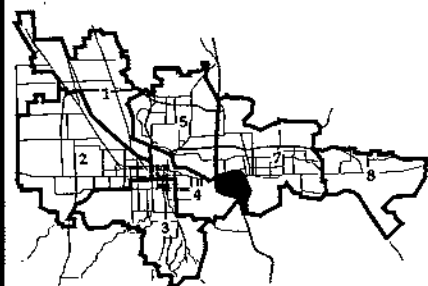


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**INDUSTRIAL
 LANDS
 SPECIAL STUDY**



Plan Designation	Site # 's
Light Medium	2 thru 4, 8, 9, 11, 12
Non Industrial	1, 5 thru 7, 10, 13

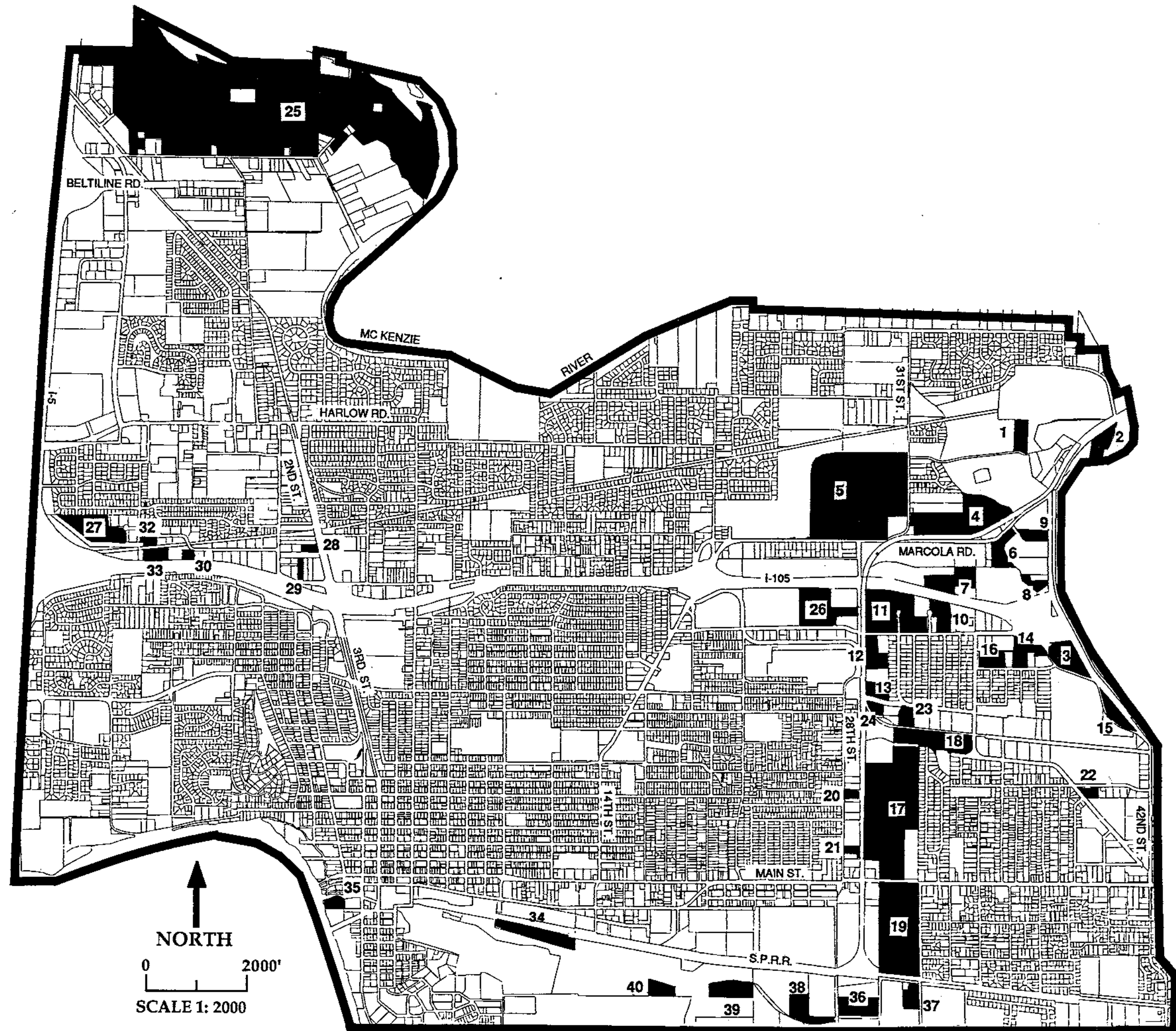
Vicinity Map



Vacant as of January 1989

Sites in
**SUBREGION
 #6**

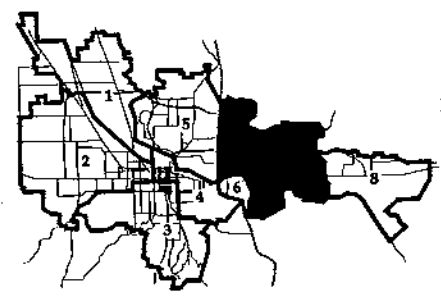
GLENWOOD



Metropolitan
**INDUSTRIAL
 LANDS
 SPECIAL STUDY**

Plan Designation	Site # 's
Light Medium	5, 26 thru 30, 32, 33, 35, 37, 38
Special Light	5, 25
Heavy	3, 4, 6 thru 19, 22 thru 24, 34, 39, 40
Non Industrial	1, 2, 20, 21, 36

Vicinity Map

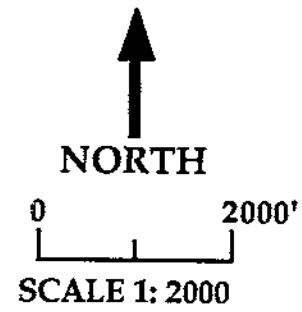
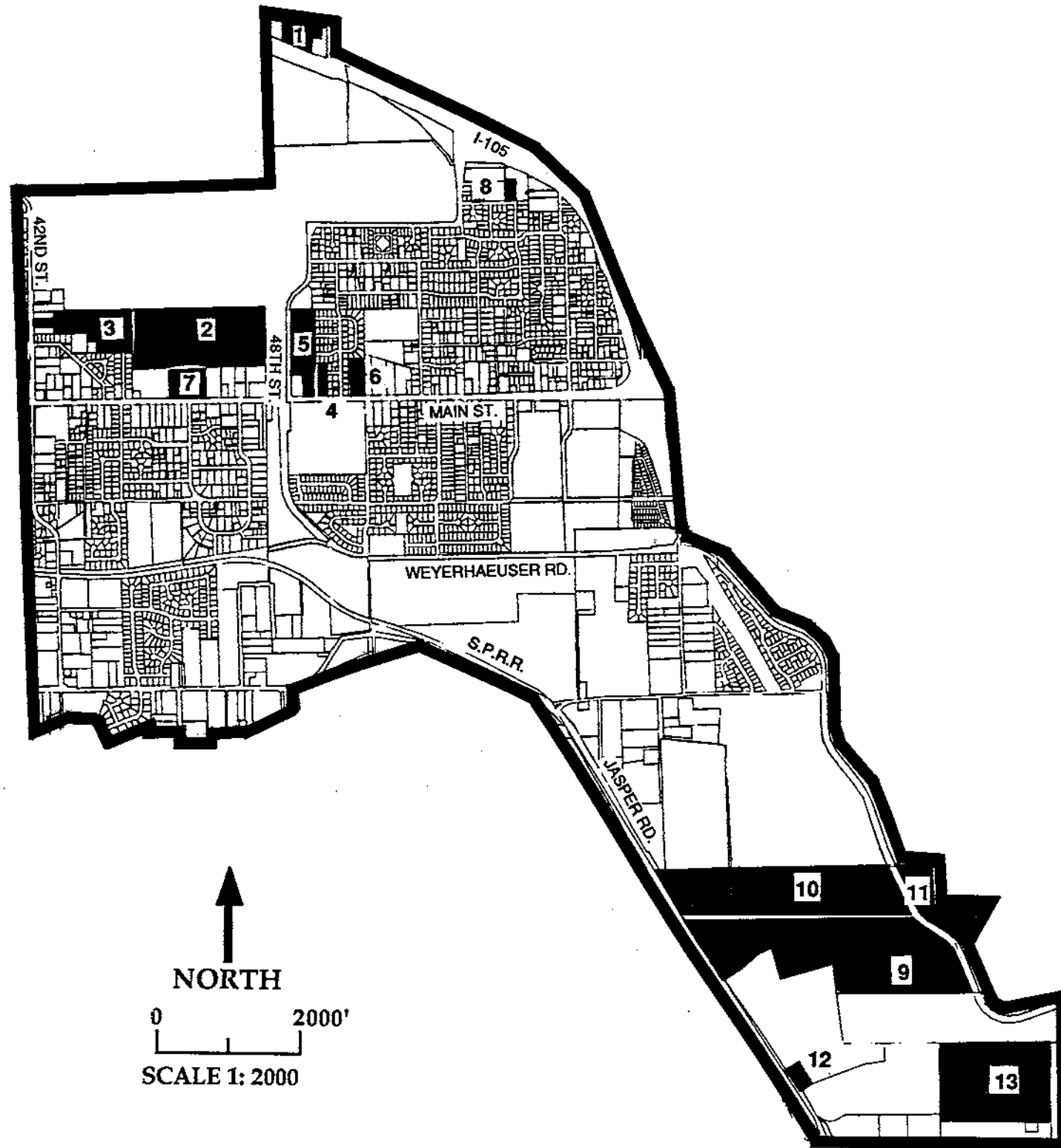


Vacant as of January 1989

Sites in
**SUBREGION
 #7**

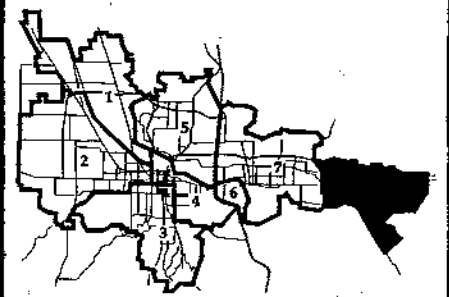
WEST SPRINGFIELD

**Metropolitan
INDUSTRIAL
LANDS
SPECIAL STUDY**



<i>Plan Designation</i>	<i>Site # 's</i>
Light Medium	5, 7, 9, 10, 11, 13
Heavy	1, 2, 3
Special Heavy	12
Mixed/University	4, 6
Non Industrial	8
Publicly Owned	5

Vicinity Map



Vacant as of January 1989

**Sites in
SUBREGION
8**

EAST SPRINGFIELD