



Oregon

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TO: Cities, Counties, and Interested Parties

FROM: Steven Santos, Economic Development Planning Specialist, DLCD

SUBJECT: Goal 9 Guidebook

On behalf of the Department of Land Conservation and Development, I am pleased to announce that the first version of the Industrial & Other Employment Lands Analysis Guidebook is available on the DLCD web site.

To access the guidebook, go to: <http://www.lcd.state.or.us/LCD/econdev.shtml> and click on the link for the Industrial and Other Employment Lands Analysis Guidebook.

The guidebook is posted by section as a series of PDF files. It is intended for the user to download each section to print out and place in a three-ring binder. If you have difficulty downloading these files, please don't hesitate to contact me at the number or email below to arrange an alternative form of delivery.

The Guidebook is intended to be an ongoing resource and will be updated over time. Since this is the first version of the Guidebook, your feedback and comments are welcome and necessary to make improvements.

If you have any questions, comments, feedback, or need help accessing the guidebook, please don't hesitate to contact me at steven.santos@state.or.us or at 503-373-0050 x284.

Industrial and Other Employment Land Analysis Guidebook

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Background and Purpose

The Oregon Department of Land Conservation and Development (DLCD) created this guidebook to assist planners in identifying and analyzing the supply of land for industrial and other employment uses in their communities. These steps supplement the guidance provided by statewide planning Goal 9 and the Goal 9 administrative rule. The purpose of Goal 9 planning is to provide adequate opportunities throughout the state for a variety of economic activities vital to the health, welfare and prosperity of Oregon's citizens.

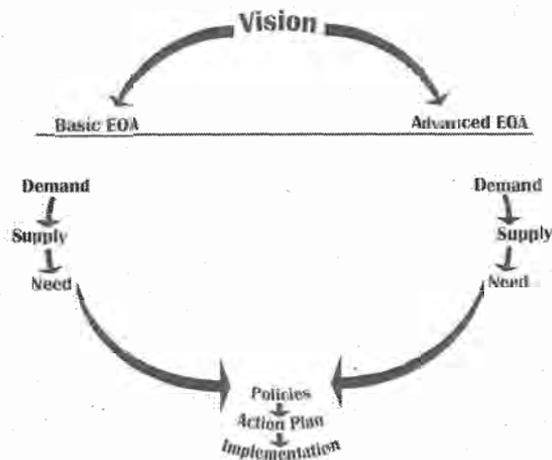
In 2001, an Advisory Committee on Commercial and Industrial Development was formed to "ensure that Oregon communities are providing sufficient buildable commercial and industrial land...." In December of 2002, the Committee produced *Sufficiency of Commercial and Industrial Land in Oregon: Recommendations for Oregon Communities*. The report,

available at <http://www.oregon.gov/icd/publications.shtml> describes Basic and Advanced methods to evaluate and analyze industrial and other land needs. The 2003 Legislative Assembly directed the DLCD to develop this guidebook to implement the Advisory Committee's report. The framework consists of land needs for a 20-year planning period within urban growth boundaries (UGB). This analysis is one part of the comprehensive planning process conducted by cities and counties in Oregon. Table 1 indicates statewide planning goals most related to economic development inside UGBs.

Goal 1	Citizen Involvement
Goal 2	Land Use Planning
Goal 5	Open Spaces, Scenic and Historic Areas, and Natural Resources
Goal 7	Areas Subject to Natural Disasters and Hazards
Goal 9	Economic Development
Goal 10	Housing
Goal 11	Public Facilities and Services
Goal 12	Transportation
Goal 14	Urbanization

How to Use the Guidebook

The centerpiece of Goal 9 planning is the economic opportunities analysis (EOA) described in section two. The EOA is the process of analyzing trend data to determine the future employment land needs for the planning area. Users may follow just the Basic approach, utilize some of the methodologies from the Advanced section, or follow the Advanced section alone to comply with the Goal 9 rule. Guidance for Basic and Advanced approaches follow.



Basic Approach—appropriate for smaller jurisdictions with limited access to financial, technical or staff resources. The guidebook is centered around the Basic approach. Worksheets to help users complete the Economic Opportunities Analysis (EOA) portion of the Goal 9 process are included in appendix B.

Advanced Approach—appropriate for jurisdictions with staff capacity and/or resources to access detailed economic and Geographic Information Systems (GIS) data.

Both approaches contain step-by-step instructions on how to conduct the local economic development planning process. Data sources and other resources are listed at the end of each step. Summaries of major tasks are included at the end of each section, and margins are provided for notes. There are many ways a guidebook user can choose to complete the process. Users may combine elements of the Basic and Advanced approaches. They also may reverse the order of the demand and supply steps, or undertake them simultaneously.

The appendices include definitions of terms and acronyms used in the guidebook, sources for geographic information systems (GIS), demographic and economic data. Consult the DLCD Web site (www.oregon.gov/lcd/econdev.shtml) for additional information.

Overview of Economic Development

As reflected in Goal 9 and other policies of state and local governments, economic development is a priority in Oregon. Successful planning helps communities attract and retain jobs, maintain a healthy economy and generate wealth. It requires effective infrastructure placement, community involvement and coordination with other jurisdictions.

According to the Goal 9 administrative rule, local jurisdictions must adopt comprehensive plan policies to implement local economic development objectives. These policies and associated strategies should be revised and updated regularly, at least when land supply, economic, or demographic conditions change. An overview of the major economic development planning steps is followed by detailed explanations marked with a . Data sources at the end of each task are marked with .

Step One: Create (or Refine) a Vision and Goals

Public involvement is particularly important at the beginning and end of the economic development planning process. This process should result in strategies to stimulate and maintain job growth and identify primary locations for economic development. Many jurisdictions already have a community vision and/or an economic development strategy that can be the basis for this work.

The vision should be:

- ➔ A balance between what the jurisdiction would like to achieve and the resources and public support it can realistically expect
- ➔ A recognition of opportunities the market will support
- ➔ Consistent with the role of the jurisdiction in the regional and state economies
- ➔ Understandable to citizens without technical training or experience
- ➔ Easily incorporated into the jurisdiction's comprehensive plan
- ➔ Consistent with state law

“A clear vision and economic development strategies helped Hillsboro achieve economic growth and diversification in semiconductor, software, medical technology and many other sectors.”

*—David Lawrence
Hillsboro Deputy City Manager*



As a first step, jurisdictions should review existing policies and plans to ascertain any conditions—demographic, economic or other—that may have changed since the original vision or policies were developed.

Appendix D contains an example from the city of Hillsboro of broad goals can help guide economic development objectives and policies to assist with implementation.

“Other Employment Uses” Encompasses all non-industrial jobs, including retail, wholesale, service, non profit, business headquarters, administrative and government activities that are accommodated in retail, office and combined building types. Also includes activities of an entity or organization that serves the medical, educational, social service, recreation and security needs of the community.

Another example may be found at www.ci.corvallis.or.us. Click on “About Corvallis” then “2020 Vision Statement.”



Step Two:

Conduct the Economic Opportunities Analysis (EOA)

Goal 9 requires cities and counties to provide an adequate supply of sites suitable sizes, types, locations, and service levels for a variety of industrial and other employment uses.

The EOA contains four elements: trend analysis, identifying site characteristics, land inventory and assessment of community economic development potential. Goal 9 administrative rule requirements may be found at:

http://arcweb.sos.state.or.us/rules/OARS_600/OAR_660/660_009.html and <http://www.lcd.state.or.us/LCD/docs/goals/goal9.pdf>

An adequate land supply provides sites suitable for the 20-year planning period as well as for the short-term to meet development opportunities as they occur. This is necessary to accommodate a varied range of small, medium and large employers, for new and

expanding businesses and to ensure land is available for immediate development.

Land qualifies as short-term if it is ready for development within one year of a permit application or request for service extension. A 20-year land supply where 25 percent of the land is available short-term is considered competitive. This means there is a sufficient range of site sizes and locations to respond to economic development opportunities as they arise. Under the Goal 9 administrative rule, jurisdictions may participate in the industrial site certification program or set targets other than 25 percent for their short-term supply of land.

The objective of the EOA is to match expected **demand** for industrial and other employment lands with the **supply** and to provide a basis for local governments to accommodate identified **needs**.

➔ **Demand for land** is estimated from the analyses of national, state, regional, county or local economic trend data. For non-residential uses, business growth is the source of demand for industrial and other employment land. It usually is described by measures of business activity such as revenues, profit, imports/exports, output, and employment. Another part of the EOA on the demand side is to assess the community's local economic development potential. The demand analysis also should include an assessment of land by type, considering site requirements desired by industrial and other employment uses.

➔ **Supply of land** is determined from an inventory of existing developed, redevelopable and vacant industrial and other employment lands.

- Using the results of the demand and supply analysis, the next step is to calculate **land needs** for the 20-year planning period and the short-term.

Another important part of the economic opportunities analysis is to identify economic development issues that affect the vision and goals drafted earlier in the process. These include local and regional development strengths and weaknesses such as transportation, public and social infrastructure, workforce availability, business incentives and financial capability. The results of these two steps should be an economic opportunities analysis of market opportunities, local strengths and weaknesses and development objectives.

Step Three: Develop Policies

-  3 The purpose of policies is to implement local development objectives. For example, an objective of providing adequate land supply for industrial jobs may be reached by policies protecting those lands from encroachment or conversion to other uses, or requiring they be replaced if rezoned to other uses, or compromised by other factors.

Step Four: Develop an Action Plan

-  4 This should be based on the community vision and the previous steps. It should identify roles and responsibilities for all parties, an implementation schedule, estimated costs for infrastructure and potential funding sources.

Step Five: Implement Plan

-  5 This should begin as soon as practicable and continue throughout the planning period. The action plan and EOA should be monitored and revised as needed, particularly when conditions change.

Other Issues

Regional Coordination

Collaboration and coordination in a broad market area among cities, counties, ports and agencies can conserve resources and identify unique opportunities. Conducting an EOA for several jurisdictions at the same time may be less expensive than for individual jurisdictions and is allowed under the Goal 9 rule.

Industrial Land Preservation

Though some non-industrial activities, such as restaurants and office supply companies may be important amenities for tenants in industrial zones, care should be taken that they not overtake the primary uses and compromise the jurisdiction's ability to meet its development objectives. Some industrial lands are irreplaceable as they are especially suited for certain industries because of their size, topography and access to transportation and freight facilities. Such areas should be protected by



local policies. Techniques to protect prime industrial lands include:

- Special districts or overlay zones, such as industrial sanctuaries or strategic employment areas
- Limited retail or other non-industrial space within these special districts
- "No net loss" policies regarding industrial land. For example, a jurisdiction may have a policy that requires lost industrial acreage to be replaced elsewhere if some industrial employment land is rezoned to commercial retail or housing
- Large-lot parcel requirements to avoid incremental reductions, such as partitions
- Public ownership
- Financial incentives for private owners
- Reinvestment in existing industrial districts
- Flexibility that accommodates a range of industrial uses

Creating an industrial sanctuary through zoning is one way to preserve prime industrial land, or especially when adding new industrial lands to an urban growth boundary

Short-Term Supply of Land

Site and other development constraints affect the cost and timing of development. Short-term analyses address market opportunities within one to five-year planning period. These can help the jurisdiction target prospective industrial other employers who need an ample supply of land with features such as:

- Appropriate parcel size, slope and configuration
- Adequate infrastructure includes, roads, utilities and telecommunications
- Minor and/or easily ameliorated environmental issues, such as wetlands, floodplains and hazardous materials
- Willing sellers or owners
- Affordable price and overall development costs
- Workable land-use regulations

Local economic development strategies and action plans should address steps a jurisdiction is willing to take to be competitive for targeted industrial and other employment activities in the short term.

Summary of Key Goal 9 Requirements

Economic Opportunities Analysis (OAR 660-009-0015)

Compares the demand for land for industrial and other employment uses with the existing supply of such land and includes:

- Review of national, state, regional, county, and local trends
- Identification of site characteristics
- Inventory of industrial and other employment lands
- Assessment of community economic development potential

Industrial and Other Employment Development Policies (OAR 660-009-0020)

Comprehensive plans must include:

- Community economic development objectives
- Commitment to provide a competitive short-term supply for jurisdictions within metropolitan planning organizations
- Commitment to provide adequate sites and facilities
- Detailed strategies for preparing the total lands supply for development and replacing the short-term supply as it is developed for jurisdictions within metropolitan planning organizations

In addition, cities and counties are encouraged to adopt plan policies relating to:

- Brownfield redevelopment and maintaining industrial lands in industrial use
- Expansion, retention and increased productivity from existing industries and firms
- Protection of prime industrial lands
- Additional approaches to achieving local objectives

Designation of Lands for Industrial and Other Employment Uses (OAR 660-009-0025)

Cities and counties must adopt measures adequate to implement policies, including:

- Identification of needed sites
- Total land supply
- Short-term supply of land
- Uses with special siting characteristics

Determining the Appropriate Approach to Economic Development

There are many factors to consider when choosing the most appropriate approach. Table 2 is a guide to help communities make this decision. As noted, Basic and Advanced methodologies can be mixed and matched based on a community's capacity and need for detailed analysis. Both benefit from the use of a Geographic Information System (GIS) to provide an accurate estimate of existing vacant or unconstrained land supply, sorted by zoning type, parcel size, ownership, location, proximity to public utilities, access, and other factors. If a GIS is unavailable, assessors' information may be used for the supply analysis.

Table 2			
What level of analysis is best for your jurisdiction?			
Criterion	Basic Method	Grey Area	Advanced Method
Population Size (000's)	<5	5-25	25+
Staff planning/economics expertise	None	Some	Staff planner or economist
GIS availability and capability	None	Some	Full GIS Capability
Schedule for decisions	Less than 12 months	12-18 months	More than 18 months
Economic development growth objectives and commitment of local policy-makers	Insignificant/Immeasurable	Small, but measurable	Significant
Budget	<\$15k	\$15-\$30k	\$30k +

Both Basic and Advanced methods begin with creating or refining a local vision for economic development.



Step Two: Conduct the Economic Opportunities Analysis —Basic Approach

The Economic Opportunities Analysis (EOA) is defined in Oregon Administrative Rule (OAR) 660-009-0015. The Advanced approach follows the explanation of this Basic methodology. Worksheets that correlate to basic approach are included in Appendix B.

The Basic approach may be used by jurisdictions of any size to evaluate their current industrial and other employment land inventory and buildable land supply. It can rely mainly on existing data sources and does not require significant data collection, analysis or interpretation. It assumes that the jurisdiction does not have access to geographic information systems (GIS). This approach has three basic elements; estimate demand, identifying supply and determining the critical needs for industrial and other employment land. Though the demand and supply analysis may be conducted at the same time, and some jurisdictions may begin by conducting the supply analysis in this guidebook, the demand section is explained first.

Basic Approach—Demand

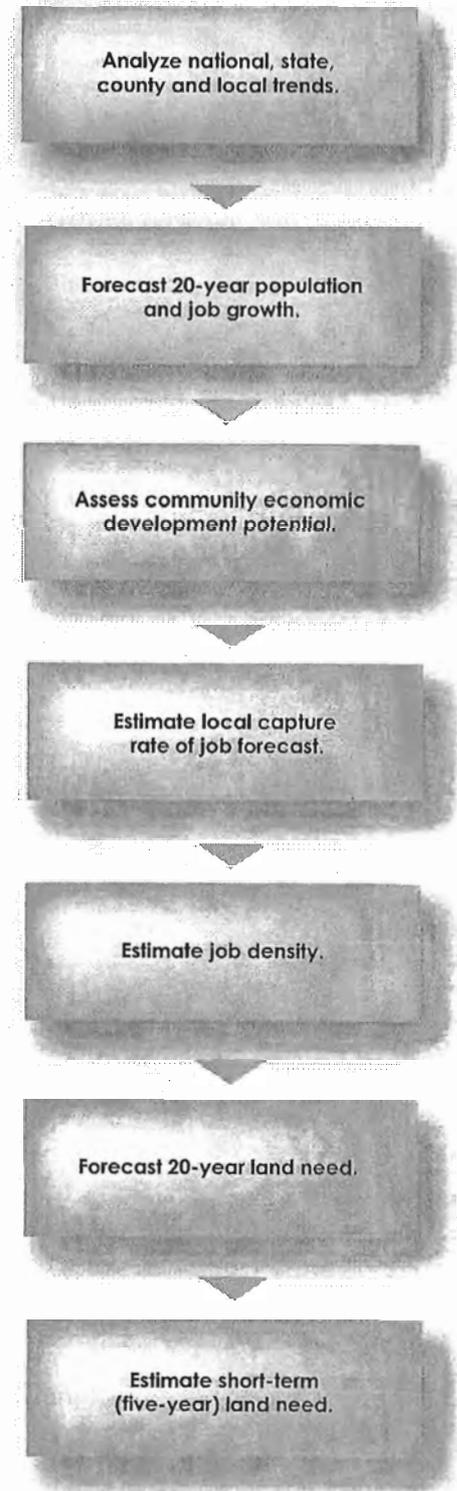
The purpose of the demand analysis is to identify industrial and other employment uses that can reasonably be expected to locate in an area. A review of national, state, regional county and local trends provides the context for local economic growth.

Demand Task Checklist.

- ➔ **Demand Task 1:** Analyze national, state, regional, county and local trends
- ➔ **Demand Task 2:** Forecast 20-year population & job growth by sector for a defined Market Region (MR)
- ➔ **Demand Task 3:** Assess community's economic development potential

Figure 1

Basic Steps in the Demand Analysis



- ➔ **Demand Task 4:** Calculate local capture of regional job growth forecasts and number of jobs that require vacant land
- ➔ **Demand Task 5:** Estimate job density by sector (jobs per acre)
- ➔ **Demand Task 6A:** Forecast 20-year land need for job growth in UGB
- ➔ **Demand Task 6B:** Forecast 20-year land need for public facilities to accommodate job growth in UGB
- ➔ **Demand Task 6C:** Aggregate land demand forecast for jobs and public facilities in UGB
- ➔ **Demand Task 6D:** Estimate long-term land demand by parcel size
- ➔ **Demand Task 6E:** Calculate short-term (5-year) land demand for local UGB by parcel size

Demand Task 1A. Assess national, state, regional, county and local economic trends.

Regional information is available from the Oregon Employment Department that can help jurisdictions complete this task. Qualitative and quantitative local experience over the past years, including land use applications and business activities are other important sources of information. The regional trend information may be compared to information available locally or regionally. Factors to consider include:

- ➔ Population trends and characteristics (historic growth rates, age, race, etc).
- ➔ Income (per capita, household, and family)
- ➔ Employment (by industry and occupation)
- ➔ Public policies, taxes, and fiscal policy
- ➔ Recruiting efforts, prospects, marketing successes and failures

Table 3 summarizes the basic employment forecasting methods that rely on past trends as an indicator of future growth. The Basic analysis worksheets utilize the Ratio Trend method. The methodologies can be used alone or in combination. They rely on these assumptions:

- Past growth is a good indicator of future growth
- Factors affecting local economic growth will not change substantially
- Selection of the base year can affect the forecast significantly

Table 3
Employment Forecasting Methods

Method	Description
Ratio trend	Uses current city/county ratio of employment to predict the future.
Trend extrapolation	Uses historical employment growth rates to predict the future.
Population/employment ratio trend	Determines a ratio between population and employment.
Comparative	Compares growth with larger, older areas. Consider social, economic, political and other variables.

To calculate employment forecasts, the state will accept a basic trend extrapolation, calculated annually over a 20-year period.

Demand Task 1A Objective: Ascertain regional and local trends in population and employment.

Data sources:

- ✓ Oregon Employment Department (www.qualityinfo.org)
- ✓ U.S. Census (www.census.gov)
- ✓ Oregon Department of Administrative Services, Office of Economic Analysis (www.oea.das.state.or.us)
- ✓ Regional agencies, such as Metro and Councils of Governments:

_____ offices. Calculating redevelopable acres is optional for
_____ jurisdictions.

_____ Conduct interviews with local and regional economic
_____ development practitioners such as representatives from the
_____ Oregon Economic and Community Development Department,
_____ neighboring jurisdictions, ports and other entities.

_____ In addition to market factors, public policy can affect the supply,
_____ cost and quality of a community's economic development
_____ potential through:

_____ Regulations. Though they are recognized as necessary to protect
_____ the health and safety of a community and help maintain the
_____ quality of life, many communities are considering how standards
_____ and procedures can be simplified to help keep and attract
_____ businesses. These include flexible zoning, streamlined permitting
_____ procedures and allowing home-based business operations.

_____ Taxes. This may be less important in decisions of local businesses
_____ than consideration of the costs of transportation, raw materials
_____ and capital. However, workers compensation and sales and
_____ property tax may affect some siting decisions of out of state
_____ businesses.

_____ Financial incentives. These are more effective at redirecting
_____ growth within a region than they are at providing a competitive
_____ advantage between regions. Urban

_____ renewal areas (URA's) or tax increment financing (TIF) districts can
_____ also be used to direct growth.

_____ Industry clusters. Similar firms can realize operational savings and
_____ have access to a pool of skilled labor when locate close-by. Public
_____ policies can encourage such clustering.

Table 5 Summarizes basic methods for estimating land demand. The Basic analysis worksheet process utilizes the employee per acre (EPA) process.

A variation of the third method is to estimate the number of expected employees through assumptions or floor-to-area ratios (FAR) and square feet of built space per employee. For example, assumptions of 500 square feet of total (not usable or leasable) office space per employee and of an FAR of 0.3 (built space equals 30% of the buildable area) yields about 26 employees per net acre, or about 21 employees per gross acre. This method tends to yield greater densities than those typically assumed for employees per acre, perhaps because the FAR assumptions for a single lot are not easy to sustain over a larger area.

Demand Task 5 Objective: Select the job density, or jobs per net buildable acre; calculate local estimates for job density.

Data sources:

- ✓ Current population/employment estimates and forecasts
- ✓ Employee-per-acre assumptions

Product: Total jobs per acre for industrial and other employment estimated by sector.

Demand Worksheet Task: Task 5. Use the subtotals for industrial and other employment job density, or from lines 46, 47 and 48. Divide by a jobs-per-acre allowance and enter into lines 52-55.

Demand Task 6. Estimate land demand.

An estimate of local land demand can be completed in several steps numbered 6A-6E in the worksheet.

Demand Task 6 Objective: Identify land demand for industrial and other employment sectors.

- Net buildable acres, subtracting land that is unbuildable or needed for future public facilities from gross buildable vacant acres

The data needed to conduct such an analysis, using only local knowledge and fieldwork and not GIS, includes the following:

- Comprehensive plan and zoning maps
- County assessor parcel maps
- Aerial photos (if available)
- Field analysis

Supply Task Checklist.

- **Supply Task 1:** Estimate existing vacant industrial and other employment land supply in local UGB.
- **Supply Task 2A:** Estimate local long-term (20-year) land constraints
- **Supply Task 2B:** Estimate local short-term (5-year) land constraints
- **Supply Task 2C:** Estimate local vacant land supply subtracting long-term land constraints
- **Supply Task 2D:** Estimate local vacant land supply subtracting short- and long-term land constraints

Supply Task 1. Determine existing vacant/partially vacant parcels on the plan map.

Supply Task 1 Objective: Estimate the total land area inside the UGB by zoning type and site sizes.

Data Sources:

- ✓ Comprehensive plan map
- ✓ Aerial photos
- ✓ Wetland maps

Table 6 shows a sample comparison of demand and supply.

Table 6 Sample Comparison of Demand and Supply						
Parcel Size*	Existing Total Vacant Land Supply	Net (Unconstrained) Land Supply	Projected Short-Term Parcel Demand (years 1 to 5)	Projected Long-Term Parcel Demand (years 6 to 20)	Additional Land Needs (parcels)	Comments
Less than 1 acre	12	2	0	0	0	Surplus of small (less than 1 acre) infill parcels
1 to 5 acres	6	1	1	3 to 4	3 to 4	Additional "ready to develop" sites needed
6 to 10 acres	0	0	1	1 to 2	2 to 3	Additional "ready to develop" sites needed
10 + acres	1	0	0	1	0	Little demand likely in this category. Incentives needed to spur development.
Total parcels	19	3	2	5 to 7	5 to 7	

Reconciliation Task Checklist.

- **Reconciliation Task 1A:** Carry over local 5-year net new land demand for UGB
- **Reconciliation Task 1B:** Carry over local 5-year land supply for UGB
- **Reconciliation Task 1C:** Forecast for 5-Year land surplus or deficit for local UGB
- **Reconciliation Task 2A:** Carry over local 20-year net new land demand for UGB
- **Reconciliation Task 2B:** Carry over local 20-year land supply for UGB
- **Reconciliation Task 2C:** Forecast for 20-year land surplus or deficit for local UGB



Step Two: Conduct the Economic Opportunities Analysis—Advanced Approach

This chapter describes a level of analysis in addition to the Basic Approach that meets the requirements of Goal 9.

This Advanced approach requires more detailed data and analysis as well as geographic information systems (GIS). Primary research on employment densities, development trends and other factors included a 20-year demand forecast improve the forecast data.

Advanced Approach—Demand

This section describes how to calculate long-term (20 years) and short-term (1-5 years) needs, followed by steps to aggregate and disaggregate demand. For example, an aggregate forecast is an estimate of the total amount of industrial land needed in a jurisdiction during a 20-year planning period. A disaggregated forecast may start with the aggregated, long-term forecast as a baseline or control and divide it further by subarea, industrial sector, parcel size and time period, such as 1-5 years or 5-10 years. Table 7, continued on the next page, shows a sample disaggregation of employment demand.

Employment Sectors (Non-farm payroll)	Projected Jobs* 2002-2022	Capture Rate	Industrial Jobs	Supportable Gross Fl. Area Req. (sf)**	Supportable Acreage (gross)***
Manufacturing	--	40%	--	--	--
Durable Goods	180	40%	72	72,000	24
Lumber & Wood Products	(60)	40%	(24)	(24,000)	--

Table 7 Sample Disaggregation					
Other Durable Goods	240	40%	96	96,000	31
Non-Durable Goods	(180)	40%	(72)	(72,000)	--
Food & Associated Products	(240)	40%	(96)	(96,000)	--
Other Non-Durable Goods	60	40%	24	24,000	8
Construction & Mining	(480)	--	--	--	--
Transportation & Utilities	(920)	40%	(368)	(368,000)	--
Wholesale Trade	360	40%	144	144,000	47
Government	840	20%	67	67,200	22
TOTAL	5,390		(157)	(156,800)	132

*Does not reflect jobs/land for schools.

** Assumes 1,000 gross square feet of floor area per employee.

*** Assumes 30% of site devoted to public roads, utilities and open space.

As noted previously, many variables can be considered to estimate the growth and kind of industrial and other employment activity that will require developable vacant land.

Long-Term Demand Analysis

Forecasted employment growth can be translated into demand after ascertaining the possible types of companies expected to expand or locate in the planning area and the employees per acre. The resulting estimate can be refined further by applying assumptions about re-use of vacant buildings, redevelopment of built sites and floor-to-area ratios in multi-story buildings. The resulting supportable acreage is the amount of building or land area likely to be needed or supported by the projected job growth.

The analysis of site requirements should consider size, shape, soil, transportation access, services and other characteristics.

This data can be entered into a spreadsheet with worksheets supporting each set of input and, if appropriate, alternative geographies (e.g., neighborhoods within a city, cities within a county, counties within a region). A recommended methodology follows:

Long-Term Demand Task Checklist.

- **Demand Task 1:** Establish baseline employment level and historic growth trends
- **Demand Task 2:** Forecast employment growth
- **Demand Task 3:** Group industries by type of land use
- **Demand Task 4:** Identify employment growth that does not require additional land
- **Demand Task 5:** Apply assumptions to convert employment growth to land demand
- **Demand Task 6:** Adjust net acres to total developable acres
- **Demand Task 7:** Adjust for vacancy rate
- **Demand Task 8:** Disaggregate the total demand

Demand Task 1. Establish baseline employment level and historic growth trends.

The Oregon Employment Department publishes employment data for the state and individual counties by sector and industry, showing the number of reporting units or establishments, monthly employment, average annual employment, quarterly payroll and annual payroll. As this information is derived from unemployment insurance data provided by individual firms, it includes only employees covered by the state's unemployment insurance program, or "covered employment." Generally, people not

These average annual growth rates (AAGR) can be applied to the baseline level of employment established in Task 1 to calculate the employment level and employment growth by industry.

Data sources:

- ✓ Oregon Employment Department ES 202 data and 10-year regional growth forecast by industry and occupation
- ✓ Bureau of Economic Analysis employment by county
- ✓ Local firms

Demand Task 3. Group industries by type of land use.

To forecast demand for non-residential land, employment growth by industry should be combined, based on their employment

densities and development types. Table 8 shows three common land use types and their corresponding typical industries:

☉ Commercial: retail, administrative and professional activities such as finance, insurance, real estate, legal, accounting, information technology and medical services. May also include food service, recreation and tourism facilities.

☉ Industrial: manufacturing, assembly, fabrication, processing,

Table 8 Sample of Grouping Industries by Land Use Type			
	Warehouse/Distribution	General Industrial	Tech/Flex
Construction and Mining		75%	25%
Manufacturing		75%	25%
TCU			
Trucking and Warehousing	100%		
Water Transportation	100%		
Air Transportation	100%		
Communications		50%	50%
Electricity, Gas, Sanitation		50%	50%
Wholesale	90%	10%	
Services			
Computer, Data Processing			100%
Auto Repair, Services, Parking		100%	
Miscellaneous Repair		75%	25%

Source: Hammer Siler George Associates

Industrial and other employment jobs within residential or mixed-use zones. Planning areas that allow a mixture of employment and residential land uses, such as Mixed-Use Commercial and Mixed-Use Employment Districts tend to require medium- to high-density housing co-existing with retail, office and some light industrial uses. This may entail GIS-based analysis of employment sectors by standard industrial classifications (SIC) for a particular zone district (using ES202 data) or field research to verify the numbers of dwellings, types of employers and number of employees. Table 9 provides a sample mixed-use zoning analysis of jobs and dwellings.

Table 9 Sample Mixed-Use Zoning Analysis of Jobs and Dwellings							
Mixed Use Zone Town Center – Jobs	Range (FAR/Acre)*	Assumed Range (FAR/Acre)*	Assumed Distribution of Land Use	Assumed Distribution of Acres (Net Buildable)	Estimated Floor Area (SF)	Assumed Floor Area SF Per Job	Estimated New Jobs
Retail Use	0.20-0.30	0.25	70%	17.1	186,000	550	338
Office Use	0.35-0.50	0.50	20%	4.9	106,000	350	304
Civic/Other Use	0.20-0.40	0.40	10%	2.4	42,000	750	56
Total	--	--	100%	24.4	334,000	--	698

Mixed-Use Zone Town Center – Dwellings	Estimated Floor Area (SF)**	Assumed Average SF/Dwelling	Estimated Dwelling Units
Retail Floor Area	186,000	--	--
Upper-Level Housing	61,380	950	65

* FAR = ratio of building floor area to total site land area.

** Retail floor area estimate derived from above calculation on retail use.

Source: Otak, Inc.

_____ estimate land demand in acres. Some sampling to confirm the
_____ estimate, through interviews, assessment data on building
_____ footprints and field checks, is optional.

_____ Measures of employees per acre vary widely, even among firms in
_____ the same industry. In all cases, these assumptions should reflect
_____ local conditions and expected trends.

_____ **Option B. Building square feet per employee and floor-area ratios**
_____ **(FAR's)**

_____ Applying assumptions of building square feet per employee (SFE)
_____ to the employment forecast results in an estimate of total building
_____ space needed to accommodate forecasted employment growth.
_____ This estimate can be translated to net acres of land by applying
_____ assumptions of building FARs. These assumptions can be based on
_____ similar studies elsewhere or local analyses.

_____ For SFE, there is general consensus in empirical studies that a
_____ reasonable range for office use is between 300 and 500 square
_____ feet; retail can be the same or slightly higher. Industrial and
_____ warehousing may reach as high as 600 to 1,000. FARs average
_____ around 0.2 to 0.4 for suburban areas, varying by land use and
_____ building type.

_____ To develop measures of SFE, a local jurisdiction should match
_____ confidential employment data for individual firms to building size
_____ available in assessment and taxation data. This information also
_____ can be used to calculate a FAR for each firm. The resulting
_____ measures can be averaged by industry or land use type.

_____ As noted previously, both estimates can vary widely among firms in
_____ the same industry. The assumptions applied to the employment
_____ forecast should be adjusted to reflect local conditions and
_____ expected trends.

term. There are exceptions, such as, for example, if a few large parcels are held by a single owner who does not plan to sell them in the immediate future can impact available supply.

Vacancy rates also apply to built space. As they tend to be cyclical, the assumption should reflect a long-term average and provide a range of choices. For efficient market operation, a minimum vacancy rate for built space is between 5% and 15%. The estimate of total acres of demand should be increased by this percentage as the market often requires more options than the employment estimates seem to require.

Data sources:

- ✓ Interviews with local realtors

Demand Task 8. Disaggregate the total demand.

The total demand for industrial and other employment land uses that results at the end of Task 7 is for 20 years. Task 8 may be undertaken if further estimates of subcategories, such as heavy industrial/high-tech; short-term/long-term; geographical areas; or parcel size, are needed. Unless the total demand has been developed (steps 1-7) by adding up disaggregated demand estimates, these estimates should subdivide the aggregate (total) land need into components.

As part of their Goal 9 analysis, cities and counties should identify the site requirements of firms that may expand or locate in the planning area. As an important component, parcel size can be determined by using the same employment and land use data as employed to estimate total land demand. An estimate of demand by parcel size can be compared to supply by parcel size to indicate any land deficiencies that should be addressed. A parcel may include more than one tax lot if they are contiguous and/or can be combined under one ownership.

Short-Term Demand Analysis

This analysis should be consistent with the data and results of the local economic strategy and the Basic land analysis methods, as discussed in the Basic approach. The results can be used to determine market conditions and short-term economic growth potential and demand. Market conditions can be categorized as follows:

- ➡ **Strong Market**—favorable regional and local economic growth pressure; few sites/buildings exist in market area; local economic objectives and strategy stress capitalizing on near-term development opportunities.
- ➡ **Mixed Market**—favorable regional and local growth pressure; local economic objectives and strategy support growth; existing or planned local supply of land/buildings appears adequate to meet short-term demand.
- ➡ **Weak Market**—low to moderate regional and local economic growth pressure; local economic objectives and strategy do not support significant growth; local supply of land/buildings appears adequate to meet short-term demand.

Following the assessment of 20-year growth potential, the jurisdiction can quantify industrial and other employment land demand over the short-term (1-5 years) by following these steps:

Short-Term Demand Task 1. Interpolate long-term parcel demand (from Task 8) into short-term demand.

Use long-term demand data from Task 8 to determine short-term demand by dividing the number of years by the total parcel demand. Adjust according to the jurisdiction's market scenario.

Advanced Approach: Determining Supply

Long-Term Land Supply

The steps in this analysis build on the Basic Approach, introducing GIS and other data collection techniques. They will help a jurisdiction calculate:

- Gross vacant acres by plan designation, including fully vacant and partially vacant tax lots
- Gross buildable vacant acres by plan designation, subtracting unbuildable acres from total acres
- Net buildable acres by plan designation, subtracting land for future public facilities from gross buildable vacant acres
- Total net buildable acres by plan designation, adding redevelopable acres to net buildable acres

Supply Task Checklist.

- **Assemble databases.**
- **Categorize land.** Classify land into several mutually exclusive categories.
- **Identify development constraints.** Acknowledgment that not all vacant land is buildable and may be constrained by natural features, zoning, public facilities and other factors.
- **Calculate net buildable land.** Data may be organized by any of the attributes the jurisdiction wishes. GIS provides information that allows classification of each tax lot as either developed, partially developed, or vacant. Tax lots that are considered developed are re-assessed in a subsequent step to determine their redevelopment potential.

- **Verify analysis.** This generally includes review through aerial photos, orthophotos and field research to identify potential problems that cannot be ascertained by other means.
- **Analyze land by type.**

This Advanced Approach is aided by use of GIS data to develop a summary of land supply that can be cross-referenced. It relies on information such as land use and zoning, parcel boundaries and physical features that can be manipulated at the tax lot level.

There are many ways that "vacant land" and "buildable land" can be defined.

Tax lot boundaries often include developed and vacant land on the same parcel (e.g., one house on a three-acre lot). Thus, on individual tax lots, vacant land that is not constrained (buildable) may be either totally vacant with no significant improvements or partially vacant with some improvements. It also may be described as underutilized and redevelopable.

Redevelopable land is not vacant but can support some of the new demand identified previously. A common guide to determine whether a parcel is redevelopable is if the value of improvement on the land is less than the land value alone. This is also called have a land-to-improvement value ratio. If the ratio is greater than 1:1, the lot may be considered redevelopable. Another way to assess the likelihood of redevelopment is to compare the parcels' improvement value to surrounding parcels. If the improvement value is significantly lower than similarly designated surrounding parcels, it may be redevelopable.

Infill is not considered a type of vacant land development, but a condition of a tax lot relative it's to surroundings. If nearby tax lots

Supply Task 4. Estimate total buildable land supply by land classification.

To ensure the accuracy of the conclusions before the final analysis is conducted, jurisdictions should verify buildable land data through aerial photos and field visits. Large jurisdictions may choose standard sampling techniques to test accuracy of the analysis.

Calculate gross buildable acres. Divide the estimated total buildable land supply into classifications. Begin by subtracting constrained acres from total vacant acres—preferably at the tax lot level. This analysis is most easily done by using GIS. It should result in a tabular database that can be summarized by various attributes, such as plan designation and zoning, and facilitates further disaggregated analysis that may be needed.

Jurisdictions have two options when addressing redevelopment potential: either deduct employment from the demand side of the calculation or include redevelopable land on the supply side. To avoid double-counting, only one approach should be used.

A supply-side analysis can help identify tax lots with redevelopment potential—those with developed structures with some probability of being demolished and replaced. Many studies use improvement-to-land-value ratios to estimate this.

Convert gross acres to net acres. A gross acre is a vacant acre of land before it has had a portion of the property dedicated for public rights-of-way, private streets, or public utility easements. For example, a standard assumption is that about 20% of land in a residential subdivision is used for streets and utilities: thus, a gross vacant acre will yield only about 35,000 sq. ft. (80% of a full acre) for lots. At five dwelling units per gross acre, the average lot size is about 7,000 square feet. A jurisdiction can calculate the precise percentage for reducing gross to net residential acres by

analyzing subdivision permits over the last five years. Environmental constraints described in Supply Task 3 can reduce developable acreage even further.

One way to check assumptions is to randomly select developed industrial and other employment parcels and calculate the amount of land available for development that is used for streets, utility easements, and other public purposes.

Table 10 provides a sample calculation of converting gross to net acres.

Table 10 Sample Non-Residential Lands Data Worksheet									
Tax Lot#	Total Acreage	<i>Minus</i> Developed acreage	<i>Equals</i> Gross vacant acreage	<i>Minus</i> Constrained acres	<i>Equals</i> Gross buildable vacant acres	<i>Minus</i> Acres for public facilities (25%)	<i>Equals</i> Net buildable vacant acres	<i>Plus</i> Redevelopable acres ^a	<i>Equals</i> Total net buildable acres
Commercial Plan Designation									
1202	10.0	0.0	10.0	1.1	8.9	2.2	6.7	-	6.7
1400	5.0	1.0	4.0	0.0	4.0	1.0	3.0	-	3.0
1506	8.0	8.0	0.0	0.0	0.0	0.0	0.0	4.0	4.0
Subtotals							9.7	4.0	13.7
Industrial Plan Designation									
2000	20.0	0.0	20.0	2.0	18.0	4.5	13.5	-	13.5
4500	3.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0
Subtotals							13.5	3.0	16.5
Total Net Buildable Acres							23.2	7.0	30.2

Source: Adapted from the HB 2709 Workbook

^a Note: Redevelopment may also be addressed on the demand side of the analysis

Summarize buildable land by classification and plan designation.

At a minimum, jurisdictions should develop buildable lands inventory maps and summary tables displaying this information. Zoning and land classifications may also be shown.

Short-Term Land Supply

Jurisdictions may have a 20-year supply of industrial and other employment land and still not have many sites ready for development. This situation may occur if:

- Vacant, buildable, and serviceable sites are owned by a few property owners who are not ready to develop
- There are significant physical, institutional, or cost constraints before necessary public services (primarily roads, water, and sewer) can be supplied

Short-Term Supply Task 1. Identify short-term land supply.

In the buildable lands inventory, identify the number of sites and total acreage by land type ready for immediate development. The local public facilities plan should define the time schedule for providing services to developable sites.

Data sources:

- ✓ Local public facilities plans
- ✓ Interviews with public works director, utility districts
- ✓ Interviews with local landowners, developers and realtors

Advanced Approach—Comparing Land Demand and Supply (Need)

In the Basic approach, the result of the land demand analysis is compared to the total buildable land supply to determine whether the jurisdiction has a 20-year supply of buildable land. An analysis of short-term supply is also required.

Jurisdictions can begin a more detailed comparison of demand and supply by reviewing the site requirements of firms and conducting a detailed comparison of local sites. At a minimum,

Appendix A: Glossary

Absorption—The rate at which properties can be leased or sold in a given area.

Adequate Land Supply (Long-Term)—Commercial and industrial designated land within an urban growth boundary (UGB) that adequately accommodates employment needs up to 20 years as documented in the local Economic Opportunity Analysis. This entails a range of commercial and industrial-designated sites of various sizes and locations. Land deemed “adequate” also is considered “suitable”, but not necessarily “available.” (See definitions for those terms).

Adequate Land Supply (Short-Term)—Commercial and industrial-designated land within an urban growth boundary that adequately accommodates the short-term (1 to 5 years) employment needs documented in the local Economic Opportunity Analysis. This entails a range of commercial and industrial-designated sites in various sizes and locations. Land deemed as “adequate” also is considered “suitable” and “available”, and should not be constrained by environmental, infrastructure nor ownership issues.

Available Land—Designated land for commercial or industrial uses that is suitable and offered for sale or lease by the property owner, or is available for future on-site expansion by existing tenants.

Buildable Lands—Lands in urban and urbanizable areas that are suitable, available and necessary for development. Include both vacant and developed land likely to be redeveloped.

Buffer—Strip of land that separates one type of land use from another with which it is incompatible.

Cluster—Geographic concentration of interconnected companies, specialized suppliers, service providers, firms in related industries and associated institutions that compete but also cooperate.

Commercial—A business, firm or organization that generates income by producing, handling or providing products or services for ultimate sale. Commercial uses include the entire retail (direct to consumer or business-to-business) sector; administrative and professional operations such as finance, insurance, real estate, legal, accounting, information technology and medical services; may also include food service, recreation services and tourism facilities.

Commission—The Land Conservation and Development Commission. Cities and counties may designate land in an industrial or other employment land category to compensate for any institutional land demand that is not designated under this section. Though cities and counties are not required to designate institutional uses needed for government facilities on privately owned land, the requirements of OAR 660-009-0025(2) still apply.

Competitive Short-Term Supply—Provides a range of site sizes and locations to accommodate the market needs of a variety of industrial and other employment uses, free from ownership constraints.

Competitive Market Region—A group of counties that provides a competitive market for land, goods, services and jobs.

Constrained Land—Vacant or partially vacant parcels with significant physical, environmental or infrastructure limits to development. Physical constraints include steep topography (sloped over 10% for industrial use and over 20% for commercial use), unstable soils and parcel configuration. Environmental constraints include on-site wetlands, floodplains or significant

riparian areas. Infrastructure constraints include inadequate public facilities (e.g., roads and utilities).

Conversion—The process and associated impacts of changing land from one use to another.

Covered Employment—Jobs covered by unemployment insurance; usually about 85% of total employment. People who are self-employed, farm workers, and some contractors are examples not covered by unemployment insurance, or “non-covered” employees.

Demand—The desire for commercial, institutional and industrial lands.

Department—The Department of Land Conservation and Development.

Developed Land—Parcels with relatively high-value improvements that are not vacant.

Development Constraints—Factors that limit or prevent the use of land for economic development. Development constraints include, but are not limited to, wetlands, environmentally sensitive areas such as habitat, environmental contamination, slope, topography, cultural and archeological resources, infrastructure deficiencies, parcel fragmentation or areas subject to natural hazards.

Economic Development Strategy—A planning document that describes economic development conditions, policies, growth objectives and implementation steps unique to the local jurisdiction. May be an element in a local comprehensive plan.

Elevation—The distance above sea level.

Employed—All civilians 16 years old and over who are paid employees, in their own business or profession, on their own farm, or work 15 hours or more unpaid on a family farm or in a family business.

Employees per Acre—A measure of employment density.

Employment Area—An area or sub area containing several local governments where employees are likely to commute from one jurisdiction to another. Employment areas are determined by the jurisdictions that wish to coordinate their planning efforts under OAR 660-009-0030.

Employment Land—Designated to accommodate a broad range of commercial and industrial uses.

Employment-Shed—Geographic area from which employees are drawn into the local or regional economy. An employment-shed may include all land within a jurisdiction's urban growth boundary; the jurisdiction's urban growth boundary plus surrounding unincorporated areas; two or more nearby jurisdictions and surrounding unincorporated land; or a larger regional area.

Floodplain—Area adjoining a stream that is subject to inundation by flood. Consists of:

- Floodway fringe: the area outside the floodway.
- Floodway: channel of a river or other watercourse and the adjacent land areas that must be reserved to discharge the base flood without cumulatively increasing the water surface elevation more than 2.5 inches.

Gross Vacant Acre—An acre of vacant land before it has been allotted for public right-of-way, private streets or public utility easements. A standard assumption is that between 20% and 30% of land in a subdivision is used for streets and utilities; thus, a gross

vacant acre will yield only about 35,000 sq. ft. (70%-80% of a full acre) for lots.

Industrial—Employment activities generating income from the production, handling or distribution of goods and related support activities. Industrial employment includes, but is not limited to, jobs in manufacturing, assembly, fabrication, processing, storage, logistics, warehousing, distribution, and research and development. Industrial uses have special land, infrastructure and transportation requirements and tend to cluster in traditional and new industrial areas segregated from other non-industrial activities.

Institutional—Relates to an entity or organization that provides a good or service that is not commercial or industrial in nature. Institutional uses include, but are not limited to, public and private health care facilities, jails and government facilities. Cities and counties are not required to designate institutional uses needed for government facilities on privately owned land. They may designate land in an industrial or other employment land category to compensate for any non-designated institutional land demand.

Irreplaceable—Property that has characteristics not found elsewhere.

Labor Force—All persons age 16 or over, plus members of the U.S. Armed Forces (on active duty with the United States Army, Air Force, Navy, Marine Corps, or Coast Guard).

Land Market Factor—Commercial and industrial land demand that accounts for the amount of land needed (in excess of baseline demand forecasts) to address use requirements for flexibility and competitiveness in the marketplace. Land market factors typically range from 0% to 200% of baseline demand, depending upon local economic policy objectives and local/regional economic development potential.

Land Need—Supply of lands needed to accommodate future employment demand.

Locational Factors—Include but are not limited to: proximity to raw materials, supplies, labor and services, markets or educational institutions; access to transportation facilities; and workforce (e.g., skill level, education, age distribution).

Long-Term—Planning period 20 years or more from the time the commercial and industrial buildable lands analysis is conducted.

Long-Term Supply of Land—Portion of the total land supply that is serviced or serviceable and suitable to replace the short-term supply as it is developed during the planning period.

Metropolitan Planning Organization (MPO)—Organization designated by the Governor to coordinate transportation planning on urban land in the state.

Net Vacant Acre—Vacant land after allotments for public right-of-way, private streets or utility easements. For example, a one-acre site that has 30% of land devoted to streets and utilities yields 0.7 acres for net development.

Net Vacant Land—Greater than one acre where the improvement value is less than land value.

Other Employment—All non-industrial jobs, including retail, wholesale, service, non profit, business headquarters, administrative and governmental activities that are accommodated in retail, office and combined building types. Also includes activities of an entity or organization that serves the medical, educational, social service, recreation and security needs of the community.

Ownership Constraints—Occur when ownership patterns or monopolies constrain the availability of the short-term supply of land.

Partially Vacant Constrained Land—Same as partially vacant, with limitations on development.

Partially Vacant Land—Parcels with some development; vacant portions large enough to develop.

Planning Area—The area within an urban growth boundary. Under state law, cities and counties with urban growth management agreements are required to address the urban land governed by their respective plans as specified in the urban growth management agreement for the affected area.

Prime Industrial Land—Land suited for targeted industrial uses. Traded-sector industries are businesses, firms or organizations that sell their goods or services in markets for which national or international competition exists, thus importing revenue into the local area. Prime industrial lands have characteristics that are difficult or impossible to replicate within the planning area; are at least 10 contiguous acres; contain few or no development constraints, and have ready access to the regional freight infrastructure. May include industrial brownfield sites.

Ready for Development— Land that can be developed within one year of a permit application or request for service extension.

Redevelopable Land—Occupied or partially occupied land that may or may not contain a low value of improvements relative to the value of the land.

Redevelopment Potential—Parcels with developed structures that are likely to be demolished; may include brownfield sites.

Safe Harbor—A standard procedure that complies with state or local law.

Serviceable—Public facilities, as defined by OAR chapter 660, division 011, that have adequate capacity for development where an industrial commercial site is located or can be upgraded to have adequate capacity. For a short-term supply of land, serviceable means public facilities either are currently available at the site or can be provided to the site within one year of an application for a building permit or request for service extension.

Short-Term—A planning period that is less than five years from the time the commercial and industrial buildable lands analysis is conducted.

Short-Term Supply of Land—Suitable land within the total land supply that is serviced or serviceable with the appropriate characteristics and ready for construction within one year of being chosen for development.

Significant Wetlands—Protected under federal law. Significant wetlands are not part of the buildable land inventory.

Site Characteristics—The attributes necessary for a particular industrial or other employment use. Characteristics may include: a minimum acreage or configuration including shape and topography; visibility; specific types or levels of public facilities and services; proximity to a particular transportation or freight facility such as an interstate highway, rail, marine port or airport.

Slope—For industrial land, should not exceed 10-15%; commercial land usually can be developed on slopes up to 20%.

Standard Industrial Classification (SIC)—Manual published by the federal Office of Management and Budget that provides a systematic classification of basic economic activities (industries).

Suitable—Land designated for industrial or other employment use that provides, or can be expected to provide, the appropriate characteristics for the proposed use or category of use.

Supply of Land—Existing developed, redevelopable and vacant commercial, institutional and industrial lands.

Total Land Supply—Supply for a 20-year planning period. Total land supply includes the short-term supply of vacant and redevelopable land for the industrial or other employment uses identified in the comprehensive plan.

Traded-Sector Industries—Businesses, firms or organizations that sell their goods or services in markets for which national or international competition exists.

Unemployed—All civilians 16 years old if they (1) were neither at work nor with a job but not at work, and (2) looking for work during the previous four weeks, and (3) were available to accept a job.

Urban Growth Boundary (UGB)—In Oregon, the designated area in which urban, as distinguished from rural, commercial, industrial, residential and other uses may occur.

Vacant Land—Land greater than one acre not currently containing permanent buildings or improvements.

Vacant Constrained Land—Same as vacant land, but with portions with significant wetlands, riparian areas and slopes greater than 10% for industrial and 20% for commercial land uses.

Appendix B Basic Worksheet Method for Estimating Local Land Demand

Objective		Description	Source/Notes							
Task 1: A and B	Analyze national, state, regional, county and local trends	Identify past trends in population and employment (at place of work) in the Market Region (MR) and affected jurisdictions	Market Region	Local Area County or UGB	Local Share of Market Region (%)	Units	Oregon Employment Dept., Dept. of Commerce, County Business Patterns, Regional governments			
		population								
		1980			people	U.S. Census				
		1990			people	U.S. Census				
		2000			people	U.S. Census				
		base year			people	Portland State University				
		2015			people	Oregon Office of Economic Analysis				
		2025			people	Oregon Office of Economic Analysis				
		employment (at place of work)								
		1980			jobs	Oregon Employment Department				
		1990			jobs	Oregon Employment Department				
		2000			jobs	Oregon Employment Department				
		base year			jobs	Oregon Employment Department				
		2015			jobs	Oregon Employment Department				
		2025			jobs	Oregon Employment Department				
Task 2	Forecast 20-year population & job growth by sector for a defined Market Region (MR)	Historic and projected job growth by sector (at place of work, covered employment) in Market Region					Oregon Employment Dept., Dept. of Commerce, County Business Patterns, Regional governments			
			Step 1: Base year job count (specify year)	Step 2: Forecast 10-year job count (specify year)	Step 3: Forecasted change in jobs (step 2-step 1)	Step 4: Forecasted annual change in jobs (Step 3 divided by 10 years)		Step 5: Total 20-year job forecast for Market Region (Step 4 x 20 years)	Units	
		Construction & Mining							jobs	Oregon Employment Department
		Manufacturing							jobs	Oregon Employment Department
		Transportation, Com. & Utilities							jobs	Oregon Employment Department
		Wholesale Trade							jobs	Oregon Employment Department
		Subtotal Industrial Jobs							jobs	Oregon Employment Department
		Retail Trade							jobs	Oregon Employment Department
		Finance, Insurance Real Estate (FIRE)							jobs	Oregon Employment Department
		Services							jobs	Oregon Employment Department
		Subtotal Commercial/Service Jobs							jobs	Oregon Employment Department
		Institutional/Government							jobs	Oregon Employment Department
		Other/Uncovered Employment (3-5% of jobs)							jobs	Oregon Employment Department
		Total Jobs							jobs	Oregon Employment Department
		Task 3	Assess community's economic development potential	Document local UGB competitive market advantages and disadvantages	Market Region	UGB				Interviews with business and industry managers and economic practitioners preferred
Location relative to markets					ordinal score	subjective score (1=poor, 2 = fair, 3=good, 4 = excellent)				
Availability of key transportation facilities					ordinal score	subjective score (1=poor, 2 = fair, 3=good, 4 = excellent)				
Key public facilities (water, sewer, etc.)					ordinal score	subjective score (1=poor, 2 = fair, 3=good, 4 = excellent)				
Labor Market (cost and access)					ordinal score	subjective score (1=poor, 2 = fair, 3=good, 4 = excellent)				
Materials and energy (availability and cost)					ordinal score	subjective score (1=poor, 2 = fair, 3=good, 4 = excellent)				
Necessary support services					ordinal score	subjective score (1=poor, 2 = fair, 3=good, 4 = excellent)				
Pollution control issues					ordinal score	subjective score (1=poor, 2 = fair, 3=good, 4 = excellent)				
Education and technical training					ordinal score	subjective score (1=poor, 2 = fair, 3=good, 4 = excellent)				
Other (such as land availability)					ordinal score	subjective score (1=poor, 2 = fair, 3=good, 4 = excellent)				
Total										
Task 4A	Estimate total job growth in local jurisdiction based on capture rate within the Market Region	Historic and projected job growth by sector (at place of work, covered employment) in Market Region and Local Area (UGB)	Step 1: 20-year Job Forecast for Market Region (carry over from Task 2, Step 5)	Step 2: Enter local area job growth capture rate (%)	Step 3: Local jurisdiction 20-year job forecast (Step 1 x Step 2)	Units	Oregon Employment Dept., Dept. of Commerce, County Business Patterns, Regional governments			
		Industrial Sector				jobs				
		Commercial/Service Sector				jobs				
		Institutional/Government Sector				jobs				
		Other/Uncovered Employment				jobs				
Total Jobs				jobs						
Task 4B	Adjust local jurisdiction job growth for infill and redevelopment	Allocate the 20-year local jurisdiction job forecast to redevelopment of underutilized sites versus vacant sites	Step 1: Local jurisdiction 20-year job forecast (carry over from Task 4A)	Step 2: Forecasted allocation to redevelopment (%)	Step 3: Forecasted allocation to vacant sites (%)	Step 4: Projected 20-year jobs that require land (step 1 * step 3)	Units	Oregon Employment Dept., Dept. of Commerce, County Business Patterns, Regional governments		
		Industrial Sector				jobs				

**Appendix B
Basic Worksheet Method for Estimating Local Land Demand**

Objective	Description	Source/Notes										
	Commercial/Service Sector						jobs					
	Institutional/Government Sector						jobs					
	Other/Uncovered Employment						jobs					
	Total Jobs						jobs					
Task 5	Estimate job density (jobs per acre)	Forecast average jobs per acre by net land area for employment sectors in UGB					Local interviews, Urban Land Institute, Portland Regional Industrial Land Study					
		Industrial Sector		jobs per acre			allowance (typically 0-12 jobs/ac)					
		Commercial/Service Sector		jobs per acre			allowance (typically 14-20 jobs/ac)					
		Institutional/Government Sector		jobs per acre			allowance (typically 6-10 jobs/ac)					
		Other/Uncovered Employment		jobs per acre			allowance (typically 6-10 jobs/ac)					
		Total/Average (optional)		jobs per acre								
Task 6A	Forecast 20-year land need for job growth in UGB (net acres)	Forecast 20-year land requirements by land use type (net acres) in UGB					Derived from Tasks 4 and 5					
		Industrial Sector		acres			Line 46 (Step 4) x Line 52					
		Commercial/Service Sector		acres			Line 47 (Step 4) x Line 53					
		Institutional/Government Sector		acres			Line 48 (Step 4) x Line 54					
		Other/Uncovered Employment		acres			Line 49 (Step 4) x Line 55					
		Total		acres								
Task 6B	Forecast total 20-year land need for public facilities in UGB	Forecast 20-year land requirements for public facilities (based on 25% of net land area)					Derived from Task 6A					
		Industrial Sector		acres			Line 58 x 25%					
		Commercial/Service Sector		acres			Line 59 x 25%					
		Institutional/Government Sector		acres			Line 60 x 25%					
		Other/Uncovered Employment		acres			Line 61 x 25%					
		Total		acres								
Task 6C	Aggregate total 20-year land demand forecast for jobs and public facilities in UGB	Forecast 20-year land requirements by land use type (gross buildable acres) in UGB					Derived from Task 6B					
		Industrial Sector		acres			Line 58 + Line 64					
		Commercial/Service Sector		acres			Line 59 + Line 65					
		Institutional/Government Sector		acres			Line 60 + Line 66					
		Other/Uncovered Employment		acres			Line 61 + Line 67					
		Total		acres								
Task 6D	Estimate long-term (20-year) land demand by parcel size	Allocate 20-year land requirements by land use type and parcel size (gross buildable acres and sites)*	Total Sites		Large Sites		Standard Sites		Small Sites		Derived from Tasks 6A and local estimates	
			Tax Lots (optional)	Acres	Tax Lots (optional)	Acres	Tax Lots (optional)	Acres	Acres	Tax Lots (optional)		Acres
		Industrial Sector										
		Commercial/Service Sector										
		Institutional/Government Sector										
		Other/Uncovered Employment /Special Uses									allowance for special uses	
		Total										
Task 6E**	Calculate short-term (5 year) land demand for local UGB by parcel size	Forecast 5-year land requirements by land use type and parcel size (gross buildable acres)**	Total Sites		Large Sites		Standard Sites		Small Sites		Derived from Task 6B	
			Tax Lots (optional)	Acres	Tax Lots (optional)	Acres	Tax Lots (optional)	Acres	Acres	Tax Lots (optional)		Acres
		Industrial Sector										Line 77 divided by 3
		Commercial/Service Sector										Line 78 divided by 3
		Institutional/Government Sector										Line 79 divided by 3
		Other/Uncovered Employment									allowance for special uses	
		Total										

* Note: Jurisdictions may vary definition of "large", "standard" and "small" parcels depending on local economic development objectives. Typical "large parcels" are at least 10-100 acres in size, standard sites are typically between 1 and 5 acres, and small sites are less than 1 acre.

**Note: It is recommended that the 20-year demand forecast be divided by 3 to allow for a slight market factor that provides a competitive land supply which allows market choice to account for varying tenant site requirements.
Source: Otak, Inc.

Appendix C: Internet References

Web Site	Data Provided	Goal 9 Reference
www.oregon.gov	Governments: including city, county, council of government, state agency, or federal agency data often provide some GIS information that is periodically updated. The State of Oregon web site, www.oregon.gov , has connections to all cities, counties, and state agencies. Many states now have some kind of GIS data clearinghouse or links to data providers.	Supply and Demand
www.gis.state.or.us	Oregon Geospatial Data Clearinghouse maintains various state-wide GIS layers for download.	Supply
www.ous.edu	College or University Libraries; both University of Oregon and Oregon State University libraries have GIS collections.	Supply and Demand
www.terra.geo.orst.edu/ucgis	College or University Departments are now beginning to make available data that has been used or created in the course of their research. This web site is for Oregon State University Geographic Information Sciences. This web site describes GIS and GISci facilities, research, faculty and education at Oregon State University (OSU), Corvallis, Oregon. It is also OSU's online portfolio for membership in the UCGIS.	Supply
www.sul.stanford.edu/depts/gis/web.html	College or University web sites that present lists of various state and national GIS data sources. A good example is from Stanford University. Last updated October 13, 2004.	Supply and Demand
www.esri.com/data/index.html	Access to the right data is key to intelligent GIS analysis. ESRI offers a variety of data products to support your applications. ESRI also promotes and supports a strong group of partners who provide a wide range of data products in ESRI-compatible formats.	Supply and Demand
www.seamless.usgs.gov/viewer.html	The United States Geological Survey (USGS) maintains the National Map that allows viewing and downloading of data.	Supply
www.nsd.usgs.gov	The USGS maintains a National Geospatial Data Clearinghouse. This site provides one-meter aerial photography, digital elevation models, and various nationwide data sets that can be used to identify land forms and topographic features.	Supply
www.fema.gov	The Federal Emergency Management Agency (FEMA). They provide floodplain and associated data that can be viewed at www.gis.msc.fema.gov/Website/DFIRM_View/Viewer.htm .	Supply
www.teraserver.com	The Terra Server maintains a subscription service for aerial photography. There are also links to other aerial photography providers	Supply
www.wetlandfws.er.usgs.gov/wlnds/viewer.htm	National Wetlands Inventory (NWI) can be accessed through the Federal Fish and Wildlife Service web site. The data can be view or downloaded from the viewer. Data can also be downloaded at the following site: www.wetlandfws.er.usgs.gov/download.html .	Supply
www.oregon.gov/ODOI	Oregon Department of Transportation (ODOT), roadway maps can be accessed at the web site and through the Maps and Library link in the column at the left.	Supply

Web Site	Data Provided	Goal 9 Reference
www.census.gov	US Census data can be found here. Downloadable GIS data can be found through the Geography links and the tabular data can be found through the United States Census 2000 link.	Demand
www.oregonprospector.com	The Oregon Prospector web site provides access to a State-wide industrial land and building inventory. While the inventory of sites is in the early stages of development, this web site provides key commercial and industrial land/building supply data for "permit ready" sites in cities and counties throughout Oregon.	Supply
www.econ.state.or.us	The Economic and Community Development Department provides economic and community development and cultural enhancement throughout the state, and administers programs that assist businesses, communities and people. Oregon's economic development system is designed to meet the state's changing economy, provide flexibility in funding statewide and regional needs, and focus on funding economic and community development services for rural and distressed communities. Through the internet, we hope to provide information to browsers from both Oregon and worldwide. We want to provide you with useful, updated information at a low cost.	Demand
olmis.emp.state.or.us/	The Oregon Labor Market Information System (OLMIS) provides economic information to employers, job seekers, students, policy makers, analysts and others. It is designed to give users access to the Employment Department's information resources free of limitations due to time or location. It is part of the agency's effort to allow people to make informed decisions based on the best data available.	Demand

Appendix D: Vision to Actions

Example provided courtesy of Hillsboro (<http://www.hillsboro2020.org>)

Vision

In the year 2020, Hillsboro is our home town. Within a rapidly changing metropolitan region and global economy, we live in a dynamic community that sustains our quality of life. Here, neighbors, generations and cultures connect. We live and work in balance with nature. Hillsboro is a safe and affordable community, a place our children and their children will be proud to call home.

Goals

Strengthening and Sustaining Community

Enhancing Neighborhoods and Districts

Preserving the Environment

Creating Economic Opportunity (detail shown below)

Expanding Educational and Cultural Horizons

Promoting Health and Safety

Objectives and Actions

Diverse Business Base

Foster Hillsboro's diverse base of businesses and industries.

- *Prepare and implement a new Hillsboro area economic development strategy, covering land supply, business retention, and recruitment*
- *Investigate ways to support and encourage emerging and multi-cultural businesses*
- *Encourage use of existing multi-cultural resources to expand hiring and training practices*

Family-Wage Jobs

Promote the creation of family-wage jobs.

- *Develop definition of "sustainable family-wage jobs"*
- *Prepare a profile of "family-wage" jobs in the community*
- *Establish a demographic and economic profile to help identify businesses with family-wage jobs*

Business Needs

Ensure zoning, development codes and land supply match the needs of all business types.

- *Revise zoning and development codes and permitting to recognize needs of all business types*
- *Maintain ongoing database of available land and leased space for all business types*

Long-Term Water Supply

Assure a long-term water supply for local business through sound water management practices.

- *Take a leadership role to ensure adequacy of regional water supply and delivery system*
- *Support capital improvement projects to maintain adequate water delivery and storage systems*
- *Develop and implement water conservation programs*

Transportation and Communications Improvements

Support transportation and communication system improvements to move goods, services, and information, and allow residents to reach destinations efficiently throughout the community.

- *Participate in the Hillsboro Airport master plan update*
- *Take leadership role in planning and financing of local and regional transportation systems*
- *Develop high-speed data network strategy city-wide*

Jobs-Education Coordination

Team educational institutions and business to better match education and training with jobs.

- *Develop an ongoing forum to synchronize business employment needs and trends with educational curriculum planning*
- *Enhance internship and apprenticeship programs for persons entering and re-entering the work force*

Appendix E: Potential Economic Development Policies

Category/Policy	Description
Land Use	Policies regarding the amount and location of available land and allowed uses.
Provide adequate supply of land to support employment growth	As per State requirements, provide an adequate supply of development sites to accommodate anticipated employment growth with the public and private services, sizes, zoning, and other characteristics needed by firms likely to locate in a particular city.
Cut red tape	Take actions to reduce costs and time for development permits. Adopt development codes and land use plans that are clear and concise.
Public Services	Policies regarding the level and quality of public and private infrastructure and services.
Provide adequate infrastructure to support employment growth	Provide adequate public services (i.e. roads, water, and sewer) and take action to assure adequate private utilities (i.e. electricity and communications) are provided to existing businesses and development sites.
Focused public investment	Provide public and private infrastructure to identified development sites.
Communications infrastructure	Actions to provide high-speed communication infrastructure, such as developing a local fiber optic network.
Business Assistance	Policies to assist existing businesses and attract new businesses.
Business retention	Targeted assistance to businesses facing difficulty or thinking of moving out of the community.
Recruitment and marketing	Establish a program to market the community as a location for business in general, and target relocating firms. Take steps to provide readily available development sites, an efficient permitting process, well-trained workforce, and perception of high quality of life.
Development districts (enterprise zones, redevelopment districts, etc.)	Establish districts with tax abatements, loans, subsidized infrastructure, reduced regulation, or other incentives available to businesses in the district that meet specified criteria.
Public/private partnerships	Make public land or facilities available, public lease commitment in proposed development, provide parking, and other support services.
Financial assistance	Tax abatement, waivers, loans, grants, and financing for firms meeting specified criteria.
Business incubators	Create low-cost space for use by new and expanding firms in Sweet Home with shared office services, access to equipment, and networking opportunities.
Mentoring and advice	Provide low-cost mentors and advice for local small businesses in the area of management, marketing, accounting, financing, and other business skills.
Export promotion	Assist businesses in identifying new products and export markets; represent local firms at trade shows and missions.
Workforce	Policies to improve the quality of the workforce available to local firms.
Job training	Create opportunities for training in general or implement training programs for specific jobs or specific population groups (i.e. dislocated workers).
Job access	Provide transit/shuttle service to bring workers to job sites.
Other	
Regional collaboration	Coordinate economic development efforts with the County and the State so that clear and consistent policies are developed.
Quality of life	Maintain and enhance quality of life through good schools, cultural programs, recreational opportunities, adequate health care facilities, affordable housing, and environmental amenities.

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