Regional Industrial Lands Study: Economic Trends

Employment Growth and Development Density

Presentation by ECONorthwest

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Background

Why study industrial lands?

- It's not only the law—it's a good idea
  - State requirements
    - Implications for Regional Urban Growth Boundary
  - Economic development
    - Land a key factor
      - Location
      - Services
      - Cost

What kind of study?

- How much buildable land is there?
  - What characteristics?
    - Location, size, services
  - How readily available?
- How much will growth require?
  - Density of development
  - By location and characteristics

What's been done so far?

- Phase I (July 98)
  - Interviews to define the problem
- Phase II (December 99) (1)
  - Demand: 6,300 net buildable acres of industrially-zoned land (20 years)
  - Supply: 9,200 acres of industrially-zoned land, but:
    - 2,400 acres are readily developable
    - Unevenly distributed; Few large parcels

(1) Six county Portland-Vancouver PMSA. Supply is all types (Tier A - D), which includes non-vacant land assumed potentially redevelopable land.

What does this study do?

- Phase III: Policy Alternatives (now)
  - Check estimates
    - More research on potential change in type, operation, and land needs of businesses
    - Estimate costs of making more land available
  - Compare alternative strategies and policies

What does this part of Phase III cover?

- Demand analysis and emerging industrial trends: a check on Phase II demand analysis
  - Population and employment: trends and forecasts
  - Emerging trends affecting industrial land
    - Location, parcel size, employment density, building type, infill, redevelopment
  - Alternative land demand forecasts

How is this presentation organized?

- Definitions
- Expected employment growth
- Land demand
- Site requirements
- Conclusions

Definitions

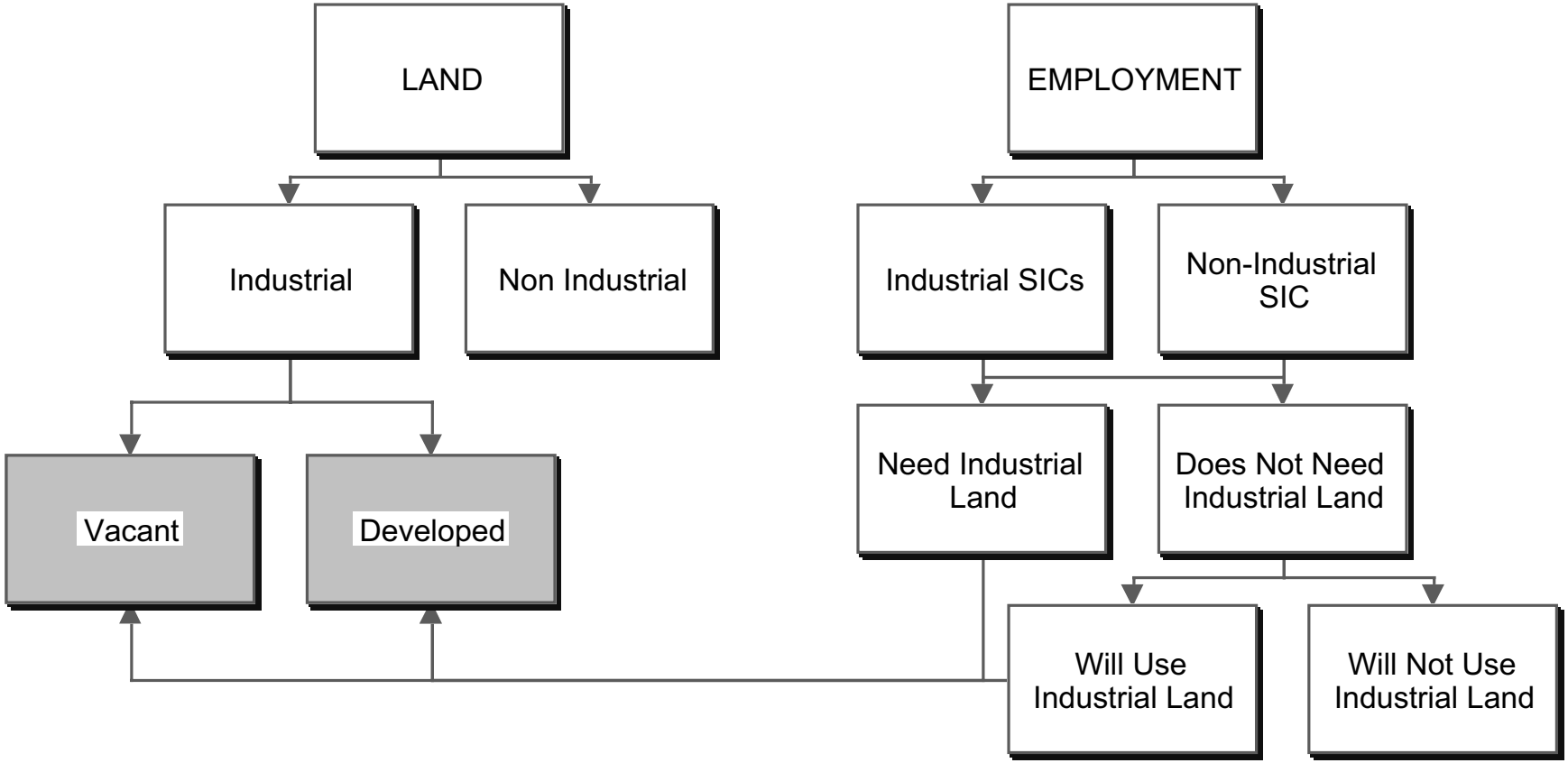
Definitions: What is an "industrial" *job*?

- Typically includes following sectors:
  - Manufacturing
  - Transportation, Communication and Utilities
  - Wholesale Trade
  - Mining and Construction
- Similar to "traded" or "basic" sectors
  - Usually excludes Services, even if they are export-oriented

What is "industrial" *land*?

- Land designated to allow (not necessarily require) industrial uses
- Not all jobs in "industrial" sectors use industrially-designated land
  - E.g., head office in downtown commercial
- Not all industrially-designated land is used by "industrial" sectors
  - Some services NEED industrial land (e.g., auto repair)
  - Some office/retail/residential developments USE industrial land

Land and employment



Industrial jobs by land designation, 2000

	Gross Acres	Industrial Jobs as % of All Jobs
All Industrial Areas	44,198	73%
Industrial Area	417	77%
Heavy Industrial	15,891	85%
Light Industrial	6,326	68%
Mixed Use Industrial	21,564	69%
All Commercial Areas	13,704	17%

Source: Otak, based on 2000 ES-202 data for Clackamas, Multnomah, and Washington Counties, matched with parcel data and plan designation categories from Metro's RLIS database

Note: In this table, "industrial" includes construction, mining, manufacturing, TCU, and wholesale. It does not include services (auto repair, etc.)

Use of "industrial" for demand analysis

- How much vacant industrially-designated land does the region need?
- It must accommodate most job growth in "industrial" sectors
- It must also accommodate some job growth in "non-industrial" sectors

Expected Employment Growth

Employment growth: nation and state

- Continued growth: U.S., Oregon, Region
- Convergence of regional and national growth rates
- Continued decline in "industrial" share (though increase in number)
- Continued rise in services share

1999 Six-County Region Employment

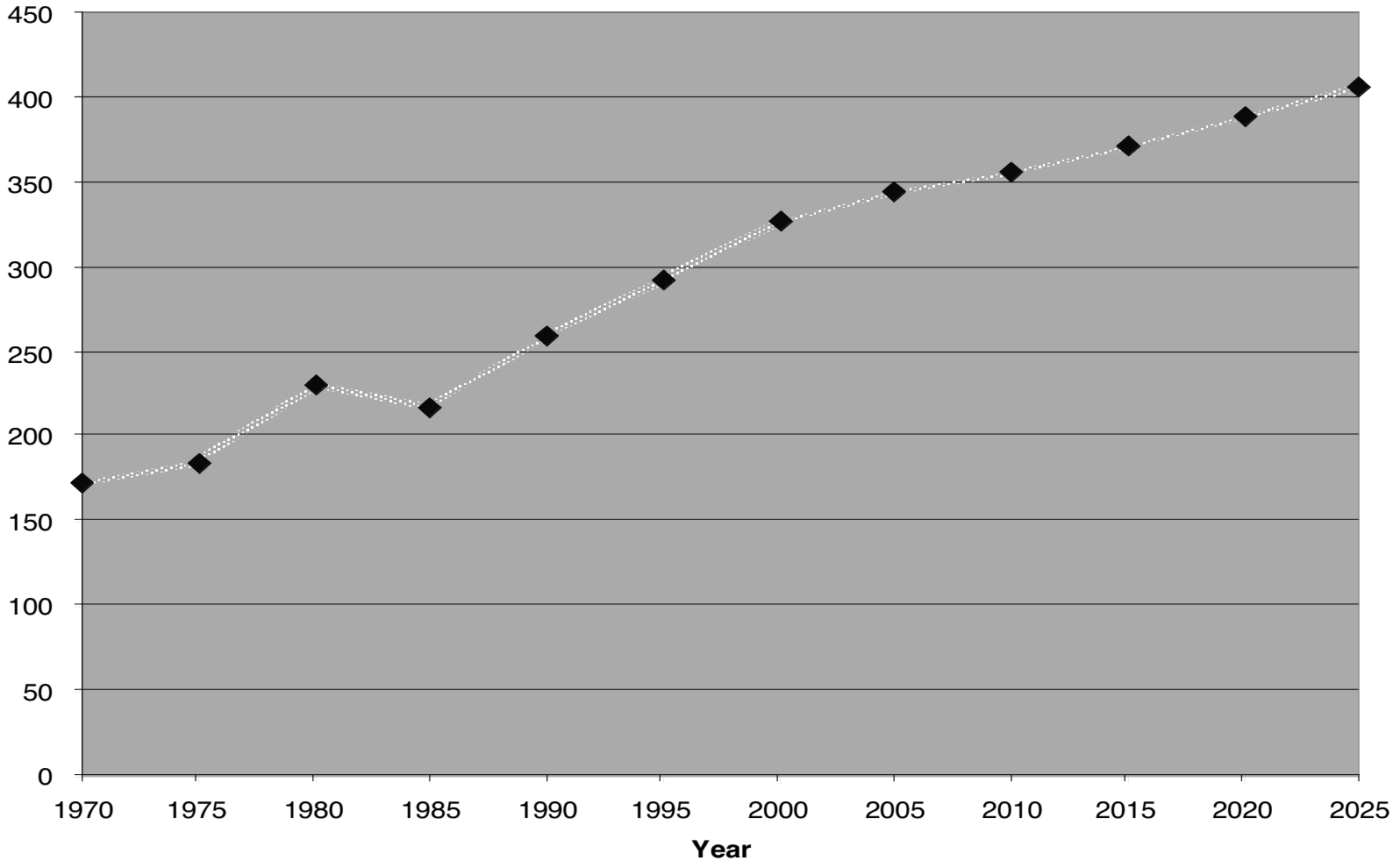
- Industrial

Manufacture	17%
Wholesale	8%
TCU	6%
Construction	6%
Subtotal	37%

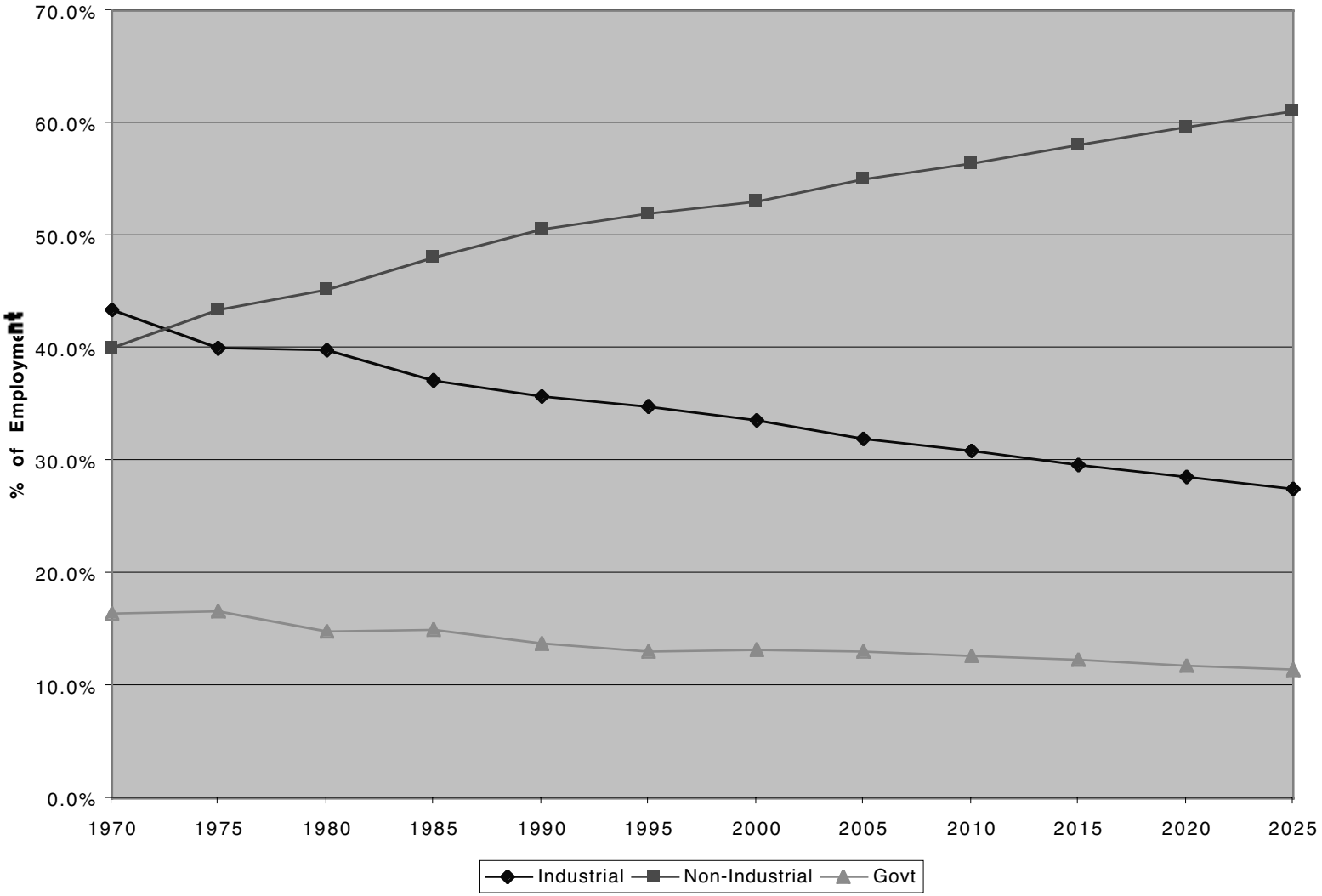
- Non-Industrial

Services	32%
Retail	20%
FIRE + Gov	9%
Ag/For./Fish.	2%
Subtotal	63%

Regional industrial employment (000s)



Regional share of employment



Analysis: Estimated Demand for Industrial Land

Review of Phase II demand analysis

- 8 key factors in estimating land need
  - Job growth forecasts
  - % jobs by sector that need industrial land
  - Use of non-vacant industrial land
  - Distribution of jobs to building types
  - Employment densities (sq.ft./employee)
  - Floor-to-area ratios
  - Vacancy rates
  - Non-industrial use of industrial land

Limitations

- Inherent forecasting problems
  - 25 years Economic cycles and changes
  - Technology Public policy
- Thus, our test
  - Given existing conditions and expectations for markets and policy, is an assumption or forecast reasonable?
  - Reasonable: no alternative assumption or forecast is obviously more likely

Changes to Phase II

- Some adjustment to % industrial
- Minor adjustment to employment densities and FAR
- More consideration of use of non-vacant land

Use of non-vacant land ("refill")

- Phase II assumptions:
  - Potentially redevelopable land considered on supply side
    - But includes wide spectrum of potential
      - How much will actually be redeveloped?
  - Other use of non-vacant land not considered in Phase 2 analysis
    - Increased shifts, on-site infill, more workers per square feet, etc.

Use of non-vacant land ("refill")

- Findings:
  - Alternative to supply-side analysis: assume a % of emp. growth to go on non-vacant land
  - Metro uses this method; found 21% of industrial employment growth accommodated by "refill" for 1994-96
  - Must take cycles into account
- Conclusions
  - Issue best addressed on demand-side
  - 15% is a reasonable long-term average

Forecast of demand for industrial land

- A few alternatives in each factor lead to thousands of possible different outcomes
- Modeled from 2000 to 2025 based on research
  - Extremes: 4,600 to 10,300 net acres
  - 90% Confidence Interval: 5,700 to 8,200 net acres
  - Mean: 6,900 net acres (our best estimate)
  - Phase II: 7,900 net acres

Site Requirements

Site requirements: why care?

- Not just about *how much* land…
- Also about *what type* of land
- If firms don't find the right type of land, it doesn't matter how much total industrial land is available

Site requirement trends: clustering

- Clusters are similar businesses, supportive businesses, labor force and networks
- Continued perception that proximity to existing clusters is key, BUT...
- Rising land prices and traffic congestion causing some dispersal: regionwide clusters
- Conclusion: continued strength of existing clustering, but potential growth elsewhere

Site requirement trends: utility needs

- Most industries require:
  - Good transportation infrastructure
  - Good telecommunications
- Some industries require:
  - High electricity use from reliable source
  - High water use

Site requirement trends: labor force

- Proximity to skilled labor is important for many industries
  - Region has skilled labor
  - Transportation system offers intra-region mobility
  - Proximity to training can be key
- Quality of life and affordable, diverse housing stock needed to attract and keep skilled labor

Site requirement trends: suburbanization

- Consistent trend over past 30 years
  - Perception (waning) of less traffic congestion
  - Following residential suburbanization
  - Lower price and greater availability of land
- Slowed by recent counter-trends
  - Need to attract skilled workers with urban amenities
  - Less land needed by some high-tech industries, e.g., software and bio-tech

Site requirement trends: price sensitivity

- Firms optimize: trade-offs between site needs and costs
  - Importance of quality of life, workforce skills, and clustering leading to less land price sensitivity in some industries BUT…
  - Some manufacturing/warehouse
    - Land intensive relative to capital and labor
    - Very sensitive to lease rate
    - Thus, land price (relative to other areas) matters
    - Example: timber mill

Site requirement trends: site size

- Varies greatly:
  - Across industries
  - Within industries
- Need a mix of site sizes
- Future expansion on-site is common desire

Parcel size analysis

- Based on analysis of employment size distribution of tri-county firms, from 2000 Oregon Employment Dept. data
- Translate workers to parcel size using findings on FAR, sqft./employee, etc.
- Findings: Most firms will require small parcels, but the large parcels will account for much of total acreage needs
- But, parcels can be assembled to sites

Summary

Growth and total land need

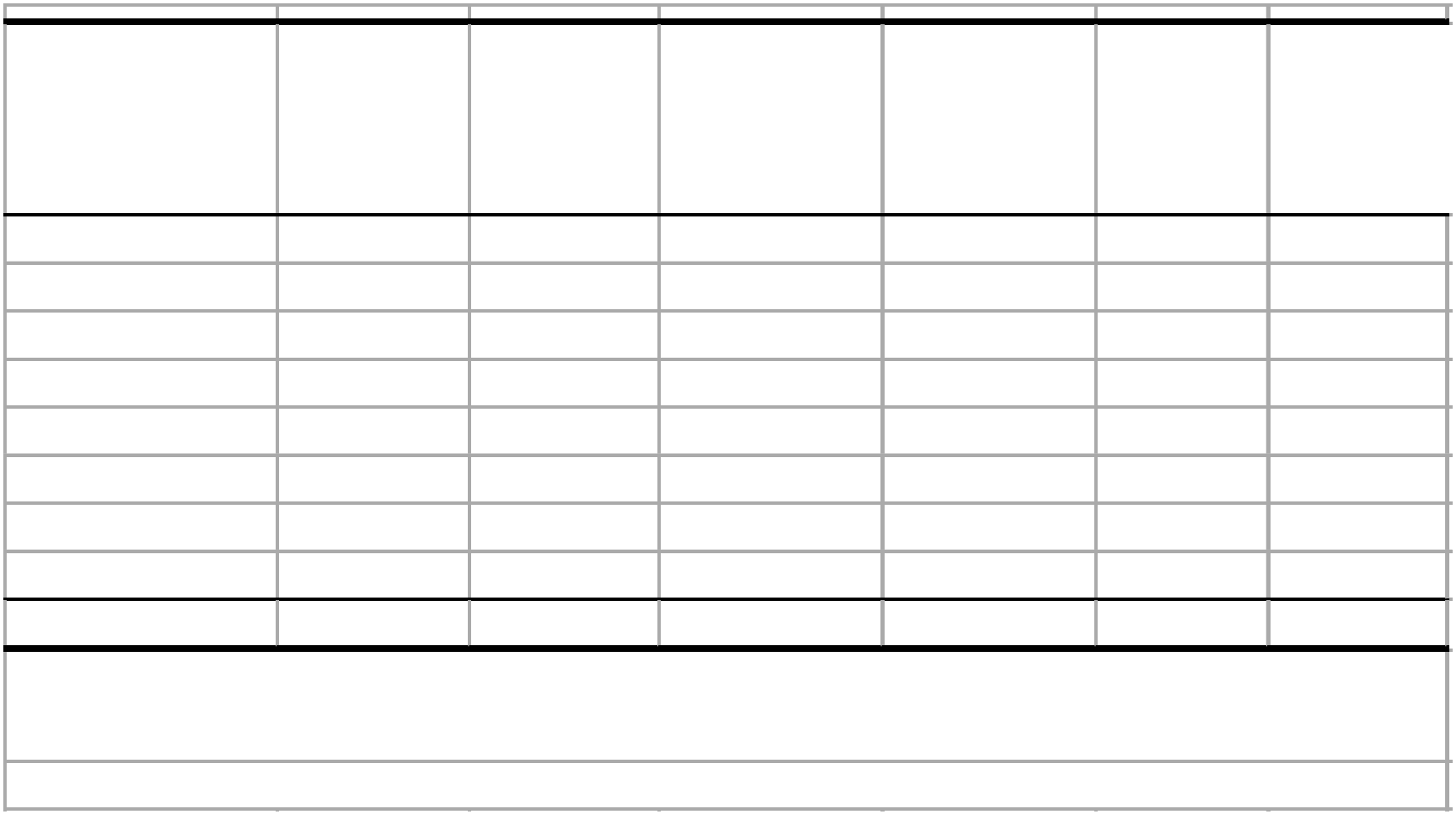
- Growth forecasts reasonable
- How much net buildable vacant industrial land will this require?
  - There are factors decreasing density (e.g., automation) and increasing density (e.g., more functions performed in warehouses)
  - Use of non-vacant land and non-industrial land decreases the need; use of industrial land by non-industrial jobs increases the need
  - Our estimate: 6,900 acres

Site requirements

- Labor force, clusters, utilities, land price all important
  - Absolute and relative importance varies by industry
- Mix of parcel sizes needed

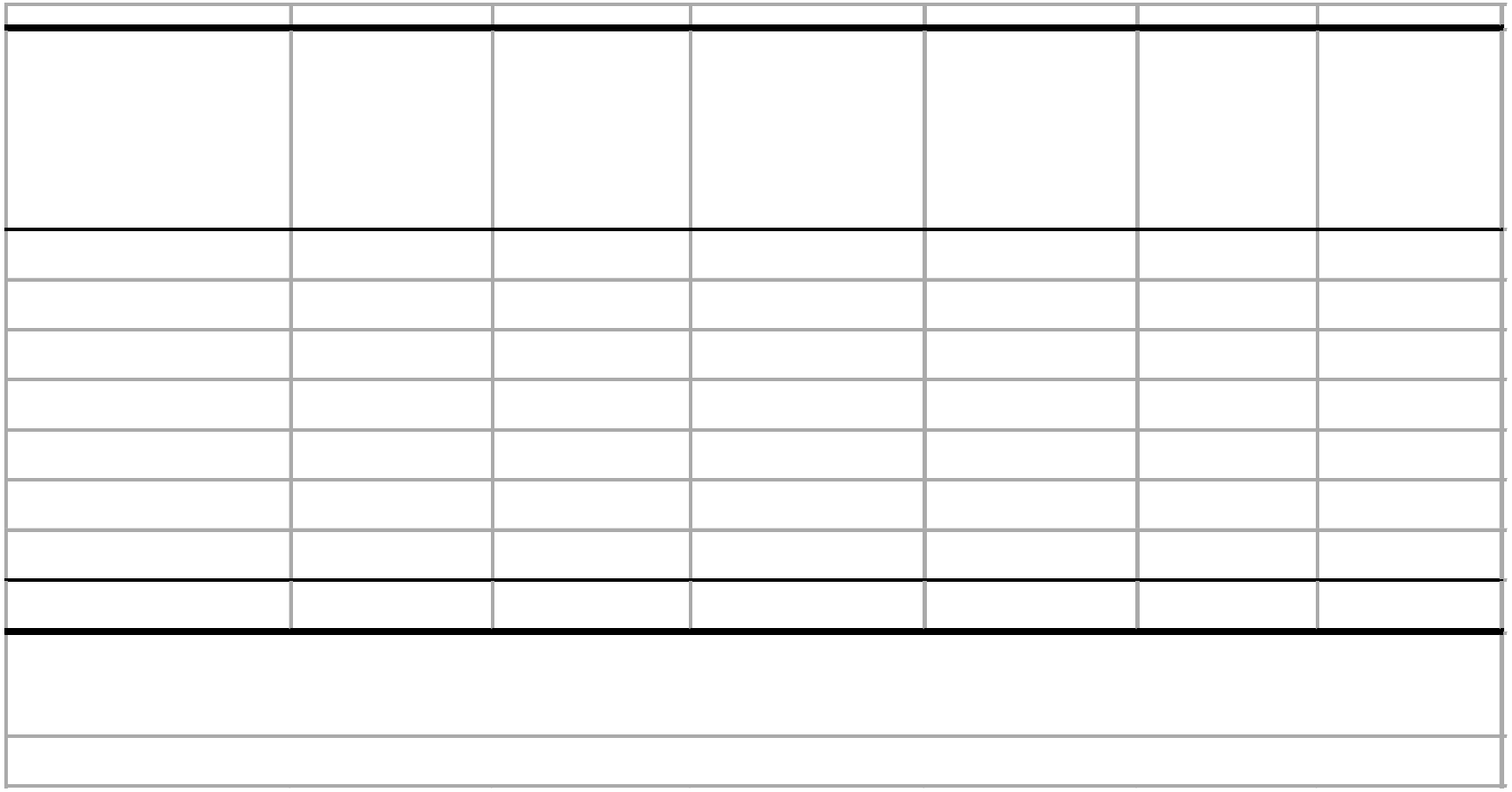
Parcel size demand, 2000-2025

- Tech/Flex space



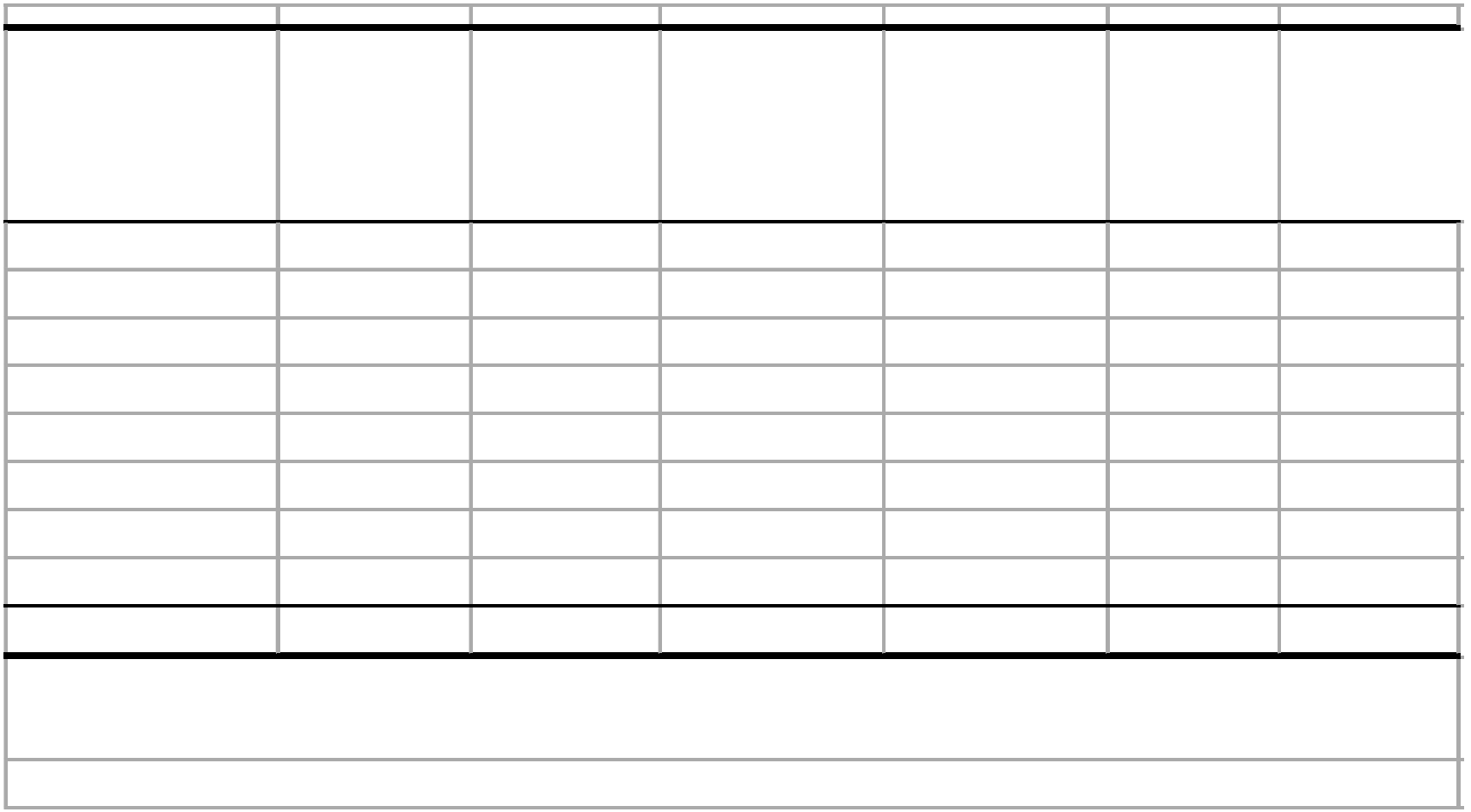
Parcel size demand, 2000-2025

- Warehouse/Distribution space



Parcel size demand, 2000-2025

- General Industrial space



Forecast by location, 2000-2025

County	Demand 2000-2025 (net acres)	Tier A Supply (from Phase 2, gross acres)
Washington	2,100	483
Clackamas	2,000	47
Clark	1,600	1,345
Multnomah	900	442
Yamhill	250	0
Columbia	50	70