

Economic Productivity of
Employment and Industrial Land

Economic Mapping Pilot Project

June 2009

Project Sponsors

- Oregon Economic and Community Development Department (OECDD)*
- City of Hillsboro
- NAIOP
- CAR/CREEC/OAR

* Project was funded in part by the Oregon State Lottery Funds administered by the Oregon Economic and Community Development Department.

OECDD – \$25,000

City of Hillsboro - \$5,000

NAIOP - \$2,500

CAR/CREEC/OAR - \$1,500

CAR – Commercial Association of Realtors. CREEC – Commercial Real Estate Economic Coalition. OAR – Oregon Association of Realtors

Project Team

- Group Mackenzie
- Johnson/Reid
- OECDD

Project Objectives

- Develop a methodology for determining the economic productivity of industrial / employment land utilizing a specific study area
- Document methodology so it can be used elsewhere
- Contribute to the current dialogue on urban and rural reserves in the Portland metro area

Develop and test the methodology on land in the Hillsboro area

Determine how the approach can be replicated in other parts of the metro area and the state

Contribute information that can add to the understanding of the economic potential of candidate lands in the Reserves study area

Take the first look at how an economic foundations land map can be created

Methodology - Approach

- Define and analyze existing employment area as influenced by economic clustering
- Determine physical constraints and net developable acres
- Identify and calculate key productivity measures
- Project findings to defined undeveloped area

- 1) Identify a specific geography that will be analyzed for its economic productivity e.g. Title 4 land near Hillsboro
- 2) Describe and define the economic activity that is currently taking place in the developed area; define the cluster aspects of that economic activity; describe the submarkets, if they exist, in the area
- 3) Use same methodology used to determine development constraints in the Reserves Study Area, and apply it to the existing development area
- 4) Identify the variables that can be accessed and the sources of that data; determine how they will be applied to the developed area; and calculate the measures
- 5) Use the results of this analysis to project the potential economic productivity of land adjacent and proximate to, but outside the UGB

Methodology – Data Sources

- Metro
 - RLIS
- Oregon Employment Department
 - ES202
- Washington County
 - Assessor Data
- 2005 data set

RLIS – Regional Land Information System. A clearinghouse of GIS data for the Metro region. The data are maintained by Metro and created by Metro and other jurisdictions.

ES202 – from the State Employment Department. Economic data including such information as payroll.

Assessor Data – used to derive property tax revenue

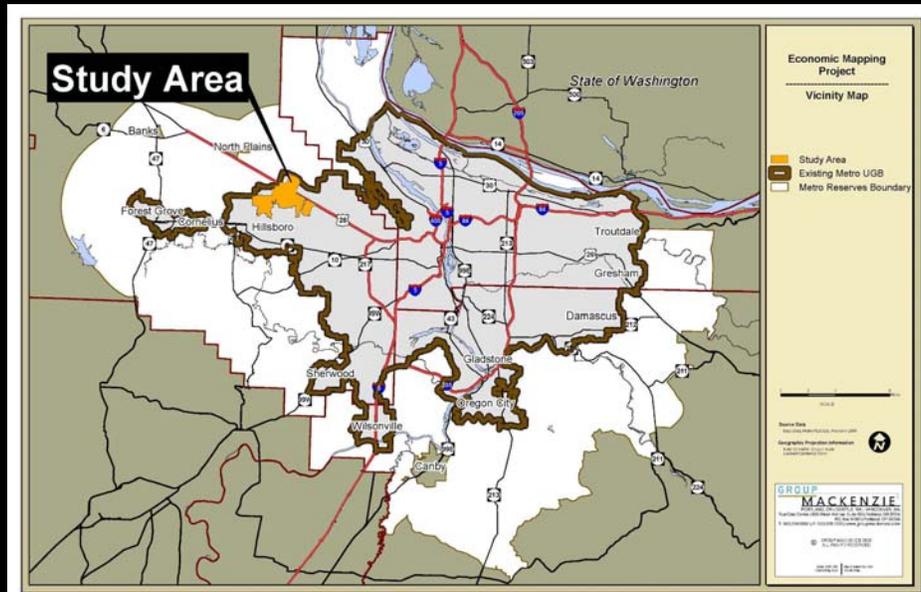
Methodology – Data Analysis

- Productivity of land – total annual market value
- Productivity of land – total annual pay roll
- Productivity of land – total annual property tax revenue

We identified and quantified three levels of productivity of land:

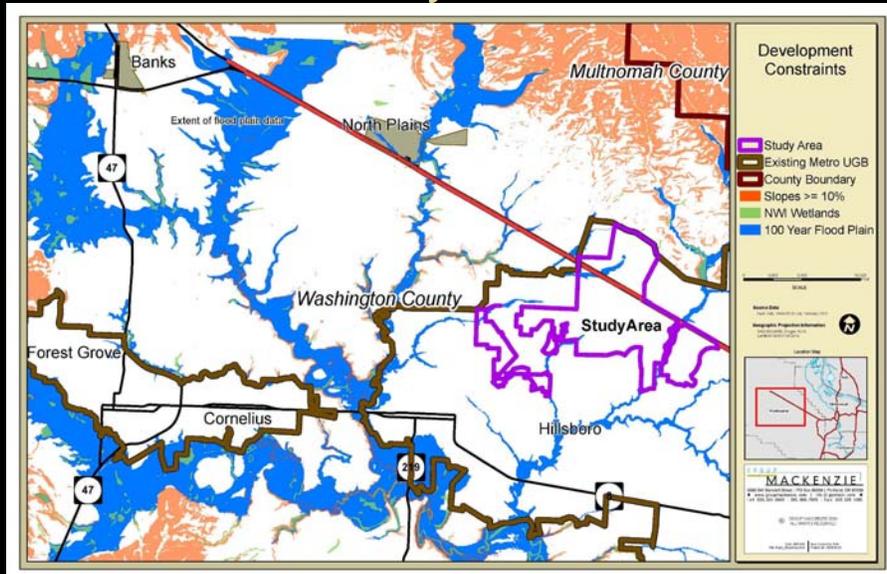
1. Annual market value
2. Annual pay roll
3. Annual property tax revenue

Study Area – Vicinity Map



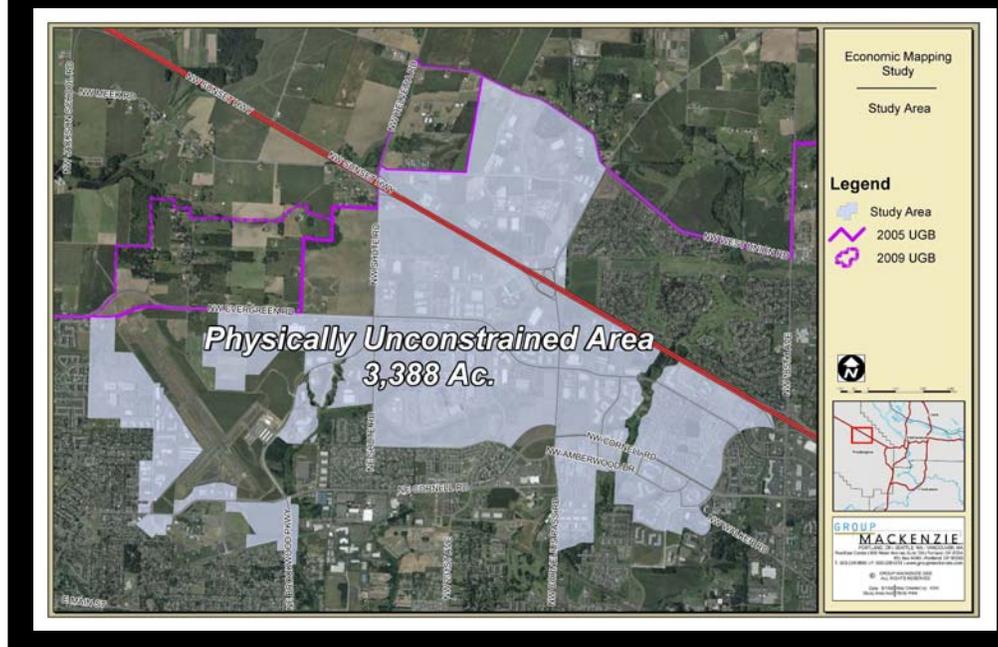
The study area is Hillsboro's Title 4 land

Physical Development Constraints Study Area



This map is an enlargement of the area where this pilot project was done. The constraints are shown in both the "Study Area", the Title 4 area located within the UGB in Hillsboro, and the Reserves Study Area outside the UGB. This shows the lack of physical development constraints in this part of the region.

Study Area – Hillsboro Title 4 Land



Gross Area: 3,534 Acres (designated by Metro as Title 4 land; we have taken out the Hillsboro Airport property and the then undeveloped part in the central north and adjacent to the 2005 UGB to get to this total)

Physically Unconstrained Area: 3,388 Acres (less physical constraints i.e. wetlands, flood plain, slope > 10%) – this is the number we used to calculate productivity of land values

Total Unconstrained Area: 3,042 Acres (less public ROW and physical constraints)

Productive Area: 1,782 Acres (tax lots with building value greater than \$0)

Some of the site attributes of the area include: flat, unconstrained land; availability of infrastructure, including both public and private utilities; access to transportation (Hwy. 26); and access to labor.

Study Area Profile

STUDY AREA: HILLSBORO TITLE 4 LANDS		Distribution of:	
Economic Composition:		Employment	Payroll
		Manufacturing Employment:	63%
Service Employment:		18%	12%
Trade Employment:		10%	5%
Other Employment:		8%	7%
Average Payroll per Employee: \$		77,274	
Unconstrained Area Acreage:		3041.7 Acres	
Productive Area Acreage:		1782.0 Acres	
Average Employment Density:		8.91 Emp/Acre	
Avg. Density per Productive Acre		15.20 Emp/Acre	
Major Industries			
NAICS	Description		
334413	Semiconductor and Related Device Manufacturing		
334515	Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals		
561422	Telemarketing Bureaus and Other Contact Centers		
333295	Semiconductor Machinery Manufacturing		
339113	Surgical Appliance and Supplies Manufacturing		
335999	All Other Miscellaneous Electrical Equipment and Component Manufacturing		
332999	All Other Miscellaneous Fabricated Metal Product Manufacturing		

26,875 jobs with an average payroll of over \$77,000

2/3 of the employment and ¾ of the payroll is in the manufacturing sector

The major industries are electronics related, metals manufacturing and service

Average Employment Density (8.9 employees/acre) is for the total unconstrained area which deletes physical constraints and ROW

Employment Density for the Productive Acreage (15.2 employees/acre) includes those parcels which have investment; in other words those tax lots with buildings valued at greater than \$0.

This area has been identified as a cluster of technology development for the state. As such it also has specific location attributes.

Cluster Production Inputs

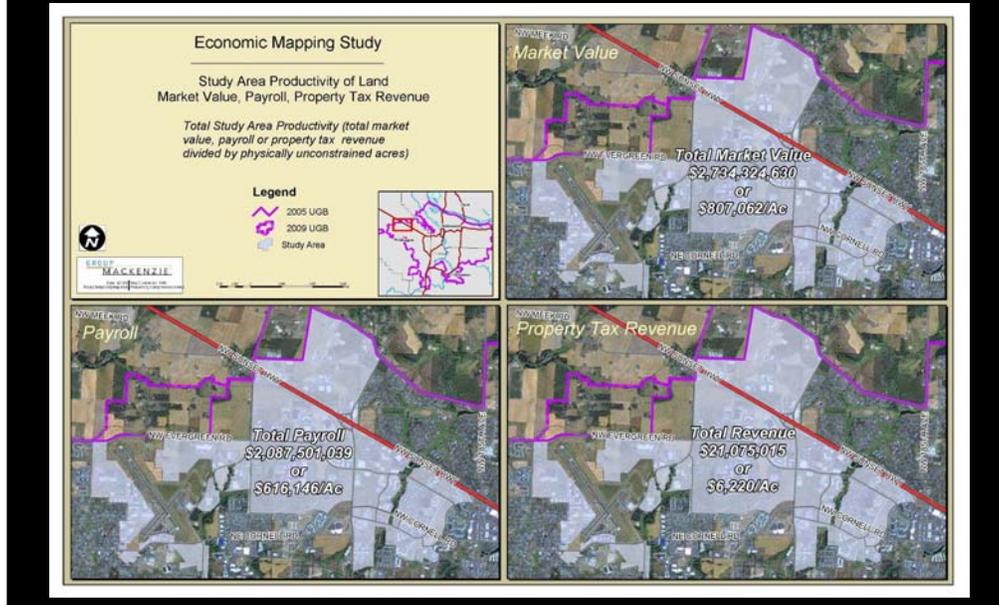
- Highly skilled, specialized technology workforce
- Water/manufacturing cooling capacity
- Electrical power capacity
- Seismically stable, low-slope land
- Transportation: freeway, public transit, executive airport
- Specialized chemical and gas inputs infrastructure
- Experienced public services: large, high tech facility planning and delivery needs

All clusters have unique characteristics. This list for the technology cluster in Washington County is derived from the recently completed Goal 9, Economic Opportunities Analysis. Successful employment areas have a combination of general locational factors and cluster specific attributes.

Employment areas also require infrastructure investments.

Productivity of Land

Annual Market Value, Payroll, Property Tax Revenue



These maps identify the productivity of the study area for three factors: market value; payroll; and property tax revenue

Annual, 2005 values

Mkt. Value: \$2.7 billion; \$800,000/Acre

This compares to a county-wide average of \$457,575/Acre*

Double the county average

Payroll: \$2 billion; \$616,000/Acre

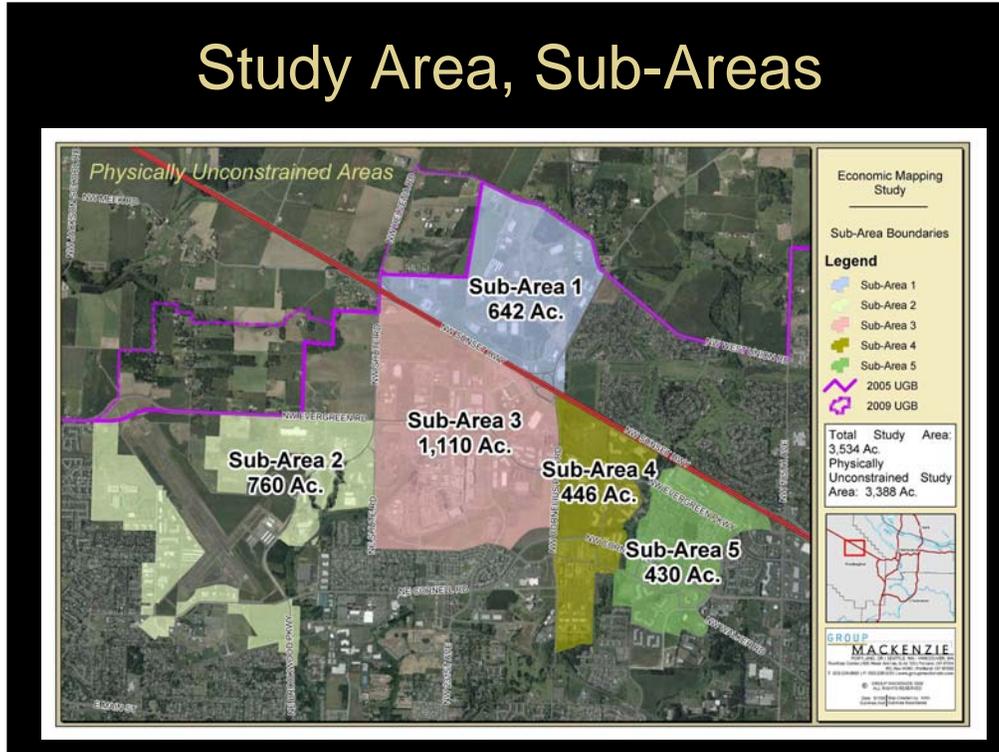
Property Tax: \$21 million; \$6200/Acre

*Total Employment Tax Lot Gross Acres in the County is 21,176 Acres (Title 4 and/or Industrial or Commercial or Mixed Use Employment General Zoning Classification)

Total Market Value of employment Tax Lots is \$9.7 billion (\$9,689,626,474)

Market Value per Acre is \$457,575.9

Study Area, Sub-Areas



So far, we've presented information for the entire Title 4 economic study area. We also looked at subareas, that identify economic activities that contribute to the whole. These subareas provide a more detailed analysis of what makes up this cluster of economic activity and resulting productivity and also is key to the methodology we have developed to project future productivity.

Sub-Area 1: General Manufacturing

The subarea is primarily industrial manufacturing including machinery and equipment, printing, fabricated metal, technology and medical equipment. Other non-manufacturing users of general industrial land are in the district, specifically large retailers and wholesalers requiring yard space.

Sub-Area 2: Corporate Campus

The economic composition of subarea 2 is largely technology manufacturing/software and corporate campus and includes Intel's Jones Farm Campus, Radisys, and FEI. The average wage is the highest in the region at just over \$91,000.

Sub-Area 3: High Tech Manufacturing

Intel's Ronler Acres Campus accounts for roughly 49% of the subarea's land mass and an even greater share of total employment. Other companies include smaller Japanese supplies and industrial gas suppliers. The average wage is roughly \$76,612 in the subarea.

This subarea total approximately 1100 acres. 50% of this total is undeveloped. Roughly 20% of undeveloped land is land banked by Intel at Ronler Acres. This is an expected land use pattern for high-technology development. Flexibility in parcel/site size is paramount. Holding costs of "land banking" for future expansion and development are minimal relative to facility and equipment costs.

Sub-Area 4: Professional Business Park and Support Services

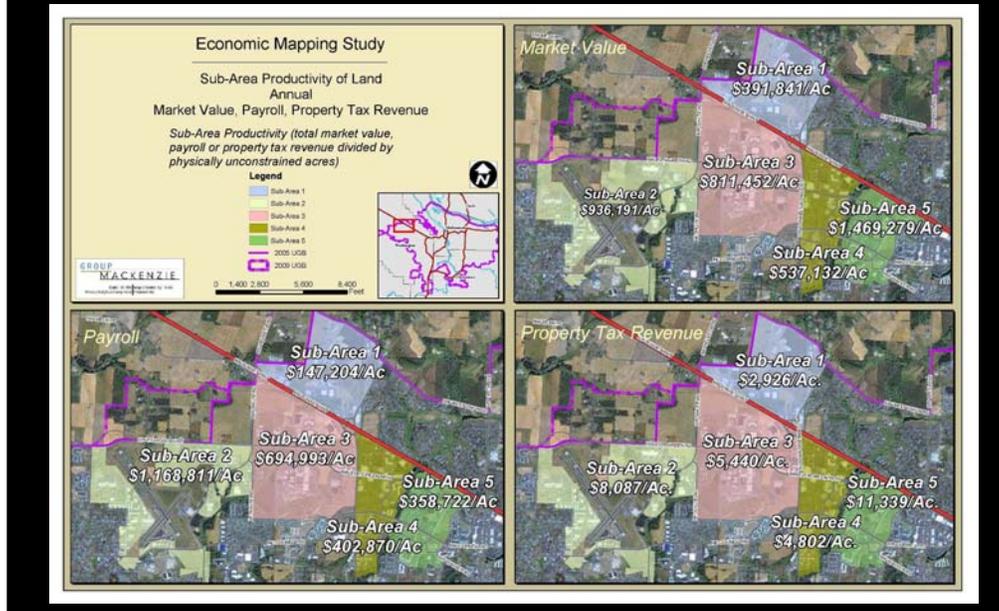
Development forms in the district are largely suburban office and professional business park space. Employment in manufacturing and several predominant high-tech employers, service and trade oriented industries and construction.

Sub-Area 5: Services and Regional Retail and some Housing

Subarea 5 has the lowest concentration of manufacturing employment in the study area with over 78% of employment and 68% of payroll in the district falls in service and trade industries. The district has the highest allocation employees in information, namely software publishing. Retail employment also due to Streets @ Tannesbourne. The area also has some housing, mainly apartments.

Productivity of Land

Annual Market Value, Payroll, Property Tax Revenue



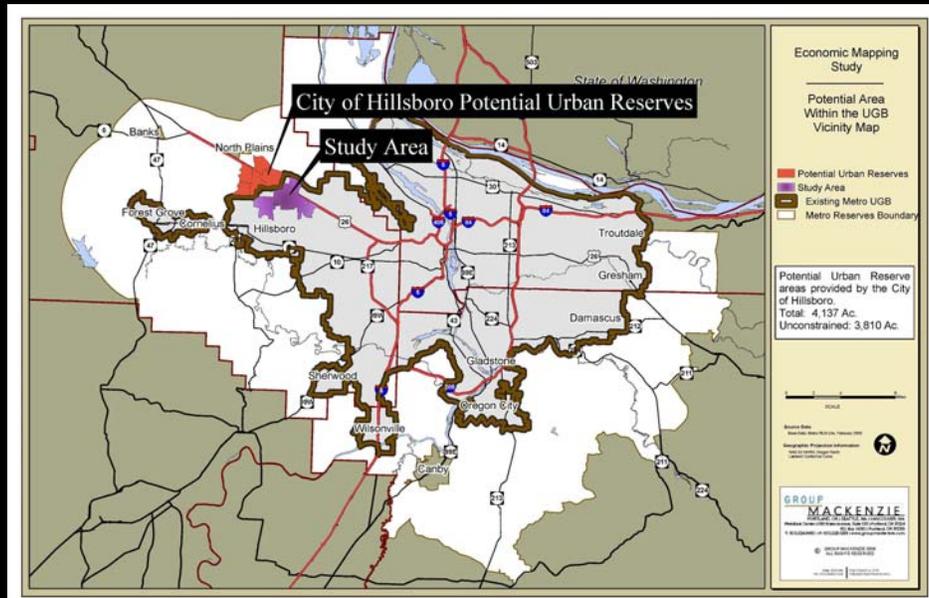
Market Value Range/Acre: \$390,000 - \$1.4 million

Payroll Range/Acre: \$147,000 - \$1.1 million

Property Tax Range/Acre: \$2900 - \$11,000

2005 numbers

Potential Urban Reserves



We have identified the economic productivity of the study area land. Now, we are using that analysis to project what the potential productivity of the land outside the UGB, in the Reserves Study Area, could be. You can see from this map that the adjacency to the Title 4 area can be expected to have a great influence on the potential economic productivity or the potential urban reserves area.

Economic Productivity Model

- Projected economic productivity in the new urban area is a function of the per acre value of:
 - Productivity values of existing, proximate economic activity
 - Productivity values of regional or aspirational economic activity

Development Profile of Reserves Area

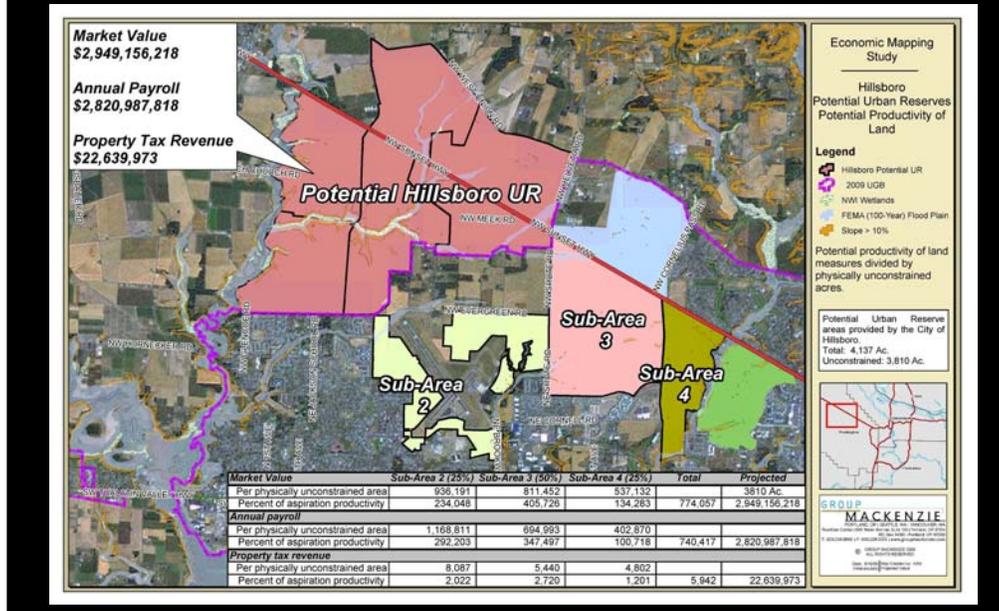
- 25% of Reserves Area projected to be corporate headquarters
- 50% of Reserves Area projected to be high tech manufacturing
- 25% of Reserves Area projected to be professional business park

This development profile reflects the aspirations of the City of Hillsboro as reflected in the Goal 9 Economic Opportunities Analysis.

The specific distribution of the existing Title 4 land subareas are:

50% Subarea 3, high tech manufacturing; 25% Subarea 2, corporate campus; 25% Subarea 4, professional business park.

Projected Annual Economic Productivity



These projections are based on the per acre productivity of the adjacent Title 4 land and reflect the aspirational goals of the City of Hillsboro.

The projected annual productivity of the potential urban reserves land in Hillsboro is:

Market value of \$3.2 billion;

Annual payroll of \$3 billion;

Annual property tax revenue of \$24.6 million;

Conclusions

- Potential economic productivity of future employment land can be measured
- Economic productivity is a function of both existing investment and community aspirations
- Development potential of employment land is dependant on locational factors that can be identified and analyzed

Factors Influencing Economic Potential of Land

- Physical Constraint Factors
 - Wetlands
 - Floodplain
 - Slope
- Infrastructure Factors
 - Utilities
 - Transportation
- Adjacency Factors
 - Economic activity
 - Labor force
- State and Regional Aspiration Factors
 - State/Regional opportunities
 - Statewide Planning Goal 9: Economic Development

This project set out to inform a better understanding of the economic potential of new urban areas, based on an understanding of adjacent economic activity. As the work progressed it evolved to taking into consideration the infrastructure and locational requirements of companies and how the aspirational goals and regional and state opportunities must also be taken into consideration. There is more work to do to gain a more complete understanding of the relationship of existing economics, economic opportunities and locational factors to specific areas that have the potential to develop as new urban designations.

Next Steps

- Present the findings to get feedback and input
- Apply and test methodology in other areas
- Refine method for determining infrastructure costs to support land productivity in new urban areas
- Use physical constraint, infrastructure, and economic adjacency and aspirational factors to identify potential employment lands