



**ECONOMIC OPPORTUNITIES ANALYSIS**  
**HERMISTON, OREGON**

Prepared For:  
City of Hermiston, Oregon

July 2024

# Acknowledgments

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# I. INTRODUCTION

This report introduces analytical research presenting an Economic Opportunities Analysis (EOA) for the City of Hermiston, Oregon.

Cities are required to reconcile estimates of future employment land demand with existing inventories of vacant and redevelopable employment land within their Urban Growth Boundary (UGB). The principal purpose of the analysis is to provide an adequate land supply for economic development and employment growth. This is intended to be conducted through a linkage of planning for an adequate land supply to infrastructure planning, community involvement and coordination among local governments and the state.

To this end, this report is organized into seven primary sections:

- **Economic Development Objectives:** The community goals and policies that form the foundation for the EOA.
- **Economic Trends:** Provides an overview of national, state, and local economic trends affecting Umatilla County and the City of Hermiston, including population projections, employment growth and a demographic profile.
- **Economic Development Potential:** A discussion of the comparative advantages of the local community and work force.
- **Industries Differentiation Analysis:** Analysis of key industry typologies the City should consider targeting as economic opportunities over the planning period.
- **Employment Land Needs:** Examines projected demand for industrial and commercial land based on anticipated employment growth rates by sector.
- **Reconciliation:** Summarizes the City's inventory of vacant and redevelopable industrial and commercial land (employment land) within City of Hermiston's UGB. Compares short- and long-term demand for employment land to the existing land inventory to determine the adequacy and appropriateness of capacity over a five and twenty-year horizon.
- **Conclusions and Recommendations:** Summary of findings and policy implications.

## II. COMMUNITY ECONOMIC DEVELOPMENT OBJECTIVES

The City of Hermiston is preparing an Economic Opportunities Analysis (EOA) based on a 20-year forecast of employment growth. A Statement of Community Economic Development Objectives defines a sustainable vision for economic development in Hermiston by considering the city's economic history, changes affecting that tradition, and new and emerging opportunities.

The City of Hermiston aspires to become the regional center for trade and industry through the following actions:

- Ensuring an adequate supply of industrial land in large parcels to provide job creation and economic growth.
- Ensuring an adequate supply of commercial land in the downtown and along commercial corridors.
- Removing barriers to commercial redevelopment to ensure a modern and efficient commercial base.
- Continue to provide leadership in identifying and locating new, and expanding existing, industrial, and commercial businesses into the City.
- Providing adequate infrastructure to support all employment activities through public and private funding sources.

### **COMPREHENSIVE PLAN POLICIES**

The following is a summary of policies that are related to the objectives of this EOA, drawn from Chapter III of the City of Hermiston Comprehensive Plan, which contains more context and discussion on each.

#### **POLICY 20: GENERAL ECONOMIC DEVELOPMENT**

##### **Overview**

Hermiston is well situated as an economic hub in Umatilla County and the surrounding region. The city enjoys some competitive advantages which can be enhanced in the future to grow employment, establish successful industry clusters, and diversify the employment base. An ample supply of buildable commercial and industrial lands, in multiple zoning classifications, will provide the flexibility to meet the needs of new and expanding businesses.

##### **Vision**

To become the center of commercial and industrial activity in northeast Oregon providing an attractive, livable community utilizing adaptive, modern policies to capture economic development opportunities.

#### **POLICY 17: AGRICULTURE AND AGRICULTURE-RELATED ECONOMY**

THE CITY OF HERMISTON WILL UNDERTAKE ACTIVITIES WHICH REINFORCE ITS POSITION AS THE RURAL SERVICE CENTER FOR THE REGION.

- A) The City will maintain an adequate supply of designated commercial land within the City to provide a full range of goods and services needed by area farmers, and support agriculture related industries;
- B) The City will encourage agriculture-related businesses which add value to agricultural production in the area, including food processing, storing and shipping, and agri-tourism.

## **POLICY 18: GENERAL INDUSTRIAL DEVELOPMENT**

THE CITY OF HERMISTON WILL FACILITATE INDUSTRIAL DEVELOPMENT AS A MEANS OF CREATING NEW JOBS AND FOSTERING THE ECONOMIC WELL BEING OF THE COMMUNITY. IN SUPPORT OF THIS GOAL, THE CITY OF HERMISTON ADOPTS THE FOLLOWING POLICIES:

- A) The City will maintain an adequate supply of designated industrial land to meet anticipated demand, including large developable parcels;
- B) Provide an appropriate level of urban services, including water, sewer, roads, and police and fire protection in a timely and efficient manner;
- C) Identify and recruit new types of industry as a means of diversifying the economic base, and building existing industry clusters.

## **POLICY 19: COMMERCIAL DEVELOPMENT**

THE CITY OF HERMISTON WILL ASSURE THE AVAILABILITY OF A SUFFICIENT SUPPLY OF COMMERCIAL LAND TO ACCOMMODATE 20-YEAR PROJECTED NEED AND STRIVE TO ACHIEVE THE BALANCED DISTRIBUTION OF COMMERCIAL ACTIVITIES IN NEIGHBORHOODS, DOWNTOWN, AND ALONG OUTLYING HIGHWAYS.

## **HERMISTON 2040 VISION**

The following is a summary of Goals and Actions from the Hermiston 2040 Community Vision + Action Plan most relevant to economic development.

### **GOAL: GROWING + PROSPEROUS HERMISTON**

As the fastest growing community in eastern Oregon, Hermiston is fostering sustainable growth that embraces the diversity of its growing population while preserving the small-town feel. Hermiston's individuals and families thrive in a community that offers access to economic opportunities, diverse retail offerings, housing options for all, and world-class education and support services.

#### **Action 1.1: Expand retail, dining, and community attractions.**

- Provide more retail and shopping options that include gathering spaces and social opportunities.
- Attract more restaurants, cuisine variety, and food pods.
- Attract more grocery retail options.
- Encourage tourism that builds on existing opportunities.

#### **Action 1.2: Increase housing opportunities.**

- Support the development of more diverse and affordable housing options for all segments of the community.

#### **Action 1.3: Provide economic opportunities that allow individuals and families to thrive.**

- Promote sustainable growth that preserves the City's small-town feel.
- Revitalize Hermiston's downtown – update the older buildings and attract businesses to Main Street.

#### **Action 1.4: Provide world-class education and support services for people of all ages.**

- Provide improved school facilities and quality education for all.

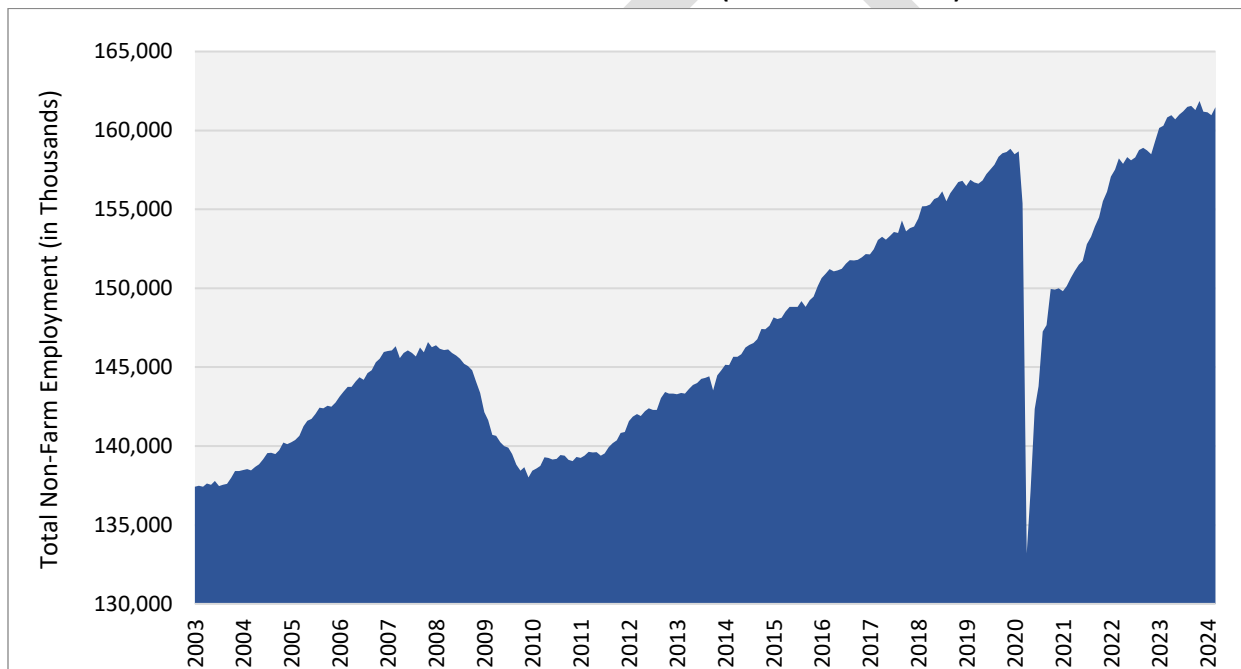
### III. ECONOMIC TRENDS

This section summarizes employment and workforce trends at the national, state, and local level that will influence economic conditions in the City of Hermiston over the 20-year planning period. This section is intended to provide the economic context for growth projections and establish a socioeconomic profile of the community.

#### A. NATIONAL TRENDS

**Employment:** In the first months of the pandemic, the nation lost nearly 22 million jobs, or 14% of total employment. However, the economy recovered quickly, displaying exponential growth as early as February 2021. As of late 2022, national employment had largely returned to pre-pandemic levels, eventually going on to reach a new peak in 2023 with roughly 162 million non-farm jobs in the economy (Figure 3.1).

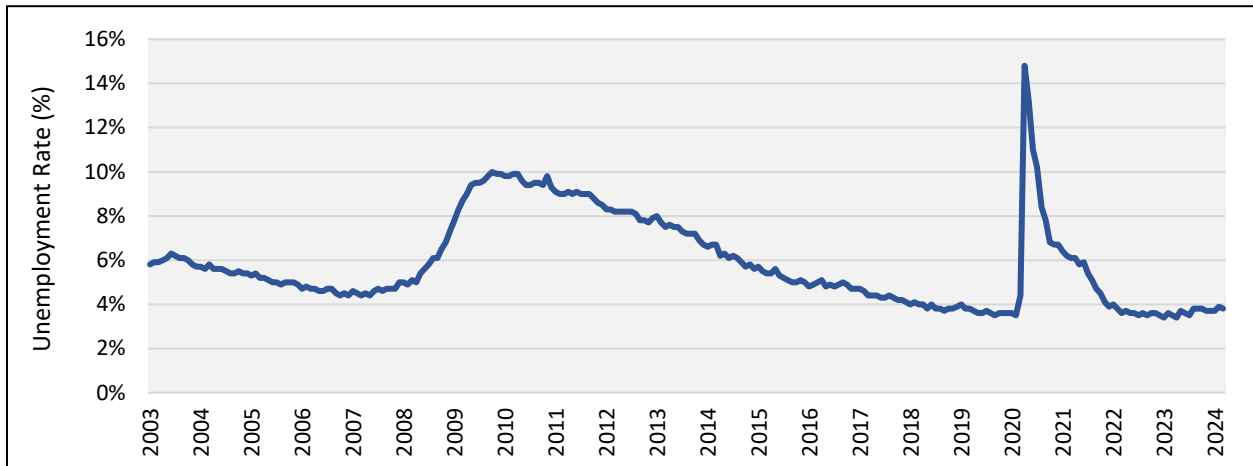
FIGURE 3.1: NATIONAL EMPLOYMENT LEVELS (JAN 2003 – MAR 2024)



Source: U.S Federal Reserve Bank of St. Louis

**Unemployment Rate** The national unemployment rate spiked to nearly 15% in 2020 as many businesses paused operations or closed permanently in the first months of the pandemic. However, the unemployment rate began to decline almost immediately, and by mid-2022 had fallen back to a low 3.5%. There has been a slight uptick in the unemployment rate following the summer 2023, but it has remained low by historical standards, hovering around 3.9% as of March 2024 (Figure 1.2).

FIGURE 3.2: NATIONAL UNEMPLOYMENT RATE (JAN 2003 – MAR 2024)

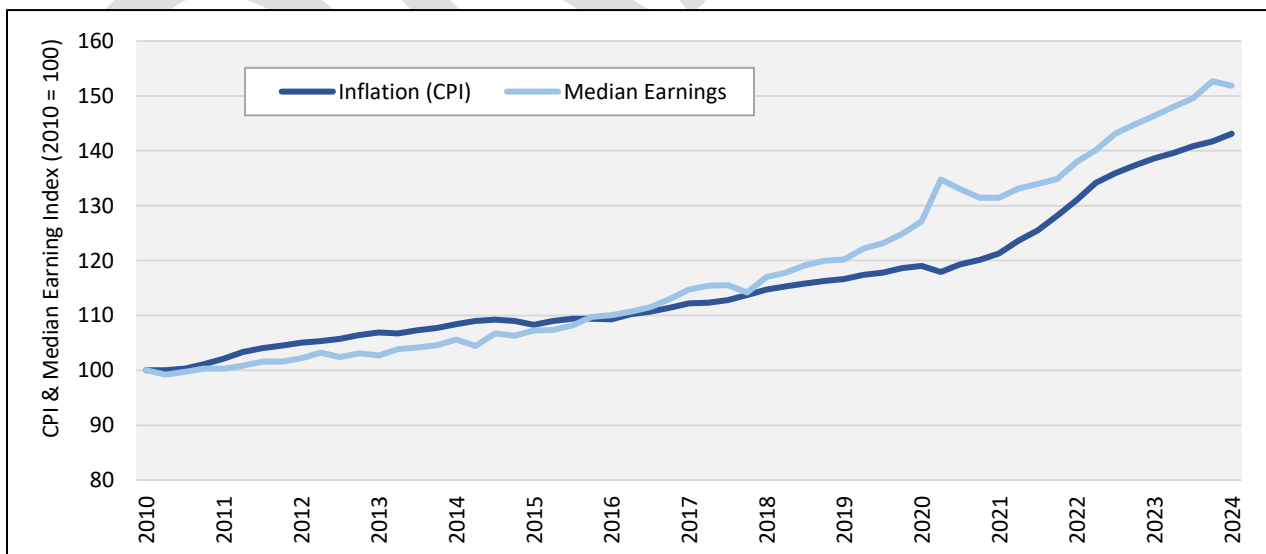


Source: U.S Federal Reserve Bank of St. Louis

**Inflation:** The counter story to this strong positive rebound in employment has been a rising rate of inflation coming out of the pandemic. Various stimulus measures, combined with supply shortages, led to rising prices for many consumer products, energy, and food. The rate of inflation accelerated in 2021 and began moderating towards the end of 2022, though the rate remains elevated (Figure 3.3). The Federal Reserve has maintained higher interest rates to curb price increases, however recent inflation has been at least partially driven by global macroeconomic forces beyond the Fed’s control.

**Wages:** On a positive note, average household earning levels have also enjoyed growth coming out of the recession and have largely kept pace with, or exceeded, inflation in recent years. Earnings also spiked in 2020 when government stimulus payments were added to earned wages. However, this growth has started to decelerate as of Q1 2024, decreasing from the quarter before (Figure 3.3).

FIGURE 3.3: INFLATION INDEX VS. MEDIAN EARNINGS INDEX (Q1 2010 – Q1 2024)

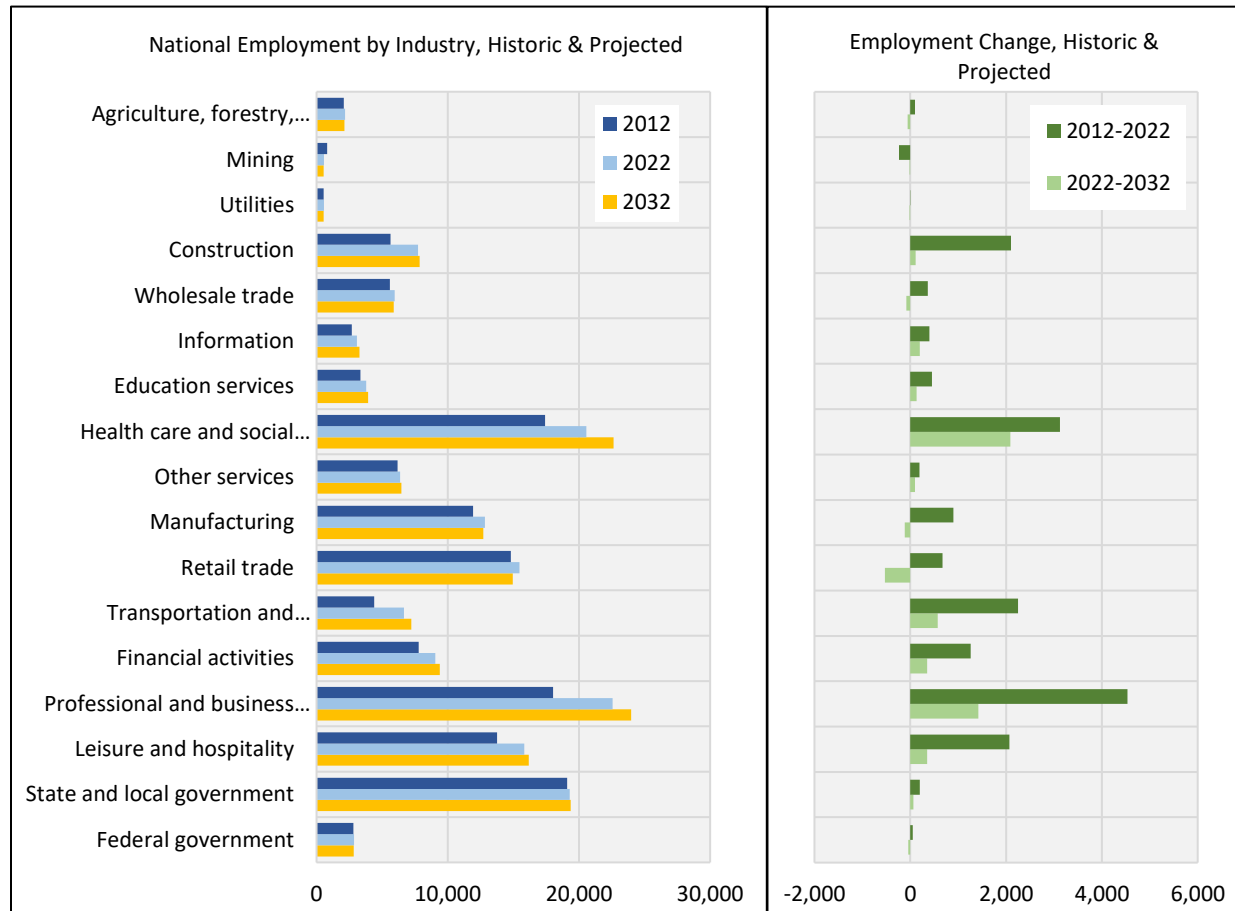


Source: U.S. Federal Reserve Bank of St. Louis; Consumer Price Index for Urban Consumers (US); Median Earnings for Full-Time Employees, Seasonally Adjusted



**Industry Sector Employment:** At a national level healthcare & social assistance is projected to account for the largest share of new employment growth, followed by professional & business services, and leisure & hospitality. The aging of the population is expected to drive the healthcare sector over the next few decades.

**FIGURE 3.4: NATIONAL EMPLOYMENT GROWTH BY SECTOR, HISTORIC AND PROJECTED**

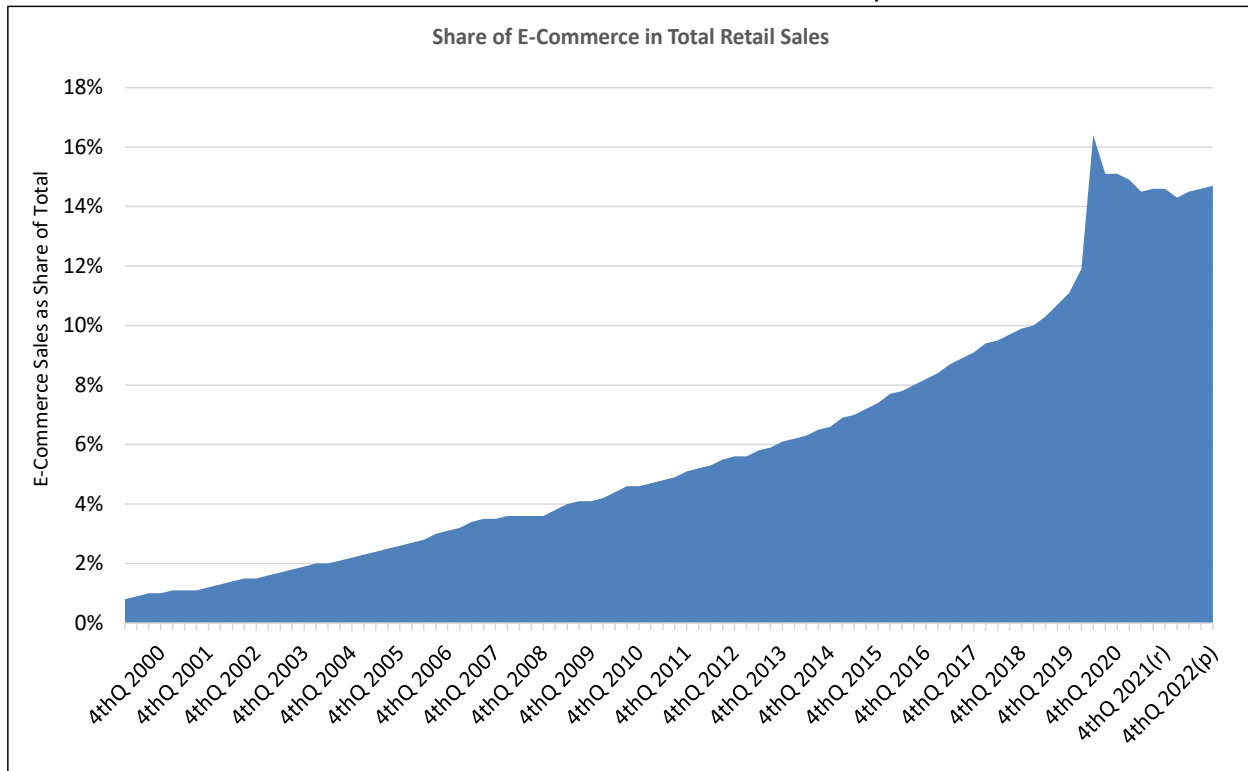


SOURCE: US Bureau of Labor Statistics

Recent trends and current forecasts reflect a shift from a goods economy, featuring manufacturing and natural resources, towards a service economy, which emphasizes technological innovation, research, and design.

The most dramatic spending shift in the context of real estate in recent times is the growth in online shopping, which has reduced the overall need for brick-and-mortar space, especially from retailers selling physical goods. While the share of sales accounted for by e-commerce has grown at a steady pace over the last decade, the pandemic greatly accelerated this trend. In 2020, the share of sales taking place online jumped from 12% of total retail spending to 16%. It has since settled to 14.5% of spending, which is well above the pre-pandemic share (Figure 3.5).

**FIGURE 3.5: E-COMMERCE AS A PERCENT OF TOTAL RETAIL SALES, UNITED STATES**



SOURCE: Retail Indicators Branch, U.S. Census Bureau, JOHNSON ECONOMICS

The growth in e-commerce has accelerated a shift in storage needs from retail stores to warehouses and distribution centers. At the same time, automation is causing a consolidation within the warehousing and distribution industry, leading to increasing reliance on larger third-party operators able to make heavy investments in capital and expertise. Finally, changes in the use of electronic devices and growth in online services are causing a shift in the tech sector, from hardware manufacturing to software development.

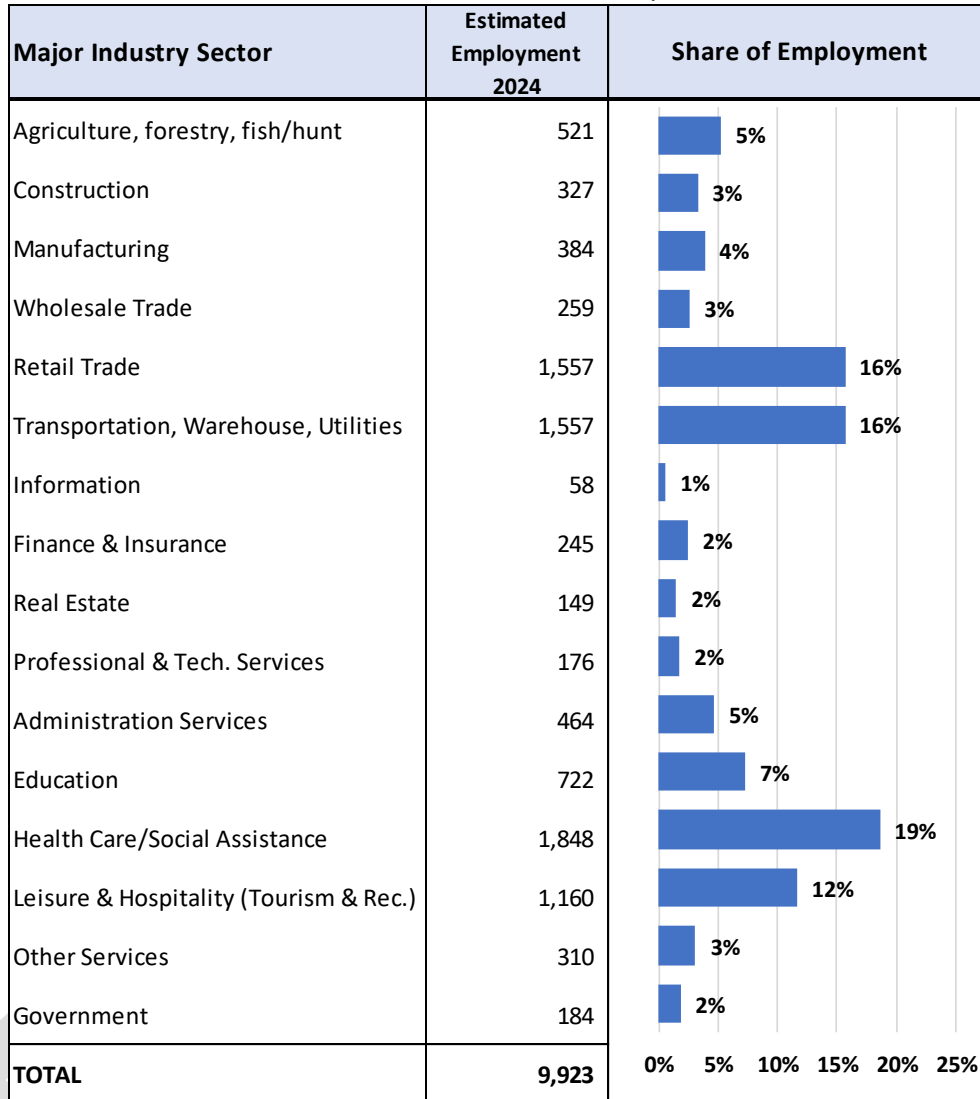
This pattern has also been reflected in the State of Oregon, with e-commerce employment increasing at the expense of brick-and-mortar retail employment. This is causing a shift in storage needs from retail stores to warehouses and distribution centers. This has also been one factor underlying the growth of the data center industry to facilitate the growth in online activity, which is discussed in greater detail in a following section.

## **B. HERMISTON EMPLOYMENT AND FIRMS**

As of 2024, the City of Hermiston is home to over 755 businesses with roughly 9,920 workers, including the self-employed. The largest industries by employment are health care, retail, transportation/warehousing/utilities, and leisure and hospitality (including dining and tourism-related). Hermiston has the lowest estimated employment representation in government, real estate and professional services, and the information sectors.

The identical estimate of employment in “retail” and “transportation/warehousing/utilities” is coincidental, and all estimates carry a margin of error. (Industry sectors are discussed in more detail in Section IV of this report)

**FIGURE 3.5: ESTIMATED EMPLOYMENT BY INDUSTRY SECTOR, CITY OF HERMISTON 2022**

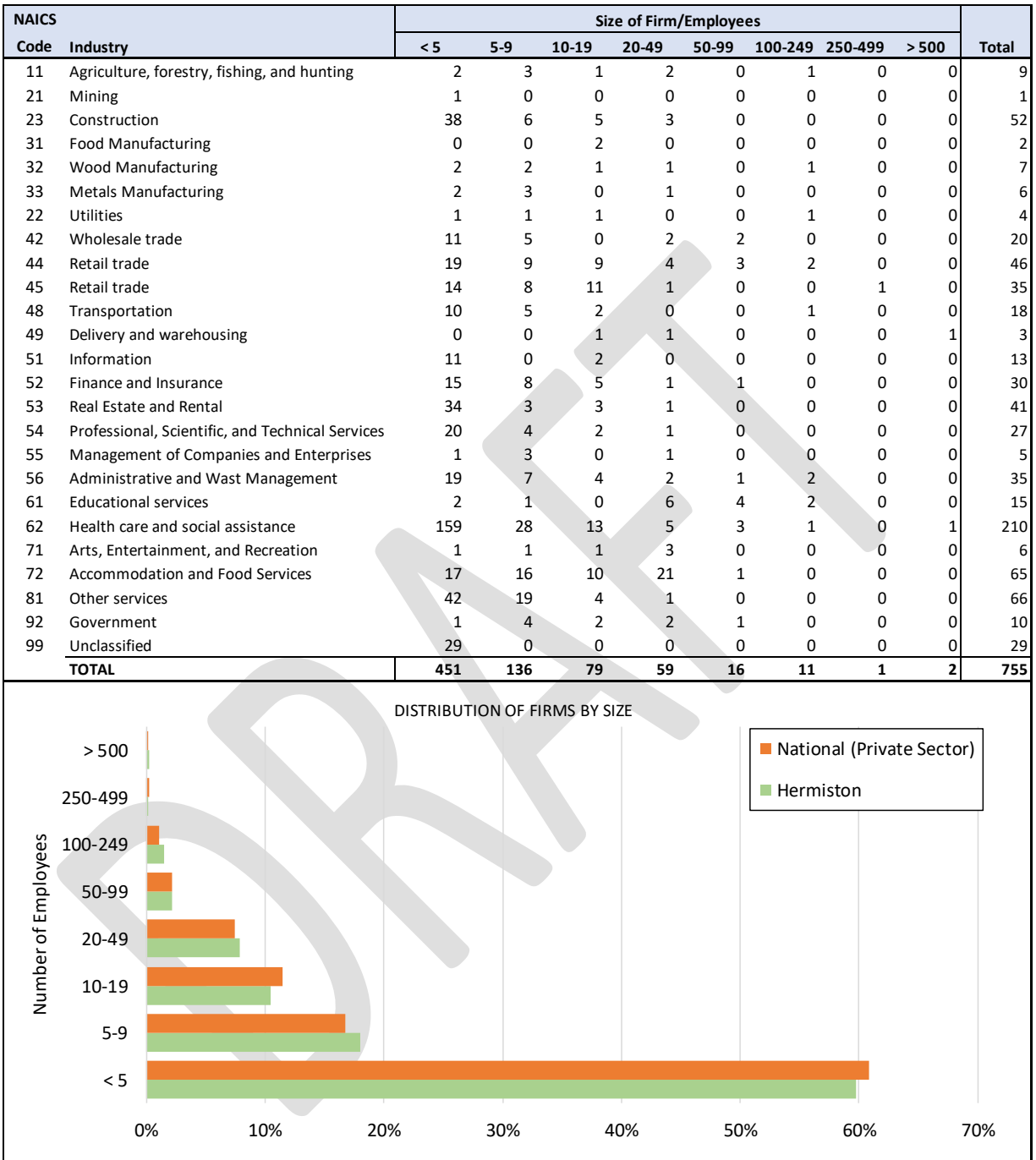


SOURCE: Oregon Employment Department, 2022 QCEW data projected to 2024, Johnson Economics

The local employment base is dominated by relatively small firms, with nearly 90% of businesses having fewer than 20 employees (Figure 3.2). However, this trend is in keeping with the national average. Most businesses are small businesses. (This is based on the most recent 2022 QCEW data for unemployment-insurance covered employment, and therefore doesn't include all self-employment or owner/operator businesses.) Just 1% of firms have more than 100 employees. This is again, in keeping with national trends.

As of 2022, there were an estimated 755 firms in Hermiston with covered employees.

**FIGURE 3.6: DISTRIBUTION OF FIRMS BY SIZE, CITY OF HERMISTON - 2022**

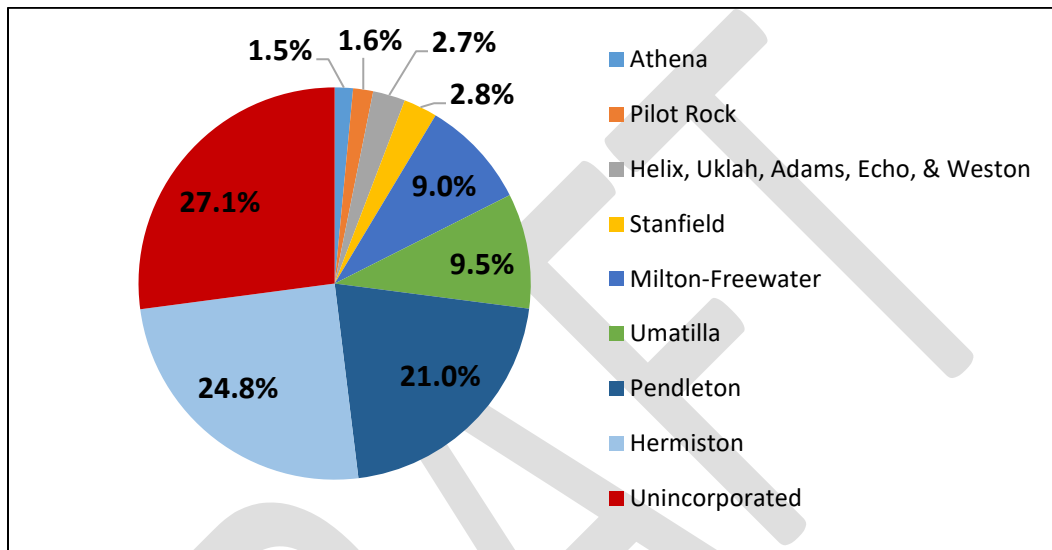


Source: Oregon Employment Department, QCEW data

## C. LOCAL POPULATION AND WORKFORCE TRENDS

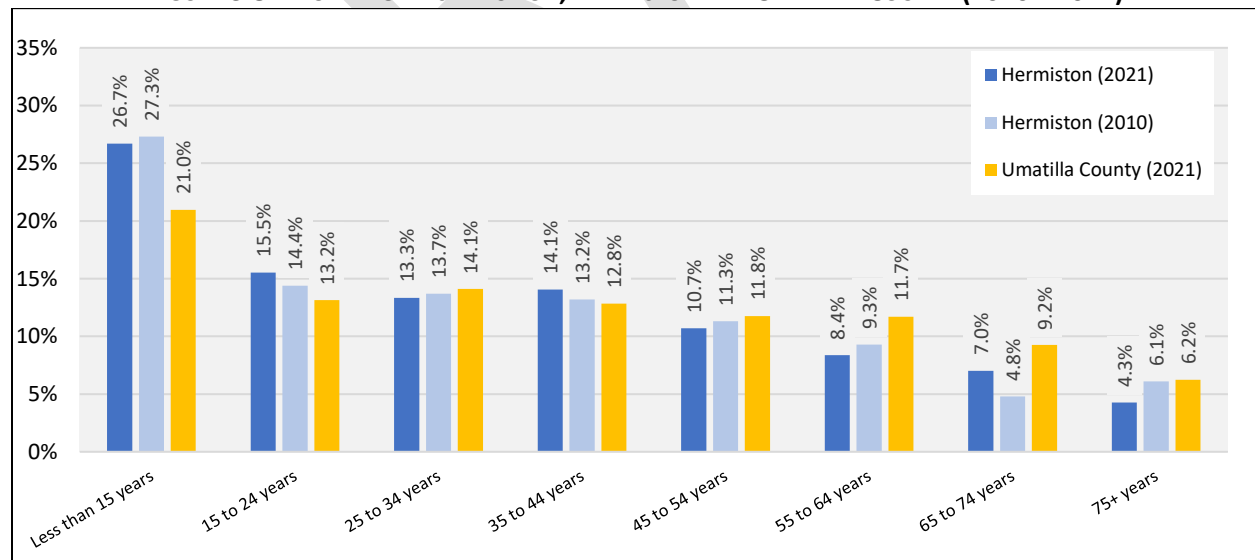
**Population:** With a population of roughly 20,000 people in 2022, the City of Hermiston is the largest incorporated municipality in Umatilla county, representing nearly 25% of the county's population. The city has grown at an estimated rate of 1.5% per year since 2010, almost double that of the county's growth rate. The city grew by roughly 3,200 residents since 2010, which accounts for 72% of the entire county's growth of 4,400 residents in that period. It is projected that by 2043 Hermiston will represent over 31% of Umatilla's county population<sup>1</sup>.

**FIGURE 3.7: SHARE OF TOTAL POPULATION IN UMATILLA COUNTY, 2022<sup>2</sup>**



SOURCE: Population Research Center, Portland State University

**FIGURE 3.8: BROAD AGE DISTRIBUTION, HERMISTON AND UMATILLA COUNTY (2010 – 2021)**



SOURCE: U.S Census Bureau, ACS 5-Year Estimate

<sup>1</sup> PSU Population Research Center, Oregon Population Forecast Program (2022 – 2026 Cycle)

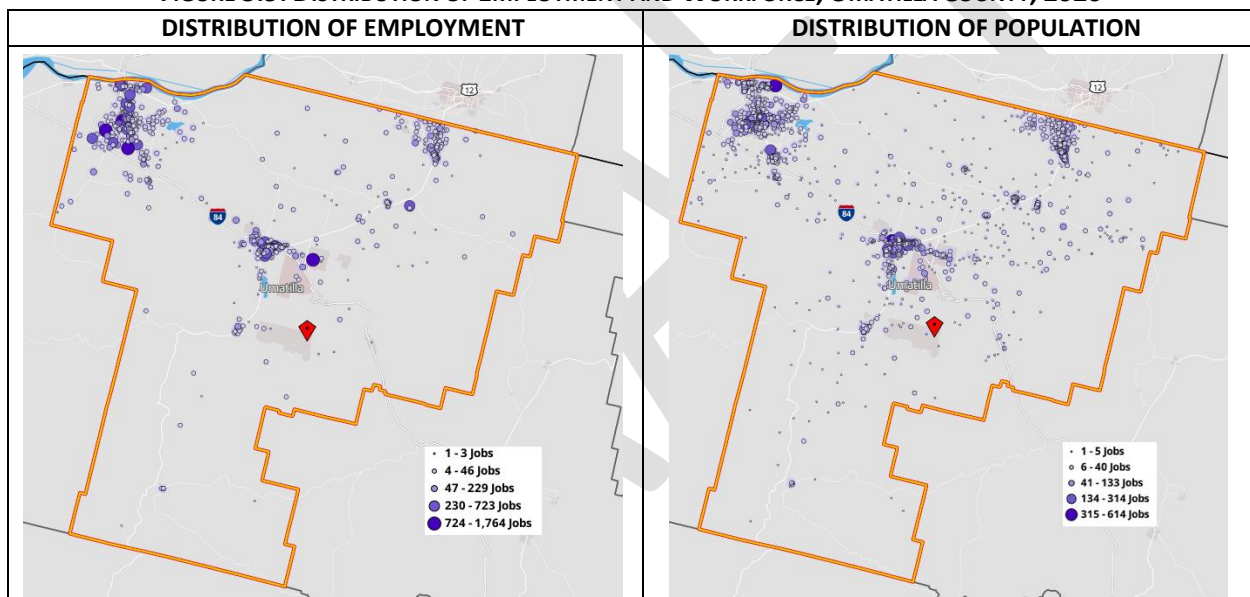
<sup>2</sup> Helix, Uklah, Adams, Echo, & Weston are grouped together as each of these cities represent less than 1% of the county's population respectively.

Hermiston has a younger population than the county, with over a quarter of the population being younger than 15 years according to the Census (Figure 3.8). Between 2010 and 2021, the <15 age bracket grew the most as a share of the population, highlighting Hermiston’s appeal as well as a place suitable for young families. Those aged 45 to 64 also grew as a share of the total population but remain smaller than the county share.

When compared to the rest of the state, Umatilla County has a larger proportion of children, and around 2% fewer people aged 18-64, and around 3% fewer people aged 65 and older, thus having a proportionally younger population but smaller share in prime working years than the state. The trend towards an older population is a national trend due to the aging of the large Baby Boom generation. The first half of this generation is now well past the traditional retirement age, while much of the younger half will be retiring over the coming decade.

**Employment and Population Concentrations:** The distribution of employment in Umatilla County is concentrated around the cities of Hermiston and Umatilla city in the northwest; Pendleton in the heart of the county; and Milton-Freewater in the northeast. The distribution of population is similar, however with more households spread throughout the various unincorporated areas of the county.

**FIGURE 3.9: DISTRIBUTION OF EMPLOYMENT AND WORKFORCE, UMATILLA COUNTY, 2020**

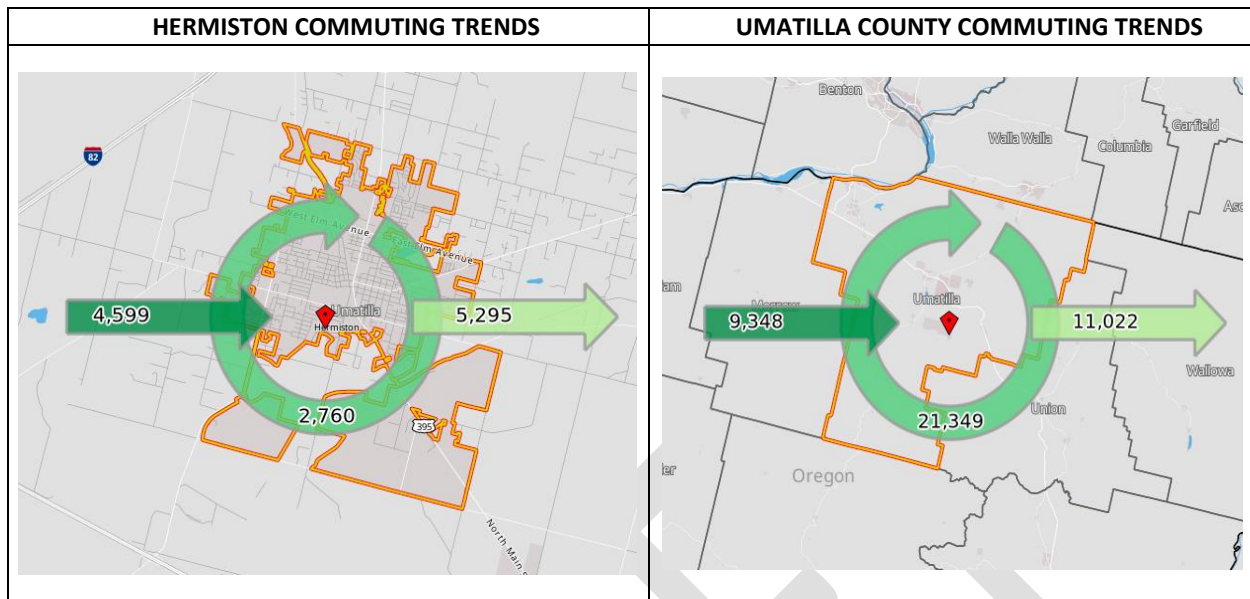


SOURCE: Census Bureau, Longitudinal Employer-Household Dynamics (LEHD) Data

**Commuting Trends:** In 2020 (the most recent data available), the city of Hermiston was estimated to have roughly 4,600 people commuting in for work, while 5,300 people commuted out; 2,760 residents both lived and worked in the city. These figures reflect “covered employment” as of 2020, the most recent year available. Covered employment refers to those jobs where the employee is covered by federal unemployment insurance. This category does not include many contract employees and the self-employed and therefore is not a complete picture of local employment. The figures discussed here are best understood as indicators of the general pattern of commuting and not exact figures.

Of those residents who work outside of the city, the most common commute destinations are Umatilla city, Pendleton, Boardman, and Portland. For local employees who commute in from outside of Hermiston, most live in Umatilla city, Pendleton, and Kennewick.

**FIGURE 3.10: NET INFLOW-OUTFLOW OF EMPLOYEES, HERMISTON, AND UMATILLA COUNTY, 2020**

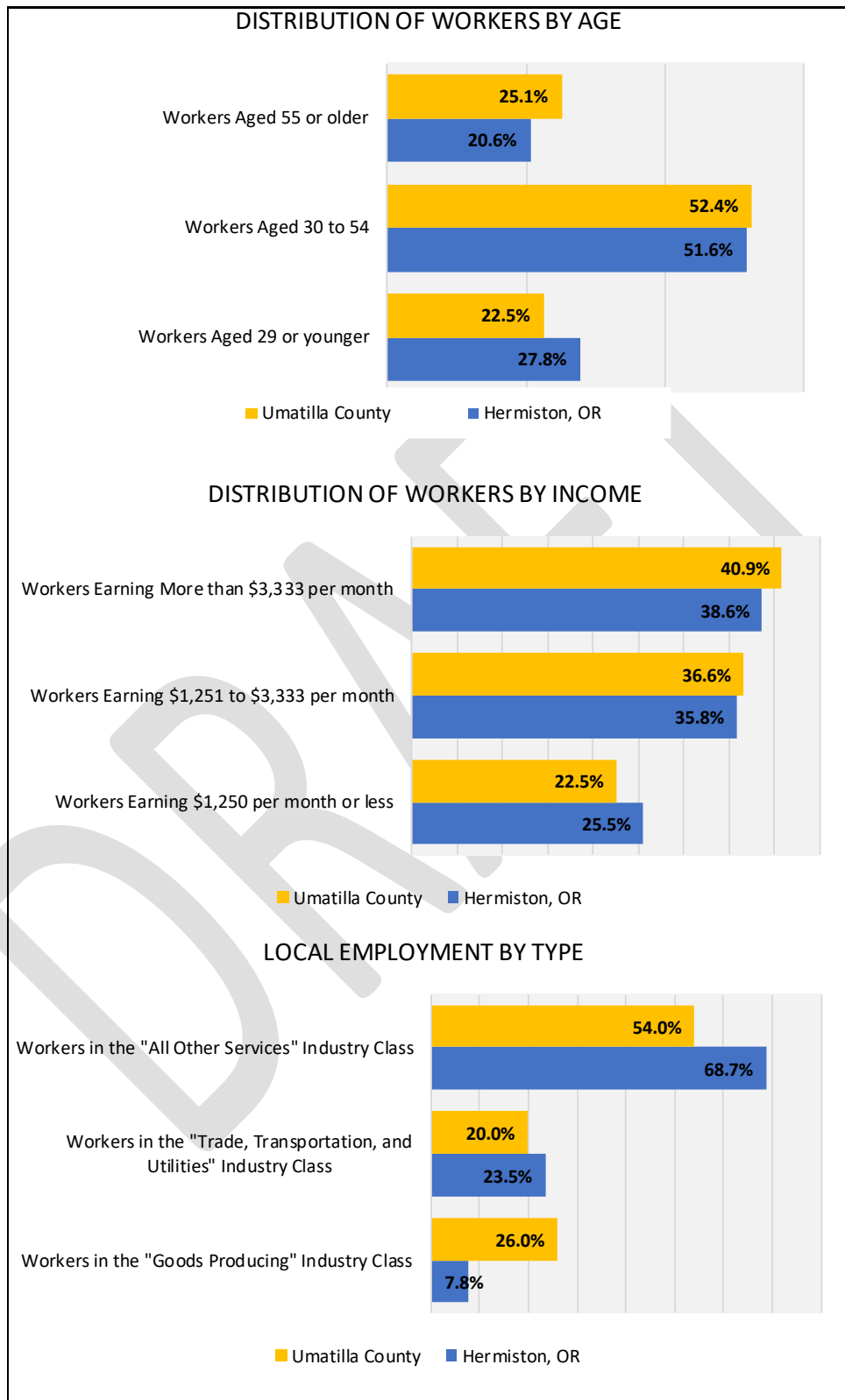


SOURCE: Census Bureau, Longitudinal Employer-Household Dynamics (LEHD) Data

Some amount of cross-commuting is common in most communities, as residents are willing to consider a larger employment market beyond the city boundaries, and as workers in the broader area search for available housing that may be in other cities. However, over one third of working residents of Hermiston both live and work in Hermiston, which is a fairly high share compared to many markets.

**Labor Force Characteristics:** The figures below show a comparison of labor force distribution in Hermiston city and Umatilla county. Hermiston has a larger proportion of workers aged 29 or younger as well as workers who earn \$1,250 or less per month (categories provided by the Census Bureau.) This highlights how Hermiston’s labor force is somewhat younger and relatively lower income compared to the county.

**FIGURE 3.11: NET INFLOW-OUTFLOW DETAILS, HERMISTON AND UMATILLA COUNTY, 2020**

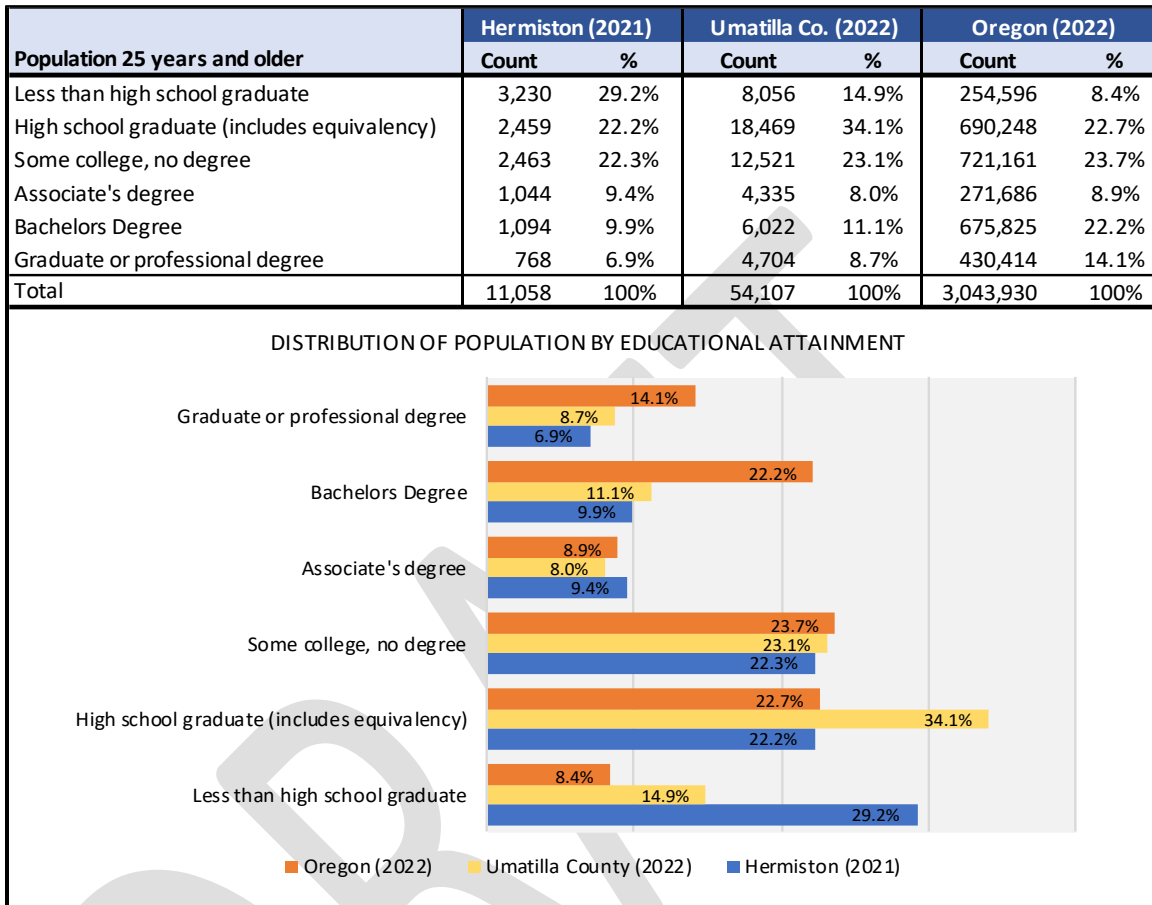


SOURCE: US Census Bureau, LEHD Origin-Destination Employment Statistics



Hermiston has a lower-educated adult population in comparison to the county or state (Figure 3.12). Note that the data on Hermiston is from 2021 as that is the most recent available data.

**FIGURE 3.12: EDUCATIONAL ATTAINMENT PROFILE FOR THE POPULATION 25 AND OVER, 2021 & 2022**



SOURCE: U.S. Census Bureau, 2017-2021 ACS 5-Year Estimates, 2021 - 2022 ACS 1-Year Estimates

- Roughly 30% of the local population 25 and older has not completed high school, as compared to 8.4% statewide.
- An additional 22% have a high school education.
- 49% of the adult population in 2021 has some education beyond high school, compared to 51% countywide (2022), and 69% statewide (2022).
- 26% of local adults in 2021 had completed a post-secondary degree, compared to 28% of the county population in 2022, and 45% of the state population in 2022.

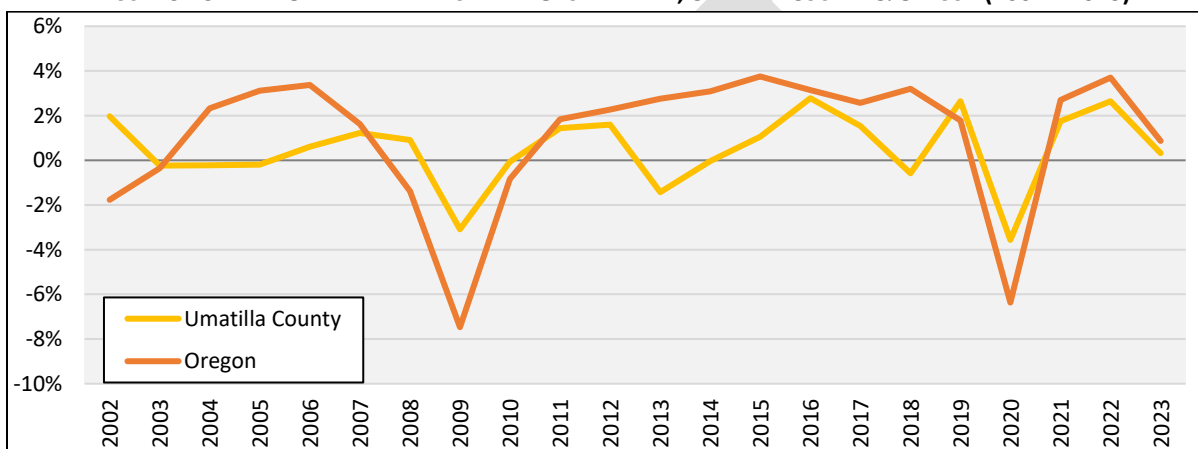
The local workforce actually has good capacity to fill many information technology (IT) jobs, a field which has seen growing demand due to the region becoming an emerging data center hub. Contrary to popular belief, many IT jobs do not require a college degree. For example, data from Indeed.com shows that as of 2023, 36% of “Data Center Technician” job openings only require a high school diploma or GED, while 31% require a bachelor’s degree, 27% require an associate’s degree, and 6% require a master’s degree <sup>3</sup>.

<sup>3</sup> <https://www.indeed.com/career/data-center-technician/career-advice>

**Employment Growth:** Umatilla County has displayed weaker employment growth when compared to the State of Oregon. Throughout the 2010's Umatilla County's employment growth hovered between 1.5% to 3%, but with 2013 and 2018 both seeing a net decrease in the employment base.

In comparison, the state's employment growth rate hovered consistently around the 2% to 4% range, averaging at 2.4% annually in the same time span. Despite this, Umatilla County has been less affected by recent shocks such as the '08 – '09 and COVID recessions. This is most likely due to a large share of the county's employment base being historically employed in the health care and social assistance sector which is more resilient to economic shocks. During the most recent COVID recession, Umatilla County's employment base decreased by 3.6% while the state's employment base decreased by 6.4%.

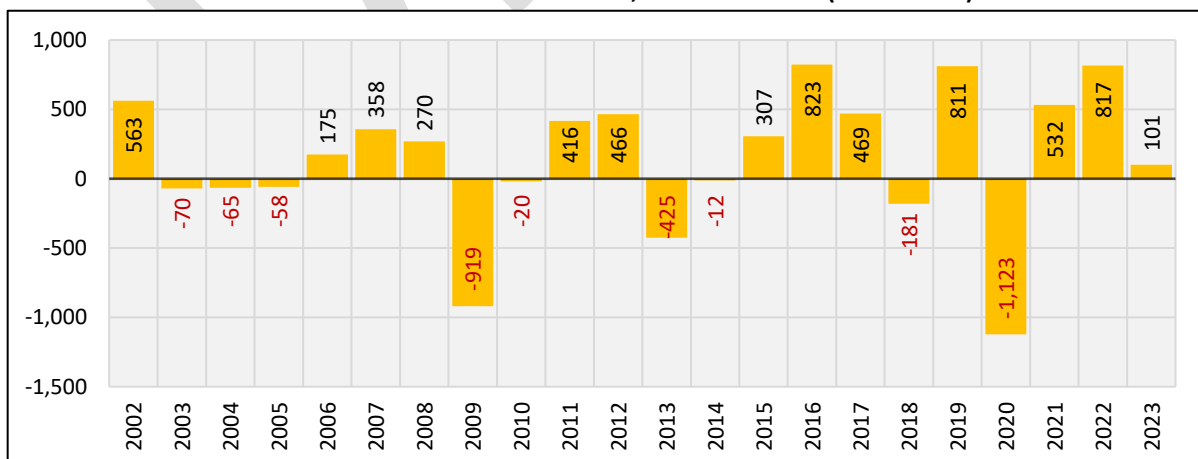
**FIGURE 3.13: YEAR-OVER-YEAR EMPLOYMENT GROWTH RATE, UMATILLA COUNTY & OREGON (2002 – 2023)**



Source: Oregon Employment Department, QCEW Estimates

Annual employment growth in Umatilla County was slow in the 2000's with more jobs lost than gained throughout the decade. The 2010's saw better employment growth, peaking in 2016 with 823 jobs added. As with most of the nation, the county experienced significant job loss in 2020 due to the COVID pandemic, but quickly rebounded in the following years. As of 2022, all the jobs lost in 2020 have been recovered, while the state had only recovered roughly 80% of the jobs lost by the end of the year.

**FIGURE 3.14: NET CHANGE IN EMPLOYMENT, UMATILLA COUNTY (2002 – 2023)**



Source: Oregon Employment Department, QCEW Estimates

## IV. COMMUNITY ECONOMIC DEVELOPMENT POTENTIAL

The economic climate of a community helps foster growth of existing firms and industry clusters and make the area attractive for new businesses. The City of Hermiston has several advantages that boost its potential as a location for current and future business.

**Location:** Hermiston's location is an advantage for some industries and a challenge for others. Located on the Columbia River Gorge in Eastern Oregon, the addressable market for goods and service providers in Hermiston stretches from Boardman to Pendleton to the Tri-Cities in Washington. However, the market for small local, non-traded sector businesses is limited by population size and density.

The location has strong benefits for some industry, in particular agriculture and ag support businesses, food processing and manufacturing, businesses benefiting from river access and transport, and those drawing from the ample power, water, and land resources, which notably includes the data center industry over the past decade.

**Transportation Connectivity:** Hermiston has strong regional transportation access, being located at the conjunction of the I-84 and I-82 freeways, and near multiple state and federal highways. I-84 is the main route for commuters, freight, and travelers between Boise and Portland, while I-82 provides direct access to the Tri-Cities area in Washington State to the north. Hermiston has easy access to its nearest neighboring communities including Umatilla, Boardman, and Pendleton.

Businesses in the area have multiple access points to freight rail service with connections to the remainder of the Northwest. There are small municipal airports located in Hermiston and Pendleton, and the larger Tri-Cities airport is located 45 minutes to the north. Portland International Airport is located roughly three hours to the west, and Boise Airport four hours to the east.

**Labor Market:** The availability of ample and skilled labor is a key factor in economic development potential. Beyond the talent pool of Hermiston residents, the city's central location and freeway access give local businesses the ability to draw on a larger labor pool from the region. In Oregon, Hermiston draws on a labor pool from across Umatilla County and North Morrow County, and as far as La Grande. The Tri-Cities metro area, with a population of over 300,000, is located 30 minutes to the north and is an important source of skilled labor across the region.

An estimated 63% of the local workforce commutes into Hermiston. While ideally these workers may eventually choose to relocate to the community, in the meantime businesses know they can attract workers with a full range of skills and experience from a broader area if necessary.

Common workforce issues include finding qualified workers with the proper basic and technical skills, training entry-level workers effectively, and successfully employing contractors from staffing agencies. With the ongoing development of large data center facilities in Umatilla County, a specialized industry that hardly existed 15 years ago, along with other employment growth, drawing sufficient skilled workers to the area may remain a challenge for the foreseeable future. The continued population growth in Hermiston and ready access to the broader region will help this effort. New and existing local businesses will also assist in developing the specific skills and education they will need from their workforce.

**Quality of Life:** Hermiston offers a high quality of life and urban amenities to attract new workers and businesses to the city. The city offers a mixture of small-town lifestyle, diverse cultural activities, with access to nature and rural amenities, while also being a quick trip away from other metro areas with additional urban amenities. The community features relatively affordable housing in comparison to other parts of the region, good schools, parks, and ample shopping and local services.

Hermiston's location on the gorge in Northeastern Oregon offers ready access to a full range of river and mountain recreation, including camping, hiking, fishing, and hunting.

**Utilities:** Hermiston and Umatilla County have ready access to ample green energy from regional dams on the Columbia River watershed, including the McNary Dam directly to the North. The area also has ample water resources to meet the needs of agriculture and water-dependent industry. This combination has made Umatilla and Morrow Counties attractive to the data center industry over the past decade as they need dependable sources of both.

**Flat, Buildable, Land:** The study area has a diversity of potentially available land to accommodate a range of uses and intensity of uses. This diversity can expand regional marketability and offers the flexibility to plan uses meeting specific site criteria. Within the State of Oregon, there are very limited opportunities for large-lot industrial development. The region's potential supply of large sites can provide a strong competitive advantage, if it is made available. While the land in the county may be hypothetically suitable however, the right amount, location, and sizes of development sites for different employers may not be currently available within the Urban Growth Boundary.

**Economic Development Partnerships:** Hermiston has several partners in economic development, including the Hermiston Chamber of Commerce, Umatilla County, the Port of Umatilla, neighboring cities, NEOEDD, and Business Oregon. Hermiston features a Blue Mountain Community College campus to offer ongoing education and training to the local workforce.

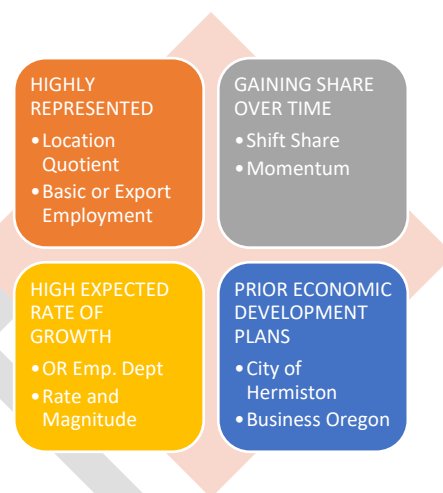
Local and regional employers are also key partners in promoting and growing their industries. Hermiston works with these and other regional partners to provide the infrastructure and services needed to retain and attract businesses to the city.

**Economic Development Tools:** Hermiston features an Enterprise Zone and Opportunity Zones which allow for tax abatements to incentivize new business development across the city. Hermiston also maintains multiple Urban Renewal areas that can offer incentives for development, secure key economic development sites, among other projects.

## V. INDUSTRY DIFFERENTIATION ANALYSIS

This element of the Economic Opportunities Analysis utilizes analytical tools to assess the economic landscape in Umatilla County and the City of Hermiston. The objective of this process is to identify a range of industry types that can be considered targeted economic opportunities over the planning period.

A range of analytical tools to assess the local and regional economic landscape are used to determine the industry typologies the county and individual cities should consider targeting over the planning period. Where possible, we look to identify the sectors that are likely to drive growth in current and subsequent cycles.



### ECONOMIC SPECIALIZATION (UMATILLA COUNTY)

A common analytical tool to evaluate economic specialization is location quotient analysis. This metric compares the concentration of employment in an industry at the local level to a larger geography. All industry categories are assumed to have a quotient of 1.0 on the national level, and a locality's quotient indicates if the local share of employment in each industry is greater or less than the share seen nationwide. For instance, a quotient of 2.0 indicates that locally, that industry represents twice the share of total employment as seen nationwide. A quotient of 0.5 indicates that the local industry has half the expected employment.

FIGURE 5.1: INDUSTRY SECTOR SPECIALIZATION BY MAJOR INDUSTRY, UMATILLA COUNTY, 2022

Industry	Annual Establishments	Average Employment	Total Annual Wages	Average Annual Wages	Employment LQ
101 Goods-producing	505	7,754	\$372,716,437	\$48,066	1.64
1011 Natural resources and mining	195	3,649	\$146,559,195	\$40,164	9.49
1012 Construction	232	1,235	\$75,186,831	\$60,859	0.76
1013 Manufacturing	79	2,870	\$150,970,411	\$52,604	1.06
102 Service-providing	1849	16,948	\$810,378,253	\$47,817	0.75
1021 Trade, transportation, and utilities	410	6,774	\$327,118,030	\$48,294	1.13
1022 Information	35	657	\$62,828,861	\$95,581	1.02
1023 Financial activities	171	710	\$41,441,687	\$58,341	0.39
1024 Professional and business services	211	1,306	\$66,612,269	\$50,989	0.27
1025 Education and health services	517	3,944	\$221,186,028	\$56,083	0.8
1026 Leisure and hospitality	210	2,733	\$62,023,130	\$22,695	0.82
1027 Other services	219	794	\$27,834,584	\$35,052	0.85
1029 Unclassified	77	29	\$1,333,664	\$45,988	0.46
Total	4,710	49,403	\$2,366,189,380	\$47,896	

SOURCE: U.S. Bureau of Labor Statistics

A location quotient analysis was completed for Umatilla County, which evaluated the distribution of local employment relative to national averages, as well as average annual wage levels by industry (Figure 5.1). The industries that are well-represented countywide are good candidates for growth in localities such as Hermiston as the city has the ability to tap into regional advantages to grow locally.

Among major industries, the natural resources sector (which includes agriculture) was the most strongly represented, with trade, transportation, and utilities being the next. Manufacturing and information each have representation somewhat higher than the national average, though recent additions to employment in the information sector from data center development are not included in this 2022 data. The professional & business services and financial activities sector were the most under-represented major industries. The information sector provided the highest average wages among these industries, while the leisure and hospitality industry (tourism) has the lowest average wages.

A more detailed analysis shows that the industries with the highest LQ in the county are the “agriculture, forestry, fishing, and hunting” category followed by the local government, transportation & warehousing, and utilities industries. The industries that employ the most people in the county are the local government, healthcare & social assistance, “agriculture, forestry, fishing, and hunting”, and retail trade industry. The most under-represented industries are the educational services, management of companies & enterprises, and professional & technical services.

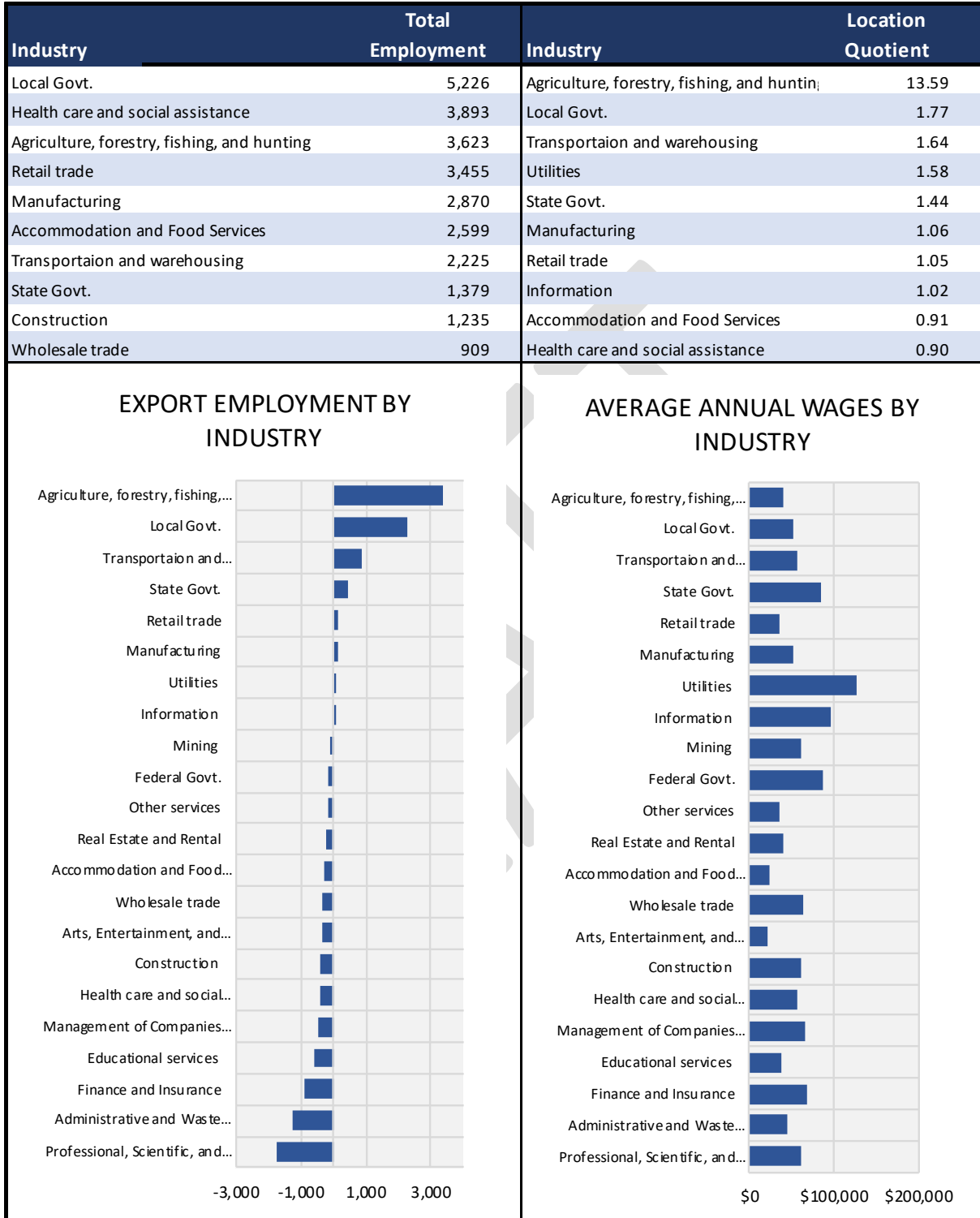
**FIGURE 5.2: INDUSTRY SECTOR SPECIALIZATION BY DETAILED INDUSTRY, UMATILLA COUNTY, 2022**

Industry	Annual Establishments	Average Employment	Total Annual Wages	Average Annual Wages	Employment LQ
Agriculture, forestry, fishing, and hunting	191	3,623	\$144,924,249	\$40,006	13.59
Mining	4	26	\$1,634,946	\$61,891	0.22
Utilities	8	185	\$23,542,562	\$127,372	1.58
Construction	232	1,235	\$75,186,831	\$60,859	0.76
Manufacturing	79	2,870	\$150,970,411	\$52,604	1.06
Wholesale trade	86	909	\$57,256,576	\$63,000	0.72
Retail trade	234	3,455	\$121,540,510	\$35,177	1.05
Transportation and warehousing	82	2,225	\$124,778,382	\$56,086	1.64
Information	35	657	\$62,828,861	\$95,581	1.02
Finance and Insurance	82	468	\$31,600,826	\$67,547	0.35
Real Estate and Rental	89	243	\$9,840,861	\$40,581	0.49
Professional, Scientific, and Technical Services	115	464	\$28,612,014	\$61,653	0.21
Management of Companies and Enterprises	7	56	\$3,622,314	\$64,877	0.11
Administrative and Waste Management	89	787	\$34,377,941	\$43,710	0.39
Educational services	14	51	\$1,883,657	\$36,695	0.08
Health care and social assistance	503	3,893	\$219,302,371	\$56,339	0.9
Arts, Entertainment, and Recreation	21	134	\$2,774,769	\$20,785	0.27
Accommodation and Food Services	190	2,599	\$59,248,361	\$22,793	0.91
Other services	219	794	\$27,834,584	\$35,052	0.85
Federal Govt.	30	469	\$40,759,761	\$86,908	0.77
State Govt.	43	1,379	\$115,935,338	\$84,072	1.44
Local Govt.	112	5,226	\$271,544,662	\$51,960	1.77
Total	2,465	31,748	\$1,610,000,787	\$50,712	

SOURCE: U.S. Bureau of Labor Statistics

The level of indicated export employment per sector is estimated by combining the location quotients and overall employment levels. Export industries are important in that they grow the overall size of the local economy by bringing in dollars from outside the community, rather than recirculating internal spending. The industries with the highest level of export employment are agriculture & forestry and transportation & warehousing.

**FIGURE 5.3: TOP TEN INDUSTRIES IN TERMS OF TOTAL AND EXPORT EMPLOYMENT, UMATILLA COUNTY (2022)**



SOURCE: U.S. Bureau of Labor Statistics

## ECONOMIC SPECIALIZATION (CITY OF HERMISTON)

The same analysis for the City of Hermiston reveals high levels of employment concentration in industries such as delivery & warehousing, educational services, utilities, and agriculture & forestry.

**FIGURE 5.4: INDUSTRY SECTOR SPECIALIZATION BY DETAILED INDUSTRY, CITY OF HERMISTON, 2022**

Industry	Annual Establishments	Average Employment	Total Annual Wages	Average Annual Wages	Employment LQ
Agriculture, forestry, fishing, and hunting	9	231	\$10,866,443	\$47,041	3.08
Mining	1	4	\$120,577	\$30,144	0.12
Construction	52	253	\$15,309,246	\$60,511	0.55
Food Manufacturing	2	25	\$562,515	\$22,501	0.18
Wood Manufacturing	7	307	\$17,540,956	\$57,137	1.55
Metals Manufacturing	6	55	\$2,484,585	\$45,174	0.13
Utilities	4	119	\$13,532,680	\$113,720	3.61
Wholesale trade	20	247	\$13,730,094	\$55,587	0.69
Retail trade	81	1,463	\$55,801,536	\$38,142	1.59
Transportation	18	254	\$22,069,723	\$86,889	1.25
Delivery and warehousing	3	1,010	\$49,029,059	\$48,544	5.63
Information	13	44	\$1,661,560	\$37,763	0.24
Finance and Insurance	30	221	\$13,774,444	\$62,328	0.59
Real Estate and Rental	41	128	\$5,696,790	\$44,506	0.92
Professional, Scientific, and Technical Services	27	107	\$5,346,415	\$49,966	0.17
Management of Companies and Enterprises	5	54	\$3,580,314	\$66,302	0.36
Administrative and Waste Management	35	477	\$18,787,459	\$39,387	0.84
Educational services	15	700	\$39,768,126	\$56,812	3.92
Health care and social assistance	210	1,734	\$112,839,561	\$65,075	1.43
Arts, Entertainment, and Recreation	6	92	\$1,546,388	\$16,809	0.67
Accommodation and Food Services	65	969	\$22,994,147	\$23,730	1.21
Other services	66	259	\$9,381,655	\$36,223	0.99
Government	10	183	\$13,398,659	\$73,217	0.14
Total	726	8,936	\$449,822,932	\$50,338	

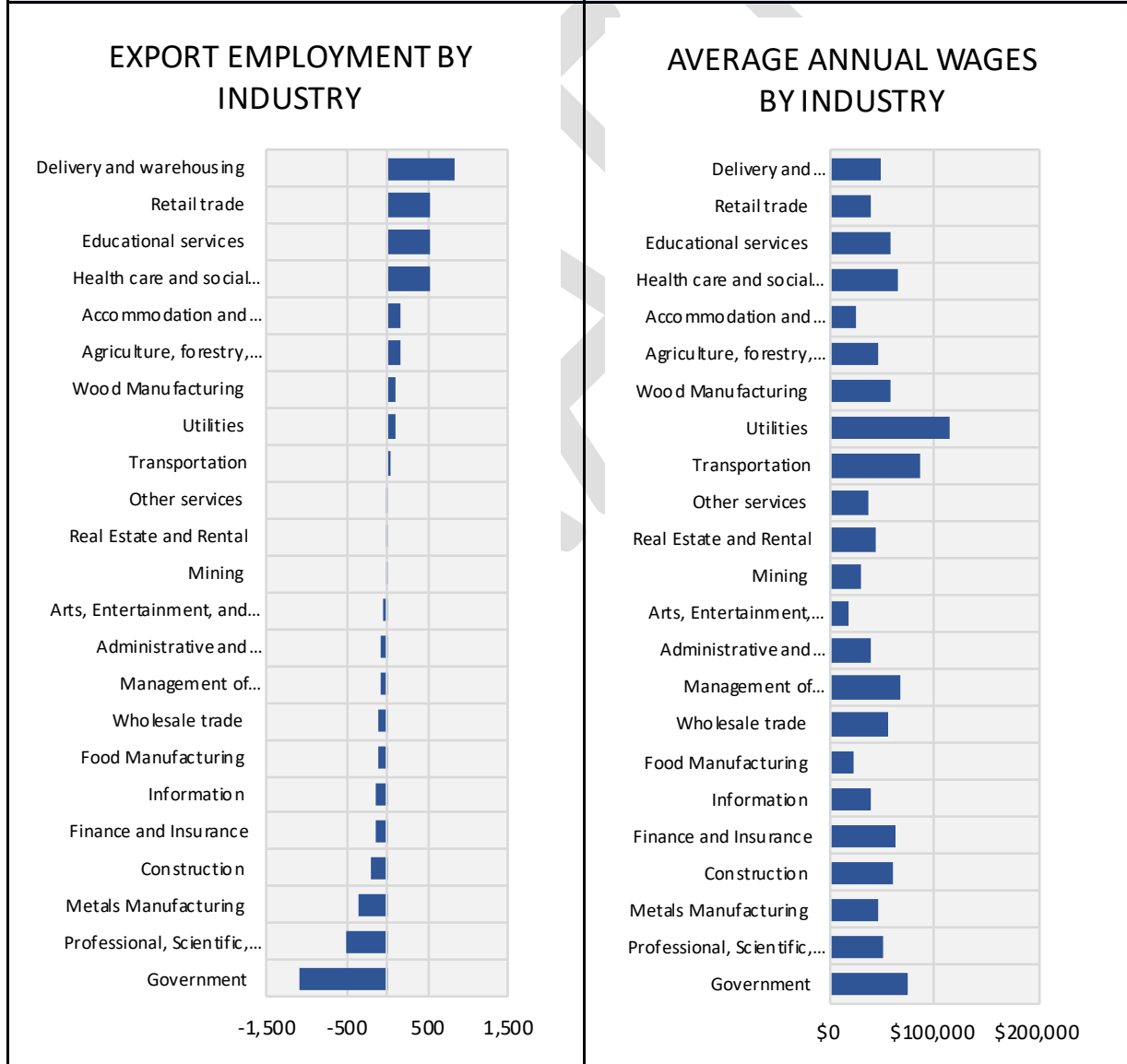
SOURCE: Oregon Employment Department

The top sectors in terms of overall employment were healthcare & social assistance, retail trade, delivery & warehousing, and accommodation & food service. Nine industries in the city have positive export employment, the largest being delivery & warehousing, retail trade, educational services, and healthcare & social assistance. Wal-mart Associates Inc is a major employer in the area employing over 1,500 people across the delivery & warehousing and retail trade industries. The top industries with the highest average annual wages are utilities, transportation, and government. The most underrepresented industries in the city by location quotient are the mining, metals manufacturing, and government industries.



**FIGURE 5.5: TOP TEN INDUSTRIES IN TERMS OF TOTAL AND EXPORT EMPLOYMENT, CITY OF HERMISTON (2022)**

Industry	Total Employment	Industry	Location Quotient
Health care and social assistance	1734	Delivery and warehousing	5.63
Retail trade	1463	Educational services	3.92
Delivery and warehousing	1010	Utilities	3.61
Accommodation and Food Services	969	Agriculture, forestry, fishing, and hunting	3.08
Educational services	700	Retail trade	1.59
Administrative and Waste Management	477	Wood Manufacturing	1.55
Wood Manufacturing	307	Health care and social assistance	1.43
Other services	259	Transportation	1.25
Transportation	254	Accommodation and Food Services	1.21
Construction	253	Other services	0.99



SOURCE: Oregon Employment Department and Bureau of Labor Statistics

## ECONOMIC DRIVERS

### Shift Share Analysis

The identification of the economic drivers of a local or regional economy is critical in informing the character and nature of future employment, and by extension land demand over a planning cycle. To this end, we employ a shift-share analysis of the local economy emerging out of the latter half of the recent expansion cycle<sup>4</sup>.

A shift-share analysis is an analysis that measures the local effect of economic performance within a particular industry or occupation. The process considers local economic performance in the context of national economic trends—indicating the extent to which local growth can be attributed to unique regional competitiveness or simply growth in line with broader trends. For example, consider that Widget Manufacturing is growing at a 1.5% rate locally, about the same rate as the local economy. On the surface we would consider the Widget Manufacturing industry to be healthy and contributing soundly to local economic expansion. However, consider also that Widget Manufacturing is booming across the country, growing at a robust 4% annually. In this context, local widget manufacturers are struggling, and some local or regional conditions are stifling economic opportunities.

We can generally classify industries, groups of industries, or clusters into four groups:

**Growing, Outperforming:** Industries that are growing locally at a rate faster than the national average. These industries have characteristics locally leading them to be particularly competitive.

**Growing, Underperforming:** Industries that are growing locally but slower than the national average. These industries generally have a sound foundation, but some local factors are limiting growth.

**Contracting, Outperforming:** Industries that are declining locally but slower than the national average. These industries have structural issues that are impacting growth industry wide. However, local firms are leveraging some local or regional factor that is making them more competitive than other firms on average.

**Contracting, Underperforming:** Industries that are declining locally at a rate faster than the national average. These industries have structural issues that are impacting growth industry wide. However, some local or regional factors are making it increasingly tough on local firms.

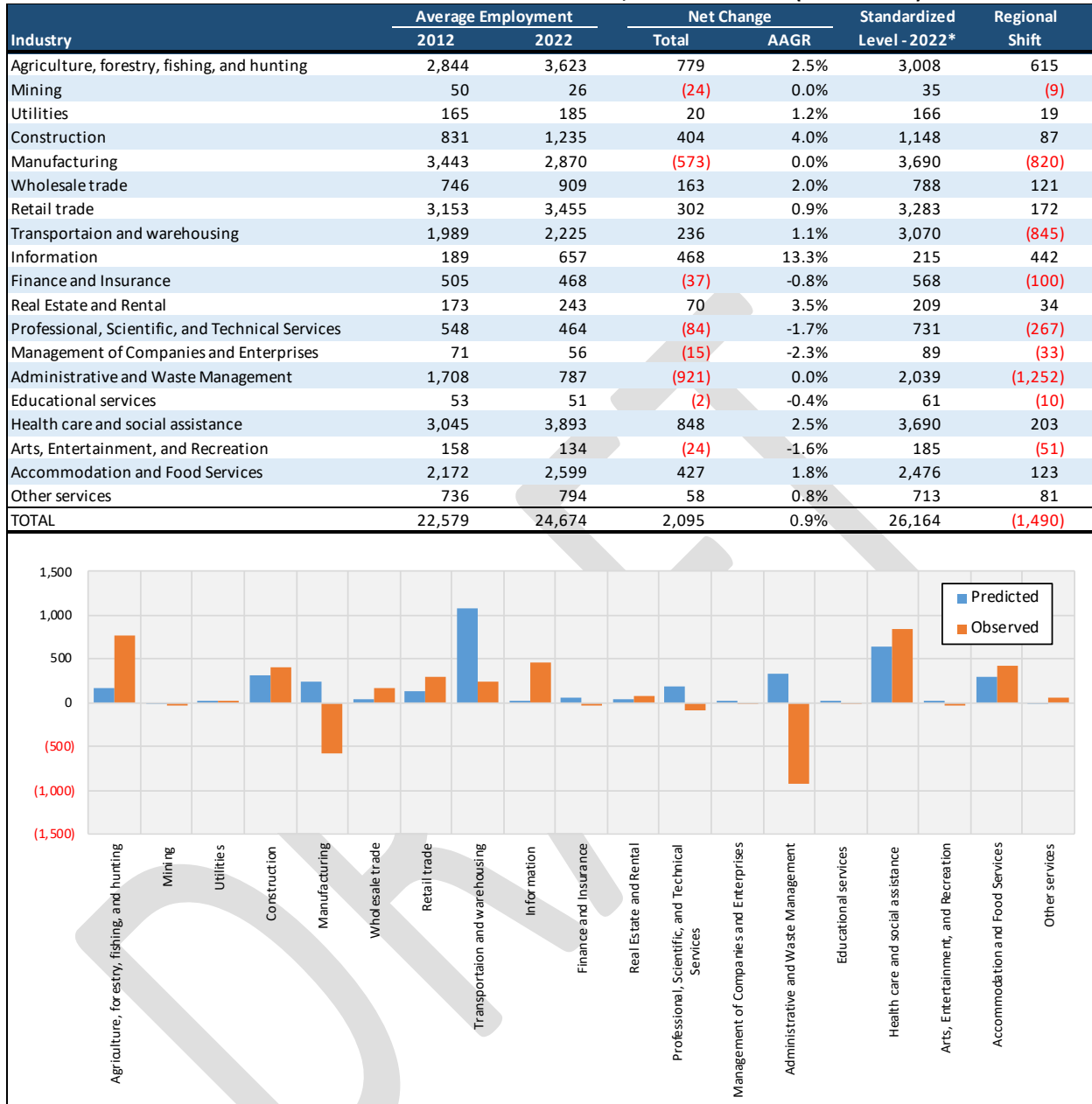
The average annual growth rate by industry from 2012 to 2022 in Umatilla County was compared to the national rate. The observed local change was compared to a standardized level reflecting what would be expected if the local industry grew at a rate consistent with national rates for that industry.

As shown in Figure 5.6, most county industries grew at a slower rate than the rest of the country. Sectors that did experience a notable positive regional shift in employment during this period were agriculture & forestry, information, health care & social assistance, retail trade, and accommodation & food services. The sectors that outperformed expectations the most were agriculture & forestry, information, and health care & social assistance. Sectors with the greatest negative regional shift in employment were administrative & waste management, transportation & warehousing, and manufacturing.

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<sup>4</sup> Measured from 2012 through 2022

**FIGURE 5.6: INDUSTRY SECTOR SHIFT SHARE ANALYSIS, UMATILLA COUNTY (2012 – 2022)**

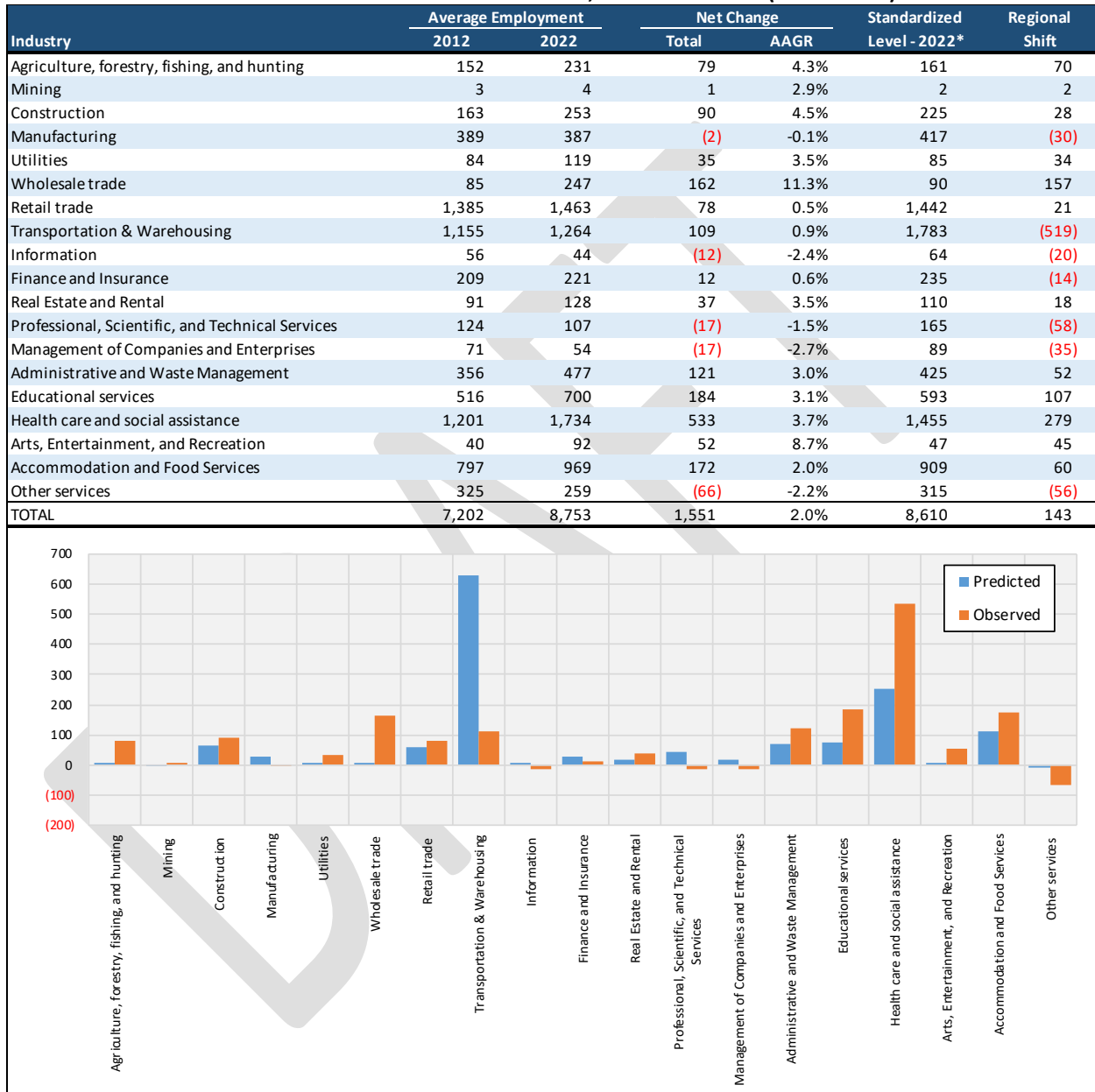


\* Employment level in each industry had it grown at the same rate as its counterparts at the national level over the same period.

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis, Bureau of Labor Statics, Oregon Employment Department

When the same analysis is done for the city of Hermiston, the city's growth outperformed the rest of the county in additional industries. The best performing sectors on this measure in the local economy were health care & social assistance, wholesale trade, and educational services. These sectors grew faster than expected based on the national pace.

**FIGURE 5.7: INDUSTRY SECTOR SHIFT SHARE ANALYSIS, CITY OF HERMISTON (2012 – 2022)**



\* Employment level in each industry had it grown at the same rate as its counterparts at the national level over the same period.

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis, Bureau of Labor Statistics

## Growth and Current Strength Analysis

This analysis takes a look at the relationship between the location quotient of an industry and its employment growth (shift share) over the years to give useful insight into an industry's competitive performance. As mentioned above, location quotients are a metric that compares a local industry's employment concentration to the nation's employment concentration of the same industry. A quotient above 1 indicates that an industry has more local representation compared to what is expected nationally while a quotient less than 1 indicates that the local industry has less than the expected employment. When an industry's LQ is compared alongside its employment growth one can identify which industries in the region have been highly competitive, showing signs of growth, decreasing in competitiveness, or underperforming.

Much like the shift share analysis, this analysis separates industries/clusters into 4 categories<sup>5</sup> :

**Growth Clusters:** Industries that show strong concentration locally ( $LQ > 1.0$ ) and have had positive employment growth in recent history. These industries are a focal point of the regional economy, displaying strong competitive advantage and potential growth.

**Mature Clusters:** Industries that have a strong local concentration ( $LQ > 1.0$ ), but negative employment growth during the period of analysis. These industries have been an important factor in the local economy but may need resources to ensure growth into the future and continued competitiveness.

**Emerging Clusters:** Industries that have a smaller local concentration ( $LQ < 1.0$ ), but have seen positive employment growth recently. Although these industries may not have been as important in the regional economy, there is strong potential for growth and could be main drivers of the regional economy in the foreseeable future.

**Declining Clusters:** Industries that have a smaller local concentration ( $LQ < 1.0$ ) as well as negative employment growth. These industries are shrinking and have little competitive advantage in the region.

The Figure 5.8 below depicts this relationship in the city of Hermiston during the 2012 – 2022 period. A majority of industries showed positive employment growth in the last decade, placing them in the growth and emerging clusters. However, more industries have an LQ lower than 1, indicating that industries within Hermiston are less concentrated than what is expected on the national level. The growth cluster is made up of 8 industries having both LQ's above 1 as well as positive employment growth. The delivery and warehousing industry (NAICS 49) had the highest LQ while the wood manufacturing sector (NAICS 32) boasted the highest growth rate among the growth cluster. Other industries in the growth cluster include agriculture (NAICS 11), utilities (NAICS 22), educational services (NAICS 61), retail trade (NAICS 45), accommodation & food services (NAICS 72), as well as health care & social assistance (NAICS 62). These industries can be considered some of the focal points of Hermiston's economy in the last decade.

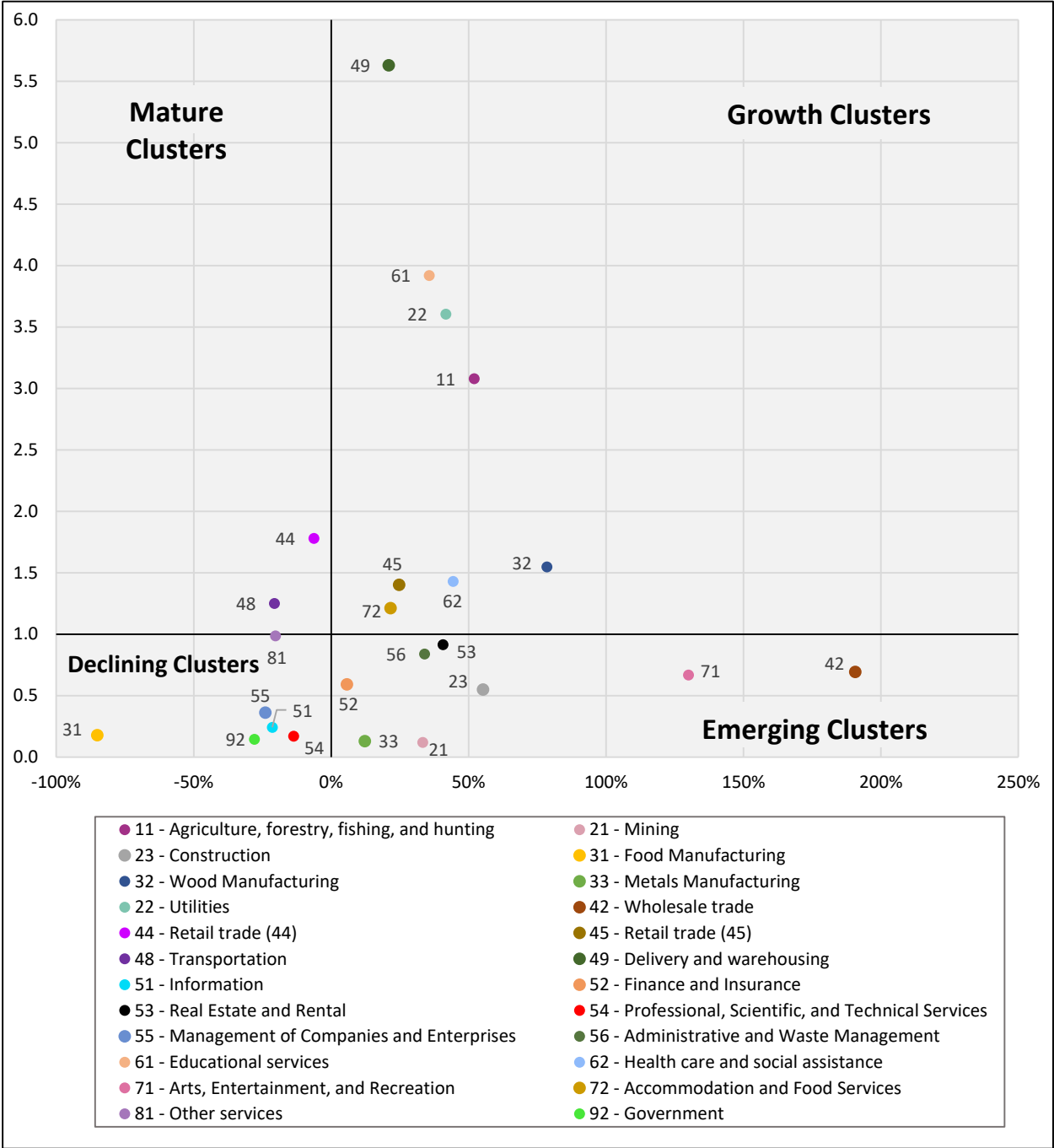
On the other hand, the emerging cluster, which is characterized by industries with a lower local concentration yet positive employment growth, is also comprised of 8 industries. The industry in this cluster with a concentration closest to that of its national counterpart is the real estate and rental industry while the wholesale trade industry displayed the strongest employment growth in the cluster and city (roughly +191% in the last decade). Industries in this cluster can be expected to become important economic drivers in Hermiston in the future if they experience sustained growth.

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<sup>5</sup> Kaliba, Aloyce. (2014). Industry Cluster Analyses for Capital Region Planning and Development District and the North Delta Regional Planning & Development District, Louisiana, USA. 10.13140/RG.2.1.2639.5282.

Industries in the mature and declining clusters are a minority, indicating that most of Hermiston’s industries have been thriving in recent years. Notable industries in these two clusters are transportation in the mature cluster (LQ of 1.25, employment growth of -20.6%) and the information sector in the declining cluster (LQ of 0.24, employment growth of -21.4%).

FIGURE 5.8: LOCATION QUOTIENT AND EMPLOYMENT GROWTH RELATIONSHIP, CITY OF HERMISTON (2012 – 2022) \*



The unclassified sector (NAICS 99) was left out due to having an employment base of less than 10.

Source: Oregon Employment Department, Bureau of Labor Statistics, JOHNSON ECONOMICS

Figure 5.9 below depicts this same analysis applied to Umatilla County during the 2012 – 2022 period. Much like Hermiston, a majority of Umatilla County’s industries experienced positive employment growth while more industries were less concentrated than their national counterparts. A notable industry in the growth cluster is the information sector (NAICS 51), which fell under the declining clusters in the city of Hermiston. On the county level, the information sector has experienced the most employment growth out of any industry, increasing by roughly 250% in the last decade. This sector also has more representation locally when compared to its national counterpart making it undoubtedly one of the strongest economic drivers in the region. The information sector’s recent impressive performance is most likely due to the recent increased development of data centers in the region. These developments were driven by Umatilla County’s strategic geography along the region’s fiber optic network as well as its proximity to a large body of water and a freeway hub. These factors work together in reducing a data center’s operating costs, making Umatilla County a lucrative geography for this type of development. Besides this, much of Umatilla County’s industries share similar traits with that of Hermiston’s in terms of competitiveness and concentration, especially among the lower LQ industries.

**FIGURE 5.9: LOCATION QUOTIENT AND EMPLOYMENT GROWTH RELATIONSHIP, UMATILLA COUNTY (2012 – 2022) \***



\* The agriculture sector (NAICS 11) is left out in the figure for display purposes. For context this industry had an LQ of 13.59 with employment growing by roughly 27% from 2012 to 2022. The unclassified sector (NAICS 99) was also left out due to its employment base being less than 10.

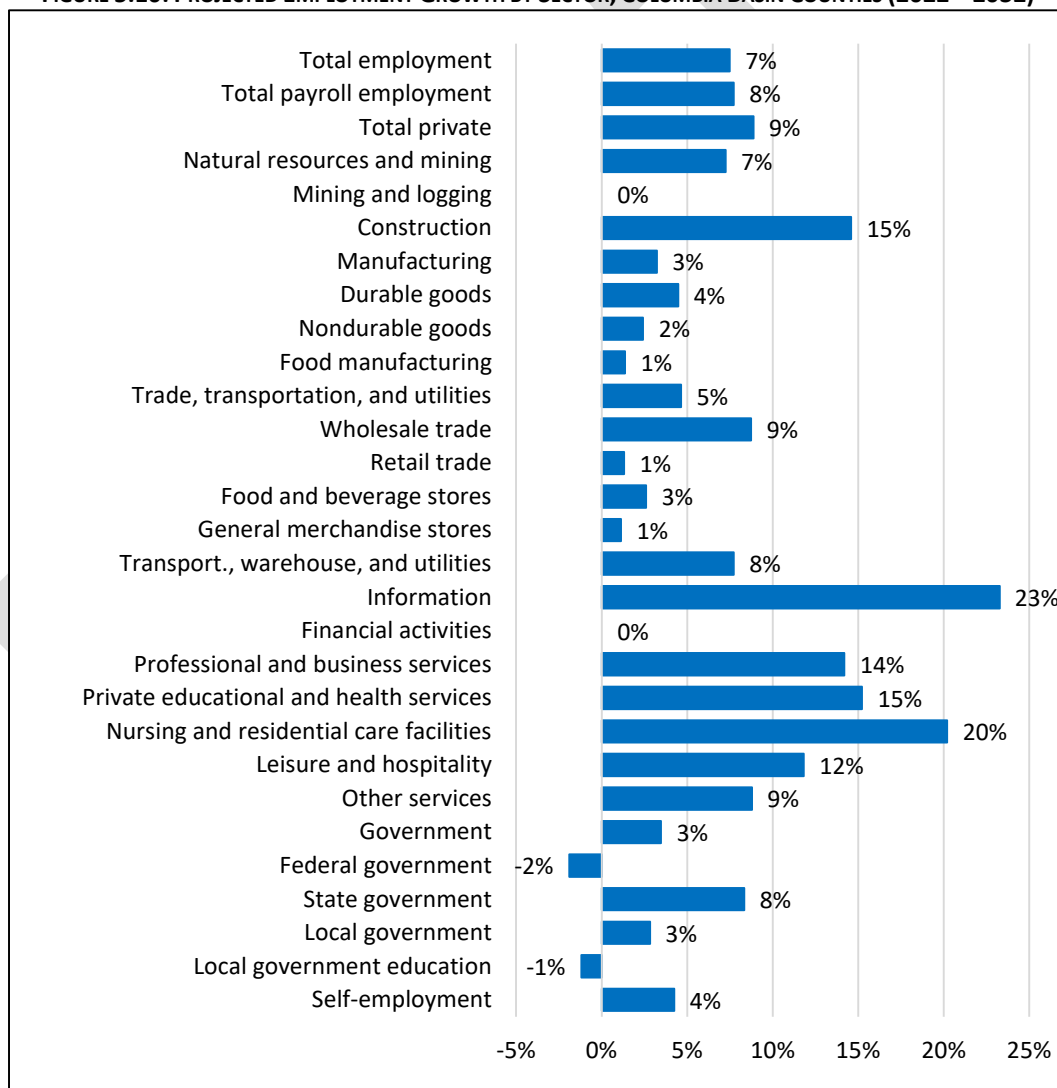
Source: Oregon Employment Department, Bureau of Labor Statistics, JOHNSON ECONOMICS

## PROJECTED EMPLOYMENT GROWTH (OED)

The State of Oregon produces employment forecasts by sector at the broader regional level, which groups the Morrow and Umatilla counties together into one Columbia Basin region. The most recent forecast anticipates a gain of 3,100 jobs from 2022 through 2032, reflecting an average annual growth rate of about 1% during the period. This growth is in-line with Umatilla county's historical average annual growth rate since 2002 as highlighted in Section II.

In this region, the major industries with the fastest growth rates are projected to be information including data centers, private educational & health services (including nursing facilities), construction and professional services. Government employment is projected to shrink slightly, while other sectors are expected to experience flat or very low growth. The projected large increase in the information industry is, in part, due to the influx of data centers that have been recently constructed and planned to be introduced in the region.

**FIGURE 5.10: PROJECTED EMPLOYMENT GROWTH BY SECTOR, COLUMBIA BASIN COUNTIES (2022 – 2032)**



SOURCE: Oregon Employment Department, Workforce and Economic Research Division



## DATA CENTER DEVELOPMENT ACTIVITY – UMATILLA COUNTY

This EOA analysis would be incomplete without addressing the recent history of data center development in the area, including Umatilla County and adjacent Morrow County. These facilities have been attracted to the area, as well as Central Oregon, due to the availability of ample affordable power and water resources that meet the criteria for data center campuses, as well as large, flat development sites to house these substantial facilities. Local and state financial incentives have also helped attract this development.

Data centers accommodate the physical equipment necessary to store, manage, process, and transmit digital information over the internet. Demand for data centers has and continues to increase rapidly, especially as cloud computing, streaming services, e-commerce, and artificial intelligence (AI) become more prevalent.

While data centers come in a wide variety of sizes and capacities, development in Umatilla and Morrow Counties has been almost exclusively of “hyperscale” data center campuses, which serve the needs of the largest internet and cloud computing companies including Amazon, Google, Facebook, Apple, and Microsoft. These companies are among the largest and best capitalized in the world with the resources to make these massive investments.

### **National Growth**

A 2024 report<sup>6</sup> by Cushman and Wakefield on the data center (DC) market finds that new development of these facilities is still accelerating globally, with the amount of new development known to be in the current pipeline (excluding those in land planning stage) expected to increase DC capacity by 2.5 times in the Americas market alone. (The data center industry measures capacity in megawatts of power to run equipment.) The report forecasts that DC revenues from cloud storage and AI customers is expected to grow by nearly 900% within the next 5 years.

The hyperscale DC category has been the fastest growing type in terms of capacity. As of 2010, hyperscale campuses represented an estimated 13% of total capacity among data centers. As of 2022, they represented an estimated 77% of total capacity.<sup>7</sup> With the largest technology companies needing their own dedicated data centers to accommodate their own storage and AI needs or run cloud operations, the growth of hyperscale centers is expected to continue to outpace other categories. McKinsey & Company estimates that hyperscale DC capacity will grow by another 2.5 times by 2030.<sup>8</sup>

Co-location centers, owned by third-party operators with capacity that is leased to multiple other businesses, are also expected to continue to grow, but less quickly (1.8 times). Growth in small “enterprise centers”, run by smaller individual businesses for their own needs, has stagnated as they increasingly rely on outsourcing to the other two categories for their data storage and processing needs. Enterprise now make up 10% of data center capacity and this share is falling year to year.

Physical capacity in land, facilities, power and water will be needed globally, nationally, and regionally to meet this strong demand that is not slowing but accelerating. The United States remains the leading market in the world for DC development, capacity, and usage.

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<sup>6</sup> “Global Data Center Market Comparison.” Cushman and Wakefield, 2024.

<sup>7</sup> “What do you Need to Know About Designing Data Centers?”, Consulting Specifying Engineer, May/June 2023

<sup>8</sup> “Investing in the rising data center economy.” McKinsey & Company, 2023.

### **Regional Growth (Oregon)**

Oregon is now an established major market for data center development with the largest data center clusters focused on the eastern Columbia Basin (Umatilla and Morrow), Portland metro area, and Prineville. Currently, the Portland metro area has the greatest number of data centers, with most in the Hillsboro area. However, these tend to be smaller data centers in the co-location category. Land constraints and shortage of available industrial sites in the Metro area restricts the size and expansion of DC campuses. The Prineville area is home to a small number of very large campuses, specifically Apple and Meta (Facebook) campuses of roughly 150 and 360 acres respectively.

The Columbia Basin is home to the greatest concentration of hyperscale data centers in the state, with a much larger number of similarly-sized campuses averaging roughly 100 acres (see more below).

Oregon is a globally significant data center market. The Cushman and Wakefield report assesses Oregon to be the #8 DC market in the world, and #4 in the United States. Oregon is now home to hyperscale data centers for many of the largest tech companies in the world. Established markets have advantages for DC operators including vendors, construction expertise, and state and local governments and utilities that are familiar with the industry and its needs. Oregon ranks even better in some categories, including being:

- #3 globally in IT load (computation capacity), #2 nationally
- #6 globally in presence of cloud operators, #4 nationally
- #5 globally in renewable power options, #1 nationally
- #1 in tax structure nationally

### **Regional Growth (Umatilla and Morrow Counties)**

Over the prior decade, investment and jobs growth in this sector has been extremely robust and outstripped growth in any other sector in the region. Since roughly 2014, nine large data center campuses have been developed in Umatilla and Morrow Counties. These campuses include 34 individual data center buildings of roughly 200k-225k square feet each, and cover an estimated 850 acres, including accompanying substations. There are currently six additional campuses currently planned or under development, for a total of 15 hyperscale data center campuses expected to be completed over a period of roughly 12 years.

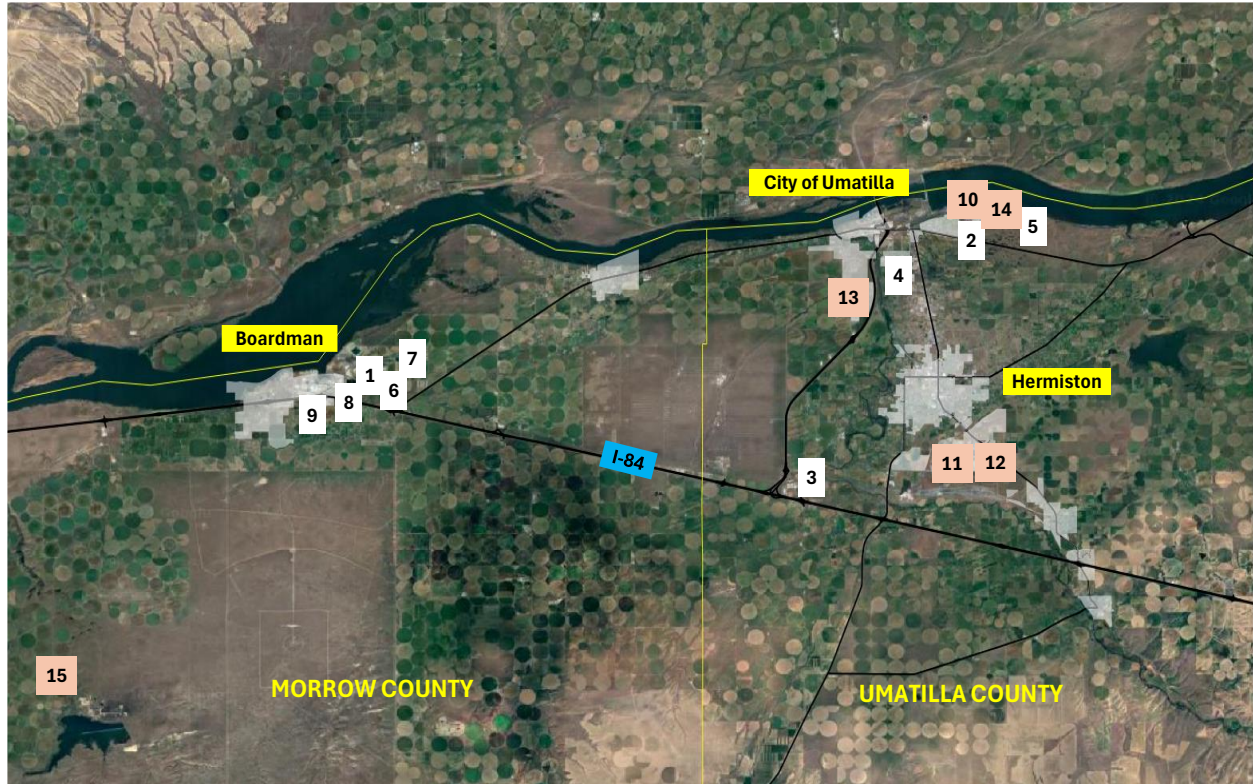
Most of this development (7 of 9 campuses, with 28 buildings) has taken place just in the last five years. Over the last five years an average of 1.5 centers have been completed each year across the two counties. At an average of 108 acres per campus, this is average land development of roughly 160 acres per year for hyperscale data centers.

In Umatilla County, there have been four campuses developed over a decade (three in the past five years), and four more under development, and one more in planning. These developments (existing and proposed) will average 130 acres in size, with an average of four large buildings per campus, qualifying as hyperscale data center campuses.

Of the six total projects currently under construction or planned in the two counties, five are in Umatilla County and one in Morrow County. Umatilla County is expected to average development of over two sites per year over the next three years.

The following map and table (Figure 5.11) summarize the existing and planned hyperscale data center developments in Umatilla and Morrow Counties. Two of these were built prior to 2019, but all of the remaining have been built in the last five years, with five more under construction, and one more acquired site in planning.

FIGURE 5.11: EXISTING AND UNDER DEVELOPMENT DATA CENTERS, UMATILLA AND MORROW COUNTY



Site #	Years Built (Est.)	Total Acres*	DC Buildings	Estimated FAR
<b>Existing</b>				
1	2014-2017	59.9	3	0.36
2	2014-2022	35.17	3	0.41
3	2022-2023	125.8	4	0.18
4	2023	187.1	4	0.11
5	2023-2024	82.8	4	0.26
6	2021-2022	108.4	4	0.18
7	2023	99.9	4	0.21
8	2019-2023	68.2	4	0.23
9	2021-2023	82.2	4	0.25
<b>Under Development/Planned</b>				
10	2024	131.25	4	0.15
11	2024-2025	100	4	0.20
12	2024-2025	113.6	4	0.17
13	2024-2025	194	4	0.11
14	2025-2026	133	4	0.15
15	2024-2025	100	4	0.20
15		1,621	58	0.18

SOURCE: Baxtel, Data Centers.com, Umatilla and Morrow County assessors and GIS, Google Earth, Johnson Economics

Continuous growth over the last five years indicates that large technology companies have the will and resources to develop hyperscale data center campuses at a rate of one to two per year, consuming somewhere between 100 to 300 acres per year, for the foreseeable future.

### **Data Center Employment**

Data from the Bureau of Economic Analysis (BEA) for Umatilla County indicates that between 2012 and 2022 (the most recent year available) job growth in the “Information” sector that includes data centers outpaced growth in all other sectors. The sector added an estimated 565 new jobs over that decade with most of this growth taking place in the second half of the period. It is important to note that this data does not include multiple new data center facilities that have come on line since 2022, which are estimated to have added hundreds of additional jobs in this sector.

The 565 new jobs represented growth of 220% in this sector between 2012 and 2022, or 12.3% per year. The second fastest growing sector in the county was Construction, which grew at 3% annually (445 new jobs). The accelerated growth in construction jobs is also at least partially attributable to the development of these large data center campuses.

Data center operators maintain confidentiality over details of their operation. As noted, the most recent year of employment data available from both BEA and QCEW data provided by the state is 2022, which does not include the completion of most of the data centers in the area.

However, a handful of real-world examples analyzed by Johnson Economics estimates employment at 35 to 40 employees per building (avg. hyperscale building of roughly 200k to 225k s.f.) Industry sources also estimate that employment at data centers can be anywhere from 20 – 50 employees per building. So that a hyperscale campus, typically of four buildings, might have an average of 140 employees once it is in operation. This assumption is applied in the following section to estimate average employment at hyperscale data centers.

### **Indirect and Induced Employment**

Due to the sheer size of data center investments, the new direct employment they bring, and continued spending by the enterprise in the local economy, DC development is estimated to have large secondary impacts in other sectors.

Using the IMPLAN (IMPact for PLANning)<sup>9</sup> economic multiplier model, Johnson Economics estimated the impact of the data center operations activity on secondary employment in the broader economy. Large data center campuses are very high-value investments that generate significant additional spending in the region. This added economic activity helps generate new jobs across support industries. These are called indirect or induced effects.

**IMPLAN Methodology:** IMPLAN models the magnitude and distribution of economic impacts, and measure three types of effects. These are the direct, indirect, and induced changes within the economy. The following is a brief definition of the three impact types:

**Direct Impacts:** The actual change in activity affecting a local economy. For example, if a new industrial building is constructed, direct economic impacts represent the value-added output for that firm/user, as well as the jobs required for development and the labor income paid.

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<sup>9</sup> IMPLAN is an economic impact model designed for analyzing the effects of industry activity (employment, income, or business revenues) upon all other industries in an economic area. Minnesota IMPLAN Group (MIG), Stillwater, Minnesota

**Indirect Impacts:** Indirect impacts reflect the response of all other local businesses within the geographic area to the direct impact. Continuing the previous example, indirect impacts of a new institutional user would comprise revenues for related vendors (e.g., real estate services, vendors, etc.), and the jobs and labor income thereby generated.

**Induced Impacts:** These reflect the response of households within the geographic area affected by direct and indirect impacts. In the given example, induced impacts would be the increase in all categories of spending by households in the geography directly or indirectly employed by the businesses' activities.

Due to the sheer size of the data center investments in a relatively rural county, the resulting indirect and induced employment across other industries is estimated at roughly 2/3 of the direct data center employment. Figure 5.12 shows an estimate of the amount of additional employment generated by the on-going operating activities of one hyperscale data center campus (four buildings of roughly 200k s.f. each, with 140 avg. total employees).

**FIGURE 5.12: ESTIMATED INDIRECT AND INDUCED IMPACTS  
STANDARD HYPERSCALE DATA CENTER (140 JOBS)**

Employment Category	Jobs	Share of Total	Share of Direct Jobs
Direct (DC per Bldg)	140	59%	
Indirect	80	34%	57%
Induced	18	7%	13%
<b>TOTAL:</b>	<b>238</b>	<b>100%</b>	<b>70%</b>

Source: Minnesota IMPLAN Group, Johnson Economics

IMPLAN estimates that the ongoing operations of a data center will support secondary employment equal to 70% of the direct DC employment. In the case of a 140-employee DC (building), this amounts to an additional 98 employees in secondary industries. Figure 5.13 presents an estimate of the top ten industries that this activity would support.

**FIGURE 5.12: ESTIMATED INDIRECT AND INDUCED IMPACTS BY SECTOR**

Sector	Description	Est. Share of Indirect/ Induced Empl.
51	Data processing, hosting, ISP, web search portals and related services	40.1%
22	Electric power generation, transmission, and distribution	12.2%
72	Food services and drinking places	7.4%
54	Employment services	4.1%
53	Real estate establishments	3.5%
62	Offices of physicians, dentists, and other health practitioners	3.3%
23	Maintenance and repair construction of nonresidential structures	2.2%
44	Retail Stores - Food and beverage	1.9%
45	Retail Stores - General merchandise	1.7%
62	Private hospitals	1.7%

Source: Minnesota IMPLAN Group, Johnson Economics

The indirect and induced impacts, while significant, are distributed over many other sectors. Indirect and induced impacts are discussed more in the following section, and these figures help form the assumptions for estimated impacts.

## VI. FORECAST OF EMPLOYMENT AND LAND NEED

### CITY OF HERMISTON EMPLOYMENT FORECAST

Goal 9 requires that jurisdictions plan for a 20-year supply of commercial and industrial capacity. Because employment capacity is the physical space necessary to accommodate new workers in the production of goods and services, employment need forecasts typically begin with a forecast of employment growth in the community. The previous analysis of economic trends and targeted industries set the context for these estimates. This analysis translates those trends into estimates of employment growth by broad industry. Forecasts are produced at the sector or subsector level (depending on available information), and subsequently aggregated into two-digit North American Industry Classification System (NAICS) sectors. Estimates in this analysis are intended for long-range land planning purposes and are not designed to predict or respond to business cycle fluctuation.

The projections in this analysis are built on an estimate of employment in 2024, the commencement year for the planning period. Employment growth will come as the result of net-expansion of existing businesses in the community, new business formation, or the relocation/recruitment of new firms. Forecast scenarios consider a range of factors influencing growth. Long-range forecasts typically rely on a macroeconomic context for growth. The forecast does not consider the impact of a significant exogenous shift in employment such as recruitment of an unforeseen major employer. (This forecast **does** include the anticipated employment at data center facilities currently under construction, because this employer is known at the time of this analysis. More detail below.)

### OVERVIEW OF EMPLOYMENT FORECAST METHODOLOGY

Our methodology starts with employment forecasts for major commercial and industrial sectors. Forecasted employment is allocated to building type, and a space demand is a function of the assumed square footage per employee ratio multiplied by projected change. The need for space is then converted into land and site needs based on assumed development densities using floor area ratios (FARs).

FIGURE 6.1: UPDATE TO BASELINE YEAR AND CONVERSION OF COVERED TO TOTAL EMPLOYMENT



The first analytical step of the analysis is to update covered employment to the 2024 base year. The Quarterly Census of Employment and Wages (QCEW) data was used to determine the City of Hermiston’s covered employment by industry through 2022, the latest year available. To update these estimates, we use observed industry specific growth rates for Umatilla County between 2012 and 2022.

The second step in the analysis is to convert “covered”<sup>10</sup> employment to “total” employment. Covered employment only accounts for a share of overall employment in the economy. Specifically, it does not consider sole proprietors

<sup>10</sup> The Department of Labor’s Quarterly Census of Employment and Wages (QCEW) tracks employment data through state employment departments. Employment in the QCEW survey is limited to firms with employees that are “covered” by unemployment insurance.



or commissioned workers. Covered employment was converted to total employment based on observed ratios at the national level derived from the Bureau of Economic Analysis from 2014 through 2022. The differential is the most significant in administration services, professional & technical services, and other services. The adjusted 2024 total employment base for the city of Hermiston is just over 9,000 jobs.

**FIGURE 6.2: UPDATE TO 2024 BASELINE AND CONVERSION OF COVERED TO TOTAL EMPLOYMENT, CITY OF HERMISTON (2022 – 2024)**

Major Industry Sector	QCEW Employment			Total Emp. Conversion <sup>2</sup>	2024 Estimate
	2022 Employment	'12-'22 County Δ <sup>1</sup>	2024 Estimate		
Agriculture, forestry, fishing, hunting	235	-1.3%	229	44%	521
Construction	253	2.9%	268	82%	327
Manufacturing	387	-1.7%	374	97%	384
Wholesale Trade	247	1.6%	255	98%	259
Retail Trade	1,463	0.8%	1,487	96%	1,557
Transportation, Warehouse, & Utilities	1,383	0.7%	1,402	90%	1,557
Information	44	12.3%	56	95%	58
Finance & Insurance	221	0.9%	225	92%	245
Real Estate	128	3.5%	137	92%	149
Professional & Technical Services	161	0.3%	162	92%	176
Administration Services	477	-5.5%	426	92%	464
Education	700	-0.5%	693	96%	722
Health Care/Social Assistance	1,734	1.1%	1,772	96%	1,848
Leisure & Hospitality	1,061	1.8%	1,098	95%	1,160
Other Services	259	0.6%	262	85%	310
Government	183	0.4%	184	100%	184
<b>TOTAL</b>	<b>8,936</b>	<b>1.1%</b>	<b>9,030</b>	<b>91%</b>	<b>9,923</b>

Source: Johnson Economics

1) Growth rate calculated using CES data for Umatilla County

2) Bureau of Economic Analysis (2022 National Averages)

### **BASELINE SCENARIO: BASELINE “SAFE HARBOR” FORECAST**

The Goal 9 statute does not have a required method for employment forecasting. However, OAR 660-024-0040(9)(a) outlines several safe harbor methods, which are intended to provide jurisdictions an agreed-upon methodological approach to jobs forecasting. The recommended approach for the City of Hermiston is 660-024-0040(9)(a)(B), which allows reliance on the most recent 20-year coordinated population forecast for the City prepared by Portland State University Population Research Center. The overall employment growth rate is assumed to match population growth rate.

The second safe harbor method uses the regional employment forecast by industry, published by the Oregon Employment Department (see Figure 5.10). In the case of Hermiston, both methods result in a very similar growth rate. The baseline growth rate shown in Figure 6.3 (following page) is based on the population growth forecast which has a slightly higher rate compared to the OED forecast (0.97% vs. 0.91% annually). The baseline forecast would entail the creation of 2,113 new jobs over the 20-year forecast period.

### **ADJUSTED EMPLOYMENT FORECAST: DATA CENTER GROWTH, CONSTRUCTION, AND ECONOMIC IMPACTS**

A second adjusted forecast scenario was influenced by the analysis conducted in the EOA, and specific known employment-use developments that are proposed in Hermiston and adjacent parts of Umatilla County. The adjusted forecast takes the employment growth of the baseline scenario as a starting point, but accounts for:

- The anticipated employment created by hyperscale data center developments, including known and proposed projects;
- An estimate of additional “indirect and induced” employment that will result from the economic activity generated in the general community from these large investments;
- An additional estimate of growth in the construction sector employment given the scale and on-going nature of very large and high-investment data center construction projects.

#### **Pace of Hyperscale Development Activity (Umatilla County and Hermiston)**

As discussed in Section V, the data center industry has grown rapidly in the region over the past decade, with nine hyperscale data center campuses finished or under development in Umatilla County. Two campuses are currently under development in south Hermiston on E. Penney Avenue. These two campuses cover roughly 215 acres, include 8 individual data center buildings, and will house hundreds of future jobs which are reflected as future growth in the Information sector in Figure 6.3 below.

In addition to these two campuses under development, there are multiple proposed additional hyperscale campuses in the immediate area of Hermiston. These campuses will be served by Hermiston infrastructure and utilities, and it is reasonable to assume that these would be Hermiston developments, even if located on land that is currently unincorporated and/or outside of the city’s UGB. (As Section VII of this report discusses, there will be no suitably large sites remaining within the UGB after the build-out of the Penney Ave. sites.)

Umatilla has experienced rapid growth in hyperscale campus development the last decade, and particularly in the last five years. Considering the pace of development over the past five years, plus anticipated additions over the next three years, Umatilla County alone has experienced the addition of one hyperscale data center per year on average. If appropriate large sites continue to be available, Johnson Economics concludes that this pace will be sustainable for the foreseeable future. Sufficient interest in available sites has already been expressed by multiple developers to maintain this pace for the next ten years.

This pace implies an estimated 20 new data center developments in northwest Umatilla County over the 20 year planning period of this report, of which Hermiston could reasonably expect to capture up to half if appropriate land is available.

The proposed ongoing development of multiple new hyperscale campuses in the immediate Hermiston area is credible, being supported by a very large technology company that has proven its intent to build these facilities continuously and quickly in Umatilla County over the past decade.

Based on this analysis, high employment growth has been forecasted in the Information sector as shown in Figure 6.3. As multiple data center developers have demonstrated that they have the intent and the resources to make these large investments on an ongoing basis, this analysis finds that they are not speculative and will happen if suitable sites are available.



### **Direct Data Center Employment (Information Industry Sector)**

- The adjusted forecast estimates the creation of 2,020 information sector jobs over the 20-year period, of which 1,550 would be anticipated to be direct data center employment. At an average of 140 employees per campus, this implies up to 11 potential campuses, which would include the two Penney Ave. campuses currently under development.
- The remaining 480 information sector jobs are expected to be those induced in related industries and vendors as this sector continues to boom (see below), but these jobs will not be housed directly at data center sites.

### **Indirect and Induced Employment (Across Sectors)**

- Using the IMPLAN (IMPact for PLANning)<sup>11</sup> economic multiplier model, Johnson Economics estimated the impact of the data center development and operation activity on the broader economy. Large data center campuses are very high-value investments that generate significant additional spending in the region, in the building and operations phases. This added economic activity helps generate new jobs across support industries. These are called indirect or induced effects. Due to the sheer size of the data center investments and ongoing economic activity, the resulting indirect and induced employment across other industries is estimated at roughly 70% of the direct data center employment. (See Section V)
- This analysis indicates that an additional 1,080 indirect and induced jobs are expected over the 20-year period as the data center development takes place. These jobs are distributed over all sectors as they experience some indirect impact of the new investment and direct employment. However, the employment is not expected to be distributed evenly, with an estimated 40% being in support industries and vendors serving the data center industry. Utilities sector is expected to account for 12% of the indirect growth, with all other sectors experiencing diminishing shares.

### **Increased Direct Construction Employment**

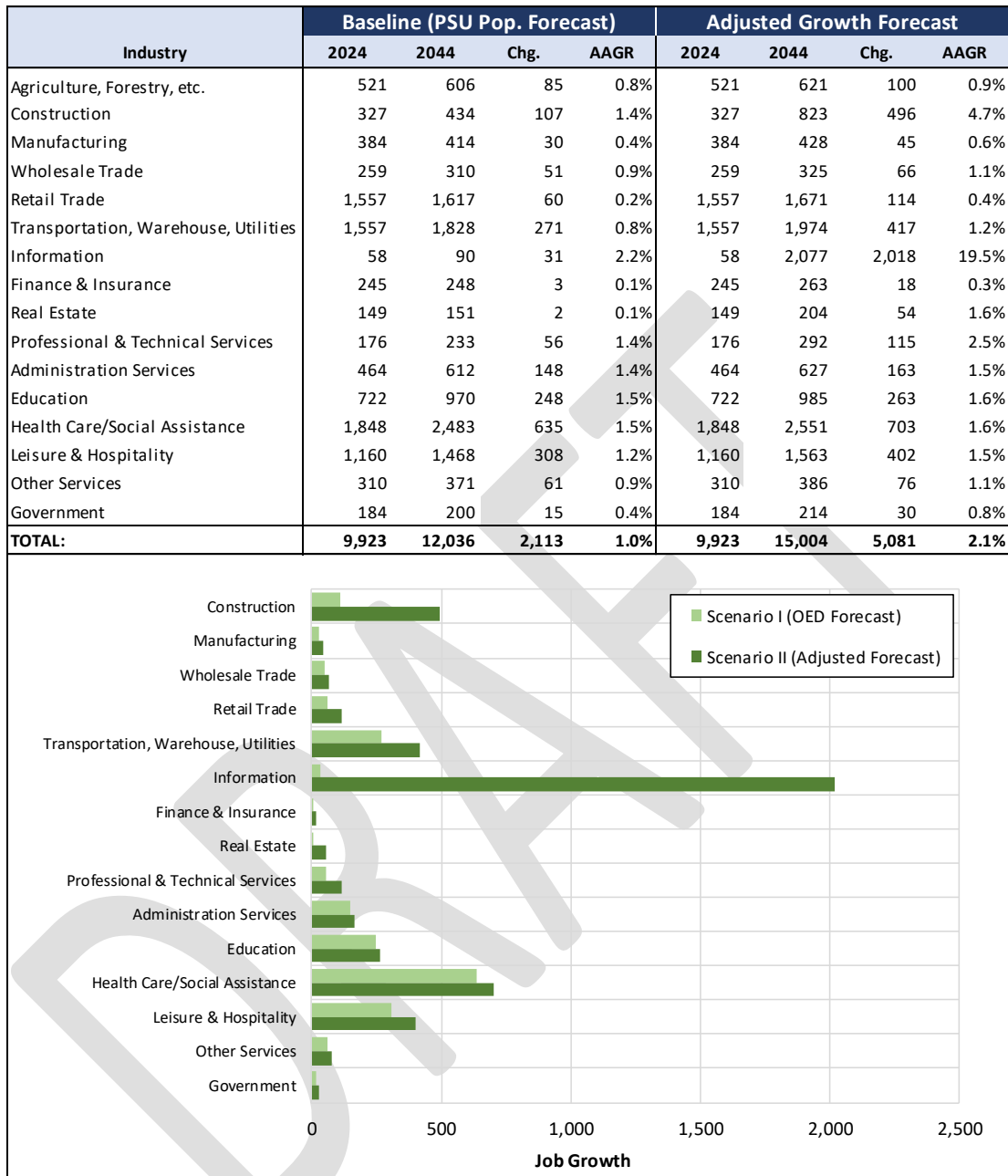
- Employment in the construction sector in Umatilla County has grown at a rate of 2.9% over the decade 2012 to 2022, adding an estimated 450 jobs. The amount and pace of large data center development, construction investments that may approach or exceed \$1B each, has greatly increased since that data was current. Each project is estimated to require hundreds or thousands of individual specialists over the course of the construction phase.
- For this reason, this analysis assumes that the county will need to continue growth in the construction sector beyond the 1.4% reflected in the OED regional forecast. Applying this 1.4% forecast to the baseline scenario results in growth of only 100 jobs over 20 years.
- Assuming continued growth of 2.9% over the coming 20 years in the county would imply countywide growth of almost 1,400 new construction jobs over that period. Given the continued local development of high-investment mega-scale construction projects, this seems realistic over a 20-year period. If Hermiston captured 25% of the countywide growth, that would be 350 additional construction jobs over the baseline (plus indirect and induced), which is the assumption reflected in Figure 6.3.

As summarized in Figure 6.3 below, this adjusted growth forecast estimates an average annual growth rate of 2.1% for the period, for a total addition of 5,080 new jobs. The forecasted rate of 2.1% is somewhat higher than the realized employment growth rate since 2010 of 1.8% per year, (source: Oregon Employment Department, QCEW data). However, an acceleration in growth rate would be in keeping with the on-going large-scale employment use developments in the county, and the very high level of investment in the local economy it entails.

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<sup>11</sup> IMPLAN is an economic impact model designed for analyzing the effects of industry activity (employment, income, or business revenues) upon all other industries in an economic area. Minnesota IMPLAN Group (MIG), Stillwater, Minnesota

**FIGURE 6.3: ADJUSTED GROWTH FORECAST, CITY OF HERMISTON (2024 - 2044)**



Source: Oregon Employment Department, Johnson Economics

### FIVE-YEAR INCREMENTAL FORECAST

The adjusted growth forecast, accounting for the development of hyperscale data centers, estimates an annual growth rate of 2.1%, or 5,081 new jobs over the 20-year period. Over 2,000 of these new jobs in the information sector, attributable almost wholly to data center development, account for 39% of this anticipated growth.

Forecasts grounded in broad based economic variables cannot account for all the realities of local businesses and trends among evolving industries. Any long-term forecast is inherently uncertain and should be updated on a regular basis to reflect more current information. This is particularly true in a smaller jurisdiction such as Hermiston, in which a single large firm's location and/or operational decision may substantively impact the rate of growth.

The adjusted growth forecast was further broken down into four five-year increments, assuming a consistent rate of growth over the period. We would expect that in reality the twenty-year period will include multiple business cycles, and that the growth rate will be variable over that time.

**FIGURE 6.4: GROWTH FORECAST, 5-YEAR INCREMENTS, CITY OF HERMISTON (2024 - 2044)**

Industry	Overall Employment					Net Change by Period				Total 24-44
	2024	2029	2034	2039	2044	24-29	29-34	35-39	40-44	
<b>Adjusted Growth Forecast</b>										
Agriculture, forestry, fishing, hunting	521	544	568	594	621	23	24	26	27	100
Construction	327	412	518	653	823	85	107	135	170	496
Manufacturing	384	394	405	417	428	11	11	11	12	45
Wholesale Trade	259	274	290	307	325	15	16	17	18	66
Retail Trade	1,557	1,585	1,613	1,642	1,671	28	28	29	29	114
T.W.U.	1,557	1,652	1,753	1,861	1,974	95	101	107	114	417
Information	58	143	348	851	2,077	84	206	502	1,226	2,018
Finance & Insurance	245	250	254	258	263	4	4	4	5	18
Real Estate	149	161	174	189	204	12	13	14	15	54
Professional & Technical Services	176	200	227	257	292	24	27	30	34	115
Administration Services	464	500	539	581	627	36	39	42	45	163
Education	722	781	844	912	985	58	63	68	74	263
Health Care/Social Assistance	1,848	2,003	2,172	2,354	2,551	155	168	182	198	703
Leisure & Hospitality	1,160	1,250	1,347	1,451	1,563	90	97	104	112	402
Other Services	310	328	346	366	386	17	18	20	21	76
Government	184	191	199	207	214	7	7	8	8	30
<b>TOTAL:</b>	<b>9,923</b>	<b>10,668</b>	<b>11,598</b>	<b>12,897</b>	<b>15,004</b>	<b>745</b>	<b>930</b>	<b>1,299</b>	<b>2,107</b>	<b>5,081</b>

Source: Oregon Employment Department, Johnson Economics

## EMPLOYMENT LAND FORECAST

The next step in the analysis is to convert projections of employment into forecasts of land demand over the planning period. The methodology begins by allocating employment by sector into a distribution of building typologies that those economic activities typically use. As an example, insurance agents typically locate in traditional office space, often along commercial corridors. However, a percentage of these firms are also located in commercial retail space adjacent to retail anchors. Cross tabulating this distribution provides an estimate of employment in each typology.

The next step converts employment into space using estimates of the typical square footage exhibited within each typology. Adjusting for market average vacancy we arrive at an estimate of total space demand for each building type.

Finally, we can consider the physical characteristics of individual building types and the amount of land they typically require for development. The site utilization metric commonly used is referred to as a “floor area ratio” or FAR. For example, assume a 25,000-square foot general industrial building requires roughly a site of roughly 100k square feet to accommodate its structure, setbacks, parking, and necessary yard/storage space. This building would have an FAR of roughly 0.25. Demand for space is then converted to net acres using a standard floor area ratio FAR for each development form.

## LAND DEMAND ANALYSIS – ADJUSTED GROWTH FORECAST

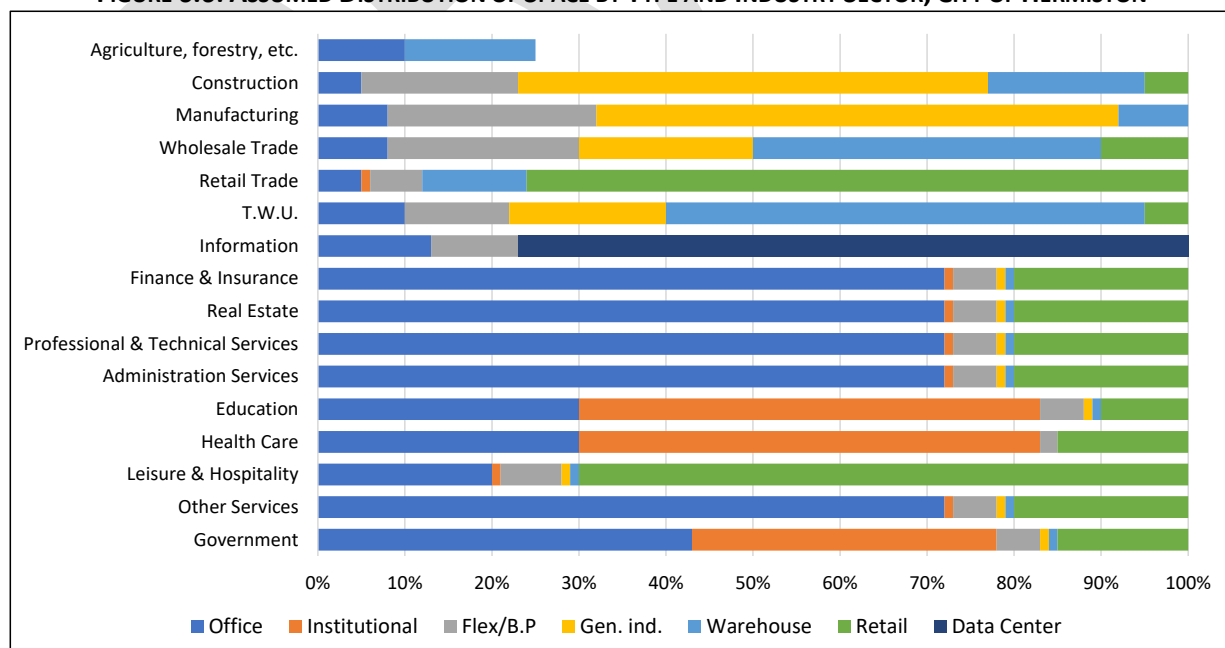
In this analytical step we allocate employment growth to the standard building typologies. The building typology matrix represents the share of sectoral employment that is located across various building types. (Note that only a fraction of employment in the agricultural sector is assumed to need urban real estate, as many of these companies operate in unincorporated areas in the region around the city. Food processing operations are captured under “manufacturing.”)

**FIGURE 6.5: DISTRIBUTION OF EMPLOYMENT BY SPACE TYPE, CITY OF HERMISTON (ADJUSTED FORECAST)**

Industry Sector	BUILDING TYPE MATRIX						
	Office	Institutional	Flex/B.P	Gen. ind.	Warehouse	Data Center	Retail
Agriculture, forestry, etc.	10%	0%	0%	0%	15%	0%	0%
Construction	5%	0%	18%	54%	18%	0%	5%
Manufacturing	8%	0%	24%	60%	8%	0%	0%
Wholesale Trade	8%	0%	22%	20%	40%	0%	10%
Retail Trade	5%	1%	6%	0%	12%	0%	76%
T.W.U.	10%	0%	12%	18%	55%	0%	5%
Information	13%	0%	10%	0%	0%	77%	0%
Finance & Insurance	72%	1%	5%	1%	1%	0%	20%
Real Estate	72%	1%	5%	1%	1%	0%	20%
Professional & Technical Services	72%	1%	5%	1%	1%	0%	20%
Administration Services	72%	1%	5%	1%	1%	0%	20%
Education	30%	53%	5%	1%	1%	0%	10%
Health Care	30%	53%	2%	0%	0%	0%	15%
Leisure & Hospitality	20%	1%	7%	1%	1%	0%	70%
Other Services	72%	1%	5%	1%	1%	0%	20%
Government	43%	35%	5%	1%	1%	0%	15%
<b>TOTAL</b>	<b>21%</b>	<b>10%</b>	<b>9%</b>	<b>8%</b>	<b>8%</b>	<b>31%</b>	<b>13%</b>

Source: Johnson Economics

**FIGURE 6.6: ASSUMED DISTRIBUTION OF SPACE BY TYPE AND INDUSTRY SECTOR, CITY OF HERMISTON**



Source: Johnson Economics

Under the employment forecast scenario, employment housed in data center developments accounts for the greatest share of growth, followed by employment housed in office and retail space. If we exclude the forecasted data center employment (~1,550 jobs), the combined employment forecast in commercially zoned space (~2,220 jobs) is greater than that forecast for other types of industrially zoned space (~1,235 jobs). Note that the 5,006 total jobs shown here is less than the total employment in the adjusted forecast (5,081 jobs) because not all agricultural jobs require real estate space.

**FIGURE 6.7: NET GROWTH IN EMPLOYMENT BY BUILDING TYPE, CITY OF HERMISTON (ADJUSTED FORECAST) 2024-2044**

Industry Sector	20-year Job Forecast		NET CHANGE IN EMPLOYMENT BY BUILDING TYPE - 2024-2044							Total
	Number	AAGR	Office	Institutional	Flex/B.P	Gen. Ind.	Warehouse	Data Center	Retail	
Agriculture, forestry, etc.	100	0.8%	10	0	0	0	15	0	0	25
Construction	496	4.7%	25	0	89	268	89	0	25	496
Manufacturing	45	0.6%	4	0	11	27	4	0	0	45
Wholesale Trade	66	1.1%	5	0	14	13	26	0	7	66
Retail Trade	114	0.4%	6	1	7	0	14	0	87	114
T.W.U.	417	1.2%	42	0	50	75	230	0	21	417
Information	2,018	19.5%	262	0	202	0	0	1,554	0	2,018
Finance & Insurance	18	0.3%	13	0	1	0	0	0	4	18
Real Estate	54	1.6%	39	1	3	1	1	0	11	54
Professional & Technical Services	115	2.5%	83	1	6	1	1	0	23	115
Administration Services	163	1.5%	117	2	8	2	2	0	33	163
Education	263	1.6%	79	139	13	3	3	0	26	263
Health Care	703	1.6%	211	373	14	0	0	0	105	703
Leisure & Hospitality	402	1.5%	80	4	28	4	4	0	282	402
Other Services	76	1.1%	55	1	4	1	1	0	15	76
Government	30	0.8%	13	11	2	0	0	0	5	30
<b>TOTAL</b>	<b>5,081</b>	<b>2.1%</b>	<b>1,044</b>	<b>532</b>	<b>451</b>	<b>394</b>	<b>389</b>	<b>1,554</b>	<b>642</b>	<b>5,006</b>

Source: Johnson Economics

Employment growth estimates by building type are then converted to demand for physical space. This conversion assumes the typical space needed per employee on average. This step also assumes a market average vacancy rate, acknowledging that equilibrium in real estate markets is not 0% vacancy. We assume a 10% vacancy rate for office, retail, and flex uses, as these forms have high rates of speculative multi-tenant usage. A 5% rate is used for general industrial and warehouse—these uses have higher rates of owner occupancy that lead to lower overall vacancy. Institutional uses and data centers are assumed to have no vacancy, as they are typically purpose-built for healthcare, nonprofit, government, or the data center operators.

The demand for space is converted into an associated demand for acreage using an assumed Floor Area Ratio (FAR). The combined space and FAR assumptions further provide estimates indicated of job densities, determined on a per net-developable acre basis.

**FIGURE 6.8: NET ACRES REQUIRED BY BUILDING TYPOLOGY, CITY OF HERMISTON (ADJUSTED FORECAST) – 20-YEAR**

	DEMAND BY GENERAL USE TYPOLOGY, 2023-2043							Total
	Office	Institutional	Flex/B.P	Gen. Ind.	Warehouse	Data Center	Retail	
Employment Growth	1,044	532	451	394	389	1,554	642	5,006
Avg. SF Per Employee	350	350	990	600	1,800	5,800	500	2,251
Demand for Space (SF)	365,300	186,200	446,900	236,500	699,400	9,014,500	321,000	11,269,800
Floor Area Ratio (FAR)	0.30	0.30	0.25	0.25	0.25	0.18	0.25	0.20
Market Vacancy*	10.0%	0.0%	10.0%	5.0%	5.0%	0.0%	10.0%	7.1%
Implied Density (Jobs/Acre)*	33.6	33.6	9.9	17.2	5.7	1.4	19.6	16.6
Net Acres Required	31.1	14.2	45.6	22.9	67.6	1,149.7	32.8	1,363.8
Share for infrastructure (Net-to-Gross)	20%	20%	15%	15%	15%	5%	20%	7%
Gross Acres Required	38.8	17.8	53.6	26.9	79.5	1,210.2	40.9	1,467.8

\* Average of Totals excludes data centers, due to distorting effect.

Source: Johnson Economics

Commercial office and retail densities are 33 and 20 jobs per acre, respectively. Industrial uses range from 17 for general industrial to less than 6 jobs per acre for warehouse/distribution. Data centers have low employment density due to the very large buildings and large-acreage sites typical of this use.

The projected 5,081-job expansion in the local employment base through 2044 requiring an estimated 1,364 net acres, and 1,468 gross acres, of employment land. A large majority of this needed land (1,200 gross acres) will be very large industrial sites suitable for known planned and proposed hyperscale data center development. This growth in the data center industry represents the bulk of forecasted employment growth, and land need (82%).

Due to the centrality of this identified future use, Figure 6.9 separates out data centers from other industrial uses to better represent the need from other sectors over the planning period. Excluding data centers, there is a forecasted need for 257 gross acres to house job growth in other commercial and industrial categories.

**FIGURE 6.9: EMPLOYMENT GROWTH AND LAND NEED BY BUILDING TYPOLOGY, CITY OF HERMISTON**

	Land Use (Excluding D.C.)			Data Center	Total
	Commercial	Industrial	Subtotal		
20-Year Job Growth:	2,218	1,234	3,452	1,554	5,006
Job Share:	64%	36%	100%	31%	100%
Net Needed Acres:	78.1	136.1	214.1	1,149.7	1,363.8
Gross Needed Acres:	97.6	160.1	257.6	1,210.2	1,467.8
Land Need Share:	38%	62%	100%	82%	100%

Source: Oregon Employment Department, Portland State University, City of Hermiston, Johnson Economics LLC

Despite the higher number of commercial jobs, the gross acreage of industrial land needed is 62% of this gross land need, and commercial is 38%. This is because of the relatively lower average job densities of industry requires more land to accommodate the same number of jobs.

## VII. RECONCILIATION OF EMPLOYMENT LAND NEED AND INVENTORY

The inventory of buildable employment land provides a snapshot of the current local capacity to accommodate more businesses and jobs over the planning period. This current available land is compared to the forecasted need for new land over the 20-year planning period, presented in Section VI.

### SUMMARY OF LAND DEMAND (ACRES)

The estimate of future land need is re-presented below. A total need for 1,838 gross acres was identified across a range of land use and building types, based on the adjusted growth forecast. Data centers account for 1,210 gross acres of this need. Other industrial uses account for 160 gross acres of need, and commercial uses 98 gross acres.

**FIGURE 7.1: SUMMARY OF FORECASTED 20-YEAR LAND NEED BY BUILDING TYPOLOGY (HERMISTON)**

	Land Use (Excluding D.C.)			Data Center	Total
	Commercial	Industrial	Subtotal		
<b>20-Year Job Growth:</b>	2,218	1,234	3,452	1,554	5,006
<b>Job Share:</b>	64%	36%	100%	31%	100%
<b>Net Needed Acres:</b>	78.1	136.1	214.1	1,149.7	1,363.8
<b>Gross Needed Acres:</b>	97.6	160.1	257.6	1,210.2	1,467.8
<b>Land Need Share:</b>	38%	62%	100%	82%	100%

Source: Oregon Employment Department, Portland State University, City of Hermiston, Johnson Economics LLC

### SUMMARY OF LAND SUPPLY (ACRES)

To assess the remaining supply of buildable employment land suitable to accommodate the 20-year land need, an inventory of land with the proper zoning was conducted. Figure 7.2 is a summary of the results on that inventory. A more detailed explanation of the methodology and findings of the Buildable Land Inventory (BLI) is presented as Appendix B of this report.

**FIGURE 7.2: BUILDABLE LAND INVENTORY, NET DEVELOPABLE ACRES BY ZONE (HERMISTON)**

TABLE 2: HERMISTON EMPLOYMENT BUILDABLE LANDS INVENTORY <sup>1</sup>						
	<i>Vacant</i>		<i>Developed</i>		<i>Total</i>	
<i>Category</i>	<i>Number of Sites</i>	<i>Net Buildable Acreage</i>	<i>Number of Sites</i>	<i>Potential Acreage<sup>2</sup></i>	<i>Number of Sites</i>	<i>Potential Acreage</i>
<b>Commercial</b>						
Commercial (C)	105	204.35	11	35.90	116	240.24
Mixed Commercial/ Industrial (C/I) <sup>3</sup>	15	26.97	0	0	15	26.97
Future Mixed Commercial/ Industrial (F-C/I) <sup>3</sup>	0	0	0	0	0	0
<i>Commercial subtotal</i>	<i>120</i>	<i>231.32</i>	<i>11</i>	<i>35.90</i>	<i>131</i>	<i>267.22</i>
<b>Industrial</b>						
Airport (A)	3	48.04	1	1.88	4	49.92
Industrial (I)	25	98.73	7	14.71	32	113.44
Mixed Commercial/ Industrial (C/I) <sup>3</sup>	34	189.89	1	3	35	192.89
Future Mixed Commercial/ Industrial (F-C/I) <sup>3</sup>	3	66.79	0	0	3	66.79
<i>Industrial subtotal</i>	<i>65</i>	<i>403.46</i>	<i>9</i>	<i>19.59</i>	<i>74</i>	<i>423.05</i>
<b>Totals</b>	<b>185</b>	<b>634.78</b>	<b>20</b>	<b>55.49</b>	<b>205</b>	<b>690.27</b>
<b>Table Notes:</b> <sup>1</sup> Due to rounding, some totals may not correspond with the sum of separate figures. <sup>2</sup> The Developed Potential Acreage assumes removal of existing structures, and redevelopment of the entire site. <sup>3</sup> The portions of Mixed Designation sites within 300' of Highway 395 are categorized as Commercial. The portions of Mixed Designation sites more than 300' from Highway 395 are categorized as Industrial. If a parcel has different portions classified as Commercial and Industrial, then the single parcel is counted as two sites, with separate acreage for each site.						

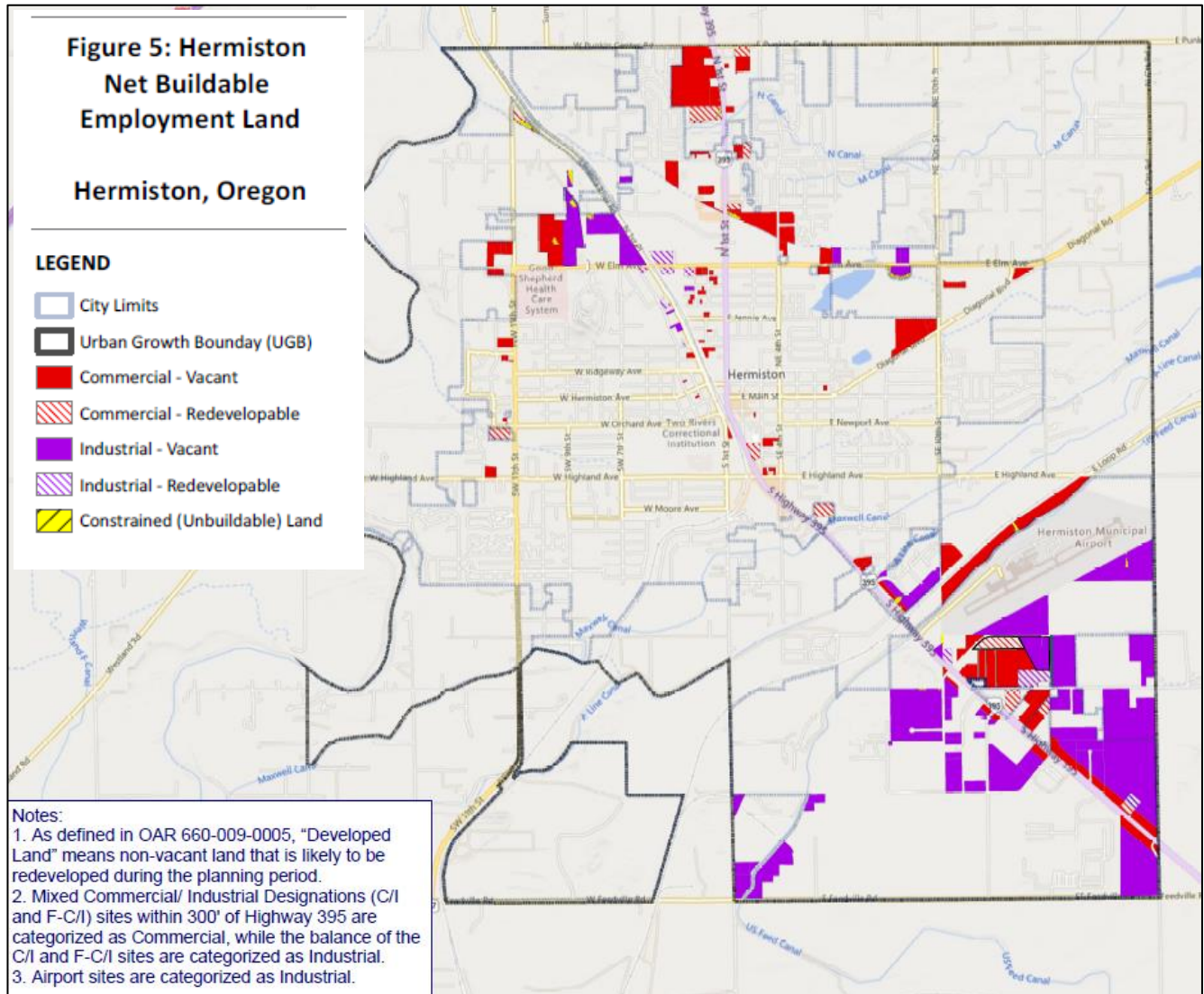
Source: City of Hermiston, Mackenzie

The BLI filtered the zoned employment land in Hermiston by Commercial or Industrial zoning category, environmental constraints that will limit development, and whether the parcel is already developed, vacant, or partially vacant (see Appendix B for more detail). The inventory was vetted to address development projects in the pipeline and known limitations on specific sites that will prevent development on all or a portion of the site.

The preceding figure presents the estimated net developable acres of land by zone. There are an estimated 268 net acres of buildable Commercial land and an estimated 423 net acres of buildable Industrial land.



**FIGURE 7.3: BUILDABLE LAND INVENTORY, EMPLOYMENT LAND BY DEVELOPMENT STATUS (HERMISTON)**



Source: City of Hermiston, Mackenzie

### **RECONCILIATION OF 20-YEAR LAND SUPPLY AND DEMAND (GROSS ACRES)**

Comparing the Buildable Land Inventory to the 20-year forecast of employment land need indicates that the City of Hermiston faces a deficit of employment land over the planning period, specifically in large-lot sites for hyperscale data center campuses (discussed more below).

There is sufficient *gross* buildable land in both the Commercial and Industrial categories to accommodate the forecasted need for other commercial and industrial categories, excluding data centers. However, as discussed more below, there is also a shortage of large lot parcels remaining for other commercial and industrial users.

A summary of the comparison of land supply and demand in gross acres is presented below.

**FIGURE 7.4: RECONCILIATION OF LAND SUPPLY AND 20-YEAR DEMAND (HERMISTON)**

EMPLOYMENT ZONING DESIGNATION	20 YR. DEMAND (Gross Acres)	BUILDABLE LAND (Acres)	Permitted Data Center Sites (Acres) <sup>1</sup>	SURPLUS OR (DEFICIT) (Gross Acres)
Commercial (Office, Institutional, Retail)	97.6	267.2		169.6
Industrial (Gen. Ind., Warehouse, Flex)	160.1	423.1		263.0
Data Center Campus	1,210.2	NA <sup>2</sup>	214	(996.2)
<b>TOTAL:</b>	<b>1,467.8</b>	<b>690.3</b>	<b>214.0</b>	<b>(563.6)</b>

<sup>1</sup> Two known large-lot hyperscale data center developments have been permitted in south Hermiston. These are two sites on E. Penney Ave, that will accommodate an estimated eight total large data center building, and an estimated 240 of the forecasted data center jobs.

<sup>2</sup> While the buildable land inventory found a surplus of industrial land in gross terms, none of the remaining sites meet the specific unique requirements of hyperscale data center campuses. Most importantly, remaining buildable sites lack the size to house a new campus. Following the development of the two E Penney sites identified above, no additional appropriate large-lot sites will remain.

Source: Johnson Economics, City of Hermiston, Mackenzie

- This analysis indicates that Hermiston has sufficient gross acres of general Commercial land, and general Industrial land to accommodate the forecasted 20-year demand for land (other than for large-lot data centers).
- It is important to note that some of the forecasted growth will include employers who may have specific site needs and preferences that are not reflected in the available buildable inventory. (See Appendix A for more details on site preferences for certain key industries.) In particular, there is forecasted demand for more suitable large-lot commercial and industrial sites while relatively few of these sites were found to remain in the inventory that are unconstrained. This is discussed in greater detail below.
- Based on identified proposed data center projects in the Hermiston area, and the rate of development of data centers generally in Umatilla and neighboring Morrow Counties over the past decade, there is a strong identified need for significant acreage for large-lot industrial sites appropriate for these developments.
- In keeping with recent data center campuses in the county, hyperscale data centers require a minimum of 100 acres of buildable land to accommodate at least four buildings. Each campus is also accompanied by an electrical substation to meet power needs, that typically requires an additional five to fifteen acres (see Appendix A). The average site size of hyperscale data center campuses in Morrow and Umatilla Counties over the past decade is 108 acres.
- There is an estimated need for 1,000 gross acres in the Hermiston area to accommodate multiple hyperscale data center campuses of 100 or more acres. Over a 20-year period, this rate of development is in keeping with the observed development of these facilities in the County over the past decade.

## **SITE SUPPLY VS. SITE DEMAND (NUMBER AND SIZE OF SITES)**

This section compares the more specific site requirements of projected future commercial and industrial users with the specific inventory of prospective employment sites identified within the UGB. Oregon Administrative Rules requires a determination of 20-year employment land need, as well as a determination of need for suitable, readily serviceable land to meet short-term demand.

The following definitions from OAR 660-009-005 are relevant to this discussion:

(2) "Development Constraints" means factors that temporarily or permanently 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 natural hazard areas....

(10) "Short-term Supply of Land" means suitable land that is ready for construction within one year of an application for a building permit or request for service extension. Engineering feasibility is sufficient to qualify land for the short-term supply of land. Funding availability is not required. "Competitive Short-term Supply" means the short-term supply of land provides a range of site sizes and locations to accommodate the market needs of a variety of industrial and other employment uses.

(11) "Site Characteristics" means the attributes of a site necessary for a particular industrial or other employment use to operate. Site characteristics include, but are not limited to, a minimum acreage or site configuration including shape and topography, visibility, specific types or levels of public facilities, services or energy infrastructure, or proximity to a particular transportation or freight facility such as rail, marine ports and airports, multimodal freight or transshipment facilities, and major transportation routes.

(12) "Suitable" means serviceable land designated for industrial or other employment use that provides, or can be expected to provide the appropriate site characteristics for the proposed

As noted in the prior section, the Buildable Land Inventory was screened for major constraints, including current development, floodways, wetlands, steep slopes, and federal ownership. The remaining parcels in the inventory may be buildable but may not meet the specific site requirements of certain users. Others may be part of the long-term supply, but not be well-suited for the short-term supply.

### **ESTIMATED 20-YEAR SITE NEEDS VS. CURRENT SUPPLY**

The following figures represent the findings of estimated need (Section VI) and current supply (Section VII) of sites by size. Note that the estimate of future needs is approximate, as economic growth is dynamic and difficult to predict. Communities should maintain flexibility and ensure a supply of a variety of site types with short-term availability, as allowed through the Goal 9 EOA process.

Figure 7.5 presents the estimated supply of sites by zoning and site size as found in the BLI. As shown, there are few remaining sites over 20 acres in size in the inventory, and no sites of greater than 50 acres. In total, there are 131 commercial sites remaining, and 74 industrial sites.

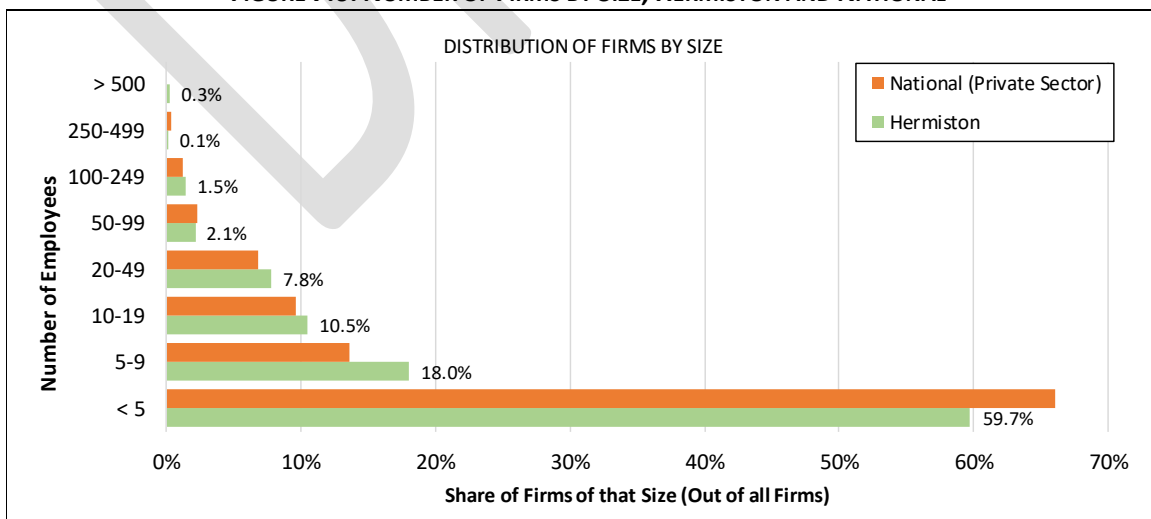
**FIGURE 7.5: SUMMARY OF SITE SUPPLY VS. FORECASTED 20-YEAR NEED  
BY LAND USE AND SITE SIZE (ACRES), HERMISTON**

TABLE 3: HERMISTON EMPLOYMENT NET BUILDABLE LANDS INVENTORY SITE SIZES									
Designation	0 to 0.99 acres	1 to 4.99 acres	5 to 9.99 acres	10 to 19.99 acres	20 to 29.99 acres	30 to 49.99 acres	50 to 99.99 acres	100+ acres	TOTAL
<b>Commercial Designation</b>									
Commercial (C)	73	36	2	3	0	2	0	0	116
Mixed Commercial/ Industrial (C/I)	8	5	2	0	0	0	0	0	15
Future Mixed Commercial/ Industrial (F-C/I)	0	0	0	0	0	0	0	0	0
<i>Commercial subtotal</i>	<i>81</i>	<i>41</i>	<i>4</i>	<i>3</i>	<i>0</i>	<i>2</i>	<i>0</i>	<i>0</i>	<i>131</i>
<b>Industrial Designations</b>									
Airport (A)	0	2	0	0	2	0	0	0	4
Industrial (I)	15	11	4	1	0	1	0	0	32
Mixed Commercial/ Industrial (C/I)	10	18	3	2	0	2	0	0	35
Future Mixed Commercial/ Industrial (F-C/I)	0	0	0	2	0	1	0	0	3
<i>Industrial subtotal</i>	<i>25</i>	<i>31</i>	<i>7</i>	<i>5</i>	<i>2</i>	<i>4</i>	<i>0</i>	<i>0</i>	<i>74</i>
<b>Commercial and Industrial Total</b>									
<b>Totals</b>	<b>106</b>	<b>72</b>	<b>11</b>	<b>8</b>	<b>2</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>205</b>

Source: City of Hermiston, Mackenzie

As is the trend nationwide, most firms in Hermiston are small businesses. The number of firms under five employees is 66% nationally, and 60% in Hermiston. Those with fewer than 10 employees are 80% of businesses nationwide and 78% locally. However, while large firms of at least 100 employees make up a small percentage of businesses, their high employment means they still represent a significant share of overall employment.

**FIGURE 7.6: NUMBER OF FIRMS BY SIZE, HERMISTON AND NATIONAL**



Source: Bureau of Economic Analysis

By applying assumptions of the amount of space and land firms require based on size, we come to an estimate of the number of sites needed for commercial and industrial users from the 20-year growth forecast. Note that many of the smallest firms of one to four people will likely include home businesses, those sharing space, in multi-tenant commercial centers and other arrangements than strictly needing their own sites. Most of the larger firms likely will need their own sites, particularly industrial businesses with externalities that make it difficult to operate in shared space.

While need is weighted towards smaller sites for the majority of businesses that have five or fewer employees, there is also a need for some sites at larger sizes to provide opportunities for new businesses to locate and allow existing businesses to expand.

The need for the largest sites (100+ acres) are for data center development, but there is also a need for additional sites of 20+, 30+ and 50+ acres to provide a full range of options to other types of commercial and industrial businesses.

**FIGURE 7.7: SUMMARY OF FORECASTED 20-YEAR SITE NEED  
BY LAND USE AND SITE SIZE (ACRES)**

LAND USE	0 TO .9 acres	1 to 4.9 acres	5 to 9.9 acres	10 to 19.9 acres	20 to 29.9 acres	30 to 49.9 acres	50 to 99.9 acres	100+ acres	TOTAL (sites)	TOTAL (acres)
Office	25	12	6	5	2	1	0	0	51	39
Institutional	16	9	6	4	1	0	0	0	36	18
Retail	31	12	6	5	2	1	1	0	58	41
<b>Commercial Total:</b>	<b>72</b>	<b>33</b>	<b>18</b>	<b>14</b>	<b>5</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>145</b>	<b>98</b>
Flex/B.P	9	4	4	3	1	0	0	0	21	54
Gen. Ind.	3	3	5	4	2	2	2	0	21	27
Warehouse	4	12	5	4	2	2	2	0	31	80
<i>Data Center</i>	0	0	0	0	0	0	0	9	9	0
<b>Industrial Total:</b>	<b>16</b>	<b>19</b>	<b>14</b>	<b>11</b>	<b>5</b>	<b>4</b>	<b>4</b>	<b>9</b>	<b>82</b>	<b>160</b>
<b>TOTAL:</b>	<b>88</b>	<b>52</b>	<b>32</b>	<b>25</b>	<b>10</b>	<b>6</b>	<b>5</b>	<b>9</b>	<b>227</b>	<b>258</b>

Source: Oregon Employment Department, BEA, Johnson Economics LLC

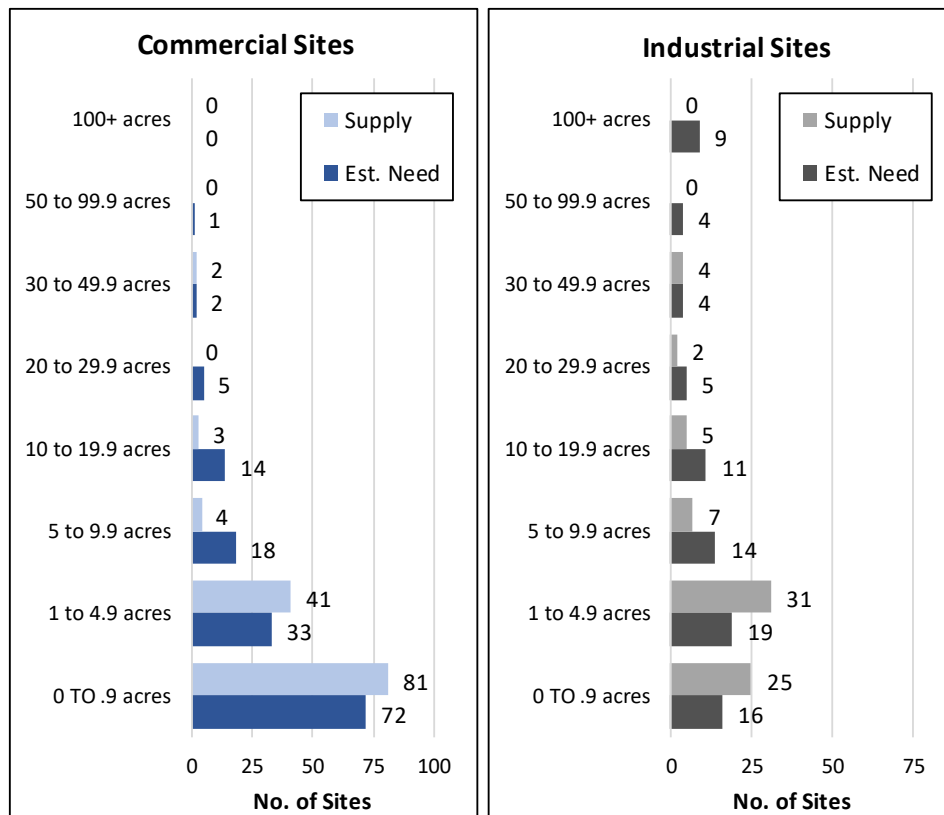
Figure 7.8 presents a side-by-side comparison of forecasted need and supply by site size.

The forecasted need for sites of different sizes does not match exactly with the current supply. The demand for commercial sites (retail/office/institutional) and industrial (general industrial, warehousing, flex park) exceeds the current supply.

It is estimated that the supply of small commercial sites is adequate, but need exceeds supply for most site sizes larger than 5 acres. There are two identified commercial sites of 30 – 49 acres, but none over 50 acres. There are also few mid-sized sites of 5 to 20 acres.

Similarly for industrial users, the number of smaller sites is estimated to be sufficient, while sites over 5 acres are undersupplied. There are no sites over 50 acres.

**FIGURE 7.8: SUMMARY OF FORECASTED 20-YEAR SITE NEED VS. SITE SUPPLY  
BY LAND USE AND SITE SIZE (ACRES), HERMISTON**



Source: Oregon Employment Department, Hermiston, Johnson Economics LLC

## VIII. CONCLUSIONS

The EOA report points to several key conclusions regarding economic development goals and target industries in Hermiston over the next 20 years. It also quantifies projected employment growth and land need within the UGB, and the adequacy of the current supply of employment land to meet that need.

Through this planning process, a few major economic development themes were identified:

- The city's Comprehensive Plan includes the following overview of economic development goals relevant to this EOA (emphasis added): "Hermiston is well situated as an economic hub in Umatilla County and the surrounding region. The city enjoys some competitive advantages which can be enhanced in the future to **grow employment**, establish successful **industry clusters**, and **diversify** the employment base. An **ample supply of buildable commercial and industrial lands**, in multiple zoning classifications, will provide the **flexibility to meet the needs of new and expanding businesses**."
- The Comp Plan also includes the following stated vision: "To become the center of commercial and industrial activity in northeast Oregon providing an attractive, livable community utilizing adaptive, modern policies to capture economic development opportunities." In addition, specific adopted policies call for supporting new industry growth, diversifying employment opportunities, and maintaining adequate supply of employment lands, and particularly available large parcels.
- The single largest growth industry in the Hermiston area is the data center industry, which has growth exponentially over the last ten years, and particularly the last five years. Multiple additional hyperscale data centers are under construction or planned at this time, each requiring 100 to 150 acres of appropriate land.
- Trends in this sector point to accelerating growth in coming years, with Oregon looking to be a top five national, and top 10 global location, if appropriate sites for expansion are available.
- The data center industry entails significant investment and on-going economic activity that supports long-term employment in other sectors. The size of this sector in Umatilla County will attract competitors, suppliers and support vendors, and construction firms for on-going expansion.
- Other than the "information" and "construction" sectors directly impacted by data center development, sectors with the highest employment growth include health care, transportation/warehousing/utilities, tourism-related including dining, education.
- The inventory of remaining buildable lands points to a lack of larger industrial sites. After the completion of two projects currently under construction, there will be no remaining sites large enough to accommodate hyperscale data centers. There is a shortage of sites at most sizes over five acres, which is a detriment to business recruitment and expansion across industrial sectors. There is a finding of adequate sites of under five acres for smaller industrial users.
- Similarly, it is estimated that the supply of small commercial sites is adequate, but need exceeds supply for most site sizes larger than 5 acres. There are two identified commercial sites of 30 – 49 acres, but none over 50 acres. There are also few mid-sized sites of 5 to 20 acres.

### Employment Growth

Hermiston is home to an estimated 9,950 jobs as of 2024. The largest sectors by number of jobs are health care, retail, transportation/warehousing, and tourism including dining and lodging. Based on a forecasted annual growth

rate of 2.1%, the city is expected to add nearly 5,100 jobs by 2044. A significant share of this job growth is projected in the data center industry (40%), with accompanying growth in construction and supportive information-sector jobs among vendors and suppliers.

Broken down into broad categories of employment that tends to use commercial/retail space, or that tends to use industrial space, the analysis forecasts roughly 55% of new employment in industrial categories (including data centers) and 45% in commercial categories.

### **Employment Land Need**

The EOA analysis finds that the forecasted 20-year job growth by industry, will translate to a need for 1468 total gross acres of land zoned for employment uses. However, this includes an estimated 1,210 of need for hyperscale data center development. (There are two sites of roughly 215 acres currently under development as data center campuses that can be deducted from this total finding of need.)

Excluding data centers, an estimated 62% of the remaining land need is for other industrial users (Industrial, Warehouse, Business Park), and 38% of need is for commercial users (Office, Institutional, Retail).

A range of site sizes will be needed ranging from the small to the very large to accommodate the projected business expansion. Different commercial and industrial users have different site requirements driven by the specific nature of their business operations, firm size, location and infrastructure requirements, and other factors.

### **Adequacy of Employment Land Supply**

The Buildable Land Inventory (BLI) of employment lands completed in conjunction with the EOA found a total of 690 buildable acres in commercial, industrial and mixed-use zones. While this total supply exceeds the total forecasted need (excluding data centers), the zoning categories, site sizes and site characteristics of the available supply do not fully meet the forecasted demand.

The following is a summary of findings on the adequacy of available employment sites compared to the forecasted need:

- For commercial users, the forecasted need for sites of different sizes does not match the current supply. The estimated demand for commercial sites (retail/office/institutional) exceeds the current supply. There is a deficit of commercial sites of nearly all site sizes over 5 acres.
- For industrial users, there is a discrepancy between the size of sites needed and those available. Most notably there is a deficit of suitable large industrial sites (>50 acre), and a deficit of mid-sized (5-30 acre) industrial sites.
- Given very strong growth trends in the data center industry, the established and growing local cluster, and known future projects under planning by credible investors, there is a need for as many as nine large sites of at least 100 acres, appropriate for hyperscale data centers. The projected regional, national, and global trends in this industry support this demand if appropriate sites are available.



## **APPENDIX A: SITING CRITERIA FOR HYPERSCALE DATA CENTERS**

# MACKENZIE.

## **TECHNICAL MEMO: SITING CRITERIA FOR HYPERSCALE DATA CENTERS**

**To**

Johnson Economics

**For**

City of Hermiston Economic  
Opportunities Analysis (EOA)

**Dated**

July 9, 2024

**Project Number**

2240028.00



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## ATTACHMENT

1. Business Oregon Industrial Development Competitiveness Matrix, July 2015

## I. INTRODUCTION

### Hermiston Economic Opportunities Analysis

This technical memo describes Mackenzie’s findings related to siting criteria for one of the City of Hermiston’s target industrial uses identified in the Economic Opportunity Analysis (EOA) currently under development by Johnson Economics. Information from this document will be used in conjunction with the Employment Lands – Buildable Lands Inventory (BLI) component of the EOA to identify land and infrastructure needed to attract hyperscale data center operators.

### Industrial Development Competitiveness Matrix

In 2015, in partnership with Business Oregon, Mackenzie developed a matrix outlining criteria that make a site competitive for development with a range of industrial uses (see Attachment 1). The criteria include physical site characteristics, transportation needs, utility needs, and other considerations used to assist in the selection of appropriate sites for industrial development. Data Center is one of the use categories identified in the matrix; however, for the reasons explained below, the 2015 matrix does not account for the more recent trend of hyperscale data centers.

### Data Centers

Data centers accommodate the physical equipment necessary to store, manage, process, and transmit digital information over the internet. The data center industry has changed quickly as data processing needs have grown exponentially in response to the general growth of the internet (e.g., e-commerce) and development of new industries including widespread adoption of decentralized cloud services, video and game streaming, mass data farming and processing, and artificial intelligence (AI).

In the data center industry, rather than measure facilities in square feet, they are often measured in terms of bulk energy such as megawatts (MW), which provides a more useful representation of their processing capacity. To put the growth of this market into perspective, a report by McKinsey & Company estimates the data center industry is expected to grow from 17 gigawatts (GW, i.e., 1,000 MW) in 2022 to about 35 GW by 2030.<sup>1</sup> According to Cushman & Wakefield, Oregon ranks #8 in the global established data center market and #5 in the established Americas market.<sup>2</sup>

### Types of Data Centers

Data centers can be developed at different scales, depending on the location and need they are intended to serve. Table 1 below lists categories identified by NAIOP, the Commercial Real Estate Development Association.

---

<sup>1</sup> *Investing in the Rising Data Center Economy*, McKinsey & Company, 2023.

<sup>2</sup> *Global Data Center Market Comparison*, Cushman & Wakefield, 2024.

TABLE 1: FIVE TYPES OF DATA CENTERS<sup>3</sup>

There is no one-size-fits-all when it comes to data centers, and depending on who is counting, five popular types of data centers are operating today.
<b>Enterprise data centers:</b> The enterprise data center supports a single organization. It is typically built, maintained, operated and managed by companies, such as banks, brokerage firms and insurance companies, for their own use.
<b>Multitenant or co-location data centers:</b> The co-location data center is one where a company will rent space within that data center, which is owned by others and located off premises from the company.
<b>Hyperscale data centers:</b> Hyperscale data centers are those of Amazon Web Services, Microsoft and IBM, and support their large-scale IT infrastructure.
<b>Edge data centers:</b> Edge data centers are owned by third parties in a specific metro area to bring IT infrastructure closer to users. They handle real-time data processing. These centers reduce communication delays.
<b>Container data centers:</b> Container data centers come in shipping containers or modules. These are ready-made data centers. They are plug-and-play, with all the components ready to go.

As the data needs of society have grown, the proliferation and scale of data centers has accelerated with it, including in Umatilla County. The development characteristics and site needs of data centers as described in the 2015 matrix (Attachment 1) do not accurately represent very large data centers and the examples that have been developed in Eastern Oregon over the last decade.

### ***Hyperscale Data Centers***

Based on the EOA's identified need for hyperscale data centers, the remainder of this report discusses the characteristics and site needs of these modern very-large data centers. This analysis is intended to augment the prior siting criteria work noted above, to address the evolution of the data center industry over the past decade. By way of context, in 2010, the ratio of energy consumption for hyperscale and cloud data centers was 13% of the total and 87% for other types. As of 2022, hyperscale demand increased to 77%.<sup>4</sup>

Hermiston's proximity to the Columbia River and major electrical transmission lines makes the area desirable for hyperscale data center campuses, as evidenced by several recent developments by Amazon Web Services (AWS) in Morrow and Umatilla Counties. The following sections of this report primarily focus on the siting criteria for the **hyperscale category** of data center facilities, based on information derived from trade organizations, literature, an end user, and Mackenzie engineering staff.

<sup>3</sup> *Data Center Real Estate: Challenges and Opportunities*, Development, Winter 2023/2024

<sup>4</sup> *What do you Need to Know About Designing Data Centers?*, Consulting Specifying Engineer, May/June 2023

## II. SITING CRITERIA FOR HYPERSCALE DATA CENTERS

Due to changes in data center development patterns, the Data Centers category outlined in the 2015 Industrial Development Competitiveness Matrix (Attachment 1) is not directly germane to current hyperscale data center development trends in Eastern Oregon. The purpose of this section is to revisit and update the siting criteria to be applicable to the types of hyperscale data centers identified in the City of Hermiston's EOA.

### **Hyperscale Data Center Site Criteria**

The availability of sufficient, affordable, and dependable electricity and water supply are critical factors driving site selection for data center development. Due to the need for data centers to stay in continuous operation, low natural hazard and security risks are also critical. There is also preference for milder climates, which reduces cooling demand and in turn, electricity, and water consumption.

#### ***Site and Building Characteristics***

The typical site size for a hyperscale data center campus is 100 acres or more, including four or more buildings at 200,000 square feet (SF) to 250,000 SF each, with 5-10 acres for dedicated electrical substations. For hyperscale data centers, the minimum site size per building is approximately 25 acres; however, recent trends in Eastern and Central Oregon show that the development generally consists of four or more buildings on 100+ acres. For new hyperscale data center development, 100 acres is the minimum site size, with recent examples in Eastern Oregon averaging roughly 110 acres, and scaling to more than 150 acres in some cases.

While sites can have a variety of shapes, the minimum dimension is determined by the length of the data center buildings. Recent examples of hyperscale buildings range from 1,000 feet to 1,150 feet in length. Sites need to be large enough to contain these large buildings plus associated parking and circulation, utilities, supportive infrastructure, and buffers.

Site topography should be relatively flat, with a maximum grade of 5%, and site shape should accommodate large rectangular building(s). Building facilities, accompanying substations, and access roads should be located outside of areas of special flood hazard (i.e., 1% annual chance or "100-year" floodplain on Flood Insurance Rate Maps issued by the Federal Emergency Management Agency).

#### ***Location***

Sites should be within 30 miles of an interstate highway or freight route. Frontage on major streets is not necessary as data centers do not rely on or benefit from high daily vehicle or pedestrian traffic, so facilities can be removed from major arterials. Proximity to marine ports and airports is generally not necessary. Proximity to rail lines is also not necessary.

Due to the noise produced by cooling equipment and backup generators, proximity to residential zones or other sensitive uses may be undesirable. While it is typically possible to mitigate those effects through building and landscape design, providing separation between hyperscale data centers and residential uses is typically desired to avoid these conflicts and to minimize exposure to potential emissions from back-up generators.

## ***Utilities***

### ***Water***

Data centers utilize large amounts of water for cooling equipment. In some cases, the water demand for data centers is estimated based on their energy use, which is measured in megawatt-hours (MWh). The estimated water demand is 1,000 gallons per day per acre, which requires a minimum 12" high-pressure supply line per Mackenzie engineering staff.

### ***Sanitary Sewer***

According to Mackenzie civil engineers, a minimum 8" service line is required if the site is reliant on sanitary sewer. Some hyperscale data center projects have developed alternative methods of disposing or reusing wastewater that does not require disposal of cooling water via sanitary sewer. Individual projects will therefore differ in their sanitary sewer requirements based on the proposed approach.

### ***Natural Gas***

Natural gas supply is not required; however, a minimum 4" service line where available increases the marketability of sites and is highly recommended.

### ***Electricity***

Data centers have a very high demand for electricity to power and cool equipment. Cooling the equipment accounts for approximately 40% of total energy consumption. The minimum power requirement per building is 60 megawatts (MW), so a prototypical four-building campus would require a minimum supply of 240 MW. This level of demand requires a dedicated substation, typically 5-10 acres in size. Redundancy is required to ensure data centers can operate without interruption. According to the U.S. Department of Energy (DOE), data centers collectively account for about 2% of total U.S. electricity use.<sup>5</sup> Backup generators, typically diesel-powered, are also required.

### ***Telecommunications***

Data center facilities require major telecommunications infrastructure including fiber optic service and route diversity.

### ***Transportation***

Sites require adequate access and circulation for truck traffic and fire apparatus. Proximity to public transit, airports, marine ports, or railroads is not required. Data centers generate minimal traffic, so frontage on high-capacity road classifications is not critical to site selection. The Industrial Development Competitiveness Matrix specifies trip generation capacity in terms of average daily trips per acre (ADT/ac), but this metric does not account for floor area ratio (FAR), which can vary significantly between single- and multi-story developments. Therefore, it may be more appropriate to based trip generation on floor area. According to the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition, the average daily trip (ADT) generation rate for Land Use Code 160 (Data Center) is 0.99 trips per 1,000 SF (KSF) of gross floor area (GFA), though ITE notes this rate is based on a limited data set.

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<sup>5</sup> [www.energy.gov/eere/buildings/data-centers-and-servers](http://www.energy.gov/eere/buildings/data-centers-and-servers)

***Security***

Sites require gated access, security lighting, and enhanced security systems to ensure data remains secure and systems stay online. Proximity to buildings or infrastructure which may be vulnerable to attack is a factor in evaluating site suitability.

***Natural Hazards***

Due to the need for the facility to be in continuous operation, sites must have minimal seismic, flood, or other natural hazard risk exposure.



### ***Examples of Eastern and Central Oregon Hyperscale Data Center Campuses***

The following examples describe hyperscale data center facilities from Umatilla, Morrow, and Crook Counties. Each facility is 100 acres or larger.

#### ***Amazon Web Services (AWS) | Umatilla County, Oregon***



**Figure 1: AWS Data Center, Umatilla County, Oregon**

*Image Source: Umatilla County Interactive Map*

- Site Address: 77954 Cottonwood Bend Road, Hermiston, OR 97838
- Year Developed: 2022 - 2023
- Site Size: 126 acres (including 9-acre dedicated substation)
- Buildings: Four single-story buildings – one at 217,900 SF and three at 250,000 SF each
- Estimated Floor Area Ratio (FAR)<sup>6</sup>: 0.18

---

<sup>6</sup> "Floor Area Ratio" is defined as the ratio of the total amount of enclosed gross floor area of buildings to the total size of the site.

*Amazon Web Services (AWS) | City of Umatilla, Oregon*



**Figure 2: AWS Data Center, City of Umatilla, Oregon**

*Image Source: Umatilla County Interactive Map*

- Site Address: 81708 Lind Road, Hermiston, OR 97838
- Year Developed: 2023
- Site Size: 187 acres (including 9.1-acre dedicated substation)
- Buildings: Four single-story buildings – two at 218,000 SF, one at 220,000 SF, and one at 230,000 SF
- Estimated Floor Area Ratio (FAR): 0.11

*Apple, Inc. | City of Prineville, Oregon*



**Figure 3: Apple Data Center, Prineville, Oregon**

*Image Source: Crook County Interactive Map*

- Site Address: 1600 SW Baldwin Road, Prineville, OR 97754
- Year Developed: 2012 - 2023
- Site Size: 154 acres (including  $\pm 2$ -acre dedicated substation)
- Buildings: Three single-story buildings – one at  $\pm 270,000$  SF and two at  $\pm 338,000$  SF each
- Estimated Floor Area Ratio (FAR): 0.14





**Figure 4: Facebook Data Center, Prineville, Oregon**

*Image Source: Crook County Interactive Map*

- Site Address: 735 SW Connect Way, Prineville, OR 97754
- Year Developed: 2011 - 2023
- Site Size:  $\pm 363$  acres (including three dedicated substations totaling  $\pm 12.8$  acres)
- Buildings: Eleven buildings totaling  $\pm 4.6$  million SF
- Estimated Floor Area Ratio (FAR): 0.29

Amazon Web Services (AWS) | Morrow County, Oregon



**Figure 5: AWS Data Center, Morrow County, Oregon**

*Image Source: Morrow County Interactive Map*

- Site Address: 75300 Lewis and Clark Drive, Boardman, OR 97818
- Year Developed: 2021 – 2022
- Site Size: 108 acres (including 10-acre dedicated substation)
- Buildings: Four single-story buildings – one at 208,000 SF, one at 209,000 SF, one at 212,000 SF, and one at 213,000 SF
- Estimated Floor Area Ratio (FAR): 0.18

*Amazon Web Services (AWS) | Morrow County, Oregon*



**Figure 6: AWS Data Center, Morrow County, Oregon**

*Image Source: Morrow County Interactive Map*

- Site Address: 75246 Gar Swanson Drive, Boardman, OR 97818
- Year Developed: 2023
- Site Size: 100 acres (including 7.8-acre dedicated substation)
- Buildings: Four single-story buildings – one at 208,000 SF and three at 216,000 SF
- Estimated Floor Area Ratio (FAR): 0.20



### III. RECOMMENDATIONS

Based on information from the Industrial Development Competitiveness Matrix and the findings in this technical memo, Mackenzie recommends the following siting criteria for the hyperscale data centers discussed in the City of Hermiston's EOA.

TABLE 2: SITING CRITERIA FOR HYPERSCALE DATA CENTERS		
Criteria		Hyperscale Data Center
<b>Physical Site</b>		
Total Site Size*	Competitive Acreage**	100+
Competitive Slope	Maximum Slope	0 - 5%
<b>Transportation</b>		
Trip Generation	Average Daily Trips Per Acre	15 - 45
Miles to Interstate or Freight Route	Miles	within 30
Railroad Access	Dependency	Not Required
Proximity to Marine Port	Dependency	Not Required
Proximity to International / Regional Airport	Dependency	Not Required
<b>Utilities</b>		
Water	Minimum Line Size (inches diameter)	12" – 16"
	Minimum Fire Line Size (inches diameter)	10" - 12"
	High Pressure Water Dependency	Required
	Flow (gallons per day per acre)	1,000+
Sanitary Sewer (if used for wastewater or cooling water disposal)	Minimum Service Line (inches diameter)	8" - 10"
	Flow (gallons per day per acre)	500 - 1,000±
Natural Gas	Minimum Service Line	4"

	(inches diameter)	
	On Site	Competitive
Electricity	Min. Service Demand	60 - 240 MW
	Close proximity to substation	Required on-site
	Redundancy Dependency	Required
Telecommunications	Major Communications Dependency	Required
	Route Diversity Dependency	Required
	Fiber Optic Dependency	Required
Special Considerations		<ul style="list-style-type: none"> <li>Power delivery, water supply, and security are critical.</li> <li>May require high volume/supply of water and sanitary sewer treatment.</li> <li>Sites should be located outside areas of special flood hazard.</li> <li>Site designs typically provide a buffer between cooling equipment/backup generators and any nearby residential uses.</li> </ul>

**Terms:** "Required" factors are seen as mandatory in a vast majority of cases and have become industry standards.  
"Competitive" significantly increases marketability and is highly recommended. May be linked to financing in order to enhance the potential reuse of the asset in case of default.  
"Not required" does not apply for the industry and/or criteria.

\* Total Site: Building footprint, including buffers, setbacks, parking, mitigation, and expansion space.

\*\* Competitive Acreage: Acreage that would meet the site selection requirements of the majority of industries in this sector.

† Water Requirements: While the Business Oregon Industrial Development Competitiveness Matrix identifies water requirements in gallons per MWh for data centers, this table uses gallons per acre.

‡ Sanitary Sewer Requirements: Water and sewer requirements are highly variable based on cooling methods and water reclamation practices and should be reviewed on a case-by-case basis for specific development requirements. Alternative approaches to wastewater management may drastically reduce the need for sanitary sewer capacity.



ATTACHMENT 1

**BUSINESS OREGON  
INDUSTRIAL  
DEVELOPMENT  
COMPETITIVENESS  
MATRIX**

*Source: Mackenzie,  
Business Oregon*

PROFILE  CRITERIA			Production Manufacturing		Value-Added Manufacturing and Assembly		Light / Flex Industrial			Warehousing & Distribuiton		Specialized		
			A	B	C	D	E	F	G	I	H	J	K	L
			Heavy Industrial / Manufacturing	High-Tech / Clean-Tech Manufacturing	Food Processing	Advanced Manufacturing & Assembly	General Manufacturing	Industrial Business Park and R&D Campus	Business / Admin Services	Regional Warehouse / Distribution	Local Warehouse / Distribution	UVA Manufacturing / Research	Data Center	Rural Industrial
1	GENERAL REQUIREMENTS		Use is permitted outright, located in UGB or equivalent and outside flood plain; and site (NCDA) does not contain contaminants, wetlands, protected species, or cultural resources or has mitigation plan(s) that can be implemented in 180 days or less.											
2	PHYSICAL SITE													
	TOTAL SITE SIZE**	Competitive Acreage*	10 - 100+	5 - 100+	5 - 25+	5 - 25+	5 - 15+	20 - 100+	5 - 15+	20 - 100+	10 - 25+	10 - 25+	10 - 25+	5 - 25+
3	COMPETITIVE SLOPE:	Maximum Slope	0 to 5%	0 to 5%	0 to 5%	0 to 7%	0 to 5%	0 to 7%	0 to 12%	0 to 5%	0 to 5%	0 to 7%	0 to 7%	0 to 5%
5	TRANSPORTATION													
	TRIP GENERATION:	Average Daily Trips per Acre	40 to 60 (ADT / acre)	40 to 60 (ADT / acre)	50 to 60 (ADT / acre)	40 to 60 (ADT / acre)	40 to 50 (ADT / acre)	60 to 150 (ADT / acre)	170 to 180 (ADT / acre)	40 to 80 (ADT / acre)	40 to 80 (ADT / acre)	40 to 80 (ADT / acre)	20 to 30 (ADT / acre)	40 to 50 (ADT / acre)
6	MILES TO INTERSTATE OR OTHER PRINCIPAL ARTERIAL:	Miles	w/ in 10	w/ in 10	w/ in 30	w/ in 15	w/ in 20	N/A	N/A	w/ in 5 (only interstate or equivalent)	w/ in 5 (only interstate or equivalent)	N/A	w/ in 30	N/A
7	RAILROAD ACCESS:	Dependency	Preferred	Preferred	Preferred	Not Required	Preferred	Preferred	Not Required	Preferred	Preferred	Not Required	Avoid	N/A
8	PROXIMITY TO MARINE PORT:	Dependency	Preferred	Preferred	Preferred	Not Required	Preferred	Preferred	Not Required	Preferred	Preferred	Not Required	Not Required	N/A
9	PROXIMITY TO REGIONAL COMMERCIAL AIRPORT:	Dependency	Preferred	Competitive	Preferred	Competitive	Preferred	Required	Preferred	Preferred	Preferred	Preferred	Competitive	N/A
		Distance (Miles)	w/ in 60	w/ in 60	w/ in 60	w/ in 30	w/ in 60	w/ in 30	w/ in 60	w/ in 60	w/ in 60	w/ in 30	w/ in 60	N/A
10	PROXIMITY TO INTERNATIONAL AIRPORT:	Dependency	Preferred	Competitive	Preferred	Competitive	Preferred	Competitive	Preferred	Preferred	Preferred	Competitive	Preferred	N/A
		Distance (Miles)	w/ in 300	w/ in 300	w/ in 300	w/ in 100	w/ in 300	w/ in 100	w/ in 300	w/ in 300	w/ in 300	w/ in 100	w/ in 300	N/A
11	UTILITIES													
	WATER:	Min. Line Size (Inches/Dmtr)	8" - 12"	12" - 16"	12" - 16"	8" - 12"	6" - 10"	8" - 12"	4" - 6"	4" - 8"	4" - 6"	4" - 8"	16"	4" - 8"
		Min. Fire Line Size (Inches/Dmtr)	10" - 12"	12" - 18"	10" - 12"	10" - 12"	8" - 10"	8" - 12"	6" - 10"	10" - 12"	6" - 8"	6" - 10"	10"-12"	6" (or alternate source)
		High Pressure Water Dependency	Preferred	Required	Required	Preferred	Not Required	Preferred	Not Required	Not Required	Not Required	Not Required	Required	Not Required
		Flow Gallons per Day per Acre	1600 (GPD / Acre)	5200 (GPD / Acre)	3150 (GPD / Acre)	2700 (GPD / Acre)	1850 (GPD / Acre)	2450 (GPD / Acre)	1600 (GPD / Acre)	500 (GPD / Acre)	500 (GPD / Acre)	1600 (GPD / Acre)	50-200 (Gallons per MWh) †	1200 (GPD / Acre)
12	SEWER:	Min. Service Line Size (Inches/Dmtr)	6" - 8"	12" - 18"	10" - 12"	10" - 12"	6" - 8"	10" - 12"	6" - 8"	4"	4"	6"	8"-10"	4" - 6" (or on-site source)
		Flow (Gallons per Day per Acre)	1500 (GPD / Acre)	4700 (GPD / Acre)	2600 (GPD / Acre)	2500 (GPD / Acre)	1700 (GPD / Acre)	2000 (GPD / Acre)	1600 (GPD / Acre)	500 (GPD / Acre)	500 (GPD / Acre)	1300 (GPD / Acre)	1000 (GPD / Acre) ‡	1000 (GPD / Acre)
13	NATURAL GAS:	Preferred Min. Service Line Size (Inches/Dmtr)	4" - 6"	6"	4"	6"	4"	6"	2"	2"	2"	2"	4"	N/A
		On Site	Competitive	Competitive	Preferred	Competitive	Competitive	Competitive	Preferred	Preferred	Preferred	Preferred	Preferred	Preferred
14	ELECTRICITY:	Minimum Service Demand	2 MW	4-6 MW	2-6 MW	1 MW	0.5 MW	0.5 MW	0.5 MW	1 MW	1 MW	0.5 MW	5-25 MW	1 MW
		Close Proximity to Substation	Competitive	Competitive	Not Required	Competitive	Preferred	Competitive	Preferred	Not Required	Not Required	Not Required	Required, could be on site	Not Required
		Redundancy Dependency	Required	Preferred	Not Required	Required	Not Required	Competitive	Required	Not Required	Not Required	Not Required	Required	Not Required
15	TELECOMMUNICATIONS:	Major Communications Dependency	Preferred	Required	Preferred	Required	Required	Required	Required	Preferred	Preferred	Required	Required	Preferred
		Route Diversity Dependency	Not Required	Required	Not Required	Required	Not Required	Preferred	Required	Not Required	Not Required	Not Required	Required	Not Required
		Fiber Optic Dependency	Preferred	Required	Preferred	Required	Preferred	Required	Required	Preferred	Preferred	Required	Required	Not Required
16	SPECIAL CONSIDERATIONS:		Adequate distance from sensitive land uses (residential, parks, large retail centers) necessary. High throughput of materials. Large yard spaces and/or buffering required. Often transportation related requiring marine/rail links.	Acreage allotment includes expansion space (often an exercisable option). Very high utility demands in one or more areas common. Sensitive to vibration from nearby uses.	May require high volume/supply of water and sanitary sewer treatment. Often needs substantial storage/yard space for input storage. Onsite water pre-treatment needed in many instances.	Surrounding environment of great concern (vibration, noise, air quality, etc.). Increased setbacks may be required. Onsite utility service areas. Avoid sites close to wastewater treatment plants, landfills, sewage lagoons, and similar land uses. Lower demands for water and sewer treatment than Production High-Tech Manufacturing.	Adequate distance from sensitive land uses (residential, parks) necessary. Moderate demand for water and sewer. Higher demand for electricity, gas, and telecom.	High diversity of facilities within business parks. R&D facilities benefit from close proximity to higher education facilities. Moderate demand on all infrastructure systems.	Relatively higher parking ratios may be necessary. Will be very sensitive to labor force and the location of other similar centers in the region. High reliance on telecom infrastructure.	Transportation routing and proximity to/from major highways is crucial. Expansion options required. Truck staging requirements mandatory. Minimal route obstructions between the site and interstate highway such as rail crossings, drawbridges, school zones, or similar obstacles.	Transportation infrastructure such as roads and bridges to/from major highways is most competitive factor.	Must be located withn or near FAA-regulated UAV testing sites. Moderate utility demands. Low reliance on transportation infrastructure.	Larger sites may be needed. The 25 acre site requirement represents the more typical site. Power delivery, water supply, and security are critical. Surrounding environment (vibration, air quality, etc.) is crucial. May require high volume/supply of water and sanitary sewer treatment.	Located in more remote locations in the state. Usually without direct access (within 50 miles) of Interstate or City of more than 50,000 people.

Mackenzie; Business Oregon

Terms:	
<div>More Critical</div> <div>↑</div> <div>Less Critical</div>	'Required' factors are seen as mandatory in a vast majority of cases and have become industry standards
	'Competitive' significantly increases marketability and is <i>highly recommended by Business Oregon</i> . May also be linked to financing in order to enhance the potential reuse of the asset in case of default.
	'Preferred' increases the feasibility of the subject property and its future reuse. Other factors may, however, prove more critical.
* Competitive Acreage: Acreage that would meet the site selection requirements of the majority of industries in this sector.	
**Total Site: Building footprint, including buffers, setbacks, parking, mitigation, and expansion space	
† Data Center Water Requirements: Water requirement is reported as gallons per MWh to more closely align with the Data Center industry standard reporting of Water Usage Effectiveness (WUE).	
‡ Data Center Sewer Requirements: Sewer requirement is reported as 200% of the domestic usage at the Data Center facility. Water and sewer requirements for Data Centers are highly variable based on new technologies and should be reviewed on a case-by-case basis for specific development requirements.	

## **APPENDIX B: BUILDABLE LAND INVENTORY**

### **METHODOLOGY AND FINDINGS**

**TECHNICAL MEMO:  
CITY OF HERMISTON  
EMPLOYMENT LANDS  
– BUILDABLE LANDS  
INVENTORY**

**To**

Johnson Economics

**For**

City of Hermiston Economic  
Opportunities Analysis (EOA)

**Dated**

July 3, 2024

**Project Number**

2240028.00



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## APPENDIX

Appendix A – Manual Adjustment Log

## **I. INTRODUCTION AND PURPOSE**

This technical memo describes Mackenzie's findings related to the employment areas Buildable Lands Inventory (BLI) for the City of Hermiston. Information from this document will be incorporated into the Economic Opportunity Analysis (EOA) reconciliation of employment land supply and demand in the main report by Johnson Economics.

## II. EMPLOYMENT LANDS BUILDABLE LANDS INVENTORY

As part of this project, the City of Hermiston requested a buildable lands inventory (BLI) for employment lands to identify those parcels available for and buildable for development by commercial and industrial users within the Urban Growth Boundary (UGB). Mackenzie has compiled information on buildable lands to further the City's economic development objectives and to satisfy provisions of Oregon Statewide Land Use Planning Goal 9, Economic Development, as codified at Oregon Administrative Rules (OAR) 660, Division 9 to implement Oregon Revised Statutes (ORS) 197.712(2).

To determine the City's buildable lands, Mackenzie utilized geographic information systems (GIS) data from the City and Umatilla County, Federal Emergency Management Agency (FEMA), Oregon Department of State Lands (DSL), Oregon Department of Geology and Mineral Industries (DOGAMI), Oregon Department of Forestry (ODF), and Bing Maps to review information on parcels, comprehensive plan designation, assessed value, and topographic conditions to:

- Categorize land designated or planned for employment.
- Screen out properties which are already built out and not anticipated to redevelop.
- Determine which sites are vacant or developed.<sup>1</sup>
- Deduct areas with site constraints that preclude development.
- Identify the remaining buildable area of vacant and developed employment sites after deducting for constraints.

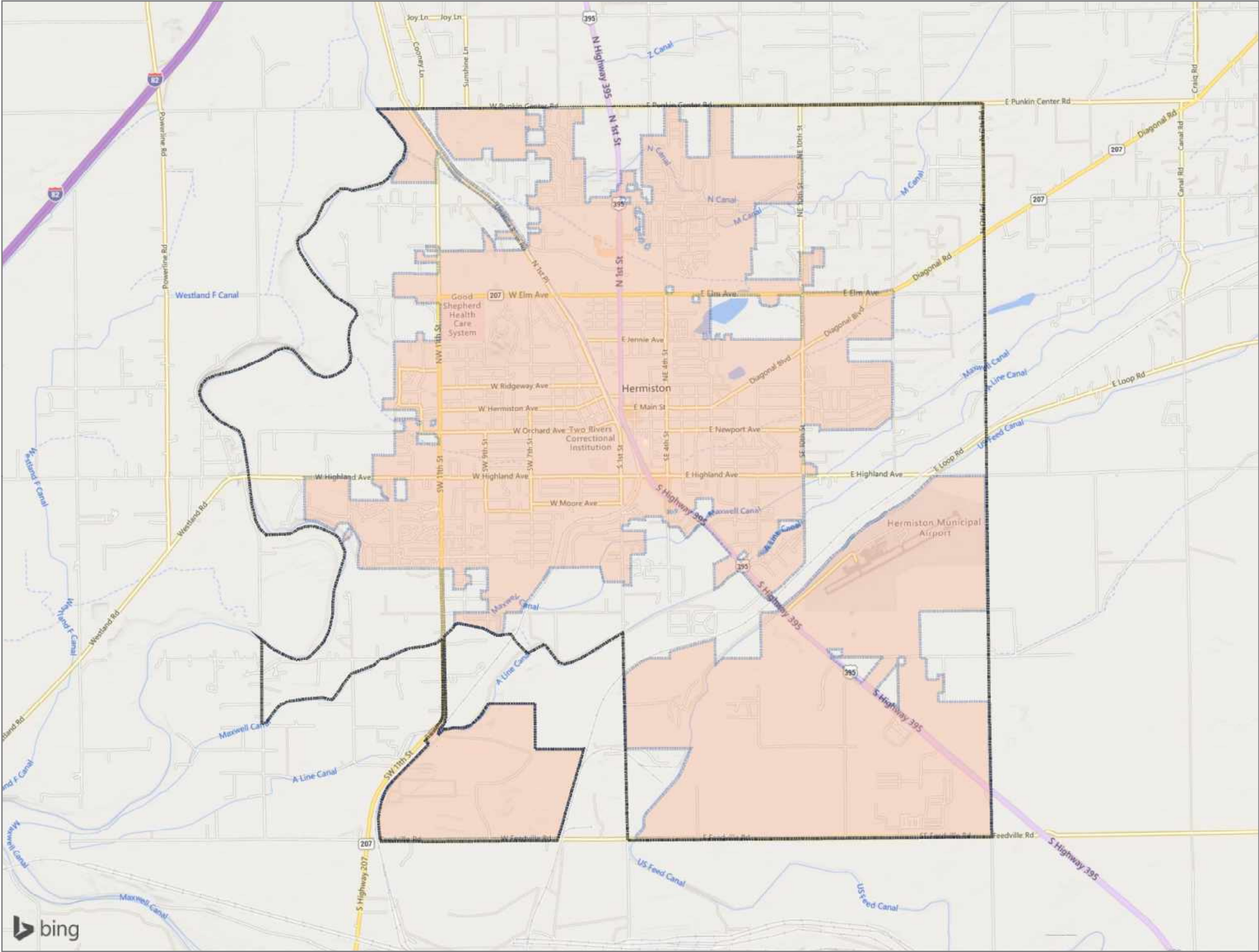
### Study Area

The study area includes the area within the City of Hermiston and the Hermiston UGB as shown in Figure 1. Areas within the UGB outside city limits are within unincorporated Umatilla County.

---



<sup>1</sup> As defined in OAR 660-009-0005, "Developed Land" means non-vacant land that is likely to be redeveloped during the planning period.

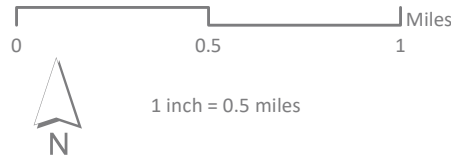




**Figure 1: Hermiston  
City Limits and  
Urban Growth Bounday**

**Hermiston, Oregon**

- LEGEND**
-  City Limits
  -  Urban Growth Bounday (UGB)



SOURCE DATA: City of Hermiston, 2024

GEOGRAPHIC PROJECTION: NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 5/22/2024  
File: Figure 1 City Limits and UGB

Map Created By: SH  
Project No: 2240028.00



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The areas noted in Table 1 were analyzed as part of this employment land BLI.

TABLE 1: CITY OF HERMISTON BLI EMPLOYMENT AREAS		
<i>Comprehensive Plan Abbreviation</i>	<i>Comprehensive Plan Designation</i>	<i>Category</i>
C	Commercial	Commercial
A	Airport	Industrial
C/I	Mixed Commercial/Industrial	Commercial within 300' of Highway 395; Industrial farther from Highway 395
I	Industrial	Industrial
F-I	Future Industrial	Industrial
F-C/I	Future Mixed Commercial/ Industrial	Commercial within 300' of Highway 395; Industrial farther from Highway 395

Those employment areas listed in Table 1 are graphically depicted in Figure 2.

To account for the fact that the Mixed Designations can accommodate either commercial or industrial development, City staff supported an approach in which Mixed Commercial/ Industrial Designations (C/I and F-C/I) parcels within 300' of Highway 395 are assumed to be developed in a commercial pattern, whereas the balance of the parcel 'is assumed to be developed in an industrial pattern.

As a result, in this report, the following terms are used:

Parcel(s): This term refers to tax lot(s) per Umatilla County Assessor data.

Site(s): This term refers to a portion of a Parcel, that may not necessarily align with Parcel boundaries. In the Industrial and Commercial Designation areas, Parcel(s) and Site(s) are synonymous as the Site boundaries align with the Parcel boundaries. As Mixed Designation areas allow for either Commercial or Industrial uses, Mixed Commercial/ Industrial Designation Parcel(s) within 300' of Highway 395 are categorized as a commercial Site, while portions of the Parcel farther from Highway 395 are categorized as an industrial Site. Therefore, for the Mixed Commercial/ Industrial Designation Parcel(s) abutting Highway 395, one Parcel may be listed as two Sites.

Figure 2: Hermiston Employment Land Comprehensive Plan Designations

Hermiston, Oregon

**LEGEND**

City Limits  
Urban Growth Bounday

**Comprehensive Plan Designations**

Airport (A)  
Commercial (C)  
Mixed Commercial/ Industrial (C/I)  
Future Mixed Commercial/ Industrial (F-C/I)  
Industrial (I)  
Future Industrial (F-I)

0 0.5 1 Miles  
1 inch = 0.5 miles

SOURCE DATA: City of Hermiston, 2024  
GEOGRAPHIC PROJECTION: NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 5/22/2024  
File: Figure 2\_Designations

Map Created By: SH  
Project No: 2240028.00



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## Vacant and Developed Employment Sites

To identify sites which may be available for economic development, Mackenzie utilized GIS software to determine which sites with commercial or industrial categories were vacant or developed, as follows:

- The vacant employment sites were identified as being those parcels with the Comprehensive Plan Designations (Designations) identified in Table 1 that Umatilla County Assessor data identify as either:
  1. Being equal to or larger than one-tenth of an acre<sup>2</sup> not currently containing permanent buildings or improvements (per Umatilla County Assessor data) and which had no visually identifiable development based on aerial photography.
  2. Being equal to or larger than five acres where less than one-half acre is occupied by permanent buildings or improvements, as determined by aerial photography.

Sites were reviewed on an individual basis without regard to ownership or proximity that could allow for aggregation by developers.

- As noted previously, for the purposes of the inventory, OAR 660-009-0005 indicates that “Developed Land” means non-vacant land that is likely to be redeveloped during the planning period (emphasis added). Therefore, the developed employment sites were identified based on coordination with Johnson Economics and City staff regarding conditions which would likely increase attractiveness for site redevelopment. Two distinct methodologies were used, depending on use category. For Commercial employment Sites and mixed employment Sites within 300' of Highway 395, this included Sites larger than one acre with building values less than 30% of the total land value per Umatilla County Assessor data. For all industrial Sites and for mixed employment Sites farther than 300' from Highway 395, this included Sites over two acres with building values less than 30% of the total land value per Umatilla County Assessor data.

Following GIS analysis to identify sites in each of the categories, Mackenzie refined the results as follows:

- To incorporate direction provided by the City staff for specific sites where staff had institutional knowledge of the employment land inventory and additional constraints, as explained in the Manual Adjustment Log included as Appendix A.
- To remove surface parking areas serving adjacent and nearby commercial uses.
- To remove GIS irregularities such as small slivers of land that are likely a result of misaligned data sets provided by multiple sources.

A map of the vacant and developed sites is included as Figure 3.

---

<sup>2</sup> OAR 660-009-0005 establishes an acreage threshold of one half-acre, but per City staff direction, sites greater than one-tenth of an acre are included as this size may be appropriate for smaller scale commercial development.

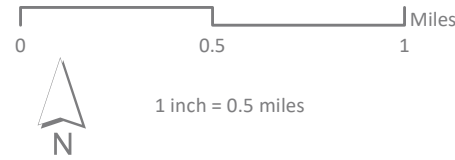


Figure 3: Hermiston  
Vacant and  
Developed  
Employment Land

Hermiston, Oregon

LEGEND

- City Limits
- Urban Growth Bounday
- Commercial - Vacant
- Commercial - Developed
- Industrial - Vacant
- Industrial - Developed



SOURCE DATA: City of Hermiston, 2024  
Umatilla County Assessor, 2024

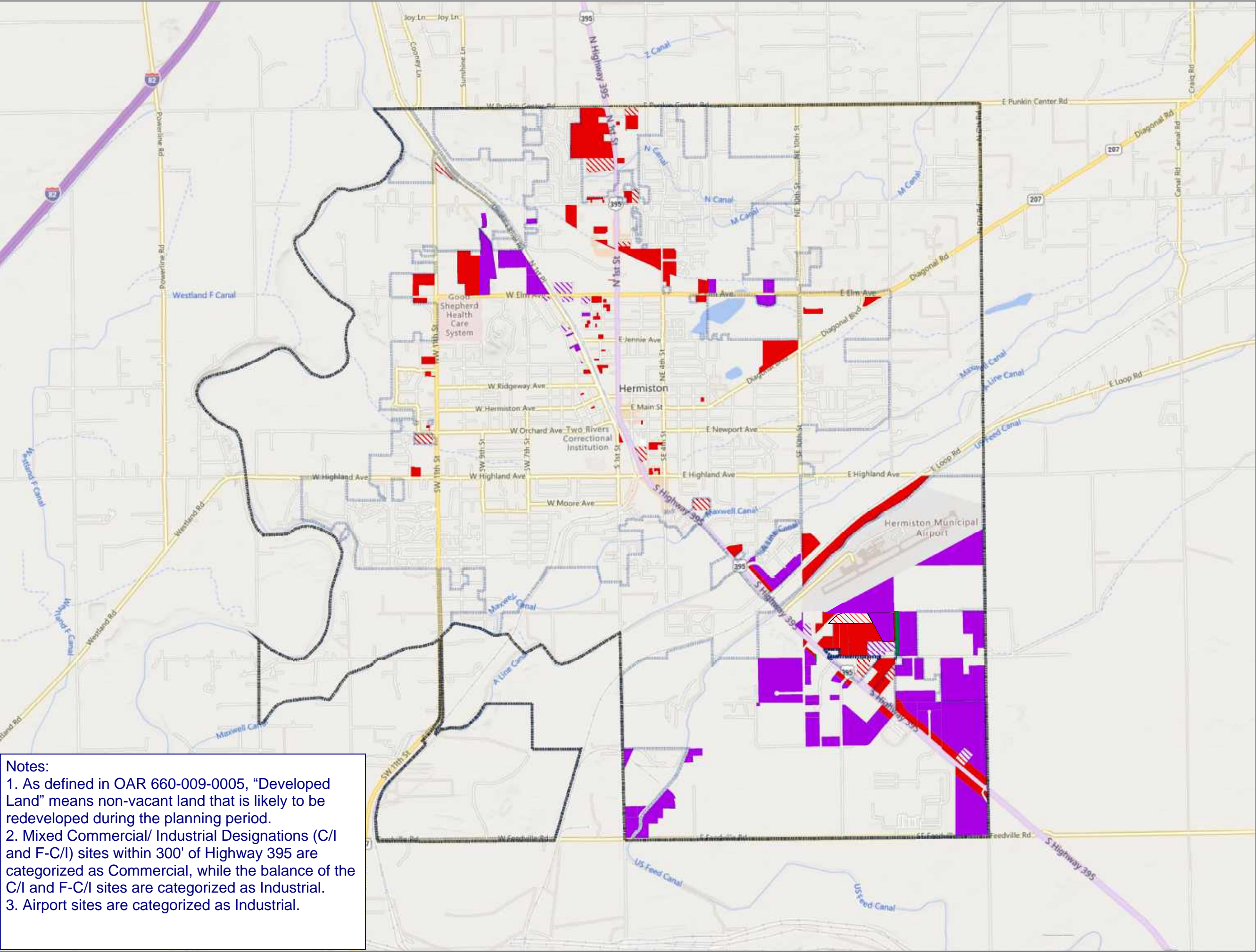
GEOGRAPHIC PROJECTION: NAD 83 HARN, Oregon North  
Lambert Conformal Conic

Date: 5/22/2024  
Map Created By: SH  
Project No: 2240028.00



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Notes:

1. As defined in OAR 660-009-0005, "Developed Land" means non-vacant land that is likely to be redeveloped during the planning period.
2. Mixed Commercial/ Industrial Designations (C/I and F-C/I) sites within 300' of Highway 395 are categorized as Commercial, while the balance of the C/I and F-C/I sites are categorized as Industrial.
3. Airport sites are categorized as Industrial.

## Development Constraints

OAR 660, Division 9 allows for reduction of buildable area in an employment lands BLI based on site development constraints, as defined in OAR 660-009-0005(2):

*‘Development Constraints’ means factors that temporarily or permanently 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 natural hazard areas.*

Based on this definition, for the Hermiston employment lands BLI, development constraints that render land undevelopable for employment uses were identified as land with any of the following characteristics:<sup>3</sup>

- Property within the 1% annual chance (100-year) floodplain.
- Areas with slopes of 10% or greater in areas with a commercial Designation or with a Mixed Designation and within 300' of Highway 395.
- Areas with slopes of 5% or greater in areas with an industrial Designation or with a Mixed Designation and farther than 300' from Highway 395.<sup>4</sup>
- Areas within High landslide susceptibility area per Oregon Department of Geology and Mineral Industries (DOGAMI)<sup>5</sup>.
- Wetlands identified in the Oregon Department of State Lands' (DSL) wetland data.

The resulting site constraints on employment land are depicted in Figure 4.

---

<sup>3</sup> City staff has indicated that public utilities are mostly within the street right-of-way; therefore, City public utility easements were not studied as a development constraint.

<sup>4</sup> The 5% slope criteria was used as a constraint for land within the Airport Comprehensive Plan Designation as the allowed uses in the Airport Zone align with that of C-2/M-1 (Comprehensive Plan Designation of C/I) which is classified as a Mixed Designation.

<sup>5</sup> No High landslide susceptibility area per Oregon Department of Geology and Mineral Industries (DOGAMI) were identified in the employment land study area.



**Figure 4: Hermiston Employment Land Development Constraints**

**Hermiston, Oregon**

**LEGEND**

- City Limits
- Urban Growth Bounday (UGB)
- Industrial Land
- Commercial Land
- Slope of 5% or greater (Industrial and Mixed Employment Land)
- Slope of 10% or greater (Commercial Land)
- Wetlands (LWI)
- 100-Year Floodplain
- Streams

0 0.5 1 Miles  
1 inch = 0.5 miles

SOURCE DATA:  
City of Hermiston (2024), Oregon Department of Forestry (2023), FEMA (2023), Oregon Department of State Lands (2023)

GEOGRAPHIC PROJECTION:  
NAD 83 HARN, Oregon North Lambert Conformal Conic

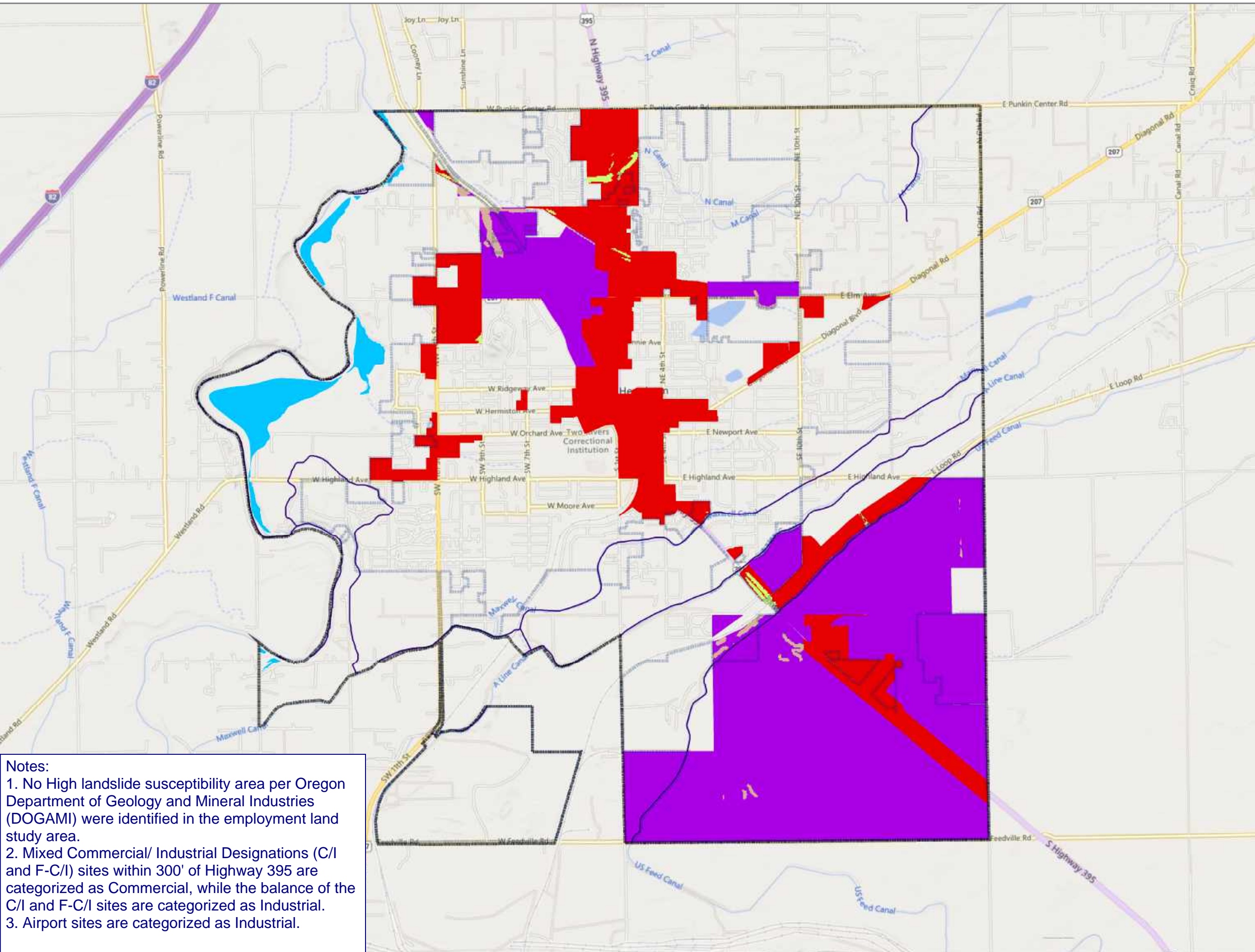
Date: 5/22/2024  
File: Figure 4 Constraints Map

Map Created By: SH  
Project No: 2240028.00



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**Notes:**

1. No High landslide susceptibility area per Oregon Department of Geology and Mineral Industries (DOGAMI) were identified in the employment land study area.
2. Mixed Commercial/ Industrial Designations (C/I and F-C/I) sites within 300' of Highway 395 are categorized as Commercial, while the balance of the C/I and F-C/I sites are categorized as Industrial.
3. Airport sites are categorized as Industrial.

## Buildable Employment Lands

The areas with constraints (Figure 4) were then deducted from the vacant and developed sites (Figure 3) to determine the net buildable portions of vacant and redevelopable sites. Sites resulting in less than 0.10 acres of net buildable land were removed since development of the small sites less than 0.10 acres is not feasible (this removed 17 sites from the inventory). The results of this analysis are summarized in Table 2 and shown graphically in Figure 5.

TABLE 2: HERMISTON EMPLOYMENT BUILDABLE LANDS INVENTORY <sup>1</sup>						
Category	Vacant		Developed		Total	
	Number of Sites	Net Buildable Acreage	Number of Sites	Potential Acreage <sup>2</sup>	Number of Sites	Potential Acreage
<b>Commercial</b>						
Commercial (C)	105	204.35	11	35.90	116	240.24
Mixed Commercial/ Industrial (C/I) <sup>3</sup>	15	26.97	0	0	15	26.97
Future Mixed Commercial/ Industrial (F-C/I) <sup>3</sup>	0	0	0	0	0	0
<i>Commercial subtotal</i>	<i>120</i>	<i>231.32</i>	<i>11</i>	<i>35.90</i>	<i>131</i>	<i>267.22</i>
<b>Industrial</b>						
Airport (A)	3	48.04	1	1.88	4	49.92
Industrial (I)	25	98.73	7	14.71	32	113.44
Mixed Commercial/ Industrial (C/I) <sup>3</sup>	34	189.89	1	3	35	192.89
Future Mixed Commercial/ Industrial (F-C/I) <sup>3</sup>	3	66.79	0	0	3	66.79
<i>Industrial subtotal</i>	<i>65</i>	<i>403.46</i>	<i>9</i>	<i>19.59</i>	<i>74</i>	<i>423.05</i>
<b>Totals</b>	<b>185</b>	<b>634.78</b>	<b>20</b>	<b>55.49</b>	<b>205</b>	<b>690.27</b>
<b>Table Notes:</b> <sup>1</sup> Due to rounding, some totals may not correspond with the sum of separate figures. <sup>2</sup> The Developed Potential Acreage assumes removal of existing structures, and redevelopment of the entire site. <sup>3</sup> The portions of Mixed Designation sites within 300' of Highway 395 are categorized as Commercial. The portions of Mixed Designation sites more than 300' from Highway 395 are categorized as Industrial. If a parcel has different portions classified as Commercial and Industrial, then the single parcel is counted as two sites, with separate acreage for each site.						



Figure 5: Hermiston Net Buildable Employment Land

Hermiston, Oregon

**LEGEND**

- City Limits
- Urban Growth Bounday (UGB)
- Commercial - Vacant
- Commercial - Redevelopable
- Industrial - Vacant
- Industrial - Redevelopable
- Constrained (Unbuildable) Land

0 0.5 1 Miles

1 inch = 0.5 miles

SOURCE DATA:  
City of Hermiston (2024), Oregon Department of Forestry (2023), FEMA (2023), Oregon Department of State Lands (2023), Umatilla County Assessor (2023)

GEOGRAPHIC PROJECTION:  
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 5/23/2024  
Map Created By: SH  
Project No: 2240028.00

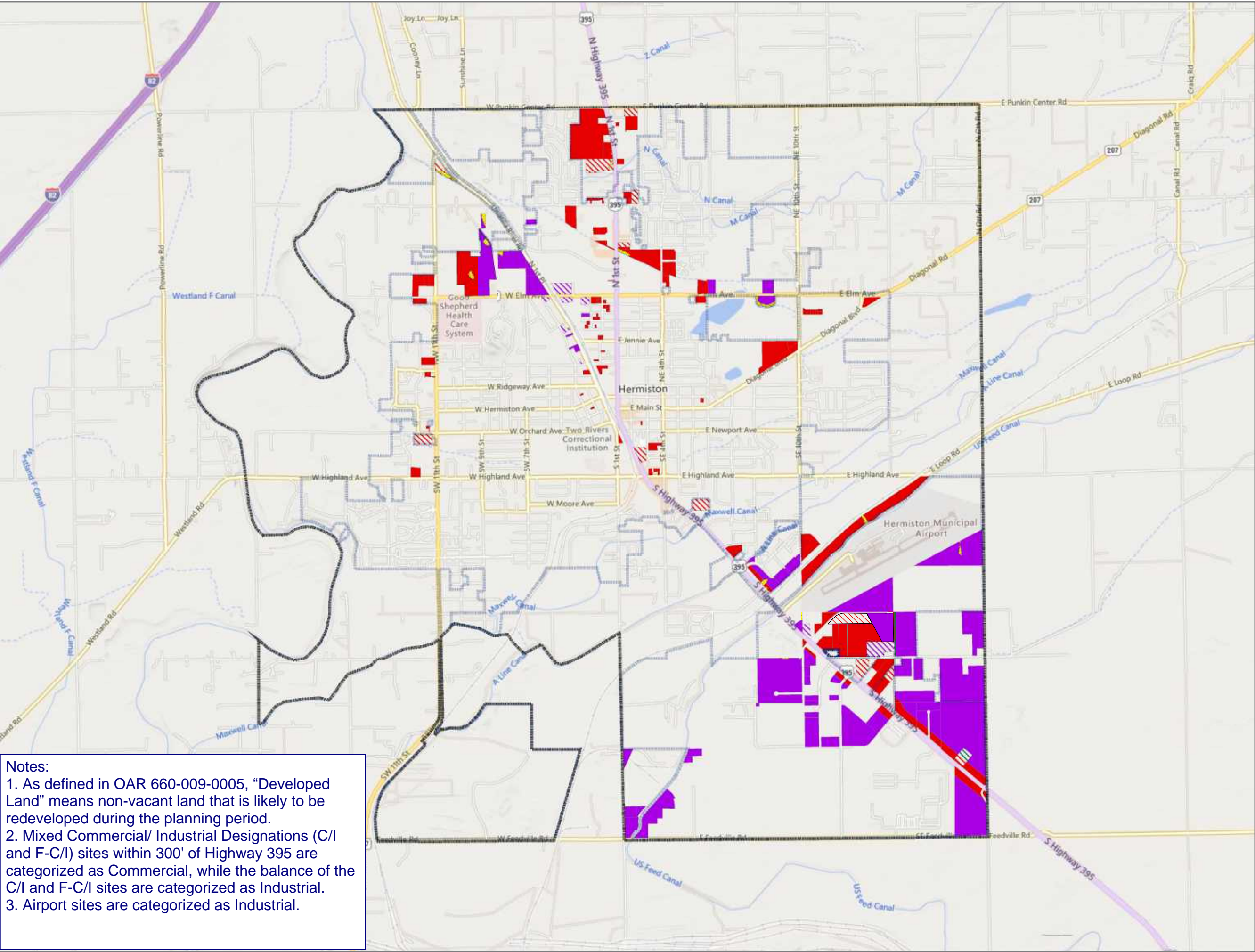


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Notes:

1. As defined in OAR 660-009-0005, “Developed Land” means non-vacant land that is likely to be redeveloped during the planning period.
2. Mixed Commercial/ Industrial Designations (C/I and F-C/I) sites within 300’ of Highway 395 are categorized as Commercial, while the balance of the C/I and F-C/I sites are categorized as Industrial.
3. Airport sites are categorized as Industrial.



Analysis of the data in Table 2 reveals the following:

- The commercial category has approximately 231 acres (36%) of vacant buildable land, and the industrial category has approximately 403 acres (64%) of vacant buildable land, for a total of approximately 634 net acres of vacant buildable employment land.
- The commercial category has approximately 35 acres (63%) of developed buildable land, and the category has had approximately 20 acres (37%) of developed buildable land, for a total of approximately 55 net acres of developed buildable employment land.
- In total, the commercial category has approximately 267 acres (39%) of buildable land and the industrial category has approximately 423 acres (61%) of buildable land, for a total of approximately 698 net acres of buildable employment land.

## Buildable Employment Lands Site Sizes

Based on the buildable sites within the UGB is shown in Figure 5 and tabulated in Table 2, Mackenzie has sorted the net buildable land supply by site size for each Designation, the results of which are in Table 3. The majority (63%) of Commercial sites are larger than 1 acre in size. The majority (81%) of Industrial sites are smaller than 5 acres in size.

TABLE 3: HERMISTON EMPLOYMENT NET BUILDABLE LANDS INVENTORY SITE SIZES									
<i>Designation</i>	<i>0 to 0.99 acres</i>	<i>1 to 4.99 acres</i>	<i>5 to 9.99 acres</i>	<i>10 to 19.99 acres</i>	<i>20 to 29.99 acres</i>	<i>30 to 49.99 acres</i>	<i>50 to 99.99 acres</i>	<i>100+ acres</i>	<i>TOTAL</i>
<b>Commercial Designation</b>									
Commercial (C)	73	36	2	3	0	2	0	0	116
Mixed Commercial/ Industrial (C/I)	8	5	2	0	0	0	0	0	15
Future Mixed Commercial/ Industrial (F-C/I)	0	0	0	0	0	0	0	0	0
<i>Commercial subtotal</i>	<i>81</i>	<i>41</i>	<i>4</i>	<i>3</i>	<i>0</i>	<i>2</i>	<i>0</i>	<i>0</i>	<i>131</i>
<b>Industrial Designations</b>									
Airport (A)	0	2	0	0	2	0	0	0	4
Industrial (I)	15	11	4	1	0	1	0	0	32
Mixed Commercial/ Industrial (C/I)	10	18	3	2	0	2	0	0	35
Future Mixed Commercial/ Industrial (F-C/I)	0	0	0	2	0	1	0	0	3
<i>Industrial subtotal</i>	<i>25</i>	<i>31</i>	<i>7</i>	<i>5</i>	<i>2</i>	<i>4</i>	<i>0</i>	<i>0</i>	<i>74</i>
<b>Commercial and Industrial Total</b>									
<b>Totals</b>	<b>106</b>	<b>72</b>	<b>11</b>	<b>8</b>	<b>2</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>205</b>

APPENDIX A

**MANUAL  
ADJUSTMENT  
LOG**

**City of Hermiston Employment Lands Buildable Lands Inventory (BLI) Manual Adjustment Log**  
**Last Update: May 22, 2024**

Date of Removal	Taxlot(s)	Gross Acreage	Comprehensive Plan Designation	Zone	Reason for Removal
April 8, 2024	4N2810AB00700 4N2810AB00800	3.57 AC	Industrial (I)	M-1	Parcel has an approved land use decision for development.*
April 8, 2024	4N28230000200	200 AC	Mixed Commercial/ Industrial (C/I)	C-2/ M-2	Parcel has an approved land use decision for development.*
April 8, 2024	4N2824BB00101 4N2824BB00200 4N2824BB01500 4N2824BB01600	3.15 AC	Mixed Commercial/ Industrial (C/I)	C-2/ M-1	Parcel has an approved land use decision for development.*
April 8, 2024	4N28240000600	100 AC	Mixed Commercial/ Industrial (C/I)	C-2/ M-1	Parcel has an approved land use decision for development.*
April 8, 2024	4N2810AB00205	1.2 AC	Industrial (I)	M-1	Parcel has an approved land use decision for development.*
April 10, 2024	4N2813C000903 4N2813C000100	33.6 AC	Industrial (I) and Commercial (C)	C-2 and M-1	Parcels have split Designations. The portion of each parcel designated as Commercial is included in the commercial acreage total. The portion of each parcel designated as Industrial is included in the industrial acreage total.
April 10, 2024	4N28130000200	31 AC	Commercial (C)	C-2	Per Ordinance No. 2356, the Comprehensive Plan Map Amendment changed approximately 31 acres from Industrial to Commercial. This

Date of Removal	Taxlot(s)	Gross Acreage	Comprehensive Plan Designation	Zone	Reason for Removal
					adjustment was made manually as City data has not yet been updated (as of 4/10/24) after City Council approval on March 11, 2024.
April 18, 2024	4N2814D000100	0.2 AC	Airport (A)	A	Parcel is partially located in the Runway Protection Zone (RPZ), limiting opportunity for development. The portion of the parcel in the RPZ is removed from the inventory, and the portion outside the RPZ is included in the inventory.*
April 18, 2024	4N2814D000200	2.5 AC	Airport (A)	A	Parcel is located in the Runway Protection Zone, limiting opportunity for development.*
April 18, 2024	4N2814D000300	4.1 AC	Airport (A)	A	Parcel is located in the Runway Protection Zone, limiting opportunity for development.*
May 14, 2024	4N28240000400	4.45 AC	C/I	C-2/M-2	Existing utility substation.*
May 14, 2024	4N2814D000400	7.27 AC	I	M-2	Public ownership for cemetery purposes.*
May 14, 2024	4N2809DA02900	0.21 AC	C	C-2	Highway drainage swale.*
May 14, 2024	4N2809DA03000	0.21 AC	C	C-2	Highway drainage swale.*
May 14, 2024	4N2803D001307	1 AC	I	M-1	Nonprofit shelter storage.*
May 14, 2024	4N2811BA00102	3.6 AC	C	C-2	Public land - public works expansion.*

Date of Removal	Taxlot(s)	Gross Acreage	Comprehensive Plan Designation	Zone	Reason for Removal
May 14, 2024	4N2811CB11800	0.38 AC	C	C-1	Coffee stand built in 2024.*
<b>Table Footnote:</b> <i>*Refinement requested by staff</i>					