

OREGON'S UNCREWED AERIAL SYSTEMS

An Economic Impact Overview

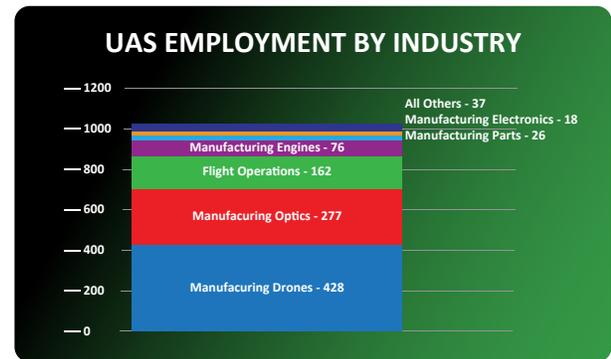
Uncrewed Aerial Systems ("UAS" or "drones") are one of the fastest-growing industries in the United States. Business Oregon commissioned an analysis to evaluate the size of the State's UAS sector and to evaluate the total economic impact of UAS on the State's Economy. The following is a summary of that analysis.

INDUSTRY OVERVIEW

UAS companies were surveyed to estimate their UAS-related employment and to determine what their role in the UAS sector is. Many companies provide goods and services to aerospace companies, and companies were asked to estimate only their UAS-related employment.

The state of Oregon has been an early leader in the UAS sector for much of the last decade. This early leadership in the UAS sector is generally attributable to two factors. First, the location of Insitu across the Columbia River, an early UAS success story, resulted in the creation of a cluster of support contractors, particularly in the sensor and optics fields. In addition, the creation of the Pendleton UAS Test Range resulted in a robust research, development, and testing center for UAS companies. Pendleton was a partner in the Alaska-Hawaii-Oregon UAS Test Site program, authorized by the Federal Aviation Administration (FAA) in 2014. Tillamook and Warm Springs are also partners in the test site program.

The survey of UAS companies in Oregon identified more than forty companies with a combined employment of more than 1,000 in Oregon. At least 400 jobs are in manufacturing drones, 277 are in manufacturing optics and sensors for UAS, and 162 jobs are in flight operations.



Manufacturing accounts for more than 80% of UAS related jobs in Oregon.

ECONOMIC IMPACT

Based on the UAS employment developed through the survey, an economic input-output model (IMPLAN) was used to estimate the direct, indirect, and induced economic impacts on the state's economy. Employment by industry was input into the IMPLAN model, creating an Oregon-specific economic impact estimate.

IMPLAN estimates that the total economic impact of the UAS industry on the Oregon economy is almost \$840 million, supporting approximately 2,500 total jobs. Direct jobs in the UAS sector generate more than \$112 million in labor income and more than \$570 million in economic impact.

Impact	Employment	Labor Income	Economic Impact
Direct	1,023.0	\$112,520,023	\$572,959,401
Indirect	627.8	\$47,842,759	\$136,513,258
Induced	813.5	\$43,008,676	\$130,247,512
Total	2,464.3	\$203,371,457	\$839,720,171

Source: IMPLAN 2022

OREGON COMPETITIVE POSITION

While the state of Oregon enjoyed early success in the UAS sector, other states have been investing heavily in UAS with the goal of capitalizing on upcoming economic opportunities as UAS becomes integrated into day-to-day commerce. Oregon has a significant number of commercial Uncrewed Aerial Systems registered with the FAA, more than 5,800. On a per-capita basis, Oregon has 138 commercial UAS per 100,000 residents, placing 13th in the US. Delaware, Alaska, and Kansas have the most drones per 100,000 residents, with 894, 841, and 555, respectively.

George Mason University publishes an annual study that evaluates the readiness of each state to support UAS-related commerce. The study summarizes steps states have taken to create aerial corridors to support drone-related commerce, as well as how readily such programs could be implemented. Oklahoma, North Dakota, Arkansas, Arizona, and Minnesota are the highest-ranked states in the George Mason University study. Oregon ranks 30th in the study.

The UAS sector is projected to grow at an annual rate of 14% to 20% annually over the next decade across the US. Two of the UAS applications that are expected to see the highest levels of growth in the next five years are UAS-based deliveries and Urban Air Mobility (UAM). These sectors offer significant economic development opportunities to those states which are prepared to capitalize on those opportunities.



UAM and UAS-based delivery programs are most likely to be implemented in states that have implemented policies that support UAS. Those states still developing policies that support UAS are likely to see these activities implemented years later.

There will also be opportunities in manufacturing UAS for deliveries and UAM. For example, once an organization such as Amazon or Walmart has its aircraft certified by the FAA, they will likely require tens of thousands of these aircraft to be manufactured.

The most aggressive competing states have a number of attributes in common. Most have a UAS coordinator in either their Department of Transportation, the Economic Development Department, or as part of an FAA UAS Test Site. In addition, many states use UAS internally for infrastructure inspections and public safety functions, including accident reconstruction, search and rescue, and bridge inspections.

Oregon can take specific steps to be ready for this growth and take advantage of the significant increase in drone commerce. In the past the state of Oregon made forward-looking UAS investments that have paid great dividends and provided competitive advantages with the FAA test ranges. It worked. It's time to look ahead once again to take advantage of opportunities with UAS sector growth that could equate to tens of millions of dollars in economic impact annually in Oregon, or these opportunities could go elsewhere.



POTENTIAL STRATEGIES TO SUPPORT UAS

There are a number of strategies the state of Oregon can implement to increase its support for the UAS sector. These include:

Increased Marketing Initiatives – Produce and execute direct marketing towards UAM research, development, and testing; direct marketing outreach to companies related to manufacturing UAS for package delivery and UAM; attending, sponsoring, and/or speaking at key UAS industry events (domestically and internationally).

Creating a Statewide UAS Task Force or Program Office – The creation of a central point of contact helps provide consistency of information and support for UAS-related issues. Business Oregon could consider establishing industry sector leads for economic development.

UAS-Related Workforce Training – Creating workforce training programs targeted at UAS pilots, UAS maintenance technicians, flight managers, and other UAS-related occupations will help the State be prepared to support the anticipated growth of the UAS sector. Since Oregon's UAS sector has a significant concentration of manufacturing jobs, creating workforce training programs suitable to the State's key UAS manufacturing sectors would help support existing companies as well as startups and companies considering establishing a presence in Oregon. Key skills, such as welding, working with advanced materials, and other industry-specific skills, should be the focus of workforce training opportunities.

Creating a Beyond-Visual-Line-of-Sight (BVLOS) – The state of Oregon needs to consider establishing one or more BVLOS corridors. This will support UAS delivery and other applications. A "proof-of-concept" BVLOS system in the Hood River or Pendleton area could be a valuable first step.

ECONOMIC IMPACTS OF SUPPORT STRATEGIES

Implementation of these strategies to support the UAS sector was evaluated using the IMPLAN model, as summarized to the right. Implementation of all of the recommendations simultaneously could increase the overall economic impact of the UAS sector to more than \$4 billion annually.

UAS INDUSTRY ESTIMATED ECONOMIC IMPACTS 2032			
	Employment	Labor Income	Total Output
UAS Sector 2022	2,464.3	\$203,371,457	\$839,720,171
2032 Baseline	9,135.3	\$753,910,375	\$3,112,919,033
Marketing Recommendations	10,179.1	\$840,047,713	\$3,468,543,638
Task Force	9,749.1	\$804,569,824	\$3,322,060,127
Workforce Training	9,792.7	\$808,165,047	\$3,336,949,792
BVLOS System	9,511.4	\$782,024,718	\$3,194,107,716
Implement All Recommendations	11,821.6	\$974,923,933	\$4,017,356,439

Source: IMPLAN 2022