Summary of Findings

Total baseline economic impacts for Wyoming's UAS/UAV activities identified in this analysis, which was among the first of its kind, are as follows:

Employment: 121

Annual Payroll: $5.7M

Spending: $3.5M

Annual Economic Activity: $9.2M

Benefits of UAS/UAV Use

While the quantitative economic impact documented in the previous section demonstrate the value of UAS/UAV activities in Wyoming, qualitative information from UAV users also serves to highlight how various users have integrated UAS/UAV into their operations to add value and efficiency.

Camp Guernsey Joint Training Center's Integrated Training Area Management (ITAM), Guernsey, WY

Camp Guernsey ITAM employs UAS as a tool to quantify and identify damage from military maneuvers in training areas that can be as large as 7,000 acres. Operational, maintenance, and fuel costs are reduced significantly with UAS.

Casper Police Department, Casper, WY

We no longer need to use the fire department's ladder truck for external aerial photos or video. This saves time and money for first responders. UAS allows rapid deployment for search and rescue.

Land Surveying Inc, Gillette, WY

For large site surveys, a one-hour flight can provide a 3D model of an apartment complex. This gives the client in-depth data that can save a large amount of time for clients and the surveyor.

Ron Nettie Photography

My drones (UAS) are used to capture still photographs and video for local real estate agencies, providing their clients with aerial perspectives not achieved through the use of ground-based cameras.

Summary

UAS/UAV technology is rapidly evolving and growing. This analysis provides a baseline estimate of statewide economic impacts from commercial UAS/UAV operations. It is worth noting that many non-hobbyist UAV operators likely operate outside of Part 107 rules; however, the economic impacts of non-licensed users are not included in the baseline impacts.

While the longer-term impacts of UAV/UAS technology are not yet fully understood, the technology is already playing an important role in a variety of industries and that role is likely to grow. As more industries find applications for UAS and the regulatory framework for commercial operation continues to evolve, the industry will continue to grow, and its economic impacts will expand.

FOR MORE INFORMATION:

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PREPARED BY: JVIATION

Wyoming

2020 AVIATION
ECONOMIC IMPACT STUDY

BASELINE ECONOMIC IMPACTS OF

WYOMING'S UAS/UAV ACTIVITIES

Overview

As part of WYDOT's 2020 Aviation Economic Impact Study, the baseline economic impact of UAS/UAV activities in Wyoming were identified. As aviation in Wyoming and across the country undergoes technological change, Unmanned Aerial Vehicles (UAVs), sometimes referred to as drones, have become more common. Unmanned Aerial Systems (UAS), often synonymous with UAVs, are the various "parts" that make a UAV function. UAS parts include all cameras and computer software, as well as the person controlling the UAV. For WYDOT's statewide economic impact study, research was conducted to provide a better understanding of the current impact of commercial UAS activities in Wyoming. The focus of the research was to provide a baseline understanding of UAS activities in Wyoming regarding personnel, spending, UAV operations, and economic impacts.

2020 AVIATION
ECONOMIC IMPACT STUDY

Study Methodology/Process

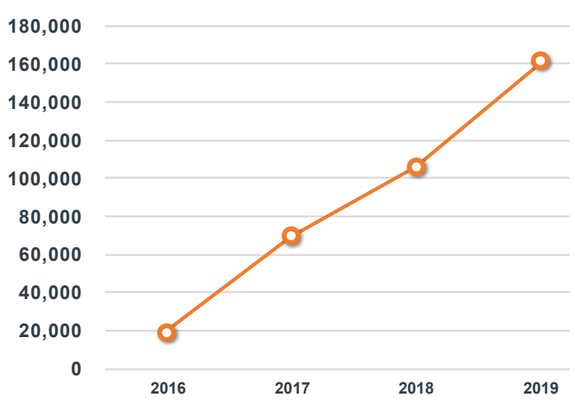
The process to identify baseline economic impacts for Wyoming's UAS/UAV activities follows:

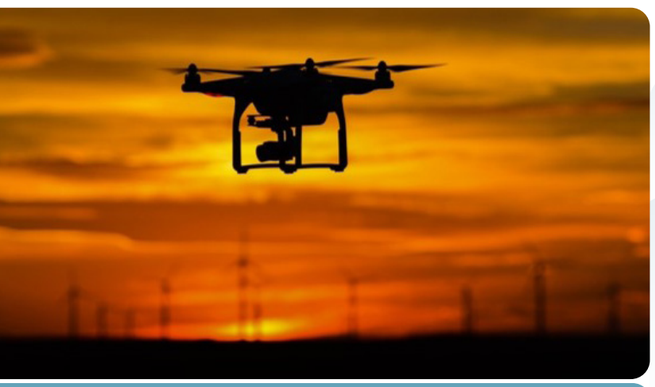
- Identify all Part 107 Remote Pilot Certificates in WY
- Research contact information and verify active use of UAS/UAV
- Develop survey to collect data on employment, payroll, spending, and UAV operations
- Create model using IMPLAN to determine direct, indirect/induced, and total economic activity

National Trends

Since the FAA's Remote Pilot license became available in 2016, these licenses have increased at an average annual growth rate of 99%.

National Remote Pilot Growth 2016-2019





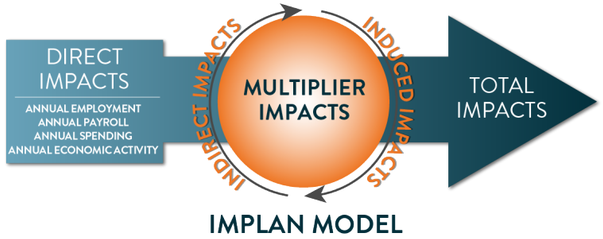
Economic Impact Measurements

For this analysis, economic impacts were identified for the following categories:

- **Employment:** jobs that are dedicated to UAS work - converted to full-time equivalents (FTEs)
- **Annual Payroll:** the portion of annual income earned by employees involved in UAS work that is dedicated to UAS work
- **Annual Spending:** annual funds expended to purchase, operate, maintain, and upgrade UAS equipment and perform UAS-related work
- **Annual Economic Activity:** combined payroll and spending

Process to Measure Economic Impacts

All economic impacts identified in the WYDOT study for UAS/UAV activities start with identifying and quantifying direct impacts. Direct impacts are the foundation for the total annual economic impacts. Once direct impacts are quantified through surveys and research, an econometric input/output model is used to estimate the additional rounds of economic benefit that the direct impacts support. The IMPLAN model is used to estimate indirect/induced economic impacts. These additional impacts are also referred to as multiplier impacts. The indirect/induced impacts measure how many times the direct impacts turn over in the economy before they leak outside the area being studied.



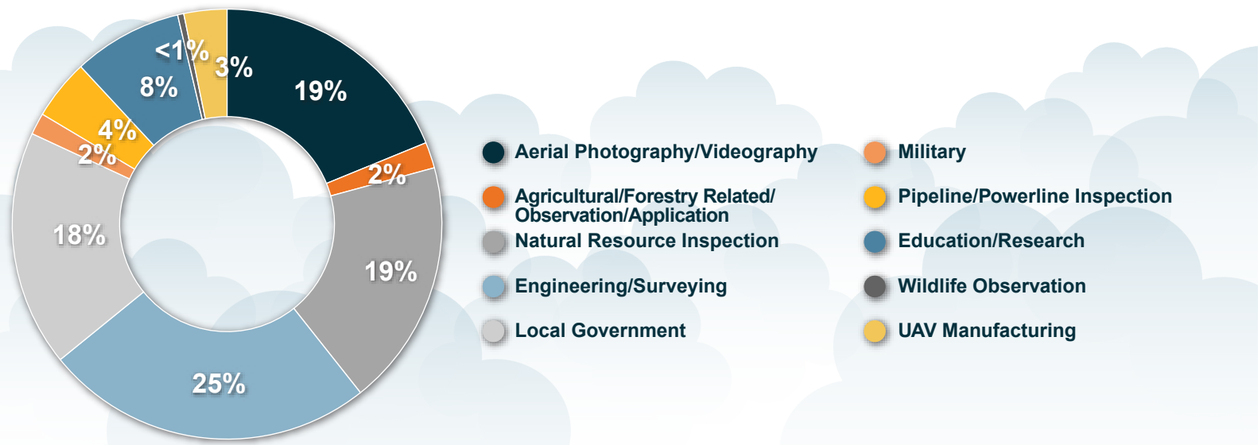
Statewide Baseline UAS/UAV Economic Impacts

IMPACT MEASURE	DIRECT	INDIRECT/ INDUCED	TOTAL
Employment	81	40	121
Payroll*	$4,081,730	$1,649,030	$5,730,760
Spending	$2,397,780	$1,076,370	$3,474,150
Annual Economic Activity	$6,479,500	$2,725,400	$9,204,900

**Payroll figures include IMPLAN industry averages*

Distribution of Wyoming UAS/UAV-Related Economic Activity Impact by Service Type

The figure below shows the UAS/UAV economic impacts by service/user type.



Summary of Survey Findings

Survey results follow:

- A total of 87 different organizations or entities were identified as being active drone operators.
- These entities have 159 employees devoting at least part of their time to UAS/UAV activities.
- These 159 workers translate to a total of 81 full-time equivalent positions (FTEs).
- Annual payroll for each worker when margined to reflect only UAS/UAV duties is $39,154 (reflective of survey data only).
- The 87 entities operate 235 drones and perform a total of 7,569 annual operations.
- Average drone flight time is about 27 minutes, resulting in total annual flight time estimated at 3,452 hours or 144 days.

The figure below shows the distribution of entities in Wyoming that currently rely on UAS/UAV activities, along with their full-time equivalent positions.

Distribution of Wyoming UAS/UAV Users by Service Type