Study Overview

- Sponsored by the Montana Department of Transportation (MDT) Research Programs

- Study Purpose
  - Understand and communicate the wide range of impacts and benefits derived from airport operations
  - Provide an economic framework to help MDT evaluate airport investments in the context of economic activity and development

- Qualitative and quantitative economic analysis of Montana airport system
Montana Airport System

- Comprised of:
  - Commercial service
  - General aviation

- Serve 1.9 million visitors per year for leisure and business travel

- 77 airports included in study
  - Airports included due to specific economic measurables
  - Exclusion of airports did not significantly impact the total statewide impact
Montana Airport System

Airport Classifications
- General aviation
- Commercial service
Methodology: Inputs

- Direct impacts
  - On-airport businesses
  - Capital expenditures on construction
  - Visitor spending

- Spin-off effects
  - Indirect effects
  - Induced effects

Combined, direct impacts and spin-off effects compose the contribution of an individual airport and determine the total statewide impact of Montana’s airport system.
Methodology: Outputs

- Jobs (headcount)
- Payroll
- Total impact

Total statewide impacts are summed to determine Montana Airports Total Statewide Impacts
Methodology: Data Collection

- **Surveys**
  - Airport managers
  - Tenants
  - Commercial service passengers
  - General aviation passengers
- **In-person inventories and interviews**
- **Secondary sources to complete data gaps**
- **Direct impacts validated with airport managers before spin-off effects modeled**
Methodology: Modeling

- IMPLAN modeling software
  - Complete data gaps
  - Estimate jobs and payroll generated from visitor spending
  - Determine spin-off effects

- vFreight™
  - Evaluate contribution of air cargo

- Assumptions
  - Headcount methodology
  - Results rounded to the nearest thousand to account for false precision
Statewide Summary of Impacts

23,849

$838,510,000

$2,779,115,000
## Results

### On-Airport

<table>
<thead>
<tr>
<th>Impact Type</th>
<th>Jobs</th>
<th>Payroll ($)</th>
<th>Economic Impacts ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-airport tenants</td>
<td>4,984</td>
<td>$255,461</td>
<td>$874,364,000</td>
</tr>
<tr>
<td>Airport operations and employees</td>
<td>276</td>
<td>$16,070,000</td>
<td>$36,780,000</td>
</tr>
<tr>
<td>Spin-off effects (indirect and inducted)</td>
<td>4,403</td>
<td>$181,197,000</td>
<td>$553,346,000</td>
</tr>
<tr>
<td>Total contribution</td>
<td>9,663</td>
<td>$452,728,000</td>
<td>$1,464,490,000</td>
</tr>
</tbody>
</table>

**Total contribution:** 9,663, $453M, $1.46B
## Results

### Construction

<table>
<thead>
<tr>
<th>Impact Type</th>
<th>Jobs</th>
<th>Payroll ($)</th>
<th>Economic Impacts ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital expenditures on construction</td>
<td>413</td>
<td>$18,365,000</td>
<td>$61,147,000</td>
</tr>
<tr>
<td>Spin-off effects: Supplier and income re-spending</td>
<td>316</td>
<td>$11,923,000</td>
<td>$38,168,000</td>
</tr>
<tr>
<td>Total contribution</td>
<td>729</td>
<td>$30,288,000</td>
<td>$99,315,000</td>
</tr>
</tbody>
</table>
## Results

**Visitor Spending**

<table>
<thead>
<tr>
<th>Impact Type</th>
<th>Jobs</th>
<th>Payroll ($)</th>
<th>Economic Impacts ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Commercial service</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct impacts</td>
<td>8,035</td>
<td>$168,852,000</td>
<td>$622,456,000</td>
</tr>
<tr>
<td>Spin-off effects</td>
<td>3,567</td>
<td>$136,479,000</td>
<td>$432,318,000</td>
</tr>
<tr>
<td>Sub-total, commercial service</td>
<td>11,602</td>
<td>$305,331,000</td>
<td>$1,054,774,000</td>
</tr>
<tr>
<td><strong>General aviation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct impacts</td>
<td>1,325</td>
<td>$29,456,000</td>
<td>$95,329,000</td>
</tr>
<tr>
<td>Spin-off effects</td>
<td>533</td>
<td>$20,705,000</td>
<td>$65,209,000</td>
</tr>
<tr>
<td>Sub-total, general aviation</td>
<td>1,858</td>
<td>$50,161,000</td>
<td>$160,538,000</td>
</tr>
<tr>
<td><strong>Total contribution</strong></td>
<td>13,460</td>
<td>$355,492,000</td>
<td>$1,215,312,000</td>
</tr>
</tbody>
</table>

**Total contribution**: $355,492,000

**Total**: $1,215,312,000
Air Cargo

- $621 million in exports and imports
- $156 million in total aviation dependence

<table>
<thead>
<tr>
<th>Directional Flow</th>
<th>Tonnage (metric tons)</th>
<th>Value ($)</th>
<th>Percent of Total by Value (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic inbound</td>
<td>3,177</td>
<td>$360,000,000</td>
<td>58%</td>
</tr>
<tr>
<td>International import</td>
<td>469</td>
<td>$84,000,000</td>
<td>14%</td>
</tr>
<tr>
<td>Total air cargo received</td>
<td>3,646</td>
<td>$444,000,000</td>
<td>71%</td>
</tr>
<tr>
<td>Domestic outbound</td>
<td>943</td>
<td>$78,000,000</td>
<td>13%</td>
</tr>
<tr>
<td>International export</td>
<td>439</td>
<td>$98,000,000</td>
<td>16%</td>
</tr>
<tr>
<td>Total air cargo shipped</td>
<td>1,382</td>
<td>$176,000,000</td>
<td>28%</td>
</tr>
<tr>
<td>Total received and shipped</td>
<td>5,028</td>
<td>$621,000,000</td>
<td>100%</td>
</tr>
</tbody>
</table>
Qualitative Benefits

- Provides holistic understanding of the value of airports
- Gathered data thru airport manager and tenant surveys
- Conducted specific analyses of impacts to agriculture, hospitals, wildland firefighting, and business community

*These quality of life benefits make Montana safer, more accessible, and a richer place to visit and call home*
### Agriculture

- 221,500 acres of farmland treated with aerial spraying

<table>
<thead>
<tr>
<th>Crop</th>
<th>Harvested (acres)</th>
<th>All Methods of Application</th>
<th>Aerial Application</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Share of Area Treated (%)</td>
<td>Estimate Area Treated (acres)</td>
<td>Share of Treated Acreage (%)</td>
</tr>
<tr>
<td>Corn</td>
<td>50,000</td>
<td>97%</td>
<td>48,500</td>
</tr>
<tr>
<td>Oat (small grains)</td>
<td>22,000</td>
<td>51%</td>
<td>11,220</td>
</tr>
<tr>
<td>Barley (wheat)</td>
<td>850,000</td>
<td>96%</td>
<td>816,000</td>
</tr>
<tr>
<td>Potato</td>
<td>10,900</td>
<td>96%</td>
<td>10,464</td>
</tr>
<tr>
<td>Totals</td>
<td>932,900</td>
<td>95%</td>
<td>886,184</td>
</tr>
</tbody>
</table>
More than 600 responses representing all sectors

Businesses with more than 21 employees or those in the manufacturing industry most likely to rely on airports to conduct business
Medical Flights

- **Key roles**
  - Facilitate emergency evacuation services
  - Support health care practitioners who fly to remote communities to provide routine and specialty care

- **Benefits**
  - Vital for patients who require immediate medical attention or advanced care
  - Allow residents to remain in local communities instead of relocating to receive specialized care

- Hospital survey conducted by the University of Montana Bureau of Business and Economic Research
Hospital Survey

- Indicated that a majority of hospitals depend on airports in some capacity
- Survey encompassed all hospital in the state (61)
Wildland Firefighting

- Majority of airports serve as primary or alternatives for fire suppression
- Key agencies
  - Bureau of Land Management
  - U.S. Forest Service
  - Montana Department of Natural Resources and Conservation
- 8,404 fires from 2011 to 2015
- Operations benefit local and regional economies through indirect and induced spin-off effects
Military / Law Enforcement

- Key law enforcement activities
  - Responding to calls in remote areas
  - Search and rescue
  - Prisoner transport
  - Homeland security operations

- Military exercise and training
  - Over 30 airports accommodate military aircraft
  - Some facilities established by the U.S. Army Air Forces during World War II

- Operations support military and civilian jobs, drive fuel sales, and provide other benefits
Products

- Statewide Executive Summary

- Individual airport brochures
Study Benefits and Uses

- Supports decision-making at all levels
- Communicates wide range of benefits of Montana airports, many of which are not recognized or understood
- Promotes economic activity and development
- Understanding of how broader economic, demographic, and other trends have affected aviation in Montana

*The results can be used to support decision-making on all levels for projects, resources, and funding*
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