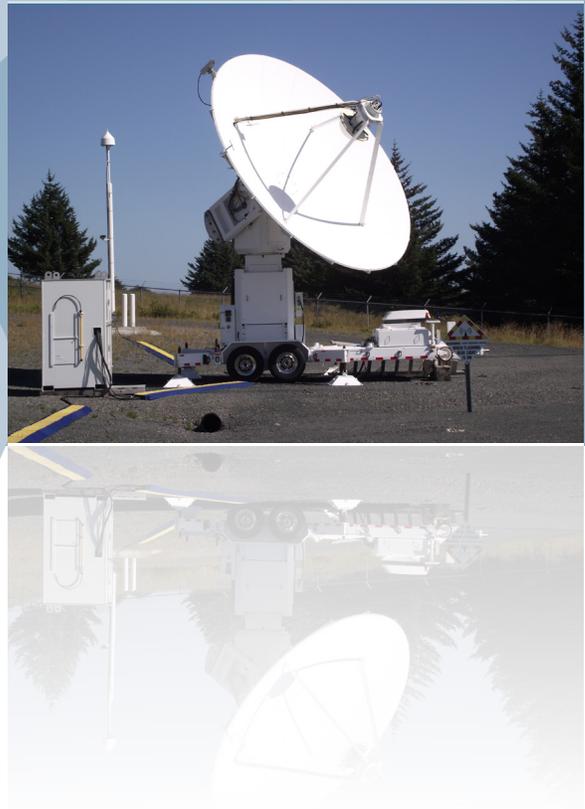


# The Economic Benefits of the Alaska Aerospace Corporation, FY 2010

*Prepared for the*  
Alaska Aerospace Corporation  
February 2011



**Northern**  
**Economics**

Wisdom • Trust • Relevance • Innovation



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*Prepared for*

## Alaska Aerospace Corporation

**February 2011**

*Prepared by*



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**Please cite as:** Northern Economics, Inc. *The Economic Benefits of the Alaska Aerospace Corporation, FY 2010*. Prepared for Alaska Aerospace Corporation. February 2011.

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## Abbreviations

AAC	Alaska Aerospace Corporation
ASGP	Alaska Space Grant Program
ADOLWD	Alaska Department of Labor and Workforce Development
KLC	Kodiak Launch Complex
ECM	Earthen Covered Magazines
FY	Fiscal Year
I-O	Input-Output
NAICS	North American Industry Classification System
NASA	National Aeronautics and Space Administration
NEI	Northern Economics, Inc.
NOAA	National Oceanic and Atmospheric Administration
O&M	Operations and Maintenance
QCEW	Quarterly Census of Employment and Wages
RMSF	Rocket Motor Storage Facility





A member of AAC staff launches weather balloons for a system tracking test.

## Executive Summary

This study quantifies the economic contribution of the Alaska Aerospace Corporation's (AAC) and the Kodiak Launch Complex's (KLC) operations on the local economies of Kodiak and Anchorage, as well as the economy of the State of Alaska as a whole. The economic analysis covers the 2010 fiscal year (July 1, 2009 to June 30, 2010).

In FY 2010, AAC purchased goods and services from more than 120 vendors and subcontractors in Alaska, and generated 110 direct, indirect, and induced jobs, which paid a total of \$6.9 million in wages and salaries within the state. AAC's total economic contribution to the state amounted to \$11.9 million in economic output. This figure includes the direct, indirect, and induced effects of AAC's activities during the year.

In FY 2010, the KLC attracted just fewer than 660 visits to Kodiak (255 mission-related and 404 non-mission-related). The direct, indirect, and induced spending for mission and non-mission-related visits to the KLC contributed more than \$347,000 in

business sales, \$128,000 in wages, and four jobs to the local economy.

Tables ES-1 through ES-3 and the corresponding Figures ES-1 through ES-3 present all the direct, indirect, and induced economic impacts of AAC's operations and projects on the Alaska economy, by region. The most significant impacts were felt in the Kodiak region, where AAC worked with 44 local vendors and subcontractors, generating \$3.7 million in labor income (local payments for wages and salaries) and contributing \$6.3 million in total economic output.



Kodiak Launch Complex on Narrow Cape, Kodiak Island, Alaska.

**Table ES-1. Direct, Indirect and Induced Employment Effects of AAC's Operations and Projects**

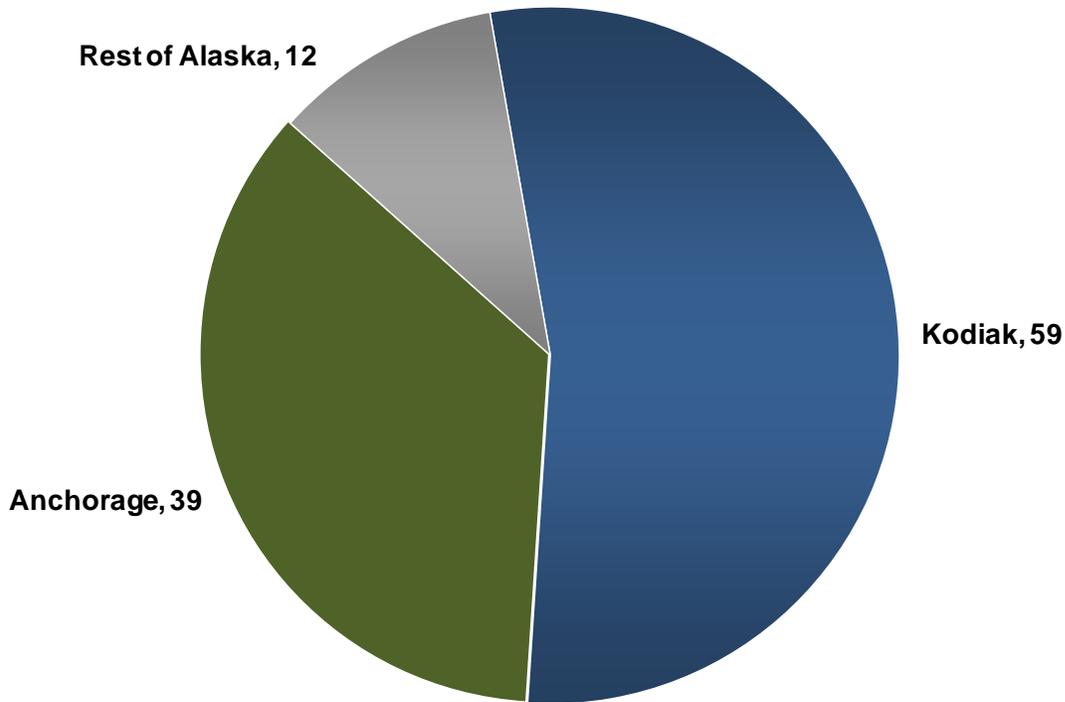
Region	AAC Positions	Contractor Positions	Indirect + Induced	Total Effects
Kodiak	29	11	19	59
Anchorage	17	1	21	39
Rest of Alaska	0	1	11	12
<b>Total Statewide</b>	<b>46</b>	<b>13</b>	<b>51</b>	<b>110</b>

Source: NEI estimates based on data from AAC and IMPLAN software and database.

Notes: Numbers above include adjustments for partial year employees.

**Figure ES-1. Total Regional Employment Generated by AAC Operations and Projects by Region**

**FY 2010 Total Jobs Created in Alaska: 110**



Source: NEI estimates based on data from AAC and IMPLAN software and database.

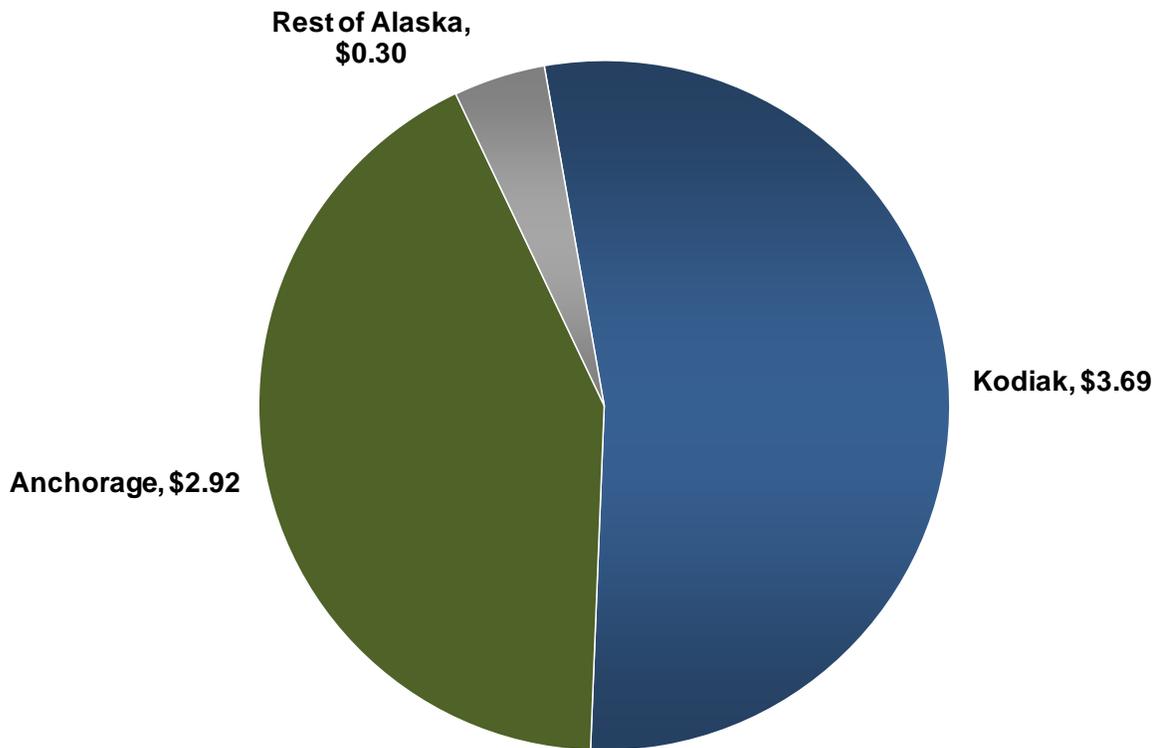
**Table ES-2. Direct, Indirect and Induced Labor Income Effects of AAC's Operations and Projects**

Region	AAC Positions	Contractor Positions	Indirect + Induced	Total Effects
	(\$)			
Kodiak	2,192,800	722,000	770,300	3,685,100
Anchorage	2,046,300	45,400	826,800	2,918,500
Rest of Alaska	-	33,900	262,300	296,200
<b>Total Statewide</b>	<b>4,239,100</b>	<b>801,300</b>	<b>1,859,400</b>	<b>6,899,800</b>

Source: NEI estimates based on data from AAC and IMPLAN software and database.

**Figure ES-2. Total Regional Labor Income Generated by AAC Operations and Projects by Region**

**FY 2010 Total Labor Income Generated in Alaska: \$6.9 million**



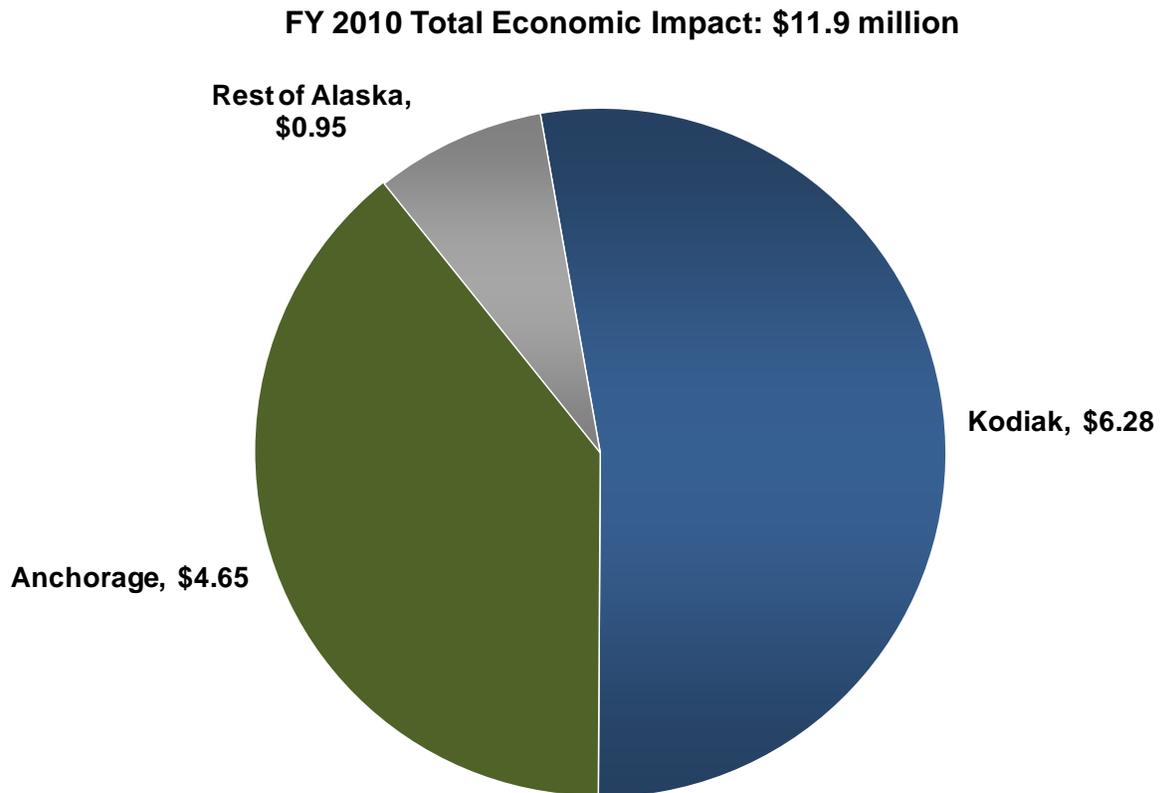
Source: NEI estimates based on data from AAC and IMPLAN software and database.

**Table ES-3. Direct, Indirect and Induced Economic Output Effects of AAC's Operations and Projects**

Region	Local Spending/Direct	Indirect + Induced (\$)	Total Effects
Kodiak	4,562,500	1,719,100	6,281,600
Anchorage	2,614,400	2,038,500	4,652,900
Rest of Alaska	534,500	411,600	946,100
<b>Total Statewide</b>	<b>7,711,400</b>	<b>4,169,200</b>	<b>11,880,600</b>

Source: NEI estimates based on data from AAC and IMPLAN software and database.

**Figure ES-3. Total Regional Economic Contribution of AAC Operations and Projects by Region**



Source: NEI estimates based on data from AAC and IMPLAN software and database.

# 1 Introduction

Alaska Aerospace Corporation (AAC) commissions an annual review of its economic contribution to the State of Alaska. The analysis quantifies AAC's contributions to the state and local economies that benefit from its operations and projects. This year's analysis is the fourth conducted for AAC by Northern Economics, Inc. (NEI), an Anchorage, Alaska-based consulting firm specializing in economic research and analysis.



Kodiak Launch Complex Maintenance Support Facility

AAC's core business area is space launch; it owns and operates the Kodiak Launch Complex (KLC) on Kodiak Island, Alaska,

through which it provides access to space for commercial and government interests. Since inception, AAC's KLC operations and special projects have generated significant economic benefits to the state by providing long-term, high-paying, stable jobs, and local economic diversity, as well as creating short-term benefits from special projects and construction activities.

In Fiscal Year (FY) 2010, AAC completed the first phase of a three-year facility expansion project with the completion of the first of five earthen covered magazines (ECM), which will be known collectively as the Rocket Motor Storage Facility (RMSF). The RMSF will allow motors to be stored, thus lowering logistics costs to customers by providing the option of a single shipment of multiple motors to KLC. The facility allows for storage of preassembled motors which can be integrated with payloads and launch vehicles quickly. The nation relies on the use of mobile technology; this rapid launch capability will ensure continued mobile access.

In the fall of 2010, the State of Alaska and NASA signed a three-year non-reimbursable Space Act Agreement establishing a partnership for space exploration, scientific research, and education initiatives. The agreement provides for research and development with AAC to evaluate existing ground tracking stations at the Kodiak Launch Complex for potential use in support of NASA's small satellite operations (NASA 2010).

This study covers the economic impacts of AAC's operations and special projects for FY 2010 (July 1, 2009 through June 30, 2010). It includes an analysis of the regional impacts to Kodiak, Anchorage, and other Alaska regions, as well as the impacts to the State of Alaska as a whole. The economic contribution or impacts of AAC were primarily measured in terms of direct, indirect, and induced economic output, jobs, and labor income. In addition, the study also looked at other community benefits such as local economic diversification and quality of jobs.

The remainder of this report contains the following sections:

**Section 2, Approach** describes the data sources and methodology used in evaluating the economic effects;

**Section 3, Local Spending and Economic Output Effects** presents the direct, indirect and induced effects of AAC's FY 2010 activities on economic output or business sales;

**Section 4, Jobs and Income Effects** presents the estimated direct, indirect, and induced effects of AAC's FY 2010 activities on employment and labor income;

**Section 5, Regional Impacts** summarizes the local economic contribution of AAC operations and projects to the economies of Kodiak, Anchorage, and other regions of the state, and discusses issues such as quality of local jobs and implications on local economic diversity;

**Section 6, Additional Benefits** discusses AAC's contributions to education and community quality of life;

**Section 7, References.**

## 2 Approach

The economic benefits of AAC were evaluated by quantifying the direct, indirect, and induced effects or economic impacts of in-state spending and regional (or local) spending on goods and services associated with the operations of the KLC and related projects.

AAC provided the following data for FY 2010:

- Dollars expended by vendor and by geographic area
- Direct AAC full-time and part-time positions by location
- Total payroll by location
- Subcontractor expenses
- Travel trips and dollars expended by location
- Kodiak Launch Complex visitor counts

The information above was used as inputs to the Input-Output (I-O) model to quantify the multiplier effects of AAC's regional and in-state spending.

I-O analysis is an economic tool used to measure the effects of an economic activity on a region and is typically used to evaluate the benefits of a project or annual operations of an entity such as AAC. The analysis is based on a model of the inter-industry transactions within a community, a region, or a state.



Southern views of icy waters at the Kodiak Launch Complex.

The I-O model is a matrix that tracks the flow of money between the industries within a

specified economic region of interest. The model can measure how many times a dollar is re-spent in, or “ripples” through, the economic region before it leaks out.

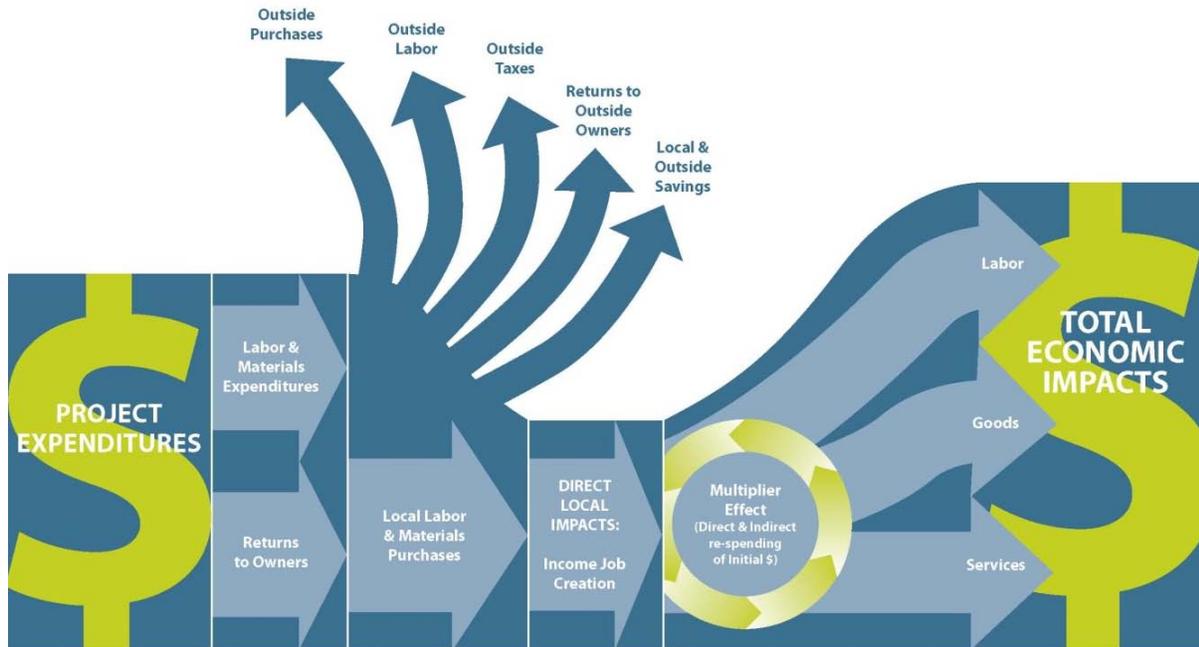
The I-O model yields multipliers that are used to calculate the indirect and induced effects on jobs, income, and business sales/output generated per dollar of spending on various types of goods and services in the study area. To evaluate the economic effects to the state or a particular region, only the “local” (i.e., within the state or within the region) expenditures are used in the model; the rest are considered leakages. More leakages mean smaller multipliers; and the larger the local expenditures, the greater the multiplier effects. The multipliers for any given industry in any given location are unique, based on industry composition and geographic area.

The IMPLAN™ software was used to develop the I-O models for the different regions affected by AAC operations and related projects. IMPLAN uses specific data on what inputs are needed to produce the goods or services for over 400 industries, and borough-specific data on what industries are available

locally from which to purchase those inputs. The most recent (2009) IMPLAN data on multipliers for all the economic sectors within each borough and statewide were applied.

Figure 1 illustrates conceptually how the total economic impacts or benefits are determined.

**Figure 1. Framework in Evaluating the Total Economic Effects or Impacts of Local Spending**



AAC expenditure data were sorted according to where the expenditures were made. As a starting point, the expenditure data by vendor were sorted according to zip code. However, the zip code data represent the locations where the accounting departments of the vendors are located and not necessarily where the dollars are expended. For example, the Kodiak Narrow Cape Lodge is located in Kodiak, is staffed by local Kodiak residents, and purchases supplies locally, but its corporate office is based in Fairbanks. The zip code data for this vendor therefore show a Fairbanks zip code since payments are sent to the corporate office, but a share of the local spending and multiplier effects are generated in Kodiak. There were a number of Alaska businesses that have local offices in Kodiak and even a number of out-of-state vendors that have operations in Alaska. Both the vendor and subcontractor data for each location, including the out-of-state companies were therefore checked to ensure that the expenditure data were allocated to the appropriate region. This regional allocation was confirmed by AAC staff.

### 3 Local Spending and Economic Output Effects

The total economic impacts of AAC operations and projects include the direct effects (or the direct spending by AAC), and the resulting indirect and induced effects (collectively known as multiplier effects).

The direct economic output (or business sales) represents all the direct spending on goods and services, labor, travel-related activities, and contracted work by AAC. These are called direct effects because they are the first round of spending that occurs within a particular economic region. Indirect effects result from the subsequent rounds of spending in the economy, particularly all the subsequent business spending that occurs in the sectors that supply goods and services to AAC. Induced effects result from further shifts in spending for food, clothing, housing, and consumer goods and services that are generated by the increase in labor income or personal income in the region; this is sometimes also called payroll effects or household income effects.



Kodiak Launch Complex, Launch Control Center. This range operations base building contains security, weather and operations offices.

The multiplier effects are driven by the amount of local spending—expenditures within the region or within the state. As noted in the section above, the larger the local expenditures, the greater the multiplier effects. More out-of-region or out-of-state expenditures mean more economic leakages resulting in a reduced total economic impact.

The following sections discuss the economic output effects of AAC’s spending on operations and maintenance, travel-related activities and subcontractor activities. The last sub-section summarizes the total economic impact of all these activities.

#### 3.1 Operations and Maintenance Activities

In FY 2010, AAC purchased goods and services worth \$1.6 million from 105 Alaskan vendors (not including sub-contractors) and paid more than \$4.2 million in wages to Alaskan employees. This direct spending on operations and maintenance (O&M) activities generated approximately \$3.5 million of additional economic output in the state economy; the total economic effects amounted to \$9.3 million. Table 1 shows the direct, indirect, and induced effects of O&M spending for each of the regions and total statewide effects.

**Table 1. Total Economic Effects of AAC's Operations and Maintenance Activities FY 2010**

Region	Local Spending/Direct	Indirect + Induced (\$)	Total Effects
Kodiak	3,018,400	1,266,700	4,285,100
Anchorage	2,419,200	1,899,700	4,318,900
Rest of Alaska	396,400	314,300	710,700
<b>Total Statewide</b>	<b>5,834,000</b>	<b>3,480,700</b>	<b>9,314,700</b>

Source: NEI estimates based on expenditure data provided by AAC and the IMPLAN data and software.

In addition to the direct in-state spending shown in the table, AAC also paid about \$1.1 million to vendors outside of Alaska in FY2010. This out-of-state spending, however, is not included in the economic effects analysis.

### 3.2 Major Subcontractors

AAC contracted with 18 major subcontractors for technical consulting, system implementation work, and hospitality and construction services in FY 2010. Total subcontractor services amounted to \$2.7 million in FY 2010. Of this amount, \$1.7 million, or 61 percent, stayed in the state, particularly in Kodiak and Anchorage, going toward goods and services, travel expenditures, and other miscellaneous overhead. Direct local spending on these items generated about \$592,800 of additional indirect and induced business sales within the state. The total statewide economic effects of AAC spending on subcontractors amounted to about \$2.3 million (see Table 2).

**Table 2. Total Economic Effects of AAC's Major Subcontractor Spending in Alaska for FY 2010**

Region	Local Spending/Direct	Indirect + Induced (\$)	Total Effects
Kodiak	1,441,200	423,800	1,865,000
Anchorage	110,600	86,800	197,400
Rest of Alaska	114,300	82,200	196,500
<b>Total Statewide</b>	<b>1,666,100</b>	<b>592,800</b>	<b>2,258,900</b>

Source: NEI estimates based on expenditure data provided by AAC and the IMPLAN data and software.

### 3.3 Travel

In FY 2010, AAC's total statewide direct spending on travel related activities amounted to \$211,300. This amount does not include out-of-state travel-related spending, as this does not generate any local economic impacts. Travel expenses included airfare, lodging, ground transportation, meals and other travel-related items. The travel expenditure data were allocated by region. Airfare was allocated using the general rule of thumb that half of the fare is spent on airline operations in the location of origin and the other half of the fare is spent on airline operations in the location of destination. As shown in Table 3, most of the travel impacts were generated in Kodiak and Anchorage. The total statewide economic output effects of AAC travel spending amounted to \$307,000.

**Table 3. Total Economic Effects of AAC's Travel-related Activities in FY 2010**

<b>Region</b>	<b>Local Spending/Direct</b>	<b>Indirect + Induced</b>	<b>Total Effects</b>
	<b>(\$)</b>		
Kodiak	102,900	28,600	131,500
Anchorage	84,600	52,000	136,600
Rest of Alaska	23,800	15,100	38,900
<b>Total Statewide</b>	<b>211,300</b>	<b>95,700</b>	<b>307,000</b>

Source: NEI estimates based on expenditure data provided by AAC and the IMPLAN data and software.

### 3.4 Summary: Total Economic Effects of All AAC-Related Spending

This section summarizes the economic output effects generated by the O&M activities, subcontractor activities, and travel spending discussed above.

As show in Table 4, the total direct spending for AAC-related operations and projects that stayed within the State of Alaska amounted to about \$7.7 million. An additional \$4.2 million in indirect and induced economic output was generated in different sectors throughout the state. The total economic contribution of AAC operations and related projects in FY 2010 amounted to about \$11.9 million.

**Table 4. Total Economic Output Effects of all AAC-related Spending in 2010**

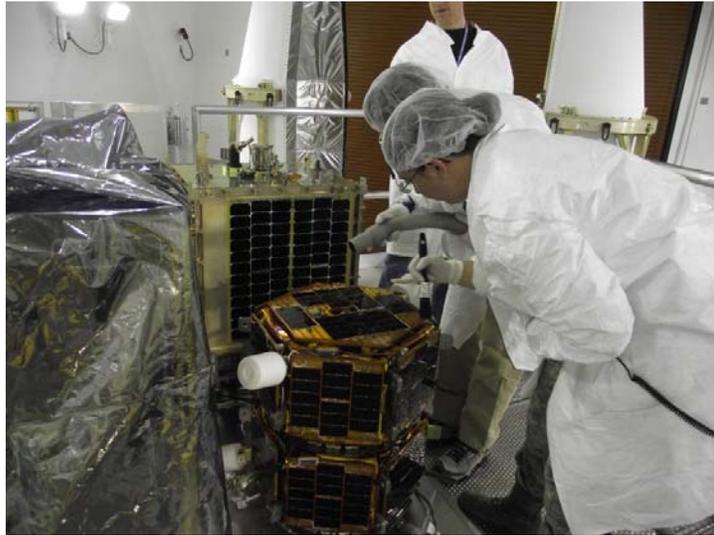
<b>Region</b>	<b>Local Spending/Direct</b>	<b>Indirect + Induced</b>	<b>Total Effects</b>
	<b>(\$)</b>		
Kodiak	4,562,500	1,719,100	6,281,600
Anchorage	2,614,400	2,038,500	4,652,900
Rest of Alaska	534,500	411,600	946,100
<b>Total Statewide</b>	<b>7,711,400</b>	<b>4,169,200</b>	<b>11,880,600</b>

Source: NEI estimates based on expenditure data provided by AAC and the IMPLAN data and software.

## 4 Jobs and Income Effects

In FY 2010, AAC supported 46 direct full-time equivalent positions; 29 of the AAC positions were based in Kodiak and 17 were based in Anchorage. In addition to the direct jobs, it is estimated that there were 13 subcontractor positions (full-time and part-time) associated with AAC operations, and 51 indirect and induced jobs.

Table 5 shows the total jobs generated by AAC operations and projects during FY 2010. The indirect and induced jobs were generated as a result of regional spending associated with AAC. This spending generates additional jobs in the sectors that supply goods and services to AAC's annual operations and maintenance, as well as those that support employee travel (e.g., restaurants, hotels, and other travel-related businesses).



U.S. Air Force personnel perform pre-flight inspection of STP-S26 satellites. Photo courtesy of the U.S Air Force.

**Table 5. AAC Positions, Subcontractor Positions, Indirect and Induced Jobs Generated in FY 2010**

Region	AAC	Subcontractor Positions	Indirect + Induced	Total Effects
Kodiak	29	11	19	59
Anchorage	17	1	21	39
Rest of Alaska	0	1	11	12
<b>Total Statewide</b>	<b>46</b>	<b>13</b>	<b>51</b>	<b>110</b>

Source: AAC employment numbers were provided by AAC. Subcontractor employment as well as indirect and induced jobs were estimated based on expenditure data provided by AAC and the IMPLAN data and software.

The business of launching rockets is complex and demanding, and requires teamwork and professionalism to coordinate the many safety, communications, engineering, logistical, and business activities involved in a launch campaign. The types of jobs created by such an endeavor require highly specialized, skilled labor. During FY 2010, the various AAC operations required a total of 99,500 direct AAC labor hours in Kodiak and Anchorage alone; this figure does not include additional labor hours spent by subcontractors.

In FY 2010, AAC's largest subcontractor industries were construction, architectural and software design, and lodging. AAC and subcontractor positions respectively corresponded to about \$4.2 million in wages and \$801,300 in local subcontractor labor costs. In addition, all the indirect and induced jobs also generated \$1.9 million in labor income. The total statewide income generated by AAC activities and projects amounted to \$6.9 million in FY 2010 (see Table 6). These figures do not include the labor and wage impacts of the additional \$1.1 million in subcontractor spending that took place out of state.

**Table 6. AAC Direct Wages, Labor Costs and Indirect and Induced Labor Income Generated in FY 2010**

Region	AAC	Subcontractor Positions	Indirect + Induced	Total Effects
		(\$)		
Kodiak	2,192,800	722,000	770,300	3,685,100
Anchorage	2,046,300	45,400	826,800	2,918,500
Rest of Alaska	-	33,900	262,300	296,200
<b>Total Statewide</b>	<b>4,239,100</b>	<b>801,300</b>	<b>1,859,400</b>	<b>6,899,800</b>

Source: AAC direct wages were provided by AAC; remaining estimates were based on expenditure data provided by AAC and the IMPLAN data and software.

## 5 Regional Impacts

This section summarizes the local economic contribution of AAC operations and projects to the economies of Kodiak, Anchorage, and the rest of the State of Alaska. The category called “other regions” captures all of the spending that occurred outside of Kodiak and Anchorage, but within the State of Alaska. Fairbanks and Juneau, among others, are included in this category.

In addition to the quantifiable regional economic impacts that are described in the sub-sections below, it is worth noting that AAC has also been involved in projects such as the National Oceanic and Atmospheric Administration (NOAA) contract to develop unmanned aircraft systems to monitor climate change and weather systems.



Payload Processing Facility; this facility consists of clean rooms for satellite processing.

### 5.1 Economic Contribution to the Kodiak Regional Economy

The economic impacts of AAC’s operations and projects were most significant in Kodiak, where they supported 44 local businesses. The total direct, indirect and induced local impacts to Kodiak’s regional economy alone amounted to \$6.3 million, generating 59 local jobs with \$3.7 million in local payments for wages and salaries (see Table 7).

**Table 7. Total Economic Contribution of AAC Operations to the Kodiak Economy**

Category	Local Spending/Direct	Indirect + Induced	Total Effects
Economic Output	\$4,562,500	\$1,719,100	\$6,281,600
Jobs (direct column includes sub-contractors)	40	19	59
Labor Income (direct column includes sub-contractors)	\$2,914,800	\$770,300	\$3,685,100

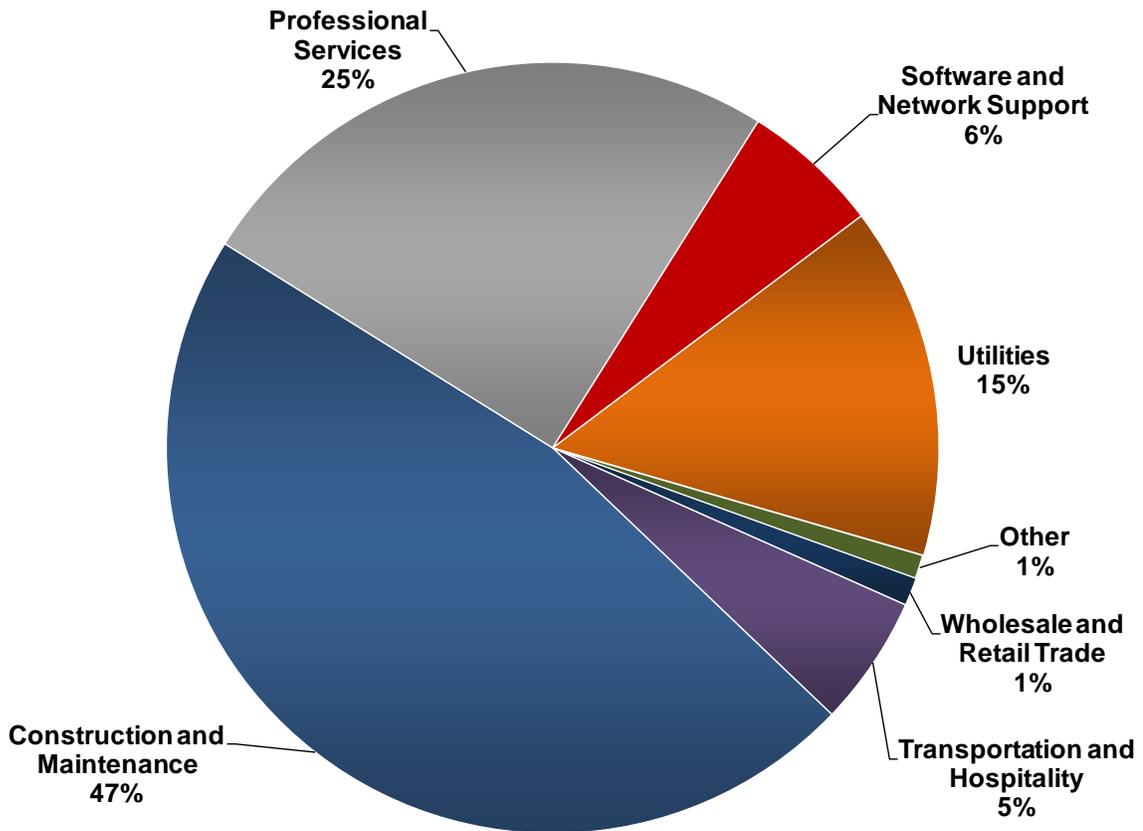
Source: NEI estimates based on expenditure data provided by AAC and the IMPLAN data and software.

#### 5.1.1 Direct Local Spending

In FY 2010, AAC’s expenditures for goods and services, including subcontractor services, generated about \$4.6 million in direct payments to businesses operating in Kodiak. This spending was distributed among 44 local businesses and increased business activities in 25 different industries or sectors in the Kodiak regional economy. These sectors include construction, retail, various professional and technical services, computer system design, wholesale trade, and a variety of hospitality and leisure sectors.

Figure 2 shows how AAC’s direct local spending was distributed among various major economic sectors in the Kodiak regional economy. This information only includes AAC’s direct spending for goods and services. AAC made significant contributions to businesses in construction and maintenance, professional services, and utilities.

Figure 2. Share of AAC’s Direct Local Spending by Sector, Kodiak Region, FY 2010



Source: AAC Expenditure Data, FY 2010

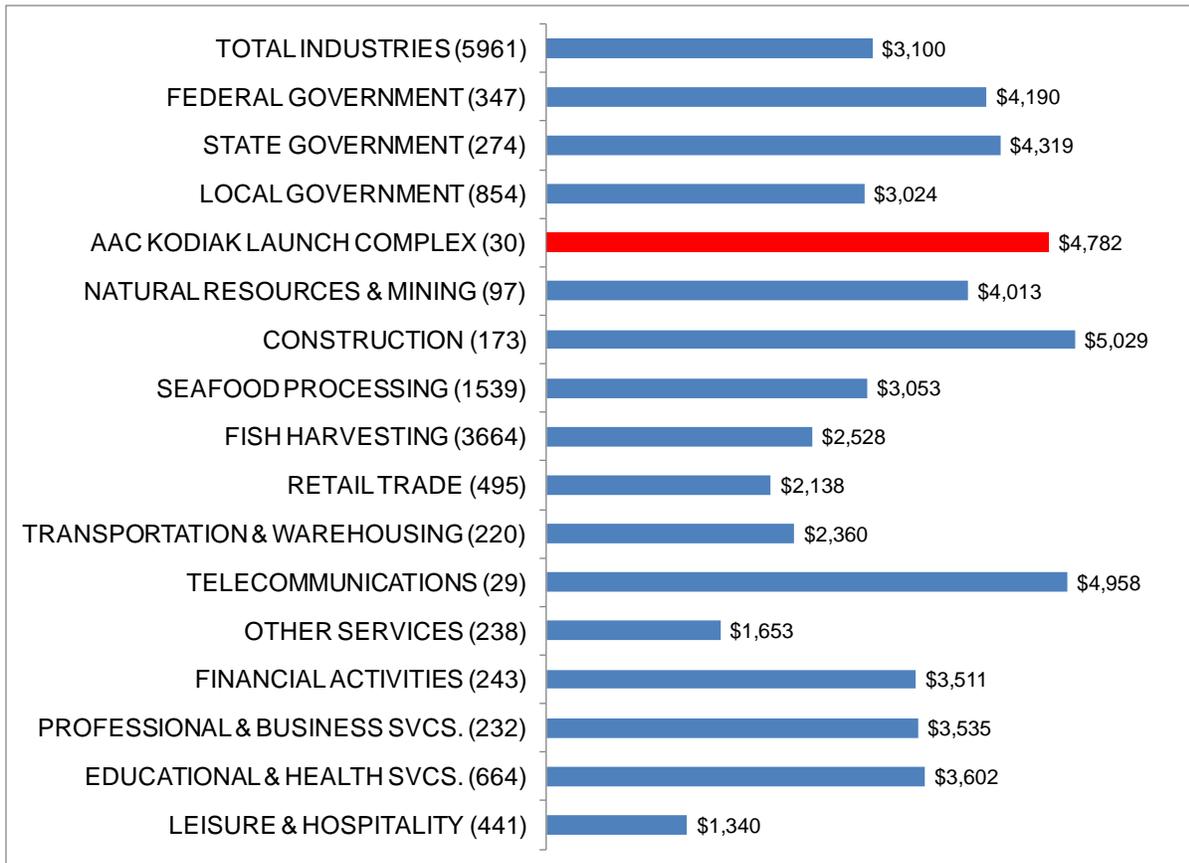
### 5.1.2 Importance of AAC to the Local Economy of Kodiak

The presence of the KLC provides economic diversity to Kodiak Island, which is otherwise dependent on fishing, seafood processing, retail services, and local government. As noted above, AAC’s commitment to purchase goods and services locally to support the operations of the KLC and other related projects creates additional economic activity in various industries in Kodiak.

In terms of employment, AAC supported 29 Kodiak-based full-time equivalent jobs and paid about \$2.2 million in wages in FY 2010. The technical skill set of jobs required to run the spaceport facility is reflected in the level of pay received by its employees. The business of launching rockets requires highly technical skills. AAC has provided benefits to the local workforce by providing high quality jobs in the region.

AAC is one of the highest paying employers in the Kodiak region. Figure 3 compares the average monthly earnings paid in various industries in the Kodiak region.

**Figure 3. Comparison of Average Monthly Earnings of Different Industries, Kodiak Borough**



Source: 2009 Quarterly Census of Employment and Wages (QCEW), Alaska Department of Labor and Workforce Development (ADOLWD), Research and Analysis Section.

Notes:

- (1) The data are primarily collected from the quarterly employer reports of wages and employment mandated by the State of Alaska's unemployment insurance laws. The industries are classified according to the North American Industry Classification System (NAICS). Certain segments of Alaska's employed population are excluded from unemployment insurance coverage, including the self-employed and fishers (fish harvesters).
- (2) The data for the *Fish Harvesting* category shown above is estimated from information published by ADOLWD on *Kodiak Region Seafood Industry, 2003-2009* showing total gross earnings of permit holders and total estimated workforce (estimated crew and individuals who fished permits). ADOLWD obtained fisheries data from the Commercial Fisheries Entry Commission.
- (3) The data for the *Seafood Processing* category is the same as the Food Manufacturing sector reported in the QCEW database.

The employment impact of AAC's operations in the Kodiak region is significant. In addition to the 29 Kodiak-based direct jobs, it is estimated that 11 subcontractor jobs, 4 vendor and travel industry jobs, and an additional 15 indirect and induced jobs were generated by the AAC-related spending in the region.

In 2010 AAC's facility expansion project generated activity and spending within the local construction and logistics sectors. As previously mentioned, this year saw the completion of the first phase of a three-year project. AAC will continue to contribute to these sectors during the subsequent phases of the expansion. In addition, the launches that take place at the KLC will continue to directly benefit local contractors. Launch-related logistics activities typically include off-loading the rocket containers

from a military aircraft at the Kodiak Airport or commercial barge at Kodiak town dock, transporting the equipment to KLC, backhauling empty containers and ground support equipment from KLC to the Kodiak Airport or dock, and loading the equipment for return to the Lower 48. This involves a coordination of efforts among KLC staff, AAC customers, local fire department and police, Alaska state troopers, Alaska Department of Transportation, and local service providers such as HAZMAT-certified drivers, as well as communications equipment and material handling equipment operators.

### 5.1.3 Economic Effects of Visitors to the Kodiak Launch Complex

In FY 2010, the KLC attracted just fewer than 660 visits to Kodiak (255 mission-related and 404 non-mission-related). The mission-related visits contributed approximately \$101,200 in business sales for hotels, restaurants, and other retail and service sectors in Kodiak, while the non-mission-related visits contributed an additional \$163,700 to these sectors. The direct, indirect, and induced spending for mission- and non-mission-related visits to the KLC contributed a total of \$347,800 in business sales, \$128,900 in wages, and four jobs to the local economy.

## 5.2 Economic Contribution to the Anchorage Economy

Table 8 shows the economic contribution of AAC operations and projects to the Municipality of Anchorage. AAC's spending in the Anchorage economy generated about 39 local jobs, and \$2.9 million in labor income.

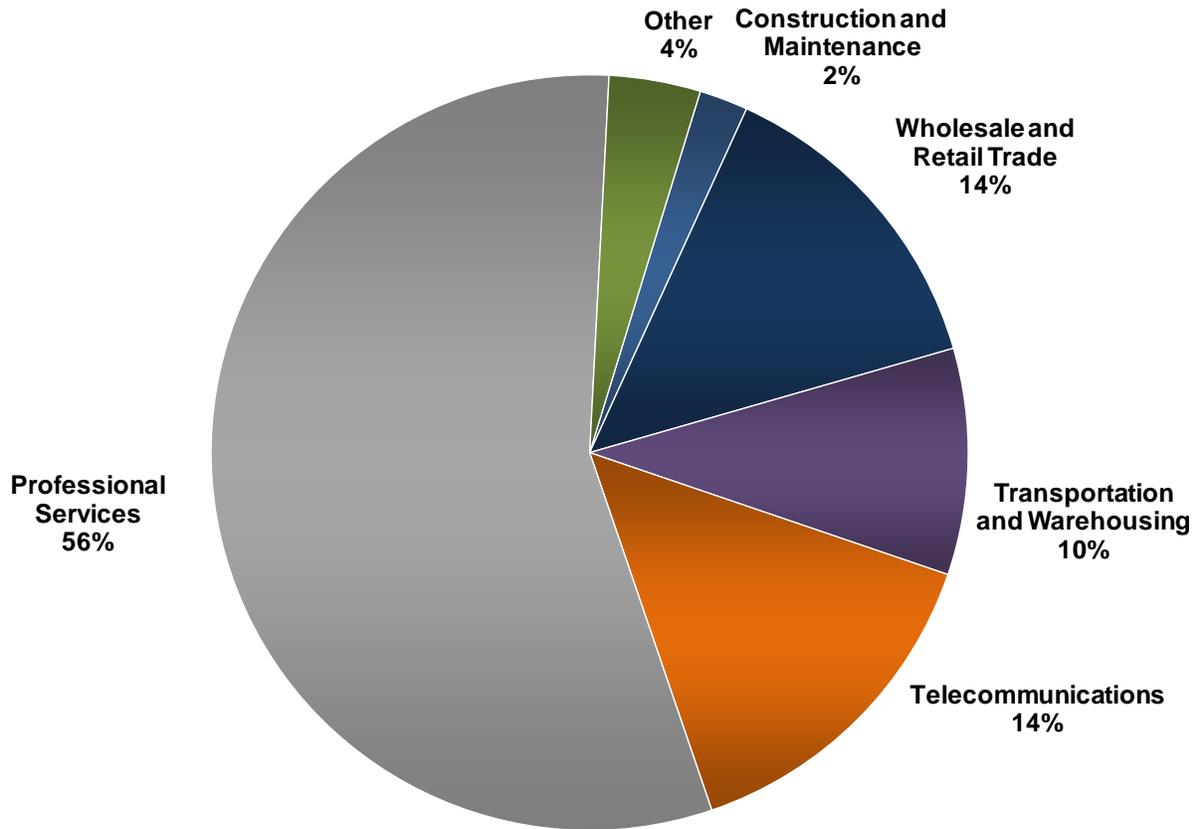
**Table 8. Total Economic Contribution of AAC Operations to the Anchorage Economy**

Category	Local Spending/Direct	Indirect + Induced	Total Effects
Economic Output	\$2,614,400	\$2,038,500	\$4,652,900
Jobs (direct column includes sub-contractors)	18	21	39
Labor Income (direct column includes sub-contractors)	\$2,091,700	\$826,800	\$2,918,500

Source: NEI estimates based on expenditure data provided by AAC and the IMPLAN data and software.

In FY 2010, AAC's expenditures for goods and services, including subcontractor services, generated about \$2.6 million in direct payments to businesses operating in Anchorage. This spending was distributed among 62 local businesses and increased business activities in sectors such as professional services, telecommunications and wholesale and retail trade, as highlighted in Figure 4. This spending created about \$2 million in indirect and induced output, and generated a total of \$4.7 million in economic output.

Figure 4. Share of AAC’s Direct Local Spending by Sector, Anchorage Region, FY 2010



Source: AAC Expenditure Data, FY 2010

### 5.3 Economic Contribution to the Rest of the State

As noted above, “other regions” captures the spending that occurred outside of Kodiak and Anchorage, but within the State of Alaska. The list of communities in this category includes Fairbanks and Juneau, among others. In FY 2010, direct local spending associated with AAC operations amounted to \$534,500, which in turn generated an additional \$411,600 in indirect and induced effects. The total economic contribution of AAC operations throughout the rest of the state amounted to \$946,100 in economic output, 12 jobs, and \$296,200 in labor income.

Table 9 summarizes the economic contribution of AAC operations and projects to other regions in the state.

Table 9. Total Economic Contribution of AAC Operations to Other Regions in the State

Category	Local Spending/ Direct	Indirect + Induced	Total Effects
Economic Output	\$534,500	\$411,600	\$946,100
Jobs (direct column includes sub-contractors)	1	11	12
Labor Income (direct column includes sub-contractors)	\$33,900	\$262,300	\$296,200

Source: NEI estimates based on expenditure data provided by AAC and the IMPLAN data and software.

## 6 Support for Education and Other Community Benefits



Alaska Aerospace Corporation telemetry van.

Included in AAC's corporate mission statement is the promotion of space-related educational development in the State of Alaska. AAC contributes to the University of Alaska (UA) Scholarship Foundation, UA Space Grant Program, and offers college summer internships.

AAC supports the Alaska Aerospace Scholarship Fund through a gift agreement with the University of Alaska Foundation for the purpose of providing scholarships to recipients who are enrolled in a four-year bachelor's degree program with the University of Alaska. AAC has

contributed a cumulative total of \$425,000 since the Fund's inception.

The Alaska Space Grant Program (ASGP) was established at the University of Alaska Fairbanks (UAF) in 1991 under NASA's National Space Grant College and Fellowship Program. The purpose of the ASGP is to create Science, Technology, Engineering, and Mathematics (STEM)-related opportunities for Alaska's university students by partnering with industry sponsors. Beginning in 2010, AAC became an ASGP sponsor by offering summer internships to Alaska-based students from STEM disciplines. Through this partnership, the ASGP provides funding for summer interns that AAC matches with an equivalent value of donated mentorship. The 2010 ASGP intern, Alex J Arneson, worked in both AAC's Anchorage headquarters and at KLC supporting the STP-S26 mission:

*"The experience gained was invaluable; I learned an incredible amount of what goes on beyond the school books with mentors who were exceptional resources and a pleasure to work with....I will be leaving this internship with a much better understanding of aerospace and engineering than when I entered the door at AAC."*

– Alex J. Arneson, 2010 intern

In addition to the ASGP intern for 2010, AAC provided internship opportunities for two additional UAF students: Charles Bergeron, in the discipline of Program Management, and Robert Schnell in Information Technologies (IT). Interns acquire direct, hands-on experience in facility operations and launch services support. Placements are available from June through August with durations depending upon university requirements and the student's schedule. The specific activities and number of intern positions available vary depending upon the launch schedule and other programs active at the KLC.

In addition to supporting local education institutions, AAC is pursuing satellite launches with scientific purposes. By monitoring climate change, weather systems, and sea ice changes, AAC hopes to increase scientific knowledge of the Arctic Region and leverage its position as the nation's only high latitude spaceport.

## 7 References

Alaska Aerospace Corporation (AAC). "Lockheed Martin and ATK Announce 2<sup>nd</sup> Generation Athena Launch Vehicles." Available at [http://www.akaerospace.com/docs/AthenaPressReleaseLM-ATK\\_FINAL\\_3-25-10.pdf](http://www.akaerospace.com/docs/AthenaPressReleaseLM-ATK_FINAL_3-25-10.pdf). March 25, 2010.

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