

WASHINGTON STATE AEROSPACE INDUSTRY

2015 Addendum



Economic Impact Study

March 2015



WASHINGTON
AEROSPACE
PARTNERSHIP

prepared for

prepared by **cai** community
attributes inc



*Community Attributes tells data-rich stories about communities
that are important to decision makers.*

Chris Mefford
President & CEO

Lead Analyst:
Spencer Cohen

Analysts:
Diana Haring
Michaela Jellicoe
Eric Viola

Community Attributes Inc.
1411 Fourth Ave., Ste. 1401
Seattle, WA 98101

www.communityattributes.com

BACKGROUND AND PURPOSE

The Washington Aerospace Partnership (WAP) requested this report to provide updated estimates of the economic and fiscal contributions of aerospace and Boeing Commercial activities to the Washington state economy. Findings represent both existing data and estimates for 2014 data not yet available for this analysis.

Analysis below presents both aerospace and Boeing Commercial-specific metrics, including revenues, jobs, income, and total economic impacts. These findings are intended to serve as an addendum to the full 2013 report made available on the WAP's website, produced by Community Attributes in 2013.

DIRECT AEROSPACE AND BOEING COMMERCIAL ACTIVITIES IN WASHINGTON

Aerospace and Related Industries

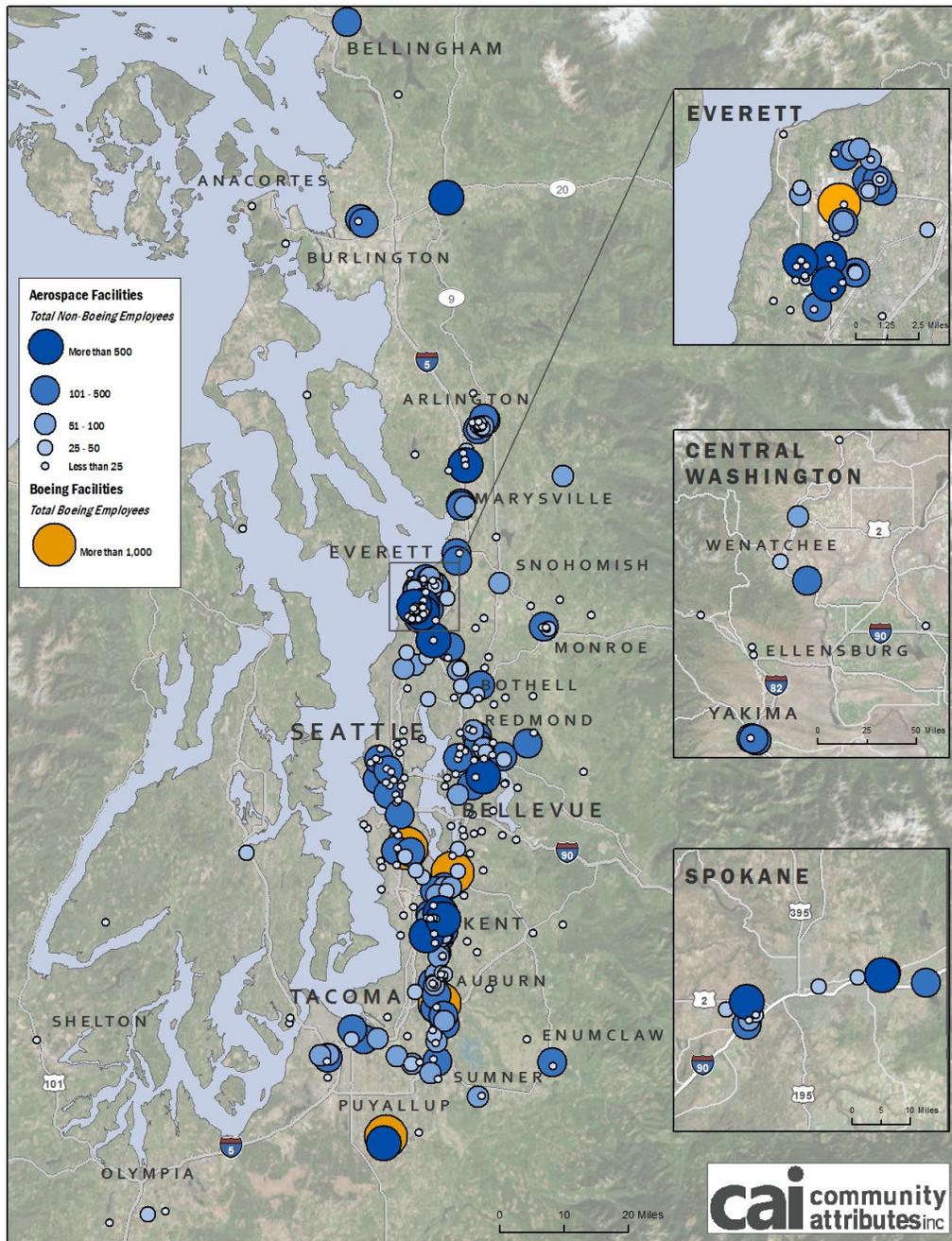
In 2014, **gross revenues** tied to aerospace, industry-wide, totaled nearly **\$59.5 billion** (estimated), up from \$52.7 billion in 2012 (expressed in 2014 dollars). The cluster includes an additional more than \$10.0 billion among aerospace related industries, for a total of \$69.5 billion in revenues in the cluster (up from \$61.6 billion in 2012, expressed in 2014 dollars).

The cluster employed an estimated **93,400 workers in 2014** in Washington state, down from 94,200 in 2012. These workers earned covered wages of nearly \$10.6 billion in 2014, or nearly \$13.5 billion when adjusted to include benefits, up from \$12.2 billion in 2012 (with benefits, adjusted for inflation to 2014 dollars). Related industries, identified by the Washington Aerospace Partnership and the Washington state Employment Security Department as having strong industry ties to the aerospace industry, employed an estimated 38,600 workers in Washington state in 2014, with wages (excluding benefits) of nearly \$2.6 billion.

Statewide, Washington's aerospace tax incentives supported business activities across nearly 400 business locations across the state. These sites employed, in aggregate, more than 99,400 workers in 2013 (latest data available). Activities were heavily concentrated in the Central Puget Sound region, but there were also a large number of aerospace activities in Eastern and Southwest Washington. In addition to Boeing, major employers included Honeywell International (1,370 jobs), Heath Tecna Inc. (970 jobs), Kaiser Aluminum (940), and Hexcel Corporation (850; **Exhibit 1**).¹

¹ Data base on tax disclosure reports made available by the Washington State Department of Revenues. Job totals by firm are rounded to the nearest 10.

Exhibit 1. Washington Businesses Using Aerospace Incentives, 2013



Sources: Washington State Department of Revenue, 2015; Community Attributes Inc., 2015.

Boeing Commercial in Washington

In 2014, The Boeing Company employed an estimated 81,400 workers across the state; this total is down from 85,900 workers in 2012 and 82,900 workers in 2013,

representing a net decline of 4,500 jobs between 2012 and 2014.² Boeing Commercial activities, which constitute the largest (but not all) Boeing activities in Washington state, employed an estimated 67,600 workers in 2014. These jobs included raw wages of \$7.7 billion, or \$9.7 billion including estimated benefits.

Boeing Commercial activities in Washington generated an estimated more than \$55.4 billion in revenues in 2014. The largest sources of revenues came from sales of the 737 (an estimated \$24.4 billion in sales) and the 777 (\$16.9 billion).

ECONOMIC IMPACTS OF AEROSPACE AND BOEING COMMERCIAL ACTIVITIES IN WASHINGTON

Aerospace Industry

In 2014, the aerospace industry in Washington supported, through direct, indirect, and induced effects, 267,200 jobs, \$22.4 billion in labor income, and \$85.7 billion in business revenues (**Exhibit 2**). These estimates are based on final demand output generated by the aerospace industry, i.e., final sales of goods to end users or purchasers outside Washington state, and are thus slightly less than total output produced by the aerospace industry in 2014. Boeing Commercial purchased an estimated \$1.1 billion in goods from other aerospace businesses in Washington in 2014; these transactions are thus captured under indirect revenues.

Exhibit 2. Economic Impacts of Aerospace in Washington State, 2014

	Direct	Indirect	Induced	Total
Jobs	93,400	36,100	137,700	267,200
Labor Income (mils 2014 \$)	13,455	2,058	6,928	22,441
Revenues (mils 2014 \$)	58,359	5,790	21,573	85,721

Sources: Washington State Office of Financial Management, 2014; Community Attributes Inc., 2015.

² Boeing Company statewide employment estimates are based on tax disclosure data published by the Washington State Department of Revenue for years 2012 and 2013. Employment for 2014 is based on the average of monthly headcounts, reported on The Boeing Company's website.

Multipliers help illustrate the impacts of these activities statewide. In 2014, each job in aerospace was associated with 2.9 total jobs statewide. Similarly, for every dollar of output in aerospace, an estimated an additional \$0.47 in sales were supported elsewhere in the economy (**Exhibit 3**).

Exhibit 3. Economic Multipliers of Aerospace in Washington State, 2014

Type	Multiplier
Total output per \$ final demand	1.47
Total jobs per direct job	2.86
Total labor income per \$ direct income	1.67
Total jobs per \$ mil final demand	4.58

Sources: Washington State Office of Financial Management, 2014; Community Attributes Inc., 2015.

Boeing Commercial in Washington State

Boeing Commercial activities in Washington state supported, via direct, indirect, and induced effects, 206,100 jobs, \$17.0 billion in labor income, and \$77.3 billion in total business revenues (**Exhibit 4**). Each job at Boeing Commercial was associated with three jobs across the state.

Exhibit 4. Economic Impacts of Boeing Commercial in Washington State, 2014

	Direct	Indirect	Induced	Total
Jobs	67,600	34,500	104,000	206,100
Labor Income (mils 2014 \$)	9,743	1,971	5,237	16,951
Revenues (mils 2014 \$)	55,411	5,572	16,305	77,288

Sources: Washington State Office of Financial Management, 2014; Community Attributes Inc., 2015.

State Fiscal Impacts of Aerospace and Boeing Commercial

In 2014, the aerospace industry paid an estimated \$201.1 million in direct state taxes. However, factoring in multiplier effects, the industry supported a total of \$635.2 million in state fiscal revenues, or an additional \$434.1 million. The largest fiscal impacts came in the form of B&O tax payments, with \$306.9 million in payments, followed by \$254.7 million in sales & use taxes.

Boeing Commercial alone supported \$528.2 million in total state fiscal revenues. In other words, every million dollars in sales generated by Boeing Commercial activities in Washington supported—via direct, indirect, and induced effects—nearly \$9,500 in total state taxes.

SUMMARY COMPARISON OF AEROSPACE IMPACTS, 2012 AND 2014

Comparisons between 2012 and 2014 are presented in **Exhibit 5** below. While overall direct employment has declined slightly in the aerospace sector, the total number of supported jobs has increased by 13,800. Total revenues supported by aerospace have continued to grow in real, inflation-adjusted terms—rising 10.0% overall between 2012 and 2014 (based on 2014 \$), or an absolute increase of more than \$7.8 billion in sales.

Exhibit 5. Summary Comparison of Total Aerospace Impacts, 2012 and 2014

Impacts	2012	2014
Jobs	253,400	267,200
Revenues (mils, 2014 \$)	77,939.3	85,761.0
Income (mils, 2014 \$)	20,402.2	22,451.1
State Taxes (mils, 2014 \$)	559.6	635.2

Source: Community Attributes Inc., 2013 and 2015.

APPENDIX: ESTIMATION METHODS

Analysis in this update has relied on a combination of 2014 actuals and estimates based on readily available data. Aerospace statewide employment is based on the full year monthly employment estimates reported by the Washington State Employment Security Department's Current Employment Statistics (CES) seasonally adjusted employment series. Boeing employment was based on a combination of Washington State Department of Revenue production site tax disclosure filings for year 2013 and Boeing reported statewide employment for 2014 (based on reported monthly totals).

Revenues for aerospace overall were drawn from the Washington State Department of Revenue's published Gross Business Income (GBI) data for aerospace through the first two quarters of 2014, and then adjusted to an estimated full-year total. Boeing Commercial revenues were drawn from Boeing's recently released 2014 annual financial statement, which includes a breakout of Boeing Commercial activities, along with data on Boeing deliveries for 2014 by model, and supplemental information to account for BCA revenues generated in South Carolina through the 787 program.