PROPOSED STRATEGIC PLAN FOR WASHINGTON STATE AEROSPACE SECTOR 2017 - 2019



Department of Commerce



ABOUT THE SECTOR LEAD



John Thornquist Director, Office of Aerospace Office of Economic Development and Competitiveness

john.thornquist@commerce.wa.gov 206.256.6103 John Thornquist serves as the Director of the Office of Aerospace, appointed to the role by Governor Jay Inslee in April of 2016. As the director, John serves as the principal adviser on aerospace related issues and coordinates activities that promote growth of the industry throughout the state.

John directs the Washington State Space Coalition, an industry group which includes large and small businesses, universities and government focused on the growth of the space subsector in Washington State.

Mr. Thornquist also participates on the board of the Washington Aerospace Partnership, a collaboration between government and business working to protect and grow the aerospace sector in Washington State.

John oversees the Unmanned Systems Industry Council which first convened in September of 2016. Similar to the Washington State Space Coalition, this council will be comprised of government, business and academia with the goal of growing the business ecosystem around unmanned systems. John brings 28 years of aerospace business and engineering experience to the Department of Commerce. He was the managing director and CEO of Carbon Aerospace, an Everett-based engineering and manufacturing consulting firm specializing in carbon fiber composite structures. Prior to Carbon Aerospace, John co-founded Global Aerosystems in 2006, an engineering services firm specializing in the design and certification of aircraft structures. Global Aerosystems was a leading engineering services supplier to The Boeing Company. In 2010, Global Aerosystems was acquired by Kaman and became Kaman Engineering Services. In 2013, KES received the Boeing Supplier of the Year award with John as the Director of Boeing Programs.

Mr. Thornquist is a graduate of Arizona State University in Mechanical Engineering and earned his Master's in Business Administration from the University of Washington's Foster School of Business.

INDUSTRY SNAPSHOT

Governor Inslee's top priority is to create an economic climate where innovation and entrepreneurship can thrive and create good-paying jobs in every corner of our state. Washington's aerospace industry fuels jobs for thousands of families and travel for billions of passengers each year. In addition to the world headquarters for Boeing Commercial Airplanes, Washington is home to more than1,396 aerospace-related business establishments that design and manufacture products ranging from tires to bolts to in-flight entertainment systems. There is at least one aerospace-related company in 34 of Washington's 39 counties.

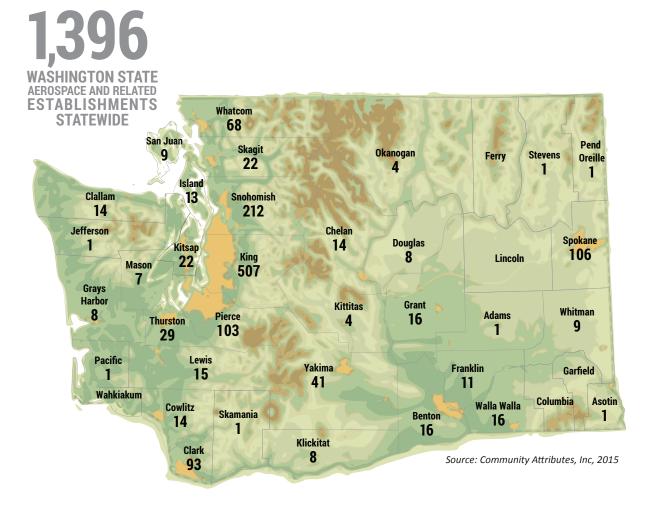
Our public research institutions and private firms are also leading the world in advancing new aerospace technologies, including advanced materials, unmanned aerial vehicles (UAVs), aviation biofuels and space exploration.

AEROSPACE SECTOR DEFINED

- Commercial/Military Airplanes
 and Rotorcraft
- Unmanned Aerial Vehicles/ Systems
- Space Commercialization
- Maintenance, Repair and Overhaul (MRO)
- Aviation Biofuel
- Air Travel and Cargo

IMPACTS OF THE AEROSPACE INDUSTRY IN WASHINGTON

- The aerospace industry generated \$94.7 billion in economic activity throughout the state of Washington in 2012.
- Boeing Commercial alone supported \$96.1 billion in revenues to the state economy through direct sales of Boeing jets, supplier and other aerospace company revenues, employee wages and spending.
- In 2015 the aerospace industry provided 136,100 jobs at 1,396 establishments across the state.
- \$51.6 billion of the \$70 billion in aerospace revenue was exported.
- Wages for the aerospace industry totaled \$13 billion.



WHAT'S NEXT?

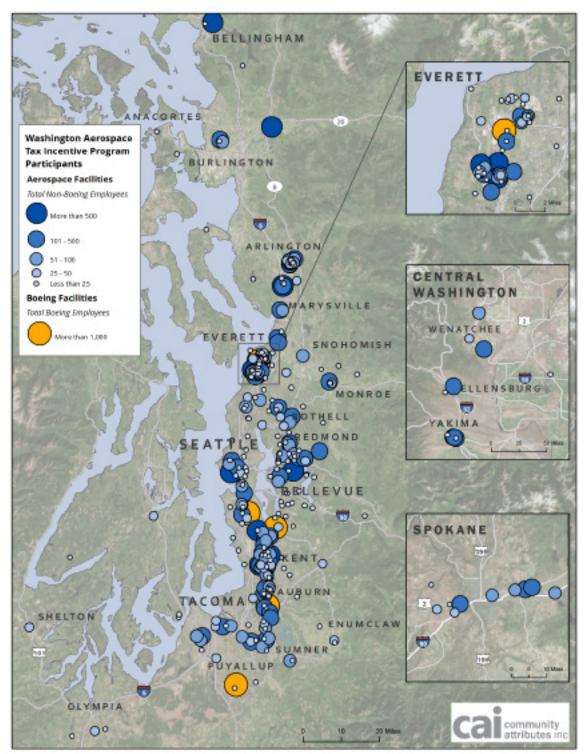
- Work with The Boeing Company and its supply chain to ensure a smooth roll-out and ramp up of the 737 MAX and 777X.
- Capitalize on the decision to build the 777X and its carbon fiber wing in Washington by helping local companies expand and attract new companies to the state.
- Diversify the industry by supporting emergent sub-sectors of the industry, including UAV/ UAS, space exploration, MRO, and aviation biofuel.

COMMUNICATION AND COORDINATION

The Office of Aerospace and its director, Kristiné M. Reeves, are charged with implementing these initiatives and coordinating a "support chain" to grow our aerospace industry. It develops, maintains and coordinates the execution of the Washington State Aerospace Strategy with the help of the following entities:

- Washington Aerospace & Advanced Materials Manufacturing Workforce Pipeline Committee
- Joint Center for Aerospace Technology Innovation
- Washington Aerospace Partnership

The Office of Aerospace is a public/ private partnership funded in part by the Washington Aerospace Partnership.



WASHINGTON BUSINESSES USING AEROSPACE INCENTIVES, 2015

Washington's aerospace tax incentive users can be found across the state. Snohomish County and King County had the largest savings due to aerospace tax incentives in 2015.

AEROSPACE SECTOR WASHINGTON STATE DEPARTMENT OF COMMERCE

INDUSTRY SECTOR BASED ECONOMIC DEVELOPMENT STRATEGIES

Governor Inslee's top priority is to create an economic climate where innovation and entrepreneurship can continue to thrive and create good-paying jobs in every corner of our state. Our sector- based economic development strategy is a reflection of the fact that we face intense international and interstate competition for good jobs. We have to be constantly vigilant about identifying opportunities and strategies for supporting existing employers

and cultivating new ones in Washington - we can't rely on luck for the next Boeing, Microsoft or Amazon to land here.

As such, Washington's industry sector economic development program's primary mission is to grow and strengthen communities through statewide industry sector strategies. While every industry has unique needs and ways of accomplishing their vision for growth, the Industry Sector Development Program focuses our efforts across three common efforts:

- Fostering Collaborative Public/ Private Partnerships
- Growing and Diversifying Washington's Industry Sectors with a Strong Business Climate
- Encouraging a 21st Century Workforce Ready to Meet Industry Needs

A BALANCED REGIONAL ECONOMIC DEVELOPMENT STRATEGY WILL HAVE ACTIVITIES AND INVESTMENTS IN EACH OF THE FOCUS AREAS.



BRAINPOWER

To compete globally, a region needs 21st-century brainpower people with the skills to support globally competitive businesses. Economic development starts with sound education and imaginative, entrepreneurial educators.



INNOVATION AND C ENTREPRENEURSHIP C NETWORKS P

A region needs business development networks to convert this brainpower into wealth through innovation and entrepreneurship. These networks include cluster organizations, angel capital networks, mentoring networks, and so on.

QUALITY, CONNECTED PLACES

Third, a region needs a strategy to develop quality, connected places. Skilled people and innovative companies are mobile; they can move virtually anywhere. They will choose to locate in places that have a high quality of life and that are connected to the rest of the world.



BRANDING EXPERIENCES

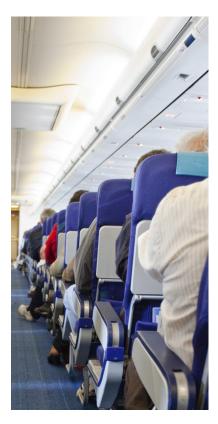
Next, a region needs to tell its story effectively through defining its most distinctive attributes and communicating them. These stories are important, especially for regions facing a "brain drain." Young people want to live in regions with a future, and they can see this future most clearly through the stories they hear about a region.



CIVIC COLLABORATION

Finally, a region needs leaders skilled in the art and discipline of collaboration. The economy demands the ability to collaborate to compete. Economic and workforce development investments involve multiple partners. A region that understands how to collaborate will be more competitive.

ABOUT THE INDUSTRY



Washington State is the undisputed leader in aerospace in The United States. The industry consists of 1,396 aerospace related companies employing over 130,000 people in 34 of the 39 counties in Washington. Aerospace generates over \$94.7 billion in economic activity annually. Not only are we the nation's leading state in commercial aircraft production, but we are also world leaders in Space and Unmanned systems. This entire industry sector provides well-paying jobs in all aspects of employment, including tech labor, engineering, technology and administration. Current and future jobs in aerospace will require a highly skilled and educated workforce which will continue to translate into jobs with well-above average wages.

The benefits to Washington State are enormous. Because of the high wage levels, the aerospace industry generates almost 2 additional jobs throughout the economy so that aerospace supports over 260,000 additional jobs.

The Boeing Company provides the lion's share of employment in the aerospace industry. Currently, they employ over 75,000 people in the State of Washington. Because of their large position in Washington State for the past 100 years, many aerospace suppliers have placed themselves in close proximity of Boeing's factories. From there, we have seen other suppliers set up in the state as well, either by moving here or as newly formed businesses, thus creating a robust ecosystem that not only supports Boeing, but supports their own aerospace business endeavors.

Not only is the commercial aviation subsector strong, but the State of Washington is seeing Space and Unmanned Systems as growing within Aerospace. Blue Origin, has a rocket production plant located in Kent, Washington. Aerospace Rocketdyne, SpaceX, Esterline, Spaceflight Industries, Planetary Resources and others have established strong space businesses in the Puget Sound area. We are seeing the development of a burgeoning business that should shape the future of space flight and sub-orbital flight in the years to come. Washington State is a driver in the space industry.

Unmanned Systems is also important and growing in the State of Washington. Insitu, located in Klickitat County on the Columbia River is a leader in unmanned aerial vehicles and an ecosystem is forming in the south part of the state to support their business. The unmanned systems business is also growing around the state. Not only are there unmanned vehicle companies growing here, but the technology companies that capture and process the information are flourishing; not just in aerial vehicles but in marine and ground applications. The Washington expects this industry to grow considerably over the next few decades.

THE AEROSPACE SECTOR IN WASHINGTON CAN BE OUTLINED INTO THREE MAJOR CATEGORIES

COMMERCIAL AVIATION

- Commercial Aircraft
 manufacturing
- Maintenance Repair and Overhaul
- Airlines and Air Cargo
- Aviation Biofuels

SPACE

- Spacecraft and suborbital craft manufacturing
- Airlines/Spacelines travel
- Satellite Development

UNMANNED SYSTEMS

- Vehicle development and manufacturing
- Technologies including data transmission, storage, analytics and processing
- Aerial, marine, and land applications

MISSION STATEMENT

To facilitate the commercial growth of Washington State's aerospace sector by supporting business and their related stakeholders, influencing legislation, and advocating for education in support of aerospace.

IMPACTS	2015	
Jobs	252,800	
Revenues	\$94,654	
Income	\$21,290.4	
State Taxes	363.1	

Data in millions Source: Community Attributes Inc. 2015

INDUSTRY ANALYSIS

STRENGTHS

- Large and highly skilled manufacturing base
- Flourishing high tech industry
- Large engineering base
- Entrepreneurial culture with access to capital
- No state income tax on corporations and individuals

OPPORTUNITIES

- Re-institute R&D tax credits for targeted industries
- Increase technical education training opportunities for advanced manufacturing

MARKETING PLAN



PRIORITIES

Largest aerospace ecosystem in the United States

PERFORMANCE GOALS

Direct contact with existing and incoming aerospace firms

KEY AUDIENCES

Existing and potential incoming aerospace businesses

OBJECTIVES

To maintain and grow the aerospace ecosystem through increased aggregate employment

IMPLEMENTATION

STRATEGY

OUTREACH

TACTICS

1. Visit as many of the EDC/ADO's as possible to understand the dynamics in aerospace for their county that they represent. The goal is to have an understanding of the value proposition of each county and the unique attributes that could support new business development.

Meetings include the following stakeholders:

- The EDC/ODA council
- Businesses that would benefit from meeting the Director
- Businesses that showcase the county
- Educators tech colleges or school board representatives

2. Interface with Unions to understand their position and view of aerospace and their expectations of the Director and the State.

3. Direct contact with businesses that require information on how the state can help their companies and how the Director can help them. This outreach mainly is to understand their company and how the state can support them and also other companies can support their business goals.

PARTNERS

ECONOMIC DEVELOPMENT COUNCILS

King County, Snohomish County, Spokane County, Kitsap County, Whatcom County, Klickitat County, Grant County, Clark County, Skagit County, Yakima County, Pierce County

ACADEMIA partial list

University of Washington Washington State University Western Washington University Bellingham Technical College Renton Technical College Big Bend Community College Everett Community College Green River College

UNIONS - AEROSPACE

IAM, SPEEA, Teamsters

INDUSTRY GROUPS AJAC

Aerospace Pipeline Committee Center of Excellence - Aerospace Puget Sound Regional Council Washington Aerospace Partnership Aerospace Futures Alliance Workforce Development Councils PNAA, WEDA, INWAC

STRATEGY	TACTICS	PARTNERS
	1. Washington Aerospace Partnership (WAP)	The Director of the Office of
INDUSTRY COUNCILS	 Currently on the board of WAP and the Secretary. This group meets quarterly and helps to develop and sustain the aerospace industry. The WAP will 	Aerospace either leads or is on the board of directors the described industry councils.
	continue to support and affect legislation directly pointed at aerospace.	Partners in the WAP include count EDC leaders from around the state
	2. Washington State Space Coalition (WSSC)	and representation from WSU and UW.
	 Currently in charge of quarterly meetings for WSSC. This group has around 20 companies, plus government and academia, that discuss state and federal issues in regards to regulation and appropriation. The goal is to promote interaction between space related companies in order to grow. 	Partners in WSSC include representatives of businesses working in the space subsector, venture capital companies, UW and WSU, and State of Washington representatives.
	3. Unmanned Systems Industry Council (USIC)	Partners in USIC will include
	• This group will be formed in September of 2016 with the purpose of bringing together companies, the state, and academia and other stakeholders to promote the commercial growth in the Unmanned Systems arena.	representatives of businesses working in the Unmanned Systems subsector (vehicle and information companies), academia, policy groups and State of Washington representatives.
	• This new group will be led by the Director of Aerospace and supported directly by the Director of ICT at the Department of Commerce.	
	1. Determine the annual EDO/ADO visits – state	1. Meetings with key EDO/ADO

PERFORMANCE METRICS

coverage.

2. Annual report of quarterly meetings through WAP, WSSC and USIC.

1. Meetings with key EDO/ADO groups that have strong aerospace ecosystems.

2. Continued leadership of the WAP, WSSC and USIC.

WHO SPEAKS FOR THE SECTOR?

Working to ensure those communities with large aerospace industry clusters and the public infrastructure that enables the industry to grow our economy must be a high priority and requires a broad strategic perspective that must take into account the needs of the public, private and social sectors. Through coordinated stakeholder engagement we will have significant impact on Washington's Aerospace sector and the people who live in our communities.

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THE WORK PLAN: 2017-2019

Continue on course with communication with businesses and Economic Development Councils throughout the State. Continue business development meetings with Aerospace companies through Air shows, expos, etc. Work with Stakeholders to understand issues that can be resolved through State support. Continue communication between stakeholders and the Governor's leadership staff. Continue working with technical colleges, workforce development groups, and the State Board of Community and Technical Colleges to maintain and enhance their continued support of programs designed to educate future aerospace workers.

GOAL 1 FOSTERING COLLABORATIVE PUBLIC/PRIVATE PARTNERSHIPS

ACTION STEP 1

Sustaining supportive industry association relationship: Washington Aerospace Partnership (WAP)

WHO WILL DO IT?	TIMELINE	
Director of Aerospace	Quarterly	
RESOURCES	POTENTIAL BARRIERS	COMMUNICATIONS PLAN
The Director is on the WAP board of directors and acts as its secretary. The WAP partially funds the position of Director for the Office of Aero- space. This is a group that works to ensure that Aerospace in the State of Washington remains strong.	Conflicts in Scheduling between the WAP and the Director of Aerospace.	Alex Pietsch is the President of WAP and John Thornquist is the Secretary. Communication is by direct participation from Brian Bonlender, Director of Washington State Department of Commerce. Meetings are quarterly.
Key Deufeure en ee hedieeteur		

Key Performance Indicator:

ACTION STEP 2

Sustaining supportive industry association relationship: Washington State Space Coalition

WHO WILL DO IT?	TIMELINE	
Director of Aerospace	Quarterly	
RESOURCES	POTENTIAL BARRIERS	COMMUNICATIONS PLAN
The Director runs the WSSC. The WSSC is an industry coalition, which includes business, government, and academia, that works to grow commerce in the "Space Ecosystem".	Effective quorum of partners for a successful, fruitful meeting	John Thornquist is the leader of the WSSC and is considered directly supported by the State of Washington. Communication will be provided directly to the Department of Commerce quarterly in regards to
Key Performance Indicator:		significant information conveyed in the meeting.

GOAL 1 Continued FOSTERING COLLABORATIVE PUBLIC/PRIVATE PARTNERSHIPS

ACTION STEP 3

Developing new industry association growing market Unmanned Systems Industry Council

WHO WILL DO IT?	TIMELINE	
Director of Aerospace	Quarterly	
RESOURCES	POTENTIAL BARRIERS	COMMUNICATIONS PLAN
The Director will create and run the USIC with the support of the ICT sector lead. This will be a coalition of business, government and academia, to continue the commercializing of products and services as they relate to unmanned system Key Performance Indicator:	Effective participation of industry businesses directly associated with unmanned systems both in vehicle development and information/ software systems.	John Thornquist will lead USIC starting in September of 2016. USIC is considered to be directly supported by the State of Washington. Communication will be provided to the Department of Commerce quarterly in regards to important developments that occur during the meeting.

EVIDENCE OF SUCCESS

For the WAP, continued support of industry events as evidenced in direct sponsorship of Aerospace related conferences. Continued sponsorship for the Director of Aerospace.

For the WSSC, continued participation by top industry companies such as Blue Origin, Aerojet Rocketdyne, Esterline, Planetary resources and others. Also participation by venture capital company, Space Angels network, and academia (WSU and UW).

For the USIC, participation by companies such as Insitu and Amazon and key Tier 1 suppliers, academia (UW, WSU, Big Bend), and other key stakeholders in quarterly meetings.

EVALUATION PROCESS

For the WAP, its ongoing existence and its evidence of sponsorship of aerospace related conferences and symposiums.

For the WSC, quarterly participation is the measure of success.

For the USIC, initial participation by academia, Insitu and its tier 1 suppliers, and other businesses in the quarterly meetings. GOAL 2 GROWING AND DIVERSIFYING WASHINGTON'S AEROSPACE SECTOR WITH A STRONG BUSINESS CLIMATE

ACTION STEP 1

Legislature, the Governor and his policy staff

WHO WILL DO IT?	TIMELINE	
John Thornquist	Continually	
RESOURCES	POTENTIAL BARRIERS	COMMUNICATIONS PLAN
1. The Director will act as a liaison between business and government in regards to the affects legislation has on their businesses, whether direct or indirect.	Availability of policy staff for communication due to legislative priorities.	Communications occur as needed either by phone or face to face meetings. Frequency is governed by the need to communicate.
2. The Director helps support the creation or revision of legislation that will directly affect businesses. That support may come in the form of influencing policy staff on legislation, testifying in regards to legislation, or providing information to legislators on upcoming legislation.		
3. The Director acts as an advisor to the Governor, his staff, state agencies and legislators on all things aerospace.		

GOAL 2 Continued GROWING AND DIVERSIFYING WASHINGTON'S AEROSPACE SECTOR WITH A STRONG BUSINESS CLIMATE

ACTION STEP 2

Businesses

WHO WILL DO IT? John Thornquist	TIMELINE Continually	
RESOURCES	POTENTIAL BARRIERS	COMMUNICATIONS PLAN
1. The Director works one-on-one with aerospace related businesses in resolving issues that can be affected by the Office of Aerospace.	Stakeholders with agendas not aligned with other stakeholders.	Communications occur as needed to satisfy the needs of individual businesses to convey information through the office of Aerospace.
2. The Director works to understand the businesses, large and small and help them in their ability to grow in the State of Washington. The Department of Commerce has the Office of Economic Development and Competitiveness which directly supports companies that wish to stay, expand and set up facilities in the State of Washington.		Communication mostly occurs through face to face discussions.
3. The Director also looks to help them expand their reach to other aerospace companies in Washington State in order to foster B2B growth.		

GOAL 2 Continued GROWING AND DIVERSIFYING WASHINGTON'S AEROSPACE SECTOR WITH A STRONG BUSINESS CLIMATE

ACTION STEP 3

EDCs and ODAs

WHO WILL DO IT?	TIMELINE	
John Thornquist	Ongoing	
RESOURCES	POTENTIAL BARRIERS	COMMUNICATIONS PLAN
 The Director works with econom- ic development councils and asso- ciate development organizations in each county to further understand their aerospace business climate. The Director meets with the boards, their businesses and their education leaders to create the "aerospace story" for their county and to assist in marketing their unique value proposition. The Director also meets with edu- cators in each county to understand the potential education options they provide for current and future work- forces in the aerospace industry. 	 Stakeholders with agendas not aligned with other stakeholders. Usually due to competition between counties for business or if stakeholders are not aligned with policy and legislative efforts. Stakeholders competing for appropriations. Technical and community college boards that have non-aligned business objectives. Stakeholders, such as EDC's that are competing for new business. Their efforts can interfere with the larger plan of attracting business to the state. 	 Communication with counties that have a significant aerospace footprint will occur quarterly at a minimum. Communication with the heads of EDC/ODA's will occur more often due to their more urgent needs. As required. Communication can be either face-to-face or by emails. Continual communication and participation with BRRE and ITA to attract and expand business in Washington State. With the merging of the Sector program under Chris Green, a more cohesive communication and action plan
3. The Director works to support their efforts in attracting and retain businesses within their jurisdiction. Assistance can come in the form of direct business contact, providing OEDC contact, or influencing legis- lation that can grow commerce in		will be developed to support business retention and expansion in aerospace.

EVIDENCE OF SUCCESS

their area.

Regular meetings with the Director of Commerce and the Governor's policy staff in conjunction with meetings of stakeholders to express their feelings and to express their needs and desires of State Government. Satisfaction conveyed by leadership of EDC's on the Director's support of their needs and objectives. Satisfaction of the Office of Economic Development and Competitiveness in the performance of the Director of Aerospace.

EVALUATION PROCESS

Regular communication between the Director of Aerospace and the Governor's staff, including the Director of Commerce on issues related to aerospace stakeholders.

GOAL 3 ENCOURAGING A 21ST CENTURY WORKFORCE READY TO MEET AEROSPACE INDUSTRY NEEDS

ACTION STEP 1

Workforce Development Councils

WHO WILL DO IT?	TIMELINE	
John Thornquist	As needed	
RESOURCES	POTENTIAL BARRIERS	COMMUNICATIONS PLAN
 Meet with WDC's to understand their mission and actions as they relate to their constituencies. 	Competition for funding by other workforce development councils or other education sources.	Communication is as required depending on the needs of WDC's in meeting their mission to place
 Assist WDC's in their efforts to obtain funding from businesses and government to sustain their programs as it relates to aerospace. 		workers into meaningful jobs.

ACTION STEP 2

STEM/CTE boards (K-12 Education)

WHO WILL DO IT?	TIMELINE	
John Thornquist	As needed	
RESOURCES	POTENTIAL BARRIERS	COMMUNICATIONS PLAN
1. Meet with STEM/CTE leaders throughout the state to promote the support by Washington State and to provide insight and guidance on future legislation and how to impact it, to best serve the needs of STEM/CTE.	Competition for funding by other workforce development councils or other education sources.	Communication as required to support legislative efforts to increase K-12 spending by the State through thei Biennial budget.
2. Attend and speak at STEM/CTE fairs and conferences, as requested, as a representative of the Office of Aerospace for the State of Washington as a way to promote the importance of education as a prerequisite to aerospace related employment		

GOAL 3 Continued

ENCOURAGING A 21ST CENTURY WORKFORCE READY TO MEET AEROSPACE INDUSTRY NEEDS

ACTION STEP 3

Community and Technical Colleges

WHO WILL DO IT?	TIMELINE	
John Thornquist	As needed	
RESOURCES	POTENTIAL BARRIERS	COMMUNICATIONS PLAN
1. Work with CTC's to understand their offerings and how they interface with students, government and businesses.	Competition for funding by other workforce development councils or other education sources. K-12 is at the forefront of the legislative	Communication occurs through discussion with CTC's and businesses in their efforts to educate the workforce and to hire
2. Promote through marketing the advantages of receiving a technical education and the positive effects of employment in the aerospace industry.	agenda and there may be resistance from legislators to adequately fund CTC's to meet the needs of future aerospace workers.	qualified workers, respectively.
3. Interface with businesses as requested to enhance B to TC relationships as it relates to internships, apprenticeships, and full time employment.		

ACTION STEP 4

Other workforce education entities

WHO WILL DO IT?	TIMELINE	
John Thornquist		
RESOURCES	POTENTIAL BARRIERS	COMMUNICATIONS PLAN
Support the Center of Excellence, the WATR Center, AJAC and others that provide technical education and assist directly in the development of aerospace related workers.	Competition for funding by other workforce development councils or other education sources.	Ongoing communication occurs face-to-face or through email communication as required.

EVIDENCE OF SUCCESS

EVALUATION PROCESS

Stakeholders are communicating with the Department of Commerce on their strategic efforts.

On-going communication with leaders of WDCs, K-12 STEM/CTE boards and Workforce training entities.



OFFICE OF ECONOMIC DEVELOPMENT & COMPETITIVENESS 206.256.6100 DECEMBER 2016