COMMUNITY AND TECHNICAL COLLEGES
Washington State Board

Washington Aerospace and Advanced Materials Manufacturing Workforce Pipeline Advisory Committee

WASHINGTON AEROSPACE & ADVANCED MATERIALS MANUFACTURING PIPELINE ADVISORY COMMITTEE

State Board for Community and Technical Colleges
Online Meeting

Advisory Committee Meeting: Thursday, February 18, 2021, 10:00 AM – 12:00 PM

Statutory Authority Laws of 2012, Chapter 28B.50.903 Revised Code of Washington

Webex Link: https://sbctc.webex.com/sbctc/j.php?MTID=m60f038dbe108e1bac366dcea9f5bca32
415-655-0002
Meeting number (access code): 145 859 3538
Meeting password: Yn4J2GVgtm3

Feb 18th Advisory Committee Meeting Agenda

Time	Item
10:00 a.m.	Call to Order, Welcome and Introductions *Jackie Davis, Chair* Adopt Minutes, October 26th, 2020 minutes *(action)* • *Call for correspondence to be entered into the record* • *Are there members of the public wishing to make public comments? (If so, the public comment period will be at 11:55am).*
10:10 a.m.	Director's Report *Jan Yoshiwara, Executive Director* • SBCTC and Legislative Updates Staff Report *Marie Bruin and Carolyn McKinnon*
10:20 a.m.	Industry Updates – Please come prepared to share updates: • What's the current status of the industry as you see it? • What's the outlook for the short-term, including as vaccines are rolled out? • What's the long-term outlook for recovery and strategic growth?

10:55 a.m. Professional/Technical Enrollment Trends during COVID-19
Becky Wood, Program Administrator

Aerospace 1000 FTES – Enrollment Updates
Carolyn McKinnon, Policy Associate, SBCTC

11:20 a.m. Aerospace Education & Training Updates —

- NEW: Aerospace Workforce Council
  - Chris Bowe, Washington Dept. of Labor & Industries
- Aerospace Apprenticeship Expansion Grants,
  - Shana Peschek, Machinists Institute
  - Guests from SPEEA (tentative)
- Core Plus Year End Report,
  - Michelle Burreson and Justin McCaffree, The Boeing Company

Public comment period, if any – 11:55am

12:00 p.m. Adjourn

PLEASE NOTE: Times above are estimates only. The SBCTC reserves the right to alter the order of the agenda. Reasonable accommodations will be made for persons with disabilities if requests are made at least seven days in advance. Efforts will be made to accommodate late requests. Please contact the Workforce Education Office at 360-704-4336.

When it's time, join your Webex meeting here.

Join meeting

More ways to join:

Join from the meeting link
https://sbctc.webex.com/sbctc/j.php?MTID=m60f038dbe108e1bac366dcea9f5bca32

Join by meeting number
Meeting number (access code): 145 859 3538
Meeting password: Yn4J2GVgtm3

Tap to join from a mobile device (attendees only)
+1-415-655-0002,,1458593538## US Toll
+1-206-207-1700,,1458593538## United States Toll (Seattle)

Join by phone
+1-415-655-0002 US Toll
+1-206-207-1700 United States Toll (Seattle)
Global call-in numbers

Join from a video system or application
Dial 1458593538@sbctc.webex.com
You can also dial 173.243.2.68 and enter your meeting number.

Join using Microsoft Lync or Microsoft Skype for Business

Dial 1458593538.sbctc@lync.webex.com

Need help? Go to https://help.webex.com

Washington Aerospace & Advanced Materials Manufacturing Workforce Pipeline Advisory Committee

Meeting Minutes
Monday, October 26, 2020

Opening
The regular meeting of the Washington Aerospace & Advanced Materials Manufacturing Workforce Pipeline Advisory Committee was called to order at 9:00 am on Monday, October 26, 2020 by Jackie Davis, Chair.

Present – Members & Guests
Shana Peschek, Machinists Institute
Robin Toth, Department of Commerce
Travis Dulany, WA SBCTC
Carolyn McKinnon, WA SBCTC
Carli Schiffner, WA SBCTC
Angie Mason-Smith, OSPI
Justin McCaffree, Boeing Workforce Development
Chelsea Mason, IAM District 751
Michelle Burreson, Boeing
Ben Hempstead, Electroimpact
Mary Kaye Bredeson, Center of Excellence for Aerospace & Advanced Manufacturing
Dave Wallace, Workforce Board
Lynn Strickland, Aerospace Joint Apprenticeship Committee
Scott Kennedy, Alaska Airlines
Larry Cluphf, WA Aerospace Training and Research Center, Edmond College
Daria Willis, Everett Community College
Becky Wallace, OSPI
Dan Parker, Boeing
Kimberly Wheeler, WA SBCTC

Approval of Minutes
The minutes of the previous meeting were unanimously approved as distributed.

- Chelsea Mason moved to adopt minutes
- Daria Willis seconded motion
- Unanimously approved

Open Issues

Letter of support from SBCTC to Hofstra is at the end of the meeting packet for public record.

State Board Update

Marie Bruin will join the Workforce Education team as the new Director on November 9, 2020. Marie joins the Education Division leadership team most recently from the Department of Employment Security where she served in a leadership role in the Workforce Initiatives Division. Prior to that, Marie was a part of the Workforce team at the SBCTC for nearly a decade. Ms. Bruin has more than 20 years of comprehensive experience implementing and leading strategic Workforce initiatives, organizational change, supporting agency partnerships, and has played a key role in supporting access to workforce resources including the expansion of registered apprenticeships, programs for youth, strategies for economic development, and resources for populations facing barriers.

The WA State Board for Community and Technical Colleges will focus on the following request during the upcoming session:

1. Maintenance of investment in Healthcare, WA Guided Pathways, High Demand Salaries, and WA College Grant.

2. Advancing Equitable Economic Recovery:
    a. Closing equity gaps for lower income populations
    b. Investments in redesigning curriculum
    c. Investment in virtual and simulation technologies.

3. Support workforce training in anticipation of well-paying jobs
    a. Additional 1000 enrollments to support high demand pathway growth
    b. Enhancement of JSP through permanent funding
    c. Increased capacity for Worker Retraining program (10% increase)

State Board staff provided an update about the Worker Retraining Program, Washington's long-standing investment ensuring access to retraining for dislocated workers. The program is overseen by the Workforce Education Customer Advisory Committee (CAC).

Industry Updates
Members shared updates on the current status and outlook for the industry, including perspectives about workforce training needs and the impacts of the COVID-19 pandemic.

Aerospace 1,000 FTE Update
Staff provided a report about program enrollment trends and a reminder about how the redistribution policy workers. Staff requested that the committee be thinking about how the redistribution policy might be adjusted to account for negative enrollment impacts of the COVID-19 pandemic. If adjustments to the policy are to be made, the Committee will need to act in the summer of 2021.

Core Plus
Angie Mason-Smith, from the Office of the Superintendent of Public Instruction, provided updates about the Core Plus program.

Adjournment
Meeting was adjourned at 11:00am by Jackie Davis, Chair. The next general meeting will be at announced at a later time

Minutes submitted by: Kimberly Wheeler, Administrative Assistant, Workforce Education, WA SBCTC

Approved by:

Discussion Brief

To: Aerospace and Advanced Materials Manufacturing Workforce Pipeline Advisory Committee
From: Carolyn McKinnon, Policy Associate, SBCTC
Date: February 9, 2021
Re: Update: Aerospace 1000 FTES

PURPOSE
This is to provide an update about the Aerospace 1000 FTES so that the we can discuss successes and challenges at the February 18, 2021 meeting.

Fall 2020 Aerospace 1000 enrollments were down 16% from a year earlier
Aerospace 1000 programs had 16% fewer full-time equivalent students (FTES) in Fall quarter 2020 than a year earlier. This is about on par with an overall enrollment decline of 17% across all professional and technical programs.

The pandemic has caused significant disruption in people's ability to go to college. Challenges like child care for school aged children, inadequate broadband, and a reluctance to enroll in remote learning courses disproportionately impact "older" prospective students (ages 30+), who are also more likely to enroll in professional and technical training programs. Fall 2019 to fall 2020 enrollment headcounts fell by 21% for students aged 30-39, and a whopping 40% in the 40+ age group.

Fall-to-fall and annual enrollment numbers for monitored programs are attached.

REPEAT HEADLINE FROM YOUR LAST MEETING:
FY20 enrollment in Aerospace 1000 programs dropped by 14% from FY19
Over-the-year, enrollment in monitored Aerospace 1000 programs dropped by 14 percent (-230 FTES). However, six programs made enrollment gains:

- Big Bend - AMT
- Clover Park - Avionics
- Everett – AMT/Avionics
- Green River - Mechatronics
- Green River – Engineering Transfer
- Whatcom – Engineering Transfer.

Overall, colleges attained 70% of the target for enrollment for Aerospace 1000 FTES last year (FY20). Keep in mind, that was year 2 of a 4-year cycle; often, it takes time for programs to build up to targeted enrollments. They are also doing so in a climate where higher education enrollments have declined precipitously over several years and COVID-19 severely impacted spring 2020 enrollments.

Enrollment monitoring now in year 3 of a 4-year performance cycle
The Aerospace 1000 FTES are distributed to colleges as follows:

- 523 FTES are permanently allocated,
- 460 FTES are allocated and being monitored by SBCTC.
- 17 FTES returned to SBCTC in FY20 by Clark College due to closing its Machining Program.

This performance monitoring and redistribution policy is explained below in the section called ***Take Back Policy for Aerospace 1000 FTES***.

The next major milestone in performance monitoring is upon us. For programs that meet or exceed targets last year (FY20), the FTES become permanent. Programs that missed targets are put on probation (FY21) and continued monitoring for the year. SBCTC will issue probation and permanency notices after the February 18 Pipeline Committee meeting.

Discussion Question

1. How might we adjust the Redistribution Policy to account for both structural changes in higher education enrollments and for the impacts of COVID-19?

Take Back Policy for Aerospace 1000 FTES

Achieving target goals

If a college meets, or exceeds, 100% of their Aerospace 1000 FTES enrollment target in FY20 the funding will move into a permanent allocation for the college. FTES will still be tracked relative to the overall system goal, but the college will no longer be subject to future take back actions based on achieving the goals proposed and funded.

Probation

If a college falls short of 100% of their Aerospace 1000 FTES enrollment in FY20 they will enter probation status. They will be funded at the same amount for FY21. If they subsequently meet 100% of their target in FY21 probation status will be lifted.

Take Back

If a college falls short of 100% of their Aerospace 1000 FTE during the probation year, the college is subject to a reduction in FTES. The reduction will be equal to the difference between the target and actual FTES met during their probation year. If the difference between target and actual FTES is greater than the amount provided by the 1000 FTES the total reduction will not exceed the amount allocated.

Redistribution

Funding and FTES recaptured as a result of the take back policy will be offered to the college system for a new round of competitive proposals.

Annual Allocations

The projected allocation numbers provided for planning purposes do not include enforcement of the take back policy. SBCTC staff will contact districts that may be subject to the take-back policy to discuss potential impacts on allocations. The take back policy is enforced **after** annual enrollments are reported, usually in late-July.

Implementation:

FY19: First year of funding.

FY20: Colleges who received funding in FY19 to receive the same dollar amount in FY20. Workforce staff requested a multi-year budget submittal and brief narrative from colleges regarding long term planning for the programs funded with 1000 FTES.

FY21: If a college meets, or exceeds, their 1000 FTES target in FY20 the funding will move into a permanent allocation. FTES will still be tracked but the college will no longer be eligible for 1000 FTES take back.

If a college missed their 1000 FTES target in FY20 they are in probation for FY21.

FY22: If targets are not achieved in FY21, and the college is on probation, college targets and funding are adjusted as a result of the take back policy. Take back will be the difference between target and actual FTES, not to exceed the amount provided in initial 1000 FTES funding.

Aerospace 1000 FTES - FY20 enrollments were down 14% from FY20 at hit 70% of performance targets.

These are the FTES that are actively being monitored for target attainment. In this table we're looking at year-end enrollments compared to both the previous year and target enrollments.

Allocation Monitoring Report
For Academic Year 2019-20, which is Fiscal Year 20 (FY20)

College	Program	Baseline	2019-20 Target**	2018-19 Actual	2019-20 Actual	FY19 to FY20 Difference	% of Target Attained
Bates	Mechanical Engineering Technology	37	41	30	20	(10)	49%
Bates	Welding	56	67	66	47	(19)	70%
Bellingham	Machining Expansion	40	46	44	39	(5)	85%
Bellingham	Mechatronics	27	51	6	-	(6)	0%
Bellingham	Welding	42	66	55	51	(5)	77%
Big Bend	AMT Program	38	40	22	39	16	96%
Clark	Machine Technology PROGRAM CLOSED	45	62	47	5	(42)	8%
Clover Park	Avionics	-	20	1	15	13	73%
Everett	Aircraft Mechanic (AMT) & Avionics	131	186	151	180	29	97%
Everett	Engineering	346	350	316	278	(37)	80%
Green River	Aero. Engineering	99	103	74	53	(21)	51%
Green River	Mechatronics	-	10	18	20	1	198%
Lake Washington	Engineering Transfer	22	85	21	35	14	41%
Lake Washington	Welding	100	112	86	62	(24)	56%
Olympic	Engineering Technology	20	65	74	22	(53)	34%
Peninsula	CNC Mach/Composites PROGRAM CLOSED	12	17	13	4	(10)	21%
Renton	Mechatronics	15	23	33	25	(7)	110%
Seattle North	Avionics/Electronics	21	61	64	55	(9)	90%
Seattle North	Electronics	21	41	37	26	(11)	62%
Seattle South	AMT Program	173	215	164	119	(45)	55%
Tacoma	Engineering	264	285	239	220	(18)	77%
Whatcom	Engineering Transfer	70	110	114	131	18	119%
System Total		**1,579**	**2,056**	**1,675**	**1,445**	**(230)**	**70%**

Source: SBCTC Data Warehouse

**The target includes the baseline annualized FTE for the monitored programs plus the monitored allocation. The base allocation is not included in the target.

FTE Criteria: all state-funded FTES for students with "F" or "B" INTENT and one of the approved program codes for the participating college

Aerospace 1000 FTES Fall-to-Fall Enrollment Trend: ***An indicator of COVID-19 impacts on enrollment***

These are the FTES that are actively being monitored for target attainment. In this table we're looking at over-the-year changes in enrollment as an indicator of performance and to understand how the pandemic has impacted programs.

College	Program	Baseline	Target**	Fall 19 Actual	Fall 20 Actual	Fall to Fall Difference	Fall to Fall Percent Change
Bates	Mechanical Engineering Technology	37	41	16	12	(4)	-25%
Bates	Welding	56	67	37	31	(6)	-17%
Bellingham	Machining Expansion	40	46	45	35	(11)	-23%
Bellingham(1)	Mechatronics	27	51	45	54	9	20%
Bellingham	Welding	42	66	70	37	(33)	-47%
Big Bend	AMT Program	38	40	37	-	(37)	-100%
Clark	Machine Technology CLOSED	45	62	-	-	-	
Clover Park	Avionics	0	20	6	27	21	348%
Everett	Aircraft Mechanic (AMT) & Avionics	131	186	152	166	14	9%
Everett	Engineering	346	350	270	247	(23)	-9%
Green River	Aero. Engineering	99	103	52	43	(9)	-17%
Green River	Mechatronics	0	10	17	17	0	3%
Lake Washington	Engineering Transfer	22	85	35	36	1	2%
Lake Washington	Welding	100	112	68	48	(20)	-30%
Olympic	Engineering Technology	20	65	35	27	(8)	-23%
Peninsula	CNC Machining/Composites CLOSED	12	17	-	-	-	
Renton	Mechatronics	15	23	31	11	(19)	-63%
Seattle North	Avionics/Electronics	21	61	62	52	(10)	-16%
Seattle North	Electronics	21	41	26	20	(5)	-20%
Seattle South (1)	AMT Program	173	215	132	132	(0)	0%
Tacoma	Engineering	264	285	203	160	(43)	-21%
Whatcom	Engineering Transfer	70	110	129	71	(57)	-45%
System Total		**1,579**	**2,056**	**1,468**	**1,227**	**(241)**	**-16%**

Source: SBCTC Data Warehouse

*The total 1000 aerospace allocations include base allocations for enrollment growth already demonstrated, and monitored allocations for those programs that are being monitored for new or additional enrollment growth.

**The target includes the baseline annualized FTE for the monitored programs plus the monitored allocation. The base allocation is not included in the target.

(1) Coding errors cause mis-reporting fall quarter. Numbers represent proxies reported by colleges for information purposes only until coding errors are corrected and captured in monitoring reports.

Aerospace 1000 FTES: Excerpts from July to December 2020 Bi-Annual Reports

Color Key:

Beige – Enrollment was down Fall19-to-Fall20

Green – Enrollment was steady or up Fall19-to-Fall20

College/ Program	Description	Enrollment Status	Successes	Challenges
Bates/ Mechanical Engineering Tech	Recruiting students with diverse backgrounds into our two-year engineering technology associate degree program.	49% of target attained in FY20 (21 FTES short). Fall19-Fall20 DOWN 6 FTES	After months of being under the "stay home, stay healthy" order, many organizations began to host meetings online only. This allowed for greater flexibility to attend more of meetings with community leaders. A few meetings we are able to attend regularly are Workforce Central's Pierce County Community Engagement Taskforce, Tacoma College Support Network, UW Internship workshops, I-Thrive, Washington State Dual Credit workshops, etc. In these meetings, individuals from across the state of Washington would share their connections and their organizations' goal. This made networking easier. We have been able to connect with 3 community organizations to discuss partnership: Pacific Mountain Workforce Development Council – MyJob program, Upward Bound program at Spanaway Lake High School, Northwest Education Access.	Bates Technical College is in the middle of the pandemic and instructors are managing students who prefer the hands-on approach through the virtual media only. Our students are struggling to stay engaged. Faculty is to offer a modified hands-on experience. Since our mechanical engineering technology program is no longer considered high demand based on 2019 ESD information, recruitment into a technical trade as mechanical engineering technology in the middle of the pandemic is an extremely difficult sell to students. One of the ways we look to overcome this is by sharing engineering technology as an alternative path to a 4-year engineering degree program by comparing and contrasting the income projection and educational cost of our program. Another way to mitigate mechanical engineering technology's current designation of "not in demand" is to package the promotion of all of our engineering technology programs from a previous student perspective.
Bates/Welding		70% of target attained in FY20 (20 FTES short). Fall19-Fall20 DOWN 4 FTES	Same as above	Bates Technical College is in the middle of the pandemic and instructors are managing students who prefer the hands-on approach through the virtual media only. Our students are struggling to stay engaged. Faculty is to offer a modified hands-on experience. The welding program has adapted to this new environment by becoming hybrid. Fours a day students attend in person lab practice and all lecture delivered through zoom. Student engagement can be difficult in the online environment, however, instructors are adapting and creating new methods to increase student engagement.
Bellingham/ Machining	Expansion of its existing two–year Associate of Applied Science degree program in Machining program	85% of target attained in FY20 (7 FTES short). Fall19-Fall20 DOWN 10 FTES	The greatest success of the last reporting period was the return to the remodeled lab space following a temporary program relocation. The remodel project, which included new and upgraded flooring, power, and air systems, required the removal of all program equipment. The floorplan design better supports student learning and has removed training bottlenecks that resulted in student frustration and delays. This project also allows for the	Recruitment and retention have continued to be a major challenge throughout the COVID-19 pandemic. Faculty in the Machining faculty have done an outstanding job pivoting from face-to-face instruction to both hybrid and online modalities while navigating a lab relocation and remodel. Despite these challenging conditions, faculty have continued to offer an exceptional educational experience for their students;

Aerospace 1000 FTES: Excerpts from July to December 2020 Bi-Annual Reports

Color Key:

Beige – Enrollment was down Fall19-to-Fall20

Green – Enrollment was steady or up Fall19-to-Fall20

College/ Program	Description	Enrollment Status	Successes	Challenges
			program to spread out students throughout the lab, in accordance with its COVID-19 safety plan. The Machining program has realized significant efficiencies through the replacement and upgrade of older equipment with newer machines and accessories. This enhanced lab environment provides students and faculty with a learning and teaching space that better aligns with industry standards, offering students greater access to machines with far less downtime while on campus. Video production to supplement instruction also continues and provides additional student support, both in the lab and as postings on Canvas. The creation and use of video equipment will continue to improve availability of supplemental learning materials for students well after students have the opportunity to return to a more traditional, on-ground program delivery.	however, challenges will remain as the pandemic will likely persist through the end of Spring 2021. Limited student access to labs and operation in a remote learning environment, as well as the coordination needed to deliver additional student support such as tutoring, advising, and counseling online will likely continue to present challenges into Fall 2021. The program continues to work to better address the challenge of college readiness levels on the part of incoming students, both in regards to knowing what is expected in the classroom and lab, and performing as a student. The I-BEST model is helping students to develop improved study skills and college literacy, and faculty continue to strengthen collaborations with Student Services to better inform entry and program advising services.
Bellingham/ Mechatronics	Expansion of two–year Associate of Applied Science degree program in Industrial Maintenance & Mechatronics (IMM) through the addition of one student cohort in Fall 2018.	*Coding issues impacting target measurement were flagged in current reports.*	In response to the COVID-19 pandemic, the BTC IMM program successfully converted one full (26 student) program that started Fall 2020 to a fully online offering for the first three quarters of the six-quarter degree. The second year of the IMM program has pivoted to a hybrid modality to allow for in-lab time, but has also transitioned a significant amount of course content online, with help from simulation software including MatLab and Simulink. The IMM program also continues to draw significant interest from the community, and following a recent manufacturing business closure, was a top program choice for those dislocated workers looking to re-train into a different career. The IMM program also continues to grow its advisory committee, expanding membership participation to better reflect and represent the workforce needs of local industries. This effort has increased advisory committee curriculum review efforts, which has helped the program continue to better align courses to the current and future needs of local and regional industry requirements.	Recruitment and retention for programs that require hands-on lab experiences throughout their program of study has continued to be a major challenge throughout the COVID-19 pandemic. Limited access to labs, learning new software, and participating in remote lectures, as well as the coordination required for additional student support such as tutoring, advising, and counseling, have continued to be a challenge for both employees and students at BTC. The IMM faculty have developed a highly effective safety plan for operations as part of BTC's overall operating procedures during this pandemic, and student and employee safety has remained a priority for BTC during the pandemic. However, enrollment levels in most programs have dropped as prospective and current students remain concerned about the risks and stresses involved in starting and completing their education during a global pandemic.

Aerospace 1000 FTES: Excerpts from July to December 2020 Bi-Annual Reports

Color Key:

Beige – Enrollment was down Fall19-to-Fall20

Green – Enrollment was steady or up Fall19-to-Fall20

College/ Program	Description	Enrollment Status	Successes	Challenges
Bellingham/ Welding	Expansion of two–year Associate of Applied Science degree program in Welding & Fabricating Technology through the addition of one student cohort	77% of target attained in FY20 (15 FTES short). Fall19-Fall20 DOWN 33 FTES	Adding a third first year cohort has continued to keep the second-year program enrollments near capacity, while offering an alternative to students that are unable to attend a daytime offering. Even with softer enrollments this last fall, it is anticipated that both second year cohorts will continue to see larger enrollments than previously realized. The additional support provided by the full-time Instruction Technician has also proven beneficial, allowing for better preparation and kitting of materials to better support students and allow for students to spend more time welding focus on technique and projects. Program faculty, in response to the COVID-19 pandemic, have continued to leverage hybrid modalities across their offerings and schedules that allow for physical distancing in the program labs by creating a scheduling model that provides the needed safety measures to keep cohorts as isolated as possible form other students.	Cancellation of all in person classes in Spring 2020 created ripple effect for program enrollment into the FY21 year. Faculty and staff used time in the Spring quarter to prepare for Summer by converting courses to a hybrid delivery model, preparing videos and simulations, creating the new scheduling model, and finalizing the COVID-19 safety plan, which was implemented in Summer quarter. This was a highly effective transition, but was difficult for both students and faculty. The transition did allow for students that were planning for a Spring 2021 graduation to stay on track, while also allowing for the traditional first year starts in Fall 2020, but impacted student's employment plans. Recruitment and retention have continued to be a major challenge throughout the COVID-19 pandemic.
Big Bend/ Aviation Maintenance Technology	The AMT Program requires 126 credits and 1900 hours (required for FAA testing). Students earn a Certificate of Achievement in Airframe and Powerplant Maintenance and/or with the addition of related instruction can earn an AAS.	96% of target attained in FY20 (1 FTE short). Fall19-Fall20 DOWN 37 FTES	The greatest success was the FAA approval of the new facility. The program also successfully completed an FAA curriculum rewrite and it was approved in November 2020. The online classes continue to be a great way to address COVID protocol. The program received approval from the FAA for online instruction through March 2021. BBCC plans to complete a partial curriculum rewrite during Summer 2021 and will add distance learning (online) as a continued possibility outside of COVID times.	The project's greatest challenges were getting the new facility ready to host classes. There was lots of organization that had to occur. This still continues. Updating equipment continues to be updating equipment. Any equipment purchases have been delayed this year due to the move. Outreach is difficult as we would normally have potential students on campus to tour the hangar/program, but that is not possible with COVID.
Clover Park/ Avionics	In our Avionics Technician Program, students will learn the operation and maintenance of the electrical systems on an aircraft.	73% of target attained in FY20 (5 FTES short) Fall19-Fall20 UP 21 FTES	During the past six months, the programs primary goal has been to maintain operations during COVID, a provide a safe and quality instructional environment. The Avionics program was originally designed to have a flexible schedule for working adults by utilizing a hybrid of online and in-person lecture and labs. This program design model, allowed for an easy pivot during COVID shutdown. The program was able to operate in a remote manner for lecture and deliver labs recognizing social distancing requirements. In 2019-2020 the program shows an 11%	Program enrollment is growing slowly. During the COVID-19 restrictions to public spaces, April 2020-August 2020, the college could not operate our Aviation Maintenance Technician (AMT) program. Therefore, students who were enrolled in the AMT program had to shift their educational plans to stay in school. Many students decided to shift to our Avionics certificate program. Thus, these students earned both an Associate's degree in AMT and a certificate in Avionics. This adjustment also impacted Avionics enrollment in the 19-20 fiscal year to a headcount of 31 and 15FTE. This

Aerospace 1000 FTES: Excerpts from July to December 2020 Bi-Annual Reports

Color Key:

Beige – Enrollment was down Fall19-to-Fall20

Green – Enrollment was steady or up Fall19-to-Fall20

College/ Program	Description	Enrollment Status	Successes	Challenges
			increase in FTE and a 25% increase in headcount. The diversity of students in this program is increasing over time.	was a notable increase from the previous year's headcount and FTE.
Everett/ AMTS and Advanced Avionics	AMTS and Advanced Avionics expansion by opening an evening AMTS cohort and increasing capacity for Advanced Avionics.	97% of target attained in FY20 (6 FTES short) Fall19-Fall20 UP 14 FTES	Our faculty continue to provide interactive lectures and visual demonstrations as part of their instruction. Faculty members incorporate technology during one-on-one and group Zoom tutoring sessions and online office hours. They are advising students remotely and ensuring their success.	We are working hard to support our students who have been impacted by COVID-19. These impacts include health, financial, employment, safety, and logistical impediments to their staying on a path to earn a certificate or degree. Our completion coach is working with these students and coordinating with other departments on campus to help address these challenges.
Everett/ Engineering	Engineering expansion project adding full-time engineering and mathematics faculty to offer 18+ additional pre-engineering courses and instructional support.	80% of target attained in FY20 (72 FTES short) Fall19-Fall20 DOWN 23 FTES	Despite present day challenges in the world and their impact on higher education, the efforts that are part of this project continue to positively shape the trajectory for student success in Engineering. The project faculty roles in the advising revamp and the streamlining of the program maps will assist the college and its students alike as we refocus on the Guided Pathways model. Also, a success is our continued relationship with Washington State University-Everett. Our faculty and program advisors collaborate with the faculty and staff at WSU Everett. This is observed via the shared communication to ensure that our course offerings continue to complement each other to meet the needs of students at both institutions. Our project faculty co-serve on an Engineering Advisory Board with colleagues at WSU.	Overall student enrollment in Engineering courses has declined, relative to last year. The decline can be attributed to co-enrollment options which allows students an early exit pathway to the bachelor's degree. Seemingly, our students will leave prior to completion of the associate's degree for this reason. We are looking to address this by reinforcing messaging regarding our course offerings including project-based learning and research opportunities. Covid-19 associated challenges include an overall student disinterest in taking courses in a remote environment. The most appealing aspects about taking engineering courses are the hands-on access to instrumentation and discovery. Program faculty and our Instructional Support Technician are working diligently to optimize pedagogy in order to closely mimic the on-campus experience. Their efforts to address this include redesigning labs and projects which students can execute off campus in a safe way. Students can check out lab kits, tools, and robotics kits which will enable to them to continue hands-on learning at home. In addition, project faculty are maximizing the features of our learning management system such that they ensure every course experience is active and students continue to be engaged.
Green River/ Engineering	The ENGR program (999Q) results with an Associate in Science- Transfer Track 2/Major Program in	51% of target attained in FY20 (50 FTES short)	Faculty have connected students to virtual resources and experiences that they may not have otherwise been able to access. For example, two students from our program received Grace Hopper Conference Scholarship funds and	The pandemic has presented many challenges for our Engineering program. Notably, it has been almost impossible to engage students in hands-on labs and extracurricular engineering projects, industry events and tours, and student-

Aerospace 1000 FTES: Excerpts from July to December 2020 Bi-Annual Reports

Color Key:

Beige – Enrollment was down Fall19-to-Fall20

Green – Enrollment was steady or up Fall19-to-Fall20

College/ Program	Description	Enrollment Status	Successes	Challenges
	Mechanical/Civil/Aeronautical/ Material Science Pre-Engineering degree. Students can complete this program in as few as two years.	Fall19-Fall20 DOWN 9 FTES	attended the conference. We refer and support eligible students to participate the College's MESA program, whenever applicable, as that program conducts online academic enrichment workshops and offers many similar resources. Engineering faculty member Xiaoqian "Lilly" Ma is Green River's liaison on a current S-STEM project led by UW's Materials Science and Engineering department. Lilly is helping to coordinate the successful transfer of low-income Engineering students to UW, and after transferring, their enrollment in this project. Green River is one of three colleges in a new coalition (led by North Seattle College) funded by the NSF LSAMP program. This "Puget Sound Alliance" has made enhanced advising, stipends, and other resources available to our Engineering students who identify with under-represented populations in the STEM research workforce.	led club meetings and projects over the past several quarters. Visits to or from local engineers and businesses, as well as participation in Engineering competitions, has not been feasible outside a few virtual events. Lack of in-person access to campus labs and scientific equipment has compromised students' ability to apply their knowledge, think critically to overcome complications that arise in the course of performing lab experiences, and receive real-time individual or small group feedback on their experiences from faculty members. Another challenge has been difficulty disseminating information quickly and consistently to students on useful support services and programs, guest speakers, internships, tutoring, and other resources. Students attending classes remotely are often burdened with simultaneous responsibilities, such as childcare; or are residing in another state or county in a different time zone, which forces them to attend class late at night or early in the morning.
Green River/ Mechatronics	The MTX program (768) includes two short-term certificates (Maintenance Mechatronics 1 and 2) and an Associate of Applied Science degree. Each certificate can be completed in as few as one quarter and two years for the degree.	Exceeded target by +98% in FY 20 (10 FTES above) Fall19-Fall20 NO CHANGE	The most significant successes for the MTX program during the reporting period has been the return to face-to-face instruction during the COVID-19 pandemic. This required significant effort on the part of faculty to develop and implement a comprehensive COVID-19 Re-Entry Plan. Faculty worked meticulously to revise instructional delivery methods and class workflow to maintain continuity and rigor of instruction and providing essential lab time while addressing restricted numbers for social distancing. Additionally, the program has successfully enhanced its I-BEST course offerings, adding three additional courses for eligible students.	The most significant challenge for the MTX program during this reporting period has been the COVID-19 pandemic and the reduction of program enrollment/FTEs that resulted due to the necessity to halt MTX classes summer quarter and the impact the pandemic has had on hands-on, equipment-dependent instructional programs like MTX. Another significant challenge for the MTX program is the lack of a full-time, tenure-track faculty position to lead this growing program. The program is currently led by an exceptionally dedicated adjunct faculty member. Due to the COVID-19 pandemic and its resultant impacts on institutional budgets, the opportunity to seek a full-time faculty position for this program must be put on hold for the foreseeable future.
Lake Washington/ Engineering	Expansion of pre-Engineering Associate's degree (AS-T) pathways through flexible course scheduling. Our focus is recruiting a diverse student	41% of target attained in FY20 (50 FTES short) Fall19-Fall20 UP 1 FTES	Keeping enrollment level is a success considered our current environment. The popularity amongst high school students is a positive although their enrollment is not counted.	Outreach to employers and adult students is difficult in remote operations. Attempts to reach potential students through new channels have not yielded new enrollments so far.

Aerospace 1000 FTES: Excerpts from July to December 2020 Bi-Annual Reports

Color Key:

Beige – Enrollment was down Fall19-to-Fall20

Green – Enrollment was steady or up Fall19-to-Fall20

College/ Program	Description	Enrollment Status	Successes	Challenges
	population, particularly women and students of color, to pursue an Engineering career.			
Lake Washington/ Welding	The Welding Technology grant is funding one full-time faculty member, one Student Success Navigator, welding equipment associated welding consumables, and a Scotchman 50514-EC 50 Ton Ironworker Punch Station. Grant funds cover one AAS degree and three long term and 1 short certificate.	56% of target attained in FY20 (50 FTES short) Fall19-Fall20 DOWN 20 FTES	There are two successes that have come from this project during the current reporting period. The first is the collaboration between the advisory committee and the program faculty. By the committee engaging and teaching faculty about laying out a production floor using Lean manufacturing techniques, this provides faculty with professional development and keeps the program relevant to industry standards. The second success is the students being an active participant in the designing and constructing of the equipment benches for the WELD 101 Oxy-Acetylene project provides an industry-based style project that builds skills in Layout and Fabrication.	The challenge that was faced was getting advisory committee members on campus to teach due to COVID 19 restrictions in a timely manner. The challenge was overcome by waiting for restrictions to relax by going to Phase two.
North Seattle/ Electronics/ Automation	This project covers: Mechatronics AAS Degree (768A) Industrial Power & Control AAS Degree (657E) Industrial Automation & Electronic Controls (long-term) Certificate (768B) Sustainable & Conventional Energy & Control Technology (long-term) Certificate (657C)	62% of target attained in FY20 (6 FTES short) Fall19-Fall20 DOWN 10 FTES	Clearing the final hurdles to purchase 1 FESTO Electromechanical trainer to improve the student to equipment ratio for 3 courses. Made effective use of other leveraged funds to benefit this project: Electronics Career Navigator, Aerospace Pathways Manager, I-BEST basic skills instructors, I-BEST Navigator, embedded tutors/teaching assistants/lab assistants Pandemic related successes: ● Faculty continued to adapt to the new normal of running classes online or in a hybrid format, where approved for in-person labs. It is about a 50/50 split. ● Created course equivalency exams for several Electronics courses to facilitate Prior Learning Assessment (PLA). Zoom Navigator meetings with students for academic advising as well as employment preparation.	Accurate/current student EPC codes continue to be a challenge. Beginning Summer 2019, enrollments across North's Electronics programs declined from the previous year. Enrollments continue to drop in FY20. Some of this decrease in enrollments could be attributed to the softening Aerospace industry in the state (Boeing 737 MAX grounding, Boeing announced layoffs, decrease travel due to pandemic, etc.). North needs to do a better job of highlighting industries (in addition to Aerospace) that value/need the skillset that Electronics/Automation programs provide. While the pandemic has certainly negatively impacted enrollments for the short-term, it may provide some opportunities to increase enrollment in the future given the large number of people in the region that are now unemployed. Mechatronics and Industrial Power & Control student skills are sought after across a variety of industries and could be attractive to prospective students seeking more stable employment. The question is more when will the

Aerospace 1000 FTES: Excerpts from July to December 2020 Bi-Annual Reports

Color Key:

Beige – Enrollment was down Fall19-to-Fall20

Green – Enrollment was steady or up Fall19-to-Fall20

College/ Program	Description	Enrollment Status	Successes	Challenges
				pandemic shutdowns begin to be reversed and people feel safe returning to public spaces.
Olympic/ Engineering Tech	The project supports expanded enrollments in the Engineering Technology program. Engineering Technology offers certificates in Composites, Precision Machining and Technical Design, and an Associate Degree in Applied Science in Engineering Technology.	34% of target attained in FY20 (43 FTES short) Fall19-Fall20 DOWN 8 FTES	Faculty developed high quality online classes to keep students moving forward when they couldn't be on campus during COVID-19. Precision Machining was one of the few college programs offered face to face. Doug Beck has done an excellent job providing a safe shop environment that is conducive to learning.	Enrollments continue to be the greatest challenge. Currently, the website is being enhanced and there is an expansion of virtual outreach activities. Once the shop remodel is completed, the Precision Machining classes will move to campus (currently offered at the Bremerton School District Skills Center). The updated space is expected to revitalize both Precision Machining and Technical Design.
Renton/ Mechatronics	During the Fall quarter, the Mechatronics program was at 117% capacity. Because of the grant, we were able to increase capacity from 20 students to 60 students.	Exceed target by +10% in FY20 (+2 FTES) Fall19-Fall20 DOWN 19 FTES	Progress report not submitted	
South Seattle/ AMT	The Aeronautical Technology Department, Aviation Maintenance Technology (AMT) Program offers Certificates of Specialization in Airframe and/or Powerplant (A&P) and AAS and AAS-T degrees. The ultimate goal is to increase the number of skilled individuals obtaining FAA-certification in the areas	Coding issues impacting target measurement were flagged in current reports.	Progress report not submitted	

Aerospace 1000 FTES: Excerpts from July to December 2020 Bi-Annual Reports

Color Key:

Beige – Enrollment was down Fall19-to-Fall20

Green – Enrollment was steady or up Fall19-to-Fall20

College/ Program	Description	Enrollment Status	Successes	Challenges
	of Airframe and Powerplant in order to meet industry need.			
Tacoma/ Engineering	Capacity expansion to educate engineering students for transfer to four-year institutions in aerospace & related engineering occupations. Includes Associate of Science Major Related Programs (MRPs) in engineering: Bioengineering/Chemical Engineering, Computer/Electrical Engineering, and Mechanical, Civil, Aeronautical, Astronautical, Industrial or Material Science Engineering.	77% of target attained in FY20 (66 FTES short) Fall19-Fall20 DOWN 43 FTES	The primary success over the last year is having the vast majority of our Physics, Engineering, and Computer Science courses taught be full-time dedicated faculty. We have also been able to create new courses specifically for our Engineering students, such as Introduction to Materials Science and AutoCAD.	The greatest challenge continues to be declining enrollment as a whole, as well as ensuring our students are coded correctly. Moving forward, we will also be transferring some students into the new MRPs, as discussed above. We are hopeful that SBCTC will allow all four MRPs to count in the Allocation, as well as the addition of the AA in Computer Science and AST2, as we know many students that go on to engineering receive these degrees from us. An additional challenge that we anticipate is staffing for our Computer Science courses in the coming year. We hope to find another FT Temporary Computer Science professor. The COVID-19 pandemic has forced us entirely into a remote environment. While it has had its own impact on how we teach our classes, it has also presented us with a challenge in ensuring students are coded correctly. Our manual process of identifying students that were potentially mis-coded used to involve a paper form and a personal conversation with a faculty member. That process has now changed to an email, asking the students to fill out an online form. We hypothesize that students may not see the importance, and therefore do not choose to fill out the form.
Whatcom/ Engineering	Expansion of the new associate of science–transfer /major related program (AS–T/MRP) degree options in engineering, responding to industry demand for workers (1) mechanical, civil, aeronautical, environmental, industrial, and material sciences engineering; (2) computer	Exceeded target by +19% in FY19 (+21 FTES) Fall18-Fall19 UP 26 FTES	Breaking ground on the new facility in Cascade Hall is probably the greatest success of the reporting period. This new facility will be a tremendous resource for engineering students once we are able to get back on campus and utilize it.	Enrollment issues are the major challenge. Our winter quarter survey will hopefully provide more insight into what is going on and whether this is an actual enrollment decline or just a data or coding issue. Regarding (b), we believe the enrollment decline indicated by the data is entirely attributable to COVID-19 as discussed above. Furthermore, the pandemic has limited our use of the many evidenced-based retention strategies we employ including hands-on projects, lab experiences, and field trips to industry tours and potential transfer universities.

Aerospace 1000 FTES: Excerpts from July to December 2020 Bi-Annual Reports

Color Key:

Beige – Enrollment was down Fall19-to-Fall20

Green – Enrollment was steady or up Fall19-to-Fall20

College/ Program	Description	Enrollment Status	Successes	Challenges
	and electrical engineering; and (3) bioengineering and chemical engineering. A general engineering transfer option is also available.			