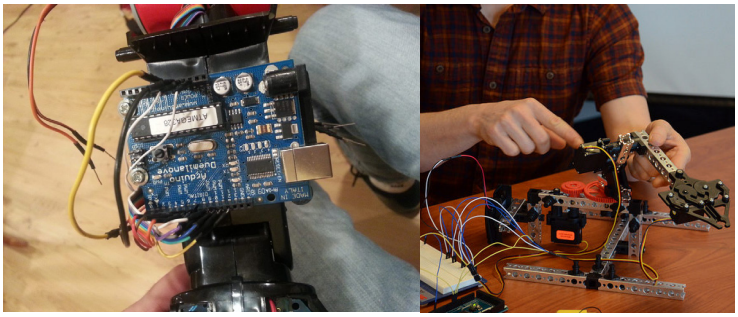

Whatcom
COMMUNITY COLLEGE

TECHNOLOGY AND ENGINEERING CENTER

WHATCOM COMMUNITY COLLEGE

2019-2021 PROJECT REQUEST REPORT
State Board for Community and Technical Colleges

December 20, 2017

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1.0 EXECUTIVE SUMMARY

1.1 Problem Statement/Type of Project Request

Massive space shortfalls at Whatcom Community College (WCC) are evidenced in the capital analysis model (CAM) (see Appendix 7.7), which clearly demonstrates significant square footage deficits in computer/technology labs, science labs, basic skills labs, student services and faculty offices. Coupled with rapidly growing program areas, current facilities cannot accommodate these insufficiencies, presenting insurmountable challenges in meeting the needs of students and the broader community.

WCC faces critical space and program delivery challenges resulting from the pressing needs for current technology-rich learning environments supporting STEM programs, particularly in computer science, computer information systems (CIS), cybersecurity and engineering. Further, WCC experiences a significant gap in spaces available to provide basic education for adults in innovative, collaborative teaching and learning environments that form the foundation for pathways to STEM degrees and leverage best practices in the use of technology in the classroom.

Without more space, WCC cannot execute its new strategic plan and will not realize its vision to be an innovative college, engaging with its diverse and changing communities. It will fail on its promise to transform lives through education.

The proposed Technology and Engineering Center (TEC) at WCC is a **growth project** requested to remedy this problem. WCC continues to experience unrelenting growth in areas programmed for the TEC and demand for trained students in these fields continues to escalate. These fields are in-demand programs that serve local, regional, and statewide needs. Demand for these programs is growing rapidly and available space is already stretched.

Since 2012-13, enrollments in technology-related programs of study at WCC have experienced incredible growth. Computer science has *tripled*, while engineering courses have more than *doubled* — with course enrollments *quadrupling* since hiring the College's first full-time engineering faculty member in 2016-17. The College's nationally renowned CIS and cybersecurity programs have *doubled* in that same time window. Further, transitional learning course offerings, which have *tripled*, have been capped due to space constraints, creating a bottleneck of students seeking an education and entry into STEM pathways of study.

This steady growth results in more students transferring to continue their education and more students directly entering the workforce as skilled, competent employees within these business and industry sectors — but only if the College can provide adequate instructional space.

Computer science, computer information systems, and cybersecurity: The spaces currently used to facilitate learning in these program and discipline areas are scattered in three distinct buildings with the majority of technology-related programs located in Baker Hall. This 14,600-gsf building, constructed in 1988, is in fair condition but its configuration and location do not offer an effective or efficient way to remodel or expand the existing building to accommodate growth in these high-demand, technology-saturated programs. Space constraints are further compounded as WCC launches both face-to-face and hybrid/online bachelor of applied science (BAS) in IT networking-cybersecurity degree options. These baccalaureate-level programs require not only additional space but also industry-standard labs.

Engineering: The WCC engineering program *currently has no facility* besides priority scheduling in a general use classroom located in Kulshan Hall. While the College invested in some needed furniture and equipment in 2017, the space is still woefully inadequate for providing engaged student learning through engineering project assignments, group work, and instructional activities. While housed in a primarily science-focused building, the program lacks adequate lab infrastructure specific to the discipline.

Transitional learning: The College's transitional learning programs, which include basic education for adults such as High School 21+ and English language learning (ELL), provide classes in both Cascade Hall and Kelly Hall. This program area is a key component of the CTC system mission and, yet, WCC has a significant space deficiency. Classrooms are constricted, insufficiently set up to be outfitted with technology, and unable to promote a collaborative, community learning atmosphere that accelerates students towards a program of study.

The TEC aligns perfectly with the space needed on WCC's campus as identified in the CAM, which strategically aligns with those areas that are growing. Further, the building is a physical example of the guided pathways model, syncing up similar programs of study. Students will have the opportunity to pursue this academic pathway whether starting their journey in adult basic education or pursuing their bachelor of applied science degree. Industry, community, and educational partners are all highly supportive of this proposal (see Appendix 7.4).

1.2 Proposed Solution

The proposed solution is to construct a new three-story 52,000-gsf building. As identified in the WCC Institutional Master Plan (IMP), this proposed facility will be located on the north end of the new north quad formed by Kulshan Hall and the Phyllis & Charles Self Learning Commons. The new TEC will provide innovative basic skills learning labs and computer lab spaces, as well as adding open study and collaborative small group work spaces as companions to main instructional spaces. This facility will concisely and cost-effectively resolve all stated needs through the inclusion of the following components:

- Seven program-specific labs for CIS, IT networking, computer science and engineering to address existing shortfalls and meet projected growth. These labs will be proportioned to accept varied furnishing/equipment layouts and will have varying sizes to accommodate small to larger class sizes and related instructional uses. Each will be provided with flexible IT infrastructure to support current and emerging technologies needed in the teaching and -learning environment.
- A cybersecurity lab, which is critical to develop integrated skills in the areas of information management and assurance, PC and network security, and other cybersecurity-related competencies, such as the proper collection and analysis of computer-based evidence and protecting that evidence. The lab will be purpose-designed to meet the physical security requirements of a Sensitive Compartmentalized Information Facility (SCIF) as defined by National Security Agency (NSA).
- Two innovative basic skills community learning labs, rich with technology and flexible in space configuration to accommodate best and most effective practices in delivering instruction to this student population.
- Two computer-based engineering classrooms and four assigned computer labs, each providing a 24-student capacity with flexible IT infrastructure and instructional media.

- Two general purpose classrooms accommodating 32-student capacity with adaptable IT infrastructure and instructional media.
- Student-focused support spaces, such as two collaborative learning labs and study commons location, in recognition that much learning occurs beyond the formal walls of classrooms/labs.
- Faculty offices, which are at a deficit on the WCC campus. This facility provides an opportunity to improve capacity in this area, particularly for faculty who directly connect to the program areas and students that will be housed and served in the TEC.

1.3 Programs Addressed by Project

The proposed TEC project will provide programmed space for computer science, computer information systems, IT networking, cybersecurity, engineering, and transitional learning programs. Further, this project supports much needed faculty office space for faculty who require direct access to the students enrolled in these high-touch program areas experiencing double- to triple-fold increases in enrollment demand in the last several years (see Section 3.2.1).

1.4 Probable Cost Summary & Comparison to Benchmark

The following table represents a probable cost summary for the Technology and Engineering Center.

Amount	Proportion	Element
$ -	0.0%	Acquisition
$ 3,537,984	12.0%	Consultant Services
$ 23,750,196	80.7%	Construction Contracts
$ 1,740,268	5.9%	Furniture, Fixtures, and Equipment (FFE)
$ 103,237	0.4%	Artwork
$ -	0.0%	Other Costs
$ 285,075	1.0%	Project Management
$ 29,416,760	**100%**	**Total Probable Building Cost**

See Attachment 6.1 for detailed project cost estimates.

The programmed assignable space in the 52,000-gsf proposed TEC is 87% academic (classrooms and labs) and 13% administrative (faculty offices and student service functions). Based on these proportions, the gross area per type and the expected costs are:

Type	GSF	Expected $/SF	Expected Cost
Classrooms/Labs	45,240	$ 586	$ 26,510,640
Faculty Offices/Student Services	6,760	$ 431	$ 2,913,560
Expected Cost			**$ 29,424,200**

The probable cost of the new building is <u>less than</u> 100% of the expected cost.

1.5 Project Schedule

The proposed Technology and Engineering Center is anticipated to be executed according to the following schedule:

Phase	Start	Complete
Predesign	6/1/2018	12/15/2018
Design	7/1/2019	6/1/2020
Bidding	7/1/2021	8/30/2021
Construction	9/1/2021	6/1/2023
Move-In	7/1/2023	8/30/2023
Occupancy	9/1/2023	

1.6 Funding

The proposed Technology and Engineering Center at WCC, together with its associated infrastructure, is estimated to total $30,427,518. The project is anticipated to be 100% funded from State Appropriation over two biennia, with predesign and design funds requested for the 2019-21 biennium and construction funds requested for the 2021-23 biennium.

2.0 PROBLEM STATEMENT, OPPORTUNITY OR PROGRAM REQUIREMENT

2.1 The Project and its Benefits

The proposed 52,000 square foot Technology and Engineering Center will primarily provide essential lab spaces to support STEM-related programs, particularly in computer science, computer information systems, cybersecurity and engineering. Technology-infused basic skills labs and computer labs are included to help reconcile challenging square footage shortfalls in these areas. Co-location of STEM-related programs and basic instruction will facilitate creation of new pathways that accelerate student progress from precollege skills through degree completion. WCC has prioritized the development of a new CIS IBEST (Integrated Basic Education Skill Training) option that will be housed in this new space. Open and collaborative small group study spaces are also programmed to support the significant learning that takes place outside of the more formal instructional setting.

Adding capacity for demonstrated areas of growth both in student and industry demand is an obvious benefit. However, there are more specific benefits related to the teaching and learning environment, connections to business and industry, K-12 and higher education partnerships, and supporting access and equity initiatives.

Teaching and Learning Environment

- An up-to-date learning environment will accommodate expanding enrollments leading to the production of a competitive labor force.
- Computer science is a high demand field and is an integral part of several programs experiencing rapid growth at WCC. The TEC allows for increased degree attainment at the certificate, associate, and bachelors levels.
- Increased capacity in engineering space lends to increased overall efficiency in the STEM schedule through better coordination of offerings with other disciplines that are required of engineering students such as math, chemistry, and physics.

- Dedicated space enables students to complete project work when they are available independent of scheduled courses. These activities and assignments are pivotal to students' practical learning, putting curricular theory and study into real life application.
- IBEST simultaneously delivers basic skills and current competitive in-demand job skills. The effectiveness of IBEST is further enhanced when combined with flipped instruction using online and technology based delivery methods. IBEST students in Washington State perform better in terms of progression, earning on average 4.8 Student Achievement Initiative (SAI) points per year compared to 1.2 SAI points per year for general population students (SBCTC, Jon Kerr 2017).

Connections to Business and Industry

- The engineering lab will prepare students for regular internships with local companies. Students will gain experience with a variety of prototyping and fabrication equipment such as laser cutters, various 3D printing technologies, and desktop CNC mills. In the last several years, BP, Alcoa, and Phillips 66 have each generously contributed cutting-edge STEM lab equipment, significant leveraged resources, which will be co-located in the new TEC to maximize student utilization. These industry partners fully support the new proposed building (see Appendix 7.4).
- According to the Washington Student Achievement Council (2015), approximately 75% of jobs in Washington State require at least a postsecondary credential. Over the next 20 years there won't be enough high school graduates to fill the employment gap according to SBCTC analysis. In particular, the supply of STEM-trained students is woefully inadequate. According to the TechAlliance (September 2017), a 13,783-annual gap exists between STEM degrees and certificates and STEM job openings in the state, with 48% of STEM job growth due to increasing computing occupations. Dedicated and updated program space for STEM training and basic education at WCC will help close this gap by providing opportunities to improve skills, utilize technology in the learning environment, and prepare students for the workforce. The Northwest Workforce Council, Cascades Job Corps College & Career Academy, and Literacy Council are all highly supportive of the proposed TEC (see Appendix 7.4).
- The CIS program has a strong relationship with the Technology Alliance Group in Bellingham, an industry group representing over 600 technology companies in the region (see Appendix 7.4). WCC also has a nationwide network with industry including F5, EnergySec, and local companies such as Vitech (see Appendix 7.4), 3D computing, and local and state government entities. The TEC would build capacity and enhance physical space configurations to provide real-work learning environments that lead to well trained workers to meet these employers' industry needs, including job vacancies and internships. Both the WCC CIS advisory committee and the director of WCC's CyberWatch West program fully endorse this proposal (see Appendix 7.4).
- WCC supports incumbent workers throughout the labor market. This student population needs flexible course hours. The TEC will provide mediated learning labs to deliver core skills like math and industry specific instruction (cloud computing, SCADA).

K-12 and Higher Education Partnerships

- The TEC provides increased opportunities to grow already successful cybersecurity summer camps for high school students who are interested in the field. These camps have

seen 101 student completions and 56 students earn college credit over the past five years. WCC now offers NSA-funded GenCyber camps for elementary, middle school, and high school students. All are high-demand offerings currently hosted in limited space.

- Improved engineering facilities will be used for a variety of outreach events to K-12 partners, including WCC-hosted engineering design competitions for K-12 students, engineering-themed summer camps, and evening open-house style sessions to expose prospective students to fields of engineering and related career opportunities. Bellingham and Ferndale school districts enthusiastically support the TEC (see Appendix 7.4).
- The TEC enhances community partnerships and allows WCC to support student preparation for career opportunities and transfer to four-year universities by modeling the experience students will receive in future work and education.
- The TEC will provide first-rate training for STEM students intending to transfer to WWU, WGU, and other four-year programs, thus strengthening the pipeline to these partner institutions. WWU – the four-year institution co-located in Bellingham to which 80% of WCC students intend to transfer – is highly supportive of the proposed TEC (see Appendix 7.4). The new instructional space and modern labs will provide synergy for students pursuing either (1) WCC's cybersecurity transfer degree to WWU's new four-year program (which WCC developed) or (2) WCC's new in-person and online BAS degrees in IT networking-cybersecurity. The TEC engineering lab will prepare WCC's engineering students for the rigors and expectations of a university setting.

Access and Equity

- WCC can avoid placing caps on in-demand and needed technology program areas. Instead, program growth can take place in response to workforce and student demand without limiting the number of students who can graduate with these skills.
- The expectation at WCC is that all students will use technology to complete coursework. The TEC will increase equitable access to instructional computer labs and programs.
- Digital literacy is a mandated part of the Workforce Innovation and Opportunity Act (WIOA) for basic skills instruction. Students will have access to multipurpose technology-rich learning spaces through the TEC, which is critical to providing equitable instruction for all students. Further, the strategic co-location of adult basic education and training in the TEC exposes these students to a technology-rich environment infused with a mix of STEM degree seekers will help accelerate their progress through the pipeline.
- Increased access to engineering labs and dedicated student space for projects and collaboration allows the program to run concurrent sections of 100- and 200-level labs.
- Additional space dedicated to basic education for adults will lift the barrier placed by currently constrained physical space capacity that prevents students from enrolling, thus allowing more students to be served and retained. According to the US Census Bureau, one-third (32.6%) of Whatcom County adults have earned a high school degree or less. Even more significant, more than 10,000 adults in Whatcom County have not yet earned their high school diploma. These community members deserve access to education.

2.2 Relationship to Facilities Master Plan, Strategic Plan, and Institutional Goals

2.2.1 Facilities Master Plan

The WCC Institutional Master Plan (IMP) was developed to provide a set of guiding principles to clearly articulate the values and needs of WCC campus community with respect to physical campus planning. The IMP was adopted by the WCC Board of Trustees in 2014. Additionally, the City of Bellingham requires all institutional properties greater than 50-acres to develop an institutional master plan to codify land-use guidance for any campus development. The College has worked closely with the City to adapt the IMP to satisfy this requirement and subsequently the Bellingham City Council formally approved the WCC IMP in October 2017.

Creation of the Technology and Engineering Center is an integral component of WCC's IMP. Identified as a new facility adjacent to Kelly Hall, it is the number one priority in the mid-term development to address anticipated growth (see Appendix 7.2).

2.2.2 Strategic Plan

In fall 2016, WCC formed a strategic planning committee to undertake a campus-wide strategic planning process. In June, they presented the 2017-2022 Strategic Plan which is structured to provide academic guidance across four core themes. The proposed Technology and Engineering Center directly supports all four of the WCC strategic plan themes in the following way:

WCC Strategic Plan Themes	Technology and Engineering Center (TEC)
Core theme 1: Achieving Success	
WCC engages students in their learning and leadership development, educational achievement, and entry into the global workforce	TEC provides specially equipped and configured labs to ensure students have "real-world" learning environments that they will encounter when they enter the workforce. TEC includes classrooms and labs with flexible configurations and access to media and technology to support collaborative learning. New labs will facilitate project-based learning for individuals and teams, allowing students to develop leadership skills.
Core theme 2: Building Community	
WCC cultivates connection through communication and collaboration for the enrichment of campus, local, and global communities	The proposed net-to-gross space allocation enables inclusion of informal study spaces to foster peer-to-peer learning and the social connections that contribute to building community. Co-location of expanded instructional space and program-specific faculty allows the creation of institutionally supported teaching and learning communities with physical spaces for faculty, staff, and students to share knowledge, enhance collaboration, and improve practice. This is consistent with a guided pathways approach to improve student connection and success.
Core theme 3: Advancing Equity	
WCC integrates principles of diversity, access, and inclusion throughout policy, practice, services and curriculum to close equity gaps in student outcomes and create an equitable work environment.	Instructional lab spaces and classrooms are designed to support an active, student-centered teaching and learning approach. These practices are research-based pedagogies that not only improve student learning, but also close equity gaps in student achievement.

Core theme 4: Enhancing Effectiveness	
WCC is fiscally responsible, provides vibrant infrastructure, fosters a safe and sustainable environment for teaching and learning	The project will provide a new, sustainably designed and operated facility which, by co-locating technology-focused programs will gain synergistic efficiencies and effectiveness. TEC directly supports the theme of effectiveness by facilitating and strengthening programs, and providing central access to services and facilities that support student needs and market demands.

2.2.3 Institutional Goals

WCC's institutional goals are captured through its planning processes, including the strategic plan and institutional master plan. The strategic plan identifies several goals directly addressed through the Technology and Engineering Center. These goals include:

- 1.2 Foster student learning through student-centered teaching and learning practices
- 2.3 Strengthen partnerships with K-12 and higher education institutions
- 2.6 Engage with business and industry to strengthen regional economic development
- 3.1 Ensure all students have access to campus resources that support educational success
- 4.1 Offer programs, services and facilities that support college needs and market demands

More specifically in the College's planning documents (work plan entry 2.6.2), WCC has a clear objective to "lead development of talent pipeline for technology industry." This includes raising the awareness for and recognition of cybersecurity education and leadership at WCC, increasing CIS/CS/engineering/IT networking enrollments to meet current and future demand, and establishing new and revised programs of study in STEM fields with regional high schools.

The TEC is critical to the pursuit of these goals. WCC's utilization data demonstrates efficient use of existing space coupled with a significant shortfall in instructional lab space for STEM programs and basic skills education. The TEC is needed to solve this compounding dilemma.

2.3 Relationship to SBCTC System Direction Goals

The TEC directly supports SBCTC's system direction as documented in the mission study. The system's direction focuses on current and future needs in the areas of:

- Economic Demand: Strengthening state and local economies by meeting the demands for a well-educated and skilled workforce.
- Student Success: Achieving increased educational attainment for all state residents.
- Innovation: Using technology, collaboration and innovation to meet the demands of the economy and improve student success.

Economic Demand: In order to improve enrollment and meet state educational attainment goals, it is critical to provide programs and services that are accessible to students from a wide variety of backgrounds. The programs directly served by this center are all rapidly growing at WCC and draw a diverse range of ages and educational backgrounds in both transfer and workforce programs. Drawing potential students to exciting and relevant programs is important for enrollment, and the guided pathways framework will support student career exploration to ensure students prepare for careers that match their strengths and interests.

The new TEC increases WCC's ability to provide the STEM programs necessary to meet the regional and state economic demand:

- IT-related fields were the #1, #3, #16, #20, #22 and #25 most in-demand jobs in September 2017 in Northwest Washington according to the Employment Security Department/LMPA, occupational employment statistics. The proposed TEC provides space specifically tailored to real-world training in these fields.
- The supply of new computer specialists and engineers in Northwest Washington has been well under the demand since 2015 and in all but one month of 2017 according to the US Department of Labor. The proposed TEC is focused on these very programs and will enable larger cohorts in these high-demand fields.
- The creation of a multi-tiered engineering lab will support continued development of a high-quality engineering transfer program that feeds a variety of high demand bachelors degree programs across the state and allow WCC to better contribute to the pipeline of engineering graduates for the state's high tech and manufacturing industries.

Student Success: This building is designed with student success in mind, with flexible instructional space planned to facilitate a hands-on and collaborative learning environment. WCC's transitional learning program is designed to support student movement to college-level courses and subsequent success in those courses through contextualized, technology-infused coursework. The engineering and CIS programs have been redesigned to move away from models of "weed-out" coursework toward incorporating courses and learning experiences that support student engagement early and consistently. The collaborative learning spaces and co-location of faculty creates the community necessary to support students from diverse backgrounds in their persistence in these challenging, but rewarding fields.

- By co-locating similar STEM programs in a single facility, the ability to generate a community of learners will greatly contribute to student success. The new facility will have study commons and areas for learning outside of the classrooms which facilitates peer mentorship with students encouraging and supporting other students.
- Building condition, configuration, and functionality can have a profound impact on both student outcomes and faculty retention. Spatial configurations, noise, heat, cold, light, and air quality obviously bear on students' and faculty's ability to perform. The effectiveness of the TEC programs and improvement in student outcomes will follow from having new flexible classrooms that can facilitate various modes of teaching and learning and provide access to technology throughout the space.
- Co-location of STEM-related programs and basic instruction will facilitate the creation of new pathways that accelerate student progress from precollege skills through degree completion. WCC has prioritized the development of a new CIS IBEST option that will be housed in the Technology and Engineering Center.

Innovation: The Technology and Engineering Center will be the physical demonstration of "using technology, collaboration and innovation to meet the demands of the economy and improve student success." The TEC exemplifies the use of technology in high-demand STEM fields promoting students to work collaboratively and innovatively to pursue and reach their academic goals regardless of where they are starting their journey.

- Engineering and computer science labs are adjacent to each other in the new facility. These disciplines will share computer resources for data driven instructional tasks.

Sharing resources will also foster interdisciplinary collaboration between disciplines.

- By creating physical security needed to achieve certification as a SCIF, the cybersecurity program can ensure their students have the experience of operating in the real-world environment they will most definitely experience post-graduation.
- Technology-rich learning community labs support best practices in basic education for adults by infusing technology into the everyday experience of teaching and learning.

2.4 Program Summary and Related Space

Space Name	ASF	Quant.	Total NSF	Workstations Class	Workstations Lab
Instructional Space					
Learning Community Classroom (Technology-rich Basic Skills Lab)	1,384	2	2,768	64	
General Classroom	920	2	1,840	64	
Computer Lab (Assigned)	920	4	3,680		96
Fundamentals Engineering Lab	1,697	1	1,697		24
Applied Engineering Lab	1,253	1	1,253		24
Engineering Classroom	916	2	1,832		48
Applied IT Lab	1,697	1	1,697		32
CIS Computer Lab	varies	3	3,106		80
Cybersecurity Lab	2,400	1	2,400		32
IT Networking Lab	varies	3	3,864		80
Conference/Seminar	500	2	1,000		
Quiet Study	150	2	300		
Study Commons	1,834	3	5,826		
Informal Study	300	2	600		
		Subtotal NSF	**31,863**	**128**	**416**
Administrative Space					
Faculty Office Suite	1,991	2	3,982		
		Subtotal NSF	**3,982**		
TOTAL NSF			**35,845**		
Corridor/Circulation			7,893		
Toilets			1,830		
MEP/Service			2,670		
Walls & Support			3,762		
TOTAL GSF			**52,000**		

Note: The program summary includes open study area at 11% of gross per the SBCTC Best Practices in Flexibility.

2.5 Increased FTEs (Types 1 and 2) Accommodated by Project

The proposed TEC increases workstation in general classrooms by 64, basic skills labs by 64, and engineering/IT lab workstations by 416.

	Proposed Seats Added	Future Utilization	Contact Hours	Contact Hours/FTE	New Type-1 FTE
Classrooms	128	19.73	2,525	15	168
Labs	416	14.68	6,107	30	204
Total	**544**		**8632**		**372**
Based on existing campus ratio of Type 1 FTE equal to 1.2 Type 2 FTE					
Total new Type 1 FTE					372
Total new Type 2 FTE					447

With easy access to technology and the digital focus of the housed programs, a greater increase is possible for Type 2 FTEs. The planned intermodal learning pathways possible with the new facility will accommodate the projected growth of Type 2 FTEs.

2.6 Buildings Affected by this Project

The TEC is a new stand-alone facility and will have no direct impact on existing buildings.

3.0 ANALYSIS OF ALTERNATIVES

3.1 Defining the Capital Problem

The primary capital problem centers on an identified deficit of needed instructional square footage in program areas that have grown exponentially in the last several years and are currently constrained due to space limitations.

The TEC is needed to meet current standards for higher education, specifically in high demand fields, as well as code requirements for accessibility, health and safety, and to support the College's commitment to meet student, industry and community expectations.

3.2 Project Drivers and Critical Needs

Key project drivers and critical needs are hinged on two significant facets: (1) exponential enrollment growth in high-demand programs of study and (2) immense square footage shortfalls in the instructional space needed to support these areas. Evidence to support these drivers and needs are clearly documented to support this project request, such as enrollment gains, high priority job skills gaps in the technology sector, and the capital analysis model for WCC.

Computer science, computer information systems, and cybersecurity: This trio of interconnected, high-demand programs is experiencing unprecedented growth at WCC. They are also critically integrated with WCC's burgeoning engineering program and the new BAS in IT networking-cybersecurity which will launch an online option in fall 2018 and will be recruiting students from 44 states in the U.S. Despite recent renovations to Baker Hall and the designation of dedicated lab space, WCC is experiencing severe space limitations and exploding enrollments. WCC is struggling to keep pace with growing demand and requires uniquely-designed space keyed on practical application in these fields.

WCC is also the lead institution of CyberWatch West, an NSF-funded regional cybersecurity education consortium formed to address the shortage of information security professionals. It is imperative that WCC lead this work with model spaces and instruction. Physical security and cyber security are quickly converging. With WCC recognized as a National Center of Academic Excellence in Information Assurance/Cyber Defense, it needs to provide a "real-world" high security environment for the program. The configuration of Baker Hall makes creating a SCIF expensive and impractical.

Engineering: The WCC engineering program currently has no facility besides priority scheduling in a general use classroom. While WCC has made commendable efforts to address needs with furniture and equipment, the outcome is insufficient in providing capabilities for both class assignments and extra-curricular project work. In addition, students pursuing engineering at WCC currently lack access to industry standard lab space simply because it does not exist. Since 2016-17 alone, engineering course enrollments have more than *quadrupled* since hiring a full-time engineering faculty member. Clearly, WCC's engineering students are sorely underserved.

Transitional learning: Currently, WCC's transitional learning programs including adult basic education, High School 21+ and ELL fail to provide technology-rich teaching and learning environments. WCC needs physical space to accommodate needed basic skills labs integrated with technology to help prepare tomorrow's workforce. This instructional approach is articulated as standard practice within the Workforce Innovation and Opportunity Act (WIOA) and the Washington State College and Career Readiness Standards (CCRS) for adult education. These standards have been infused with digital literacy and technology use. To meet these standards, WCC basic skills students need consistent access to technology and community learning spaces.

3.2.1. New Space for Enrollment Demand (Enrollment Growth)

The capital analysis model (CAM) (see Appendix 7.7) identifies a massive shortage of 13,031 assignable square feet (asf) in basic skills labs and another 11,562-asf in computer labs. In addition to these square footage deficits, clear space needs are identified in science and technology lab spaces, as well as faculty offices and student service functions.

The CAM also projects that in fall 2026 WCC's Type 1 FTE will total 3,229, an increase of 8% over 10 years. Beyond the 10-year enrollment forecast provided by SBCTC, it is critical to acknowledge the substantial growth occurring in program areas planned for this project request and those program areas that are constrained physically to the point where WCC cannot enroll more students until more space is available. Evidence for this growth at WCC is as follows:

- The computer science program has seen exceptional FTE growth since 2013-14, with a 63% increase from 2015-16 to 2016-17 and nearly tripling from 2012-13 to 2016-17.
- The CIS/cybersecurity program has experienced significant and ongoing FTE growth – growing 24% from 2015-16 to 2016-17 and doubling between 2012-13 and 2016-17. Continued growth is fully expected in this high-demand area, which also results from the launch of BAS degree options in IT networking-cybersecurity.
- Since 2013-14, engineering enrollments at WCC have doubled, demonstrating a critical need to increase capacity, resources, tools, and related physical spaces to support this pipeline of students. Between fall 2016 and fall 2017 alone, enrollments quadrupled.
- Since 2014-15, transitional learning courses offered have nearly tripled, highlighting a significant increase in need for this student population. Over the same time period, the

number of disabled transitional learning students has increased nearly 50%, suggesting the need for more accessible learning spaces that meet current accessibility standards.

The planned TEC is critically needed to address the current and forecasted shortfalls in instructional lab spaces in all the identified program areas.

3.2.2. Renovation/Replacement

The TEC project at WCC does not include a renovation or replacement component.

3.2.3. Accreditation (and Certification) Needs

The Technology and Engineering Center directly supports two accreditation criteria from the Northwest Commission on Colleges and University (NWCCU).

> **2.G.1** Consistent with its mission, core themes, and characteristics, the institution creates and maintains physical facilities that are accessible, safe, secure, and sufficient in quantity and quality to ensure healthful learning and working environments that support the institution's mission, programs, and services.
>
> **2.G.4** Equipment is sufficient in quantity and quality and managed appropriately to support institutional functions and fulfillment of the institution's mission, accomplishment of core theme objectives, and achievement of goals or outcomes of its programs and services.

In addition, WCC serves as a national center of academic excellence for cyber defense two-year education (CAE2Y) and was one of the first community colleges in the country to earn the CAE2Y designation. Certification requires colleges to have a formally designated center space, physical labs and spaces designed for student learning to take place and be assessed by hand-on activities, and sufficient security considerations at the institutional and programmatic levels.

For engineering, the College seeks to provide an equivalent experience for students as they would receive at an ABET (Accreditation Board for Engineering and Technology) baccalaureate institution. Currently, WCC's facilities for engineering instruction are lacking in this manner, as there is not sufficient space for design and hands-on experiences.

3.3 Alternatives Considered

3.3.1 Programmatic and Facility Related

The college has already taken several actions to accommodate enrollment growth within existing facilities. As an example, WCC partnered with its Foundation in 2013 to invest local funds in renovating Baker Hall to better meet student needs in the CIS and cybersecurity fields. Improvements allowed for more effective lab spaces appropriately sized to match the teaching and learning environment and the need to practically apply learned skills. While WCC has enhanced facilities as resources allow, significant unmet space and related capacity needs persist.

Any combination of the strategies described below would provide an inadequate and unsatisfactory alternative to building the new Technology and Engineering Center.

- Increasing the number of distance education courses: WCC plans to continue to increase hybrid enrollment as total campus enrollment grows. This has already been factored into WCC's capacity analysis; it does not obviate the need for a new building.
- Offering more courses off campus: The CIS, cybersecurity, and engineering programs require immediate access to supporting functions such as the library, advising, tutoring,

and similar student services. Moving these programs into leased, off-campus space would have significant negative impact to operational costs and student outcomes.

- Additional renovation and expansion of Baker Hall: Building renovation would cause significant operational disruptions during the period of renovation and reduce overall enrollment capacity. Renovating a facility that is already operating over its designed capacity will undermine WCC's ability to engage students in their learning and will have regressive effects on efforts to develop a holistic learning environment for students.

  The site constraints also impact the ability to plan an effective expansion of Baker Hall. Further, insufficient resources prohibit major renovation and expansion, coupled with the fact that the condition of the building would not reach minimum scoring thresholds to qualify for capital funding for a renovation/expansion project.

3.3.2 Consequences of Doing Nothing

"Doing nothing" is not a viable option and was rejected as the need to address space constraints in vibrantly growing, high-demands fields are considered critical. If the project does not proceed:

- The need to provide a modern student-focused technology and engineering facility will be limited, and in many areas unachievable.
- Without the additional space, program and course caps will have to be placed on entry into the constricted programs, limiting the number of students who can access education and graduate with these in-demand skills. The College will not meet demand and will not keep pace with changing times and evolving technology workforce needs.
- Overall quality of the educational experience at WCC will diminish. Healthy WCC programs may be cannibalized in order to meet growth in STEM program. Only the TEC provides a win-win scenario.
- Access to instructional technology needed to support student learning in these program areas and pathways, in particular basic education for adults, will be insufficient.
- Collaborative learning among students on similar academic and career pathways will be limited by lack of suitable space and inability to co-locate synergistic programs of study.
- Staff efficiency due to space configuration deficiencies will continue to be problematic.

Doing nothing will inhibit WCC's ability to provide individual and collaborative learning outside the classroom. Doing nothing prohibits WCC from progressing on the system's stated directions, WCC's strategic goals, and responding to the expressed needs of business and industry.

Existing inadequate and inefficient conditions would continue and WCC will be unable to meet the increasingly technology-driven learning demands of current and future technology and engineering students at every level of their academic journey.

3.3.3 Cost Estimate for Each Alternative

Real costs can be estimated for each alternative.

- The proposed solution is to construct new: The preferred alternate is estimated to have a total escalated project cost of $30,427,518 for the building and infrastructure (see Attachment 6.1).

- Alternate #1 is to execute a phased renovation and expansion to Baker Hall: This option would require renovating the 15,000-gsf of Baker Hall and adding the needed 52,000-sf growth. It is estimated to have an escalated total project cost of $38,291,000 as outlined on the C-100 in Attachment 6.1.
- Alternate #2 is to Off-Campus Lease: As the analysis in Attachment 6.1 illustrates, the cost of leasing equivalent space near the campus would be $6,439,400 in the first biennium of the lease and $4,768,400 per biennium thereafter over 13 biennia for a total cost of over $73M over the life of a 30-year lease.
- Alternate #3 is to do nothing: The direct capital cost to do nothing is $0 however the lost opportunity costs from the impacts from unrealized FTE, impact on the workforce and local technology economy would be considerable.

4.0 PROJECT PLANNING OF PREFERRED ALTERNATIVE

4.1 History of the Building

The proposed TEC is a growth project that was first identified in the 2004 IMP as a 50,000 GSF, general classroom facility. Due to lack of funding, the project was never realized and has now carried forward to the 2017 IMP as described in this proposal.

Kelly Hall was designed to allow for an extension to the east. The extension was envisioned to connect directly to Kelly Hall or be an adjacent structure connected by a covered or enclosed walkway. The site design for the Self Learning Commons includes utility improvements and an access road to anticipate future construction of the proposed facility. The TEC will form the capstone building to the north-campus courtyard area and will help WCC realize its vision and live out its promise statement.

4.2 Useful Life of Proposed Facility

Life expectancy of the TEC will be beyond 50 years for this proposed facility.

4.3 Discussion of Sustainability

LEED certification: The Technology and Engineering Center will be designed to achieve the Leadership in Energy and Environmental Design (LEED) Silver certification level and will incorporate at least nine (9) of the best practices to reduce greenhouse gas emissions, as shown in Attachment 6.6. By designing to the LEED Silver standard, WCC will reduce lifecycle costs (as required by OFM), thereby increasing both environmental and financial sustainability. The LEED checklist found in Attachment 6.5 identifies readily achievable as well as potentially achievable credits for this project, and demonstrates our commitment to LEED certification.

Greenhouse Gas Emission Reduction Plan: WCC's Greenhouse Gas Emission Reduction Plan (see Appendix 7.2) incorporates multiple strategies for reducing the campus's carbon footprint. The TEC meets at least nine of the "Best Practices to Reduce Greenhouse Gas Emissions."

- Above code-minimum HVAC system efficiency
- Post-occupancy commissioning
- Photovoltaic energy systems
- Time of day and occupancy controls/programming for lighting
- Energy-efficient (LED) lighting

- Roofing materials with high solar reflectance and reliability
- Orient building for optimizing day lighting and minimizing solar heat-gain
- Paving material having high reflectance
- Increased access to bike and public transit, no new parking

4.4 Impact to Deferred Maintenance and Repair Backlog

The proposed TEC is a new facility. This section is not applicable to the project.

4.5 Acquisition Needs

The facility will be sited on the current WCC campus; no land needs to be acquired.

4.6 Mitigation and Neighborhood Related Issues

WCC is one of the largest properties in the Cordata Neighborhood of Bellingham. As part of the recently approved Institutional Master Plan, the College met frequently with Bellingham City Planning and Development office and the Cordata Design Review Committee. Additionally, WCC connected with the Cordata Neighborhood Association and Cordata Neighborhood Board to obtain input on the IMP and to inform the adjacent community of the planned development.

Construction of a new building on the site proposed was an integral part of these discussions and the IMP. Strong neighborhood support exists for all elements of the IMP including the new TEC.

4.7 Parking Expansion

The number of available on-campus parking spaces is greater than the code required minimum. Parking counts indicate that the number of spaces is also greater than the current demand for parking, therefore there is no need to expand parking for the new TEC.

4.8 Permit Issues / Variances Required

The Technology and Engineering Center will be located near the center of campus on property already zoned Institutional. Under the newly adopted IMP, it will be classified as a project having "non-significant" impact to the surrounding community and will be reviewed for consistency with the IMP and applicable development regulations using the standard building and land use permit process. No variances will be required for the development of the new TEC.

4.9 Utility and Infrastructure Needs

The proposed sanitary sewer system consists of an 8-inch PVC line connecting to the existing 12-inch sewer that is to the east of the Learning Commons 400 feet south east of the building.

The proposed water system includes domestic water, irrigation, and fire protection lines connecting from an existing 10-inch cast-iron water main that was installed east of the Learning Commons approximately 300 feet. New fire hydrants at the southeast and southwest corners of the proposed building location will provide adequate fire hydrant coverage. The fire main extension will be 10-inch cast iron which will also feed a 2" copper domestic water feed.

Natural gas will be provided from the existing main feeding Kelly Hall from the west.

Primary power will be provided from an underground duct (300-ft) connected to the vault and transformer southwest of Kelly Hall.

Telecommunications utilities will require relocation of the primary fiber optic service to the campus. The existing feed consists of four two-inch conduits with bunched fiber. It enters campus from the east, north of the Learning Commons and runs east-west between Kelly and Kulshan Halls. The line will need to be moved to the south to clear the planned footprint of the proposed TEC. Standard data and telephone will be extended from the service to Kelly Hall.

Reasonableness of Infrastructure Cost: The proposed infrastructure improvements estimated at $1,010,758 are less than 4% of the total building cost. 100% of the proposed infrastructure improvements serve only the new building.

Infrastructure Risk Mitigation: The proposed infrastructure serves only the new building constructed in this proposal.

Infrastructure Suitability for Long-Term Financing:, The cost-weighted like of the infrastructure is estimated to be 30.58-years.

4.10 Stormwater and Other Environmental Issues

The storm drainage system for the proposed TEC will be connected to and utilize the existing north campus basin storm drainage system. Runoff from pollution generating paved areas will be collected by a series of catch basin structures and underground pipes and conveyed to the existing 12" PVC storm drainage system installed with the Learning Commons. Non-pollution generating hardscape areas, landscaped areas and natural areas will utilize a combination of catch basins structures, under-drains, and underground pipes to collect and convey surface flows to the existing storm drainage sand infiltration systems north of the site along the access road. This flow will be used to recharge the wetlands north of the project site.

Stormwater detention will not be required for the TEC site due to the basin already being part of the Cordata Regional Detention Facility.

Landscape improvements will include native plantings in the vicinity of the new building, tying into the existing adjacent native landscaping.

Clearing includes the removal of vegetation necessary to construct the new building. No tree removal will be needed. Demolition will be limited to the removal of such items as existing utilities and surface structures.

4.11 Roads and Traffic Signals

Existing service roads will provide access to the site. Therefore, no new internal access roads or traffic signals will be required for this project. The campus is well-served by an existing modern road network. The new TEC will not require new roadway or signalization improvements.

4.12 Department of Archaeology and Historic Preservation (DAHP) and Tribal Reviews

The project will comply with the Executive Order 05-05. An EZ-1 Project Review Sheet has been submitted to Department of Archaeology and Historic Preservation initiating the formal review process of any ground disturbances. At the time of issuance for this Project Request Report all necessary steps with DAHP have been completed and no further action is required.

The Lummi and Nooksack Tribes have been given notice of the intent to construct the proposed TEC. (Attachment 6.4) Neither Tribe has expressed concerns in response to the project.

4.13 Capacity and Utilization Analysis

Fall 2016 utilization of classrooms, labs and other instructional uses indicates a very efficient use of space, particularly considering the exponential growth experienced by WCC over the last decade and the fact that the last state-funded capital project on WCC's campus occurred in 2005.

The College's laboratory utilization rate for fall 2016 was 16.75 and its classroom utilization rate was 20.40. When factoring in new spaces provided for in this capital project request, utilization rates are forecasted at 14.68 and 19.73, respectively.

Fall 2016 Utilization

	Contact Hours	Workstations	Fall 2016 Utilization
Classes	35,348.25	1,733	20.40
Labs	13,684.92	817	16.75
Campus	49,033.17	2,550	19.23

Future Utilization

	Contact Hours	Workstations	Future Utilization
Classes	36,708.25	1,861	19.73
Labs	18,104.92	1,233	14.68
Campus	54,813.17	3,094	17.72

Future utilization rates continue to demonstrate effective and efficient use of space as outlined by the scoring criteria.

4.14 New Programs and Changing Mix in Programs

The TEC will support the growth and development of several programs including certificates, associate, and specific transfer degrees in engineering and cybersecurity, as well as the new BAS degree in IT networking-cybersecurity. In addition, the building will provide space for STEM training and technology-rich lab spaces for basic education for adults.

WCC has prioritized the development of a new CIS IBEST option that will be housed in this new space. Co-location of STEM-related programs and basic instruction will facilitate the creation of new pathways that accelerate student progress from precollege skills through degree completion.

The proposed building will also allow the college to increase the range and capacity of its STEM offerings through the addition of new courses in computer science and engineering. Offering more STEM courses in high-demand areas supports the College's transfer and workforce education missions while addressing the community's economic needs.

4.15 New Space and Vacated Space

Program areas slated for the WCC Technology and Engineering Center are currently scattered in three different buildings on campus: Baker Hall, Kulshan Hall and Cascade Hall. Completion of the TEC supports co-location of high-demand program areas. Spaces vacated by the realization of the TEC allows the college to repurpose these areas to further offset other current shortages, such as additional computer and science labs, student services, and other key instructional spaces.

4.16 Comparison of Existing/New Spaces to CAM

The CAM (see Appendix 7.7) identifies a shortage of 13,031-asf in basic skills labs of which about 3,000 square feet would be solved for in the TEC. Further, there is almost 17,400 deficient square feet identified in the CAM for computer and science labs. The TEC would remedy this space insufficiency.

WCC now experiences significant space shortfalls in both faculty offices and student services functions, totaling over 25,000 square feet of deficit. The TEC will offset this shortage by adding 9,000 square feet in faculty offices, study spaces and collaborative learning environments.

The CAM also projects that in fall 2026, the College's Type 1 FTE will total 3,229, an increase of 8% over 10 years. The planned TEC is critically needed to address the current space shortfalls in needed spaces in addition to accommodating the projected growth.

4.17 Need and Availability of Surge Space

Current operations will not be displaced with the construction of the new Technology and Engineering Center; accordingly, surge space is not needed for this project.

4.18 Flexibility and Adaptability of Proposed Space

The TEC will be designed for maximum flexibility and adaptability of proposed space, providing open areas with the goal of encouraging collaboration among students, faculty, and staff.

Faculty and staff offices are shown with an open plan concept to encourage collegial interactions, with shared break-out areas for private conferences adjacent to and within the office suite. Labs are grouped around a prep space, so the programs may share equipment and resources where practicable. Flexible classrooms and computer labs will also be shared by all the programs in the building, further maximizing resources and de-emphasizing departmental ownership of floor space. Furniture in the TEC will be movable to allow multiple configurations of teaching and study space so that rooms may be set up for lectures or group learning. Collaborative study, informal learning, meeting and presentation spaces are provided to accommodate varying needs.

5.0 PROJECT BUDGET ANALYSIS OF PREFERRED ALTERNATIVE

5.1 Prediction of Overall Project Cost

WCC estimates the escalated Maximum Allowable Construction Cost (MACC) for this growth project at $20,647,410 for the building and $692,665 for its infrastructure for a total MACC escalated to be $21,340,075. The total project cost is estimated at $30,427,954. (Attachment 6.1)

5.2 Project Cost Comparisons

The estimates for the TEC compare favorably to recent SBCTC major capital projects of similar size and complexity. The proposed 52,000 square foot project has a total cost of $30,427,518 serving 447 new FTES for $68,071 per net new FTE and $585.15 per GSF. (See Appendix 7.6 for detailed cost comparison against similar SBCTC projects.)"

5.3 Maintenance and Operations Costs – Anticipated Annual Impact

The Technology and Engineering Center will be of permanent (50-year) construction type, meeting current energy and environmental codes, and Greenhouse Gas Reduction plans. The project will result in significant energy, maintenance, and operational efficiencies when

compared to other campus facilities. (See Appendix 7.6 for detailed Maintenance and Operations Costs & Anticipated Annual Impact)

5.4 Anticipated Method of Construction

The College evaluated three methods of project delivery.

GC/CM (General Contractor/Construction Manager)

- GC/CM may be utilized on projects with construction costs of $10 million or more where early involvement of the contractor is a benefit in terms of scheduling, phasing, or coordination, construction at an occupied facility; a complex or technical work environment; or specialized work on a building that has historic significance.
- GC/CM may involve increased costs for design fees related to working with the contractor and preparing multiple bid packages; and for the GC/CM risk contingency.

Design-Build

- Design-Build may be utilized on projects with construction costs of $2 million or more where construction activities are highly specialized; there is an opportunity for greater innovation or efficiencies between the designer and the builder; or significant savings in project delivery time would be realized.
- Design-Build may involve increased costs due to the effort to prepare the RFQ/RFP, stipends for competitors in the RFP phase and ongoing participation of consultants.
- Design-Build may not provide the depth of design/programming interface needed in a building where multiple program needs may be competing for fixed area or assets.
- Design-Build with a guaranteed maximum price (GMP) places much of the decision making on the Design-Builder where cost may be the primary consideration may not provide the anticipated level of quality.
- There are fewer local contractors in the Whatcom County area that have experience with this delivery-method thus the pool of local general contractors may be limited.

Design-Bid-Build

- Design-Bid-Build is used to procure most public works major capital projects in Washington State and almost all projects for the SBCTC.
- The process encourages price competition.
- Responsibility criteria can be used to ensure a qualified contractor is awarded the project.
- The college is experienced with this delivery type.

After careful consideration, WCC proposes to use Design-Bid-Build project delivery. The project is not complex enough, nor is the timeline compressed enough, to warrant the additional costs associated with GC/CM delivery. The variety of programming needs also does not lend itself to early establishment of a GMP under Design-Build.

ATTACHMENT 6.1

Cost Estimates (C-100 Form)

ATTACHMENT 6.1 – Cost and C-100 Forms

The following pages include:

- C-100 for the Proposed Technology and Engineering Center Building
- C-100 for the Proposed Technology and Engineering Center Infrastructure
  The combined C-100's reflects:
  Maximum Allowable Construction Cost (MACC)..... $21,340,075
  Total Project Cost $30,427,518
  Escalated MACC/GSF $410/GSF
  Escalated Total Project Cost/GSF..... $585/GSF

- C-100 for Considered Alternative 1 –Renovate Baker Hall and add 52,000-gsf Growth
  Maximum Allowable Construction Cost (MACC)..... $26,775,174
  Total Project Cost $37,947,000
  Escalated MACC/GSF $402/GSF
  Escalated Total Project Cost/GSF..... $569/GSF

- Lease Costs for Considered Alternative 2 –Lease Off-Campus 52,000-gsf
  Initial Biennium Capital Cost $6,439,400
  Subsequent Biennium Leas Cost $4,768,400
  Total Cost 30-year Lease $73,197,000

- Infrastructure Average Useful Life Calculation: ..... 30.58 years

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Agency	Whatcom Community College
Project Name	Technology and Engineering Center **(Building)**
OFM Project Number	

Contact Information	
Name	Brian Keeley
Phone Number	(360) 383-3375
Email	bkeeley@whatcom.edu

Statistics			
Gross Square Feet	52,000	MACC per Square Foot	$349
Usable Square Feet	35,845	Escalated MACC per Square Foot	$397
Space Efficiency	68.9%	A/E Fee Class	B
Construction Type	College classroom facilit	A/E Fee Percentage	7.31%
Remodel	No	Projected Life of Asset (Years)	50
Additional Project Details			
Alternative Public Works Project	No	Art Requirement Applies	Yes
Inflation Rate	2.80%	Higher Ed Institution	Yes
Sales Tax Rate %	8.70%	Location Used for Tax Rate	Bellingham
Contingency Rate	5%		
Base Month	December-17		
Project Administered By	DES		

Schedule			
Predesign Start	June-18	Predesign End	December-18
Design Start	July-19	Design End	May-21
Construction Start	September-21	Construction End	September-23
Construction Duration	24 Months		

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Project Cost Estimate

Total Project	**$25,982,929**	Total Project Escalated	**$29,416,760**
		Rounded Escalated Total	**$29,417,000**

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Agency	Whatcom Community College	
Project Name	Technology and Engineering Center **(Building)**	
OFM Project Number		

Cost Estimate Summary

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$330,000		
A/E Basic Design Services	$960,523		
Extra Services	$912,000		
Other Services	$886,539		
Design Services Contingency	$154,453		
Consultant Services Subtotal	**$3,243,516**	**Consultant Services Subtotal Escalated**	**$3,537,984**

Construction			
Construction Contingencies	$906,822	Construction Contingencies Escalated	$1,034,050
Maximum Allowable Construction Cost (MACC)	$18,136,442	Maximum Allowable Construction Cost (MACC) Escalated	$20,647,410
Sales Tax	$1,656,764	Sales Tax Escalated	$1,886,288
Construction Subtotal	**$20,860,028**	**Construction Subtotal Escalated**	**$23,750,196**

Equipment			
Equipment	$1,404,000		
Sales Tax	$122,148		
Non-Taxable Items	$0		
Equipment Subtotal	**$1,526,148**	**Equipment Subtotal Escalated**	**$1,740,268**

Artwork			
Artwork Subtotal	**$103,237**	**Artwork Subtotal Escalated**	**$103,237**

Agency Project Administration			
Agency Project Administration Subtotal	$0		
DES Additional Services Subtotal	$250,000		
Other Project Admin Costs	$0		
Project Administration Subtotal	**$250,000**	**Project Administation Subtotal Escalated**	**$285,075**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate

Total Project	**$25,982,929**	Total Project Escalated	**$29,416,760**
		Rounded Escalated Total	**$29,417,000**

WCC TECHNOLOGY ENGINEERING CENTER
PREFFERED ALTERNATE
BUILDING

Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis	$40,000			
Environmental Analysis	$40,000			
Predesign Study	$250,000			
Other				
Insert Row Here				
Sub TOTAL	**$330,000**	**1.0446**	**$344,718**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$960,523			69% of A/E Basic Services
Other				
Insert Row Here				
Sub TOTAL	**$960,523**	**1.0714**	**$1,029,105**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$180,000			
Geotechnical Investigation	$35,000			
Commissioning	$35,000			
Site Survey	$30,000			
Testing	Included in 4) below			
LEED Services	$60,000			
Voice/Data Consultant	$80,000			
Value Engineering	$50,000			
Constructability Review	$50,000			
Environmental Mitigation (EIS)	$20,000			
Landscape Consultant	$85,000			
ELCCA and Energy Modeling	$85,000			
Wetlands Consultant	$25,000			
Reimbursables	$20,000			
Interior Design/FF&E Support	$55,000			
Instructional Media/A-V Design	$50,000			
Renderings Modeling	$12,000			
Interactive Cost estimating	$40,000			
Insert Row Here				
Sub TOTAL	**$912,000**	**1.0714**	**$977,117**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$431,539			31% of A/E Basic Services
HVAC Balancing	In construction			
Staffing				
Other				
Enhanced CA/CO Services	$200,000			
Materials Testing	$80,000			
Independent Commissioning	$80,000			
LEED Reporting	$60,000			
Reimbursables for Bid & CA/CO	$35,000			
Insert Row Here				
Sub TOTAL	**$886,539**	**1.1403**	**$1,010,921**	Escalated to Mid-Const.
5) Design Services Contingency				

Design Services Contingency	$154,453			
Other				
Insert Row Here				
Sub TOTAL	**$154,453**	**1.1403**	**$176,123**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$3,243,516**		**$3,537,984**	

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Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation	$267,245			
G20 - Site Improvements	$655,380			
G30 - Site Mechanical Utilities	See Infrastructure			
G40 - Site Electrical Utilities	See Infrastructure			
G60 - Other Site Construction				
General Conditions	$77,000			
Contractors O & P	$79,970			
Sub TOTAL	**$1,079,595**	**1.1092**	**$1,197,487**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1092**	**$0**	
3) Facility Construction				
A10 - Foundations	$504,492			
A20 - Basement Construction	$0			
B10 - Superstructure	$870,690			
B20 - Exterior Closure	$2,364,700			
B30 - Roofing	$506,110			
C10 - Interior Construction	$1,397,000			
C20 - Stairs	$160,050			
C30 - Interior Finishes	$1,397,000			
D10 - Conveying	$205,000			
D20 - Plumbing Systems	$600,600			
D30 - HVAC Systems	$2,860,000			
D40 - Fire Protection Systems	$286,000			
D50 - Electrical Systems	$2,814,900			
F10 - Special Construction	$0			
F20 - Selective Demolition	$0			
General Conditions	$1,232,000			
Built-In Fixtures and Equipment	$594,880			
Contractors O & P	$1,263,425			
Sub TOTAL	**$17,056,847**	**1.1403**	**$19,449,923**	
4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$18,136,442**		**$20,647,410**	

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7) Construction Contingency				
Allowance for Change Orders	$906,822			
Other				
Insert Row Here				
Sub TOTAL	**$906,822**	**1.1403**	**$1,034,050**	
8) Non-Taxable Items				
Permitting and Fees	$160,000			
Insert Row Here				
Sub TOTAL	**$160,000**	**1.1403**	**$182,448**	
Sales Tax				
Sub TOTAL	**$1,656,764**		**$1,886,288**	
CONSTRUCTION CONTRACTS TOTAL	**$20,860,028**		**$23,750,196**	

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Cost Estimate Details

Equipment				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
E10 - Equipment	$468,000			
E20 - Furnishings	$936,000			
F10 - Special Construction				
Other				
Insert Row Here				
Sub TOTAL	**$1,404,000**	**1.1403**	**$1,600,982**	
1) Non Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1403**	**$0**	
Sales Tax				
Sub TOTAL	**$122,148**		**$139,286**	
EQUIPMENT TOTAL	**$1,526,148**		**$1,740,268**	

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Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Project Artwork	$0				0.5% of Escalated MACC for new construction
Higher Ed Artwork	$103,237				0.5% of Escalated MACC for new and renewal construction
Other					
Insert Row Here					
ARTWORK TOTAL	**$103,237**		**NA**	**$103,237**	

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Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Agency Project Management	$0				
Additional Services	$250,000				
Other					
Insert Row Here					
PROJECT MANAGEMENT TOTAL	**$250,000**		**1.1403**	**$285,075**	

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STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Agency	Whatcom Community College
Project Name	Technology and Engineering Center **(Infrastructure)**
OFM Project Number	

Contact Information	
Name	Brian Keeley
Phone Number	(360) 383-3375
Email	bkeeley@whatcom.edu

Statistics			
Gross Square Feet	52,000	MACC per Square Foot	$12
Usable Square Feet	35,845	Escalated MACC per Square Foot	$13
Space Efficiency	68.9%	A/E Fee Class	B
Construction Type	College classroom facilit	A/E Fee Percentage	10.64%
Remodel	No	Projected Life of Asset (Years)	50
Additional Project Details			
Alternative Public Works Project	No	Art Requirement Applies	Yes
Inflation Rate	2.80%	Higher Ed Institution	Yes
Sales Tax Rate %	8.70%	Location Used for Tax Rate	Bellingham
Contingency Rate	5%		
Base Month	December-17		
Project Administered By	DES		

Schedule			
Predesign Start	June-18	Predesign End	December-18
Design Start	July-18	Design End	June-20
Construction Start	September-21	Construction End	September-23
Construction Duration	24 Months		

Green cells must be filled in by user

Project Cost Estimate

Total Project	**$916,609**	Total Project Escalated	**$1,010,758**
		Rounded Escalated Total	**$1,011,000**

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Agency	Whatcom Community College
Project Name	Technology and Engineering Center **(Infrastructure)**
OFM Project Number	

Cost Estimate Summary

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$6,000		
A/E Basic Design Services	$48,139		
Extra Services	$77,000		
Other Services	$21,627		
Design Services Contingency	$7,638		
Consultant Services Subtotal	**$160,404**	**Consultant Services Subtotal Escalated**	**$170,053**

Construction			
Construction Contingencies	$31,224	Construction Contingencies Escalated	$35,605
Maximum Allowable Construction Cost (MACC)	$624,472	Maximum Allowable Construction Cost (MACC) Escalated	$692,665
Sales Tax	$57,046	Sales Tax Escalated	$63,360
Construction Subtotal	**$712,741**	**Construction Subtotal Escalated**	**$791,630**

Equipment			
Equipment	$0		
Sales Tax	$0		
Non-Taxable Items	$0		
Equipment Subtotal	**$0**	**Equipment Subtotal Escalated**	**$0**

Artwork			
Artwork Subtotal	**$3,463**	**Artwork Subtotal Escalated**	**$3,463**

Agency Project Administration			
Agency Project Administration Subtotal	$0		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$0		
Project Administration Subtotal	**$40,000**	**Project Administation Subtotal Escalated**	**$45,612**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate

Total Project	**$916,609**	Total Project Escalated	**$1,010,758**
		Rounded Escalated Total	**$1,011,000**

WCC TECHNOLOGY ENGINEERING CENTER

PREFFERED ALTERNATE

INFRASTRUCTURE

Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study	$6,000			
Other				
Insert Row Here				
Sub TOTAL	**$6,000**	**1.0162**	**$6,098**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$48,139			69% of A/E Basic Services
Other				
Insert Row Here				
Sub TOTAL	**$48,139**	**1.0435**	**$50,233**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$70,000			
Geotechnical Investigation				
Commissioning				
Site Survey				
Testing				
LEED Services				
Voice/Data Consultant				
Value Engineering				
Constructability Review				
Environmental Mitigation (EIS)				
Landscape Consultant	$7,000			
Other				
Insert Row Here				
Sub TOTAL	**$77,000**	**1.0435**	**$80,350**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$21,627			31% of A/E Basic Services
HVAC Balancing				
Staffing				
Other				
Insert Row Here				
Sub TOTAL	**$21,627**	**1.1403**	**$24,662**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$7,638			
Other				
Insert Row Here				
Sub TOTAL	**$7,638**	**1.1403**	**$8,710**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$160,404**		**$170,053**	

Green cells must be filled in by user

Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation				
G20 - Site Improvements				
G30 - Site Mechanical Utilities	$304,425			
G40 - Site Electrical Utilities	$196,790			
G60 - Other Site Construction				
General Requirements	$77,000			
Contractors O & P	$46,257			
Sub TOTAL	**$624,472**	**1.1092**	**$692,665**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1092**	**$0**	
3) Facility Construction				
A10 - Foundations				
A20 - Basement Construction				
B10 - Superstructure				
B20 - Exterior Closure				
B30 - Roofing				
C10 - Interior Construction				
C20 - Stairs				
C30 - Interior Finishes				
D10 - Conveying				
D20 - Plumbing Systems				
D30 - HVAC Systems				
D40 - Fire Protection Systems				
D50 - Electrical Systems				
F10 - Special Construction				
F20 - Selective Demolition				
General Conditions				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1403**	**$0**	
4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$624,472**		**$692,665**	

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7) Construction Contingency				
Allowance for Change Orders	$31,224			
Other				
Insert Row Here				
Sub TOTAL	**$31,224**	**1.1403**	**$35,605**	
8) Non-Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1403**	**$0**	
Sales Tax				
Sub TOTAL	**$57,046**		**$63,360**	
CONSTRUCTION CONTRACTS TOTAL	**$712,741**		**$791,630**	

Green cells must be filled in by user

Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Project Artwork	$0				0.5% of Escalated MACC for new construction
Higher Ed Artwork	$3,463				0.5% of Escalated MACC for new and renewal construction
Other					
Insert Row Here					
ARTWORK TOTAL	**$3,463**		**NA**	**$3,463**	

Green cells must be filled in by user

Cost Estimate Details

Project Management				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
Agency Project Management	$0			
Additional Services				
Agency Management	$40,000			
Insert Row Here				
PROJECT MANAGEMENT TOTAL	**$40,000**	**1.1403**	**$45,612**	

Green cells must be filled in by user

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Agency	Whatcom Community College
Project Name	**ALTERNATE 1 - Renovate and Addition to Baker Hall**
OFM Project Number	

Contact Information	
Name	Brian Keeley
Phone Number	(360) 383-3375
Email	bkeeley@whatcom.edu

Statistics			
Gross Square Feet	66,600	MACC per Square Foot	$352
Usable Square Feet	43,290	Escalated MACC per Square Foot	$402
Space Efficiency	65.0%	A/E Fee Class	B
Construction Type	College classroom facilit	A/E Fee Percentage	7.02%
Remodel	No	Projected Life of Asset (Years)	50
Additional Project Details			
Alternative Public Works Project	No	Art Requirement Applies	Yes
Inflation Rate	2.80%	Higher Ed Institution	Yes
Sales Tax Rate %	8.70%	Location Used for Tax Rate	Bellingham
Contingency Rate	5%		
Base Month	December-17		
Project Administered By	DES		

Schedule			
Predesign Start	June-18	Predesign End	December-18
Design Start	July-19	Design End	May-21
Construction Start	September-21	Construction End	December-23
Construction Duration	27 Months		

Green cells must be filled in by user

Project Cost Estimate

Total Project	**$33,421,672**	Total Project Escalated	**$37,946,601**
		Rounded Escalated Total	**$37,947,000**

STATE OF WASHINGTON

AGENCY / INSTITUTION PROJECT COST SUMMARY

Agency	Whatcom Community College
Project Name	**ALTERNATE 1 - Renovate and Addition to Baker Hall**
OFM Project Number	

Cost Estimate Summary

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$450,000		
A/E Basic Design Services	$1,192,958		
Extra Services	$1,003,000		
Other Services	$1,105,967		
Design Services Contingency	$187,596		
Consultant Services Subtotal	**$3,939,521**	**Consultant Services Subtotal Escalated**	**$4,302,917**

Construction			
Construction Contingencies	$1,172,788	Construction Contingencies Escalated	$1,341,905
Maximum Allowable Construction Cost (MACC)	$23,455,768	Maximum Allowable Construction Cost (MACC) Escalated	$26,775,174
Sales Tax	$2,142,684	Sales Tax Escalated	$2,446,186
Construction Subtotal	**$26,951,241**	**Construction Subtotal Escalated**	**$30,769,221**

Equipment			
Equipment	$1,782,000		
Sales Tax	$155,034		
Non-Taxable Items	$0		
Equipment Subtotal	**$1,937,034**	**Equipment Subtotal Escalated**	**$2,216,355**

Artwork			
Artwork Subtotal	**$133,876**	**Artwork Subtotal Escalated**	**$133,876**

Agency Project Administration			
Agency Project Administration Subtotal	$0		
DES Additional Services Subtotal	$400,000		
Other Project Admin Costs	$0		
Project Administration Subtotal	**$400,000**	**Project Administation Subtotal Escalated**	**$457,680**

Other Costs			
Other Costs Subtotal	**$60,000**	**Other Costs Subtotal Escalated**	**$66,552**

Project Cost Estimate

Total Project	**$33,421,672**	Total Project Escalated	**$37,946,601**
		Rounded Escalated Total	**$37,947,000**

Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis	$80,000			
Environmental Analysis	$40,000			
Predesign Study	$250,000			
Model existing conditions	$80,000			
Insert Row Here				
Sub TOTAL	**$450,000**	**1.0446**	**$470,070**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$1,192,958			69% of A/E Basic Services
Other				
Insert Row Here				
Sub TOTAL	**$1,192,958**	**1.0714**	**$1,278,136**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$180,000			
Geotechnical Investigation	$35,000			
Commissioning	$35,000			
Site Survey	$30,000			
Testing	$24,000			
LEED Services	$60,000			
Voice/Data Consultant	$80,000			
Value Engineering	$50,000			
Constructability Review	$50,000			
Environmental Mitigation (EIS)	$20,000			
Landscape Consultant	$85,000			
ELCCA and Energy Modeling	$85,000			
Wetlands Consultant	$25,000			
Reimbursables	$20,000			
Interior Design/FF&E Support	$75,000			
Instructional Media/A-V Design	$65,000			
Renderings Modeling	$24,000			
Interactive Cost estimating	$60,000			
Insert Row Here				
Sub TOTAL	**$1,003,000**	**1.0714**	**$1,074,615**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$535,967			31% of A/E Basic Services
HVAC Balancing	In construction			
Staffing				
Other				
Enhanced CA/CO Services	$300,000			
Materials Testing	$80,000			
Independent Commissioning	$95,000			
LEED Reporting	$60,000			
Reimbursables for Bid & CA/CO	$35,000			
Insert Row Here				
Sub TOTAL	**$1,105,967**	**1.1442**	**$1,265,448**	Escalated to Mid-Const.
5) Design Services Contingency				

Design Services Contingency	$187,596			
Other				
Insert Row Here				
Sub TOTAL	**$187,596**	**1.1442**	**$214,648**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$3,939,521**		**$4,302,917**	

Green cells must be filled in by user

Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation	$300,000			
G20 - Site Improvements	$700,000			
G30 - Site Mechanical Utilities	$250,000			
G40 - Site Electrical Utilities	$250,000			
G60 - Other Site Construction	$0			
General Conditions	$105,000			
Contractors O & P	$192,600			
Sub TOTAL	**$1,797,600**	**1.1092**	**$1,993,898**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1092**	**$0**	
3) Facility Construction				
A10 - Foundations	$600,000			
A20 - Basement Construction	$0			
B10 - Superstructure	$1,056,000			
B20 - Exterior Closure	$3,000,000			
B30 - Roofing	$600,000			
C10 - Interior Construction	$1,750,000			
C20 - Stairs	$160,050			
C30 - Interior Finishes	$1,750,000			
D10 - Conveying	$204,600			
D20 - Plumbing Systems	$759,000			
D30 - HVAC Systems	$3,680,000			
D40 - Fire Protection Systems	$330,000			
D50 - Electrical Systems	$3,300,000			
F10 - Special Construction	$0			
F20 - Selective Demolition	$300,000			
General Conditions	$1,155,000			
Built-In Fixtures and Equipment	$693,000			
Contractors O & P	$2,320,518			
Sub TOTAL	**$21,658,168**	**1.1442**	**$24,781,276**	
4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$23,455,768**		**$26,775,174**	

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7) Construction Contingency				
Allowance for Change Orders	$1,172,788			
Other				
Insert Row Here				
Sub TOTAL	**$1,172,788**	**1.1442**	**$1,341,905**	
8) Non-Taxable Items				
Permitting and Fees	$180,000			
Insert Row Here				
Sub TOTAL	**$180,000**	**1.1442**	**$205,956**	
Sales Tax				
Sub TOTAL	**$2,142,684**		**$2,446,186**	
CONSTRUCTION CONTRACTS TOTAL	**$26,951,241**		**$30,769,221**	

Green cells must be filled in by user

Cost Estimate Details

Equipment				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
E10 - Equipment	$594,000			
E20 - Furnishings	$1,188,000			
F10 - Special Construction				
Other				
Insert Row Here				
Sub TOTAL	**$1,782,000**	**1.1442**	**$2,038,965**	
1) Non Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1442**	**$0**	
Sales Tax				
Sub TOTAL	**$155,034**		**$177,390**	
EQUIPMENT TOTAL	**$1,937,034**		**$2,216,355**	

Green cells must be filled in by user

Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Project Artwork	$0				0.5% of Escalated MACC for new construction
Higher Ed Artwork	$133,876				0.5% of Escalated MACC for new and renewal construction
Other					
Insert Row Here					
ARTWORK TOTAL	**$133,876**		**NA**	**$133,876**	

Green cells must be filled in by user

Cost Estimate Details

Project Management				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
Agency Project Management	$0			
Additional Services	$400,000			
Other				
Insert Row Here				
PROJECT MANAGEMENT TOTAL	**$400,000**	**1.1442**	**$457,680**	

Green cells must be filled in by user

Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs					
Hazardous Material Remediation/Removal	$60,000				
Historic and Archeological Mitigation					
Other					
Insert Row Here					
OTHER COSTS TOTAL	**$60,000**		**1.1092**	**$66,552**	

Green cells must be filled in by user

Lease Option 1 Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

New Lease Option 1 Description	LEASE 52,000GSF FOR TECHNOLOGY AND ENGINEERING CENTER OFF CAMPUS - ALTERNATIVE #2

New Lease Information		
Lease Location	Bellingham	Market Area: Northwest
Lease Square Feet Type	Gross	
New Facility Square Feet	52,000	
New Lease Start Date	7/1/2023	
SF per Person Calculated		

New Lease Costs	**Years of Term**	**Rate / SF / Year**	**Rate / Month**	**Adjusted to FS Rate**	**Total FS Rate / Month**	**Estimated FSG Market Rate**	**Estimated FSG Rate / Month**	**Real Estate Transaction Fees for Term**
Years 1 - 30	30	$ 34.00	$ 147,333	$ 45.85	$ 198,683	$ 41.68	$ 180,625	$ 773,500
Years								
Years								
Years								
Years								
Total Length of Lease	30							$ 773,500
Transaction Fee for first 5 Years	2.50%	*of total rent for first 5 years of term*						
Transaction Fee for Additional Years	1.25%	*of total rent for term beyond 5 years*						

Note: Real estate transaction fees calculated on base lease - not full service rate including added services and utilities.

WCC 2019-21 PRR
Technology & Engineering Center
Alternative #2

Added Services	New Lease Operating Costs (Starting in current year)	Known Cost / SF / Year	Estimated Cost / SF / Year in 2023 - Gross	Total Cost / Year	Cost / Month
☑	Energy (Electricity, Natural Gas)	$ 1.50	$ 1.25	$ 78,000	$ 6,500
☑	Janitorial Services	$ 1.77	$ 1.50	$ 92,040	$ 7,670
☑	Utilities (Water, Sewer, & Garbage)	$ 1.83	$ 0.43	$ 95,160	$ 7,930
☑	Grounds	$ 0.62	$ 0.15	$ 32,240	$ 2,687
☑	Pest Control	$ 0.25	$ 0.05	$ 13,000	$ 1,083
☑	Security	$ 0.40	$ 0.13	$ 20,800	$ 1,733
☑	Maintenance and Repair	$ 2.43	$ 6.40	$ 126,360	$ 10,530
☑	Management	$ 0.68	$ 0.76	$ 35,360	$ 2,947
☐	Road Clearance	$ -	$0.00	$ -	$ -
☑	Telecom	$ 2.37	$ -	$ 123,240	$ 10,270
	Additional Parking	$ -	$ -	$ -	$ -
	Other		$ -	$ -	$ -
	Total Operating Costs	**$ 11.85**	**$ 10.67**	**$ 616,200**	**$ 51,350**

Escalated to lease start date

	New Lease One Time Costs	Current Estimate	Calculated (for reference)	
*	Real Estate Transaction Fees		$ 773,500	*Per Std %*
*	Tenant Improvements		$ 780,000	*$15 per SF*
*	IT Infrastructure	$ 416,000	$ -	
*	Furniture Costs	$ 1,040,000	$ -	
*	Building Security and Access Systems	$ 65,000		
*	Moving Vendor and Supplies	$ 150,000	$ -	
	Other / Incentive			
	Total	$ 1,671,000	$ 1,553,500	

Biennium Budget Impacts for New Lease	Biennium Time Period Start	Finish	Existing Lease Option	New Lease Option 1	Biennium Impact:
21-23 Biennium Lease Expenditure	7/1/2021	6/30/2023	$ -	$ -	$ -
23-25 Biennium Lease Expenditure	7/1/2023	6/30/2025	$ -	$ 6,439,400	$ 6,439,400
25-27 Biennium Lease Expenditure	7/1/2025	6/30/2027	$ -	$ 4,768,400	$ 4,768,400
27-29 Biennium Lease Expenditure	7/1/2027	6/30/2029	$ -	$ 4,768,400	$ 4,768,400
29-31 Biennium Lease Expenditure	7/1/2029	6/30/2031	$ -	$ 4,768,400	$ 4,768,400

19-21 PRR **20-Dec-17**

Technology and Engineering Center - Whatcom Community College

Infrastructure Component	Avg. Useful Life	Estimated Cost (2017 $)	Cost Weighted Life
Potable Water Piping (PVC)	25	$ 80,000	2,000,000
Fire Piping (Ductile Iron)	40	$ 90,000	3,600,000
Natural Gas (Steel)	40	$ 20,000	800,000
Interbuilding Communications (PVC)	25	$ 65,000	1,625,000
Sewer Lines (Concrete)	40	$ 80,000	3,200,000
Storm Lines (Metal)	40	$ 140,000	5,600,000
Primary Power Feed	20	$ 217,500	4,350,000
SUBTOTAL		$ 692,500	21,175,000
COST WEIGHTED AVERAGE USEFUL LIFE			**30.58**

Note:

(1) Above costs are escalated MACC Costs rounded

ATTACHMENT 6.2

Project Parameters Form

Project Parameters

Type of Space	Square Footage	Percent
Renovation of Existing	(S1) 0	0%
New Space	(S2) 52,000	100%
Exterior Circulation of Existing. See Appendix H.	(S6) 0	0%
Demolished Area	(S3)	
Total Affected Area	**(S4) 52,000**	100%
Net Area Change = New – Demo – Circulation	(S5) 52,000	100%

Costs	Dollars	Percent
Acquisition	$ 0	0%
Consultant Services	$ 3,708,037	12.2%
Construction Contracts (w/o eligible Infrastructure)	Ca $ 23,750,196	78.1%
Eligible Infrastructure Contracts (from C100)	Cb $791,630	2.6%
Equipment	$ 1,740,268	5.7%
Artwork	$ 106,700	0.3%
Other Costs	$ 0	0%
Project Management	$ 330,687	1.1%
Total Project Cost (C1)	$ 30,427,518	100%

Funding	Dollars	Percent
State Appropriation	$ 30,427,518	100%
Financed – backed by State Appropriation	$ 0	0%
Local Funds – Cash (see list of qualifying funds)	Ma $ 0	0%
Financed – backed by Local Funds	Mb $ 0	0%
Total Project Funding	**(F1) $ 30,427,518**	100%
Matching	(Ma+Mb) $ 0	(Ma+Mb) / F1 0%
Variance = Cost – Funding	(C1 – F1) $ 0	0%

Project Weighting	Equivalent Area	Percent
Matching	(M4 * S4) 0	M4 = 2 * (Ma+Mb)/F1 0%
Infrastructure	(I4 * S4) 1,727	I4 = min(Cb/(Ca+Cb),(1-M4)) 3%
Renovation	(R4 * S4)	R4 = (S1 * (1-M4-I4))/(S1+S5+min(S2,S3)) 0%
Replacement	(P4 * S4)	P4 = (min(S2,S3) * (1-M4-I4))/(S1+S5+min(S2,S3)) 0%
New	(N4 * S4) 50,273	N4 = ((S5)*(1-M4-I4))/(S1+S5+min(S2,S3)) 97%
Total	**S4 52,000**	**M4+R4+P4+N4 100%**

Attachment 6.2

ATTACHMENT 6.3

Minimum and Overarching Criteria Form

2019-21 Minimum and Overarching Criteria Points

Evaluation Criteria	Scoring Standard	College Response
College Response	Affected buildings are at a single site.	**YES** / ~~No~~
College Response	Project does not include improvements to temporary or portable facilities.	**YES** / No
College Response	Project is not a gymnasium or recreational facility.	**YES** / No
College Response	Project is not an exclusive enterprise function such as a bookstore, dormitory or contract food service.	**YES** / ~~No~~
College Response	Project is not dependent on another project in the current request.	**YES** / ~~No~~
College Response	Project meets LEED Silver Standard requirements.	**YES** / ~~No~~
College Response	College has a Greenhouse Gas Emission Reduction plan.	**YES** / ~~No~~
College Response	The facility is state-owned or a condominium interest is held (state capital funds cannot be spent on leased space).	**YES** / ~~No~~
College Response	Project will take more than one biennium. And, project costs at least $5,000,000 and does not exceed 70,000 gsf without WACTC Capital Budget Committee approval.	**YES** / ~~No~~
College Response	If project includes renovation or replacement, then affected buildings have been owned by the college for 20 years at the time of the request.	**YES** / ~~No~~
College Response	If project includes renovation, then the project extends the useful life of the affected building at least 20 years.	~~Yes / No~~ **(Not Applicable)**
College Response	If project includes renovation, then the cost does not exceed 80% of the current replacement cost.	~~Yes / No~~ **(Not Applicable)**
Effective use of existing facilities See Appendix C for guidelines on determining existing utilization.	Fall 2016 space utilization relative to standards and other proposals. Standards are: Classroom seats used 22 hours per week. Laboratory seats used 16 hours per week.	**9 points** Classrooms 20.40 Labs 16.75
Ability to enhance state and institution's achievement of goals	*Add up points from each category: (Max 14)* Directly tied to facilities master plan Directly tied to objectives in strategic plan Include clear and succinct description of the relationship between the project and its impact on partnerships with K-12, 4 yrs, business, etc. This may be supported by letters from partners describing how the project will benefit the partnership. Project includes at least seven of the best practices identified in Appendix A to reduce greenhouse gas emissions.	**YES 4** **YES 4** **YES 4** (see Narrative 2.1 and Appendix 7.4) **YES 2** (see Narrative 4.3 and attachment 6.6)
	Overarching Subtotal (O1)	
	Overarching Weighting (O2)	
	Overarching Weighted Subtotal (O3 = O1 x O2)	
	Overarching Portion of Project (O4)	
	Overarching Points (O5 = O3 x O4)	

Attachment 6.3

ATTACHMENT 6.4

DAHP and Tribal Review

ATTACHMENT 6.4 – DAHP and Tribal Letters

The following pages include:

- DAHP notice of non-significance
- Letters to the Lummi and Nooksack Tribes

Allyson Brooks Ph.D., Director
State Historic Preservation Officer

November 16, 2017

Mr. Wayne Doty
Director of Capital Budgets
WA State Board for Community and Technical Colleges
MS 42495
Olympia, WA 98504-2495

In future correspondence please refer to:
Project Tracking Code: 2017-11-08223
Property: Whatcom College Kelly Hall Expansion
Re: No Historic Properties Affected

Dear Mr. Doty:

Recently the Washington State Historic Preservation Officer (SHPO) and Department of Archaeology and Historic Preservation (DAHP) was contacted regarding the above referenced proposal. This communication has been reviewed on behalf of the SHPO by Dr. Rob Whitlam and myself under provisions of Governor's Executive Order 05-05. Our review is based upon documentation provided in their submittal.

First, we agree with the project area of potential effect (APE) as mapped in their documentation. We also concur that no historic properties will be affected by the current project as proposed. As a result of our concurrence, further contact with DAHP on this proposal is not necessary. However, if new information about affected resources becomes available and/or the project scope of work changes significantly, please resume consultation as our assessment may be revised. Also, if any archaeological resources are uncovered during construction, please halt work immediately in the area of discovery and contact the appropriate Native American Tribes and DAHP for further consultation.

Thank you for the opportunity to review and comment. If you have any questions, please don't hesitate to contact me.

Sincerely,

Russell Holter
Project Compliance Reviewer
(360) 586-3533
russell.holter@dahp.wa.gov

Whatcom
COMMUNITY COLLEGE

October 9, 2017

Chairman Bob Kelly
Nooksack Tribal Council
4979 Mount Baker Highway
Deming, WA 98244

Dear Chairman Kelly,

Pursuant to Governor's Executive Order 0505 and out of respect for our local tribal communities, I am writing to inform you of Whatcom Community College's intent to build a new 51,000 sq. ft. academic building on our main campus in Bellingham, Washington. The new facility will include instructional classrooms, technology labs, student study spaces, and offices.

We are currently preparing a capital funding request to submit to the Washington State Board of Community & Technical Colleges (SBCTC) on December 15 as part of a competitive process to identify needs and establish capital funding priorities within the SBCTC system. Should our request be successful in securing funding, we would hope to start the design phase of our project in the 2019-2021 biennium.

The Washington State Department of Archaeology and Historic Preservation (DAHP) has already determined that the proposed project would have no impact to cultural resources. That said, the College is committed to the immediate stoppage of work if any cultural resources are discovered during the course of construction.

Attached you will find a campus map showing the proposed location of the new building. I would ask that you please respond directly to Brian Keeley, Senior Director for Facilities & Operation, via email at bkeeley@whatcom.edu by Thursday, November 30, 2017 with any comments or concerns you may have regarding the proposed project.

Thank you,

Kathi Hiyane-Brown, Ed.D.
President

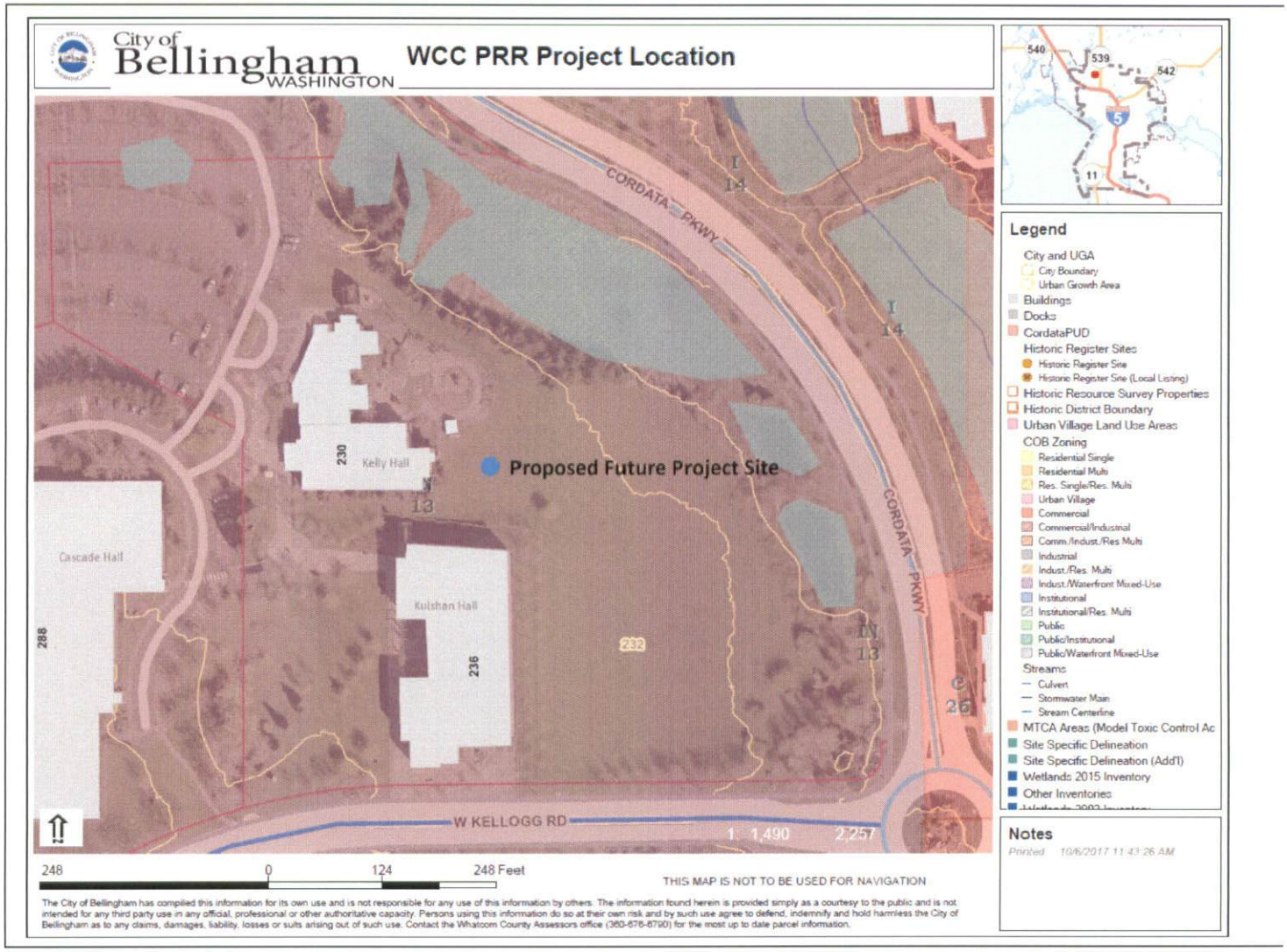
phone 360.383.3000 | fax 360.383.4000 | 237 West Kellogg Road, Bellingham WA 98226 | whatcom.edu

Whatcom
COMMUNITY COLLEGE

Project Location:

Township: T38N **Range:** R02E **Section:** 12

Address: 230 W. Kellogg Rd. **City:** Bellingham **County:** Whatcom



Project Address: Whatcom Community College
230 W. Kellogg Rd.
Bellingham WA, 98226

Whatcom
COMMUNITY COLLEGE

October 9, 2017

Chairman Tim Ballew
Lummi Nation Business Council
2665 Kwina Road
Bellingham, WA 98226

Dear Mr. Ballew,

Pursuant to Governor's Executive Order 0505 and out of respect to our local tribal communities, I am writing to inform you of Whatcom Community College's intent to build a new 51,000 sq. ft. academic building on our main campus in Bellingham, Washington. The new facility will include instructional classrooms, technology labs, student study spaces, and offices.

We are currently preparing a capital funding request to submit to the Washington State Board of Community & Technical Colleges (SBCTC) on December 15 as part of a competitive process to identify needs and establish capital funding priorities within the SBCTC system. Should our request be successful in securing funding, we would hope to start the design phase of our project in the 2019-2021 biennium.

The Washington State Department of Archaeology and Historic Preservation (DAHP) has already determined that the proposed project would have no impact to cultural resources. That said, the College is committed to the immediate stoppage of work if any cultural resources are discovered during the course of construction.

Attached you will find a campus map showing the proposed location of the new building. I would ask that you please respond directly to Brian Keeley, Senior Director for Facilities & Operations, via email at bkeeley@whatcom.edu by Thursday, November 30, 2017 with any comments or concerns you may have regarding the proposed project.

Thank you,

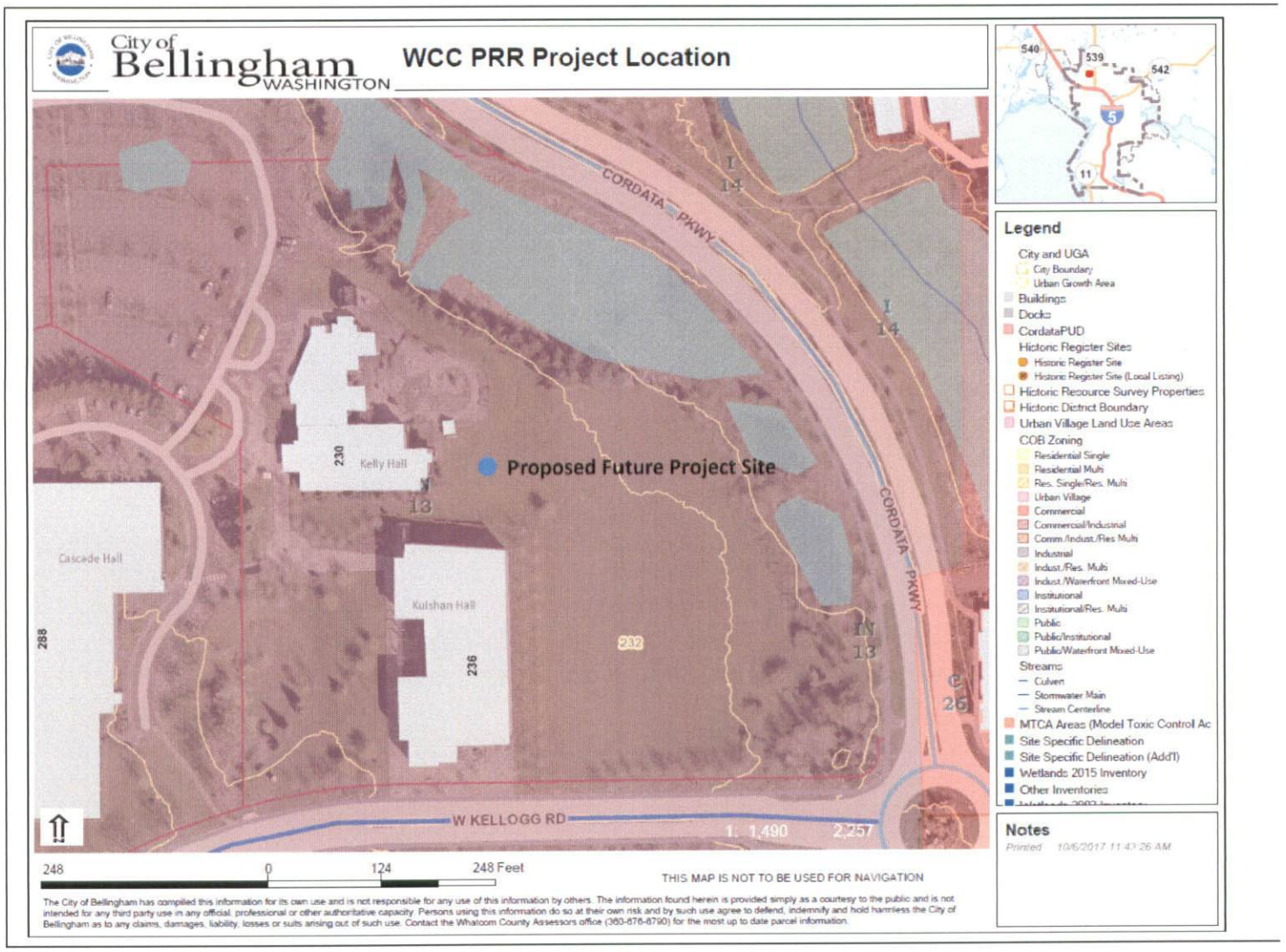
Kathi Hiyane-Brown, Ed.D.
President

Whatcom
COMMUNITY COLLEGE

Project Location:

Township: T38N **Range:** R02E **Section:** 12

Address: 230 W. Kellogg Rd. **City:** Bellingham **County:** Whatcom



The City of Bellingham has compiled this information for its own use and is not responsible for any use of this information by others. The information found herein is provided simply as a courtesy to the public and is not intended for any third party use in any official, professional or other authoritative capacity. Persons using this information do so at their own risk and by such use agree to defend, indemnify and hold harmless the City of Bellingham as to any claims, damages, liability, losses or suits arising out of such use. Contact the Whatcom County Assessors office (360-676-6790) for the most up to date parcel information.

Project Address: Whatcom Community College
230 W. Kellogg Rd.
Bellingham WA, 98226

ATTACHMENT 6.5

LEED v4 Checklist

LEED v4 for BD+C: New Construction and Major Renovation

Project Checklist

Project Name: **Technology and Engineering Center - Whatcom Communityu College**

Date: December 2017

Y	?	N			
1			Credit	Integrative Process	1

9	3	4	**Location and Transportation**		16
1			Credit	LEED for Neighborhood Development Location	16
		1	Credit	Sensitive Land Protection	1
	2		Credit	High Priority Site	2
1		3	Credit	Surrounding Density and Diverse Uses	5
5			Credit	Access to Quality Transit	5
1			Credit	Bicycle Facilities	1
1			Credit	Reduced Parking Footprint	1
	1		Credit	Green Vehicles	1

6	3	1	**Sustainable Sites**		10
Y			Prereq	Construction Activity Pollution Prevention	Required
1			Credit	Site Assessment	1
	2		Credit	Site Development - Protect or Restore Habitat	2
	1		Credit	Open Space	1
2		1	Credit	Rainwater Management	3
2			Credit	Heat Island Reduction	2
1			Credit	Light Pollution Reduction	1

6	3	2	**Water Efficiency**		11
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
2			Credit	Outdoor Water Use Reduction	2
3	3		Credit	Indoor Water Use Reduction	6
		2	Credit	Cooling Tower Water Use	2
1			Credit	Water Metering	1

18	11	4	**Energy and Atmosphere**		33
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
3	3		Credit	Enhanced Commissioning	6
9	6	3	Credit	Optimize Energy Performance	18
1			Credit	Advanced Energy Metering	1
1		1	Credit	Demand Response	2
1	2		Credit	Renewable Energy Production	3
1			Credit	Enhanced Refrigerant Management	1
2			Credit	Green Power and Carbon Offsets	2

8	5	0	**Materials and Resources**		13
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
3	2		Credit	Building Life-Cycle Impact Reduction	5
1	1		Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
1	1		Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
1	1		Credit	Building Product Disclosure and Optimization - Material Ingredients	2
2			Credit	Construction and Demolition Waste Management	2

15	1	0	**Indoor Environmental Quality**		16
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
2			Credit	Enhanced Indoor Air Quality Strategies	2
3			Credit	Low-Emitting Materials	3
1			Credit	Construction Indoor Air Quality Management Plan	1
2			Credit	Indoor Air Quality Assessment	2
1			Credit	Thermal Comfort	1
2			Credit	Interior Lighting	2
2	1		Credit	Daylight	3
1			Credit	Quality Views	1
1			Credit	Acoustic Performance	1

3	3	0	**Innovation**		6
2	3		Credit	Innovation	5
1			Credit	LEED Accredited Professional	1

2	2	0	**Regional Priority**		4
1			Credit	Regional Priority: Specific Credit	1
1			Credit	Regional Priority: Specific Credit	1
	1		Credit	Regional Priority: Specific Credit	1
	1		Credit	Regional Priority: Specific Credit	1

68	31	11	**TOTALS**	Possible Points:	**110**

Certified: 40 to 49 points, **Silver:** 50 to 59 points, **Gold:** 60 to 79 points, **Platinum:** 80 to 110

ATTACHMENT 6.6

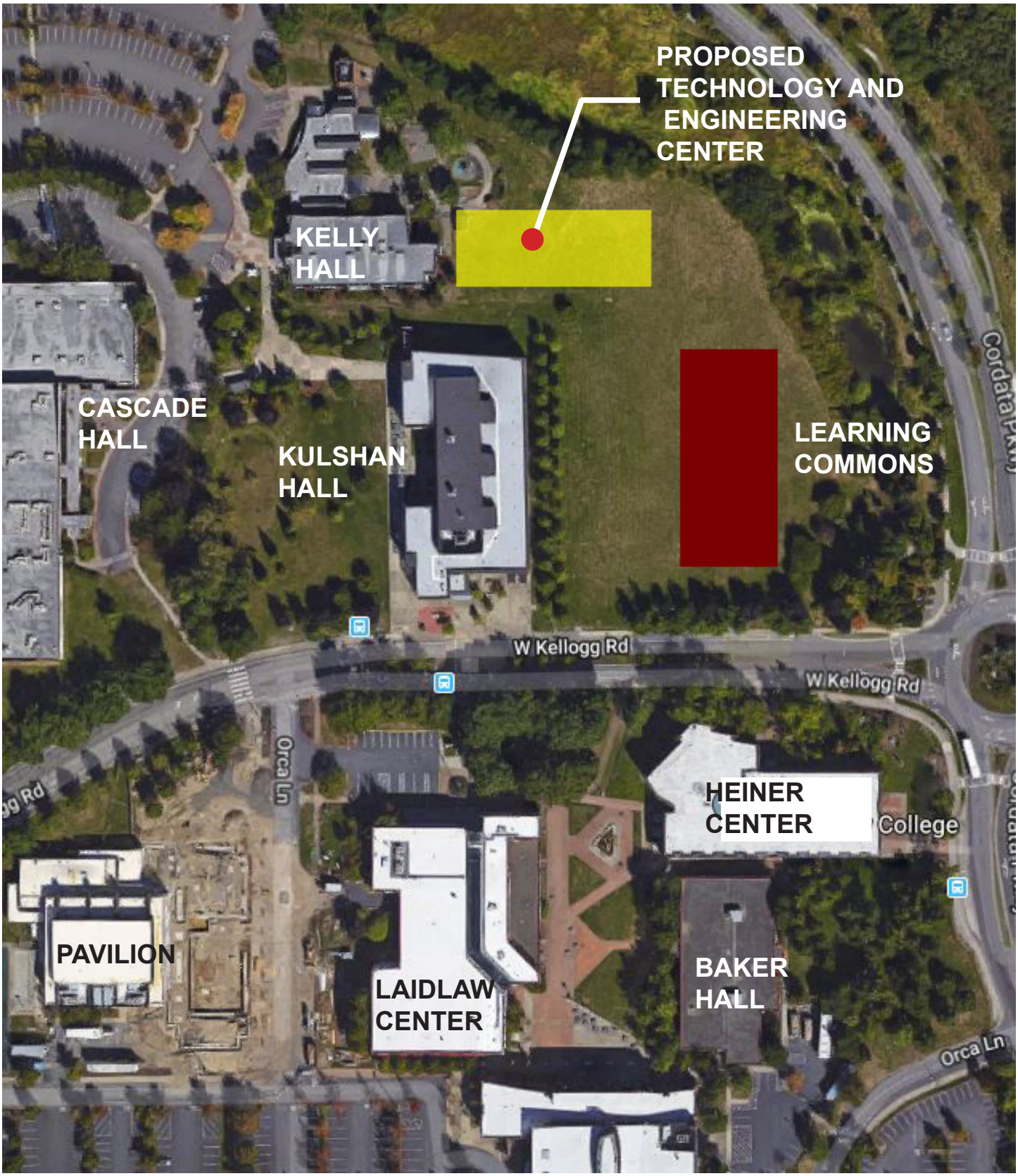
Best Practices to Reduce Greenhouse Gas Emissions

Appendix 6.6 Best Practices to Reduce Greenhouse Gas Emissions

System / Best Practices		Included in Project?
Mechanical		
	Solar water heating	No
	Above code HVAC system efficiency	**Yes**
	Use natural gas instead of electricity for heating	No
	Geothermal heat pump	No
	Post occupancy commissioning	**Yes**
	Interconnectivity of room scheduling in 25Live and HVAC controls	No
Electrical		
	Photovoltaic energy systems	**Yes**
	Time of day and occupancy programming of lighting	**Yes**
	Efficient lighting	**Yes**
Envelope		
	Minimize building surface area for necessary floor area	No
	Roofing materials with hight solar reflectance and reliability	**Yes**
	Green roofs to absorb heat and act as insulators for ceilings	No
Site		
	Orient building for natural light and reducted heating and cooling loads	**Yes**
	Trees and vegetation planted to directly shade building	No
	Paving materials with hight solar reflectance, enhanced water evaporation, or otherwise designed to remain cooler or require less ighting than conventional pavements	**Yes**
	Increase transportation shoices - dirve, walk, bike or public transit	**Yes**
Total number of these best practices included in project:		**9**

ATTACHMENT 6.7

Site Map



N
W E
S

SITE MAP

NO SCALE

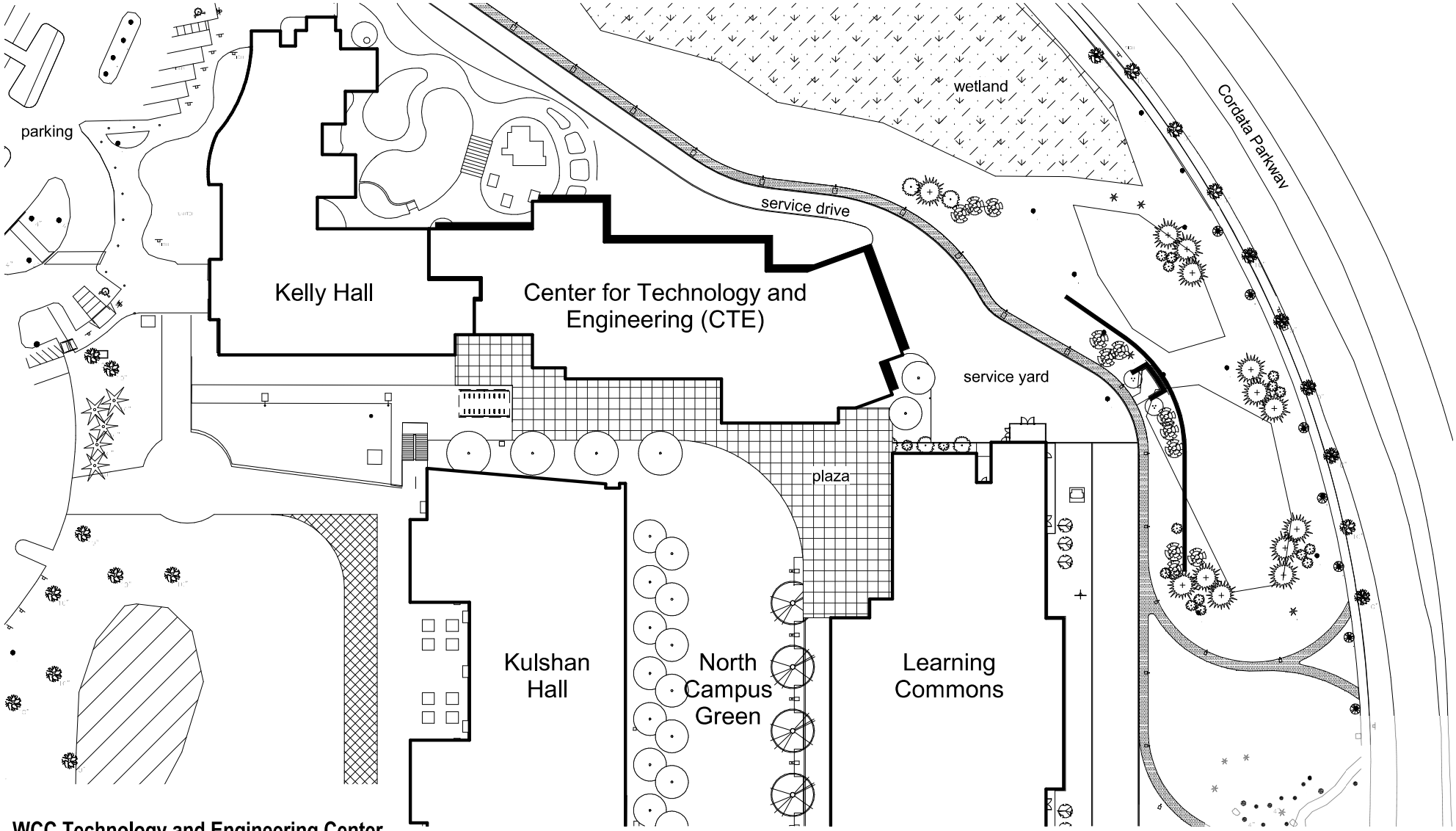
Whatcom COMMUNITY COLLEGE

TECHNOLOGY AND ENGINEERING CENTER

PROJECT REQUEST REPORT

ATTACHMENT 6.8

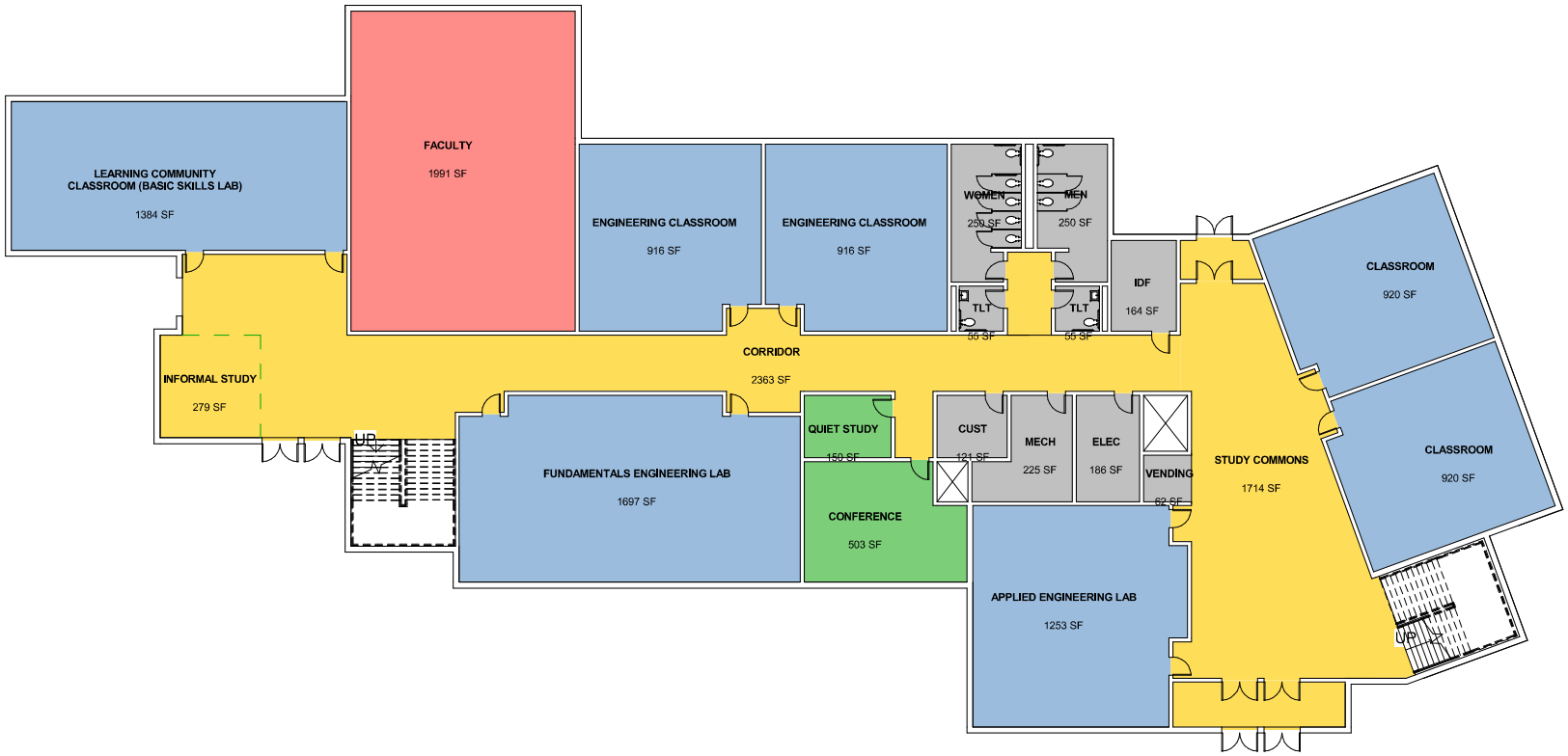
Preliminary Drawings and Sketches



WCC Technology and Engineering Center

SITE PLAN

No Scale



WCC Technology and Engineering Center

GROUND FLOOR PLAN DIAGRAM

No Scale

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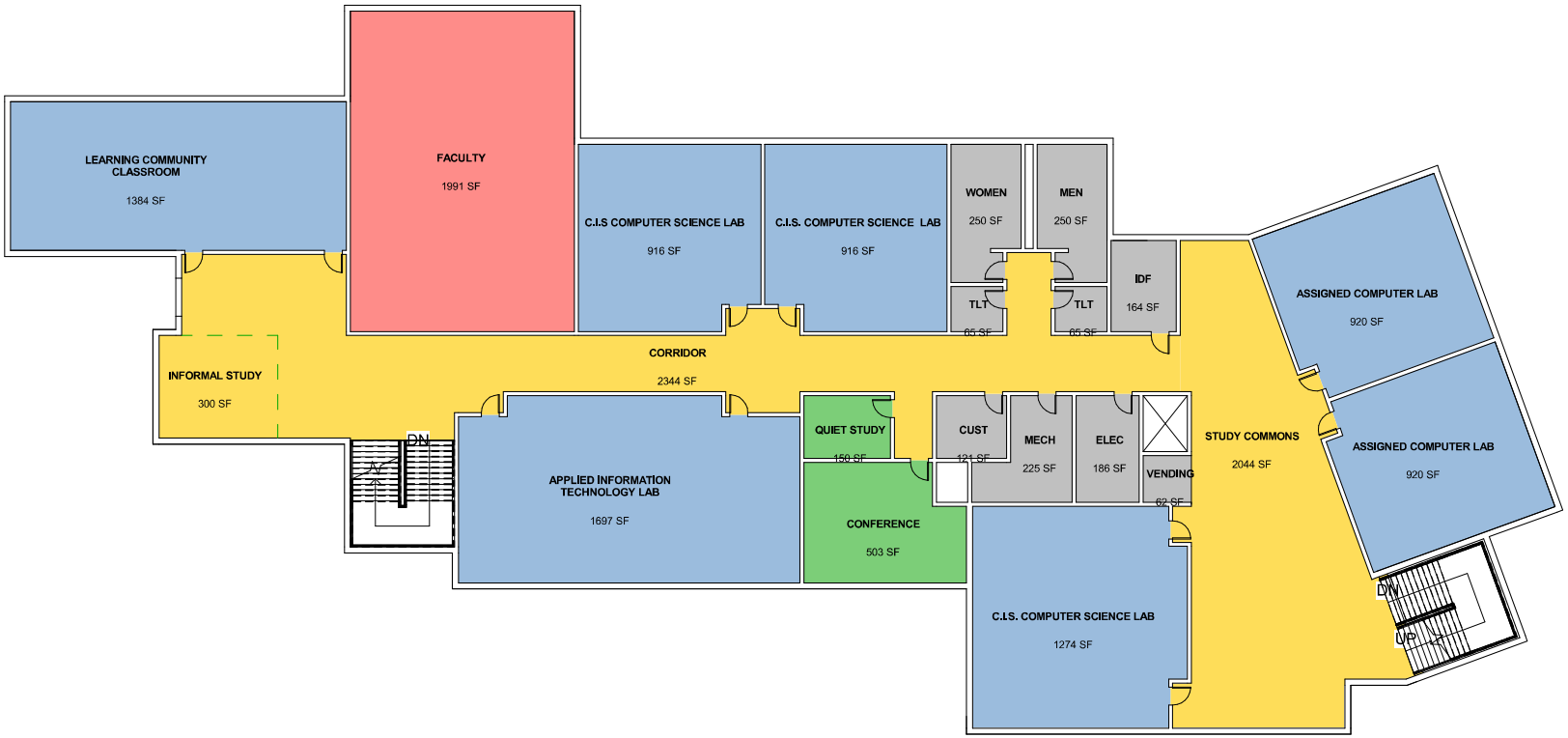


WCC Technology and Engineering Center

SECOND FLOOR PLAN DIAGRAM

No Scale

N
W E
S

WCC Technology and Engineering Center

THIRD FLOOR PLAN DIAGRAM

No Scale

N
W E
S

APPENDIX 7.1

Site Specific Materials

Appendix 7.1 – Site-Specific Material

The following pages include site-specific material from other adjacent projects that directly relate to the proposed project:

- Executive Summary from Geotechnical Report

Geotechnical Summary of site immediately adjacent to the proposed Technology and Engineering Building

EXECUTIVE SUMMARY

This report contains the results of our geotechnical engineering services for use in the design of the proposed Learning Commons on the Whatcom Community College campus in Bellingham, Washington. The project consists of constructing an approximately 65,000 square foot, steel brace-frame, three-story structure. The project will include a patio area in the northwest portion of the site, new driveway/fire lane access from the north, and retaining wall to maintain desired site grades.

This summary is presented for introductory purposes only and the complete recommendations presented in this report must be used for project design.

Subsurface Conditions

The subsurface conditions at the site were evaluated by drilling four borings and excavating six test pits within the proposed building footprint and driveway area. Based on our explorations, the near-surface soils consist of fill/reworked glaciomarine drift associated with past grading activities. The fill soils were encountered overlying undisturbed native glaciomarine drift. Glaciomarine drift generally consists of stiff to very stiff silty clay near surface and becomes softer with depth. Minor groundwater seepage was observed in two test pits at the time of excavation.

Seismic Design

In accordance with the 2012 International Building Code (IBC), the site is classified as Site Class D.

Reuse of On-Site Materials

On-site clayey glaciomarine drift soils will be suitable for use as structural fill only during dry weather conditions. Even during dry conditions, it may be difficult to achieve 95 percent compaction (ASTM D1557) with the on-site soils. Accordingly, we do not recommend reuse of site soils within the building footprint or under slabs or foundation elements. All structural fill placed below the new structure should consist of imported gravel borrow. Structural fill placed to construct driveway areas or backfill utility trenches may consist of on-site glaciomarine drift provided that the soils are moisture conditioned and meet the required compaction, otherwise imported gravel borrow should be used.

Temporary Excavations and Shoring

We anticipate that most of the excavation for the building may be completed using temporary open cut slopes. Cuts made in fill soils should be no steeper than 1.5H:1V (horizontal:vertical). Temporary cuts made in the stiff to very stiff undisturbed native glaciomarine drift soils should be no steeper than 1H:1V.

Foundation Design

The building can be supported on conventional spread footings bearing on undisturbed stiff to very stiff glaciomarine drift or on structural fill placed over these soils. Footings bearing on undisturbed native soil or on structural fill placed over undisturbed stiff to very stiff native soils may be designed using an allowable soil bearing value of 3,000 pounds per square foot (psf). The allowable bearing value may be increased by one-third for short duration loads such as wind or seismic events. Mat foundations or slabs may be designed using a subgrade modulus of 100 pounds per cubic inch (pci) if supported on structural fill or stiff to very stiff Bellingham (glaciomarine) drift (GMD) as described in this report.

Because of the thickness of existing fill soils, it will be necessary to overexcavate footing areas to remove existing fill and backfill with structural fill or controlled density fill (CDF). Alternatively, ground improvement such as aggregate piers may be considered.

Lateral foundation loads may be resisted by passive resistance on the sides of the footings and by friction on the base of the footings. For footings supported and surrounded by either dense/stiff native soils or compacted structural fill, a coefficient of friction of 0.35 and a passive resistance of 300 pounds per cubic foot (pcf) may be used.

Footing drains should be incorporated in the design of the project.

Floor Slabs

Concrete slabs-on-grade should be supported on a minimum 12 inches of granular structural fill, including a 4-inch-thick crushed rock capillary break layer overlain by a vapor retarder membrane. A subgrade modulus of 100 pci may be used for design of the slabs-on-grade at the site. The granular structural fill should be placed on exposed subgrade soils compacted to at least 95 percent per ASTM D 1557.

Below-Grade Walls

Below-grade walls should be provided with a free-draining drainage layer and footing drain pipes. For below-grade walls constructed either neat against the stiff native soils, or backfilled with compacted structural fill, we recommend the walls be designed using the following equivalent fluid weight lateral earth pressures:

- allowable passive – 300 pcf
- active – 35 pcf level backslope/55 pcf for 2H:1V backslope
- at rest – 55 pcf level backslope/75 pcf for 2H:1V backslope
- seismic earth pressure – 8H, where H is the height of the wall

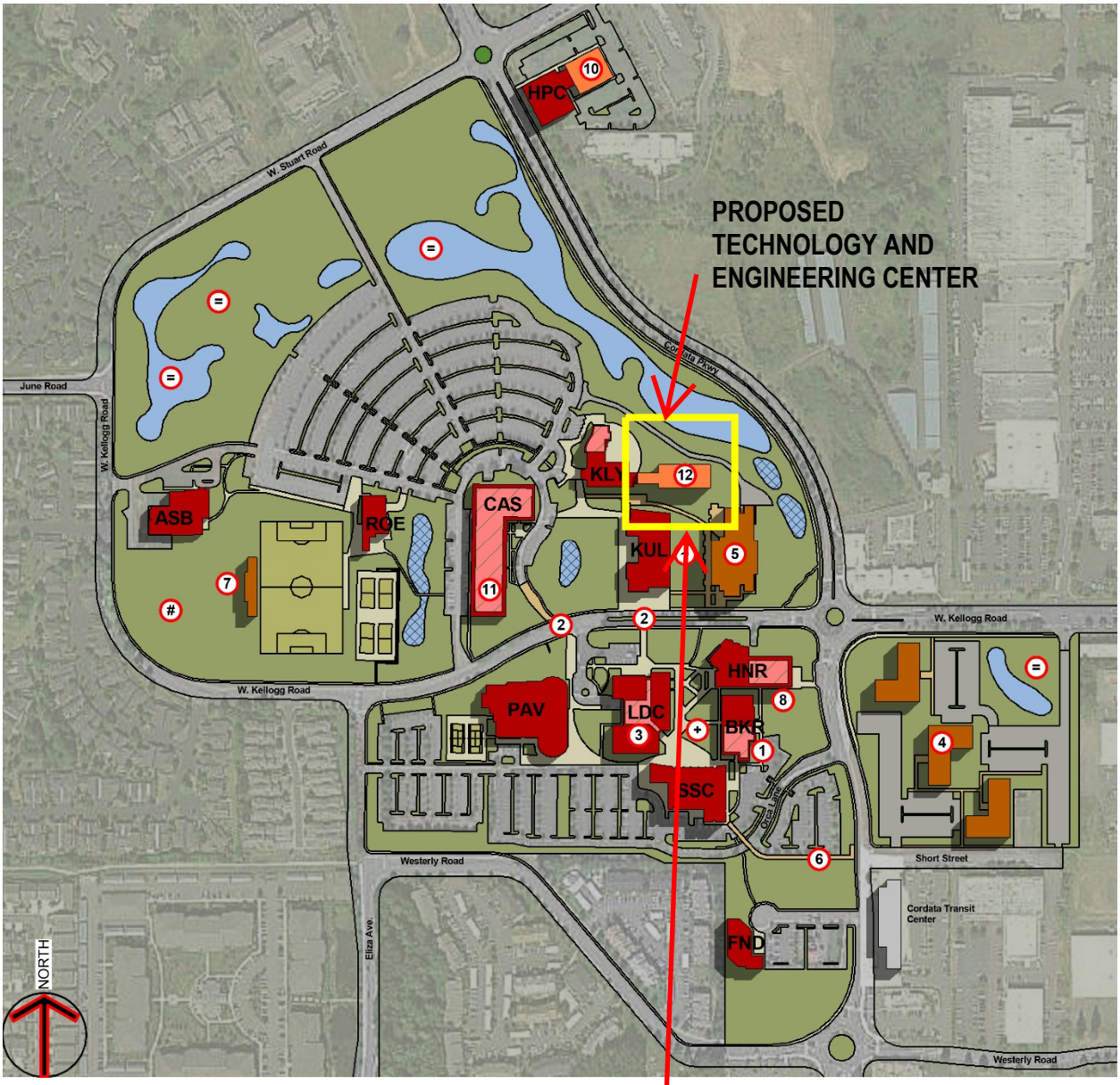
APPENDIX 7.2

Planning Documents

Appendix 7.2 – Selected Material from WCC Planning Documents

The following pages include material from WCC planning documents that directly relate to the proposed project:

- Excerpt from the 2017 IMP showing the proposed project as a integral part of the facilities master plan
- WCC 2017-2022 Strategic Plan
- WCC Green House Reduction Plan



Proposed Mid-Term Development

Key Notes

Existing
- # Open Space / Recreation
- = Open Space / Wetlands
- ~ North Campus Quad
- + South Campus Quad

Near-Term
1. Remodel - Baker Hall
2. New Infrastructure - Pedestrian Safety Improvements at W. Kellogg Road
3. Remodel - Laidlaw Center
4. New Construction - Student Housing with Parking
5. New Construction - Learning Commons
6. New Infrastructure - Southeast Campus Gateway
7. New Construction - Orca Field House
8. Remodel - Heiner Center
9. NOT USED

Mid-Term
10. New Construction - HPC Addition
11. Renovation - Cascade Hall
12. Renovation/New - Kelly Hall

Legend

- Existing Buildings
- Existing Wetlands
- Existing Stormwater Treatment Pond
- Future Lawn/Green Space
- Future Parking
- Future Sidewalk
- Future Interior Renovation (Near-Term)
- Future New Buildings (Near-Term)
- Future New Buildings (Mid-Term)

4.3 Mid-Term Development

Mid-term development is defined as projects which will be requested, planned, designed, and constructed within the next 8-12 years. The anticipated projects (Figure 10) include:

HPC Phase-II (New)

The proposed project will expand the HPC building to accommodate functions that were not included in the initial construction due to budget/funding. Proposed program elements include:

Health Care student support:

- Tutoring/mentoring
- Advising
- Career and employment information
- Library/Study area
- Computer access
- Prevention and Wellness Center
- Clinical space for rehabilitation and/or nurse-managed care

New Area:	13,000 net square feet (nsf)
Anticipated Completion:	Spring 2024

Cascade Hall (Renovation)

In the mid-term phase, Cascade Hall will be approximately 40-years old and while worn and outdated, it is unlikely to score poorly enough in future condition surveys to warrant the state funding its replacement. Given the State OFM preference for funding renovation projects over new/replacement, it is planned that Cascade Hall be fully renovated to provide modern classroom/lab space and to address building condition and systems obsolescence. Renovation will also provide accessible routing between the north and south portions of the building. Anticipated remodel scope includes reorganization of interior non-load bearing partitions, new interior finishes, new lighting and instructional media, and some systems (power/HVAC) improvement.

Given the lack of surge space on campus to relocate Cascade functions and occupants, it is anticipated that the renovation could be executed in two phases.

Renovated Area:	41,472-gsf
Anticipated Completion:	Spring 2027

PROPOSED TECHNOLOGY AND ENGINEERING CENTER

Kelly Hall (Renovation/Expansion)

When Kelly Hall was constructed in 1998, it was designed to facilitate an addition/expansion to the east. To provide additional academic and academic support space needed to accommodate anticipated enrollment growth, it is proposed that an addition to Kelly Hall be developed. Envisioned as a three-story structure to minimize its footprint and potential impact on the north wetlands buffer, it will have classrooms/labs on the lower two floors and offices/support

functions on the upper floor. The addition will also form the north edge of the north campus quad.

Renovation in the existing portion of the building is anticipated to be relatively minor, consisting of reorganization of interior non-load bearing partitions (mostly on the northern 1-story portion); new interior finishes; new lighting and instructional media; and some systems (power/HVAC) improvement.

Given the lack of surge space on campus to relocate Kelly function/occupants, it is anticipated that the expansion would occur in an initial phase with the renovation occurring after.

New Area:	36,000-gsf
Renovated Area:	23,772-gsf
Building Height:	3 stories (50-ft)
Anticipated Completion:	Fall 2029

WCC Strategic Plan 2017-22

CORE THEME 1 | ACHIEVING SUCCESS

Whatcom engages students in their learning, leadership development, educational achievement, and workplace preparation. To help students achieve success, we will...

1.1 Improve student success in retention, completion, transfer, and employment.
1.2 Foster student learning through student-centered teaching and learning practices.
1.3 Promote student access through quality services and resources.
1.4 Provide students with mentors, internships, and career preparation.

CORE THEME 2 | BUILDING COMMUNITY

Whatcom cultivates connections for the enrichment of the college, local communities, and beyond. To build community, we will...

2.1 Increase collaboration and communication to serve collective needs across the College.
2.2 Create teaching and learning communities.
2.3 Strengthen partnerships with K-12 and higher education institutions.
2.4 Foster learning, service, and leadership opportunities through community partnerships.
2.5 Cultivate community awareness and support for the College.
2.6 Engage with business and industry to strengthen regional economic development.

CORE THEME 3 | ADVANCING EQUITY

Whatcom integrates principles of diversity, access, and inclusion throughout policy, practice, services, and curriculum to close equity gaps in student outcomes and create an equitable work environment. To advance equity, we will...

3.1 Ensure all students have access to campus resources that support educational success.
3.2 Apply culturally responsive pedagogy in all teaching and learning environments.
3.3 Increase services focused on supporting marginalized student populations to close the equity gap in student outcomes.
3.4 Revise policies, practices, services, and curricula from an equity-based lens.
3.5 Improve recruitment and retention of diverse students, faculty, staff, and administrators.
3.6 Increase campus engagement in social justice education and leadership opportunities.

CORE THEME 4 | ENHANCING EFFECTIVENESS

Whatcom is fiscally responsible, supports faculty and staff, fosters a safe and sustainable environment for teaching and learning, and uses data-driven decision making to enhance institutional effectiveness. To enhance institutional effectiveness, we will...

4.1 Offer programs, services, and facilities that support college needs and market demands.
4.2 Increase college enrollment and secure resources for the continued viability of the College.
4.3 Provide ongoing opportunities for faculty and staff professional growth.
4.4 Enhance the safety of the college environment.
4.5 Model leadership in environmental protection, economic viability, and social equity, the three pillars of sustainability.
4.6 Apply assessment and evaluation data to inform decisions.

Mission: Whatcom Community College contributes to the vitality of its communities by providing quality education in academic transfer, professional-technical, and lifelong learning, preparing students for active citizenship in a global society.

Vision: Whatcom will be an innovative college, engaged with our diverse and changing communities.

Promise: We transform lives through education. We accomplish this by supporting student growth, respecting student investment, embracing diversity, promoting excellence and creating opportunities.

Strategic Planning: Students come first at Whatcom Community College. Whatcom provides a nationally recognized learning environment for students seeking to improve their lives through education. We demonstrate commitment to success, access, and equity by focusing on retention and completion; cultivating critical thinking and global citizenship; and providing a welcoming environment with engaged peers, faculty, and staff. We appreciate the positive impact of student investments, like time and resources, on our teaching, learning, and leadership environment. With effective strategic planning, we prioritize student needs, a reflection of our student-centered mission and vision.

We are pleased to present the 2017-22 strategic plan, which outlines the mission, values, and strategic directions for Whatcom Community College over the next five years.

2017 WCC Board of Trustees
Tim Douglas, chair
Steve Adelstein
John Pedlow
Barbara Rofkar
Kathi Hiyane-Brown, Ed.D., WCC President

Whatcom Community College
Greenhouse Gas Emissions Reduction Plan

Revised November 1, 2017

In 2009, the Legislature and Governor adopted the State Agency Climate Leadership Act (Engrossed Second Substitute Senate Bill 5560 – Chapter 519, Laws of 2009). The Act committed state agencies to reduce their greenhouse gas (GHG) emissions to:

- 15 percent below 2005 levels by 2020.
- 36 percent below 2005 by 2035.
- 57.5 percent below 2005 levels (or 70 percent below the expected state government emissions that year, whichever amount is greater) by 2050.

The Act, codified in RCW 70.235.050-070 directed agencies to annually measure their **Greenhouse Gas Emissions (GHG)**, estimate future emissions, track actions taken to reduce emissions, and develop a strategy to meet the reduction targets. The strategy is required by law in RCW 70.235.050 section (3). State agencies over a certain size are required to report to the Department of Ecology the actions taken to meet the emission reduction targets under the strategy for the preceding biennium. **Whatcom Community College (WCC)** as a state agency is committed to meeting these targets and to voluntary reporting.

2. GHG Emissions from WCC Operations, History and Reduction Targets

A. GHG emissions from Building and Fleet Energy Use (EPA Scope 1 and 2)

Year	**Greenhouse Gas Emissions** (metric tons carbon dioxide equivalent, $MTCO_2e$)
2005	2356.5
2015 (or most recent year)	1698.1
2020 (projected)	2980.21650.6
2035 (projected)	3457.71508.2

B. All WCC GHG Emissions, including Commuting and Business Travel (EPA Scope 3)

WCC recognizes that student and employee commuting (EPA Scope 3) represents over 85% of total campus emissions. (See Fig. 1)

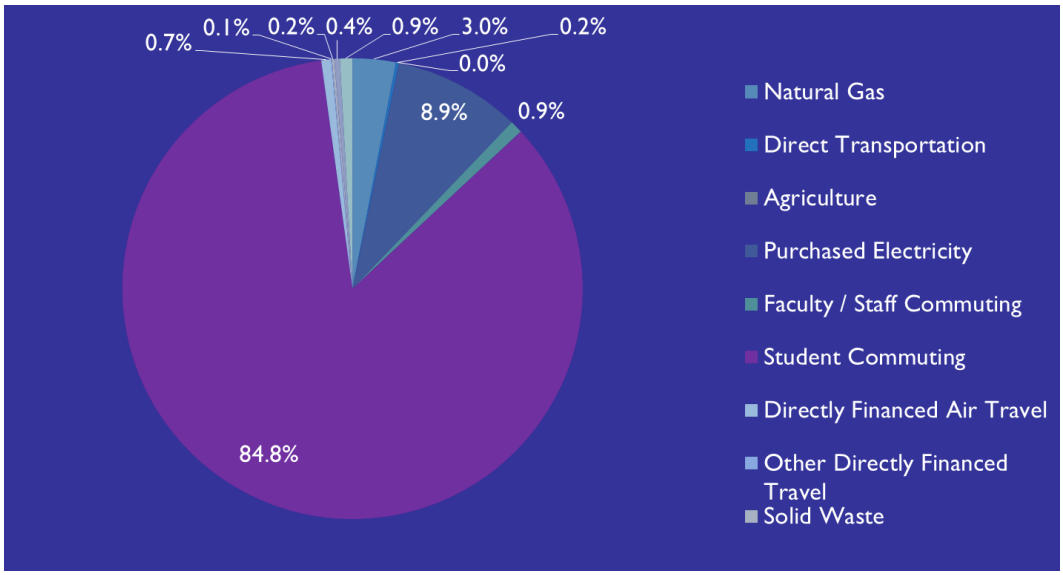


Fig. 1

C. Greenhouse Gas Reduction Targets

Year	GHG Reduction Target ($MTCO_2e$)
2020 (15% below 2005)	**2003**
2035 (36% below 2005)	**1508.2**
2050 (57.5% below 2005)	**1001.5**

D. Level of GHG Reduction Needed to Meet Target

Year	Amount of GHG Reduction Needed to meet Targets ($MTCO_2e$)
2020	**977.2 705.9**
2035	**1405.8950.7**

3. Strategies and Categories for GHG Reduction at WCC

1. Align state mandated GHG reduction targets with the WCC Strategic Plan, see below*.
2. Improve documentation of GHG emissions in Portfolio Manager and GHG Reports.
3. Monitor progress towards goals annually.
4. Develop and implement strategies and programs for GHG reduction in the following **Categories:**
   A. Facility Energy Usage - I Natural Gas (HVAC)
      - II Fuel (Fleet and Equipment)
      - III Electrical (Lighting, Technology, Equipment)
   B. Water (domestic, irrigation, rainwater catchment, storm water)
   C. Waste (waste to landfill, hazardous waste, toxic chemicals)
   D. Outreach (best practices and programs for staff, faculty and students, including CTR/Smart Trips)

E. "S" classes (sustainability education required for graduation)
F. Generation and mitigation (solar power, tree planting)

4. Overview of Current WCC Programs for GHG Reduction

***The WCC Leadership committed to reducing our impact on the environment in Goal #4 of the 2017 WCC Strategic Plan:**

-"4.5 Model leadership in environmental protection, economic viability, and social equity, the three pillars of sustainability.
-4.6 Apply assessment and evaluation data to inform decisions."

Resource Conservation Management Plan (RCM)

Since fall 2009 WCC has been tracking GHG emissions from utilities, fleet and travel using EPA Energy Star Portfolio Manager, a database for utility usage/cost information. Additionally Portfolio Manager makes comparisons with industry standards and provides carbon footprint data. The utilities being tracked using this software are natural gas, electricity, water/sewer and irrigation.

WCC also separately tracks waste/compost/recycling, fleet mileage, equipment fuel and travel mileage.

Review and monitoring of progress and implementation

The RCM Plan is reviewed in facilities operations meetings. Facilities staff review progress on sustainability measures and best practices, suggest new measures, and identify responsible departments, resources, financing, schedules and deadlines.

WCC has a Sustainability Committee convened by a faculty coordinator appointed to a two year term, who has a percentage of time dedicated to sustainability efforts. The Facilities Liaison to the Sustainability Committee monitors progress in operations and coordinates strategies with other departments.

Sustainability Committee membership includes faculty, staff and students. All participants can comment on ongoing programs and suggest new measures.

Assessment and reporting to inform decisions

The facilities liaison maintains the RCM Plan , assesses progress toward GHG reduction targets, and produces GHG reduction reports as required.

Staff positions in other departments are assigned to assess progress on the CTR/Smart Trips, public transportation and bicycle programs, and report to the Sustainability Committee. Staff in other departments contribute GHG supporting documentation on business travel, asset reuse and other areas.

Education and Outreach

WCC strives to model best practices in sustainability, and to provide an atmosphere where the diverse issues in this rapidly evolving field can be discussed. WCC plans, hosts and participates in sustainability related events and lectures made available to staff, faculty, students and the surrounding community.

WCC's CTR/Smart Trips includes a partnership with the Whatcom Transit Authority that provides unlimited, pre-paid access to local WTA bus service for all students while enrolled, for

a small tuition fee per quarter. WCC also encourages bicycle use with our facilities bicycle fleet, staff bike facilities and student bike club.

WCC currently has 32 "S" designated classes (with a sustainability component), and every student must complete a minimum of 3 (S) credits to graduate.

5. Strategies for WCC Operations (EPA Scope 1 and 2)

A. Low Cost Strategies

Strategies	GHG Reduction Estimate Annual ($MTCO_2e$)	Upfront Cost Estimate ($)	Payback Period Estimate (Years)	Date to Implement Estimate
Campus Energy Use				
Internal re-commissioning of systems in our LEED silver buildings		N/A		Annual per site
Replace remaining hot water heaters with HE, Energy Star or equivalent		N/A		Ongoing
Replace all appliances with Energy Star or equivalent		N/A		Ongoing
Fleet Energy Use				
Prototype alternative fuel equipment		N/A		2018
Pursue grant for EV charging station		N/A		2020
TOTALS:				

B. High Cost and/or Long Term Strategies

Strategies	GHG Reduction Estimate ($MTCO_2e$)	Upfront Cost Estimate ($)	Payback Period Estimate (Years)	Date to Implement Estimate
Campus Energy Use				
Exterior parking lighting Retro to LED		$200,000	20 Years	TBD
Laidlaw center east wall insulation		$50-$100,000	50 years	TBD
Solar alternate built into LRN		$130,000	40 years	TBD
RMI roof replacements on Baker		$294,000	30 years	2020
RMI roof major repair on Syre		$228,000	15 years	2020
RMI roof major repair on Kelly		$146,000	15 years	2020
Fleet Energy Use				
Convert to electric vehicles as existing gas powered vehicles are retired		Revenue Neutral	10 years	2020
TOTALS:		$1073,000	N/A	N/A

C. Commuting and Business Travel (EPA Scope 3) Emissions Reduction Strategies

Strategies	GHG Reduction Estimate ($MTCO_2e$)	Upfront Cost Estimate ($)	Payback Period Estimate (Years)	Date to Implement Estimate
Employee Business Travel				
Encourage ITV and other electronic meeting formats (i.e. webinars, teleconferencing etc.).				
Employee/Student Commuting				
Support a robust CTR/Smart Trips program to reduce the number of single passenger trips				
Evaluate the role of parking in future CTR/Smart Trip planning				
TOTALS:			N/A	N/A

6. Specific Measures and Best Practices by Category

HVAC

1) Continue preventative maintenance on HVAC systems. Ensure equipment and building system components are operating effectively and efficiently.
2) Equip all new buildings with Direct Digital Controls. Program building schedule to coincide with fluctuating occupancy.
3) Replace and upgrade end-of-life HVAC equipment with more energy efficient systems as part of the capital repairs program.
4) Adjust summer work schedule to allow shut down of HVAC and lighting systems on Friday afternoons June to September.
5) Encourage staff to keep windows closed in campus buildings.
6) Consolidate off-hours classes and events into energy efficient areas of campus.
7) Update HVAC schedule weekly to ensure systems only run when buildings/rooms are occupied.
8) Use solar reflective roofing materials.

Fleet/Fuel

1) Maximize fuel efficiency by maintaining existing vehicles and consolidating trips.
2) Use electric carts and bicycles as appropriate to replace trips in gas-powered vehicles.

Electrical

1) Retrofit lighting with LED or HE florescent lighting campus wide.
2) Reduce consumption by considering placement, wattage, and lighting quality.
3) Reduce consumption by utilizing natural light. Retrofit photo eyes where feasible.

4) Encourage campus community to reduce consumption and lamp operation hours by turning off lights when spaces are not occupied.
5) Adjust summer work schedule to allow shut down appropriate lighting systems on Friday afternoons June to September.
6) Retrofit occupancy sensors where feasible. Equip all new buildings with occupancy sensor control.
7) Give staff occupying offices access to sustainable choices for personal electronic equipment and encourage replacement of older equipment.
8) Consolidate off-hours classes and events into energy efficient areas of campus. Adjust parking lot lighting schedules for daylight hours.
9) Continue to optimize Virtual Desktop Infrastructure operation for sustainability and efficiency.

Domestic Water

1) Work with the City of Bellingham to conduct water audits based on historical trends and identify line size reduction where feasible.
2) Reduce the amount of fixture units in early planning stages of new construction.
3) Continue preventative maintenance focus to ensure equipment, fixtures, meters, sensors, valves and control system components are operating efficiently, and mitigate leaks immediately.

Irrigation Water

1) Allow most lawn areas to brown during the summer months.
2) Install only minimal irrigation systems.
3) Favor native and xeriscape plantings in landscape areas.
4) Continue to install deduction meters on water mains used for irrigation.

Storm Water

1) Use rainwater catchment system at the ASB building for spot irrigation in summer.
2) Consolidate the total area of all impervious surfaces to isolate storm-water costs.
3) Keep maintenance and monitoring of storm water systems up to date.
4) Utilize pervious paving materials when applicable.

Waste/Recycling/Compost

1) Provide waste signage on receptacles featuring large print and full color pictures of examples showing the type of waste/recycling/compost for each bin.
2) Group waste collection sites in central office areas and provide a no-trash-can option in offices.
3) Continue the practice of student-led waste audits that encourage campus community participation and sustainability awareness.
4) Work with campus food service to provide all-compostable service ware at all locations.

5) Expand advanced recycling options for staff, for example, plastic film, markers, pens, Styrofoam, etc.
6) WCC currently purchases 100% post consumer recycled hand towels.
7) Recycle maintenance generated construction waste such as concrete and blacktop.

Hazardous Waste and Toxic Chemicals

1) Work with STEM departments to reduce hazardous waste generation.
2) Work with facilities departments to ensure there are no duplicate products in SDS.
3) Convert all indoor paint to true Zero VOC > 50ppm.
4) Work to implement a LEED compliant Green Cleaning Program campus wide.
5) Work with vendors to provide low VOC product options.
6) Keep universal waste recycling programs up to date.

Outreach

1) Utilize WCC's website and screen saver software to provide access to information about sustainability strategies and programs and to promote RCM.
2) Encourage student participation through continued support for projects initiated by the student sustainability club.
3) Maintain water bottle refill stations sponsored by the student sustainability club.
4) Continue to communicate the concepts of lifecycle analysis and sustainable purchasing to the campus community.

Direct Generation, Mitigation

1) Monitor performance of solar array at ASB building, and maintain panels with annual.
2) Expand solar power generation as feasible, for example completing the alternate on the new Learning Commons Building.
3) Implement a grounds tree planting program, following the Urban Forest Project Protocol, or equivalent, carbon sequestration guidelines

The WCC GHG Emissions Reduction Plan is a living document. The strategies outlined in this plan will be reviewed and updated by the Facilities sub group of the Sustainability Committee.

APPENDIX 7.3

Detailed Cost Estimate

Appendix 7.3 – Detailed Cost Estimates

The following pages provide the detailed cost estimate for the proposed building, sitework, and related infrastructure.

Whatcom
COMMUNITY COLLEGE

TECHNOLOGY AND ENGINEERING CENTER
Whatcom Community College
12/6/2017

Main Building	**$**	**17,056,847**
Site Development	**$**	**1,079,595**
Infrastructure	**$**	**624,472**
Anticipated Base Bid	**$**	**18,760,915**

Exclusions:

State Sales Tax
Testing and Inspections
Construction Contingency
Architect/Engineering Fees
Owner's Consultants
Builders Risk Insurance
Hazardous Material Removal
Project Contingency
Utility Company Fees
Permits
Construction Management
Furnishings and Equipment Not Listed
Owner's Moving Costs

PROJECT: TECHNOLOGY AND ENGINEERING CENTER
LOCATION: WHATCOM COMMUNITY COLLEGE, BELLINGHAM WA
EST TYPE: PRR

DIVISION	DESCRIPTION		TOTAL	$/SF
A10	FOUNDATIONS		459,094	8.83
B10	SUPERSTRUCTURE		791,400	15.22
B20	EXTERIOR CLOSURE		2,149,722	41.34
B30	ROOFING		460,100	8.85
C10	INTERIOR CONSTRUCTION		1,270,000	24.42
C20	STAIRS		145,500	2.80
C30	INTERIOR FINISHES		1,270,000	27.50
D10	CONVEYING SYSTEMS		186,000	3.58
D20	PLUMBING		546,000	10.50
D30	HVAC		2,600,000	50.00
D40	FIRE PROTECTION		260,000	5.00
D50	ELECTRICAL		2,559,000	49.21
E10	BUILT-IN EQUIPMENT		33,800	0.65
E20	BUILT-IN FURNISHINGS		507,000	9.75
Z10	GENERAL REQUIREMENTS		1,120,000	21.54
	ESTIMATE SUBTOTAL		**14,357,616**	**279.18**
	ESTIMATE CONTINGENCY @	10.00%	1,435,762	
	SUBTOTAL		15,793,377	
	GENERAL CONTRACTOR'S OH & P @	8.00%	1,263,470	
	SUBTOTAL		17,056,847	
	SEE C-100 FORM			
	TOTAL		**17,056,847**	**328.02**

EXCLUSIONS:
SEE ESTIMATE SUMMARY

PROJECT: TECHNOLOGY AND ENGINEERING CENTER
LOCATION: BELLINGHAM
BLDG SF: 52,000
EST TYPE: PRR

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL	$/SF
A10	**FOUNDATIONS**					
02300	FOUNDATION EXCAVATION/BACKFILL	18,000	SFA	1.50	27,000	
02620	FTG DRAINS-SEE CIVIL ESTIMATE	1,286	LF	4.00	5,144	
03000	4" SLAB ON GRADE COMPLETE	18,000	SF	8.00	144,000	
03000	COLUMN FTGS	11	CY	450	4,950	
03000	CONTINUOUS FTGS	160	CY	500	80,000	
03000	ELEVATOR PIT	1	EA	15,000	15,000	
07000	PERIMETER INSULATION/WATERPROOFING	36,000	SF	5.00	180,000	
07000	WATERPROOF ELEVATOR PIT	1	LS	3,000	3,000	
A10	**FOUNDATIONS**			**DIVISION TOTAL**	**459,094**	**8.83**
B10	**SUPERSTRUCTURE**					
03000	CONCRETE TOPPING SLAB	34,000	SF	4.85	164,900	
03300	MECH.PADS,CURBS-ALLOW	1	LS	5,000	5,000	
05120	OPEN WEB JOISTS @ ROOF	8	TON	4,000	32,000	
05120	STRUCTURAL STEEL FLOOR-COLS,BEAMS	30	TON	4,400	132,000	
05120	STRUCTURAL STEEL ROOF-COLS,BEAMS,RODS	50	TON	4,400	220,000	
05140	FLOOR MISC.STEEL CONNECTIONS,ANGLES,PLATES	3	TON	4,800	14,400	
05200	MISC. STEEL ROOF-CONNECTIONS,ANGLES,PLATES	3	TON	4,800	14,400	
05300	METAL FLOOR DECK	34,000	SF	3.75	127,500	
05300	STEEL ROOF DECK	18,000	SF	3.50	63,000	
07120	FIRESTOPPING @ FLOOR	34,000	SFA	0.35	11,900	
07120	FIRESTOPPING @ ROOF	18,000	SFA	0.35	6,300	
B10	**SUPERSTRUCTURE**			**DIVISION TOTAL**	**791,400**	**15.22**
B20	**EXTERIOR CLOSURE**					
03000	EXT WALL GROSS AREA	33,472	SF			
04000	BRICK VENEER	16,736	SF	26.00	435,136	
05000	LINTEL STEEL	750	LF	60.00	45,000	
07400	METAL PANEL	6,694	SF	30.00	200,832	
08000	MISC. HDWRE/ADA/SECURITY/ELEC	1	LS	15,000	15,000	
08100	EXT. DOOR/FRM/HDWRE-PAIR	3	EA	3,200	9,600	
08100	EXT. DOOR/FRM/HDWRE-SGL	9	EA	1,950	17,550	
08120	EXT. FULLY GLAZED DOORS-PR	6	EA	4,420	26,520	
08120	EXT. FULLY GLAZED DOORS-SGL	2	EA	2,730	5,460	
08500	CURTAIN WALL/STOREFRONT/WINDOW	10,042	SF	95.00	953,952	
09260	EXT. FRAME,SHEATH,INSUL-WALL SYS. @MTL.PANEL	6,694	SF	24.70	165,352	
09260	EXT. GIRTS,SHEATH,INSUL-WALL SYS. @ MASONRY	16,736	SF	11.75	196,648	
09900	MISC.FLASH,TRIM,,SEAL-EXT WALL AREA	33,472	SF	2.25	75,312	
15000	EXTERIOR LOUVER	60	SF	56.00	3,360	
B20	**EXTERIOR CLOSURE**			**DIVISION TOTAL**	**2,149,722**	**41.34**
B30	**ROOFING**					
06100	ROUGH CARPENTRY ROOFING	18,000	SFA	0.55	9,900	
07420	MEMBRANE ROOFING SYSTEM-R 52.5 INSUL	18,000	SF	17.35	312,300	
07450	BUILT UP INSULATION/CRICKETING	4,000	SF	4.50	18,000	

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL	$/SF
07500	RUBBERIZED MEMBRANE,INSUL,MOUNTED PAVERS @ DECK	880	SF	32.50	28,600	
07600	MISC FLASHING/SHEET METAL/DOWNSPOUTS @ ROOF	18,000	SF	1.75	31,500	
07710	FALL PROTECTION	18,000	SFA	0.70	12,600	
08600	ROOF HATCH,LADDERS,MECH PAD,WALK PADS	8,000	SFA	0.50	4,000	
08600	SKYLIGHTS-TUBULAR	1,800	SFA	24.00	43,200	
B30	**ROOFING**			**DIVISION TOTAL**	**460,100**	**8.85**
C10	**INTERIOR CONSTRUCTION**					
03000	NEW ELEVATOR SHAFT WALL	2,520	SF	50.00	126,000	
08400	INTERIOR CONSTRUCTION (WALLS/DOORS/RELITES)	52,000	SF	22.00	1,144,000	
C10	**INTERIOR CONSTRUCTION**			**DIVISION TOTAL**	**1,270,000**	**24.42**
C20	**STAIRS**					
05500	INTERIOR STAIRS-OPEN/MAIN	3	FLT	30,000	90,000	
05500	INTERIOR STAIRS-STANDARD	3	FLT	18,500	55,500	
C20	**STAIRS**			**DIVISION TOTAL**	**145,500**	**2.80**
C30	**INTERIOR FINISHES**					
09000	INTERIOR FINISHES (WALL FINISH/FLOOR/CEILINGS)	52,000	SFA	27.50	1,430,000	
C30	**INTERIOR FINISHES**			**DIVISION TOTAL**	**1,430,000**	**27.50**
D10	**CONVEYING SYSTEMS**					
14240	ELEVATOR 3 STOP-MACHINE ROOM LESS	1	EA	186,000	186,000	
D10	**CONVEYING SYSTEMS**			**DIVISION TOTAL**	**186,000**	**3.58**
D20	**PLUMBING**					
15000	PLUMBING-W/5.5% ADDED DESIGN CONT. PER NOTKIN	52,000	SFA	10.50	546,000	
D20	**PLUMBING**			**DIVISION TOTAL**	**546,000**	**10.50**
D30	**HVAC**					
15500	HVAC-VRF SYSTEM-W/5.5% ADDED DESIGN CONT.	52,000	SFA	50.00	2,600,000	
D30	**HVAC**			**DIVISION TOTAL**	**2,600,000**	**50.00**
D40	**FIRE PROTECTION**					
15000	FIRE PROTECTION SYSTEM-W/5.5% ADDED DESIGN CONT.	52,000	SFA	5.00	260,000	
D40	**FIRE PROTECTION**			**DIVISION TOTAL**	**260,000**	**5.00**
D50	**ELECTRICAL**					
16000	ELECTRICAL-POWER, LIGHTING & CONTROLS	52,000	SFA	42.00	2,184,000	
16000	A/V	15	RM	25,000	375,000	
D50	**ELECTRICAL**			**DIVISION TOTAL**	**2,559,000**	**49.21**
E10	**EQUIPMENT**					

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL	$/SF
11030	MISC EQUIPMENT/APPLIANCES ALLOWANCE	52,000	SFA	0.65	33,800	
E10	**EQUIPMENT**			**DIVISION TOTAL**	**33,800**	**0.65**
E20	**FURNISHINGS**					
12320	CASEWORK ALLOWANCE	52,000	SFA	8.50	442,000	
12500	WINDOW COVERINGS-ROLLER SHADES	52,000	SFA	1.25	65,000	
E20	**FURNISHINGS**			**DIVISION TOTAL**	**507,000**	**9.75**
Z10	**GENERAL REQUIREMENTS**					
01000	BUILDING SQUARE FOOTAGE	52,000	SF			
01000	GENERAL CONDITIONS	16	MO	70,000	1,120,000	
Z10	**GENERAL REQUIREMENTS**			**DIVISION TOTAL**	**1,120,000**	**21.54**
				ESTIMATE SUBTOTAL	**14,517,616**	**279.18**

PROJECT: TECHNOLOGY AND ENGINEERING CENTER
LOCATION: WHATCOM COMMUNITY COLLEGE, BELLINGHAM WA
SITE AREA: 32,000
EST TYPE: PRR

DIVISION	DESCRIPTION		TOTAL	$/SF
G10	SITE PREPARATION		242,950	
G20	SITE IMPROVEMENTS		595,800	
Z10	GENERAL REQUIREMENTS		70,000	
	ESTIMATE SUBTOTAL		**908,750**	
	ESTIMATE CONTINGENCY @	10.00%	90,875	
	SUBTOTAL		999,625	
	GENERAL CONTRACTOR'S OH & P @	8.00%	79,970	
	SUBTOTAL		1,079,595	
	ESCALATION per C-100			
	TOTAL		**1,079,595**	

EXCLUSIONS:
SEE ESTIMATE SUMMARY

PROJECT: TECHNOLOGY AND ENGINEERING CENTER
LOCATION: WHATCOM COMMUNITY COLLEGE, BELLINGHAM WA
SITE AREA: 32,000
EST TYPE: PRR

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL	$/SF
G10	**SITE PREPARATION**					
02000	SITE AREA - AFFECTED	0.75	AC			
02230	SITE CLEARING	1	LS	6,750	6,750	
02310	FINE GRADING	1	LS	11,200	11,200	
02310	IMPORTED FILL	1	LS	115,000	115,000	
02315	STRIP AND DISPOSE OFF-SITE	1	LS	60,000	60,000	
02370	EROSION CONTROL	1	LS	50,000	50,000	
	PER AHBL					
G10	**SITE PREPARATION**			**DIVISION TOTAL**	**242,950**	
G20	**SITE IMPROVEMENTS**					
02775	CONCRETE SIDEWALK	1,500	SYD	40.00	60,000	
02800	BENCHES	1	LS	14,000	14,000	
02800	DETACHED FACILITY SIGN-ALLOW	1	LS	15,000	15,000	
02800	TRASH/RECYCLE RECEPTACLES	1	LS	6,000	6,000	
02810	IRRIGATION	1	LS	20,800	20,800	
02900	PLANTING,SOILS,COMPOST,SOD,ROOT BARRIER	1	LS	480,000	480,000	
G20	**SITE IMPROVEMENTS**			**DIVISION TOTAL**	**595,800**	
Z10	**GENERAL REQUIREMENTS**					
01000	GENERAL CONDITIONS	2	MO	35,000	70,000	
Z10	**GENERAL REQUIREMENTS**			**DIVISION TOTAL**	**70,000**	
				ESTIMATE SUBTOTAL	**908,750**	**28.40**

PROJECT: TECHNOLOGY AND ENGINEERING CENTER
LOCATION: WHATCOM COMMUNITY COLLEGE, BELLINGHAM WA
SITE AREA: 32,000
EST TYPE: PRR

DIVISION	DESCRIPTION		TOTAL	$/SF
G10	SITE MECHANICAL UTILITIES		276,750	8.65
G20	SITE ELECTRICAL UTILITIES		178,900	5.59
Z10	GENERAL REQUIREMENTS		70,000	2.19
	ESTIMATE SUBTOTAL		**525,650**	**16.43**
	ESTIMATE CONTINGENCY @	10.00%	52,565	
	SUBTOTAL		578,215	
	GENERAL CONTRACTOR'S OH & P @	8.00%	46,257	
	SUBTOTAL		624,472	
	ESCALATION per C-100			
	TOTAL		**624,472**	**19.51**

EXCLUSIONS:
SEE ESTIMATE SUMMARY

PROJECT: TECHNOLOGY AND ENGINEERING CENTER
LOCATION: WHATCOM COMMUNITY COLLEGE, BELLINGHAM WA
SITE AREA: 32,000
EST TYPE: PRR

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL	$/SF
G30	**SITE CIVIL / MECHANICAL UTILITIES**					
02510	POTABLE WATER SYSTEMS 2" PVC	600	LF	90	54,000	
02510	FIRE PROTECTION WATER SYSTEMS (6-in DI)	600	LF	100	60,000	
02510	NATURAL GAS (Steel)	150	LF	85.00	12,750	
02530	SANITARY SEWER SYSTEM (Concrete)	600	LF	90	54,000	
02630	STORM DRAINAGE SYSTEMS (CMP)	1	LS	96,000	96,000	
G30	**SITE CIVIL / MECHANICAL UTILITIES**			**DIVISION TOTAL**	**276,750**	**8.65**
G40	**SITE ELECTRICAL UTILITIES**					
16000	INTERBUILDING TELECOMMUNICATIONS	600	LF	85.00	51,000	
16000	SITE ELECTRICAL-1500 KVA UTILITY TRANSFORMER	1	LS	47,900	47,900	
16000	SITE ELECTRICAL-DISTRIBUTION AND LIGHTING	1	LS	80,000	80,000	
G40	**SITE ELECTRICAL UTILITIES**			**DIVISION TOTAL**	**178,900**	**5.59**
Z10	**GENERAL REQUIREMENTS**					
01000	GENERAL CONDITIONS	2	MO	35,000	70,000	
Z10	**GENERAL REQUIREMENTS**			**DIVISION TOTAL**	**70,000**	**2.19**
				ESTIMATE SUBTOTAL	**525,650**	**16.43**

APPENDIX 7.4

Partnerships

Appendix 7.4 Partnerships Supported Community/Business Support

The following pages provide a summary of the specific 4-year and K-12 programs that will be directly supported by the proposed Technology and Engineering Center.

- Western Washington University
- Bellingham Public Schools
- Ferndale School District

Support letters are also provided indicating how community partners and business and industry will benefit from the new TEC Project. Letters are provided from:

- Whatcom Literacy Council
- NW Workforce Council
- TAG
- WCC CIS advisory committee
- Vitech, Inc.
- Cyberwatch West
- Alcoa Corporation
- Cascade Job Corps College and Career Academy
- Phillips 66

December 11, 2017

To the SBCTC review committee,

Whatcom Community College (WCC) educates thousands of students from local communities and beyond each year. Among WCC's transfer students, 86% attend Western Washington University, located just five miles away. WCC's vision is to be an innovative college, engaging with its diverse and changing communities, with the promise to transform lives through education. Western Washington University has a mission to bring together individuals of diverse backgrounds and perspectives in an inclusive, student-centered university that develops the potential of learners and the well-being of communities. The two institutions are strong educational partners.

WCC strives to provide innovative programs to help prepare students for the future, including computer science, computer information systems, cybersecurity, and engineering. While these in-demand programs face soaring student interest, WCC's current facilities are stretched far too thin to meet rising demand. WCC must provide technology-rich learning environments in order to train students in these high-touch, high-demand areas. Further, WCC lacks space to provide critical basic education for adults in innovative, collaborative teaching and learning environments that leverage best practices in the use of technology in the classroom.

In order to remedy this problem, WCC is proposing to construct a new three-story, 52,000-square foot building – called the Technology and Engineering Center – to provide STEM training and technology rich classroom space for adult basic education. With new computer/technology labs, science labs, basic skills labs, student services and faculty offices, the proposed Technology and Engineering Center at WCC will train students in high-demand fields.

As Dean of the College of Science & Engineering at Western Washington University, I enthusiastically support WCC's major capital project request to the State Board for Community and Technical College (SBCTC) to fund the much needed Technology Education Center at WCC. The project will allow WCC to prepare more of its students in high quality, transfer preparation for STEM careers and transfer degrees in our community.

Sincerely,

Brad Johnson, Dean
College of Science and Engineering
Western Washington University
Bellingham, WA, 98225

Bellingham Public Schools
a collective commitment

Superintendent
Greg Baker

Board of Directors
Kelly M. Bashaw
Douglas W. Benjamin
Camille Diaz Hackler
Quenby M. Peterson
Steven H. Smith

December 11, 2017

To the SBCTC review committee,

Whatcom Community College (WCC) educates thousands of students from local communities and beyond each year, including hundreds of graduates from Bellingham Public Schools. WCC's vision is to be an innovative college, engaging with its diverse and changing communities, with the promise to transform lives through education. Bellingham Public Schools has a mission to prepare all students for success and the widest range of educational and vocational options to support a diversity of life choices.

WCC strives to provide innovative programs to help prepare students for the future, including computer science, computer information systems, cybersecurity, and engineering. While these in-demand programs face soaring student interest, WCC's current facilities are stretched far too thin to meet rising demand. WCC must provide technology-rich learning environments in order to train students in these high-touch, high-demand areas. Further, WCC lacks space to provide critical basic education for adults in innovative, collaborative teaching and learning environments that leverage best practices in the use of technology in the classroom.

In order to remedy this problem, WCC is proposing to construct a new three-story, 52,000-square foot building – called the Technology and Engineering Center – to provide STEM training and technology rich classroom space for adult basic education. With new computer/technology labs, science labs, basic skills labs, student services and faculty offices, the proposed Technology and Engineering Center at WCC will train students in high-demand fields.

Bellingham Public Schools strongly supports WCC's major capital project request to the State Board for Community and Technical College (SBCTC) to fund the much needed Technology Education Center at WCC. The project will allow WCC to serve more of the students graduating from our schools for high quality STEM careers and transfer degrees in our community. The building will also provide innovative spaces for activities that supplement our current students' learning, such as cyber camps and STEM camps.

Sincerely,

Jeff Tetrick
Career and Technical Education Director

Bellingham School District #501
1306 Dupont Street, Bellingham, WA 98225-3118 • Phone: 360-676-6400 • FAX: 360-676-2793 • www.bellinghamschools.org

FERNDALE
SCHOOL DISTRICT *Making a Difference….*

December 5, 2017

To the SBCTC review committee,

Whatcom Community College's (WCC's) vision is to be an innovative college, engaging with its diverse and changing communities, with the promise to transform lives through education. WCC proudly serves thousands of students each year, helping community members achieve their educational goals and dreams in a variety of fields.

While innovative WCC programs like computer science, computer information systems, cybersecurity, and engineering face soaring student interest, WCC's current facilities are stretched far too thin to meet rising demand. WCC must provide technology-rich learning environments in order to train students in these high-touch, high-demand areas. Further, WCC lacks space to provide critical basic education for adults in innovative, collaborative teaching and learning environments that leverage best practices in the use of technology in the classroom.

In order to remedy this problem, WCC is proposing to construct a new three-story, 52,000-square foot building – called the Technology and Engineering Center – to provide STEM training and technology rich classroom space for adult basic education. With new computer/technology labs, science labs, basic skills labs, student services and faculty offices, the proposed Technology and Engineering Center at WCC will train students in high-demand fields that serve local, regional, and statewide employer needs.

As WCC's committed community partner, the Ferndale School District fully supports WCC's major capital project request to the State Board for Community and Technical College (SBCTC) to fund the much needed Technology Education Center at WCC. The proposed building will provide critical hands-on learning space to help prepare the workforce of tomorrow.

Sincerely,

Scott Brittain

Scott Brittain
Assistant Superintendent of Teaching and Learning
Ferndale School District
(360) 383- 9210

Whatcom
Literacy Council
Opening Doors. Changing Lives.

December 11, 2017

Dear Review Committee:

Please accept this letter in support of Whatcom Community College's proposal to construct a new three-story, 52,000 square foot building to provide Science, Technology, and Adult Basic Education instruction. Whatcom Community College is a trusted educational partner in Whatcom County and makes a significant contribution to the education and training opportunities available to local residents.

WCC is committed to providing innovative basic skills programming and the Whatcom Literacy Council values the productive relationship with the college. Currently, WCC lacks key instructional spaces to serve the number of students needing basic skills instruction. Specifically, there is a need for technology rich, collaborative teaching and learning spaces that support highly innovative basic skills programming for programs such as High School Completion, English Language Acquisition, flipped instruction, and integrated education and training. These programs not only provide critical access to under-served populations, but also provide accelerated skill attainment through I-BEST and dual credit high school and college programming.

The Whatcom Literacy Council works closely with WCC to provide a cohesive range of educational services for local residents. Students in need of fundamental literacy skills often start at the Whatcom Literacy Council with a one-to-one tutor and then progress to WCC courses for high school completion and job training. The Whatcom Literacy Council also provides trained volunteers to help in Adult Basic Education classes at the instructor's request, allowing those WCC students to be more successful. These are the students who will benefit from the critical hands-on, collaborative and technology rich learning spaces that are central to the design of WCC's proposed building.

A state-of-the-art facility designated for Science, Technology, and Adult Basic Education instruction will impact the work of the Whatcom Literacy Council, our partner agencies, and the entire community in a positive way. We hope you will agree that this is a worthy project.

Sincerely,

Katherine Freimund

Katherine Freimund, Executive Director
Whatcom Literacy Council

PO Box 1292, Bellingham WA 98227
360.752.8678 // TTY Telephone access 7-1-1 // www.whatcomliteracy.org

Northwest Workforce Council

PO Box 2009 (101 Prospect Street), Bellingham, WA 98227 - 360.676.3209 • 2005 E. College Way, Mount Vernon, WA 98273 - 360.416.3600
265 NE Kettle St., Ste. 102, Oak Harbor, WA 98277 - 360.675.5966 • PO Box 1696 (540 Guard Street #210), Friday Harbor, WA 98250 - 360.378.4662
- www.nwboard.org -

December 13, 2017

State Board for Community and Technical Colleges (SBCTC)
PO Box 42495
Olympia, WA 98504-2495

SBCTC Review Committee,

Northwest Workforce Council (NWC) is the Local Workforce Development Board, serving Whatcom, Skagit, Island, and San Juan Counties. We collaborate with and support colleges and other workforce partners in a variety of ways including, but not limited to; alignment of strategic plans, convening key industry tables, participating on advisory boards, leveraging resources, advancing student success through strategic investments of Workforce Innovation and Opportunities Act (WIOA) funds, and providing career navigation support to students.

Northwest Workforce Council is pleased to endorse Whatcom Community College's (WCC's) proposal for infrastructure expansion to support instruction in science, technology, engineering and math (STEM) and adult basic education (ABE). The Council can attest to the need for increased innovation and enhanced capacity to deliver instruction in STEM and ABE. Providing these skills is a key component of initiatives under WIOA. WCC has been a long-standing partner in supporting education of the region's workforce.

It is our understanding, that as program enrollments in such fields as computer science, computer information systems, cybersecurity, and engineering have increased, WCC's current facilities are inadequate. Classrooms and labs lack capacity to provide technology-rich learning environments. WCC space capacity for ABE is also limited. Both new workforce entrants and returning workers continue to need remediation in critical basic education. Additional collaborative teaching and learning environments will enhance the efficiency and effectiveness of that classroom training.

WCC's proposal to construct a new building – called the Technology and Engineering Center – to provide classroom space for STEM training and technology-rich Adult Basic Education will help address these training capacity issues. With new computer/ technology labs, science labs, basic skills labs, student services and faculty offices, the proposed Technology and Engineering Center at WCC will train students for the emerging occupations in NWC's strategic key industry sectors of manufacturing and health care.

As a leader and partner in workforce development, the Council supports WCC's major capital project request to fund a Technology Education Center. The proposed building will provide the environment needed to help prepare the region's workforce of tomorrow in support of strong economic outcomes.

Sincerely,

Gay L. Dubigk
Chief Executive Officer

:tag Technology Alliance Group for Northwest Washington

OFFICERS

President
Ed O'Neill
Emergency Reporting

Vice President
Kamira Rea
Faithlife

Secretary
David LeBow
Alpha Technologies

Matt Bain
Sole Graphics

Brad Johnson
Western Washington University

Dwayne Neufeld
Kyocera

J. Michael Newlight
Tomorrowscope.com,
Bellingham Angel Investors

Scott Ritchey
SPIE

Janice Walker
Whatcom Community College

Meg Weber
VSH CPA's

ADMINISTRATION

Communications Coordinator
Athena Roth

December 6th, 2017

To the SBCTC review committee,

The Technology Alliance Group for Northwest Washington (TAG) is pleased to offer this letter in support of Whatcom Community College's (WCC's) major capital project proposal. For many years, TAG has partnered with WCC to align efforts in serving the workforce needs of TAG's over 600-member technology-oriented companies, as well as to attract new technology companies in support of economic growth in the northwest. This proposal is a natural extension of those efforts.

While innovative WCC programs like computer science, computer information systems, cybersecurity, and engineering face soaring student interest and enrollments in recent years, even with recent renovations to WCC's Baker Hall we recognize that WCC's current facilities are stretched far too thin to meet ongoing rising demand. WCC must provide technology-rich learning environments in order to train students in these applied, high-demand fields that are essential to our local employment base. Further, WCC lacks space to provide critical basic education for adults that is vastly improved if inclusive of collaborative teaching and learning environments that leverage best practices in the use of technology in the classroom.

In order to remedy this problem, WCC is proposing to construct a new three-story, 52,000-square foot building – called the Technology and Engineering Center – to provide classroom space for STEM training and technology-rich adult basic education. With new computer/ technology labs, science labs, basic skills labs, student services and faculty offices, the proposed Technology and Engineering Center at WCC will train students in fields that serve and meet growing technology sector employer needs locally, regionally, and statewide.

As a committed community partner, The Technology Alliance Group for Northwest Washington fully supports WCC's major capital project request to the State Board for Community and Technical College (SBCTC) to fund the much needed Technology Education Center at WCC. The proposed building will provide critical hands-on learning space to help prepare the region's workforce of tomorrow.

Sincerely,

The Technology Alliance Group Board and Staff.

December 13, 2017

To the SBCTC review committee,

As a member of the Whatcom Community College (WCC) Computer Information Systems Advisory Committee, a local employer of numerous WCC graduates and a former graduate of Whatcom's CIS program, I am writing to urge the SBCTC to consider funding Whatcom Community College's capital project proposal. WCC has proven to be an innovative institution, engaging and serving thousands of students each year and helping community members achieve their educational goals and dreams in a variety of fields. It comes as no surprise that Whatcom County has a growing population and employer base and it is clear the future health of our community and economy is dependent on a highly trained and educated workforce. Whatcom Community College plays an integral role in nurturing this growth.

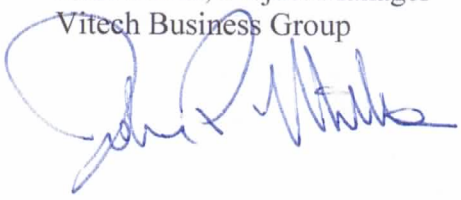
WCC programs like Computer Information Systems, Cybersecurity, Engineering and Computer Science have faced significant growth in enrollments in recent years. However, even with recent renovations to WCC's Baker Hall/Cybersecurity Center, it is clear that WCC's current facilities are stretched far too thin to meet ongoing rising demand for these programs. In order to prepare students for an evolving industry having such high demand for a talented workforce, WCC must provide technology-rich learning environments to students. Providing improved basic education for adults in an inclusive and collaborative environment while utilizing the latest technology will greatly advance and prepare our local workforce for the technological challenges and opportunities they face in the future.

I am excited to learn of WCC's proposal to remedy this problem through the construction of a proposed three-story Technology and Engineering Center. The center will provide classroom space for STEM training and technology-rich adult basic education and will accommodate new computer and technology labs, science and basic skills labs, student services and faculty offices. The center will enable WCC to continue training our community's expanding student pool and will ultimately enable students to meet the needs of local employers, such as Vitech, as well as regional and statewide employers looking for innovative, intelligent, and well-trained employees.

As a committed WCC community partner, Vitech Business Group fully supports WCC's major capital project request to the State Board for Community and Technical College (SBCTC) to fund the much-needed Technology Education Center at WCC. The proposed building will provide critical hands-on learning space to help prepare the region's workforce of tomorrow.

Sincerely,

John Miller, Project Manager
Vitech Business Group



December 5, 2017

To the SBCTC review committee,

The Whatcom Community College (WCC) Computer Information Systems Advisory Committee is pleased to offer this letter in support of WCC's major capital project proposal. WCC proudly serves thousands of students each year, helping community members achieve their educational goals in a variety of fields, and meeting employer needs through the production of a highly skilled workforce. As a volunteer committee that supports and advises one of the college's fastest growing program enrollments, we fully support the need for this proposed expansion.

WCC programs like computer information systems and cybersecurity have faced soaring student interest and enrollments in recent years. Even with recent renovations to WCC's Baker Hall/Cybersecurity Center, it is clear that WCC's current facilities are stretched far too thin to meet ongoing rising demand for this program, let alone related programs in engineering and computer science. WCC must provide technology-rich learning environments in order to prepare students in these high-demand fields that are essential to the region's employment base. Further, WCC lacks space to provide basic education for adults that is significantly improved if inclusive of collaborative teaching and learning environments that leverage best practices in the use of technology in the classroom.

We are excited to learn of WCC's proposal to remedy this problem through the construction of a new three-story, 52,000-square foot building that will be called the Technology and Engineering Center. That the Center will provide classroom space for STEM training and technology-rich adult basic education is even more exciting. With new computer/ technology labs, science labs, basic skills labs, student services and faculty offices, the proposed Technology and Engineering Center at WCC will train students for fields that will meet our needs as local employers and also those of many other regional and statewide employers.

The WCC CIS Advisory Committee is made up of committed community partners to the College. We fully support WCC's major capital project request to the State Board for Community and Technical College (SBCTC) to fund the much needed Technology Education Center at WCC. The proposed building will provide critical hands-on learning space to help prepare the region's workforce of tomorrow.

Sincerely,

Tracy Atwood, WCC CIS Advisory Committee Chair
General Account Manager, Tech Help

cyberwatch west
The Center for Cybersecurity Education

December 5, 2017

To the SBCTC review committee,

As Director of Computer Sciences and Information Systems at Whatcom Community College (WCC) and Principal Investigator for CyberWatch West, I can attest firsthand to the unprecedented growth over the last several years in WCC's computer information systems (CIS) and cybersecurity programs. These high demand programs offer multiple degree and certificate options that lead to high-wage occupations and transfer opportunities. This fall, WCC launched a new Bachelor of Applied Science (BAS) degree in IT Networking that will also be offered online starting fall 2018 in order to help address increasing enrollment demand.

But even with recent renovations to Baker Hall, these program spaces are fully maximized and the College must provide new space to meet ever increasing demand in these highly regarded programs. As a nationally recognized leader in cybersecurity education, the College not only leads CyberWatch West – a National Science Foundation (NSF) regional center for cybersecurity education – and C5 (Catalyzing Computing and Cybersecurity at Community Colleges), also funded by the NSF, it was recently selected by the National Security Agency (NSA) to lead efforts to improve and expand cybersecurity education nationwide as one of four Centers of Academic Excellence in Cyberdefense (CAE-CD) National Resource Centers.

As the director of these programs, I am writing to confirm my unequivocal support for the proposal to fund construction of a new three-story, 52,000-square foot building, called the Technology and Engineering Center, to provide critically needed computer/technology labs and instructional space to train students in these high-demand fields.

Sincerely,

Corrinne Sande

Corrinne Sande
Director/PI CyberWatch West
Director of Computer Sciences and Information Systems
Phone: 360.383.3552
csande@whatcom.edu

Alcoa Corporation

Alcoa Intalco Works
4050 Mountain View Rd,
Ferndale, WA 98248

December 11, 2017

To the SBCTC review committee,

Whatcom Community College's (WCC's) vision is to be an innovative college, engaging with its diverse and changing communities, with the promise to transform lives through education. WCC proudly serves thousands of students each year, helping community members achieve their educational goals and dreams in a variety of fields.

While innovative WCC programs like computer science, computer information systems, cybersecurity, and engineering face soaring student interest, WCC's current facilities are stretched far too thin to meet rising demand. WCC must provide technology-rich learning environments in order to train students in these high-touch, high-demand areas. Further, WCC lacks space to provide critical basic education for adults in innovative, collaborative teaching and learning environments that leverage best practices in the use of technology in the classroom.

In order to remedy this problem, WCC is proposing to construct a new three-story, 52,000-square foot building – called the Technology and Engineering Center – to provide STEM training and technology rich classroom space for adult basic education. With new computer/technology labs, science labs, basic skills labs, student services and faculty offices, the proposed Technology and Engineering Center at WCC will train students in high-demand fields that serve local, regional, and statewide employer needs.

As WCC's committed community partner, Alcoa Intalco Works fully supports WCC's major capital project request to the State Board for Community and Technical College (SBCTC) to fund the much needed Technology Education Center at WCC. The proposed building will provide critical hands-on learning space to help prepare the workforce of tomorrow.

Sincerely,

Ron Jorgensen
Plant Manager
Alcoa Intalco Works

CASCADES JOB CORPS
COLLEGE & CAREER ACADEMY

Cascades Job Corps College & Career Academy

December 12, 2017

Dear SBCTC review committee,

The Cascades Job Corps College & Career Academy is pleased to provide this letter in support of Whatcom Community College's (WCC's) major capital project proposal – The Technology & Engineering Center.

Cascades Academy offers no-cost career training that provides students ages 16-21 with hands-on experience in Information Technology and Healthcare, as well as related professional development. As our students graduate and seek to continue their education, we are delighted to be able to guide them to future, robust opportunities at WCC in high-demand, high-wage STEM fields.

We understand that WCC's current facilities for STEM programs are stretched beyond limits, and many classrooms/lab spaces need upgrading to provide the technology-rich learning environments needed to train students in applied topics such as IT Networking and Cybersecurity. In order to remedy this problem, WCC is proposing to construct a new three-story, 52,000-square foot Technology and Engineering Center – to provide classroom space for STEM training and technology-rich adult basic education. With new computer/technology labs, science labs, basic skills labs, student services and faculty offices, the proposed Technology and Engineering Center at WCC will be an ideal location for our graduates to thrive as they further their professional education and training.

Cascades Academy fully supports WCC's major capital project request to the State Board for Community and Technical College (SBCTC) to fund the much needed Technology Education Center at WCC. The proposed building will provide an incredible opportunity for our students, as well as to help fill the growing workforce shortage in STEM, both in our region and across the state and nation. We are delighted to partner with WCC and support this request.

Sincerely,

Kevin Meenaghan
Academy Director
Cascades Job Corps College and Career Academy

1950 Northern State Road. · PO Box 819 · Sedro-Woolley, WA 98284
Phone (360) 854-3400 · Fax (360) 854-2227

Phillips 66
Ferndale Refinery
P.O. Box 8 Ferndale, WA 98248
Phone 360.384.8550

December 7, 2017

SBCTC
PO Box 42495
Olympia, WA 98504-2495

To the SBCTC review committee,

Whatcom Community College's (WCC's) vision is to be an innovative college, engaging with its diverse and changing communities, with the promise to transform lives through education. WCC proudly serves thousands of students each year, helping community members achieve their educational goals and dreams in a variety of fields.

While innovative WCC programs like computer science, computer information systems, cybersecurity, and engineering face soaring student interest, WCC's current facilities are stretched far too thin to meet rising demand. WCC must provide technology-rich learning environments to train students in these high-touch, high-demand areas. Further, WCC lacks space to provide critical basic education for adults in innovative, collaborative teaching and learning environments that leverage best practices in the use of technology in the classroom.

To remedy this problem, WCC is proposing to construct a new three-story, 52,000-square foot building – called the Technology and Engineering Center – to provide STEM training and technology rich classroom space for adult basic education. With new computer/technology labs, science labs, basic skills labs, student services and faculty offices, the proposed Technology and Engineering Center at WCC will train students in high-demand fields that serve local, regional, and statewide employer needs.

As WCC's committed community partner, the Phillips 66 Ferndale Refinery fully supports WCC's major capital project request to the State Board for Community and Technical College (SBCTC) to fund the much-needed Technology Education Center at WCC. The proposed building will provide critical hands-on learning space to help prepare the workforce of tomorrow.

Sincerely,

Josh Summers

APPENDIX 7.5

Functional Program - Space Tabulation

Appendix 7.5 – Functional Program / Tabulation

The following outlines the proposed functional program / space tabulation for the proposed Technology and Engineering Center:

Space Name	ASF	Quant.	Total ASF	Workstations	
				Class	Lab
INSTRUCTIONAL SPACE					
Learning Community Classroom (Technology-rich Basic Skills Lab)	1,384	2	2,768	64	
General Classroom	920	2	1,840	64	
Computer Lab (Assigned)	920	4	3,680		96
Fundamentals Engineering Lab	1,697	1	1,697		24
Applied Engineering Lab	1,253	1	1,253		24
Engineering Classroom	916	2	1,832		48
Applied IT Lab	1,697	1	1,697		32
CIS Computer Lab	varies	3	3,106		80
Cyber Security Lab	2,400	1	2,400		32
IT Networking Lab	varies		3,864		80
Conference/Seminar	500	2	1,000		
Quiet Study	150	2	300		
Study Commons	varies	3	5,826		
Informal Study	300	2	600		
subtotal nsf			**31,863**	128	416
ADMINISTRATIVE SPACE					
Faculty Office Suite	1,991	2	3,982		
subtotal nsf			**3,982**		
TOTAL NSF			**35,845**		
Corridor/Circulation			7,893		
Toilets			1,830		
MEP/Service			2,670		
Walls & Support			3,762		
TOTAL GSF			**52,000**		
	Efficiency:		**69%**		

APPENDIX 7.6

Project Budget Analysis

Appendix 7.6 - Project Cost Comparisons and M & O Costs

Project Cost Comparisons (detailed analysis for Section 5.1 of Report)

The estimates for the TEC compare favorably to recent SBCTC major capital projects of similar size and complexity:

Similar SBCTC Projects	GSF	Project Cost	New FTES	$/Net New FTE	$/GSF
Proposed Technology and Engineering Center	52,000	$30,427,518	447	$68,071	$585.15
WCC Learning Commons	69,210	$36,774,000	1,224	$30,044	$531.34
Edmonds Science Engineering Technology Building	69,910	$47,378,000	225	$210,569	$677.70
Cascadia College Center for Science & Technology	66,100	$41,147,000	800	$51,434	$622.50
	Average of similar projects			**$97,349**	**$610.51**

Note: Type-2 FTE's used in calculation of New FTE's

Maintenance and Operations Costs – Anticipated Annual Impact (detailed analysis for Section 5.2 of Report)

The TEC is primarily a classroom and lab building so administrative costs are minimal.

Annual cost impacts include custodial, utilities, technology, capital maintenance, general repair and furniture/equipment replacement, walkways, landscaping & grounds maintenance, security and administration costs.

The operation and maintenance budget impacts for the TEC is estimated to be $525,200 annually and require 1.8 FTES. This is based on the existing college campus services ratios and square footage costs. Project impact on the college's annual operating budget is as follows:

O&M Category	FTE's	Annual Cost/Unit	Quantity	/ Unit	Est. Annual O&M Cost
Janitorial	1	$1.77	52,000	/ GSF	$92,040
Utilities	0	$1.83	52,000	/ GSF	$95,160
Techology - Infra. &Tech. Support	0.13	$2.37	52,000	/GSF	$123,240
Capital Maint./Repair	0.64	$2.43	52,000	/ GSF	$126,360
Roads and Grounds	0	$0.62	52,000	/ GSF	$32,240
Security	0	$0.40	52,000	/ GSF	$20,800
Administration	0	$0.68	52,000	/ GSF	$35,360
				total cost	$525,200
TOTAL M & O	**1.77**	**FTE**	52,000	**$10.10**	**Per GSF**

APPENDIX 7.7

CAM Analysis

Preliminary for 2019-21 Project Requests
CAPITAL ANALYSIS MODEL (CAM) GENERATED SPACE
DirectLine inventory data April 2017
COLLEGE: **Whatcom**
TYPE: **Community College**

Warning: do not use before ~
College breaks out assignable areas by CAM category fo
College verfies assignaable area by CAM category on the

All FTE *	FALL 2014	FALL 2024	Growth	Percent	FTE/Year
Academic	2,698	2,914	216	8%	22
Vocational	633	683	50	8%	5
Basic Skills/Dev Ed	602	650	48	8%	5
TOTAL	**3,933**	**4,247**	**314**	**8%**	**31**

Type 1 FTE	FALL 2014	FALL 2024	Growth	Percent	FTE/Year
Academic	2,110	2,279	169	8%	17
Vocational	474	511	37	8%	4
Basic Skills/Dev Ed	407	439	32	8%	3
TOTAL	**2,991**	**3,229**	**238**	**8%**	**24**

Type 2 FTE	FALL 2014	FALL 2024	Growth	Percent	FTE/Year
Academic	2,499	2,698	199	8%	20
Vocational	509	550	41	8%	4
Basic Skills/Dev Ed	486	525	39	8%	4
TOTAL	**3,494**	**3,773**	**279**	**8%**	**28**

* All funding sources, all ages, all intents (excluding community service), all enrollments (excluding DOC)
Type 1 = Day On-Campus (excludes Online)
Type 2 = Day On-Campus + Online

Preliminary for 2019-21 Project Requests
CAPITAL ANALYSIS MODEL (CAM) GENERATED SPACE
DirectLine inventory data April 2017
COLLEGE: **Whatcom**
TYPE: **Community College**

Warning: do not use before ~
College breaks out assignable areas by CAM category fo
College verfies assignaable area by CAM category on the

TYPE OF SPACE	FAE CODING	FTE TYPE	2016 SPACE AVAILABLE	COMMITTED CHANGES 2016-26	2026 SPACE AVAILABLE	2026 CAM ALLOWANCE	2019-21 SPACE DEFICITS SHORTAGE	2019-21 SPACE DEFICITS OVERAGE	SHORTAGE AS % OF 2019-21 CAM ALLOWANCE
GEN. CLASSROOM	A1	1	42,803		42,803	32,092	0	10,711	0%
BASIC SKILLS LABS (open)	A2	2	1,459		1,459	14,490	13,031	0	90%
SCIENCE LABS.	B1	1	15,813		15,813	21,651	5,838	0	27%
COMPUTER LABS. (open)	B2,B4,B5	2	14,339		14,339	25,901	11,562	0	45%
ART	C1	2	5,474		5,474	6,000	526	0	9%
MUSIC	C2	2	0		0	4,000	4,000	0	100%
DRAMA	C3	2	4,173		4,173	5,000	827	0	17%
Subtotal Instruction			**84,061**	**0**	**84,061**	**109,133**	**35,783**	**10,711**	**33%**
AUDITORIUM	C4	2	6,417		6,417	9,000	2,583	0	29%
LIBRARY/LRC	E1	2	16,031		16,031	49,293	33,262	0	67%
PHYS. EDUCATION	H3	2	25,364		25,364	34,980	9,616	0	27%
FACULTY OFFICE	F1	2	19,955		19,955	32,046	12,091	0	38%
Subtotal Instructional Support			**67,767**	**0**	**67,767**	**125,319**	**57,552**	**0**	**46%**
Total Instructional Space			**151,828**	**0**	**151,828**	**234,453**	**93,336**	**10,711**	**40%**
ADMIN./STU.SERV.	G1,G2	2	13,940		13,940	27,344	13,404	0	49%
STU.CTR.& RELATED	H1,H2	2	18,685		18,685	40,902	22,217	0	54%
C.STORES/MAINT.	I1	2	13,713		13,713	19,667	5,954	0	30%
CHILD CARE	H4	2	5,791		5,791	12,828	7,037	0	55%
Subtotal Student Service/Other			**52,129**	**0**	**52,129**	**100,742**	**48,613**	**0**	**48%**
TOTAL CAM SPACE			**203,957**	**0**	**203,957**	**335,194**	**141,948**	**10,711**	**42%**

TOTAL ASSIGNED	302,779
CAM/TOT. ASSIGN.	67%