2019/2021
PROJECT REQUEST REPORT

TACOMA COMMUNITY COLLEGE

CENTER FOR INNOVATIVE LEARNING AND ENGAGEMENT

DECEMBER 20, 2017

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1.0 EXECUTIVE SUMMARY

Twelve years ago, Tacoma Community College (TCC) identified the need to address achievement gaps with our low-income and underrepresented student populations in a more holistic way. This new sense of purpose led TCC to become an *Achieving the Dream* (ATD) grantor college in 2006. The goal of the ATD *National Reform Network* then and now is to close achievement gaps and accelerate success among diverse, underrepresented student populations, particularly low-income students, and students of color.

Our involvement with ATD initiated a cultural shift that forced us to look at student success through a different lens; one that was more intentional and data-driven.

The result was the development of a *Pathways to Completion* model designed to reduce barriers to student success by establishing comprehensive support services along with more explicit educational and career pathways. Based on the *Completion by Design* (CBD) initiative, the *Pathways to Completion* framework conceives of the student experience in stages: from connection > beginning > belonging > gateway classes > academic focus beyond the first year and finally > to completion.

In 2017, TCC revised its *Pathways to Completion* model to more strongly emphasize the student's first year experience around connections, belonging, and academic and career focus. Additionally, TCC has forged a successful track record particularly at the precollege level of developing pathways for greater retention and graduation rates and has been a leader in both basic skills and developmental education pathways across the system. In the last two years in particular, TCC leadership has moved the college steadily down a path toward the full implementation of the *Guided Pathways* model.

Some of major accomplishments along this path include the following:

- Identifying 5 meta majors or career clusters (Business, Accounting, Information Technology; Physical Sciences, Math, Engineering; Behavioral and Social Sciences, Education, Human Services; Health Professions and Biosciences; Arts, Communication, and Global Humanities),
- Becoming a Washington MESA program partner, which will allow us to create cohorts of traditionally underrepresented students in the STEM fields with dedicated advisors and wrap-around support,
- Acquiring Civitas Learning analytic software supports proactive advising, gives us a better understand student engagement, continuation probability, indicators of success and risk, and allows students to track their progress towards their degree,
- Developing comprehensive onramps and integrated Learning Communities beginning at basic skills and developmental education, to accelerate low-skilled adults to and through to college level coursework.
- Implementing a full-scale redesign of Developmental Education including integrated, contextualized, and accelerated precollege pathways in math and English.
- Increasing our capacity in Institutional Research to collect and contextualize data while embracing a culture of evidence, inquiry, collaboration, and innovation.

The aforementioned accomplishments demonstrate that TCC is both fully committed and well positioned to advance the guided pathways work, fully integrating all Guided Pathway principles, components and processes across all departments, and divisions of the college. Yet, TCC's

learning spaces do not meet a similar promise. TCC continues to operate in a physical infrastructure in which unimaginative general use spaces are populated by traditional, immovable furniture and desktop technologies in such a way as to limit the kind of contextualized, innovative learning that TCC now envisions. TCC has insufficient laboratory, flexible, and simulation space to meet new pedagogies and emerging practices. TCC's current spaces do not allow faculty to work with students in ways that model real life in such areas as business, communications, world languages, and paralegal. In addition, TCC's current spaces include current buildings that have exceeded the reasonable lifespan and need to be replaced. Finally, TCC has insufficient integration with student support centers, library services, and emerging pedagogies that demonstrate the importance of flexible, unstructured, and unscheduled spaces. TCC's Center for Innovative Learning and Engagement aims to rectify these limitations.

TCC is very excited about the possibility to create spaces in which students can better collaborate with each other, technologies, and learning objects – both real and virtual – that support innovative, authentic, and integrated learning. TCC's most recent instructional building – the H.C. Joe Harned Center for Health Careers – has demonstrated the wisdom of such an approach for students in nursing and allied health fields by providing informal learning spaces, atriums, simulation laboratories, skills labs, and gardens in addition to traditional classroom and computer labs to provide familiarity with spaces similar to what a student might find in a clinical setting. The Center for Innovative Learning and Engagement aims to do the same for students in both transfer and technical areas.

1.1 Problem Statement

- Tacoma Community College (TCC) lacks the contemporary learning spaces needed to implement new pedagogies and emerging practices.
- TCC's Business and Humanities programs lack simulation spaces that will allow each program to infuse instruction with artifacts and activities, to better prepare learners for the workplace or transfer.
- TCC's Business and Humanities programs lack integration spaces that create synergies towards emerging competencies which are now recognized across disciplines, such as intercultural competencies, design thinking, and entrepreneurship.
- Three of TCC's current buildings (10, 10B, and F1) have exceeded their reasonable lifespan and need to be replaced

1.2 Proposed Solution

Replace Buildings 10, 10B, and F1 on campus with a new Center for Innovative Learning and Engagement. By granting funding for a new and replacement building, the State Board will enable Tacoma Community College to advance the missions of the 22 disciplines that comprise the Business and Humanities divisions, including their various associated degree programs and special distinction and concentration areas.

1.3 Programs addressed by the Project (6.8)

This project supports the college's efforts to create seamless academic pathways that foster collaborative learning, interdisciplinary connections, and community engagement. TCC subscribes to the notion that broad integrative knowledge is critical for the careers of today and has embraced innovative pedagogies such as learning communities and service learning that support and enhance our capacity to provide high quality academic experiences that meet the needs and

expectations of our students, employers, and the community. Along with community partners such as *Pacific Lutheran University, Tacoma Art Museum and University of Washington Tacoma, (7.4.4)* the proposed project will create an environment that allows students to apply learning across multiple fields and disciplines with particular emphasis on those programs that need updated laboratory spaces but do not currently have access to them, including business, paralegal, humanities, social sciences, and communications. These academic programs are a driving force in facilitating Integrative Learning at TCC, effectively transforming the learner experience by interconnecting curriculum and creating opportunities for students to apply concepts across a variety of disciplines.

As a result of our revised *Pathways to Completion* model and strategic efforts, TCC is innovating around instruction. Curriculum is developed to expand and enhance linked courses that integrate general education coursework. Examples include capstone projects, learning communities, team teaching, civic engagement, bridge programs (transitional to college, freshman to sophomore and sophomore to junior level educational experiences at transfer institutions), service and experimental learning, and student peer mentorships. The *Pathways to Completion model* will improve student *program access*. The new collaborative learning environments established by this model will foster *efficiency, service and space relationships* in a modern workplace. The current physical space barriers on the TCC campus due to inadequate facilities and challenging room-scheduling situations will no longer be barriers to education. TCC's faculty are transforming our approach and practice in teaching and increasingly form interdisciplinary instructional teams, develop professionally in faculty-driven communities of learning and practice, engage in cross-discipline peer mentorship and professional development, and have enhanced assessment to include self-assessment in addition to program outcomes and learning, skills and attitude outcomes. Curriculum development, faculty development, and assessment at TCC clearly share a common goal and focus: bridging our student's achievement gaps, successfully engaging our students in learning communities, and leading our students to completion of degree programs and successful, seamless transfer to bachelor programs and careers. Our commitment to and increasing facilitation of integrated learning help TCC make steady progress in serving many of TCC's under-represented populations more effectively, strengthening connections and collaborations among our ever more diverse learner communities.

TCC expects growth in enrollment and a significant increase in student success and completion of degrees as a result of our refined pathway to completion initiative, the development of our new meta majors or career clusters (2017), the development of interdisciplinary distinction pathways (Honors, American Ethnic and Gender Studies, Sustainability, and Global Studies (2016-2018), and the development of specialization pathways that enable students in the Associate of Arts degree to pursue new pathways that facilitate a seamless transition to junior level transfer into Bachelor of Arts majors at four year institutions (2017-2019). Prior to these developments, students at TCC could not select meta majors or career clusters, and could not pursue pathways of distinctions or specialization pathways designed. Now, students will be able to select meta majors and pathways of distinction and specialization and TCC will be able to tailor instructional and student support services to facilitate these academic goals and strategically lead our students to success.

The primary challenge that remains is that none of the academic pathways associated with the Humanities and Social Sciences has a physical home. Unlike pathways in the sciences, technology and health services, there is no common physical space, building, center or physical home students in these pathways can access and utilize to meet, engage in their learning com-

munities, and access the student and educational support services they need to be successful. Additionally, our efforts and progress are significantly hindered and limited by our outdated and inadequate instructional space situation and lack of a home for our Center for Innovative Learning and Engagement and the teaching and learning spaced proposed therein.

Business Pathways

- Professional technical business (accounting, business management, entrepreneurship)
- Transfer business (accounting, business law, economics)
- Paralegal

Due to space constraints, TCC has been forced to separate its two interrelated business programs; the professional technical business program, and the transfer business program with an Associate of Business degree with transfer intention. Both of these programs have been highly successful, boasting highly-qualified, enthusiastic faculty. In 2015, TCC recognized the opportunity to create a unified business program that will ladder and integrate the two curricula, to better meet the needs of students while allowing the curriculum to be more flexible and responsive to the needs of a highly diversified and global service area. Grouped within the Health, Business, and Professional Services division, these programs will be given the opportunity to grow collectively under common leadership, with an eventual goal of evaluating further potential expansion through integration with the Paralegal program.

The Paralegal program at TCC has shown sustained growth, due in part to the popularity of the Limited License Legal Technician (LLLT) program in Washington. In 2012, Washington became the first state to adopt the LLLT rule that authorizes non-attorneys who meet certain educational requirements to advise and assist clients in certain practice areas of law. For this reason, growth of the TCC Paralegal program is anticipated to continue, especially considering that the LLLT Board is in the process of expanding services to approve a second practice area – estate planning and guardianship. Additional LLLT practice areas are planned for the future, in order to serve the unmet demand on traditional legal service providers. Considering this growth trend, the Paralegal program at Tacoma Community College would benefit greatly from dedicated space to enhance learning and strengthen ties with the legal community.

Humanities and Social Science Pathways

- Humanities, English, Communication Studies, World Languages.
- Social and Behavioral Sciences including: Anthropology, History, Political Science, Psychology, Sociology.

Humanities and Social Science programs represent a significant portion of the FTE capacity of TCC, serving nearly every degree or certificate offered by the college. The courses in these disciplines are currently taught in 10 different buildings on campus. Because of the relatively few spaces available, the utilization rate of these instructional spaces is 78%, compared to the typical rate for a commensurately-sized state community college of 55-60%. This space shortage limits the college's ability to offer innovative instruction at appropriate times for students, many of which are required for their degree programs. Since the anticipated growth of FTE over the next 10 years will impact these critical gateway courses more severely than all others, adding instructional space for these programs is a critical need in order to adequately serve the core requirements of TCC's identified pathways.

Humanities and Social Science education supports successful learning throughout TCC's broad array of instructional programs and are an essential component of every student's experience at the college. The growth and strength of the Humanities and Social Science pathways creates an increase in demand for tutorial, supplemental, and innovative learning support. These

support services require a central location, open access, and innovative meeting and networking spaces, all of which TCC severely lacks. The Center for Innovative Learning and Engagement will change that and place our pathways, and teaching and learning communities on the map and enable all to thrive and collaborate strategically and effectively.

In summary, Humanities and Social Sciences at TCC are deficient of both dedicated and collaborative spaces and the corresponding infrastructure to function well. As a direct result, our pathways in the Humanities and Social Sciences lack the synergy and identity needed to fully integrate the disciplines. Cross-discipline integration will lead to more meaningful learning with a clear focus on the relevance of the humanities to program completion and career achievement. The development of cross-discipline synergy and individual program identity relies on the availability of space which TCC's current state of infrastructure is not able to facilitate.

Cross-Program Benefits (7.4.4)

The Center for Innovative Learning and Engagement will also meet the needs of our learner community by providing a home for an Interdisciplinary Academic Support Network. This support network will enable students, faculty, and community members to network and collaborate. It will also provide a meeting place for local artists, scholars, writers, thinkers, social and behavioral scientists, and business professionals to enhance course topics and enrich the greater intellectual and cultural climate of the college and our community. Moreover, specialized spaces within the Center for Innovative Learning and Engagement will enable TCC to showcase and promote the academic achievements, and intellectual and scholarly contributions that students, faculty and community members from across disciplines are making in the arts, humanities, and the social and behavioral sciences - to inspire our own learning.

The Center for Innovative Learning and Engagement will also be home to TCC's new unified writing program; Writing, Reading, and Research Across the Curriculum (WRRAC). By providing WRRAC program space, the Center for Innovative Learning and Engagement will resolve capacity limitations currently affecting delivery of the associated programming. This accommodation, in turn, will foster strategic skill development across the curriculum while creating a hub for cross and interdisciplinary learning in all academic programming leading to transfer.

The Center for Innovative Learning and Engagement will bridge the educational experience in Business, Humanities, Social Science, Communication, and Transitional Studies in transformative ways by promoting creative collaborations across all areas of inquiry; embodying and advancing the cultural, ethical, and aesthetic values necessary to flourishing democratic societies; and exemplifying engaged, life-long learning for our students, our faculty, the community and the region.

Demand for these new, collaborative learning opportunities and potential new applied Baccalaureate programs will create many opportunities for growth in the associated disciplines. However, preparing students for interdisciplinary teamwork, which is routine in the modern workplace, requires physical space that cannot be facilitated on the TCC campus due to inadequate facilities and a challenging room-scheduling situation. For example, a Modern Learning Lab (7.4.8)includes Collaborative Learning Lab Pods where students interact with one another and the professor. In a business course, students collaborate virtually with potential employers, and community partners at each pod. In a communication studies class, students work in pods, presenting and formulating ideas to one another, using the technology to guide their presentations. In a composition course, students work in small groups to do research, critique sources, view material prepared by the instructor. They can also do small group editing on google.doc or

other interactive software. This type of lab set up will support Universal Design for Business, Humanities and Social Science Learning Principles.

1.4 Probable Cost Summary and Comparison to Benchmark

The total escalated cost of the project is estimated at $31,846,479. The escalated cost of the Building is estimated at $30,333,168, which is less than the state's expected cost per SF benchmark for this facility type. The escalated cost of the Infrastructure to support the project is estimated at $1,513,311, which is less than 5% of the of the total escalated cost of the project.

1.5 Project Schedule

Project Request Report Submitted	December 2017
TCC Matching Funds Available	December 2017
Pre-Design	July 2019 – December 2019
Design and Construction Documents	January 2020 – April 2021
Bid	May 2021
Notice to Proceed	July 2021
Substantial Completion/Commissioning	December 2022
Building Occupancy	January 2023
Demolition F1 Building	February 2023
Final Completion	February 2023

Predesign and Design funds are requested for the 2019/21 biennium, and construction funds are requested for the 2021/23 biennium.

1.6 Project Funding

The funding for this project will be obtained from multiple sources. Tacoma Community College is requesting State capital funds for the new Center for Innovative Learning and Engagement in addition to a TCC Board of Trustees has committed $1,000,000 of local funds (7.4.7) that are secured, and specifically allocated to this project.

2.0 PROBLEM STATEMENT, OPPORTUNITY OR PROGRAM REQUIREMENT

2.1 Project Description (6.8)

Tacoma Community College proposes to construct a new 53,075 square foot Center for Innovative Learning and Engagement, to replace Buildings 10, 10B and F1. The project scope assumes a multi-story building to house instructional space with appropriate technology and equipment needs for pathways in Business, Humanities, and Social Sciences, and cross and interdisciplinary programming. The facility will include multimedia enriched laboratories for classroom and open lab use, instructional centers for innovative and hands-on teaching and learning in the Business, Humanities and Social Science core curriculum, as well as state-of-the-art equipped flexible instructional spaces with breakout rooms to team teach and learn capabilities for cross and interdisciplinary learning. The project includes investments in campus accessibility and infrastructure improvements, and parking expansion.

Business Pathways

Previously, due to space constraints, TCC was forced to separate two business programs; a professional technical program focused on accounting, small business, and entrepreneurship, and a program that provides transfer level accounting, business law, and economics courses towards an associate of business with transfer intention. Both of these programs have been highly successful and boast highly qualified, enthusiastic faculty. In 2015, TCC recognized the opportu-

nity to create a unified business program that would ladder and integrate the two curricula, to better meet the needs of students and allow the curriculum to be more flexible and responsive to the diverse needs and economic base of its global service area. Grouped within the Health, Business, and Professional Services division, these programs will be given the opportunity to grow collectively under common leadership, with an eventual goal of evaluating further potential expansion through integration with the Paralegal program.

Following continued growth of the Paralegal program, in conjunction with the popularity of the Limited License Legal Technician (LLLT) program in Washington, the Paralegal program at Tacoma Community College would benefit greatly from dedicated space to enhance learning and strengthen ties with the legal community. The LLLT Board is currently in the process of expanding the program to a second new practice area – estate planning and guardianship. More practice areas are planned to open, to serve the unmet needs of other legal services.

Mock Courtroom

A mock courtroom will serve as a space for students to learn about the legal system through simulation and provide greater understanding of interpersonal skills, discovery, and forensics. This will also help develop students' teamwork, analytical and presentation skills. Opportunities to bring in law firms and government agencies, as well as the Court of Appeals and Supreme Court of Washington to conduct sessions will further strengthen TCC's legal ties. The courts conduct a "Have Gavel, Will Travel" program, holding court at different colleges. The program last visited TCC a decade ago and found the space provided in the library inadequate to hold session. Providing ample space to once again host this valuable, highly visible program will create a wonderful opportunity for students, faculty and the community. The Supreme Court of Washington also supports the prospect of having a day in which LLLT's appear in court, on behalf of their clients. A mock courtroom space will allow many beneficial functions to take place at the college that are not currently possible.

Deposition Rooms

Small rooms used to conduct mock depositions and interviews of clients will respond to the program's large number of inquiries and incoming students each quarter. Adjuncts are now overloading students into their classes to meet the demand. Having a dedicated space with room to grow would greatly benefit the Paralegal Program.

Business Program Labs

Dedicated space for a Business Lab will provide an opportunity for the college to implement an open concept lab space containing 5 pods of 4 workstations with a large screen monitor for collaborative use and individual stations. White boards will be located on all walls and (3) 60" monitors positioned around the room will allow student viewing from all angles. A Smart Board will be near the instructor's station. The space will have four smaller glass-walled breakout rooms for four to six students, equipped with identical technology. The glass walls will be writable. The remaining walls will be surfaced in white boards. The entire room will be networked so that business and logistics simulation activities can occur simultaneously at all pods and breakout rooms. At the top of the wall around the perimeter of the room, the NYSE ticker tape will be running to provide students with up-to-the minute stock market data.

Customized Business Program Computer Lab

A computer lab that allows our program to download legal software, separate from the rest of the campus, will help students master the technology skills essential for success in the business field. The lab would contain 30 computers, a high-speed scanner, Acrobat Pro, and the ability to download programs, which is currently restricted by IT. This room is anticipated to be a

shared resource.

Humanities and Social Sciences Pathways

Currently, Tacoma Community College does not have a centralized home for the pathways associated with the Humanities and Social Sciences as this programming is currently spread across 10 different buildings on campus. The proposed building enables TCC to create a central hub for innovative learning, engagement, and interdisciplinary academic support, and networking, to facilitate the interactive, cross and interdisciplinary, and innovative learning experience necessary to close achievement gaps, enabling all students to complete their academic pathways and achieve their career goals.

Humanities Labs

TCC's Humanities programming includes pathways in the humanities, film and literary studies, creative writing, and philosophy. Current arrangements do not accommodate our contemporary methodologies and learning needs. Courses are currently conducted in instructional spaces lacking adequate sound proofing and other design considerations necessary to deliver curriculum without disrupting adjacent instructional activities. The Center for Innovative Learning and Engagement will provide an academic home for our learner community with scheduled and flexible lab spaces, breakout rooms, upgraded design, insulation and multimedia support, plus the standard equipment commonplace at other institutions but not yet available on the TCC campus. The new facility will also add needed display and interactivity space for students to connect and explore cultural artifacts and realia, to allow for active observation and hands-on engagement. The Humanities Lab will serve a central role at TCC by housing the new Honors Distinction Pathway and academic specializations in the Humanities under the Associate of Arts degree.

World Languages and Culture Lab

World Languages at Tacoma Community College include Chinese, German, Japanese, and Spanish. These disciplines currently lack instructional space that is conducive to student-centered interactive learning. Language Arts disciplines require such a space to connect the language acquisition process with hands-on cultural exploration and successful intercultural communication training, as well as structured peer and academic skill support. The proposed learning space will enable world language students, including English language learners, to become part of a learning community both inside and outside of the classroom by engaging in live interaction with native speakers across the globe, and collaborating in teams on learning projects by utilizing student-centered spaces for large and small group work. Each pod allows for direct connection of any student device to its large flat screen (located at one end of each pod). Consequently, each student group may collaborate on projects using Internet 2 technologies, video and audio resources, and share with either their group or the whole classroom. The instructor has complete control of each display and can override student display decisions, or let them use their creativity to enhance this student-centered approach. Students will also benefit from live streaming of radio, television and film broadcast for cultural study, and observe cultural artifacts and realia through hands-on exploration. Outside of class time, these facilities will serve as a world languages and cultures hub for tutoring, networking and conversation training, to provide students with needed academic support and practice opportunities that TCC is currently unable to provide due to facility limitations. The World Languages and Culture Lab will also serve a central role at TCC by housing the new Global Studies distinction pathway.

Social Science Lab

TCC's Social Science programming offers courses in anthropology, history, and political science and includes an anthropology lab. The social science courses are currently spread out

across campus and do not allow for concerted efforts and collaborative learning, or consistent hands-on study and work with related artifacts. The Center for Innovative Learning and Engagement will rectify this as the Social Science Lab will serve as a hub for Social Science core courses and provide a centralized home for the social science learning community.

Behavioral Science Lab

Psychology, Sociology, and Anthropology are growing areas of study at TCC, which similar to other disciplines discussed in this proposal, lack a central home and corresponding instructional and network space for this learner community. The proposed Behavioral Science Lab addresses this need by providing instructional space designed for the work and study of our behavioral scientists-in-training. This lab will enable our learning communities to engage in hands-on, in-depth research, case studies and statistical analyses with the appropriate resources, software and hardware support; to thrive in a learning environment enabling a learner group or class to breakout into small focus groups for strategic graded collaborative team teaching and learning, as part of a larger, comprehensive learning process. The Behavioral Science Lab will also serve a primary role as home to the new American, Ethnic, and Gender Studies distinction pathway.

Cross-Program Benefits

The Center for Innovative Learning and Engagement will also house TCC's new Communication and Transitional Studies division, which includes all of TCC's writing curricula. This unified writing program is intended to ensure that all students exiting TCC have the rigorous communication skills to contribute in meaningful ways in both career and transfer. This unified writing program is integrated with all other academic disciplines through the Writing, Reaching, and Research Across the Curriculum (WRRAC) program. By providing a permanent new home to WRRAC, the proposed building will help resolve the capacity limitation currently affecting delivery of associated programming including cross disciplinary collaboration to ensure we are meeting the reading and writing needs across the curriculum. Every TCC degree and certificate requires one or more college-level writing or speaking classes, yet capacity for delivering these courses has not kept pace with enrollment in these programs. The WRRAC fosters strategic skill development across the curriculum. It will provide a hub for cross and interdisciplinary learning in all academic programming leading to transfer.

The Center for Innovative Learning and Engagement will bridge the educational experience in Business, Humanities, and Social Sciences in a transformative way by promoting creative collaborations across all areas of inquiry; embodying and advancing the cultural, ethical, and aesthetic values necessary for flourishing democratic societies; and exemplifying engaged, life-long learning for our students, our faculty, the community and the region.

Student/Faculty Engagement

Currently, faculty offices and student support services associated with programs in Business, Humanities, and Social Sciences are located in buildings scattered across the TCC campus. These buildings typically close after traditional staffing hours, preventing evening students from meeting with faculty members and accessing other career/learning support such as discipline-focused career and pathway advising and coordinated tutorial support for the humanities and social sciences courses. The Center for Innovative Learning and Engagement dedicates 9% of the building area to accommodate faculty offices and support services, promoting student interaction with faculty from multiple disciplines, outside of the classroom. By providing faculty and support space within the new building, career planning and networking opportunities with faculty is better integrated and the diverse student population will be further engaged in their learning. This

integrated arrangement has been shown to enhance student persistence, completion, and success. The strategic placement of faculty and support services within this building is a necessary to develop our learning communities and meet our strategic goals of increasing pathway development and degree completion.

Departmental Library / Learning Resource Center

The Departmental Library proposes to use 6,210 net square feet of the Center for Innovative Learning and Engagement in an innovative extension of its mission:

- To provide research expertise aligned with the curriculum and embedded in a location other than the library.
- To provide instruction in an active learning classroom, designed to mirror student-driven learning.
- To provide a makerspace, an interdisciplinary incubator for innovation, drawing on multiple campus perspectives, expertise, and campus trends/initiatives (i.e. pathways) to engage with the curriculum.

Of the total 6,210 square feet, roughly 1,600 square feet will be designated for active learning; a portion will be set aside for research work with students (and possibly co-locating this service with an element of writing tutoring); the rest of the space will be a makerspace. A successful makerspace on a community college campus necessitates alignment with the curriculum, ensuring that its partners include those from a variety of disciplines – from STEM to art. The makerspace will need current technology, including a variety of 3D scanners and printers to more practical work spaces and equipment where collaborative, hands-on projects transpire. Makerspaces are documented elements of academic libraries. Current literature reviews makerspace usage and impact. John Burke examines the "impact of producing items on students' understanding of related concepts and the value of *making* to the strengthening and diversity of this understanding". In particular, he highlights how:

> The concept of participatory culture allows students to play multiple roles in the creative process, gaining understanding from each perspective. The idea is to move students from serving only the role of consumers of information or media, and into the role of creators. Not only does this provide students with the freedom to shape their own visions into products, but it also allows them to grow in their skills at their own pace, and to have guidance from and collaboration with more experienced creators. The learner can become the teacher, and grow in understanding through explaining what they know to others. There is power in having an environment where students can see and share the work of their own hands.

A makerspace strengthens the ecosystem of learning at TCC and the Library's role in overall student success. Developing such a space will enable cross-campus partnerships, student involvement, and close alignment with:

- the curriculum
- degree learning outcomes
- current campus initiatives, and
- the college's strategic plan, particularly its goals to Create Learning, Embrace Discovery, and Engage Community.

Benefits of Proposed Solution

- Replace inadequate, disparate, insufficient learning spaces with centrally located, state-of-the-art facilities;
- Accommodate program and enrollment growth and augment infrastructure and scheduling flexibility with provisions for evolving technologies in research, composition and commu-

nication to implement the pedagogies and emerging practices necessary to meet program learning outcomes;
- Create a multi-disciplinary hub with technology-rich, team based, innovative learning environments for our currently separate learning communities in business, humanities, and social and behavioral sciences to explore and comprehend the relationship between humanistic study and artistic, ethical, political, social and corporate issues in the contemporary world;
- Enhance and escalate student leadership and academic experiences by creating new educational learning communities that promote and support teamwork, networking, commitment and service to the community;
- Provide a locus and support for innovative research and interdisciplinary collaboration among faculty and students in business, humanities, and social and behavioral sciences;
- Offer various opportunities for engagement with art, literature, philosophy, history, social political, and corporate formations, thereby strengthening the foundation from which to respond meaningfully to one another and the needs of our world;
- Include programming such as working groups, discussion forums, symposia, seminars, informal dialogues, student, faculty and guest presentations and conferences, joint projects, and professional development and career planning workshops;
- Integrate multiple modes of inquiry and expression to increase the relevance of student learning and lead to student success in courses, year-to-year retention, and persistence to degrees;
- Foster collaboration, experimentation, and critical thought through public discussion, seminars, symposia, research and curricular support, working and reading groups, exhibitions and cultural programming in an atmosphere of respect for diverse perspectives and expertise;
- Nurture, coordinate, connect, and publicize the scope, variety, and achievements of business, humanities and social and behavioral science programming at Tacoma Community College.

2.2 How this Project Relates to: Facilities Master Plan

Tacoma Community College recently updated its Facilities Master Plan (7.3). This project request is a direct result of those efforts, and is the highest priority of TCC's Facilities Master Plan. TCC's Business, Humanities, and Social Sciences pathways courses are currently housed in 10 decentralized facilities on the TCC campus, which limits the ability of the College to integrate delivery of these programs as well as the ability of division faculty to collaborate on instructional delivery. The Master Plan identifies the location of existing Building 10 and 10B as the site of the new Center for Innovative Learning and Engagement. Buildings 10, 10B, and F1 are three of the worst buildings on campus and are identified for replacement in the Short Term Plan for the Center for Innovative Learning and Engagement.

Campus Conditions

A majority of the Tacoma Community College campus is positioned on a plateau above parking and public transit located at the perimeter of the western half of the campus. To promote accessibility and connections to the campus core, each of the planned projects along the western edge of the plateau will include paths, steps, and universally accessible means of travelling to the higher grades, potentially through public lobbies located within the buildings themselves. This project request includes funding to develop stairs and accessible ramps that form the first phase of a cross campus plaza running along the northern edge of the Center for Innovative Learning and Engagement. Following the TCC Facilities Master Plan, the plaza will continue and connect with the Student Services Building and the Student Center in future projects.

Strategic Plan and Institutional Goals

Mission: *Tacoma Community College creates meaningful and relevant learning, inspires greater equity, and celebrates success in our lives and our communities.*

Vision: *Tacoma Community College is recognized as a spirited leader in emphasizing and documenting student learning. We are known for our commitment to innovation and excellence, our inclusive community, and our technology integration. We achieve this through the collective dedication and recognition of our college family and generous support of our community.*

TCC's most recent strategic plan was approved in 2014 and runs through 2018. The plan affirmed the institution's mission and core themes: Create Learning, Achieve Equity, and Engage Community. In addition, the strategic plan identified a fourth strategic theme: Embrace Discovery. The Center for Innovative Learning and Engagement aids TCC and fulfilling its mission, strategic plan themes, and specific strategic priorities that aid in achieving the strategic plan. Create Learning ensures that TCC provides meaningful and relevant learning. One strategic priority under this theme is to ensure that TCC creates multiple, inclusive and equitable learning environments that support the needs of our diverse student population. Achieve Equity is focused on ensuring that students from all backgrounds and cultures have opportunity and success at TCC. Three strategic priorities under the Equity theme are advanced by the Center for Innovative Learning and Engagement:

- Use technology to increase learning, access, affordability and support for all students.
- Explore, develop, and maintain classroom environments that enhance student learning, ensuring readiness for transfer and workforce.
- Cultivate a campus environment that celebrates, encourages, and empowers the cultural richness of our community and world.

Engage Community ensures active participation by the community, helping TCC foster lasting relationships with individuals connected to TCC; alumni, community volunteers and donors. This is exemplified in TCC's Partnerships with PLU, the Tacoma Art Museum and UW Tacoma.

Three strategic priorities under the Community theme are advanced by the Center for Innovative Learning and Engagement:

- Ensure TCC's physical and virtual environment and processes are welcoming and easily navigated.
- Encourage and support the community to engage the campus through the arts and community services.

Finally, TCC's Embrace Discovery theme seeks to continuously explore, evaluate, and scale innovative solutions to enhance learning, equity, and community. The Center for Innovative Learning and Engagement will provide a state of the art facility with unique learning spaces that promote TCC's continued exploration of pedagogy, new technologies, and identified best practices that promote student learning and success.

The Center for Innovative Learning and Engagement will advance TCC's Embrace Discovery theme as it will:

- Provide a physical environment that encourages exchange of experience, knowledge and ideas.
- Provide for asynchronous learning outside the classroom (wireless network, distance ed., formal and informal study settings, contact with professors and tutors)
- Develop connections that improve individual lives and promote social progress.
- Include spaces that support collaborative inquiry and project-based learning with shared

study areas and informal social spaces near lecture rooms and faculty offices.
- Design and support programs and design spaces that encourage interaction. (academic, creative, social and recreational)
- Develop facilities that are inviting, culturally inclusive, and reflect the cultures on campus.
- Act as a teaching tool that reflects multi-cultural contributions to design.
- Provide technologically advanced and diverse learning environment types to support multiple teaching - learning modalities and provide maximum accessibility.

2.3 Relationship to SBCTC System Direction Goals

The Center for Innovative Learning and Engagement relates directly to the SBCTC System Direction, "Creating Opportunities for Washington's Future" goals: 1) Economic Demand, 2) Student Success, and 3) Innovation. As noted in the SBCTC vision, the higher education system has a direct connection to a strong and powerful Washington economy. However, higher education is not currently meeting the demands of the state's workforce and SBCTC's goals reflect the need for increasing focus on high demand skills and knowledge that helps the state's citizens achieve the necessary postsecondary credentials to find meaningful employment and advance socioeconomic stability.

- *Economic Demand*. The Center for Innovative Learning and Engagement provides a mechanism to align new programs that meet the needs of our area workforce. As noted, TCC is creating pathways that incorporate critical intersections between globalization, culture, and business, ensuring that students complete credentials that prepare them for the emerging job requirements in our service area and the state of Washington.
- *Student Success.* The Center for Innovative Learning and Engagement supports state goals around increased educational attainment by facilitating pathway development, creating spaces that can incorporate eLearning, open educational resources, and can advance TCC's business program, including a competency based pathway. In addition, TCC students from the diverse cultures find affinity and a sense of belonging in artistic expression, leading to increased retention, persistence, and ultimately, success.
- *Innovation* is addressed by co-locating classrooms and studios. The inter-relationship of these spaces will allow college faculty to combine traditional approaches to teaching and learning in a classroom setting with expressive and creative activities in order to more effectively achieve learning outcomes. Multiple learning styles are incorporated in the understanding of the course material and collaboration among student peers. The Center for Innovative Learning and Engagement includes a unique arrangement of laboratories and breakout spaces to foster diverse experiences with business, humanities and social science curricula. Support for these methodologies will encourage enhanced student involvement and access to rich experiences that students will confidently take into their careers.

2.4 Program Area Summary Table (6.8)

Lab Space	Net: 25,250 SF	71% ASF
Library/ LRC Space	Net: 6,210 SF	17% ASF
Faculty Offices	Net: 3,300 SF	9% ASF
Student Service Space	Net: 800 SF	2% ASF
Building Services (non-assignable)	Net: 17,515 SF	
TOTAL GROSS SQUARE FOOT (GSF) AREA	53,075 SF	

GSF based on 67% efficiency ratio to account for mechanical/electrical, and support space.

2.5 Increased Type 1 and Type 2 FTE Students Accommodated by this Project

Tacoma Community College anticipates FTE growth related to the Center for Innovative Learning and Engagement from program development, growth and interdisciplinary collaborations. TCC's recent reorganizations to create unified business and writing programs are expected to create enhanced persistence and success in these programs and far exceed the SBCTC forecasted growth. Growth of programs in Paralegal, Limited License Legal Technician (LLLT) and a devised new business concentration related to Call Center Management are expected to add 40 FTE annually. Further, the addition of new humanities dedicated spaces and four new distinction pathways and the development of specializations under the Associate of Arts degree will increase FTE capacity by 45 annually to accommodate TCC's projected growth for the next 10 years. **Thus, this project will increase FTE capacity by 85 FTE annually, for a net increase of 850 FTE over the next 10 years.**

2.6 Table of Affected Existing Buildings (7.4.5)

Building Affected	Identifier	Date Built	FCS Score	GSF	Comments
Building 10	A00792	1965	476	13,718	Demolished
Building 10B	A07263	1965	439	812	Demolished
Building F1	A03517	1970	470	10,539	Demolished
				25,069	Total Area Demolished and Replaced

3.0 ANALYSIS OF ALTERNATIVES

3.1 Capital Problem: Facilities (7.2)

Buildings 10, 10B and F1, range from 45 – 50 years old. These are small, inefficient buildings that were poorly constructed due to insufficient funds at the time of the bond issue. Overall, these buildings have exceeded their life expectancy and should be replaced.

Capital problems include the following:

- **Seismic risk –** these buildings have several structural liabilities associated with their lateral seismic force resisting systems, and anchorage of the concrete walls to the roof that is not in compliance with code. Failure of the wall anchorage could lead to wall collapse, followed by roof collapse. See Structural Assessments (7.1.3) included in the Appendix.
- **Code violations –** building exit/egress lighting systems and fire alarm system are not in compliance with current life safety codes. Further, none of these buildings are fire protected.
- **An inadequate electrical system** – the electrical power distribution system (7.1.5) at each of these buildings is aged and has exceeded its useful life.
- HVAC (7.1.4) and plumbing are original to these buildings and are past their useful lives. The costs to replace these systems would exceed that of a new building.
- **Hazardous materials** – the building materials and codes used when Buildings 10, 10B, and F1 were constructed are not consistent with current practices. Asbestos has been found in the vinyl tiles, coves, mastic, piping, and fittings. Further, asbestos was detected in the roof tiles.
- **Accessibility challenges** – there is no elevator provided in the two-story F1 Faculty building.
- **Roof deterioration** – the single-ply roof on Building 10 has membrane leaks and significant deterioration. The roof membrane on F1 is also showing signs of deterioration.

- **Poor energy efficiency** – insulation in these buildings is minimal and windows are single-pane. Leaking and air infiltration are evident.
- **Lack of technology and data infrastructure** – TCC's Business, Humanities, and Social Sciences pathways have been early and vigorous adopters of hybrid/online courses, providing educational access to a diverse student body, but lack the specialized equipment required to provide professional workforce training in media and communications.

3.2 Critical Needs and Project Drivers

The Business, Humanities, and Social Sciences pathways are currently housed in 10 decentralized facilities on the TCC campus that are among the oldest on campus and lack the infrastructure to support media technology, presentation, and performance equipment. Further, they do not foster collaborative teaching/learning and are not sized for multiple modalities (large group instruction, group dialog and small group work). The Center for Innovative Learning and Engagement will meet the following critical needs:

- Meet the demands of growing enrollments in Business, Humanities, and Social Sciences pathways, which in turn, is driven by enrollment in high demand distinction and specialization pathway and degree programs.
- Engage students in disciplinary work such as literary, visual, performing, and digital humanities, while adding global context and meaning to academic courses.
- Enhance pathway driven interdisciplinary opportunities that accelerate rates of completion for students across multiple programs.
- Provide opportunities to present curriculum in a variety of modes, including direct instruction, distance learning, small groups, and creative projects in studios and computer labs.
- Develop students' skills in speaking, writing, reading, listening, and work group skills required by the information-age economy.
- Develop students' communication skills, cognitive ability to integrate information from a variety of sources, awareness of world cultures; all essential for employment in our global economy.
- Double lab space for online and hybrid online courses, which are the fastest growing of TCC's offerings. Capacity will be added to service twice as many online students, thereby freeing classrooms to expand other college programs.

Special Initiatives

Washington is the first state in the country to offer an affordable legal support option to help meet the needs of those unable to afford the services of an attorney. http://www.wsba.org/Licensing-and-Lawyer-Conduct/Limited-Licenses/Legal-Technicians LLLT is a new program at TCC. The state's community colleges and their paralegal programs have had a significant role to play in laying down the foundation for LLLTs in partnership with the state's law schools and the Washington State Bar Association (WSBA), creating both a new career option for students and a new legal services option for people in their communities. Employment trends by state for Paralegals and Legal Assistants ranks Washington 30th in the nation for percent growth, with an anticipated 8.4% increase by 2024. http://www.careerinfonet.org/carout3.asp?optstatus=111111111andid=1andnodeid=2andsoccode=232011andstfips=53andjobfam=21andmenuMode=andorder=Percent It is estimated that more than 50% of those interested in obtaining their LLLT will choose to pursue a Paralegal AAS degree as the first step.

Further, TCC has recently doubled the faculty in Logistics and expects to see an increase in the total number of students completing their Business AAS with a certificate in global logistics. The

industry is strong with estimated growth more than twice the national rate. https://www.careeronestop.org/Toolkit/Careers/Occupations/occupation-profile.aspx?keyword=Logistics%20Managersandonetcode=11307103andlocation=Washington

The Humanities (ENGL/HUM/PHIL) anticipate significant growth because of anticipated new Honors Distinction Pathway and Specializations in addition to a pathway oriented curriculum and planned future articulation agreements. Additionally, new tendencies of renewed relevancy of Humanities and Social Science in tech fields http://www.forbes.com/sites/georgeanders/2015/07/29/liberal-arts-degree-tech/ supports this anticipated growth, as does the anticipated growth rate for Liberal Arts majors in general http://college.usatoday.com/2017/08/09/useless-liberal-arts-degree-can-give-you-an-edge-in-tech-heres-why/

3.3 Alternatives Considered

Renovation of Buildings 10, 10B, and F1 is not feasible as the cost to renovate would exceed the cost to replace. Building systems have outlived their useful life. Further, these small, inefficient, poorly functioning buildings do not meet the instructional needs of the College.

3.3.1 Programmatic Facility Related

TCC's pathway in the Humanities and Social Sciences have grown along with the high demand programs that they support, but they utilize classroom spaces at a significantly higher rate than other programs because new classroom and studio spaces for these programs have not been added to the campus.

If this project is not funded, the alternative for growing capacity on the campus is to increase the already high utilization rate of buildings dispersed around campus, scheduling more classes during extended hours. Classes conducted outside of traditional school hours are often difficult for students to attend due to work and other schedules, ultimately limiting access to required courses for program completion.

Likewise, the business programs transfer curriculum has seen considerable growth despite the challenge of scattered classrooms across campus and without the opportunity to create a unified program identity. While the recent reorganization to align transfer business, professional – technical business, and paralegal have outstanding potential to aid students in career identification and completion, such potential is hindered by the lack of cohesive space and specialized labs described in this proposal. In seeking alternatives, Tacoma Community College is faced with the reality that prioritization of this program alignment would necessitate reprogramming current general use classrooms to business specific spaces. The reduction in general use classrooms campus-wide would exacerbate the existing complications of scheduling instructional spaces to meet student needs.

3.3.2 Consequences of Doing Nothing

In essence, the consequences of doing nothing would hamper our ability to develop our learning communities and meet our strategic goals of increasing pathway development and degree completion. Replacement of Buildings 10, 10B, and F1 for the Center for Innovative Learning and Engagement is the best alternative to meet the needs of the College.

3.3.3 Cost Estimate for Each Alternative

The total escalated cost of the project is estimated at $31,846,479. The escalated cost of the Building is estimated at $30,333,168, which is less than the state's expected cost per SF benchmark for this facility type. The escalated cost of the Infrastructure to support the project is estimated at $1,513,311, which is less than 5% of the of the total escalated cost of the project.

4.0 PROJECT PLANNING OF PREFERRED ALTERNATIVE

4.1 History of the Building

Buildings 10, 10B and F1, were constructed prior to 1970 and were financed through a one-time Tacoma School District local bond. Per the 2015 Facility Condition Survey, "the bond issue, as passed, was not sufficient to allow for high quality, long lasting construction… the result has been buildings that reflect low first cost, are not constructed for a life expectancy of 50 years or more, and many small buildings that do not provide for efficiencies in space utilization or program adaptation."

4.2 Life of Proposed Facility

The project is planned to provide 50 years of service or more. Systems will be designed for ease of regular service and cost effective replacement. Proposed materials and systems provide the greatest life-cycle cost benefit within reasonable first-cost parameters. Program space and building systems will flexibly accommodate evolving educational program needs and delivery methods.

4.3 Sustainability (LEED Silver Standard required)

Tacoma Community College strongly supports environmentally sound construction practices. The Center for Innovative Learning and Engagement will be designed to meet or exceed Washington's LEED certification requirements (6.5). The college received its first LEED Gold certification with the Early Learning Center, completed in 2008. Most recently, the Joe Harned Center for Health Careers was LEED Gold certified and the Health and Wellness Center Renovation will meet LEED Gold certification. This new building will continue TCC's commitment to sustainability, with goals including optimizing energy performance, reducing water use, maximizing daylight and views, facilitating alternative transportation, and promoting a healthy indoor learning environment.

Further, this project will be designed to meet thirteen of the best practices to reduce greenhouse gas emissions. These strategies along with the GHG reduction plan (7.4.2) are indicated in the appendix.

4.4 How this Project Impacts Deferred Maintenance and Repair Backlog

This project will build new space and reduce demands on existing facilities, eliminating large investments in additional maintenance and repair for Buildings 10, 10B, and F1. The total deferred maintenance cost per GSF defined in the Facility Conditions Survey is $1.85. The total cost saved in deferred maintenance by the demolition of buildings 10, 10B and F1 is $46.378.

4.5 Acquisition Needs

All buildings affected by this project are located on the TCC campus. No acquisition is required.

4.6 Mitigation, Permit issues, and Neighborhood Related Issues

The campus is located in a CCX (Mixed Use District) in the City of Tacoma. This zoning encourages a variety of uses, greater density, and height of development. The Center for Innovative Learning and Engagement is planned to be a multi-story building. A preliminary meeting was held with the City to review this proposed project. There are no known permit issues, neighborhood issues, or variances that will be required.

4.7 Parking Expansion Directly Related to the Project

The College intends to expand parking on campus as required for this project. Per discussions with the City of Tacoma, required parking can be located anywhere on campus, and a reduction in parking is allowed per their zoning code due to the close proximity of the transit center. The existing parking lot nearest the building will be modified in order to install a new underground storm water detention vault to serve this project. This parking lot will also be updated to meet current parking island and landscape requirements. In the future, an additional 60 parking stalls will be developed north of the large existing lots, as identified in the Facilities Master Plan.

4.8 Permit Issues, Variances Required

There are no known permit issues, neighborhood issues, or variances that will be required.

4.9 Utility Infrastructure Needs (7.1.1)

The college's 40 year old water, sanitary sewer and storm water systems were constructed when the campus was founded and have never been upgraded. New campus projects have included localized improvements, bringing new services from off campus to individual projects. However, existing campus-wide systems have continued to decline. The City of Tacoma requires comprehensive repair or replacement of TCC's existing sanitary sewer and storm drainage when modifying or making new connections to City utility lines. On recent projects, fire flow and adequate water pressure have been hard to achieve from existing campus services.

The Facilities Master Plan recommends incremental replacement of utilities with sequenced project development planned along the western edge of the TCC campus. This project proposal includes the next step in replacing campus domestic water, storm water and sewer services and builds on new utilities included in prior projects. This project will also extend the campus data network to the north.

4.10 Storm Water and Other Environmental Issues

The City of Tacoma requires storm water detention and wetland mitigation, where necessary, to secure building permits for all campus development projects that add impervious area. There is a tapestry of wetlands located on the west boundary of campus. These wetland boundaries are not located in the vicinity of the location of the Center of Innovative Learning and Engagement.

4.11 Roads And Traffic signals

Per discussion with the City of Tacoma there will be no additional roadways or traffic signals required for the project.

4.12 DAHP and Tribal Reviews (6.4)

There are no known issues with the demolition and replacement of Buildings 10, 10B, and F1. Historic Property Inventory forms were completed for each building and submitted on-line to the

Department of Archeology and Historic Preservation (DAHP). DAHP determined that no historic properties will be affected by this project.

4.13 Capacity and Utilization (2016) (7.4.3)
Tacoma Community College completed the space utilization analysis based on Fall 2016 Live 25 scheduling data to determine space utilization for the campus. In the 2016 space utilization worksheet TCC has an estimated 18.24 hours/week (97%) for classroom utilization and 15.81 hours/week (89%) for Labs. The 292 newly added Lab Workstations in this project will increase the future utilization of Labs to 17.01 hours/week. The campus wide Future Utilization will be 17.96 hours/week, closer to achieving the SBCTC target of 22 hours/week.

TCC's space challenges are best represented in the Enrollment and Facility Inventory Summary for Project Identification which shows that TCC has among the lowest gross square feet/FTE of all state community colleges, at 97 gsf/FTE. The State Board for Community and Technical Colleges' average for a two-year academically oriented college is 129 gross square feet/FTE. TCC's projected growth of 850 FTEs in the next 10 years for Business, Humanities and Social Science program development further exacerbates our need for additional space. (7.4.9)

4.14 New Programs, Changing Mix in Programs
New programs planned for the Center for Innovative Learning and Engagement include our refined pathway to completion initiative, the development of our new meta majors or career clusters (2017), the development of interdisciplinary distinction pathways (Honors, American Ethnic and Gender Studies, Sustainability, and Global Studies (2016-2018), and the development of specialization pathways that enable students in the Associate of Arts degree to pursue new pathways that facilitate a seamless transition to junior level transfer into Bachelor of Arts majors at four year institutions (2017-2019).

4.15 New Space and Vacated Space (7.4.6)
Building 10 and 10B will be demolished at the start of construction since this is the proposed location for the new building. The faculty office Building, F1 will remain in operation during construction of the Center for Innovative Learning and Engagement. Once completed, faculty offices will relocate, and F1 will be demolished. As the Business, Humanities and Social Science programs move into the new building, the vacated space will be used for classrooms and additional faculty offices.

Building F1			**Building 10 and 10B**	
FAE Category	**ASF**		**FAE Category**	**ASF**
F1	5,374		A1	8,250
G1	536		A2	1,440
J4	2,339		J2	465
J5	170		J3	1,235
Total	**8,419**		J4	904
			Total	**12,294**

4.16 Comparison of Existing and New Spaces to the Capital Analysis Model (7.4.1)
According to the STCC September 2017 close inventory in the data warehouse, the demoli-

tion of Buildings 10, 10B and F1 includes: General Classrooms (8,250 ASF), Basic Skills Labs (1,440 ASF), Faculty Office (5,374 ASF) and Student Service (536 ASF). The new area of the building is 35,560 ASF and includes: Lab Facilities (25,250 ASF), Library (6,210 ASF), Faculty Office (3,300 ASF) and Student Service (800 ASF). The project will improve the instructional space deficit shortage by 25,250 ASF, improve the Instructional support space deficit shortage by 10,310 ASF and improve the Student Service space deficit shortage by 800 ASF. **In summary, the project will add 19,960 ASF, replace 15,600 ASF for** a **net area change of 24,694 ASF.**

4.18 Flexibility and Adaptability of Proposed Space

The Center for Innovative Learning and Engagement will be designed for flexibility, with laboratory spaces large enough to provide multiple modes of learning and collaboration and at the same time to serve different learning styles. Breakout spaces will be within labs to allow students to collaborate on group projects. Informal study areas will be located in the corridors and in some cases provide an indoor/outdoor learning experience. A collaborative office area for each program with shared work spaces will further encourage student and faculty integration. Large corridors will allow for informal study areas.

5.0 PROJECT BUDGET ANALYSIS OF PREFERRED ALTERNATIVE

5.1 Prediction of overall project cost (6.1)

The total escalated cost of the project is estimated at $31,846,479. The escalated cost of the Building is estimated at $30,333,168, which is less than the state's expected cost per SF benchmark for this facility type. The escalated cost of the Infrastructure to support the project is estimated at $1,513,311, which is less than 5% of the of the total escalated cost of the project.

5.2 Comparison to Similar Washington Community and Technical College Project

The total escalated cost of the project is estimated at $31,846,479. It will provide 292 FTEs, at $110,344/FTE. The average $/FTE for all major projects included in the SBCTC 2018 Capital Request is $114,925/FTE. The $/FTE of the project is less than the state average, and it is also less than similar project types. For comparison, the Spokane Falls Fine and Applied Arts Replacement is $318,967/FTE and the Grays Harbor Student Services and Instructional Building is $980,260/FTE.

5.3 Anticipated Annual Impact on College's Operating and Maintenance Budget

The anticipated annual impact on the college's operating and maintenance costs for Janitorial, Utility, Technology, Capital Maintenance, Roads, walks, landscaping, Security is **$7.98/sf.**

53,075 SF new Area – 25,069SF Replacement bldg. Area – 3,312 SF Exterior Circulation Area = 24,694 net new area.**24,694 x $7.98 = $197,058 impact to MandO/fiscal year**

2.5 additional FTE (staff) Includes: Janitorial costs, Utility costs, Technology, Capital Maintenance/repair, Roads, Walks, Landscaping, Grounds, Security.

The Justification for desired method of construction for The Center for Innovative Learning and Engagement will be Design-Bid-Build. The design and Construction will be administered by the department of Enterprise Services along with the Tacoma Community College Facilities Department. TCC Facilities employs 2 FTE's and will have no Project management costs associated with the project.

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Agency	Tacoma Community College
Project Name	Center for Innovative Learning and Engagement
OFM Project Number	

Contact Information	
Name	McGranahan & C&N
Phone Number	253-383-3084 / 206-830-0543
Email	jill.cohn@mcgranahan.com

Statistics			
Gross Square Feet	53,075	MACC per Square Foot	$351
Usable Square Feet	35,560	Escalated MACC per Square Foot	$397
Space Efficiency	67.0%	A/E Fee Class	B
Construction Type	College classroom facilit	A/E Fee Percentage	7.28%
Remodel	No	Projected Life of Asset (Years)	
Additional Project Details			
Alternative Public Works Project	No	Art Requirement Applies	Yes
Inflation Rate	2.80%	Higher Ed Institution	Yes
Sales Tax Rate %	10.10%	Location Used for Tax Rate	Tacoma
Contingency Rate	5%		
Base Month	November-17		
Project Administered By	DES		

Schedule			
Predesign Start	July-19	Predesign End	December-19
Design Start	January-20	Design End	May-21
Construction Start	July-21	Construction End	February-23
Construction Duration	19 Months		

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Project Cost Estimate

Total Project	**$26,968,011**	Total Project Escalated	**$30,333,168**
		Rounded Escalated Total	**$30,333,000**

STATE OF WASHINGTON

AGENCY / INSTITUTION PROJECT COST SUMMARY

Agency	Tacoma Community College
Project Name	Center for Innovative Learning and Engagement
OFM Project Number	

Cost Estimate Summary

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

Consultant Services			
Predesign Services	$250,000		
A/E Basic Design Services	$982,831		
Extra Services	$1,112,000		
Other Services	$671,562		
Design Services Contingency	$150,820		
Consultant Services Subtotal	**$3,167,213**	**Consultant Services Subtotal Escalated**	**$3,460,973**

Construction			
Construction Contingencies	$931,707	Construction Contingencies Escalated	$1,053,854
Maximum Allowable Construction Cost (MACC)	$18,634,131	Maximum Allowable Construction Cost (MACC) Escalated	$21,051,530
Sales Tax	$1,976,150	Sales Tax Escalated	$2,232,644
Construction Subtotal	**$21,541,987**	**Construction Subtotal Escalated**	**$24,338,028**

Equipment			
Equipment	$1,698,400		
Sales Tax	$171,538		
Non-Taxable Items	$0		
Equipment Subtotal	**$1,869,938**	**Equipment Subtotal Escalated**	**$2,115,089**

Artwork			
Artwork Subtotal	**$105,258**	**Artwork Subtotal Escalated**	**$105,258**

Agency Project Administration			
Agency Project Administration Subtotal	$0		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$0		
Project Administration Subtotal	**$0**	**Project Administation Subtotal Escalated**	**$0**

Other Costs			
Other Costs Subtotal	**$283,615**	**Other Costs Subtotal Escalated**	**$313,820**

Project Cost Estimate

Total Project	**$26,968,011**	Total Project Escalated	**$30,333,168**
		Rounded Escalated Total	**$30,333,000**

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease					
Appraisal and Closing					
Right of Way					
Demolition					
Pre-Site Development					
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

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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	$250,000			
Other				
Insert Row Here				
Sub TOTAL	**$250,000**	**1.0617**	**$265,425**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$982,831			69% of A/E Basic Services
Other				
Insert Row Here				
Sub TOTAL	**$982,831**	**1.0814**	**$1,062,834**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$75,000			
Geotechnical Investigation	$35,000			
Commissioning	$25,000			
Site Survey	$30,000			
Testing	$25,000			
LEED Services	$75,000			
Voice/Data Consultant	$35,000			
Value Engineering	$40,000			
Constructability Review	$40,000			
Environmental Mitigation (EIS)	$10,000			
Landscape Consultant	$85,000			
ELCCA	$50,000			
LCCT	$75,000			
Reimbursables inc Reprographics prior to bid	$50,000			
Advertising	$2,000			
Traffic Analysis	$30,000			
Hazardous Materials Consultant	$40,000			
Acoustic Design	$40,000			
Interior Design	$50,000			
Security Consultant	$30,000			
Audio Visual Consultant	$30,000			
Lighting Consultant	$30,000			
Value Engineering Participation	$35,000			
Constructability Review Participation	$35,000			
Environmental Graphics/Signage	$25,000			
Cost and Scheduling	$25,000			
Door Hardware Consultant	$10,000			
Envelope Consultant	$50,000			
SEPA/Land Use	$30,000			
Sub TOTAL	**$1,112,000**	**1.0814**	**$1,202,517**	Escalated to Mid-Design
4) Other Services				

Bid/Construction/Closeout	$441,562			31% of A/E Basic Services
HVAC Balancing				
Staffing				
Commissioning & Training	$80,000			
LEED Reporting & Monitoring	$25,000			
Reimbursables/Reprographics for bid and construction	$50,000			
Construction Materials Testing	$75,000			
Sub TOTAL	**$671,562**	**1.1311**	**$759,604**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$150,820			
Other				
Insert Row Here				
Sub TOTAL	**$150,820**	**1.1311**	**$170,593**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$3,167,213**		**$3,460,973**	

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Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation	$429,090			
G20 - Site Improvements	$475,773			
G30 - Site Mechanical Utilities				
G40 - Site Electrical Utilities				
G60 - Other Site Construction				
General Conditions	$81,438			
Contractors Overhead and Profit	$51,781			
Sub TOTAL	**$1,038,082**	**1.1065**	**$1,148,638**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1065**	**$0**	
3) Facility Construction				
A10 - Foundations	$369,454			
A20 - Basement Construction	$529,230			
B10 - Superstructure	$2,321,778			
B20 - Exterior Closure	$2,400,275			
B30 - Roofing	$516,346			
C10 - Interior Construction	$1,505,195			
C20 - Stairs	$156,200			
C30 - Interior Finishes	$1,009,541			
D10 - Conveying	$180,000			
D20 - Plumbing Systems	$698,998			
D30 - HVAC Systems	$2,574,138			
D40 - Fire Protection Systems	$291,913			
D50 - Electrical Systems	$2,425,528			
F10 - Special Construction				
F20 - Selective Demolition	$176,616			
General Conditions	$1,380,413			
E10 Equipment Installed by Contractor	$13,188			
E20 - Furnishings Installed by Contractor	$169,525			
Contractors Overhead and Profit	$877,713			
Sub TOTAL	**$17,596,049**	**1.1311**	**$19,902,892**	
4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$18,634,131**		**$21,051,530**	

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7) Construction Contingency				
Allowance for Change Orders	$931,707			
Other				
Insert Row Here				
Sub TOTAL	**$931,707**	**1.1311**	**$1,053,854**	
8) Non-Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1311**	**$0**	
Sales Tax				
Sub TOTAL	**$1,976,150**		**$2,232,644**	
CONSTRUCTION CONTRACTS TOTAL	**$21,541,987**		**$24,338,028**	

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Cost Estimate Details

Equipment				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
E10 - Equipment	$530,750			
E20 - Furnishings	$796,125			
F10 - Special Construction				
A/V Systems	$199,031			
Telecom/Data Cabling/Equipment	$172,494			
Sub TOTAL	**$1,698,400**	**1.1311**	**$1,921,061**	
1) Non Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1311**	**$0**	
Sales Tax				
Sub TOTAL	**$171,538**		**$194,028**	
EQUIPMENT TOTAL	**$1,869,938**		**$2,115,089**	

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	$105,258				0.5% of Escalated MACC for new and renewal construction
Other					
Insert Row Here					
ARTWORK TOTAL	**$105,258**		**NA**	**$105,258**	

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	$0				DES
TCC Facilities Management	$0				
Insert Row Here					
PROJECT MANAGEMENT TOTAL	**$0**		**1.1311**	**$0**	

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	$116,305			
Historic and Archeological Mitigation				
Permit and Plan review Fees	$167,310			
Insert Row Here				
OTHER COSTS TOTAL	**$283,615**	**1.1065**	**$313,820**	

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STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Agency	Tacoma Community College
Project Name	Center for Innovative Learning and Engagement - Infrastructure
OFM Project Number	

Contact Information	
Name	McGranahan & C&N
Phone Number	253-383-3084 / 206-830-0543
Email	jill.cohn@mcgranahan.com

Statistics			
Gross Square Feet	53,075	MACC per Square Foot	$19
Usable Square Feet	35,560	Escalated MACC per Square Foot	$21
Space Efficiency	67.0%	A/E Fee Class	B
Construction Type	College classroom facilit	A/E Fee Percentage	10.24%
Remodel	No	Projected Life of Asset (Years)	
Additional Project Details			
Alternative Public Works Project	No	Art Requirement Applies	Yes
Inflation Rate	2.80%	Higher Ed Institution	Yes
Sales Tax Rate %	10.10%	Location Used for Tax Rate	Tacoma
Contingency Rate	5%		
Base Month	November-17		
Project Administered By	DES		

Schedule			
Predesign Start	July-19	Predesign End	December-19
Design Start	January-20	Design End	May-21
Construction Start	July-21	Construction End	February-23
Construction Duration	19 Months		

Green cells must be filled in by user

Project Cost Estimate

Total Project	**$1,369,081**	Total Project Escalated	**$1,513,311**
		Rounded Escalated Total	**$1,513,000**

STATE OF WASHINGTON

AGENCY / INSTITUTION PROJECT COST SUMMARY

Agency	Tacoma Community College
Project Name	Center for Innovative Learning and Engagement - Infrastructure
OFM Project Number	

Cost Estimate Summary

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

Consultant Services			
Predesign Services	$0		
A/E Basic Design Services	$76,028		
Extra Services	$60,000		
Other Services	$34,158		
Design Services Contingency	$8,509		
Consultant Services Subtotal	**$178,695**	**Consultant Services Subtotal Escalated**	**$195,363**

Construction			
Construction Contingencies	$51,240	Construction Contingencies Escalated	$57,958
Maximum Allowable Construction Cost (MACC)	$1,024,796	Maximum Allowable Construction Cost (MACC) Escalated	$1,133,938
Sales Tax	$108,680	Sales Tax Escalated	$120,382
Construction Subtotal	**$1,184,716**	**Construction Subtotal Escalated**	**$1,312,278**

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

Artwork			
Artwork Subtotal	**$5,670**	**Artwork Subtotal Escalated**	**$5,670**

Agency Project Administration			
Agency Project Administration Subtotal	$0		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$0		
Project Administration Subtotal	**$0**	**Project Administation Subtotal Escalated**	**$0**

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

Project Cost Estimate

Total Project	**$1,369,081**	Total Project Escalated	**$1,513,311**
		Rounded Escalated Total	**$1,513,000**

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease					
Appraisal and Closing					
Right of Way					
Demolition					
Pre-Site Development					
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

Green cells must be filled in by user

Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis	$0			
Environmental Analysis				
Predesign Study	$0			
Sub TOTAL	**$0**	**1.0617**	**$0**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$76,028			69% of A/E Basic Services
Other				
Insert Row Here				
Sub TOTAL	**$76,028**	**1.0814**	**$82,218**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$60,000			
Geotechnical Investigation				
Commissioning				
Site Survey				
Testing				
LEED Services				
Voice/Data Consultant				
Value Engineering				
Constructability Review				
Environmental Mitigation (EIS)				
Landscape Consultant				
Sub TOTAL	**$60,000**	**1.0814**	**$64,884**	Escalated to Mid-Design
4) Other Services				

Bid/Construction/Closeout	$34,158			31% of A/E Basic Services
HVAC Balancing				
Staffing				
Other				
Insert Row Here				
Sub TOTAL	**$34,158**	**1.1311**	**$38,636**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$8,509			
Other				
Insert Row Here				
Sub TOTAL	**$8,509**	**1.1311**	**$9,625**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$178,695**		**$195,363**	

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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	$469,291			
G40 - Site Electrical Utilities	$402,200			
G60 - Other Site Construction				
General Conditions	$78,434			
Contractors Overhead and Profit	$49,871			
Sub TOTAL	**$999,796**	**1.1065**	**$1,106,275**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Utility Hook-Up	$25,000			
Insert Row Here				
Sub TOTAL	**$25,000**	**1.1065**	**$27,663**	
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**	**1.1311**	**$0**	
4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$1,024,796**		**$1,133,938**	

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7) Construction Contingency				
Allowance for Change Orders	$51,240			
Other				
Insert Row Here				
Sub TOTAL	**$51,240**	**1.1311**	**$57,958**	
8) Non-Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1311**	**$0**	
Sales Tax				
Sub TOTAL	**$108,680**		**$120,382**	
CONSTRUCTION CONTRACTS TOTAL	**$1,184,716**		**$1,312,278**	

Green cells must be filled in by user

Cost Estimate Details

Equipment				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
E10 - Equipment	$0			
E20 - Furnishings	$0			
F10 - Special Construction				
$0	$0			
$0	$0			
Sub TOTAL	**$0**	**1.1311**	**$0**	
1) Non Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1311**	**$0**	
Sales Tax				
Sub TOTAL	**$0**		**$0**	
EQUIPMENT TOTAL	**$0**		**$0**	

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	$5,670				0.5% of Escalated MACC for new and renewal construction
Other					
Insert Row Here					
ARTWORK TOTAL	**$5,670**		**NA**	**$5,670**	

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					
TCC Facilities Management	$0				
Insert Row Here					
PROJECT MANAGEMENT TOTAL	**$0**		**1.1311**	**$0**	

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					
Historic and Archeological Mitigation					
Insert Row Here					
OTHER COSTS TOTAL	**$0**		**1.1065**	**$0**	

Green cells must be filled in by user

C & N Consultants, Inc.
Construction Cost Consultants

Tacoma Community College
Center for Innovative Learning & Engagement
Tacoma, WA

PRR Estimate

Estimate Issue Date: December 15, 2017
Estimate Revision: 5

For: Jill Cohn

McGRANAHAN architects
2111 Pacific Avenue, Suite 400
Tacoma, WA 98402

December 15, 2017

Tacoma Community College
Center for Innovative Learning & Engagement
PRR Estimate
Building

INTRODUCTION

Exclusions from Construction Cost:

Design fees
Owners administration costs
Building and land acquisition fees
Legal and accounting fees
Removal of unforeseen underground obstructions
Owner's furniture, furnishings and equipment
Owners supplied materials
Work outside the construction site boundary.
Moving owners equipment and furniture
Compression of schedule, premium or shift work, and restrictions on the contractor's working hours
Assessments, finance, legal and development charges

Assumption used in establishing the estimate:

Open and competitive bidding among all proportions of the work

Items that may affect the cost estimate:

Modifications to the scope of work included in this estimate.
Special phasing requirements other than mentioned above.
Restrictive technical specifications or excessive contract conditions.
Any non-competitive bid situations.
Bids delayed beyond the projected schedule.

Tacoma Community College
Center for Innovative Learning & Engagement
PRR Estimate
Building

C & N Consultants, Inc.
Construction Cost Consultants

Date: **December 15, 2017**
Prepared By: AC

OVERALL SUMMARY CONSTRUCTION COST

	Gross Area	$/SF	$
Building	53,075 SF	327.71	17,393,431
Sitework	41,650 SF	19.56	1,038,082
Building Demolition	29,092 SF	6.96	202,618
Escalation - see C-100 form			
TOTAL CONSTRUCTION COST			**18,634,131**
Infrastructure Improvements	41,650	24.00	999,796
TOTAL CONSTRUCTION COST - INFRASTRUCTURE IMPROVEMENTS			**999,796**

Tacoma Community College
Center for Innovative Learning & Engagement
PRR Estimate
Building

C & N Consultants, Inc.
Construction Cost Consultants

Date: **December 15, 2017**
Prepared By: AC

BUILDING DATA

Building Area

Lower Level	7,765 SF	
Level 1	15,950 SF	
Level 2	14,680 SF	
Level 3	14,680 SF	
Total Gross Floor Area		**53,075 SF**

		Quantity	Unit	Ratio to Gross Area
Number of stories (x1,000)		4	EA	0.075
Gross Area		53,075	SF	1.000
Footprint Area		15,950	SF	0.301
Volume		796,125	CF	15.000
Gross Wall Area		32,330	SF	0.609
Retaining Wall Area		2,450	SF	0.046
Finished Wall Area		29,880	SF	0.563
Windows or Glazing Area	30.00%	8,964	SF	0.169
Roof Area - Flat		15,950	SF	0.301
Roof Area - Sloping		-	SF	
Roof Area - Total		15,950	SF	0.301
Roof Glazing Area		-	SF	
Interior Partition Length		3,450	LF	0.065
Interior Doors Per Leaf		92	EA	0.002
Interior Glazing		2,240	SF	0.042
Finished Area		53,075	SF	1.000
Elevators (x10,000)		1	EA	0.019

Tacoma Community College
Center for Innovative Learning & Engagement
PRR Estimate
Building

Gross Floor Area: **53,075 SF**
Date: **December 15, 2017**
Prepared By: AC

Summary of Estimate

No.	Element Description		Element Totals	Group Totals	Cost Per SF
A10	FOUNDATIONS			369,454	6.96
A1010	Standard Foundation		218,537		4.12
A1020	Special Foundation				-
A1030	Slab on grade		150,918		2.84
A20	BASEMENT WALL CONSTRUCTION			529,230	9.97
A2010	Basement Excavation		374,275		7.05
A2020	Basement Wall Construction		154,956		2.92
B10	SUPERSTRUCTURE			2,321,778	43.75
B1010	Floor & Roof Construction		2,321,778		43.75
B20	EXTERIOR ENCLOSURE			2,400,275	45.22
B2010	Exterior Walls		1,469,577		27.69
B2020	Exterior Windows		869,508		16.38
B2030	Exterior Doors		61,190		1.15
B30	ROOFING			516,346	9.73
B3010	Roof Covering		516,346		9.73
C10	INTERIOR CONSTRUCTION			1,505,195	28.36
C1010	Partitions		970,580		18.29
C1020	Interior Doors		232,839		4.39
C1030	Fittings		301,776		5.69
C20	STAIRS			156,200	2.94
C2010	Stair Construction		156,200		2.94
C30	INTERIOR FINISHES			1,009,541	19.02
C3010	Wall Finishes		277,000		5.22
C3020	Floor Finishes		358,362		6.75
C3030	Ceiling Finishes		374,179		7.05
D10	CONVEYING			180,000	3.39
D1010	Elevators & Lifts		180,000		3.39
D20	PLUMBING			698,998	13.17
D2010	Plumbing		698,998		13.17

Tacoma Community College
Center for Innovative Learning & Engagement
PRR Estimate
Building

Gross Floor Area: **53,075 SF**
Date: **December 15, 2017**
Prepared By: AC

Summary of Estimate

No.	Element Description		Element Totals	Group Totals	Cost Per SF
D30	HVAC			2,574,138	48.50
D3010	HVAC		2,574,138		48.50
D40	FIRE PROTECTION			291,913	5.50
D4010	Sprinkler System		291,913		5.50
D50	ELECTRICAL			2,425,528	45.70
D5000	Electrical		2,425,528		45.70
E10	EQUIPMENT			13,188	0.25
E1010	Equipment		13,188		0.25
E20	FURNISHINGS			169,525	3.19
E2010	Fixed Furnishings		169,525		3.19
F10	SPECIAL CONSTRUCTION			-	-
F1010	Special Structure				
F1020	Special Construction				
F20	SELECTIVE BUILDING DEMOLITION			-	
F2010	Building Demolition				-
	Sub-Total			**15,161,308**	**285.66**
	Estimating / Design Contingency	10.00%		Included in Rates	
	Sub-Total			**15,161,308**	**285.66**
	General Conditions / General Requirements	9.00%		1,364,518	25.71
	Sub-Total			**16,525,825**	**311.37**
	GC Fee	5.25%		867,606	16.35
	November 2017 Construction Cost			**17,393,431**	**327.71**
	Escalation - see C-100 form				-
	TOTAL CONSTRUCTION COST			**$17,393,431**	**327.71**

Tacoma Community College
Center for Innovative Learning & Engagement — *Gross Floor Area:* **53,075 SF**
PRR Estimate — *Date:* **December 15, 2017**
Building — *Prepared By:* AC

DETAIL OF ESTIMATE

Item Description	Quantity	Unit	Unit Cost	Totals
A10 FOUNDATIONS				
A1010 Standard Foundation				
A1011 Foundations				
Reinforced concrete continuous footings				
Excavate for continuous footings, Typ	274	CY	33.44	9,169
Over-Excavate additional 2 feet for continuous footings	343	CY	33.44	11,462
Backfill, assume imported fill, typ	343	CY	40.09	13,740
Backfill for overex area, assume imported fill, typ	131	CY	40.09	5,267
Disposal of excavated material off-site within 8 miles, assumed a 33% swell factor	820	CY	21.52	17,658
Fine grade bottom of footing	5,040	SF	0.79	3,988
Formwork to foundations - sides	5,350	SF	9.34	49,952
Reinforcing steel in foundations	16,768	LB	1.32	22,113
Concrete, 4,000 psi	143	CY	248.98	35,554
Finish to top of footing	5,040	SF	0.84	4,254
A1012 Column foundations				
Reinforced concrete spread footings				
Excavate for spread footings,	42	CY	33.44	1,391
Over-Excavate for spread footings, 2 feet	55	CY	33.44	1,849
Backfill for overex area, assume imported fill	55	CY	40.09	2,217
Backfill, assume imported fill	21	CY	40.09	825
Disposal of excavated material off-site within 8 miles, assumed a 33% swell factor	129	CY	21.52	2,773
Fine grade bottom of footing	210	SF	0.79	166
Formwork to foundations - sides	400	SF	9.34	3,735
Reinforcing steel in foundations	2,289	LB	1.32	3,019
Concrete, 4,000 psi	21	CY	248.98	5,229
Finish to top of footing	210	SF	0.84	177
A1013 Perimeter drainage and insulation				
Perimeter drain pipe and rock	605	LF	23.21	14,042
Perimeter insulation	1,815	SF	5.49	9,957
Total For Standard Foundations				**218,537**
A1020 Special Foundation				
A1021 Pile foundations				
No work anticipated				N/A
Total For Special Foundations				
A1030 Slab on Grade				
A1031 Standard slab on grade				
Reinforced concrete slab on grade	15,950	SF	8.44	134,618

DETAIL OF ESTIMATE

	Item Description	Quantity	Unit	Unit Cost	Totals
	A1034 Trenches, pits and bases				
	Elevator pit	1	EA	11,552.25	11,552
	Reinforced concrete pads	1	LS	4,747.50	4,748
	Total For Slab on Grade				**150,918**
A20	**BASEMENT CONSTRUCTION**				
A2010	**Basement Excavation**				
	A2011 Excavation for basements				
	Excavation for basements and removal	3,704	CY	50.64	187,556
	A2012 Structure backfill and compaction				
	Backfill at basement walls	165	CY	47.48	7,833
	A2013 Shoring				
	Shoring	2,160	SF	82.82	178,886
	Total For Basement Excavation				**374,275**
A2010	**Basement Walls**				
	A2021 Basement wall construction				
	Retaining walls	2,450	SF	44.52	109,076
	A2022 Moisture protection				
	Waterproofing system	2,450	SF	10.02	24,555
	A2023 Basement wall insulation				
	Rigid insulation	2,450	SF	3.96	9,693
	A2024 Interior skin				
	Gypsum board, painted	2,450	SF	4.75	11,631
	Total For Basement Walls				**154,956**
B1010	**Floor & Roof Construction**				
	B 1010 Floor Construction				
	Steel columns	132,688	LB	2.53	335,965
	Steel beams	408,375	LB	2.53	1,034,006
	Metal deck	37,125	SF	4.11	152,751
	Reinforced concrete topping slab	37,125	SF	7.39	274,168
	Fireproofing to structural steel, assumed not required				
	Equipment pads and curbs	1	LS	6,857.50	6,858
	B 1020 Roof Construction				
	Steel columns	39,875	LB	2.53	100,964
	Steel beams	127,600	LB	2.53	323,083
	Metal deck	15,950	SF	4.11	65,626
	Fireproofing to structural steel, assumed not required				

Item Description	Quantity	Unit	Unit Cost	Totals
B1023 Canopies				
Steel framing at canopies	11,200	LB	2.53	28,358
Total For Floor Construction				**2,321,778**
B20 EXTERIOR CLOSURE				
B2010 Exterior Walls				
B2011 Exterior wall construction				
Cladding systems, 70% of Finish wall area	20,916	SF	34.85	728,923
Metal stud framing	20,916	SF	8.97	187,564
Rigid insulation, 4"	20,916	SF	3.43	71,716
Batt insulation	20,916	SF	1.32	27,583
Gypsum exterior sheathing 5/8"	20,916	SF	3.69	77,232
Plywood sheathing, 1/2"	20,916	SF	3.48	72,819
Air / Vapor barrier	20,916	SF	4.43	92,679
Gypsum board, 5/8"	20,916	SF	3.29	68,847
Paint exposed steel	1	LS	6,330.00	6,330
Extra over for graffiti coatings	1	LS	6,330.00	6,330
B2013 Exterior louvers, screens and fencing				
Louvers	1	LS	10,550.00	10,550
Caulking, sealants and firestopping				
Caulking, sealants and firestopping	1	LS	38,507.50	38,508
Miscellaneous				
Finish to backside of parapet walls	1,210	SF	13.19	15,957
Parapet cap	605	LF	36.93	22,340
Sunscreens, allow	1	LS	42,200.00	42,200
Total For Exterior Walls				**1,469,577**
B2020 Exterior Windows				
B2022 Curtain walls				
Curtain wall, assume 50% of glazed area	4,482	SF	110.00	493,020
B2023 Storefronts				
Storefront glazing, assume 50% of glazed area	4,482	SF	84.00	376,488
Total For Exterior Windows				**869,508**
B2030 Exterior Doors				
B 2030 Exterior Doors				
Entrance doors and frame including hardware	1	LS	29,540.00	29,540
Glazed overhead doors	1	LS	31,650.00	31,650
Total For Exterior Doors				**61,190**

DETAIL OF ESTIMATE

	Item Description	Quantity	Unit	Unit Cost	Totals
	ROOFING				
B3010	**Roof Covering**				
	B3011 Roof finishes				
	Single ply roofing system, complete	14,355	SF	19.52	280,174
	Green roofing system, allow to 10% of roof area	1,595	SF	40.09	63,944
	B3014 Flashings and trim				
	Sheet metal flashings and trim	1	LS	29,012.50	29,013
	Canopy, glass	1,300	SF	76.49	99,434
	Miscellaneous				
	Rough carpentry	1	LS	26,375.00	26,375
	Fall arrests	1	LS	17,407.50	17,408
	Total For Roofing				**516,346**
C10	**INTERIOR CONSTRUCTION**				
C1010	**Partitions**				
	C1011 Fixed partitions				
	Metal stud framing at partitions	44,850	SF	4.80	215,291
	Metal studs framing at chase walls	2,298	SF	9.60	22,066
	Metal stud framing at shaft walls	2,033	SF	5.91	12,012
	Batt insulation	38,123	SF	1.06	40,219
	Gypsum board, 5/8"	94,297	SF	3.22	303,424
	Gypsum shaftwall, 1"	2,033	SF	4.33	8,795
	Gypsum board underlayment	31,395	SF	2.53	79,492
	FRP	877	SF	6.86	6,014
	C1013 Operable and folding panel partitions				
	Operable partitions	320	SF	73.85	23,632
	C1016 Interior balustrades and screens				
	Interior guardrails	260	LF	316.50	82,290
	C1017 Interior windows and storefronts				
	Interior glazing	2,240	SF	68.58	153,608
	Miscellaneous				
	Gypsum board bulkheads	1	LS	10,550.00	10,550
	Blocking and backing, allow	1	LS	13,187.50	13,188
	Total For Interior Partitions				**970,580**
C1020	**Interior Doors**				
	C1021 Interior doors				
	Interior doors, frames and hardware				
	Hollow metal / wood / glazed door and frame including hardware				
	Single	68	EA	2,426.50	165,002

DETAIL OF ESTIMATE

Item Description	Quantity	Unit	Unit Cost	Totals
Double	12	EA	4,378.25	52,539
Specialty hardware, allow	1	LS	15,297.50	15,298
C1025 Interior door sidelights and transoms				
Included in interior glazing section				N/A
Total For Interior Doors				**232,839**
C1030 Specialties				
C1032 Fabricated compartments and cubicles				
Toilet partitions				
ADA toilet partition	10	EA	1,698.55	16,986
STD toilet partition	14	EA	1,492.83	20,900
Urinal screens	6	EA	585.53	3,513
C1033 Storage shelving and lockers				
Janitors mop rack and shelf	3	EA	474.75	1,424
Library shelving	1	LS	87,037.50	87,038
C1035 Identifying devices				
Code signage	53,075	SF	0.16	8,399
Wayfinding and room identification signage	53,075	SF	0.63	33,596
Building signage	1	LS	10,550.00	10,550
C1037 General fittings and misc. metals				
Miscellaneous metals, allow 0.4#/SF	21,230	LB	3.43	72,792
Elevator pit ladder	1	EA	844.00	
Fire extinguisher cabinets	15	EA	242.65	3,640
Grab bars at restrooms per set	10	EA	253.20	2,532
Mirrors	1	LS	2,321.00	2,321
Restroom accessories	1	LS	13,293.00	13,293
Markerboards / tackboards	1	LS	24,792.50	24,793
Total For Fittings and Specialty Items				**301,776**
C20 STAIRS				
C2010 Stair Construction				
C 2010 Stair Construction including railings and finish				
Exit stairs	6	FLT	19,000.00	114,000
Architectural stairs	1	FLT	42,200.00	42,200
Total For Stair Construction				**156,200**
INTERIOR FINISHES				
C3010 Wall Finishes				
C3011 Wall finishes to inside exterior walls				
Paint to interior side of exterior walls	20,916	SF	1.16	24,273
C3012 Wall finishes to interior walls				

DETAIL OF ESTIMATE

	Item Description	Quantity	Unit	Unit Cost	Totals
	Paint to walls	94,297	SF	1.16	109,431
	Ceramic tile	4,500	SF	17.78	79,995
	Acoustical wall treatments and wall finishes	1	LS	63,300.00	63,300
	Total For Wall Finishes				**277,000**
C3020	**Floor Finishes**				
	C3024 Flooring including base				
	Flooring including base	53,075	SF	6.75	358,362
	Total For Floor Finishes				**358,362**
C3030	**Ceiling Finishes**				
	C3031 Ceiling finishes				
	Ceiling finishes, allow	53,075	SF	7.05	374,179
	Total For Ceiling Finishes				**374,179**
D10	**CONVEYING**				
D1010	**Elevator & Lift**				
	D1011 Passenger elevators				
	Passenger elevator, 4 stop including cab finish	1	EA	180,000.00	180,000
	Total For Elevator & Lifts				**180,000**
D20	**PLUMBING**				
D2010	**Plumbing**				
	Plumbing	53,075	SF	13.17	698,998
	Total For Plumbing				**698,998**
D30	**HVAC**				
D3010	**HVAC**				
	HVAC	53,075	SF	48.50	2,574,138
	Total For HVAC				**2,574,138**
D40	**FIRE PROTECTION**				
D4010	**Fire Protection**				
	Fire sprinkler system	53,075	SF	5.50	291,913
	Total For Fire Sprinkler System				**291,913**
D50	**ELECTRICAL**				
D5000	**Electrical**				

DETAIL OF ESTIMATE

	Item Description	Quantity	Unit	Unit Cost	Totals
	Electrical	53,075	SF	45.70	2,425,528
	Total For Electrical				**2,425,528**
E10	**EQUIPMENT**				
E1010	**Equipment**				
	E1094 Residential equipment				
	Residential equipment, allow	1	LS	13,187.50	13,188
	Total For Equipment				**13,188**
E20	**FURNISHINGS**				
E2010	**Fixed Furnishing**				
	E2012 Fixed casework				
	Casework	1	LS	139,985.31	139,985
	E2013 Blinds and other window treatments				
	Window treatments	1	LS	29,540.00	29,540
	E2014 Fixed floor grilles and mats				
	Walk off mats included in floor finish section of the estimate				N/A
	Total For Furniture				**169,525**
F10	**SPECIAL STRUCTURES**				
F1010	**Special Structure**				
	No work anticipated				N/A
	Total For Special Structure				
F1020	**Special Construction**				
	No work anticipated				N/A
	Total For Special Construction				

Tacoma Community College					C & N Consultants, Inc.
Center for Innovative Learning & Engagement			*Gross Floor Area:*	**53,075 SF**	
PRR Estimate			*Date:*	**December 15, 2017**	
Building			*Prepared By:*	AC	
DETAIL OF ESTIMATE					
Item Description	Quantity	Unit	Unit Cost	Totals	

F20 SELECTIVE BUILDING DEMOLITION

F2010 Building Element Demolition

No work anticipated				N/A	
Total For Selected Demolition					

Tacoma Community College
Center for Innovative Learning & Engagement
PRR Estimate
Sitework

Summary of Estimate

Date: **December 15, 2017**
Prepared By: AC

No.	Element Description		Element Totals	Group Totals	
G	BUILDING SITEWORK			904,863	
G10	Site Preparation		429,090		
G20	Site Improvement		475,773		
G30	Site Mechanical Utilities				
G40	Site Electrical Utilities				
	Sub-Total			**904,863**	
	Estimating / Design Contingency	10.00%		Included in Rates	
	Sub-Total			**904,863**	
	General Conditions	9.00%		81,438	
	Sub-Total			**986,301**	
	GC Fee	5.25%		51,781	
	November 2017 Construction Cost			**1,038,082**	
	Escalation - see C-100 form				
	TOTAL CONSTRUCTION COST			**$1,038,082**	

Tacoma Community College
Center for Innovative Learning & Engagement
PRR Estimate — ***Date:*** **December 15, 2017**
Sitework — ***Prepared By:*** **AC**

C & N Consultants, Inc.

DETAIL OF ESTIMATE

Item Description	Quantity	Unit	Unit Cost	Totals
G				
G10 Site Preparation				
G 1010 Site Clearing				
Site clearing	41,650	SF	1.39	57,935
G1022 Demolition of site components				
Miscellaneous site demolition / relocations	1	LS	17,655.00	17,655
G 1030 Site Earthwork				
Grading	1	LS	300,000.00	300,000
G1037 Erosion control				
Erosion control	1	LS	53,500.00	53,500
Total For Site Preparation				**429,090**
G20 Site Improvements				
G 2020 Parking Lots / Pedestrian Paving				
Hardscape paving / curbs	29,150	SF	8.71	253,891
G 2040 Site Development				
Site structures including stairs and ramps	1	EA	37,450.00	37,450
G2042 Retaining walls				
Rockery	130	LF	256.80	33,384
Retaining walls and footings	1	LS	34,240.00	34,240
G2045 Site furnishings				
Site furnishings	1	LS	5,350.00	5,350
G 2050 Landscaping				
G2051 Fine grading and soil preparation				
Fine grading and soil preparation	12,500	SF	0.70	8,694
G2053 Top soil and planting beds				
Top soil	231	CY	48.15	11,146
G2055 Planting				
Softscape planting	12,500	SF	4.82	60,188
G2057 Irrigation system				
Irrigation system complete	12,500	SF	2.51	31,431
Total For Site Improvement				**475,773**
G30 Site Mechanical Utilities				
See Infrastructure Improvements Estimate				

DETAIL OF ESTIMATE

Item Description	Quantity	Unit	Unit Cost	Totals
Total For Site Mechanical Utilities				
G40 Site Electrical Utilities & Site Lighting				
See Infrastructure Improvements Estimate				
Total For Site Electrical Utilities				

Tacoma Community College
Center for Innovative Learning & Engagement
PRR Estimate Date: **December 15, 2017**
Building Demolition **Summary of Estimate** Prepared By: AC

No.	Element Description		Element Totals	Group Totals	
G	BUILDING SITEWORK			176,616	
G10	Site Preparation		176,616		
G20	Site Improvement				
G30	Site Mechanical Utilities				
G40	Site Electrical Utilities				
	Sub-Total			**176,616**	
	Estimating / Design Contingency	10.00%		Included in Rates	
	Sub-Total			**176,616**	
	General Conditions	9.00%		15,895	
	Sub-Total			**192,511**	
	GC Fee	5.25%		10,107	
	November 2017 Construction Cost			**202,618**	
	Escalation - see C-100 form				
	TOTAL CONSTRUCTION COST			**$202,618**	

Tacoma Community College
Center for Innovative Learning & Engagement
PRR Estimate — ***Date:*** **December 15, 2017**
Building Demolition — ***Prepared By:*** **AC**

C & N Consultants, Inc.

DETAIL OF ESTIMATE

Item Description	Quantity	Unit	Unit Cost	Totals
G				
G10 Site Preparation				
G1021 Building demolition				
Demolish Existing Building	29,436	SF	6.00	176,616
Hazardous Material Abatement, Existing Building included in other C100 costs				N/A
Total For Site Preparation				**176,616**
G20 Site Improvements				
No work anticipated				
Total For Site Improvement				
G30 Site Mechanical Utilities				
No work anticipated				
Total For Site Mechanical Utilities				
G40 Site Electrical Utilities & Site Lighting				
No work anticipated				
Total For Site Electrical Utilities				

Tacoma Community College
Center for Innovative Learning & Engagement
PRR Estimate Date: **December 15, 2017**
Infrastructure Improvements **Summary of Estimate** Prepared By: AC

No.	Element Description		Element Totals	Group Totals	
G	BUILDING SITEWORK			871,491	
G10	Site Preparation				
G20	Site Improvement				
G30	Site Mechanical Utilities		469,291		
G40	Site Electrical Utilities		402,200		
	Sub-Total			**871,491**	
	Estimating / Design Contingency	10.00%		Included in Rates	
	Sub-Total			**871,491**	
	General Conditions	9.00%		78,434	
	Sub-Total			**949,925**	
	GC Fee	5.25%		49,871	
	November 2017 Construction Cost			**999,796**	
	Escalation - see C-100 form				
	TOTAL CONSTRUCTION COST			**$999,796**	

DETAIL OF ESTIMATE

Item Description	Quantity	Unit	Unit Cost	Totals
G30 Site Mechanical Utilities				
G 3030 Storm Sewer				
Storm Drainage System				
Connections	1	EA	6,050.00	6,050
Area Drains	1	LS	4,950.00	4,950
Catch basins	1	LS	15,400.00	15,400
Flow Control Riser	1	EA	3,300.00	3,300
Storm drainage piping	1	LS	47,000.00	47,000
Detention Vault	15,000	CF	14.00	210,000
Water Quality System	1	LS	50,000.00	50,000
G 3020 Sanitary Sewer				
Sanitary Sewer System				
Connections	1	LS	3,850.00	3,850
Sanitary Sewer Cleanouts	8	EA	500.00	4,000
6-inch PVC pipe	508	LF	48.00	24,384
G 3010 Water Supply				
Water Distribution				
Connections	2	EA	3,500.00	7,000
4-inch	250	LF	52.80	13,200
6-inch	206	LF	62.70	12,916
8-inch	258	LF	72.00	18,576
Fire Hydrants	3	EA	4,125.00	12,375
Fire Dept. Connection (FDC)	1	EA	2,200.00	2,200
Post Indicator Valve (PIV)	1	EA	1,980.00	1,980
4" Domestic Meter (vault and setter)	1	EA	17,700.00	17,700
2" Landscape Meter (vault and setter)	1	EA	2,200.00	2,200
2" Landscape Backflow DCVA	1	EA	2,200.00	2,200
Gas Service				
Connect to existing main	1	EA	2,310.00	2,310
Gas piping	140	LF	55.00	7,700
Total For Site Mechanical Utilities				**469,291**
G40 Site Electrical Utilities & Site Lighting				
G 40 Site Electrical Utilities				
Site electrical utilities, allow	1	LS	90,000.00	90,000
Electrical transformer	1	LS	80,000.00	80,000
Extend campus data network North	950	LF	168.00	159,600
G 4020 Site Lighting				
Site Lighting	1	LS	72,600.00	72,600
Total For Site Electrical Utilities				**402,200**

Project Parameters

Type of Space	Square Footage	Percent
Renovation of Existing	(S1) = 0	**0%**
New Space	(S2) = 53,075	**100%**
Exterior Circulation of Existing. See Appendix H.	(S6) = 3,312	**6%**
Demolished Area	(S3) = 25,069	**47%**
Total Affected Area	**53,075**	**100%**
Net Area Change = New – Demo – Circulation	24,694	**47%**

Costs	Dollars	Percent
Acquisition	0	**0.0%**
Consultant Services	3,460,973	**10.8%**
Construction Contracts (w/o eligible Infrastructure)	24,338,028	**76.4%**
Eligible Infrastructure Contracts (from C100)	1,513,311	**4.8%**
Equipment	2,115,089	**6.6%**
Artwork	105,258	**0.3%**
Other Costs	313,820	**1.1%**
Project Management	0	**0.0%**
Total Project Cost (C1)	**31,846,479**	**100.0%**

Funding	Dollars	Percent
State Appropriation	30,846,479	**97%**
Financed – backed by State Appropriation		
Local Funds – Cash (see list of qualifying funds)	1,000,000	**3%**
Financed – backed by Local Funds		
Total Project Funding	**31,846,479**	**100%**
Matching	1,000,000	3%
Variance = Cost – Funding	0	

Project Weighting	Equivalent Area	Percent
Matching	3,333	6.3%
Infrastructure	2,522	4.8%
Renovation	0	
Replacement	23,788	44.8%
New	23,432	44.1%
Total	**53,075**	**100.0%**

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2019-21 Minimum and Overarching Criteria Points

Evaluation Criteria	Scoring Standard	
College Response	Affected buildings are at a single site.	**Yes**
College Response	Project does not include improvements to temporary or portable facilities.	**Yes**
College Response	Project is not a gymnasium or recreational facility.	**Yes**
College Response	Project is not an exclusive enterprise function such as a bookstore, dormitory or contract food service.	**Yes**
College Response	Project is not dependent on another project in the current request.	**Yes**
College Response	Project meets LEED Silver Standard requirements.	**Yes**
College Response	College has a Greenhouse Gas Emission Reduction plan.	**Yes**
College Response	The facility is state-owned or a condominium interest is held (state capital funds cannot be spent on leased space).	**Yes**
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**
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**
College Response	If project includes renovation, then the project extends the useful life of the affected building at least 20 years.	**N/A - No renovation**
College Response	If project includes renovation, then the cost does not exceed 80% of the current replacement cost.	**N/A - No renovation**
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.	**Up to 9 points**
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	 **4 Yes** **4 Yes** **4 Yes** **2 Yes**

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

December 21, 2015

Ms. Diana Peeples
DES Engineering & Architectural Services
MS 41476
Olympia, WA 98504-1476

In future correspondence please refer to:
Log: 090815-04-DES
Property: Tacoma Community College Building Demolition
Re: No Historic Properties Affected

Dear Ms. Peeples:

Thank you for contacting the Washington State Department of Archaeology and Historic Preservation (DAHP). The above referenced project has been reviewed by Dr. Rob Whitlam and myself on behalf of the State Historic Preservation Officer under provisions of Governor's Executive Order 05-05 (GEO 05-05). My review is based upon documentation contained in your communication.

We concur that no historic properties will be affected by the current project as proposed. If additional information on the project becomes available, or if any archaeological resources are uncovered during construction, please halt work 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. Should you have any questions, please contact me.

Sincerely,

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

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

Project Checklist

Project Name: TCC Center for Innovative Learning and Engagement
Date: 12.20.17

Y	?	N			
			Credit	Integrative Process	1

10	4	18	Location and Transportation		16
		16	Credit	LEED for Neighborhood Development Location	16
1			Credit	Sensitive Land Protection	1
		2	Credit	High Priority Site	2
2	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

4	3	2	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
	3		Credit	Rainwater Management	3
1			Credit	Heat Island Reduction	2
1			Credit	Light Pollution Reduction	1

9	0	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
6			Credit	Indoor Water Use Reduction	6
		2	Credit	Cooling Tower Water Use	2
1			Credit	Water Metering	1

7	14	12	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
3	3	12	Credit	Optimize Energy Performance	18
	1		Credit	Advanced Energy Metering	1
	2		Credit	Demand Response	2
	3		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
2			Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
	2		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

13	3	1	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
1	1	1	Credit	Interior Lighting	2
3			Credit	Daylight	3
	1		Credit	Quality Views	1
	1		Credit	Acoustic Performance	1

4	2	0	Innovation		6
3	2		Credit	Innovation	5
1			Credit	LEED Accredited Professional	1

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

55	31	35	TOTALS	Possible Points:	110

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

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OVERALL CAMPUS PLAN

PROJECT REQUEST REPORT

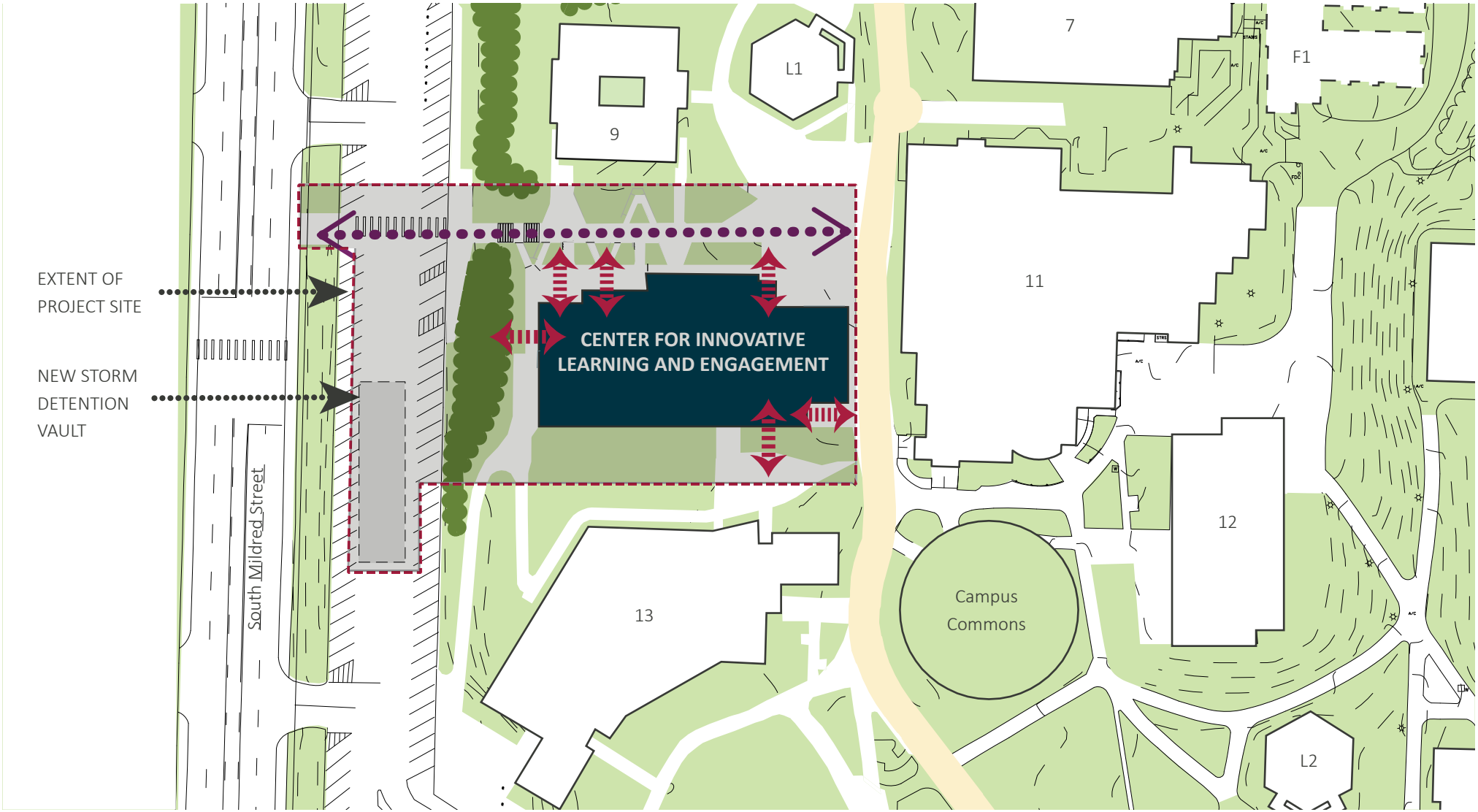
TACOMA COMMUNITY COLLEGE

20 DECEMBER 2017

Center for Innovative Learning and Engagement | Tacoma Community College |

SCIENCE LABS	QTY	SF	TOTAL SF	ROOM USE CODE
ENROLLMENT SERVICES				
Computer Labs	4	1,100	4,400	260
Paralegal and Business Labs	2	1,600	3,200	210
Paralegal and Business Labs (non-scheduled)	2	1,600	3,200	220
Business break-out rooms	4	225	900	230
Mock Courtroom /Deposition Rooms	5	300	1,500	230
World Language and Culture Lab	5	300	1,500	230
Humanities Labs	2	1,600	3,200	210
Humanities Labs (non-scheduled)	2	1,600	3,200	220
Social Science Lab	1	1,600	1,600	210
Behavioral Science Lab	1	1,200	1,200	210
Humanities break-out rooms	6	225	1,350	230
Subtotal Science labs			**25,250**	
LIBRARY/ LEARNING RESOURCE CENTER				
Departmental Library	1	4000	4,000	410
Active Learning	1	1600	1,600	530
Informal Study Area	1	610	610	411
Subtotal Library / Learning Resource Center			**6,210**	
FACULTY OFFICES				
Faculty Offices	20	110	2,200	310
Workroom	2	100	200	315
Conference Room	2	200	400	335
Office/ Reception Support	2	250	500	310
Subtotal Faculty Offices			**3,300**	
STUDENT CENTER & RELATED				
Student Advising	1	500	500	680
Café' area	1	300	300	630
Subtotal Student Center & Related			**800**	

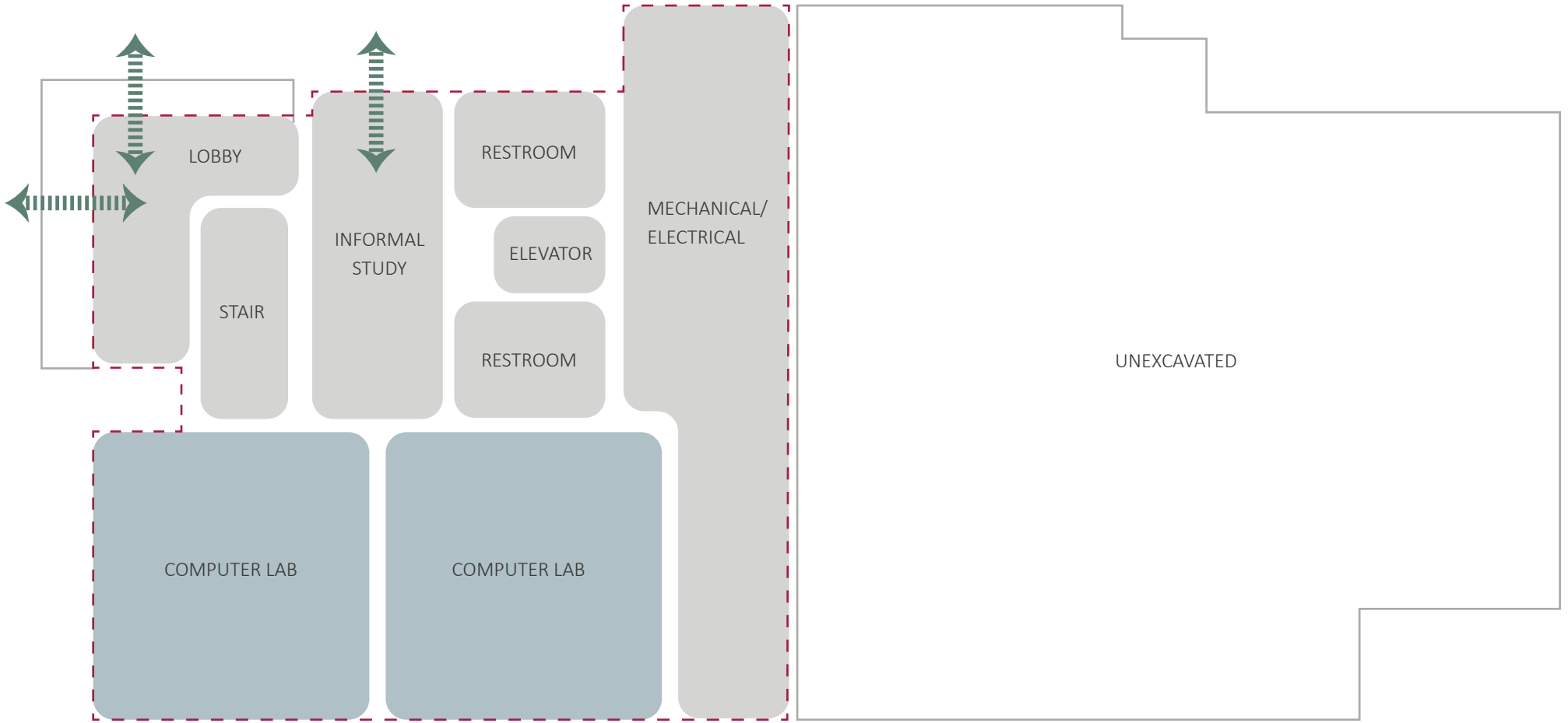
NET BUILDING AREA	35,560
SUPPORT (67% EFFICIENCY FACTOR)	17,515
TOTAL BUILDING AREA	**53,075**



CONCEPT SITE PLAN

PROJECT REQUEST REPORT
TACOMA COMMUNITY COLLEGE
20 DECEMBER 2017

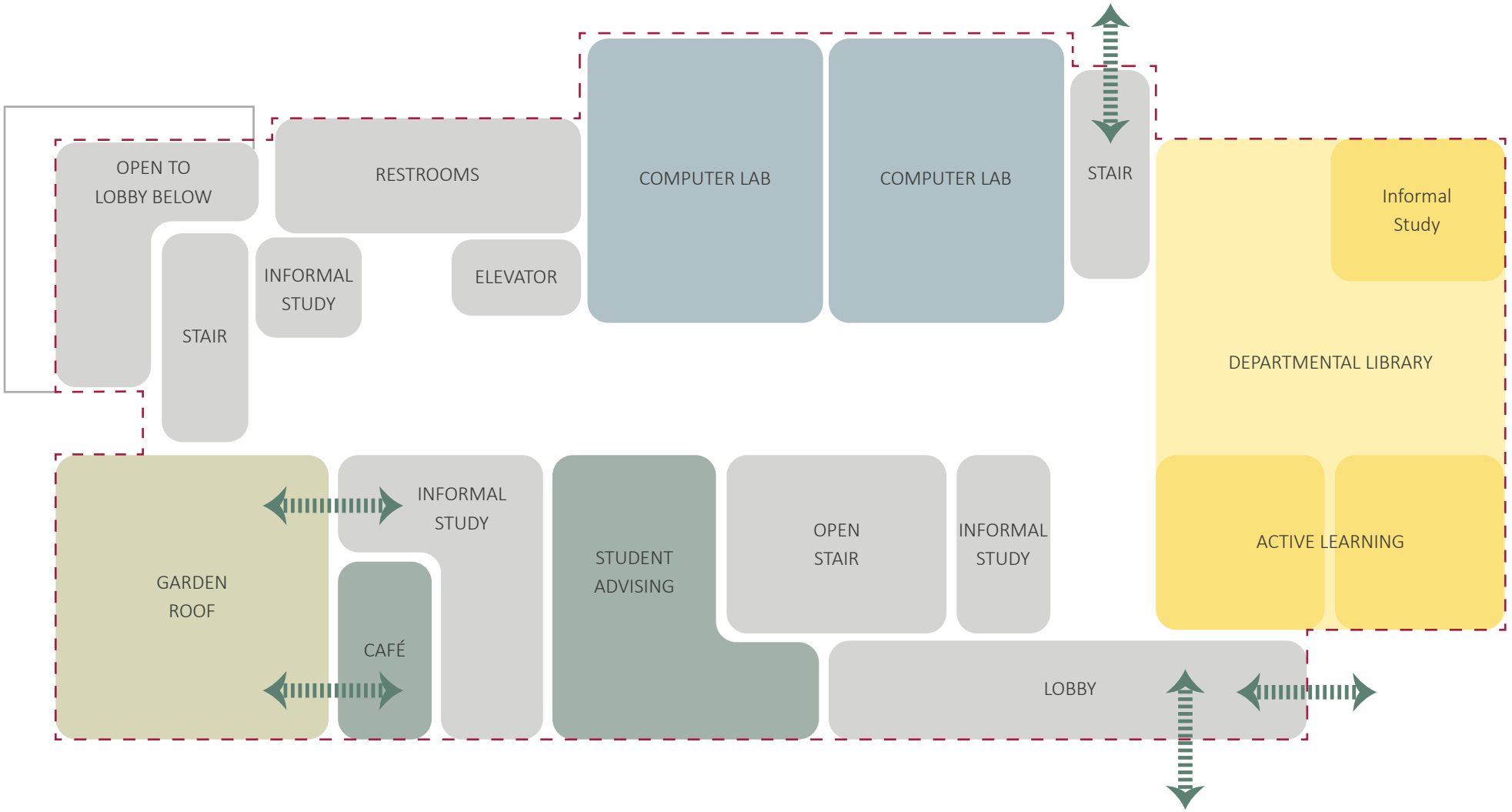
McGRANAHAN architects



CONCEPT FLOOR PLAN - LOWER LEVEL

PROJECT REQUEST REPORT
TACOMA COMMUNITY COLLEGE
20 DECEMBER 2017

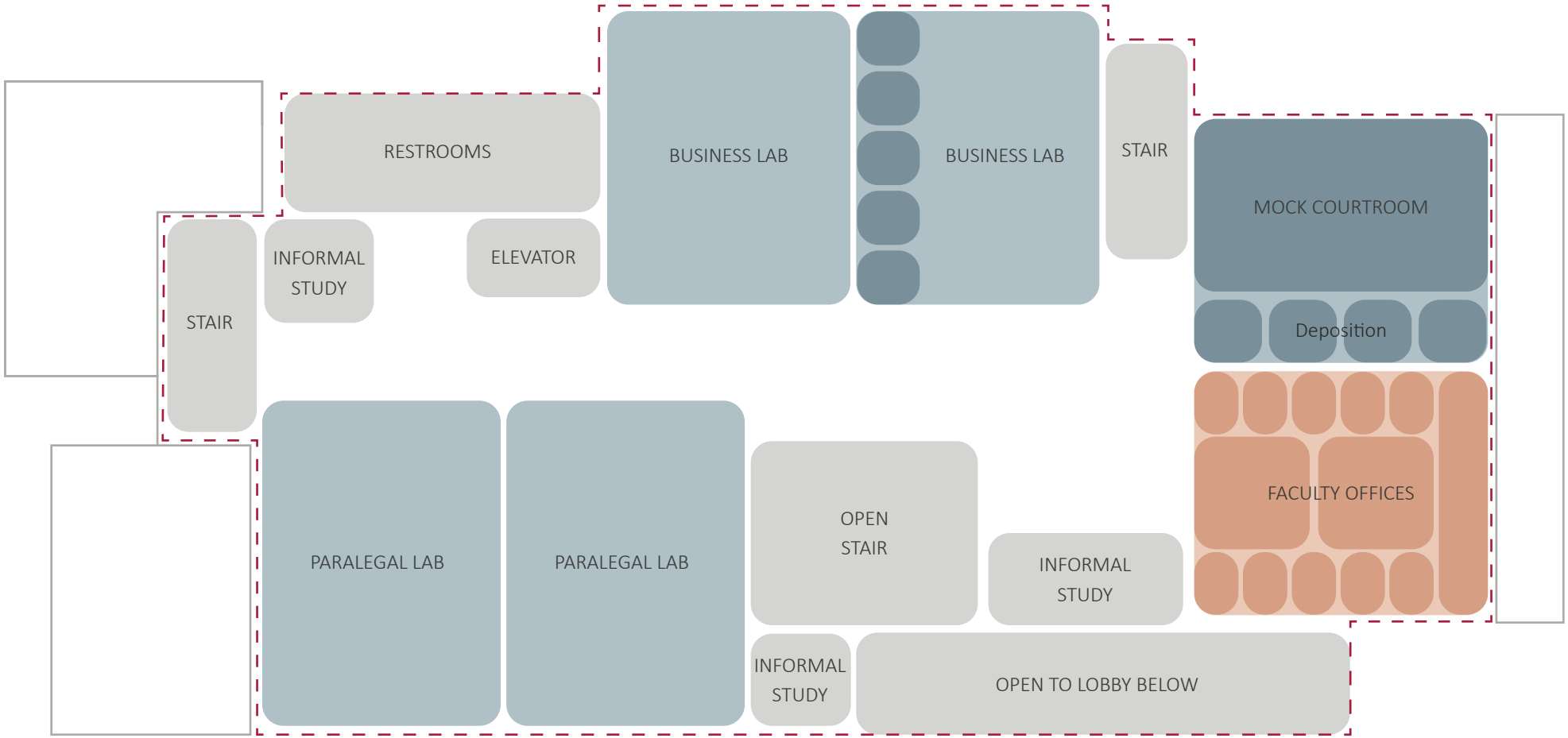
McGRANAHAN architects



CONCEPT FLOOR PLAN - FIRST FLOOR

PROJECT REQUEST REPORT
TACOMA COMMUNITY COLLEGE
20 DECEMBER 2017

McGRANAHAN architects



CONCEPT FLOOR PLAN - SECOND FLOOR

PROJECT REQUEST REPORT
TACOMA COMMUNITY COLLEGE
20 DECEMBER 2017

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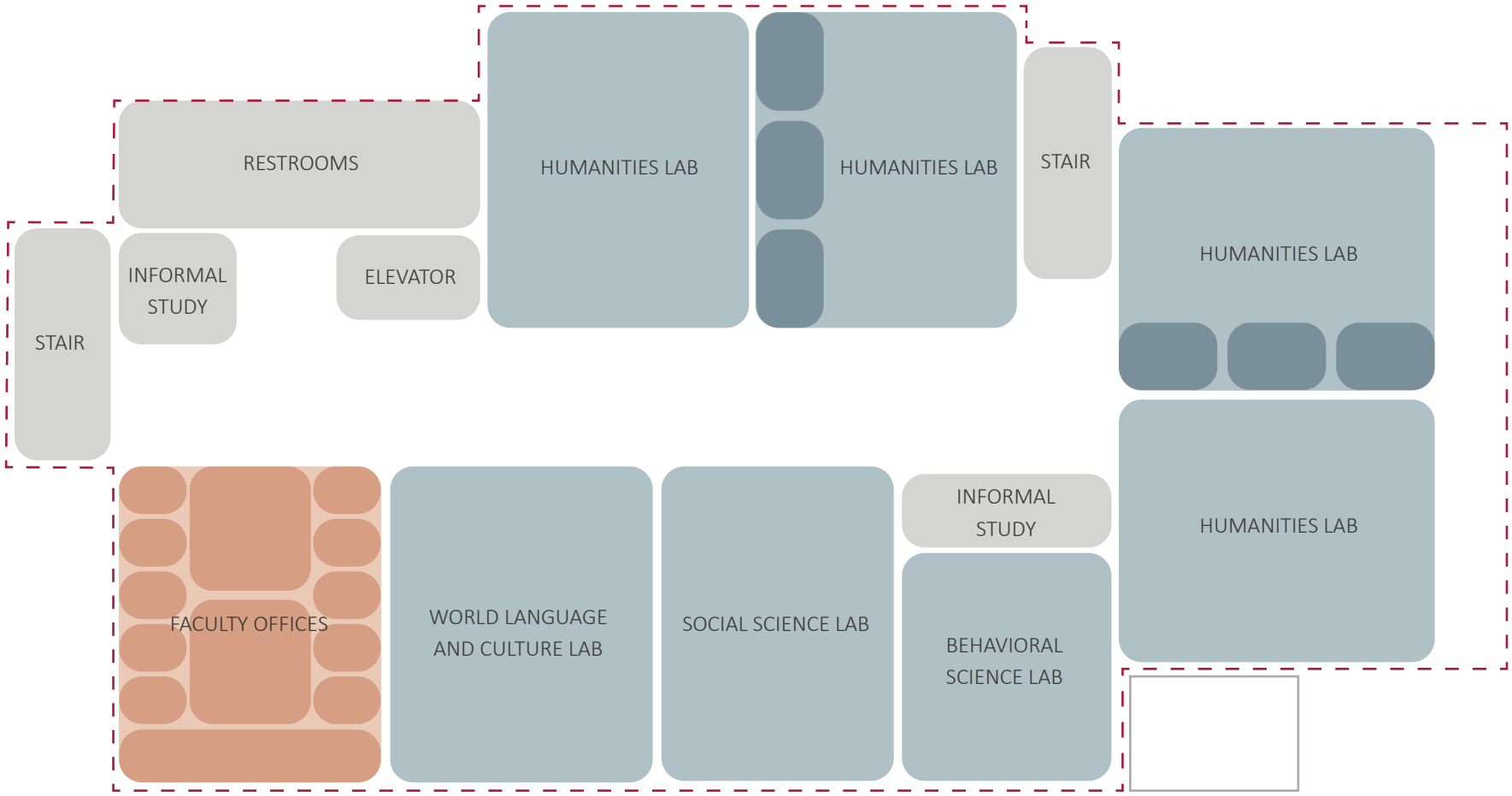

CONCEPT FLOOR PLAN - THIRD FLOOR

PROJECT REQUEST REPORT
TACOMA COMMUNITY COLLEGE
20 DECEMBER 2017

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7.1.1. average useful life of infrastructure

Appendix E – Average Useful Life of Infrastructure

The following average useful lives are used in accounting for depreciating assets. Since this is an average, about half of the infrastructure is expected to last longer. Projects involving infrastructure with different average lives shall use a cost weighted average life for scoring relative to the criteria. If replacing existing infrastructure, the proposal will have both the cost weighted average useful life of the existing and proposed infrastructures.

Infrastructure	**Average Useful Life [1]**	**Estimated Cost**	**Cost Weighted Life**
Electrical Service/Distribution – underground	20	90,000	1,800,000
Electrical Utility Pole	20		
Electrical Transformer – pad mounted	5	80,000	400,000
Electrical Transformer – in vault	5		
Electrical Generator – free standing	5		
Potable Water – piping	25	68,000	1,700,000
Potable Water – meters	25	20,000	500,000
Sewer lines – concrete	50		
Sewer lines – brick	90		
Sewer lines – metal	40		
Storm lines – PVC	25	47,000	1,175,000
Storm drains – cast iron	30		
Storm drains – metal corrugated	30		
Storm detention vault / area drains / catch basins - concrete	40	230,000	9,200,000
Storm drains – ditch/trench	100		
Telecommunication – fiber optic conductors	5		
Telecommunication networks between buildings[2]	7.5		
Inter building communication infrastructure[3]	25	160,000	4,000,000
Sewer lines - PVC Natural Gas - iron	25 30	25,000 10,000	625,000 300,000
Subtotals		A = 730,000	B = 19,700.000
Cost Weighted Average Useful Life			**26.99**

Notes:

[1] Average Useful Life in years is from Section 30.50.10 of the State Administrative & Accounting Manual Issued by Office of Financial Management unless otherwise noted.

[2] California State University Capital Asset Guide, April 2012.

[3] University of New Mexico Design Guidelines for Information Technology Infrastructure Facilities.

[4] Provide copy or link to Other data used in analysis.

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PROJECT MEMO

TO:	Matt Lane, McGranahan Architects	**DATE:**	October 29, 2015
FROM:	Doreen Gavin Tacoma - (253) 383-2422	**PROJECT NO.:**	2150385.10
		PROJECT NAME:	TCC Center for Innovative Learning and Expression
SUBJECT:	Site Visit and Research		

TCC is evaluating the feasibility of replacing Building 10 with a new Business and Humanities Center. The new building would demolish Building 10 and two other smaller buildings, replacing approximately 30,000 square feet and potentially adding up to 40,000 square feet of new space. The maximum total project area would be up to 70,000 square feet. The following notes summarize my observations from a site visit on September 22, 2015, and my research findings:

1. The site is located north of the Harned Center, and east of Mildred Street and the student parking lot. Located to the east of the proposed Center is a fire lane and Building 11. To the north are a landscape area, east-west maintenance vehicle access, asphalt paths, and Building 9.

2. The topography across the project site drops from the east to the west. Based on the campus mapping, the elevations along the fire lane are about 340 feet; the building finish floor is around elevation 338. The parking lot along the west side is separated from the building by a hillside. The elevation at the parking lot is 326 feet. The hillside provides challenges for ADA accessibility.

3. ADA parking stalls are located along the east edge of the parking lot. The current accessible route from the ADA stalls is located to the south of the Business and Humanities Center. The ramp switchbacks up the hillside to enter the north side of the Harned Center. It appears feasible to extend another accessible ramp to the north. A sidewalk extension south along the east edge of the parking lot is desirable but would require a wall to retain the hillside slope.

4. A new east-west pedestrian route is desirable across the campus, as reflected in the Master Plan. The west end of the pedestrian connector may be best located to the north of Building 10 and included in the Business and Humanities Center project.

5. The site is served by a private fire loop installed in 2006. The 10-inch water main is located west of the building in the parking lot. The nearest fire hydrant is located approximately 80 linear feet southeast of Building 10. Another fire hydrant is located about 140 feet southwest of the building.

6. The new building will be sprinkled. A third fire hydrant may be required along the northwest side of the building. A new 8-inch fire service will be required from the private fire main. Fire flow is anticipated to be adequate.

7. A private 8-inch sanitary sewer main was installed in the west parking lot as part of the Harned Center construction. The sewer main terminates about 80 feet west of the southwest corner of Building 10.

8. A new domestic water service will be required. A private domestic water service was installed during the Harned Center construction. The private 8-inch water main extends from South 19th Street and ends about 90 linear feet southwest of Building 10. The existing meter is 2-inch. The peak demand of the Harned Center and the proposed Business and Humanities Center should be evaluated to determine if a new larger meter is required to replace the existing 2-inch meter. A larger meter would incur additional facility charges from Tacoma Water Division.

9. Building 10 roof drains flow from east to west. Dave Moffat advised that the storm drain lines along the north and south sides of the building are in very poor condition, with damage from tree roots causing blockages in the past. Most likely, the roof drains are undersized. Hillside erosion occurs on the slope to the northwest of Building 10. The new Center will demolish the existing roof drain lines and construct new rood drains, area drains, and conveyance piping.

10. The replacement of Building 10 with the Business and Humanities Center will trigger stormwater improvements and flow control. A preliminary estimate based on 32,000 square feet of new or replaced impervious surfaces would require a detention volume of 15,000 cubic feet. An underground detention vault will be required and located to the west in the parking lot. The detention vault outlet would connect to a stub from the storm drain in Mildred Street. In addition, Low Impact Development (LID) facilities will be required to the maximum extent feasible. These may include bioretention facilities (rain gardens), green roofs, rainwater harvesting, and permeable pavements. While infiltration is a desirable LID technique, we anticipate that the site soils are glacial till and not conducive to infiltration of stormwater.

11. The gas service to Building 10 has been deactivated and the meter removed. The gas service line was abandoned in place and is located to the west of the building. We anticipate removing the old service line and installing a new service from the gas main.

12. The demolition of Building 10 will include removal of a heating and cooling loop and capping the pipes at the fire lane.

13. The Harned Center project extended data and communication lines from the campus data center in Building 18 to the northeast side of Building 10. It is desired by TCC to extend the data lines further north to the bridge so that the north side of the campus could eventually be tied back to the data center.

14. An existing transformer is located to the northeast of Building 10. Underground power and site lighting will be disturbed by the Business and Humanities Center project. The electrical engineer will analyze the existing and proposed loads on the high voltage loop to determine if improvements are needed.

Required Civil Site Improvements

- Building, site, and utility demolition.
- Erosion and sediment control. Baker tanks may be required for winter months prior to the construction of the stormwater vault.
- Rain garden along the north side of the building to meet City requirements for LID.
- Concrete pedestrian walks connecting the building to the fire lane and the west parking lot, at a minimum.
- Landscape improvements around the new Center, including attractive entry plazas.
- Construct a concrete pedestrian walk south along the east edge of the parking lot with a 2- to 4-foot high rockery, extending the existing sidewalk about 120 feet.
- Construct a concrete ADA accessible ramp with handrails from the parking lot to the southwest corner of the Business and Humanities Center, about 120 feet.
- Construct a new east-west pedestrian connection from the parking lot, between Buildings 9 and 10, extending to the east about 300 feet.

A sketch is attached showing the location of the required civil improvements.

Potential Infrastructure Improvements

- Extend the 8-inch domestic water main approximately 300 feet to the northwest of Building 9 to accommodate a future replacement building and new domestic service.
- Extend the 8-inch sanitary sewer main approximately 300 feet to the northwest of Building 9 to accommodate a future replacement building and new domestic service.
- Extend the campus data network to the north, as recommended by the electrical engineer.
- New fire hydrant and new 8-inch fire service (up to maximum of 100 feet).
- New 4-inch domestic water service (up to 100-foot maximum).
- Replace 2-inch meter with a 3-inch meter and pay Tacoma Water Department Service Connection Charges.
- New 6-inch sanitary side sewer from private main (up to 100 feet).
- Roof drains, storm collection system around the Center, area drains, and a 15,000-cubic foot detention vault installed in the parking lot, with restoration of the parking lot.
- Extend gas main from gas pipe along the west edge of the parking lot, approximately 140 feet.
- Site lighting, data, and power per the electrical engineer's recommendations.

A sketch is attached showing the location of the proposed Infrastructure Improvements.

DSG/lsk

c: William Fierst, AHBL

Attachments

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PCS
Structural Solutions

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1250 Pacific Avenue, Suite 701 • Tacoma, WA 98402 • t 253.383.2717

August 25, 2015

McGranahan Architects
2111 Pacific Avenue, Suite 100
Tacoma, WA 98402

ATTN: Matt Lane

RE: *Tacoma Community College PRR*
Building 10

Dear Matt:

As requested, we performed a structural evaluation of Building 10 at Tacoma Community College. Our evaluation included a review of the existing structural drawings and a visual walk-through evaluation of the building. Our evaluation consisted of observations of exposed conditions with an emphasis on building condition, signs of settlement, signs of deterioration, and indications of structural distress

Our evaluation did not include unexposed conditions that would require selective demolition, a complete lateral analysis of the building, or the actual method of repair for non-compliant items

Building 10 is a one-story classroom building constructed in 1965. There is one large lecture hall on the east side of the building that has a sloping floor. Classrooms are located throughout the remainder of the building. The primary roof framing is plywood sheathing over open-web wood trusses. Elsewhere on the building, the roof framing is sawn lumber joists. The roof framing is supported by tilt-up concrete bearing walls at the exterior and wood stud bearing walls at the interior. The tilt-up concrete panels are covered with a rock-faced adhered veneer on the exterior face of the wall. A low roof around the perimeter of the building is supported by a series of narrow precast concrete columns, approximately 4 in. thick. All the framing is supported by conventional concrete foundations

We observed some cracking and spalling in the narrow precast concrete columns around the exterior of the building. The cracking and spalling is likely due to water intrusion into the concrete which promotes reinforcing corrosion that causes the steel to expand and crack the concrete Repair or elimination of water intrusion is required to prevent additional and accelerated cracking and spalling. Throughout the building, observations of minor cracking and water intrusion were observed which are indications of localized deterioration.

PCS Structural Solutions

McGranahan Architects
Matt Lane
Tacoma Community College PRR
Building 10

The building has several structural liabilities associated with its lateral seismic force resisting system. Based on the age of the building, it was constructed under an older code in which the design seismic forces were significantly less than current code. A major alteration of the building would trigger a seismic upgrade, which would likely involve improvements to the nailing of the roof sheathing, addition of shear walls, addition of seismic holdowns, and addition of foundation elements.

Anchorage of the concrete walls to the wood roof diaphragm is not in compliance to current code, and in a seismic event the anchorage would be highly overstressed. Failure of the wall anchorage could lead to wall collapse, and then to roof collapse. Upgrade to the anchorage would be a building department requirement in a major building alteration, or possibly even during a re-roofing project.

Thank you for the opportunity to be of continued service. Please contact us if you have any questions

Very truly yours,

PCS STRUCTURAL SOLUTIONS

Jack J. Pinkard, S.E.
Principal

JJPmeh
15-508

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[illegible] Pacific Avenue, Suite 201 • Tacoma, WA 98402 • t: 253.383.2112

[illegible]

August 25, 2015

McGranahan Architects
2111 Pacific Avenue, Suite 100
Tacoma, WA 98402

ATTN: Matt Lane

RE: *Tacoma Community College PRR*
Building F1

Dear Matt:

As requested we performed a structural evaluation of Building F1 at Tacoma Community College. Our evaluation included a review of the existing structural drawings and a visual walk-through evaluation of the building. Our evaluation consisted of observations of exposed conditions with an emphasis on building condition, signs of settlement, signs of deterioration, and indications of structural distress.

Our evaluation did not include unexposed conditions that would require selective demolition, a complete lateral analysis of the building, or the actual method of repair for non-compliant items.

Building F1 is a two-story faculty office and classroom building constructed in 1970. The primary roof framing is plywood sheathing over open-web wood trusses. Elsewhere on the building the roof framing is sawn lumber joists. The floor framing is plywood sheathing over wood joists. The roof framing and floor framing is supported by tilt-up concrete bearing walls at the exterior, and by wood stud bearing walls at the interior. The tilt-up concrete panels are covered with a rock-faced adhered veneer on the exterior face of the wall. A low roof around the perimeter of the building is supported by a series of narrow precast concrete columns, approximately 4 in. thick. All the framing is supported by conventional concrete foundations.

We observed some cracking and spalling in the narrow precast concrete columns around the exterior of the building. The cracking and spalling is likely due to water intrusion into the concrete which promotes reinforcing corrosion that causes the steel to expand and crack the concrete. Repair or elimination of water intrusion is required to prevent additional and accelerated cracking and spalling. Throughout the building, observations of minor cracking and water intrusion were observed which are indications of localized deterioration.

PCS Structural Solutions

McGranahan Architects
Matt Lane
Tacoma Community College PRR
Building F1

The building has several structural liabilities associated with its lateral seismic force resisting system. Based on the age of the building, it was constructed under an older code in which the design seismic forces were significantly less than current code. A major alteration of the building would trigger a seismic upgrade which would likely involve improvements to the nailing of the roof and floor sheathing, addition of shear walls, addition of seismic holdowns, and addition of foundation elements.

Anchorage of the concrete walls to the wood roof and floor diaphragms is not in compliance with current code, and in a seismic event the anchorage would be highly overstressed. Failure of the wall anchorage could lead to wall collapse, and then to roof and floor collapse. Upgrade to the anchorage would be a building department requirement in a major building alteration, or possibly even during a re-roofing project.

Thank you for the opportunity to be of continued service. Please contact us if you have any questions.

Very truly yours,

PCS STRUCTURAL SOLUTIONS

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Tacoma Community College – Building 10 or Chinook (Classrooms)
Facility Assessment
Mechanical Systems Narrative
August 28th, 2015

1. Information Resource:

A. Existing record drawings, provided by TCC

B. SBCTC 2013 Facility Condition Survey

C. Field investigation performed August 14th, 2015.

D. Summary of maintenance items from TCC dated August 14th, 2015

2. Description of the existing H.V.A.C. system.

A. Supply/Ventilation Air: The supply air is provided from packaged rooftop equipment. The lecture hall is served from one unit. The remaining six classrooms and prep area are served from the other unit. The air is distributed through sidewall grilles located on the prep room side. The ventilation air was balanced to 1970 standards, however, at a higher rate for science room applications. When comparing the science room standard of that time to a standard classroom, the ventilation requirement is below current code. The lecture hall is well below ventilation requirements. Ventilation in this building is not adequate and below code requirements. This building does not have operable windows for additional ventilation.

B. Exhaust Air: The building has exhaust provided at the restroom spaces.

C. HVAC Equipment: The air handling equipment is located on the roof. The rooftop equipment consists of two air handlers for ventilation air only. Hydronic reheat coils are provided at the ductwork serving each space. The system is constant volume air delivery. The equipment is original and in need of replacement. The hydronic heating is provided by a single hydronic boiler within the building. The hydronic piping is all in original condition. A hydronic pump is connected to the boiler and was replaced some time ago. The boiler is original with significant repair work done. The exhaust fans appear to be original and in need of replacement.

D. Economizer: There is no airside economizer for this building.

E. Heat Recovery: There is no heat recovery for this building.

F. Energy Management Control System: The control system within the building is original and pneumatic with many thermostats not functioning well if at all. There is no scheduling at the thermostats or setback controls. The current system has not met energy code standards for 25 plus years. The control system needs to be replaced.

3. Description of the existing Plumbing system.

A. Piping: The domestic water system is primarily galvanized with some spot repairs or minimal ADA upgrades done in copper. The waste and vent system could not be viewed as part of this site study with the exception of

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some vent lines replaced with ABS as part of repair work and below the sinks. The waste piping is glass lined cast iron. This type of piping was used for acid-waste systems for science rooms and labs at the time of original construction. This type of piping is no longer used or allowed. The system is original throughout. There is no backflow device for the domestic water system not meeting current health code requirements. The faucets within the lab spaces do have an air gap fitting. The domestic waste, vent and water systems are in serious need of replacement.

B. Domestic Water Heating: The domestic water heating system has been replaced at least once over the course of the buildings life. The current unit is beyond its service life and in need of replacement.

C. Plumbing Fixtures: The plumbing fixtures are all original except for one fixture in each of the restrooms adjacent the lecture room. The facilities do not meet ADA requirements even though the space was enlarged and risers added to the existing fixtures. All of the fixtures are original with the water closets using 3.6 Gals/flush and urinals using 1.6 gals/flush wasting significant water and not meeting current environmental standards. The drinking fountain does not meet ADA requirements. The mop sinks provided are wall hung not meeting current standards and do not have proper backflow devices for the chemicals connected to the system.

4. Description of the existing Life Safety/Fire Protection system.

A. System: There is no fire sprinkler system for this building. The building is over 5,000 SF requiring a fire sprinkler system.

B. Fire Alarm: The HVAC system is not integrated with any fire alarm system not shutting down the equipment in the event a fire exist.

5. Executive Summary:

The building is tired and beyond its useful life. The HVAC and plumbing system are primarily in original condition with the maintenance staff repairing items as best as possible to keep the systems running. Many of the heaters and thermostats are not functioning. The ventilation to the building is below code. There is not an energy management system for this building. Plumbing fixtures do not meet the water conservation requirements or the ADA requirements. The galvanized water piping does not have any backflow devices meeting health code requirements and has been patched in several locations. The HVAC and plumbing systems need to be replaced in their entirety. A fire protection system is required. The life safety systems in the building do not meet current code.

The costs to replace the mechanical and plumbing equipment in this building would exceed that of a new building. The fire protection costs would exceed the costs of an equivalent new building due to the abatement requirements for penetrations.

Tacoma Community College – Building F1 or Mt Adams (Faculty Offices)
Facility Assessment
Mechanical Systems Narrative
August 28th, 2015

1. Information Resource:

A. Existing record drawings, provided by TCC

B. SBCTC 2013 Facility Condition Survey

C. Field investigation performed August 14th, 2015.

D. Summary of maintenance items from TCC dated August 14th, 2015

2. Description of the existing H.V.A.C. system.

A. Supply/Ventilation Air: The diffusers are provided in the main reception area and the conference room spaces. A portion of the private offices are provided with supply air. It appears that some walls were moved to make smaller offices to add staff resulting in some rooms with supply air and others without. The ventilation air, where it exists, was balanced to 1970 standards. The standard at that time is well below current standards. The ventilation code was significantly updated in the mid 80's due to the quantity of people getting sick from what was called "sick building syndrome". Ventilation in this building is not adequate and below code requirements. In addition, the ductwork is below grade in many places with standing water at times. This is a health issue. This building does not have operable windows at the private offices.

B. Exhaust Air: The building has exhaust provided at the restroom spaces. Exhaust is not provided at the heavy copy areas not meeting current health code requirements.

C. HVAC Equipment: The HVAC equipment is located on the roof. Some of the equipment was replaced in 2008 due to failed equipment. The system is self-contained packaged equipment to provide heating and cooling. Electric heaters are provided at the majority of the locations in the private offices below the windows. There are several heaters that are not functioning. The exhaust fans are independent with the original fans being replaced 20 plus years ago. The exhaust fans are at the end of their service life.

D. Economizer: There is no airside economizer for this building.

E. Heat Recovery: There is no heat recovery for this building.

F. Energy Management Control System: The control system within the building is original and pneumatic with many not functioning well if at all. There is no scheduling at the thermostats or setback controls. The current system has not met energy code standards for 25 plus years. The control system needs to be replaced.

3. Description of the existing Plumbing system.

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A. Piping: The domestic water system is primarily galvanized with some spot repairs or minimal ADA upgrades done in copper. The waste and vent system could not be viewed as part of this site study. The system is original. There is not backflow device for the domestic water system not meeting current health code requirements. The domestic waste, vent and water systems are in serious need of replacement.

B. Domestic Water Heating: The domestic water heating system has been replaced at least once over the course of the buildings life. The current unit is beyond its service life and in need of replacement.

C. Plumbing Fixtures: The plumbing fixtures are all original except for two water closets that were replaced in an attempt to meet ADA standards. The water closets installed do not meet the height requirement and the flush handle is on the incorrect side. The corresponding lavatories were not replaced and an attempt was made to make them ADA by changing out the faucet type. The handles meet ADA, however, trap wrap was not installed underneath and the lavatory depth does not meet wheel chair requirements. All of the fixtures are original with the water closets using 3.6 Gals/flush and urinals using 1.6 gals/flush wasting significant water and not meeting current environmental standards. The drinking fountains do not meet ADA requirements. The mop sinks provided are wall hung not meeting current standards and do not have proper backflow devices for the chemicals connected to the system.

4. Description of the existing Life Safety/Fire Protection system.

A. System: There is no fire sprinkler system for this building. The building is over 5,000 SF requiring a fire sprinkler system.

B. Fire Alarm: The HVAC system is not integrated with any fire alarm system not shutting down the equipment in the event a fire exist.

5. Executive Summary:

The building is tired and beyond its useful life. The HVAC and plumbing system are primarily in original condition with the maintenance staff repairing items as best as possible to keep the systems running. Many of the heaters and thermostats are not functioning. The ventilation to the building is well below code and does not exist in several of the offices. There is not an energy management system for this building. Plumbing fixtures do not meet the water conservation requirements or the ADA requirements. The galvanized water piping does not have any backflow devices meeting health code requirements and has been patched in several locations. The HVAC and plumbing systems need to be replaced in their entirety. A fire protection system is required. The life safety systems in the building do not meet current code.

The costs to replace the mechanical and plumbing equipment in this building would exceed that of a new building. The fire protection costs would exceed the costs of an equivalent new building due to the abatement requirements for penetrations.

Tacoma Community College – Building 10 or Chinook (Classrooms)
Facility Assessment
Electrical Systems Narrative
August 28th, 2015

1. Information Resource:

A. Existing record drawings, provided by TCC

B. SBCTC 2013 Facility Condition Survey

C. Field investigation performed August 14th, 2015.

D. Summary of maintenance items from TCC dated August 14th, 2015

2. Description of the existing Power Distribution system.

A. Building Power Distribution System: The building power distribution system is a 480V/277 system with transformers for 120/208V branch circuit power. The distribution system appears to have adequate capacity for the building. The distribution equipment is original to the building and beyond their useful life. The service equipment has 6 service disconnects and Additional circuit breakers/disconnects cannot be added. The distribution equipment is original to the building, spare parts are difficult to obtain and the panel boards need to be replaced. The system utilizes a tap ahead of the main for emergency systems and optional standby systems.

B. Primary Power Distribution System: The building is fed from a campus primary loop with pad-mounted switchgear and transformers. The transformers are tapped multiple times to feed multiple buildings. If any building loads are added or the building is remodeled, a detailed review of the service transformer loads will be required and modifications to the primary campus loop or a new service transformer may be required.

3. Description of the existing Lighting system.

A. Lighting: The light fixtures are a combination of linear fluorescent T8 and incandescent light fixtures. The measured light levels in the lecture hall were noted to be above the current standards 30 F.C. for light levels for classroom spaces. The lab space light levels were measure to be less than the current 50 F.C. standards. The lecture hall has multiple levels of control with dimming incandescent downlights and fluorescent lighting with on/off. The light fixtures for lab and classrooms have front and back on/off switching and occupancy sensors. There is no automatic daylighting control. The lighting power density and controls do not meet the current energy code but are grandfathered in. These will be required to be updated with any building or system modifications.

4. Description of the existing Life Safety (Emergency) systems.

A. Egress Lighting: The egress lighting utilizes wall pack emergency fixtures that do not provide adequate coverage to meet current codes. There is currently no egress lighting exterior to the building at each exit and some of the exits do not meet the code required light levels for minimum lighting requirements. The exit signs utilize a tap ahead of the main for power and do

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not have a source of backup power. A tap ahead of the main is no longer an acceptable source of power for emergency systems.

B. Fire Alarm: The building fire alarm system has two fire alarm panels, one is a network fire alarm panel and the other is the building device fire alarm panel. The fire alarm panel was added in 2011 but only for connecting the building to the campus fire alarm network. The building device fire alarm panel is beyond it useful life and needs to be replaced. The building does not have a fire sprinkler system and does not have code required smoke detectors along the path of egress. Visual notification does not meet current ADA requirements.

5. Executive Summary:

The building is tired and beyond its useful life. The power distribution, lighting, life safety emergency systems are primarily in original condition with the maintenance staff repairing items as best as possible to keep the systems running. The power distribution equipment has exceeded its useful life and needs to be replaced. The lighting system and controls do not meet the current energy code. The life safety systems in the building do not meet current code. The power distribution, lighting and controls, should be replaced in their entirety. The building life safety systems need to be replaced in their entirety.

The costs to replace the power and lighting equipment in this building would exceed that of a new building. The life safety system costs would exceed the costs of an equivalent new building due to the abatement requirements for penetrations.

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Tacoma Community College – Building F1 or Mt Adams (Faculty Offices)
Facility Assessment
Electrical Systems Narrative
August 28th, 2015

1. Information Resource:

A. Existing record drawings, provided by TCC

B. SBCTC 2013 Facility Condition Survey

C. Field investigation performed August 14th, 2015.

D. Summary of maintenance items from TCC dated August 14th, 2015

2. Description of the existing Power Distribution system.

A. Building Power Distribution System: The power distribution system is a 480V/277 system with transformers for 120/208V branch circuit power. The distribution system appears to have adequate capacity for the building. The service equipment has 6 service disconnects and additional circuit breakers/disconnects cannot be added. The distribution equipment is original to the building and beyond their useful life. Spare parts are difficult to obtain and the panel boards need to be replaced. The system utilizes a tap ahead of the main for emergency systems and optional standby systems.

B. Primary Power Distribution System: The building is fed from a campus primary loop with pad-mounted switchgear and transformers. The transformers are tapped multiple times to feed multiple buildings. If any building loads are added or the building is remodeled, a detailed review of the service transformer loads will be required and modifications to the primary campus loop or a new service transformer may be required.

3. Description of the existing Lighting system.

A. Lighting: The light fixtures are a combination of linear fluorescent T8 and incandescent light fixtures. The light fixtures have a single control switch for on/off manual light switch. The corridors, offices, and restrooms do not have a way of automatically turning the light fixtures off. There is no automatic daylighting control. The lighting power density and controls do not meet the current energy code. These will be required to be updated with any building or system modifications.

4. Description of the existing Life Safety (Emergency) systems.

A. Egress Lighting: The egress lighting utilizes wall pack emergency fixtures that do not provide adequate coverage to meet current codes. There is currently no egress lighting exterior to the building at each exit and the exits do not meet the code required light levels for minimum lighting requirements. The exit stairs do not have any emergency egress lighting. The exit signs utilize a tap ahead of the main for power and do not have a source of backup power. A tap ahead of the main is no longer an acceptable source of power for emergency systems.

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MECHANICAL + ELECTRICAL + SUSTAINABILITY ENGINEERS

B. Fire Alarm: The building fire alarm system was replaced in 2011 but additional devices were not added to bring the system to current code. The building does not have a fire sprinkler system and does not have code required smoke detectors along the path of egress.

5. Executive Summary:

The building is tired and beyond its useful life. The power distribution, lighting, life safety emergency systems are primarily in original condition with the maintenance staff repairing items as best as possible to keep the systems running. The power distribution equipment has exceeded its useful life and needs to be replaced. The lighting system and controls do not meet the current energy code. The life safety systems in the building do not meet current code. The power distribution, lighting and controls, should be replaced in their entirety. The building life safety egress lighting systems need to be replaced in their entirety. The building fire alarm system should be updated to have code required smoke detection through the path of egress.

The costs to replace the power and lighting equipment in this building would exceed that of a new building. The life safety system costs would exceed the costs of an equivalent new building due to the abatement requirements for penetrations.

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7.2. selected materials from facility condition survey

Tacoma Community College

Facility Condition Survey - Exit Report

The Facility Condition Survey site visit has been completed. The following information was provided at the conclusion of the site visit. Please review this summary report and submit any comments or questions to the State Board. The final report will be published at a later time and will include significantly more detail.

Overview of building score changes

- - Gig Harbor Ctr (220C) - -	Prev Score	New Score
Gig Harbor/Peninsula Center (220-00D)	170	184
- - Main Campus (220A) - -		
Cascade (220-14)	316	309
Chinook -North Section (220-10)	476	476
Info Tech Voc Center (220-16)	170	170
Pamela Transue Ctr. For Science & Engineering (220-15)	146	146
Madrona (220-F2)	408	419
Mt Adams (220-F1)	458	470
Meeker (220-17)	388	398
Carpenter/Grounds Shops (220-22)	190	221
Warehouse-Storage-Surplus (220-WH)	0	404
Mt Rainier (220-19)	440	448
Chinook -Storage (220-10B)	0	439
Titan (220-20)	372	367
Tahoma - Opgaard Student Center (220-11)	214	246

Information Systems - Adjunct Faculty Center (220-18)	202	214
Classroom Administration (220-12)	170	170
Vancouver (220-L2)	344	327
Mt Saint Helens (220-L1)	368	353
Maintenance Building (220-21)	242	259
Art Gallery (220-4)	170	171
Pearl Wanamaker (220-7)	248	276
Nisqually (220-1)	354	354
Mt Baker (220-9)	146	174
Giaudrone (220-5)	346	367
Tyee (220-8)	332	352
Annette B. Weyerhaeuser Early Learning Center (220-3)	146	163
Vashon (220-6)	300	307
Columbia (220-2)	380	363
H.C. Joe Harned Center For Health Careers (220-13)	0	136

Overview of site score changes

College Site	Previous	New
Main Campus (220A)	73	73
Gig Harbor Ctr (220C)	47	47

BUILDING CONDITION RATING

Chinook -North Section (220-10) STATE UFI: A00792 Main Campus (220A)

AREA: 13,718 SF BUILT: 1965 REMODELED: 1992 PREDOMINANT USE: General Classroom

CONSTRUCTION TYPE: Medium CRV/SF: $301 REPLACEMENT VALUE: $4,129,118

Primary Systems						
COMPONENT:	Structure	RATING: 3	x	WEIGHT: 8	=	SCORE: 24
Some cracking evident but does not likely affect structural integrity; Visible defects apparent but are non-structural						
COMMENTS:	Concrete columns and tilt-up panels; wood framing					
COMPONENT:	Exterior Closure	RATING: 5	x	WEIGHT: 8	=	SCORE: 40
Significant deterioration, leaking and air infiltration apparent						
COMMENTS:	Concrete panels w embedded stone; plaster soffits; cement-asbestos mansard tiles					
COMPONENT:	Roofing	RATING: 5	x	WEIGHT: 10	=	SCORE: 50
Leaking and deterioration is to point where new roof is required						
COMMENTS:	Hypalon single-ply; canopy needs rear drains					

Secondary Systems						
COMPONENT:	Floor Finishes	RATING: 1	x	WEIGHT: 6	=	SCORE: 6
Nice appearance, smooth transitions, level subfloors, no cracks/separating						
COMMENTS:	Carpet; carpet tile; ceramic tile					
COMPONENT:	Wall Finishes	RATING: 3	x	WEIGHT: 6	=	SCORE: 18
Aging surfaces but sound; some maintenance is required						
COMMENTS:	Gypsum board, concrete and ceramic tile					
COMPONENT:	Ceiling Finishes	RATING: 3	x	WEIGHT: 6	=	SCORE: 18
Some wear and tear; Minor staining or deterioration						
COMMENTS:	Gypsum board and lay-in tile					
COMPONENT:	Doors & Hardware	RATING: 3	x	WEIGHT: 6	=	SCORE: 18
Functional but dated						
COMMENTS:	Interior/exterior HM doors/frames-surface wear					

Service Systems						
COMPONENT:	Elevators	RATING: 1	x	WEIGHT: 6	=	SCORE: 6
Appropriate and functional for occupancy and use						
COMMENTS:	1 Story					
COMPONENT:	Plumbing	RATING: 3	x	WEIGHT: 8	=	SCORE: 24
Fixtures are functional but dated; some leaks; maintenance required						
COMMENTS:	Galvanized, cast iron and steel piping; porcelain fixtures					
COMPONENT:	HVAC	RATING: 5	x	WEIGHT: 8	=	SCORE: 40
Inadequate capacity, zoning and distribution; equipment deteriorating; No A/C in office areas; no ventilation in hazardous areas						
COMMENTS:	Gas HW boiler; chilled water from central plant; AHU w VAVs					
COMPONENT:	Electrical	RATING: 3	x	WEIGHT: 8	=	SCORE: 24
Service capacity meets current needs but inadequate for future						
COMMENTS:	Inadequate circuits and outlets					
COMPONENT:	Lights/Power	RATING: 3	x	WEIGHT: 8	=	SCORE: 24
Adequate work area illumination; adequate outlets for current use						
COMMENTS:	Ceiling-mount, lay-in and hanging fluorescent lights					

Safety Systems						
COMPONENT:	Life/Safety	RATING: 3	x	WEIGHT: 10	=	SCORE: 30
Generally meets codes for vintage of construction						
COMMENTS:						
COMPONENT:	Fire Safety	RATING: 3	x	WEIGHT: 10	=	SCORE: 30
Extinguishers and signed egress; no violations; no alarm or sprinklers						
COMMENTS:						
COMPONENT:	Modifications	RATING: 1	x	WEIGHT: 7	=	SCORE: 7
Modifications appear to be in compliance with codes and sound construction practices; HVAC/electrical service properly provided						
COMMENTS:	Some modifications not well constructed					

Quality Standards						
COMPONENT:	Maintenance	RATING: 3	x	WEIGHT: 7	=	SCORE: 21
Routine maintenance is required; deferred maintenance is evident; impact is minor to moderate						
COMMENTS:	Concrete canopy support columns have numerous spalls that need to be patched					
COMPONENT:	Remaining Life	RATING: 5	x	WEIGHT: 6	=	SCORE: 30
Life expectancy is <5 years; significant system deterioration						
COMMENTS:	Planned for demolition in 2008, but funding did not allow for replacement building					
COMPONENT:	Appearance	RATING: 3	x	WEIGHT: 6	=	SCORE: 18
Average construction; average interior and exterior appearance						
COMMENTS:	Exterior appearance is very dated					

Heat Loss						
COMPONENT:	Insulation	RATING: 3	x	WEIGHT: 6	=	SCORE: 18
Insulation present, but not to current standards (installed prior to 2010)						
COMMENTS:	Only minor insulation in ceiling					
COMPONENT:	Glazing	RATING: 5	x	WEIGHT: 6	=	SCORE: 30
Single glazing						
COMMENTS:						

TOTAL SCORE = 476 PREVIOUS BIENNIUM SCORE = 476

CONDITION: Replace or Renovate

BUILDING CONDITION RATING

Chinook -Storage (220-10B) STATE UFI: A07263 Main Campus (220A)

AREA: 812 SF BUILT: 1965 REMODELED: No data PREDOMINANT USE: Central Computer Or Telecommunications

CONSTRUCTION TYPE: No data CRV/SF: $200 REPLACEMENT VALUE: $162,400

Primary Systems						
COMPONENT:	Structure	RATING: 3	x	WEIGHT: 8	=	SCORE: 24
Some cracking evident but does not likely affect structural integrity; Visible defects apparent but are non-structural						
COMMENTS:	No data					
COMPONENT:	Exterior Closure	RATING: 5	x	WEIGHT: 8	=	SCORE: 40
Significant deterioration, leaking and air infiltration apparent						
COMMENTS:	No data					
COMPONENT:	Roofing	RATING: 5	x	WEIGHT: 10	=	SCORE: 50
Leaking and deterioration is to point where new roof is required						
COMMENTS:	No data					

Secondary Systems							
COMPONENT:	Floor Finishes	RATING: 3	x	WEIGHT: 6	=	SCORE: 18	
Some wear and minor imperfections are evident; beginning deterioration							
COMMENTS:	No data						
COMPONENT:	Wall Finishes	RATING: 5	x	WEIGHT: 6	=	SCORE: 30	
Surfaces are deteriorated and require resurfacing or rebuilding							
COMMENTS:	No data						
COMPONENT:	Ceiling Finishes	RATING: 5	x	WEIGHT: 6	=	SCORE: 30	
Deteriorated, significant number of stained or sagging areas; inappropriate for occupancy							
COMMENTS:	No data						
COMPONENT:	Doors & Hardware	RATING: 3	x	WEIGHT: 6	=	SCORE: 18	
Functional but dated							
COMMENTS:	No data						

Service Systems							
COMPONENT:	Elevators	RATING: No data					
No data							
COMMENTS:	No data						
COMPONENT:	Plumbing	RATING: No data					
No data							
COMMENTS:	No data						
COMPONENT:	HVAC	RATING: No data					
No data							
COMMENTS:	No data						
COMPONENT:	Electrical	RATING: 3	x	WEIGHT: 8	=	SCORE: 24	
Service capacity meets current needs but inadequate for future							
COMMENTS:	No data						
COMPONENT:	Lights/Power	RATING: 3	x	WEIGHT: 8	=	SCORE: 24	
Adequate work area illumination; adequate outlets for current use							
COMMENTS:	No data						

Safety Systems						
COMPONENT:	Life/Safety	RATING: 3	x	WEIGHT: 10	=	SCORE: 30
Generally meets codes for vintage of construction						
COMMENTS:	No data					
COMPONENT:	Fire Safety	RATING: 5	x	WEIGHT: 10	=	SCORE: 50
Violations exist; No exit signs or extinguishers; No sprinklers in high hazard areas						
COMMENTS:	No data					
COMPONENT:	Modifications	RATING: No data				
No data						
COMMENTS:	No data					

Quality Standards						
COMPONENT:	Maintenance	RATING: 5	x	WEIGHT: 7	=	SCORE: 35
General deterioration is evident; lack of adequate maintenance is evident; impact is moderate to severe						
COMMENTS:	No data					
COMPONENT:	Remaining Life	RATING: 5	x	WEIGHT: 6	=	SCORE: 30
Life expectancy is <5 years; significant system deterioration						
COMMENTS:	No data					
COMPONENT:	Appearance	RATING: 3	x	WEIGHT: 6	=	SCORE: 18
Average construction; average interior and exterior appearance						
COMMENTS:	No data					

Heat Loss						
COMPONENT:	Insulation	RATING: 3	x	WEIGHT: 6	=	SCORE: 18
Insulation present, but not to current standards (installed prior to 2010)						
COMMENTS:	No data					
COMPONENT:	Glazing	RATING: No data				
No data						
COMMENTS:	No data					

TOTAL SCORE = 439 PREVIOUS BIENNIUM SCORE = (blank)

CONDITION: Needs Improvement/Renovation

BUILDING CONDITION RATING

Mt Adams (220-F1) STATE UFI: A03517 Main Campus (220A)

AREA: 10,539 SF BUILT: 1970 REMODELED: No PREDOMINANT USE: Faculty Office

CONSTRUCTION TYPE: Medium CRV/SF: $269 REPLACEMENT VALUE: $2,834,991

Primary Systems						
COMPONENT:	Structure	RATING: 3	x	WEIGHT: 8	=	SCORE: 24
Some cracking evident but does not likely affect structural integrity; Visible defects apparent but are non-structural						
COMMENTS:	Concrete columns and tilt-up panels; wood framing					
COMPONENT:	Exterior Closure	RATING: 3	x	WEIGHT: 8	=	SCORE: 24
Sound and weatherproof but with some deterioration evident						
COMMENTS:	Concrete panels w embedded stone; plaster soffits; cement-asbestos mansard tiles					
COMPONENT:	Roofing	RATING: 3	x	WEIGHT: 10	=	SCORE: 30
Some deterioration is evident in membrane and flashings; maintenance or minor repair is needed						
COMMENTS:	Hypalon single-ply membrane; membrane is beginning to deteriorate; needs restoration					

Secondary Systems						
COMPONENT:	Floor Finishes	RATING: 3	x	WEIGHT: 6	=	SCORE: 18
Some wear and minor imperfections are evident; beginning deterioration						
COMMENTS:	Carpet-new/old; carpet tile; ceramic tile					
COMPONENT:	Wall Finishes	RATING: 3	x	WEIGHT: 6	=	SCORE: 18
Aging surfaces but sound; some maintenance is required						
COMMENTS:	Gypsum board; concrete; ceramic tile					
COMPONENT:	Ceiling Finishes	RATING: 3	x	WEIGHT: 6	=	SCORE: 18
Some wear and tear; Minor staining or deterioration						
COMMENTS:	Acoustical ceiling tile and gypsum board					
COMPONENT:	Doors & Hardware	RATING: 3	x	WEIGHT: 6	=	SCORE: 18
Functional but dated						
COMMENTS:	Interior/exterior HM doors/frames-surface wear					

Service Systems						
COMPONENT:	Elevators	RATING: 5	x	WEIGHT: 6	=	SCORE: 30
No elevator access for upper floors						
COMMENTS:	2 story building					
COMPONENT:	Plumbing	RATING: 3	x	WEIGHT: 8	=	SCORE: 24
Fixtures are functional but dated; some leaks; maintenance required						
COMMENTS:	Galvanized, cast iron and copper piping; porcelain fixtures					
COMPONENT:	HVAC	RATING: 1	x	WEIGHT: 8	=	SCORE: 8
Equipment in good condition; easily controlled; serves all required spaces; All necessary spaces are adequately ventilated; A/C provided						
COMMENTS:	Rooftop packaged HVAC units-2008; electric duct reheat					
COMPONENT:	Electrical	RATING: 3	x	WEIGHT: 8	=	SCORE: 24
Service capacity meets current needs but inadequate for future						
COMMENTS:	600amp 480/208v					
COMPONENT:	Lights/Power	RATING: 3	x	WEIGHT: 8	=	SCORE: 24
Adequate work area illumination; adequate outlets for current use						
COMMENTS:	Surface mount and lay-in fluorescent lighting					

Safety Systems						
COMPONENT:	Life/Safety	RATING: 3	x	WEIGHT: 10	=	SCORE: 30
Generally meets codes for vintage of construction						
COMMENTS:						
COMPONENT:	Fire Safety	RATING: 3	x	WEIGHT: 10	=	SCORE: 30
Extinguishers and signed egress; no violations; no alarm or sprinklers						
COMMENTS:	New fire alarm panel in 2011					
COMPONENT:	Modifications	RATING: 3	x	WEIGHT: 7	=	SCORE: 21
Some modifications lack code compliance; HVAC service not fully considered during renovation						
COMMENTS:	Average workmanship					

Quality Standards						
COMPONENT:	Maintenance	RATING: 3	x	WEIGHT: 7	=	SCORE: 21
Routine maintenance is required; deferred maintenance is evident; impact is minor to moderate						
COMMENTS:	Concrete canopy support columns have numerous spalls that need to be patched					
COMPONENT:	Remaining Life	RATING: 5	x	WEIGHT: 6	=	SCORE: 30
Life expectancy is <5 years; significant system deterioration						
COMMENTS:	Interior design and layout inadequate for long-term use; should be replaced					
COMPONENT:	Appearance	RATING: 5	x	WEIGHT: 6	=	SCORE: 30
Poor to average construction, but very unattractive exterior and interior spaces						
COMMENTS:						

Heat Loss						
COMPONENT:	Insulation	RATING: 3	x	WEIGHT: 6	=	SCORE: 18
Insulation present, but not to current standards (installed prior to 2010)						
COMMENTS:						
COMPONENT:	Glazing	RATING: 5	x	WEIGHT: 6	=	SCORE: 30
Single glazing						
COMMENTS:						

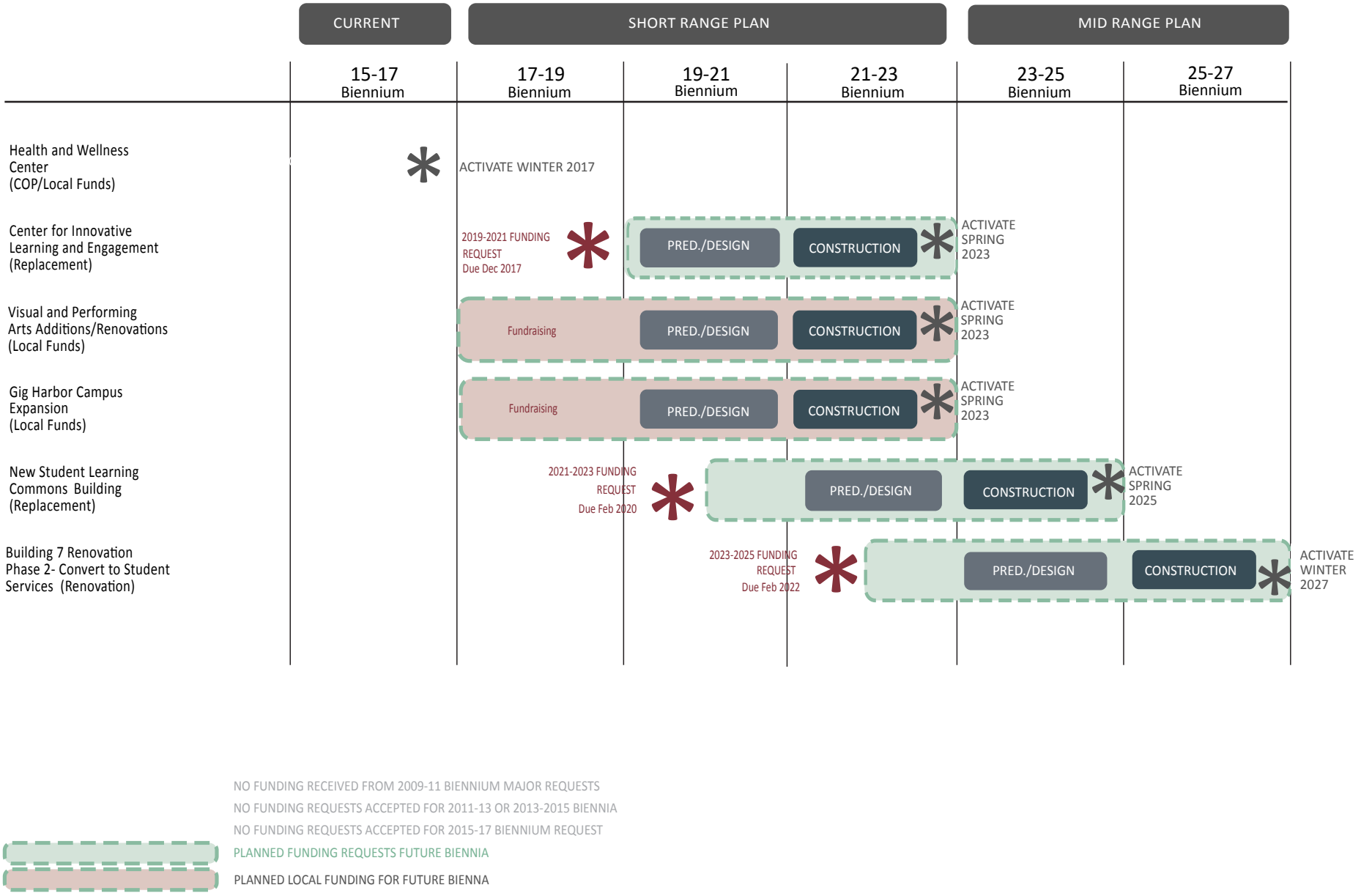
TOTAL SCORE = 470 PREVIOUS BIENNIUM SCORE = 458

CONDITION: Needs Improvement/Renovation

7.3. selected materials from master plan

TACOMA COMMUNITY COLLEGE - FACILITIES MASTER PLAN

12 Year Implementation Plan-Major Projects



NO FUNDING RECEIVED FROM 2009-11 BIENNIUM MAJOR REQUESTS

NO FUNDING REQUESTS ACCEPTED FOR 2011-13 OR 2013-2015 BIENNIA

NO FUNDING REQUESTS ACCEPTED FOR 2015-17 BIENNIUM REQUEST

PLANNED FUNDING REQUESTS FUTURE BIENNIA

PLANNED LOCAL FUNDING FOR FUTURE BIENNA

SHORT TERM PLAN 2015 - 2021

LEGEND

- PROPOSED PROJECTS
- EXISTING BUILDINGS
- FACILITY DEMOLITION
- LANDSCAPE OR EDGE IMPROVEMENT
- PARKING IMPROVEMENTS
- ROAD/VEHICULAR CIRC IMPROVEMENT

PROJECTS - COMPLETED

A. HEALTH & WELLNESS CENTER BLDG 20 ADDITION & RENOVATION

PROJECTS - PROPOSED

B. S.E. ENTRANCE REALIGNMENT & TRAFFIC SIGNAL

C. CENTER FOR INNOVATIVE LEARNING AND ENGAGEMENT (DESIGN & CONSTRUCTION - REPLACE BUILDINGS 10, 10B, & F1)

D. NEW STUDENT LEARNING COMMONS (DESIGN)

E. VISUAL & PERFORMING ARTS ADDITION (DESIGN)

F. CROSS CAMPUS PROMENADE (DESIGN)

G. CAMPUS GREEN DEVELOPMENT

H. EDGES & GATEWAY IMPROVEMENTS

I. REGIONAL STORMWATER FACILITY

J. ENVIRONMENTAL SERVICES CENTER WETLANDS RESEARCH PLATFORM

K. PARKING EXPANSION

NORTH

TCC Capital Development / Implementation Strategies

EARLIER PROJECTS (2011-14)

- The new Harned Center for Health Careers was the highest priority major capital project that the College established in the 2005 Master Plan. It was originally funded as a Growth project for development through the 2007-2013 biennia. A Predesign was produced in the 2007-09 Biennium and Design was completed in the 2009-11 biennium, then the state put the project on hold. The state approved construction for the 2013-15 biennium.
- The state put a moratorium on new capital project funding requests from 2009-2013. Because the Center for Health Careers received funding for construction in the 2013-15 biennium, the state did not place TCC on the list of colleges allowed to submit a Project Request Report (PRR) in February 2014 for the 2015-17 biennium.
- Construction of the Harned Center for Health Careers was compleed for Fall Quarter 2014.

EARLIER PROJECTS (2015-17 BIENNIUM)

- The Associated Students of TCC and the college Foundation partnered to commit a combination of COP and local funding for a new Health & Wellness Center. This addition and partial renovation to the Physical Education & Athletics Building was activated for the Spring of 2017.

ANTICIPATED SHORT & MID TERM MAJOR PROJECTS

The College has formulated a prioritized list of future capital projects from the analysis of enrollment trends, community needs, facility conditions, adjacencies of educational programs, capability of providing student services and learning resources. From these factors and many others, the following projects are in development for future funding. This 2014 update to the TCC Facilities Master Plan recommends the following high priority projects be developed through Project Request Reports (PRRs).

CURRENT

2019-21 Biennium Funding Request:

- New Center for Innovative Learning and Engagement – a combination of "growth" and "replacement", the project is planned to replace existing buildings 10, 10B & F1, and allow for growth of the Business, Humanities and Social Science programs. This is the College's highest capital priority.

NEXT STEPS

2021-23 Biennium Funding Request:

- New Student Learning Commons Building (SLC) – primarily in the "replacement" category, the project is planned to replace existing buildings 8, 19, L1 & L2. It also plans to move the existing Library from the south side of Building 7, allowing for its "Phase 2" renovation.

2023-25 Biennium Funding Request:

- Building 7 Renovation for Student Services (Phase 2) – primarily in the "renovation" category, the project is planned to consolidate the portion of Student Services activities that are currently in Building 14 into a single building. (The Phase 1 renovation on north side of Building 7 was performed in 2007 to house the other portion of Student Services activities.) The project is planned to replace building 14.

Needs Analysis

TEACHING AND LEARNING IN THE 21ST CENTURY COLLEGE

The most significant element in facilitating learning at the college is the interaction between learner and the learning facilitator. A variety of factors, including the physical environment, impacts the College's ability to ensure student learning.

Research in education best practices and student retention indicates the value of space that encourages active and collaborative learning both inside and outside of the formal classroom. Technology enhanced teaching and student engagement are critical to student success. **Implications for facilities include more versatile learning space, technology enabled classrooms and group study space.** Flexible instructional space to serve a variety of learning activities, and spaces outside classrooms for students to meet and learn during non-class times is vital for TCC to become a learning centered college. Physical space must be able to accommodate advanced and constantly changing instructional technology. **Learning communities and cross-disciplinary coordinated study courses have proven to be particularly powerful learning models, and require modern facilities that are capable of flexible teaching and learning styles.**

Moreover, professional/technical programs require physical spaces that accommodate lectures as well as active and collaborative learning experiences such as labs and virtual simulations. These learning spaces require modern classrooms for students to learn and demonstrate mastery of required technical skills. There is increasing need for tutoring in interactive settings. The physical & natural sciences have long utilized combinations of lecture rooms and intricately equipped laboratories and these spaces are growing more complex as technology improves the effectiveness and efficiency of teaching and learning. Both of these areas of higher education demand 21st century learning spaces that will increase the learner's ability to greatly synthesize and analyze very complex, high consensus information.

While lecture may have been the original didactic methodology of higher education, technology is increasingly changing the teaching-learning process. Organizational planning requires accommodation of classes with wired and wireless internet access, multi-media projection, interactive whiteboards, virtual reality/simulation software, and/or computer workstations. The physical infrastructure of an institution must support flexible and collaborative use of technology infused instructional spaces. Institutions must effectively plan for continual upgrading of instructional technologies without requiring costly and complex remodels and retrofitting.

During the past five years, TCC has promoted innovation and experimentation in teaching methodology and pedagogy to enhance the quality of student learning. In the last decade, TCC has aggressively implemented the use of technology to promote learning, expand student services, and facilitate administrative work. The interface of learning and technology is critical to addressing the new, global economy.

Humanities, Social Sciences and Business Education

Emerging competencies in today's workplace are increasingly interdisciplinary and reliant upon both technology and collaboration. In recognition of these shifts, Tacoma Community College is prioritizing the next capital budget request to be a new Center for Innovative Learning and Engagement. This project will accomplish three goals related to instruction:

- Co-locate humanities, business, and social sciences courses to create synergistic learning opportunities.
- Create flexible, technology laden spaces that model contemporary workspaces and encourage collaboration.

- Bridge emerging conceptual and technical competencies in a location that allows business and music students interested in careers in the creative industries to access necessary instructional spaces to complement the laboratory and studio spaces housed elsewhere on campus.

The Center for Innovative Learning and Engagement will consist of general use and specialized classrooms for instruction in the areas of the Humanities, Business, Social Science, student laboratory space, departmental library and faculty offices.

TCC has a successful Business transfer program. Faculty teach courses in Accounting, Economics, Statistics, Business Law, and Entrepreneurship to students whose plan is transfer to a four-year college or university business program. Co-locating these courses and faculty offices in one building with business, humanities and social sciences would allow business transfer students to work as a cohort and to work collaboratively with students in other disciplines.

Humanities are an essential component of nearly every TCC student's experience at the College. They form a bridge across cultures, socio-economic backgrounds, age differences and all other aspects that make TCC a rich learning community. Business is one of TCC's most popular programs of study. Humanities and business programs represent 20 percent of the FTE capacity of the College, and at least one humanities class is required for nearly every degree and/or certificate offered by the college.

Humanities and Business courses are currently taught in 10 different campus buildings. Because of the relatively few spaces available, the utilization rate of instructional spaces by the Humanities Division is 78%, while the typical rate for state community colleges of TCC's size is 55-60%. These conditions limit the ability of the Humanities, Arts, and Social Sciences Division to offer courses at appropriate times for students, many of which are required for their degree programs.

In recent years, growth in "high demand" programs has been accommodated in new campus facilities. The anticipated growth of 850 FTE over the next 10 years will impact Humanities, Social Sciences and Business courses more severely than all others. For these reasons more instructional space is needed for Humanities, Social Sciences and Business courses.

Spaces in many of the buildings that house Humanities and Business courses lack the needed media technology and equipment for presentations that allow a rich educational experience. While the Humanities division was an early and vigorous adopter of hybrid/online learning, professional equipment is lacking to provide training in media and communications.

Humanities programs are intimately linked to the social learning that takes place on campus. These programs represent the diversity that helps students from various backgrounds feel as if they have a connection to the College community.

Humanities, Social Science and Business programs are links to other educational pathways and opportunities in the community. TCC has strong ties to other educational and cultural resources in the Tacoma/Pierce County Region. A new integrated facility would allow TCC to be a hub in that network.

Informal Study - Library / Learning Resource Center and Active Learning

The Library continues to be an important place on community college campuses. However, the community college library/learning resource center has experienced greater change over the last 30 years than most other campus facilities. Buildings designed for quiet study and collections of print materials have had to be adapted for both informal collaborative study and makerspace workstations. As student needs have changed, the academic support services needed to support them have changed too. The Tacoma Community College Learning Resource Center now incorporates the College's Writing and Tutoring Center, Reading Lab, Computer-Assisted Lab, Language Lab, and Teaching Learning Center. The Math Advising Resource Center was relocated to another area of campus because of space limitations in the college's LRC.

The current Library / Learning Resource Center has adapted to accommodate:

- The needs of developmental writing and math students
- A rapidly growing immigrant population
- Students choosing alternate course delivery modes, including hybrid and online.
- The rapidly increasing adoption of technology in all delivery modes
- The increasing availability of digital information
- Integrated academic support functions

The current facility is a poor fit for these changing needs. Minor renovations have been unable to keep up with the growing need for:

- Additional data ports
- Workstations with wired network access
- The number and quality of public access computers
- Quality and variety of study spaces including group study rooms
- Instructional classrooms
- Media production facilities for students and faculty
- Faculty development

The Library / Learning Resource Center needs to provide the critical infrastructure for providing learning in traditional and rapidly changing delivery modes to a broadly diverse student population. The Library / Learning Resource Center is also a critical component of college retention efforts. Developmental and non-traditional students require intensive and comprehensive learning support services. As the Library adapted and became the Learning Resource Center, so can the Learning Resource Center become a Makerspace for research and informal study that will serve students needs for decades to come.

After the Center for Innovative Learning and Engagement, Tacoma Community College is planning the next capital budget request to be a new Student Learning Commons that will integrate and expand the library and learning support services that are currently located in decentralized campus facilities.

TCC's changing student demographics indicate that growing numbers of students need learning support services to become "college-ready" and gain the skills to achieve certificates or degrees. Internal research conducted by the college demonstrates that students' inability to transition through "gatekeeper courses" at the beginning of their college experience severely limits their ability to graduate and to contribute to Washington's technology intensive, globally competitive economy. Learning support services can make the difference between success and failure for a large and increasing portion of our student population.

CAPITAL ANALYSIS MODEL FINDINGS

The Capital Analysis Model (CAM) for Washington State Community and Technical Colleges evaluates each Community College against a prototypical model for area allocated to educational and administrative functions based on student FTE. The State Board of Community & Technical Colleges conducted a "preliminary" CAM analysis update in April 2017 for 2019-21 project requests. Findings from the 2017 CAM are summarized here.

Between 2008-09 and 2013-14, TCC's total student FTE's grew from 6,350 to 7,333 – a 15% increase over the past five years. (This includes state funded, contracted and student funded FTE's.) Between 2012-13 and 2013-14, TCC's state-funded FTE's grew from 5,928 to 6,120 – a 3% increase over the past year. The growth projected between the Fall of 2014 and Fall 2024 is 253, a 5% growth from prior years. This increase resulted in full utilization of college instructional space, maximum enrollment in many courses, and increased demand on instructional and student services staff.

The CAM analysis forecasted significant shortages at Tacoma Community College in several types of "Instructional" spaces on campus, including Basic Skills Labs, Computer Labs, Library/LRC (Learning Resource Center), Physical Education and Faculty Offices. Overall, the state's CAM analysis for TCC forecasted there will be a 35% shortage of total "Instructional" space on campus in 2026 (as a percentage of the CAM allowance). To address these needs, these types of spaces have been planned by the college to be included in future capital project funding requests to the state, for example, a new Center for Innovative Learning and Engagement and a new Student Learning Commons Building.

The CAM analysis also forecasted a major shortage in space designated as "Student Center & Related". To help address the shortage of Physical Education and Student Center-related types of space, the Associated Students of TCC (ASTCC) and the college Foundation have recently partnered to commit a combination of COP and local funding for a new Health & Wellness Center. This addition and partial renovation to the Physical Education & Athletics Building 20, activated in 2017 has sufficed some of this need.

The lack of space in buildings for the size of the student body translates to a shortage of technical and collaborative learning spaces on campus. Student services and learning support services are also undersized and housed in various locations across campus, creating challenges to access of these services for students.

Resource Deficiencies and Facility Needs

The 2017 CAM projects a Total Instructional Shortage of 64,111 ASF in 2026

The 2017 CAM projects a Student Service Shortage: 38,781 ASF in 2026.

ASF stands for Assignable Square Footage, which is a measure of the space assigned to the uses that a building is designed to house. Classrooms, labs, offices, storage, library functions or fitness areas are examples of area that would be considered Assignable Square Footage. The "gross area" of a building includes the ASF and includes additional square footage for corridors, elevators, restrooms and mechanical rooms. "Assignable square footage" is generally 55% to 65% of the total "gross square footage" of a building.

The 2017 CAM projects a Total CAM Shortage of 1143,908 ASF combining the shortages of instructional area and area for student services. Vocational programs have additional need and the CAM does not account for the additional space requirements of vocational programs.

As proposed in this Facilities Master Plan, a new Center for Innovative Learning and Engagement and a new Student Learning Commons will contribute to alleviating these shortfalls if they are funded. The additional FTE capacity and needed resources will provide a comprehensive and integrated set of learning support services with leading edge technology and close proximity to the majority of activities on campus.

Many students come to college unprepared for the rigors of college learning. Providing effective developmental education for these students is an important part of the college's mission, TCC has improved the year-to-year student retention rates in recent years, but it is a significant challenging the College continues to address. Further progress requires better learning support facilities, including tutoring/mentoring resources and study space.

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7.4.1. CAM analysis

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

All FTE *	**FALL 2014**	**FALL 2024**	**Growth**	**Percent**	**FTE/Year**
Academic	3,618	3,783	165	5%	17
Vocational	980	1,025	45	5%	4
Basic Skills/Dev Ed	928	971	43	5%	4
TOTAL	**5,526**	**5,779**	**253**	**5%**	**25**

Type 1 FTE	**FALL 2014**	**FALL 2024**	**Growth**	**Percent**	**FTE/Year**
Academic	2,665	2,787	122	5%	12
Vocational	795	832	37	5%	4
Basic Skills/Dev Ed	571	597	26	5%	3
TOTAL	**4,031**	**4,216**	**185**	**5%**	**18**

Type 2 FTE	**FALL 2014**	**FALL 2024**	**Growth**	**Percent**	**FTE/Year**
Academic	3,287	3,437	150	5%	15
Vocational	815	853	38	5%	4
Basic Skills/Dev Ed	814	851	37	5%	4
TOTAL	**4,916**	**5,141**	**225**	**5%**	**23**

* 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: **Tacoma**
TYPE: **Community College**

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	54,443		54,443	40,799	0	13,644	0%
BASIC SKILLS LABS (open)	A2	2	13,154		13,154	23,488	10,334	0	44%
SCIENCE LABS.	B1	1	22,133		22,133	26,477	4,344	0	16%
COMPUTER LABS. (open)	B2,B4,B5	2	12,270		12,270	32,995	20,726	0	63%
ART	C1	2	12,636		12,636	6,000	0	6,636	0%
MUSIC	C2	2	3,386		3,386	4,000	614	0	15%
DRAMA	C3	2	0		0	5,000	5,000	0	100%
Subtotal Instruction			**118,022**	**0**	**118,022**	**138,758**	**41,017**	**20,280**	**30%**
AUDITORIUM	C4	2	4,182		4,182	9,000	4,818	0	54%
LIBRARY/LRC	E1	2	25,887		25,887	66,142	40,255	0	61%
PHYS. EDUCATION	H3	2	23,332		23,332	42,370	19,038	0	45%
FACULTY OFFICE	F1	2	49,605		49,605	43,945	0	5,660	0%
Subtotal Instructional Support			**103,006**	**0**	**103,006**	**161,457**	**64,111**	**5,660**	**40%**
Total Instructional Space			**221,028**	**0**	**221,028**	**300,215**	**105,128**	**25,940**	**35%**
ADMIN./STU.SERV.	G1,G2	2	43,543		43,543	36,784	0	6,759	0%
STU.CTR.& RELATED	H1,H2	2	25,510		25,510	55,089	29,579	0	54%
C.STORES/MAINT.	I1	2	23,846		23,846	26,117	2,271	0	9%
CHILD CARE	H4	2	10,548		10,548	17,479	6,931	0	40%
Subtotal Student Service/Other			**103,447**	**0**	**103,447**	**135,469**	**38,781**	**6,759**	**29%**
TOTAL CAM SPACE			**324,474**	**0**	**324,474**	**435,684**	**143,908**	**32,699**	**33%**

TOTAL ASSIGNED	550,692
CAM/TOT. ASSIGN.	59%

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7.4.2. TCC strategy for reducing greenhouse gas emissions

Appendix – Best Practices to Reduce Greenhouse Gas Emissions
TCC Center for Innovative Learning and Engagement

System / Best Practices	**Included in Project?**
Mechanical	
Solar water heating	
Above code HVAC system efficiency	Yes
Use natural gas instead of electricity for heating	Yes
Geothermal heat pump	
Post occupancy commissioning	Yes
Interconnectivity of room scheduling in 25Live and HVAC controls	Yes
Electrical	
Photovoltaic energy systems	
Time of day and occupancy programming of lighting	Yes
Efficient lighting	Yes
Envelope	
Minimize building surface area for necessary floor area	Yes
Roofing materials with high solar reflectance and reliability	Yes
Green roofs to absorb heat and act as insulators for ceilings	Yes
Site	
Orient building for natural light and reduced heating and cooling loads	Yes
Trees and vegetation planted to directly shade building	Yes
Paving materials with high solar reflectance, enhanced water evaporation, or otherwise designed to remain cooler ore require less lighting than conventional pavements	Yes
Increase transportation choices – drive, walk, bike, or public transit	Yes
Total number of these best practices included in project:	13

Tacoma Community College

Strategy for Reducing Greenhouse Gas Emissions

6-23-2011

1. Background

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 lead by example in reducing 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.)

The Act, codified in RCW 70.235.050-070 directed agencies to annually measure their greenhouse gas emissions, 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):

> *By June 30, 2011, each state agency shall submit to the department a strategy to meet the requirements in subsection (1) of this section* [greenhouse gas reduction targets]. *The strategy must address employee travel activities, teleconferencing alternatives, and include existing and proposed actions, a timeline for reductions, and recommendations for budgetary and other incentives to reduce emissions, especially from employee business travel.*

Starting in 2012 and every two years after each state agency is required to report to Ecology the actions taken to meet the emission reduction targets under the strategy for the preceding biennium.

Sustainability

Tacoma Community College Custodial Department recycles all of the cardboard, paper, and aluminum cans that are produced by student and staff activities. Unusable books from the bookstore are recycled as well.
The Facilities Department Recycles all scrap metals, batteries, oil and fluorescent tubes that are produced from maintenance activities.
The Information Systems recycle all old computers and uses only recycled paper for the print shop activities, all college photocopiers use only recycled paper. All of the computing and office equipment on campus has been rated Energy Star for 4 or 5 years, older equipment has been phased out.
The Art Department melts and pours aluminum or brass into wonderful new sculptures.
The new Annette Weyerhaeuser Early Learning Center achieved LEED Gold.
The new Science Building has a 24 KW Solar installation on the roof.
Recent remodel in building 7 has taken advantage of skylights with daylighting controls, as well as the new Early Learning Center and Science building.
TCC currently has 8 all-electric vehicles used by various departments for on campus service work.

2. Greenhouse Gas Emissions from Agency Operations

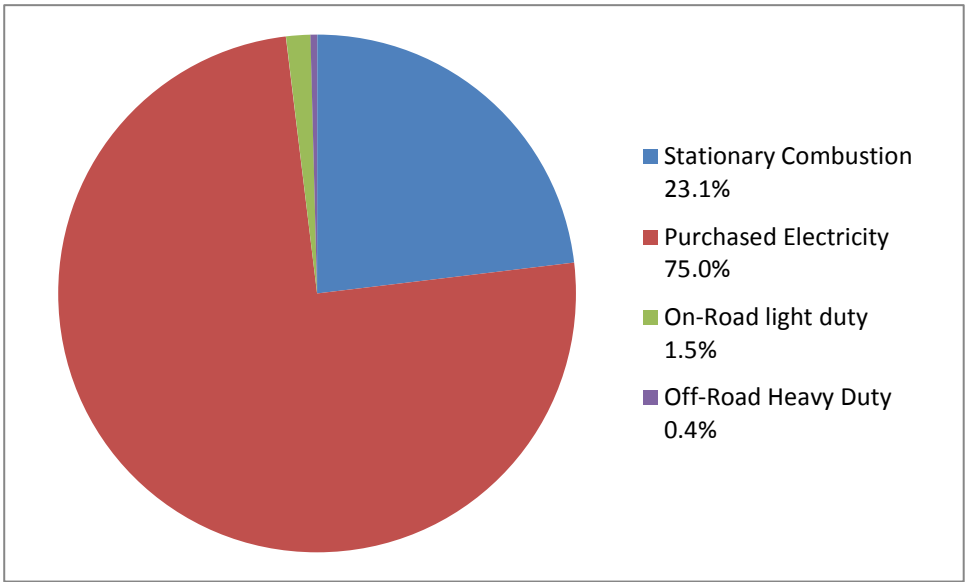
A. Direct sources of GHG emissions from building and fleet energy use

Year	Greenhouse Gas Emissions (metric tons carbon dioxide equivalent, $MTCO_2e$)
2005 (actual)	3944.3
2009 (actual)	4681.1
2020 (projected)	5449.8
2035 (projected)	6322.8

The 2005 figures do not reflect the energy consumption of the new Science Building because it did not exist in 2005. The old science building that was demolished represented only a fraction of the square footage and energy consumption of the new replacement building.
TCC Expects to continue to grow with the addition of the new Allied Health Building currently awaiting funding.
It will be very difficult for TCC to reduce energy consumption and subsequent Green House Gas Emissions to levels below 2005 figures due to these changes and growth in size.

B. Main sources of direct GHG emissions for 2009

Emissions of 2009 year MTCO2e, including the new science building, excluding employee and business travel.



C. Greenhouse Gas Reduction Targets, from the GHG calculator provided

Year	GHG Reduction Target ($MTCO_2e$)
2020 (15% below 2005)	**3352.7**
2035 (36% below 2005)	**2524.4**
2050 (57.5% below 2005)	**1676.3**

D. Level of GHG Reduction Needed to Meet Targets

Year	Amount of GHG Reduction Needed to meet Targets ($MTCO_2e$)
2020	**2097.1**
2035	**2970.2**

3. Overarching Strategies (if applicable)

The agency identified several cross-cutting strategies to help in reducing GHG emissions:

- Evaluate Green technology for on and off campus vehicles and continue to utilize existing fleet of all electric service vehicles for on-campus use.
- Consolidate classes during off-peak hours into a minimum number of buildings.
- Consolidate class hours into a more compact time frame to allow longer unoccupied times.
- Turn off all staff and student-used computers when not actually in use. Educate staff and students regarding the cost per hour incurred. Use power management settings and shut down features on computers.
- Manage non-essential or unused lighting via a reasonable number of occupancy sensors and by education of staff and students.
- Install LED lighting when technology and cost improve to allow a favorable short term payback.
- Initiate a coordinated staggered start algorithm within DDC systems for HVAC to limit peak electrical demand charges.
- Increase the bi-annual gas boiler tune up frequency from two years to annual.
- Increase teleconference.
- Continue with existing HVAC controls based energy conservation measures in the Science building.
- Initiate HVAC controls based energy conservation measures such as daily global temperature set point reset.

4. Greenhouse Gas Reduction Strategies for Direct Emission Sources (Building and Fleet Energy Use)

A. Strategies and Actions with Low to No Cost

Strategies and Actions	GHG Reduction Estimate Annual ($MTCO_2e$)	Upfront Cost Estimate ($)	Payback Period Estimate (Years)	Date to Imple-ment Estimate
Building Energy Use				
• Increase the bi-annual gas boiler tune up frequency from two years to annual.	1	$3,000	2	2011
• Initiate a coordinated staggered start algorithm within DDC systems for HVAC to limit peak electrical demand charges	1	$0.0	0	2011
• Manage non-essential or unused lighting via a reasonable number of occupancy sensors and by education of staff and students.	1	$3,000	10	11-13 biennium
• Consolidate classes during off-peak hours into a minimum number of buildings.				
• Turn off all staff and student-used computers when not actually in use. Educate staff and students regarding the cost per hour incurred. Use power management settings and shut down features on computers.				
• Continue with existing HVAC controls based energy conservation measures in the Science building.				
• Initiate HVAC controls based energy conservation measures such as daily global temperature set point reset.				
Fleet Energy Use				
TOTALS:				
	3	$6,000	N/A	N/A

B. Strategies and Actions with Payback up-to Twelve Years

Strategies and Actions	GHG Reduction Estimate ($MTCO_2e$)	Upfront Cost Estimate ($)	Payback Period Estimate (Years)	Date to Imple-ment Estimate
Building Energy Use				
• Install LED lighting when technology and cost improve to allow a favorable short term payback.				
Fleet Energy Use				
TOTALS:			N/A	N/A

C. Strategies and Actions with High Cost and Long Payback (more than 12 years or other time period determined by your agency)

Strategies and Actions	GHG Reduction Estimate ($MTCO_2e$)	Upfront Cost Estimate ($)	Payback Period Estimate (Years)	Date to Imple-ment Estimate
Building Energy Use				
Fleet Energy Use				
TOTALS:			N/A	N/A

5. Greenhouse Gas Reduction Strategies for Other Emission Sources (Employee Business Travel and Commuting)

The agency also quantified greenhouse gas emissions from employee commuting and business travel. GHG emissions from these sources were not included in the 2005 baseline because of insufficient data, and are therefore are not included in the reduction targets. Also, the agency has less operational control over these sources. The agency evaluated these sources separately in this strategy and identified reduction strategies for these sources.

Source of GHG Emissions	GHG Emissions, 2009 (or most recent year) ($MTCO_2e$)
Business Travel	92.4
Employee Commuting	1,668

Strategies and Actions	GHG Reduction Estimate ($MTCO_2e$)	Upfront Cost Estimate ($)	Payback Period Estimate (Years)	Date to Imple-ment Estimate
Employee Business Travel				
Employee Commuting				
TOTALS:			N/A	N/A

6. Additional Sustainability Strategies and Actions (if applicable)

Strategies and Actions	Co-benefits for GHG Reduction	Implementation Date Estimate
Continue to add Drought tolerant plantings where possible	Water conservation	ongoing
Increase the use of mulch for water retention in planting areas	Water conservation	ongoing

7. Next Steps and Recommendations

To implement this plan TCC will pursue the HVAC and Boiler actions immediately and will monitor the effectiveness of these efforts.

TCC Will attempt on an ongoing basis the consolidation of class usage.

TCC will promote education and outreach regarding energy usage.

TCC will evaluate Green Technology for vehicles.

TCC's travel budget is less than 1% of it's total budget. Due to the state budget reduction in excess of 18% TCC cannot provide budgetary incentives. However, when possible, TCC will encourage employees to teleconference in lieu of travel.

For additional information contact

Clint Steele
Director, Facilities Department
Tacoma Community College
253-566-5207

Dave Moffat
TCC Maintenance lead
253-566-6047
dmoffat@tacomacc.edu

7.4.3. space utilization

Fall 2016 Utilization - used in Overarching Criteria for all projects. See Appendix C.

	Contact Hours	Work-stations	Fall 2016 Utilization
Classes	46,448.00	2,546	18.24
Labs	7,685.92	486	15.81
Campus	54,133.92	3,032	17.85

Future Utilization - use for projects with net **New Area**. See Appendix D.
State Board enrollment projections are available here -
http://www.sbctc.edu/colleges-staff/programs-services/capital-budget/capital-budget-development.aspx

4,031	Fall 2016 Type 1 FTE
4,216	Fall 2026 Type 1 FTE
185	Net New Type 1 FTE

-	This project net new Classroom workstations
292	This project net new Laboratory workstations
292	Net new workstations in project

	Contact Hours	Work-stations	Future Utilization
Classes	46,448.00	2,546	18.24
Labs	13,235.92	778	17.01
Campus	59,683.92	3,324	17.96

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7.4.4. letters of support

PACIFIC LUTHERAN UNIVERSITY
OFFICE OF THE PROVOST
HAUGE ADMINISTRATION BUILDING
12180 PARK AVENUE SOUTH
TACOMA, WA 98447

P 253.535.7126
F 253.536.5103

www.plu.edu

December 11, 2017

Dear Reviewers,

Pacific Lutheran University seeks to educate students for lives of thoughtful inquiry, service, leadership and care—for other people, for their communities and for the Earth. Pacific Lutheran University purposefully integrates the liberal arts, professional studies and civic engagement. Such purposeful intention is also present in Tacoma Community College's (TCC) proposal for a new Center for Integrative Learning and Engagement. PLU is pleased to support this innovative new building to advance student success in Pierce County.

PLU and TCC have enjoyed a deep partnership in support of student learning and Tacoma-Pierce County. TCC is one of PLU's top transfer institutions and recent conversations are leading to enhanced pathways, particularly in the humanities. Once arriving at PLU, TCC transfer students perform well due in part to the quality of instruction they received while at TCC.

The Center for Integrative Learning and Engagement will provide students with contemporary learning spaces that allow the college faculty to broaden its reach to students in a variety of disciplines using collaboration, simulation, demonstrations, and artifact installations that will enhance learning outcomes. PLU welcomes this additional emphasis that will establish enhanced quality in an instructional building that supports contemporary, authentic, and collaborative learning in ways that will even better prepare TCC's transfer students.

PLU looks forward to continued partnerships with TCC and an opportunity to extend our mutual interests through the Center for Integrative Learning and Engagement.

Sincerely,

Joanna Gregson
Acting Provost
Pacific Lutheran University

TACOMA
ART
MUSEUM

1701 Pacific Avenue
Tacoma, WA 98402

T 253-272-4258
F 253-627-1898
www.TacomaArtMuseum.org

December 11, 2017

Dear Reviewers,

Consistent with its vision to be a national model for regional museums by creating a dynamic museum that engages, inspires, and builds community through art, the Tacoma Art Museum (TAM) is pleased to support Tacoma Community College's (TCC) proposal for a new Center for Integrative Learning and Engagement.

TAM and TCC have enjoyed a deep partnership in support of student learning in the arts and humanities. As a Membership for University Student Enrichment (MUSE) member, TCC has provided access and support for TCC students individually and as part of organized classes. Student use of TCC's MUSE membership has been substantial, in large part due to the commitment of TCC art and humanities faculty to support appreciation for and competence in artistic endeavors.

The Center for Integrative Learning and Engagement will provide students with contemporary learning spaces that allow the college faculty to broaden its reach to students in a variety of disciplines using collaboration, simulation, demonstrations, and artifact installations that will enhance learning outcomes. TAM welcomes this additional emphasis that will establish museum like qualities in an instructional building, promoting community through art in the same way that TAM envisions.

In addition, TCC's proposal capitalizes on important relationships between art, humanities, and business. These relationships are well-known in Tacoma, known for both its art production and broad support for art appreciation and acquisition. In short, TCC is modeling the community that both TAM and TCC serve.

TAM looks forward to continued partnerships with TCC and an opportunity to extend our mutual interests through the Center for Integrative Learning and Engagement.

Sincerely,

Samantha Kelly
Director of Education and Community Engagement
Tacoma Art Museum

UNIVERSITY of WASHINGTON | TACOMA
ACADEMIC AFFAIRS

December 11, 2017

Dear Reviewers,

Consistent with our mission as an a urban-serving university providing access to students in a way that transforms families and communities, the University of Washington Tacoma is pleased to support Tacoma Community College's (TCC) proposal for a new Center for Integrative Learning and Engagement.

UW Tacoma and TCC have enjoyed a deep partnership in support of student learning and Tacoma-Pierce County. TCC is UW Tacoma's top transfer institution and more TCC students transfer to UWT than to any other school. Many of our graduates began their academic careers at TCC preparing for transfer in business, the humanities, STEM and other fields. Once arriving at UW Tacoma, TCC transfer students perform well due not only to the quality of instruction they received at TCC, but because of the collaboration between our staff and faculty to provide clear pathways and targeted advising. We are very proud of this partnership and continually explore ways to strengthen it through programs that may serve as models for transfer pathways.

The Center for Integrative Learning and Engagement will provide students with contemporary learning spaces that allow the college faculty to broaden its reach to students in a variety of disciplines using collaboration, simulation, demonstrations and artifact installations that will enhance learning outcomes. UW Tacoma welcomes this innovative approach to enhance the quality of learning in an instructional building through authentic and collaborative approaches to learning, which will serve to prepare TCC's transfer students even better.

I look forward to continued partnerships with TCC and an opportunity to extend our mutual interests through the Center for Integrative Learning and Engagement. TCC students are UW Tacoma students. Investments like this serve to not only better prepare students, the vast majority of whom who stay in the South Puget Sound, but they also increase the number of students who achieve their goal of earning a degree, which will raise the region's and the state's level of educational attainment.

Sincerely,

Dr. Jill Purdy
Interim Executive Vice Chancellor for Academic Affairs
University of Washington -Tacoma

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Box 358430 1900 Commerce St Tacoma, WA 98402
253.692.5646 fax 253.692.5643 tacoma.uw.edu

7.4.5. photos

Photos of Existing Buildings

Building 10 -West

Building 10B - South

Building F1 - South

Building 10 – Janitor Closet

Building 10 – Service Corridor

Building 10 – Leak

Building 10 – Classroom Leak

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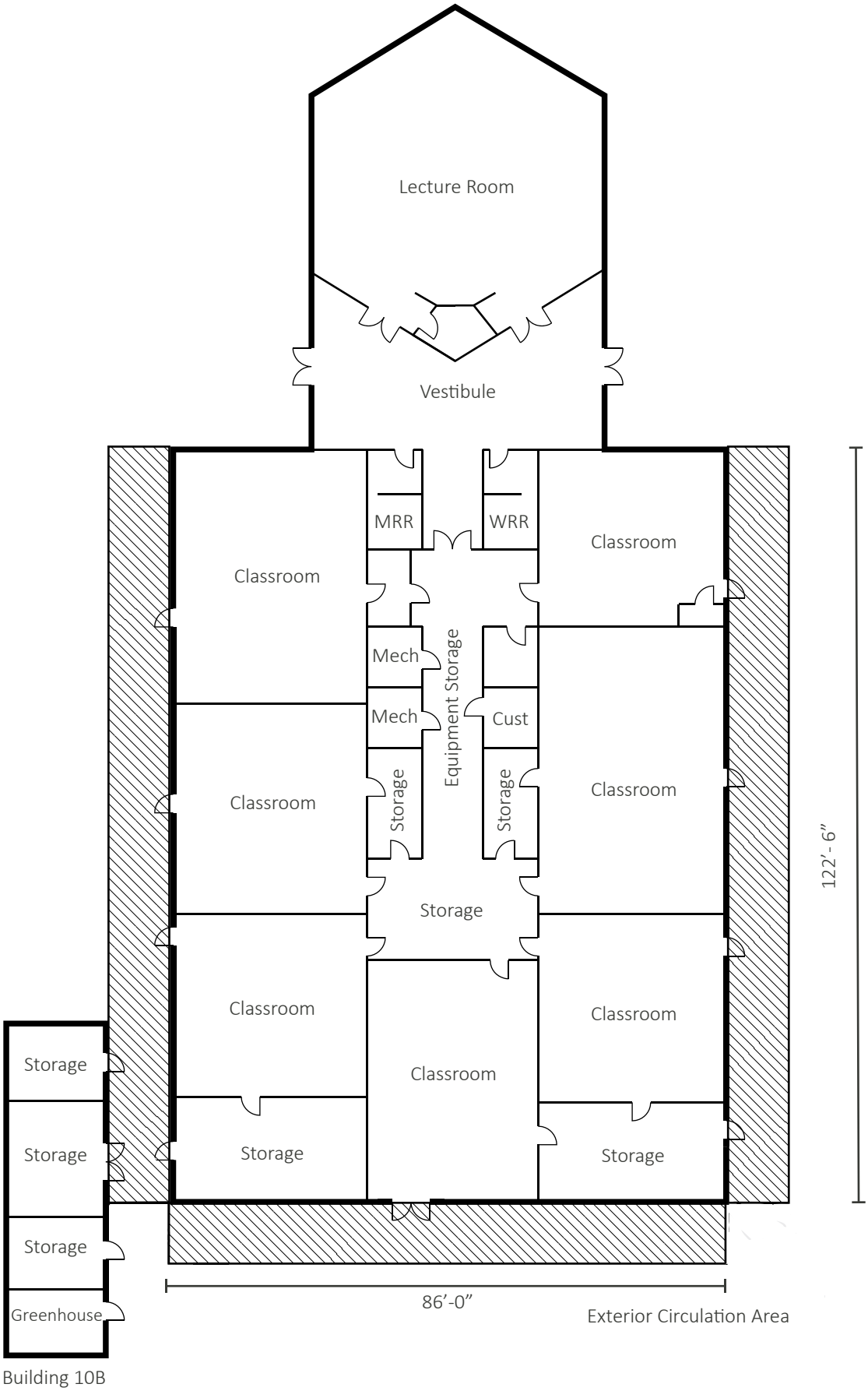
7.4.6. exterior circulation plan



EXTERIOR CIRCULATION PLAN BUILDING 10 & 10B

CENTER FOR INNOVATIVE LEARNING AND ENGAGEMENTPROJECT REQUEST REPORT
TACOMA COMMUNITY COLLEGE
20 DECEMBER 2017

McGRANAHAN architects

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6501 South 19th Street, Bldg. 12
Tacoma, WA 98466-6100
Phone: 253.566.5100

Office of the President

December 14, 2017

To whom it may concern,

The Tacoma Community College Board of Trustees believe that the future Center for Innovative Learning and Engagement increases and improves program access, efficiency, service, and simplifies space relationships for all students. In addition, we believe that the project serves a critical need for all students on campus.

The Tacoma Community College Board of Trustees is committed to providing $1,000,000 in local funds for this project. The matching funds are currently available on December 20, 2017.

Sincerely,

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7.4.8 classroom pods

Photos of Interactive Learning Labs

Small Group Interactive Learning Pods

Small Group Collaboration Learning Pods

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7.4.9 enrollment and facility inventory

Enrollment and Facility Inventory Summary for Project Identification Exercise

	Fall 2016 and 2026 Enrollment			2016 Owned GSF			Net New GSF in Pipeline	(2016 GSF + Pipeline) / 2026 FTE
COLLEGE	2016	2026	Increase	Community	Technical	Total		
Bates	3,017	3,209	6%		695,936	695,936	5,141	218
Bellevue	11,291	12,034	7%	1,143,656		1,143,656		95
Bellingham	2,249	2,416	7%		342,332	342,332		142
Big Bend	2,050	2,379	16%	482,329		482,329	24,591	213
Cascadia	2,985	3,240	9%	165,506		165,506	66,100	71
Centralia	2,279	2,379	4%	337,798		337,798	23,568	152
Clark	7,918	8,468	7%	862,683		862,683	69,000	110
Clover Park	3,458	3,647	5%		659,982	659,982		181
Columbia Basin	5,476	6,554	20%	728,830		728,830	51,335	119
Edmonds	6,440	7,023	9%	675,537		675,537	69,910	106
Everett	6,531	7,120	9%	820,215		820,215	69,630	125
Grays Harbor	1,746	1,775	2%	366,983		366,983	34,905	226
Green River	8,041	8,572	7%	817,818		817,818		95
Highline	7,303	7,802	7%	551,173		551,173	7,029	72
Lake Washington	3,116	3,331	7%		491,794	491,794		148
Lower Columbia	2,898	2,937	1%	503,058		503,058		171
Olympic	5,273	5,522	5%	522,491		522,491	50,498	104
Peninsula	1,766	1,811	3%	296,186		296,186	1,485	164
Pierce Fort Steilacoom	4,661	4,929	6%	476,083		476,083	18,474	100
Pierce Puyallup	3,253	3,502	8%	243,356		243,356		69
Renton	3,671	3,903	6%		445,549	445,549	17,598	119
Seattle Central w/ SVI	6,374	6,785	6%	1,154,812		1,154,812	12,732	172
Seattle North	4,597	4,914	7%	655,288		655,288		133
Seattle South	5,150	5,492	7%	501,877		501,877	47,542	100
Shoreline	4,787	5,120	7%	547,344		547,344	4,982	108
Skagit Valley	3,982	4,250	7%	594,796		594,796		140
South Puget Sound	4,150	4,593	11%	592,917		592,917		129
Spokane	8,326	8,786	6%	1,139,309		1,139,309	6,969	130
Spokane Falls	4,805	4,981	4%	752,714		752,714	22,419	156
Tacoma	5,526	5,778	5%	561,721		561,721		97
Walla Walla	2,949	3,087	5%	604,337		604,337		196
Wenatchee Valley	3,263	3,470	6%	405,769		405,769	41,831	129
Whatcom	3,933	4,247	8%	325,676		325,676	64,747	92
Yakima Valley	4,235	4,646	10%	899,842		899,842		194
System	**157,501**	**168,704**	**7%**	**17,730,104**	**2,635,593**	**20,365,697**	**710,486**	**125**

System Averages	Community	Technical	Total
2016 GSF/FTE	125	170	129
(2016 GSF + Pipeline) / 2026 FTE	121	161	125

Enrollment includes all fund sources but exclude DOC and Community Service.
Enrollment projection by SBCTC is based on 2016 participation rates and OFM population projections.

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