



# CENTER FOR VOCATIONAL AND TRANSITIONAL STUDIES (CVTS)

Lower Columbia College

## Predesign Report

OFM PROJECT NO. 40000106

DES PROJECT NO. 2021-224

MARCH 23, 2022



LOWER COLUMBIA COLLEGE

NOTICE

ADMISSIONS

ADMISSIONS

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- INSPECTION ROOM
- PRIVATE OFFICE

WELDING

- WELDING/FABRICATION LABORATORY
- WELDING CLASSROOM
- WELDING STORAGE-TOOL ROOM
- SHARED OFFICE
- PRIVATE OFFICE
- STUDENT LOCKERS

IT

- ELECTRICAL ENGINEERING LAB
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- SERVER LAB
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# 1.0 EXECUTIVE SUMMARY

Historically, changes in the Washington state unemployment rate track relatively close to the U.S. trend, with the rates between the state and the U.S. widening during economic downturns. However, Washington's average wages and per capita personal income both trend higher than the United States, and have almost every year since the early 1990s.

The wage and salary of manufacturing employment in Washington state has been above the national average since the early 80s and is currently almost 40% higher than the national average. Cowlitz County is consistently among the counties that have the highest rate of manufacturing employment in the state, and the Cowlitz County Economic Development Council predicts that "more than 30,000 manufacturing jobs in the SW Washington-Portland region will need to be filled in the next decade." The unemployment rate for Cowlitz County is higher, and the income level is lower than both the national and state averages. This may be due, in part, to the fact that educational attainment in Cowlitz County is well below the state average.

Lower Columbia College is excited to help bridge the gap between the residents of Cowlitz and Wahkiakum counties and the employment opportunities that exist in the southwest Washington region by preparing students for these high skills, family wage jobs. A full one-third of the students enrolled in LCC are working on college preparatory skills through the Transitional Studies programs, including Adult Basic Education (ABE), English as a Second Language (ESL), Integrated Basic Education and Skills Training (I-BEST), General Education Development (GED), and Career Education Options (CEO). The college's professional-technical programs prepare students for careers in machine trades, manufacturing, welding, and information technology.

However, the existing facilities for the vocational education and transitional studies programs prevent the college from meeting the educational workforce demand. The old, failing, and unsafe training facilities lack adequate capacity to serve program needs or enrollment demand.

The new Center for Vocational & Transitional Studies (CVTS) will address overcrowding issues and provide spaces for formal and informal learning and interdisciplinary



## Lower Columbia College Center for Vocational & Transitional Studies

### 1.0 EXECUTIVE SUMMARY

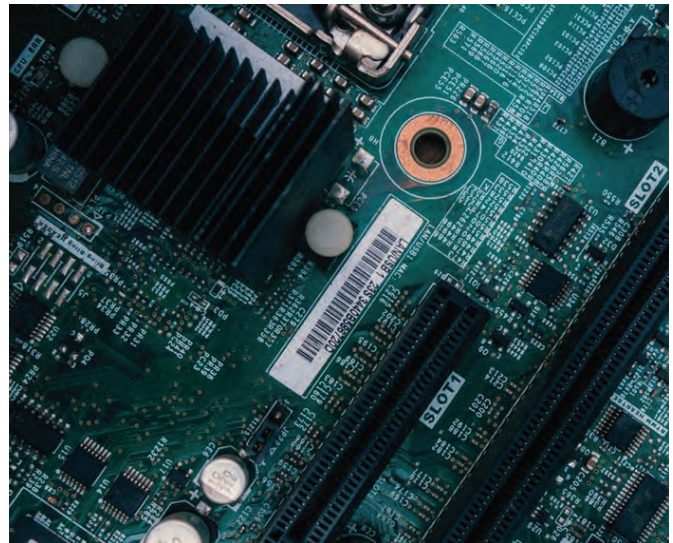
collaboration to serve the needs of the college's machine trades, manufacturing, welding, information technology and transitional studies programs in a safe, welcoming, and supportive environment. The new facility will increase visibility for the vocational programs, thus promoting career pathways for new and continuing students.

The new CVTS will provide a modern teaching environment for formal and informal learning and interdisciplinary collaboration that welcome students and increase the visibility of vocational programs on campus. Each program will have either physical, visual, or graphic representation from the first level, to encourage collaboration and provide 'walk-by' education. Informal learning spaces are proposed throughout the building to encourage student studying and engagement. Labs and vocational shop spaces are being developed as flexible spaces that can be rearranged easily. Overhead power grids and open floor space provide opportunities to experiment with teaching arrangements and strategies.

Improved instructional spaces will increase the overall safety for students, faculty, and staff and will allow LCC to build upon the already strong relationships that exist between the college and high schools within its service district. The college already hosts numerous events per year that are designed to bring K-12 together with business and industry to paths between K-12 CTE programs and LCC Professional-Technical certificate degrees. Flexible spaces and informal student learning areas within the CVTS will allow these events to utilize space outside of the shop for planning and teaching purposes.

The CVTS supports the college's goal of enhancing partnerships with local employers by providing shared access to classroom and lab spaces for professional training and certification activities. Covered fabrication areas and overhead doors into the shop spaces allow vendors access to bring equipment in for temporary training setups. A flexible classroom adjacent to a student informal learning area is located east of the main entrance to facilitate easy access for business trainees.

The benefits of this project tie directly into the strategic initiatives and core themes of Lower Columbia College. Specifically, the project helps to bridge the gap between community, industry, and education by providing learning environments that encourage formal and informal learning,





and offer peer-to-peer engagement opportunities and space for industry events and training.

This report builds on prior work of a 2015 Project Request Report, that was subsequently updated in 2017, for the 2019-2021 biennium. No previous designs have been completed for this project, and it remains the number one priority for Lower Columbia College.

Three options were analyzed as a solution – a no-action option and two site alternatives for a new building. Each was reviewed against a decision matrix and evaluated based on advantages and disadvantages alongside schedule and cost implications.

The advantages of the east location (Alternative C) outweighed the advantages of either the west location (Alternative B) or doing nothing (Alternative A). Advantages for the east location (Alt C) included community prominence, coordination with existing site utilities, campus programmatic adjacencies, campus master planning compatibility with the future Welcome Center, and construction cost savings. Disadvantages of the west location (Alt B) included impacts of existing site utilities, complex phasing, tight site constraints, campus acoustical impacts from outdoor fabrication area, and higher construction cost. Disadvantages of doing nothing (Alt A) included retaining existing 50-60 year-old buildings which don't meet current life-safety, structural, mechanical and plumbing standards, nor programmatic needs.

The vision for the Center for Vocational and Transitional Studies supports best practices in vocational training and preparatory studies, providing space and technology to support active learning, interdisciplinary collaboration, and teamwork. The building will enhance student engagement and success by improving faculty-student and faculty-staff interaction and creating flexibility to adapt to evolving program needs, pedagogy, technology, and equipment. Increasing program access and efficiency and improving space relationships creates a sense of belonging and student pride. Spaces will be designed to serve the needs of students and industry and to accommodate workforce training opportunities. These events, coupled with hands-on learning and learning on display, will provoke curiosity and encourage students to pursue technical career pathways.

The 46,267 square foot program includes a machining lab, mechatronics lab, welding lab, fabrication lab, server



## Lower Columbia College Center for Vocational & Transitional Studies

### 1.0 EXECUTIVE SUMMARY

lab, electrical engineering lab, software lab, hardware lab, 2 computer labs, quiet lab, intake and testing center, 7 classrooms, 31 offices, informal learning and study spaces, and numerous support spaces for students and faculty aimed at improving collaboration and safety.

The college and design team held a LEED Integrated Design Workshop, in which sustainability goals, priorities and strategies were discussed and outlined. The entire team affirmed its commitment to a healthy, environmentally sustainable project; and collectively defined a feasible plan to achieve minimum LEED Silver certification (and potentially LEED Gold.)

The Predesign team evaluated three methods of project delivery – Design-Bid-Build, GCCM, and Design-Build – and are recommending Design-Bid-Build (D-B-B) as the most advantageous method for this project. D-B-B encourages price competition with competitive bidding of general contractors and subcontractors. The college is experienced with Design-Bid-Build delivery and has seen that it has attracted quality local contractors. They successfully utilized this project delivery method on their two previous major capital projects which were comparable in cost and complexity to the CVTS project. The C100 budget includes design and construction contingencies appropriate for D-B-B project delivery.

The design phase is scheduled to begin in May 2022 pending selection of the A/E team. Sequenced construction is anticipated to start in September 2023 and achieve Substantial Completion in September 2025.

Since the June 2020 C100 was performed, the cost of construction has escalated at an extraordinarily high rate. The June 2020 C100 included a building of 54,799 SF with a rounded escalated Maximum Allowable Construction Cost (MACC) of \$25,075,000 and rounded escalated total project cost of \$35,011,000. The predesign building is 46,267 SF with a rounded escalated MACC of \$27,443,000. The rounded escalated total cost of the project is estimated to be \$37,211,000. To meet the \$35,011,000 total project budget allowance for the predesign, the college and design team reduced the scope of the project and the college committed local funding. LCC's president committed up to \$2.2M in local funds for the project under authorities delegated to him by the Board of Trustees.

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## 2.0 PROBLEM STATEMENT

### Program Requirements, Opportunities and Needs

#### Programmatic Overview

The programs proposed for the new Center for Vocational and Transitional Studies are key to improving the economic future of current and potential students and their families. The project is intended to replace substandard and unsafe learning environments for Machining, Manufacturing, Welding, Information Technologies, and Transitional Studies. These programs help prepare students for a brighter future, either by preparing them to continue their education or to enter high skill, high demand jobs.

- **Machining:** Almost every object in the world contains parts created by a machinist – including desks, chairs, cars, and airplanes. Machinists use high-tech machines to shape things out of metal, plastic, ceramics, and composites. Students in the Machine Trades program choose from two certificates in this pathway—machinist and computer numerical control—and/or earn an associate degree in machine trades.
- **Manufacturing:** Manufacturers across the United States need skilled production operators and technicians with the skills to run and service sophisticated machinery. Manufacturing industries include metals, plastics, wood products, solar panels, biofuels, petrochemicals, pharmaceuticals, food, semiconductors, and more. Students of the Manufacturing program learn the principles aimed at maintaining safety, improving quality, eliminating waste, and reducing the impact of industrial operations on the environment.
- **Welding:** A welder can choose a career in aerospace, construction, oil and gas, or manufacturing. LCC's welding program gives students the foundation of all the major welding and cutting processes and teaches them how to use common industry power tools and equipment. It prepares them to take and pass the Washington Association of Building Officials (WABO)



## Lower Columbia College Center for Vocational & Transitional Studies

### 2.0 PROBLEM STATEMENT

qualification test. There are two options in the Welding pathway, including a certificate and an associate degree.

- Information Technology: Because technology is a part of virtually every industry, the Information Technology career path has a lot of variety and many opportunities for advancement. In this program, students get the mix of education and technical certifications employers want for positions in network and infrastructure support, software development, systems security, customer technical support, and more.
- Transitional Studies: Over a third of LCC's students are enrolled in a Transitional Studies program, to prepare for college-level studies or earn their high school diploma through Adult Basic Education (ABE), English as a Second Language (ASL), High School + (HS+), Integrated Education and Skills Training (I-BEST), or Career Education Options (CEO).



The existing vocational and transitional studies programs are housed in facilities originally built for auto shop space. Incremental remodels have fragmented the space into undersized areas with poor adjacencies. Critical deficiencies have been identified by faculty, program advisory committee members, local employers, and the state accreditation board. Building systems are failing and spaces do not meet minimum code requirements for life safety, energy, or accessibility.

In 2010 The Northwest Commission on Colleges and Universities reported that the existing facilities are undersized and overutilized. Increases in student levels have resulted in cramped shop areas and facilities stretched to capacity,

resulting in an inability for the college to meet employer demand for student knowledge and skill levels.

The new CVTS building highlights the LCC's Vocational and Transitional Studies programs by placing them in a highly visible location near the main campus entrance. Information Technology, Machine Trades, Manufacturing, Welding, and Transitional studies are all represented on the ground floor of the new building, engendering pride and a sense of place for students enrolled in these critical programs. Adjacent informal study areas are welcoming, convenient, and accessible for all students.

### Project Opportunities

The new Center for Vocational & Transitional Studies will provide spaces for formal and informal learning and interdisciplinary collaboration to serve the needs of the college's machine trades, manufacturing, welding, information technology and transitional studies programs.

The new CVTS welcomes students and increases the visibility of vocational programs on campus, highlighting career pathway options for new and continuing students. The building placement and program adjacencies increase student awareness of, and interest in, long term job opportunities and inspire peer-to-peer engagement.

Each program will have either physical or graphic representation from the first level, aiding in student wayfinding and creating a sense of belonging. Sensitive programs like student intake, testing, and support will be placed adjacent to the main entrance, ensuring vulnerable students are cared for quickly and effectively.

The project improves access to Lower Columbia College's Guided Pathways initiative by placing the Manufacturing Pathway (part of the Industrial Technology and Transportation Meta Major) prominently within the entry experience. Improved spatial relationships will encourage active learning, project based learning, and informal study. The Information Technology Meta Major and Integrated Basic Education and Skills Training (IBEST) are also supported within the new CVTS.

Improved instructional spaces will increase the overall safety for students, faculty, and staff. All lab configurations will be OSHA/WISHA compliant and sized to accommodate safe

instruction with sufficient circulation pathways and clear lines of sight. Ventilation and lighting will meet both safety and educational standards.

This project will allow Lower Columbia College to build upon the already strong relationships that exist between the college and high schools within its service district. Partnerships designed to guide students into high skill, high-wage careers in local industry already exist between college and high school instructors. As the only source of higher education in the community, LCC offers high school students opportunities to experience vocational programs unavailable at the high school level.



*High School Welding Competition Hosted by Lower Columbia College*

The college hosts numerous events per year that are designed to bring K-12 together with business and industry to paths between K-12 CTE programs and LCC Professional-Technical certificate degrees. These events benefit the regional employer base by highlighting the opportunity for family wage jobs through post-secondary training. They also allow LCC faculty to work with K-12 instructors to identify skill gaps, training needs, and industry certification, better preparing educators to train the future workforce.

The CVTS supports the college’s goal of enhancing partnerships with local employers by providing shared access to classroom and lab spaces for professional training and certification activities. Covered fabrication areas and overhead doors into the shop spaces allow vendors access to bring equipment in for temporary training setups. A flexible classroom adjacent to a student informal learning area is located east of the main entrance to facilitate easy access for business trainees.

### Project Needs

Lower Columbia College’s professional-technical programs prepare students for high demand occupations in machine trades, manufacturing, welding, and information technology. Simultaneously, one-third of the college’s students are enrolled in transitional studies programs, preparing for higher education courses. Demand for these vocational and preparatory programs is demonstrated by round the clock use of existing instructional space. However, the college’s aging and deficient infrastructure and facilities threaten student success, achievement, and retention.

The CVTS will ensure that student needs are met, reinforcing Lower Columbia College’s Mission, and supporting the local economy. The qualities of the CVTS will support the following project goals:

- Support best practices in vocational training and preparatory studies, providing space and technology to support active learning, interdisciplinary collaboration, and teamwork – enhancing student engagement and success.
- Increase opportunities for project-based learning and peer-to-peer engagement.
- Improve faculty-student and faculty-staff interaction.
- Create flexibility to adapt to evolving program needs, pedagogy, technology, and equipment.
- Increase program access and efficiency and improve space relationships.
- Create a sense of belonging and pride through the representation of all programs within the building on the first floor.

## Lower Columbia College Center for Vocational & Transitional Studies

### 2.0 PROBLEM STATEMENT

- Provide spaces that serve students as shared assemblies of formal and informal learning that can also accommodate local workforce training as well as professional, college, and high school competitions.
- Provoke curiosity and awareness with views to hands-on learning, display and demonstration areas.
- Provide spaces and systems for safe instruction in a healthy, energy-efficient environment.
- Enhance partnerships with the K-12 school district and local businesses.
- Engage 15th Avenue to increase public visibility of the programs and boost the identity of LCC.

### Proposed Solution

The Center for Vocational and Transition Studies will provide shop spaces, labs, classrooms, informal student learning areas, offices, and support spaces that will serve machine trades, manufacturing, welding, information technology, and the college's transitional study programs. The replacement project is the number one priority in Lower Columbia College's Facilities Master Plan.

The 46,267 square foot, \$27,443,000 building will be designed to support best practices in vocational training and preparatory studies. The building will provide spaces and technologies that support active learning, interdisciplinary collaboration, and teamwork, and greatly enhance student engagement and success. New, functional adjacencies will increase opportunities for intradisciplinary project-based learning, peer-to-peer engagement, and faculty relationships.

A three-story lab/office/classroom wing positioned adjacent a one-story, high-bay machining and welding shop structure will bring program users together to share space and form community. Regular column bays and open floor plans provide long term flexibility to adapt to evolving program needs such as new technologies and equipment, updated teaching techniques, and new processes.

## Advancing LCC's Mission, Vision, and Values

### Facility Master Plan

The Center for Vocational and Transitional Studies is the college's first capital priority. The new CVTS will replace aging, deficient facilities by consolidating several existing buildings that are undersized and underutilized into one large, flexible building. The project will improve programmatic flexibility, operational efficiency, student safety, and reduce the college's maintenance costs. Programs will be able to share resources such as informal student study spaces, peer-to-peer engagement areas, active learning classrooms, work rooms, and conference rooms.



The facility will be highly visible on and off campus. Located adjacent to the Don Talley Building along 15<sup>th</sup> Ave, the new CVTS students and faculty will have easy access to many campus services, including the Student Support Center and the Admissions Building. The prominent location will give students a sense of pride in their educational pursuits.

### Strategic Plan and Institutional Goals

The CVTS directly supports Lower Columbia College's Strategic Initiatives which are expressed in the college's Core Themes (See Appendix B [College Mission & Vision](#)).



**Core Theme I: Workforce and Economic Development**



Goal: Improve alignment with business and industry demand through program refinement and exploration of new degree, certificate, and applied baccalaureate options.

Response: The new CVTS provides professional-technical education for high demand careers by creating right-sized, properly equipped learning environments, which are flexible enough to allow the college to partner with local business and industry, to support student success.

**Core Theme II: Transfer and Academic Preparation**

Goal: Refine and implement curricular and other intervention strategies to prepare students for successful navigation of program pathways that lead to productive careers.

Response: The new CVTS provides transitional studies classrooms and labs that are adequately sized and appropriately equipped to facilitate project-based learning and prepare students for college level studies.

**Core Theme III: Student Access, Support, and Completion**

Goal: Strengthen the student experience from entry to graduation to increase the proportion of individuals completing their intended course of study.

Response: The new CVTS consolidates the transitional studies program and provides learning environments, including informal student study and gathering spaces that encourage peer-to-peer exchanges, for college preparation programs, leading to increased student engagement.

**Core Theme IV: Institutional Excellence**

Goal: Continue to rebalance our revenue mix by increasing alternative sources of funding and utilizing resources wisely in support of student success.

Goal: Strengthen our commitment to diversity, equity, and inclusiveness through training and implementation of targeted intervention and recruitment strategies.

Response: The new CVTS provides safe, functional spaces for machining, manufacturing, welding, information technology, CEO, and transitional studies, and demonstrates LCC’s commitment to reducing the workforce skill gaps. The project remains the college’s highest priority for capital funding due to the impact it creates in serving students, local industry, and the larger community.

**Relevant Project History**

The Vocational & Business Information Technology Building (later renamed the Center for Vocational and Transitional Studies) was first noted as Phase 1 of the 15-Year Development Plan for Facilities in the 2015 Facilities Master Plan for Lower Columbia College. The building was originally intended to host the vocational and transitional studies programs, and to provide space for local work-force training.

A Project Request Report was submitted to the State Board of Community and Technical Colleges in 2015 and resubmitted in 2017. The PRR was subsequently approved, and design funding was appropriated for the 2021-23 biennium. No previous designs have been completed for this project. This project remains the number one priority for Lower Columbia College.

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## 3.0 ANALYSIS OF ALTERNATIVES

### Site Selection

As part of the predesign process, the project stakeholders considered three options for the new Lower Columbia College Center for Vocational and Transitional Studies on campus- a no-action option and two site alternatives. Each was reviewed against a decision matrix and evaluated based on advantages and disadvantages. The following is an overview of each option. (See [Advantage/Disadvantages Matrix](#) on page 23).



Site Options

### Alternative A: No Action

#### Advantages

- Short-term savings to taxpayers for not building the project.
- Avoids disruption to campus during construction.

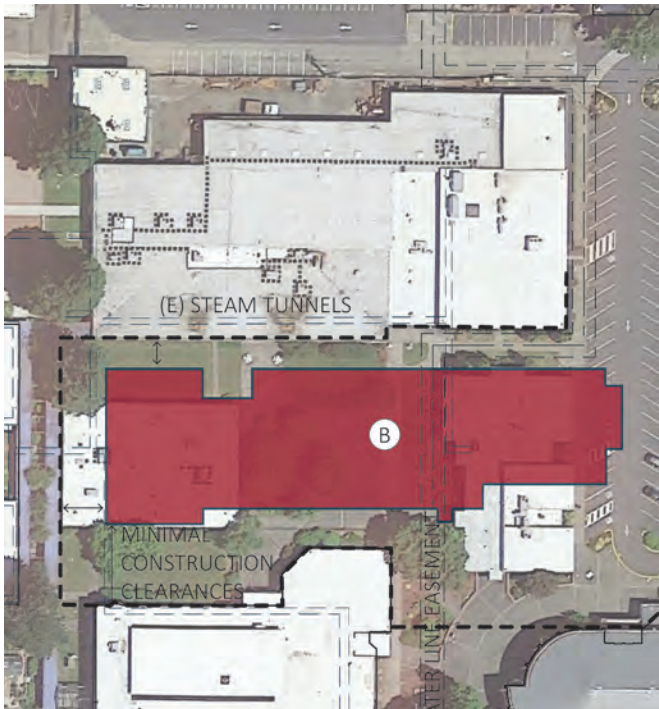
#### Disadvantages

- The Vocational Building is in failing condition and no longer meets life safety standards. The building does not meet seismic requirements and could collapse in a seismic event. The VOC does not have adequate fire resistance and the mechanical and plumbing systems are beyond their service life and are unable to maintain a consistently safe interior environment for students.
- Existing labs are too small for safe instruction and no longer serve the curriculum. Training environments, machinery, and technology are not relevant to today's workplace needs. The existing IT labs can no longer be monitored or secured.
- Instructional spaces for transitional studies are spread throughout the building, creating difficulties for student wayfinding. A lack of functional adjacencies impacts student intake, personal interaction, testing oversight, and instructional activities.
- The college has historically seen enrollment increase in the programs located in new buildings, which would not happen if the new building is not built.

# Lower Columbia College Center for Vocational & Transitional Studies

## 3.0 ANALYSIS OF ALTERNATIVES

### Alternative B: West Location



This site is centrally located to the north of the campus quad, adjacent to the admissions center, the student center, and the applied arts buildings.

#### Site Options - Alternative B

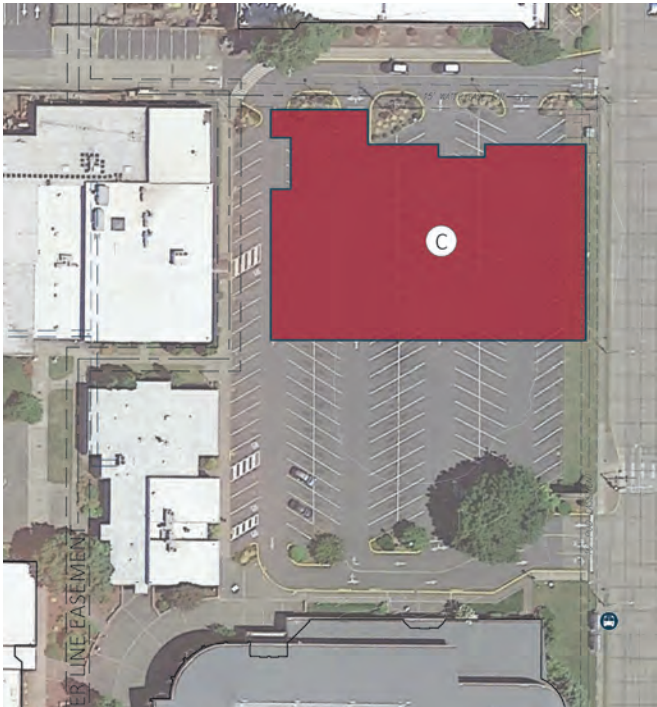
#### Advantages

- The 2015 campus master plan showed this location to be for vocational use, creating an advantage for campus compatibility.
- Near the physical center of campus and maximizes connections to the student center and admissions buildings. Non-Vocational students circulating in this area will be more frequently exposed to the Vocational activities taking place.
- Far enough away from the property line as to negate setbacks and height restrictions, allowing the campus to maximize the building size and mass within the existing zoning code regulations.
- Creates a stronger connection between the existing gymnasium and 15<sup>th</sup> Ave. by opening a view corridor between the two.

#### Disadvantages

- Requires demolition of existing steam tunnels, demolition and relocation of several electrical transformers, demolition and relocation of city water shut-off valve, and demolition and relocation of existing 20" city water main line. Relocation of water main line to 15<sup>th</sup> Ave. requires coordination with City of Longview Public Works department. The project would take several months to complete and disrupt traffic from West Side Highway to Washington Way.
- Complex phasing required for demolition, construction, and subsequent site work due to tight sight and necessity to maintain Vocational Building function until completion of new building.
- Tight site constrains building footprint in all four directions and raises safety concerns with construction in the heart of an active and occupied campus.
- Contractor laydown and parking area will utilize the south half of Lot C, reducing parking on campus during construction.
- Loading and unloading zone for semi-trucks serving welding and machine shops are difficult to achieve due to tight turning radii.
- Noise from outdoor welding fabrication area will adversely affect student activities in adjacent buildings and pedestrian areas.
- Increased distance from the Don Talley Vocational Building limits opportunities for interdisciplinary collaboration between faculty.

## Alternative C: East Location



Site Options - Alternative C

This site is centrally located to the north of the campus quad, adjacent to the admissions center, the student center, and the applied arts buildings.

### Advantages

- Prominent location on 15<sup>th</sup> Ave. creates a strong campus edge, publicly promoting the vocational programs.
- Supports the City of Longview’s plans of encouraging development along 15<sup>th</sup> to create stronger ties to downtown.
- Avoids active easements, tunnels, and utility corridors.
- Minimizes possible acoustical disruption to general student population from welding fabrication area.
- Proximity to the Don Talley Vocational Building allows for interdisciplinary collaboration between faculty.
- The Student Center and Admissions Center are both easily accessible to students using the CVTS.

- Larger footprint allows greater visibility of programs on ground floor, improving student engagement and wayfinding.
- Leaves space for a more appropriate building, the new Welcome Center, to be placed at the heart of the campus in the future.

### Disadvantages

- Alters the 2015 Campus Master Plan. (However, the Campus Master Plan was updated in 2021 in cohesion with the Project Request Report for the new Welcome Center to replace the Admissions, Applied Arts, and International Ctr/Oldbkst buildings.)
- Construction and subsequent demolition will be disruptive to campus parking as Lot C will have to be temporarily closed to student use.
- The project boundary encapsulates a larger overall area of work to accommodate the new building, parking, and site areas.

## Cost Estimates

Cost estimates between Alternatives B and C assume the same cost and square footage of the building. The disadvantages of Alternative B regarding the site would result in additional site costs estimated to be \$750,048 above the site costs of preferred Alternative C.

### Life Cycle Cost Model

OFM’s Life Cycle Cost model tool was used to compare the life cycle cost between leased space and owned space outlined in the preferred alternative. The LCCM revealed that the best value for the next 20 to 50 years is Ownership. The 50-year net present value between these options is Lease Option \$3,050,688,032 and Ownership Option \$1,108,814,429. Refer to the LCCM summary document in the appendix. (See Appendix – B.1. [Life Cycle Cost Model](#))

## Schedule Estimates

We do not anticipate an overall difference in the duration of construction between the two alternative sites. Both alternatives are planned for 24 months of construction with the following schedule milestones:

- Construction Start- September 1, 2023
- Construction Mid-point- September 1, 2024
- Substantial Completion- September 1, 2025

Both alternatives require phased construction sequences due to the necessity to keep the existing Vocational Building operational while constructing the new CVTS building. However, Alternative B requires three primary construction phases and Alternative C requires only two.

### Alternative B – West Location:

- Phase 1: Demolition of Science Bldg and Physical Science Bldg
- Phase 2: CVTS Building Construction
- Phase 3: Demolition of Vocational Bldg and Steam Plant; Parking & Site Improvements

### Alternative C – East Location:

- Phase 1: CVTS Building Construction
- Phase 2: Demolition of Vocational Bldg, Science Bldg, Physical Science Bldg and Steam Plant; Parking & Site Improvements
- With fewer construction phases, Alternative C has less risk of incurring potential additional costs and delays due to unanticipated schedule impacts.

## Conclusion

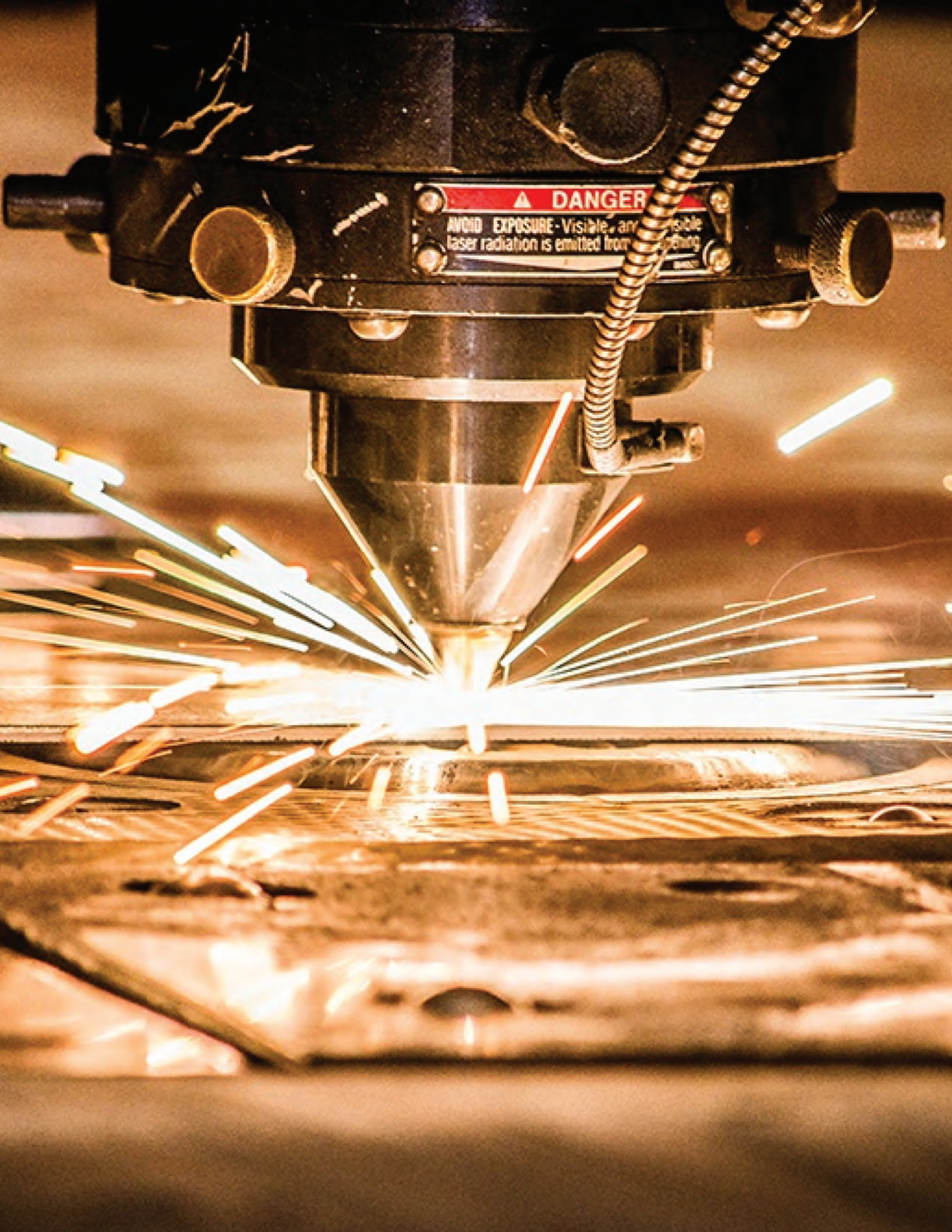
The analysis of the advantages and disadvantages favored Alternative C- East Location over the other two options. Advantages include enhanced campus and community presence, strategic campus development, less utility impacts, improved programmatic adjacencies, and construction cost savings.



## Advantages/Disadvantages

	No Action	Option B - West	Option C - East
<b>Community Connection</b> Relationship to existing buildings entries, campus pathways and campus communal outdoor spaces	Not a Differentiating Factor	Most Advantageous	Most Advantageous
<b>Program Relationships</b> Beneficial disciplinary and program space type allocation and relationships	Disadvantages the Project	Not a Differentiating Factor	Most Advantageous
<b>Parking Impact</b> Disruption to campus parking during construction	Most Advantageous	Most Advantageous	Not a Differentiating Factor
<b>Cost - Constructability</b> Costs associated with earthwork, retaining walls, stormwater and other potential site improvements	Most Advantageous	Disadvantages the Project	Not a Differentiating Factor
<b>Cost - Utility Extention</b> Costs and resources to bring utilities and infrastructure	Most Advantageous	Disadvantages the Project	Not a Differentiating Factor
<b>Campus Presence</b> Strong sense of welcome through good visibility to the new building's entrypoints	Disadvantages the Project	Not a Differentiating Factor	Most Advantageous
<b>Master Plan Compatibility</b> Buildings scale and use in alignment with master plan intentions	Disadvantages the Project	Most Advantageous	Most Advantageous
<b>Code + Jurisdictional Implications</b> height limit, setbacks, bulk and scale	Not a Differentiating Factor	Most Advantageous	Most Advantageous
<b>Campus Zoning</b> Opportunity for Cross Disciplinary Vocational Collaboration	Not a Differentiating Factor	Disadvantages the Project	Most Advantageous
<b>User Accessibility</b> Length and difficulty of travel from parking and from other buildings on campus	Not a Differentiating Factor	Most Advantageous	Most Advantageous
<b>Service Access</b> Adjacency to road or parking and ability to screen	Not a Differentiating Factor	Disadvantages the Project	Most Advantageous
<b>Solar Orientation</b> Opportunity for natural daylighting strategies and optimal photovoltaic panel exposure	Not a Differentiating Factor	Most Advantageous	Most Advantageous
<b>Construction Cost</b> Sitework, Utilities, Safety, and Phasing Costs	Not a Differentiating Factor	Disadvantages the Project	Most Advantageous

- Most Advantageous
- Not a Differentiating Factor
- Disadvantages the Project



**▲ DANGER**  
AVOID EXPOSURE - Visible, and invisible  
laser radiation is emitted from this product



# 4.0 DETAILED ANALYSIS OF PREFERRED ALTERNATIVE

## Nature of Space

The new CVTS building will house Lower Columbia College’s welding, machining, manufacturing, information technologies, and transitional study programs as well as support spaces, informal student learning areas, faculty offices, and break rooms.

The building gross square footage is 46,267 SF with a net of 32,590 SF and an unassignable area of 13,677 SF, representing a 70% space efficiency factor. The building areas break down as follows:

- 18,800 SF- Vocational Lab Spaces
- 900 SF- Computer Labs
- 6,870 SF- General Classrooms
- 840 SF- Student Support (Intake, Testing, etc.)
- 3,220 SF- Faculty Offices
- 980 SF- Administrative Offices
- 980 SF- Staff Support (Conference Rooms, Break Rooms, Storage, Etc.)

Refer to the [Predesign Program](#) on page 26 for a full summary of each space and associated square footages listed by program.

## Occupancy

The program for the CVTS building will be designed for a maximum occupancy of 48 per classroom, 22 per classroom lab, and 100 per vocational lab.

Occupant load for the new building was derived from the area of each space in the program divided by the occupant load factor of the space. Occupant load factors are based on the 2018 IBC.

The quantities, areas, and supporting information in the program spreadsheet were created in conjunction with the college administrators, staff, and professors based on current

areas and functionality as well as precedent studies of other, similar college facilities.

## Building Configuration

The Center for Vocational and Transitional Studies is envisioned as two adjoining forms, one primarily vocational and one primarily general education and support. The vocational building will be a double-height single story building housing the machine lab, welding lab, fabrication lab, and support spaces. The classroom building will be a three-story structure housing information technology, manufacturing/mechatronics, transitional studies/CEO and building support spaces.

Each program has visual or physical representation on the first floor to aid in wayfinding and create a welcoming environment. The machine lab, welding classroom, and fabrication lab are positioned directly off the primary circulation corridor, with views from the first and second floors, to ensure a high level of exposure for these vocational programs. Similarly, the information technology program showcases the server lab on the second floor with glass walls between it and the informal learning area. Student art plazas to the east and south of the building will also generate a visual presence on campus to create curiosity around vocational trades and encourage students to explore options in these fields.

## Space Needs

The State has allocated a finite amount of funding for this project. The purchase value of the funding allocation has been diminished due to the influences of labor shortages, escalation in construction costs and materials, supply chain issues, and inflation since legislative approval of the MACC.

The basic program areas and spaces, noted in the program spreadsheet herein, fit within the allocated budget given a Predesign level of detail and known marketplace influences at this time.

The new 46,267 SF CVTS building is proposed to replace the existing 32,250 SF Vocational, 9,551 SF Physical Science

# Lower Columbia College Center for Vocational & Transitional Studies

## 4.0 DETAILED ANALYSIS OF PREFERRED ALTERNATIVE

### LCC CVTS Predesign - Program Areas

Machining   Manufacturing	Teaching Stations	Support Spaces	Area	Subtotals	Comments	FAE Category Code	Room Use Code Level
Private Office		3	110	330	Offices remote from lab	F1	300s
Machine Lab	1		5000	5000		D1	200s
Computer Lab	1		1100	1100	Shared MFR/Machining	D1	200s
					MFR Only (High, exposed ceilings, cord real drops, flexible space)		
Classroom (Mechatronics)	1		1100	1100	Instrumentation	D1	200s
Storage		1	350	350	Lockable for MFR Classroom	D1	700s
Storage - Tool Room		1	350	350		D1	700s
Inspection Room	1		350	350		D1	200s
<b>Subtotal M&amp;M</b>				<b>8,580</b>			
Welding	Teaching Stations	Support Spaces	Area	Subtotals	Comments	FAE Category Code	Room Use Code Level
Private Office		2	110	220	Offices remote from lab - can be used as flex offices for other programs	F1	300s
Shared Office		1	250	250	Located inside of Fabrication Lab	F1	300s
Welding Lab	1		3000	3000	20 booths btwn 5'x5'-8'x9'; 2 inert gases and compressed air to each booth	D1	200s
Fabrication Area	1		1750	1750	Drop 6 Oxy-Acetylene manifolds down wall (Acoustically Isolate Slab for Fab and Weld shop)	D1	200s
Classroom	1		1100	1100	Adjacent to shop with direct visual and physical connection / computer storage required	D1	200s
Storage - Tool Room		1	350	350		D1	700s
Student Lockers		1	300	300		D1	700s
<b>Subtotal Welding</b>				<b>6,970</b>			
IT	Teaching Stations	Support Spaces	Area	Subtotals	Comments	FAE Category Code	Room Use Code Level
Private Office		3	110	330		F1	300s
Server Lab		1	250	250		B2	200s
Electrical Engineering Lab	1		1100	1100	Set up similar to software and hardware lab with cabling etc.	B2	200s
Computer Lab	2		1100	2200	One Hardware Lab, one Software Lab	B2	200s
					Adjacent to lab, accessible to hallway (counterdoor), 1 lab tech, 2 tech checks (students)		
Lab Check / Tech Check Room		1	250	250		B2	200s
IT Storage		1	250	250		B2	200s
<b>Subtotal IT</b>				<b>4,380</b>			
Transitional Studies	Teaching Stations	Support Spaces	Area	Subtotals	Comments	FAE Category Code	Room Use Code Level
Intake		1	300	300	First floor	F1	300s
Office		16	110	1760	4 on first floor; 12 on third floor	F1	300s
Adjunct   Workroom   Breakroom		1	500	500	Include area for adjunct staff to work informally	F1	300s
Storage		2	120	240	Lockable storage - 1 on first floor; 1 on second floor	A2	200s
Testing	1		300	300	8 testing stations each 3' apart	A2	200s
Computer Lab	1		900	900		B4	200s
					Provide sink and microwave in 2 classrooms to support science experiments & COW in classrooms (build into casework)		
General/Basic Skills Classroom	5		950	4750	On first floor - also used for industry training & events	A2	200s
General Classroom	1		1100	1100		A1	200s
<b>Subtotal TS</b>				<b>9,850</b>			
CEO (Program not in original P	Teaching Stations	Support Spaces	Area	Subtotals	Comments	FAE Category Code	Room Use Code Level
Private Office		3	110	330		F1	300s
Storage		1	120	120	Easily Accessible / shared with Open Doors	A2	200s
Quiet Lab (Shared with Open D	1		900	900		A2	200s
<b>Subtotal CEO</b>				<b>1,350</b>			
General	Teaching Stations	Support Spaces	Area	Subtotals	Comments	FAE Category Code	Room Use Code Level
Work Force Office Suite		1	580	580		F1	300s
Break Room		1	200	200		F1	300s
Conference Room		1	280	280	Seats 8	F1	600s
Hazmat Storage		1	400	400		I1	700s
<b>Subtotal General</b>				<b>1,460</b>			
Totals	Teaching Stations	Support Spaces	Area	Comments			
<b>Total Teaching Stations</b>	19						
<b>Total Support Spaces</b>		44					
<b>Total Net Assignable Area</b>			32,590	70%			
<b>Total Net Unassignable Area</b>			13,677	30%			
<b>Total Gross Square Footage</b>			46,267				

# Lower Columbia College Center for Vocational & Transitional Studies

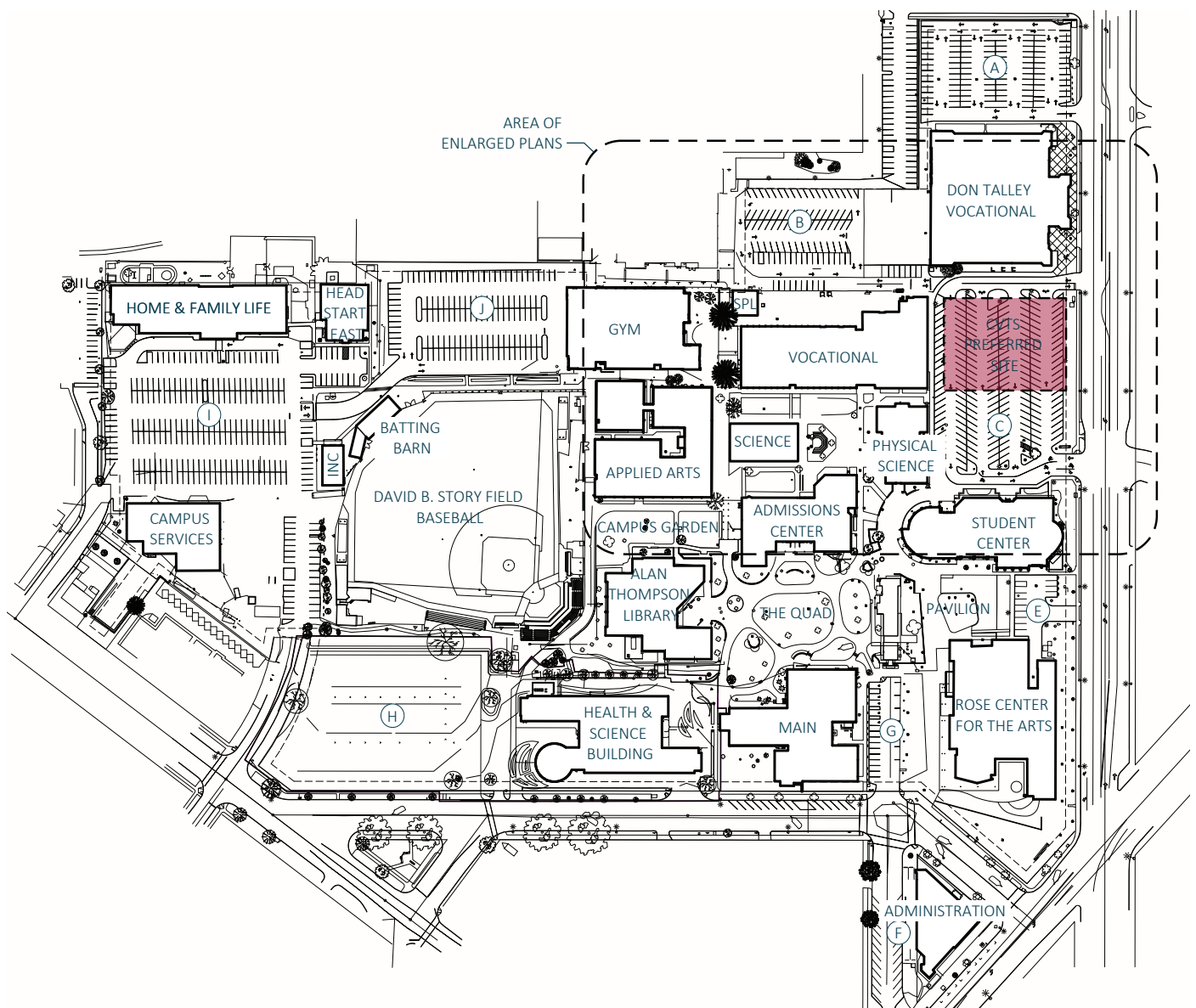
## 4.0 DETAILED ANALYSIS OF PREFERRED ALTERNATIVE

and 6,994 SF Science buildings, equaling a total of 48,795 SF of 50-60 year-old educational buildings to be demolished with this project. The existing Vocational building contains Machining, Manufacturing, Welding, IT and Transitional Studies program spaces that were designed for antiquated educational delivery over 50 years ago and will be replaced with much-needed modern learning environments.

Science instruction is being served by the 2015-built Health & Science building. The Transitional Studies Career Adult Opportunities (CEO) program will move from the existing

International Ctr/Oldbkst building, which will be demolished with the future Welcome Center project. The 1,723 SF Steam Plant is also planned for demolition with the CVTS project.

The 2021 Capital Asset Model (CAM) for Lower Columbia College notes a shortage of Basic Skills Labs and Computer Labs. To support these needs, the CVTS predesign includes five Transitional Studies Classrooms/Labs that will be utilized to teach basic skills and one Transitional Studies Computer Lab. See the LCC CVTS Predesign Program Areas list for preliminary FAE Category Codes and Room Use Code Levels.



Campus Map w/ Preferred Location

# Lower Columbia College Center for Vocational & Transitional Studies

## 4.0 DETAILED ANALYSIS OF PREFERRED ALTERNATIVE

### Site Analysis

#### Studies Completed & Underway

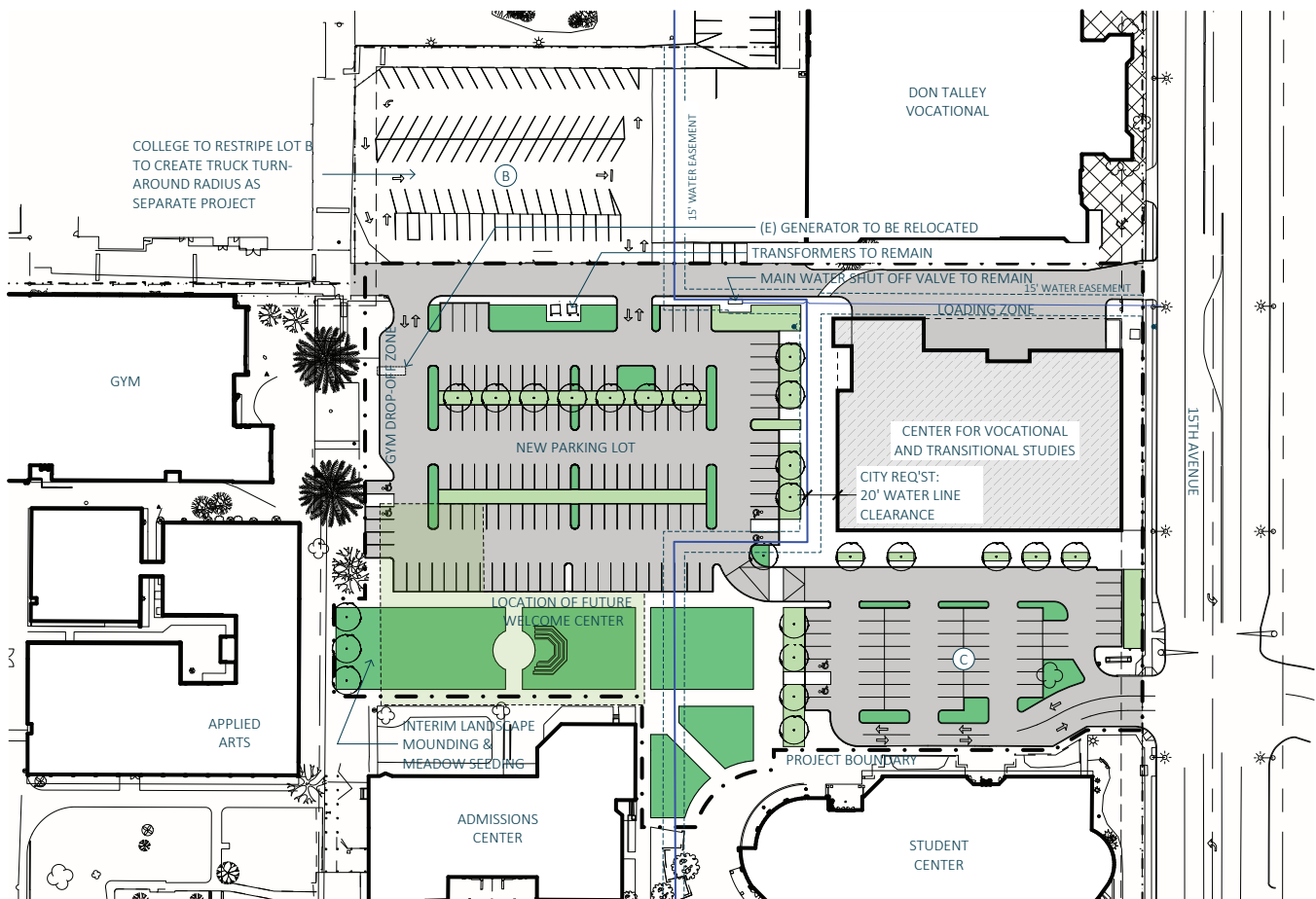
The college is in the process of procuring the following site studies, which are scheduled to be completed prior to the commencement of the Schematic Design phase:

- Phase I Environmental Survey Assessment
- Pre-Demolition Hazardous Materials Surveys for the Vocational, Science, Physical Science and Steam Plant buildings
- Site Topo/Utility Survey
- Geotechnical Survey

For the predesign, the design team preliminarily referred to geotechnical surveys from previous buildings constructed on LCC's campus. In a December 01, 2021 preliminary scoping meeting, the City of Longview indicated they would likely not require a traffic or parking study to be submitted, nor would they require traffic or street frontage improvements with this project. This will be confirmed with a formal pre-submittal meeting with the City early in the design phase.

#### Location

The preferred site is located at the northeast corner of the campus, just south of the existing Don Talley Vocational Building in Parking Lot C. This location creates a travel triangle between the new building, Student Services, and the Admissions Center and acts as a bridge between the



Proposed Site Plan

## Lower Columbia College Center for Vocational & Transitional Studies

### 4.0 DETAILED ANALYSIS OF PREFERRED ALTERNATIVE

heart of campus and the Don Talley Vocational building, reincorporating this “satellite” building and creating a vocational zone at the northeast corner of the campus.

The new CVTS location extends the campus edge formed along 15<sup>th</sup> Avenue by the Rose Center, Student Center, and Don Talley Vocational building by filling in the gap left by Lot C. Through massing, fenestration, materiality and tectonics, the new CVTS will engage both the street and the campus, enhancing the community presence along the road without diminishing the collegiate feel for students.

The new building can be easily seen and accessed from the heart of the campus, improving visual exposure for the vocational and transitional studies programs. The heightened exposure will help increase awareness, interest, and ultimately enrollment in the vocational and transitional studies programs.

- The new Center for Vocational and Transition Studies building is intended to introduce BEdA students to a positive college setting while increasing the visibility and access of the vocational programs. Highlighting these programs will identify career pathway opportunities for prospective and continuing students and strengthen the college’s ties to local industry.
- The first floor of the building will provide spaces to serve as informal learning areas for LCC students. These spaces should also be flexible enough to accommodate local workforce training programs and allow the college to host vocational competitions for professionals or college and high school students.
- Each of the vocational programs on the first floor, and the informal learning area, should have direct connections to exterior spaces. Connections from welding, machining, and manufacturing/mechatronics are to outdoor learning and fabrication areas that support the vocational programs. Informal learning is directly connected to the student art plaza to encourage engagement between students and the vocational programs.
- All programs within the building should have representation on the first floor, ideally near the main entrance, to aid in student wayfinding and to ensure BEdA students can quickly engage with educational

support programs. Prominent displays of each program will engender student pride and increase motivation.

- Faculty offices and open workstations for adjunct faculty are to be distributed on each floor, avoiding intimidating hallways. The design intent is to develop friendly, approachable work zones that help to strengthen student/faculty relationships, giving students the resources they need to persevere through life’s difficulties while remaining focused on academic success.
- Offices should be visually connected to labs, classrooms, informal learning spaces, or primary circulation routes to help strengthen interdisciplinary collaboration among faculty.
- The new building will support best practices in vocational training and preparatory studies by providing space and technology to support active learning, interdisciplinary collaboration, and teamwork, thus enhancing student engagement and success.
- A variety of settings should be created in the informal learning settings provided at each level of the building to allow students places for either reflection and retreat or active engagement, depending on their interpersonal needs at any given time.
- The building will engage 15<sup>th</sup> Ave. through form and tectonic expression, visually opening the campus to the street.



*Visual Connections Between Interior and Exterior Spaces*

## Lower Columbia College Center for Vocational & Transitional Studies

### 4.0 DETAILED ANALYSIS OF PREFERRED ALTERNATIVE

- Interior connections, both visual and physical, between interior spaces and between interior and exterior spaces are beneficial for all students. Those viewing activities may find a spark of curiosity ignite while those being viewed may find a sense of pride in their work growing.

## Water Rights and Water Availability

Water mains on campus are owned and maintained by Lower Columbia College. There is an existing 20-inch steel public water main located just west of the proposed CVTS building, which is owned and maintained by the City of Longview. Due to the water line's existing conditions, including pipe material, age, and lack of proper cover, the line will need to be protected during construction. A public water shut-off valve and vault are located, and will remain, at the northwest corner of the CVTS preferred location. Two 8-inch public water lines are accessible near the site and could be used to serve the new building. One line is in the access drive north of the new building, the other is in 15th Avenue. The new building will be fully sprinklered and will require a new domestic water service (meter) and fire line connection for the sprinkler system. Required backflow protection units are located inside the building. Existing fire hydrants are located nearby on both the east and west sides of the proposed building.

## Stormwater Requirements

Construction of the new CVTS will trigger stormwater improvements, including flow control and water quality. The project creates both non-pollution-generating and pollution-generating surfaces. New pollution-generating surfaces, such as parking lots, will require water quality treatment, while runoff from non-pollution-generating surfaces, such as the roof areas, will only require collection and disposal. Rain Gardens (bio-infiltration facilities) are proposed for the post development runoff, including the remaining portion of Lot C, disposal will be achieved through on-site infiltration.

## Acquisition Needs

The project does not require the acquisition of property.

## Easements and Setback Requirements

The project is constrained to the east by the property line setback of 15' and to the west by the water line easement of 15'. Although the recorded easement is only 15', the city has asked that we keep the building 20' from the centerline of the existing water line easement.

## Potential Issues with the Surrounding Neighborhood, During Construction and Ongoing

No potential issues with adjacent properties or the surrounding area are anticipated to result from the construction of the CVTS building in the preferred location.

## Utility Extension or Relocation Issues

Utility connections are readily available at the site. The City of Longview is the sanitary sewer, stormwater, and potable water purveyor.

### Sanitary Sewer

- An 8-inch sanitary sewer line is located south of the proposed building in the portion of the existing parking lot to remain. This existing sewer line will be utilized to serve the building.
- As a benefit to the project and the campus, a new rain garden will be provided to treat the runoff of the existing parking lot west of the Don Talley Building – Lot B.
- Infiltration testing will be required prior to design, to confirm the infiltration rates of the existing soils.

### Dry Utilities

- Dry utilities, such as gas, cable, and power are also available at the site. Survey information shows a gas line located in the access drive, north of the proposed building.
- Overhead power lines are also located along the access drive and will need to be relocated underground.

## Potential Environmental Impacts

- The proposed project boundary encapsulates brown field and parking areas, ensuring that campus green spaces and natural amenities be preserved.
- There are no known contaminants on site that require mitigation efforts.
- The project is not immediately adjacent to wetlands or shoreline and will not require wetlands or shoreline mitigation measures.
- There are no shoreline jurisdiction issues that need to be addressed with this project.
- Zoning for the site is governed by the City of Longview Municipal Code Chapter 19. The site is currently zoned C-C Civic Center District with a Land Use/Comprehensive Plan overlay of Public/Quasi-Public/Institutional.

## Parking

Based on a December 1, 2021 preliminary scoping meeting with the City of Longview, we anticipate that no net additional parking stalls will be required due to the college's current excess in their parking requirements. An updated campus parking count will need to be submitted to the City to confirm compliance with this project. The project plans to replace the area currently occupied by the Vocational, Science, Physical Science, and Steam Plant buildings with a new parking lot between the CVTS and the existing gymnasium. Lot C will also be reconfigured and restriped. The combined impact of the new parking lot and the renovation of Lot C results in a net loss of 17 parking stalls but an increase of 4 accessible parking stalls. To meet the Americans with Disabilities Act, the four stalls will be split, two adjacent to CVTS and two adjacent to the Gymnasium.



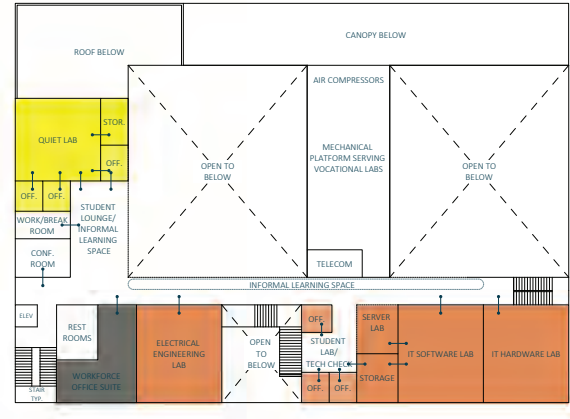
# Lower Columbia College Center for Vocational & Transitional Studies

## 4.0 DETAILED ANALYSIS OF PREFERRED ALTERNATIVE

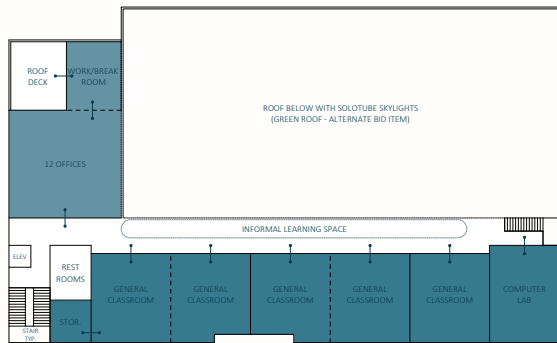
### Building Relationships



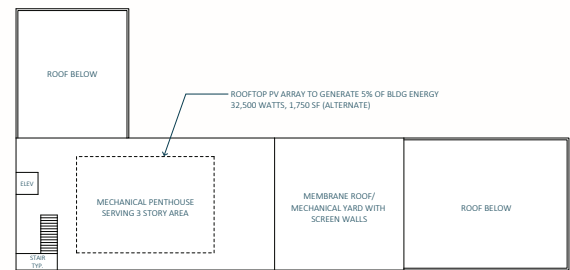
First Floor



Second Floor



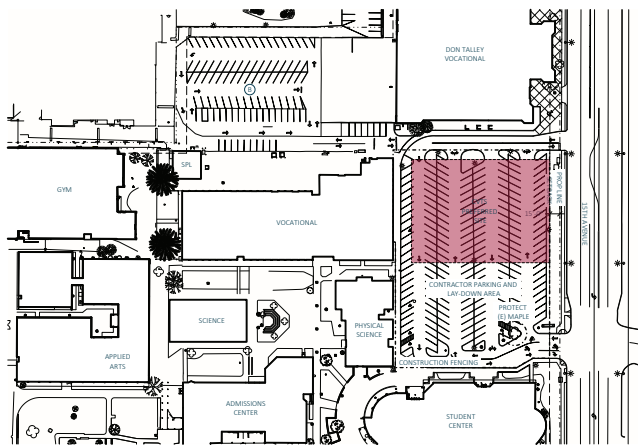
Third Floor



Mechanical Platform



## Construction Impacts

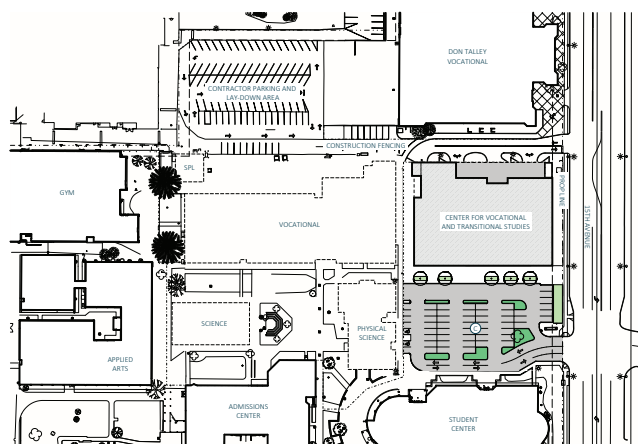


Construction Impact - Phase 1

In Phase 1 of the construction, Parking Lot C will be used for lay-down and contractor parking. The existing maple tree to the southeast of the lot will be protected while the contractor constructs the new CVTS building and reconfigures Lot C to fit the new, smaller footprint south of CVTS.

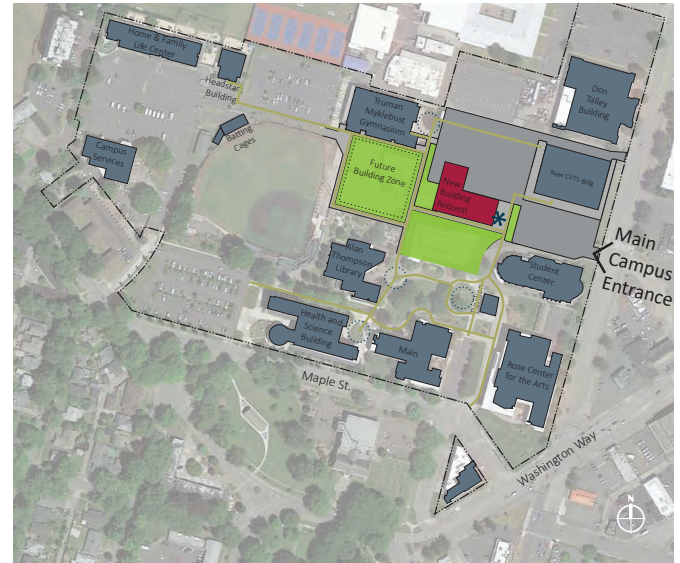
In Phase 2 of the construction, the newly reconfigured Parking Lot C will be opened for student use with 55 stalls. Construction fencing will be moved to surround the Vocational Building, SPL, Physical Science, Science, Parking Lot B, and the drive aisle to access Parking Lot B from 15<sup>th</sup>. Parking Lot B will be used for lay-down and contractor parking during demolition and site improvements.

The design team may need to explore the feasibility of other options depending on the parking needs of the college.



Construction Impact - Phase 2

## Consistency with Long Term Planning



## Campus Master Plan

The project ties directly to the 2015 Lower Columbia College Facilities Master Plan and 2021 Campus Master Plan update. The FMP identifies four core strategic themes that demonstrate LCC’s dedication to student success and academic excellence and will ensure that higher education is accessible, affordable, and relevant to current and potential students.

These goals are:

### Workforce and Economic Development

- Provide quality professional/technical education for employment, skills enhancement, and career development.
- Partner with business, community groups, and other educational entities to provide workforce development and customized programs and services.

### Transfer and Academic Preparation

- Ensure that learners who are under prepared for college level studies have access to developmental coursework and bridge opportunities to college level work.

## Lower Columbia College Center for Vocational & Transitional Studies

### 4.0 DETAILED ANALYSIS OF PREFERRED ALTERNATIVE

- Offer courses and support for students to meet the requirements for transfer from Lower Columbia College.
- Provide the support for transfer students to successfully transition to upper division college and university programs.

#### Student Access, Support, and Completion

- Offer a full array of educational programs and support services to meet the diverse needs of Cowlitz and Wahkiakum counties.
- Provide students with the support needed to pursue and achieve their educational goals.

#### Institutional Excellence

- Demonstrate our commitment to institutional integrity by investing in our campus, students, and employees.
- Uphold our reputation for high quality and contribute to the value of the community by promoting excellence in our programs, services, and activities.

The FMP also outlines four Proposed Master Planning Strategies:

- Replacement of Aging Facilities
- Consolidating Building Replacements
- Accommodating Emerging Directions in Learning
- Funding Resources

This project was identified as the next major project in the FMP and continues to be the college's number one priority for the 2023-2025 biennium funding. This project allows the college to address each of the four core strategic themes and the subsequent objectives listed above.

## Consistency with Other Regulations

### High Performance Buildings - LEED Silver Standard

Per RCW 39.35D High-performance Public Buildings- all major facility projects of public agencies receiving any funding in a state capital budget, or projects financed through a financing contract as defined in RCW 39.94.020, must be designed, constructed, and certified to at least the LEED silver standard.

The college and design team held a LEED Integrated Design Workshop on January 6, 2022, in which sustainability goals, priorities and strategies were discussed and outlined. The entire team affirmed its commitment to a healthy, environmentally sustainable project; and collectively defined a feasible plan to achieve minimum LEED Silver certification (and potentially LEED Gold.) See Appendix B.9 for [LEED Checklist and notes from Integrated Design Workshop](#).

### Energy Efficiency and Environmental Performance Standards

Per RCW 19.27A.210 State Energy Performance Standard - the state will develop energy performance standards, seeking to maximize reductions of greenhouse gas emissions of buildings, including energy use intensity (EUI) targets by building type and methods of conditional compliance that include an energy management plan, operations and maintenance program, energy efficiency audits, and investment in energy efficiency measures designed to meet the targets. The state will develop energy use intensity targets that are no greater than the average energy use intensity for the covered commercial building occupancy type with adjustments for unique energy using features.

The CVTS project will comply with state energy performance standards-in-progress. During the predesign, the team identified the most appropriate building systems to optimize energy performance within the allowable project budget, targeting an EUI benchmark range of 35-45 kBtu/ft<sup>2</sup> for this holistic building type. Performance energy simulation modeling and continued EUI benchmarking will be performed in the design phase.

Per Executive Order 20-01 State Efficiency and Environmental Performance, New Facility Construction, dated January 23, 2020, subject to available funding, all newly constructed state-owned buildings shall be designed to be zero energy or zero energy-capable, and include consideration of net-embodied carbon. In unique situations where a cost effective zero-energy building is not yet technically feasible, buildings shall be designed to exceed the current state building code for energy efficiency to the greatest extent possible.

The CVTS project budget does not currently support achieving net zero energy, which would require a scale of photovoltaic (PV) panel array that would exceed the budget. The predesign currently anticipates an alternate bid item for a roof-top PV array that would provide 5% of the building's energy use. The predesign also includes a net-zero readiness approach for roof-top PV panels to be installed throughout the building if/when funding becomes available in the future.

## Electric Car Charging Stations

RCW 19.27.540 requires educational occupancies to provide the greater of one parking space or ten percent of employee parking spaces. The proposed site plan provides 197 new stalls, 10 stalls will be designated for employees. The electrical site plan includes 3 charging stations that each serve 2 stalls, thus providing power for 6 out of 10 employee stalls, exceeding the minimum code requirement.

## Greenhouse Gas Reduction Strategies

Per RCW 70.235.070 Greenhouse Gas Emissions Reduction Policy, all state agencies must adopt policies to reduce greenhouse gas emissions. Lower Columbia College has developed a comprehensive list of strategies for reducing greenhouse gas emissions and is currently engaged in the implementation of the strategies outlined in the reduction plan. (See Appendix – B.9 [Greenhouse Reduction Plan.](#)) The new CVTS facility is planned to implement high-performance building measures in congruence with LCC's greenhouse gas reduction plan.

## Archaeology and Historic Preservation/ Tribal Reviews

The project description and supporting documentation were submitted to the Department of Archaeology and Historic Preservation (DAHP) (See Appendix- B.2. [DAHP Letter](#)). The DAHP expressed no concerns over historical resources. The Confederated Tribes of Grand Ronde, the Confederated Tribes of Warm Springs Reservation of Oregon, the Confederated Tribes and Bands of the Yakama Nation, the Cowlitz Indian Tribe, and the Squaxin Island Tribe have been contacted by the College with information about the project (see letters in appendix). LCC had yet to receive any responses by the completion of this predesign report. Since the college has interfaced with the tribes on previous new building projects, no mitigation is anticipated to be required.

## Americans with Disability Act Implementation

The ADA prohibits discrimination based on disability in employment, State and local government, public accommodations, commercial facilities, transportation, and telecommunications. ADA Title II requires that State and local governments give people with disabilities an equal opportunity to benefit from all the programs, services, and activities (e.g., public education, employment, transportation, recreation, health care, social services, courts, voting, and town meetings). This project will follow the State requirements for architectural standards under ADA.

The project provides ADA access from an adjacent parking area via new ADA compliant walkways/ramps along the south and west sides of the proposed building location. These connect to the main campus pedestrian walkway, providing ADA access to the Don Talley building north, the Gymnasium to the west, and the main campus to the south of the CVTS site.

## Growth Management Act

The comprehensive plan update for the City of Longview, from October 2019, states that “Cowlitz County and the cities within it are not subject to the full state Growth Management Act (GMA). However, Longview is subject to the planning and zoning requirements for “code cities,” a particular form of governmental organization (Chapter 35A.63 RCW). This statute sets minimal requirements for comprehensive planning, which must include land use (“the proposed general distribution, general location, and extent of the uses of land,” including environmental protection) and circulation (“the general location, alignment, and extent of existing and proposed major thoroughfares, major transportation routes, and major terminal facilities”). A number of other topics may also be included. The land-use and circulation provisions must correlate, and the development regulations be consistent with the comprehensive plan. In addition, Cowlitz County jurisdictions must designate and work toward preserving natural resource lands, as well as planning for and regulating critical areas such as wetlands and flood plains.” The proposed project fully complies with the city’s comprehensive plan and zoning codes.

## Other Codes and Regulations

Zoning for the site is governed by the City of Longview. All development within the campus zones are governed by the Campus Master Plan, as adopted by the City of Longview. It is anticipated that the 2021 Campus Master Plan update will need to be submitted and approved by the City as a Minor Amendment to the Master Plan.

## Further Studies and Other Significant Components

The location of the city’s existing 20” water line through campus and the increased easement requirement around that line due to poor soil conditions has prompted the college and city to begin discussions to move the line into 15th Ave, east of the campus boundary. This would allow the campus to develop unencumbered by the water line easement in the future. Further study and discussion are needed to resolve the issue completely.

## Building Commissioning

The CVTS building will be commissioned to ensure that control devices, components, equipment, and systems are calibrated, adjusted, and operate in accordance with the approved plans and specifications. Commissioning will also be performed per the requirements of the WSEC including enhanced commissioning to meet the requirements of LEED 4.1.

Functional testing will be performed by a registered professional to demonstrate the correct installation and operation of each component, system, and system to system relationship in accordance with the plans and specifications. This demonstration is to prove operation, function, and maintenance serviceability for each of the commissioned systems. Upon completion of the commissioning scope, the contractor will submit to the code official a commissioning compliance checklist per the WSEC, signed by the building owner.

Building Envelope Commissioning will also be completed per the WSEC and LEED 4.1. Air barrier testing will be performed to ensure the air leakage rate is below code required values and window water testing completed to verify installation of window systems. Air Barrier testing results will be submitted by the contractor to the code official.

## Future Phases

The new CVTS project does not include planning for any future phases that will affect the project. Lower Columbia College is planning a new Welcome Center that will be located north of the existing Admissions Center and will require some parking reconfiguration of the new lot west of the CVTS.

## Delivery Method

### Design-Bid-Build

The Predesign team evaluated three methods of project delivery- Design-Bid-Build, GCCM, and Design-Build- and are recommending Design-Build-Build (DBB) traditional project delivery as the most advantageous method for this project. The following considerations were evaluated:

#### Traditional Project Delivery - Recommended

##### Design-Bid-Build (D-B-B)

- D-B-B has been used on most WA State Community & Technical College projects, and a majority of WA State public projects in general.
- LCC is familiar and experienced with Design-Bid-Build delivery. They have used it on their last two major capital projects and it has attracted quality local contractors.
- D-B-B encourages price competition with competitive bidding of general contractors and subcontractors.
- Responsibility Criteria can be defined in the specifications to help prevent against an unqualified general contractor being awarded the project.
- The C100 budget includes design and construction contingencies appropriate for D-B-B project delivery.

#### Alternative Project Delivery - Not Recommended

##### General Contractor/Construction Manager (GCCM)

- RCW 39.10 allows GCCM project delivery to be used on projects with complex scheduling, phasing or coordination; or construction at an occupied facility; or GCCM involvement during design is critical to project success; or a complex or technical work environment; or specialized work on a building with historical significance.
- GCCM can be a cost-effective overall project delivery process, however it would incur increased budgetary costs for GCCM preconstruction fees for early involvement during design, preparing multiple packages during bidding, and GCCM risk contingencies, which are not accounted for in the allowable project budget.



##### Design-Build (D-B)

- RCW 39.10 allows D-B project delivery to be used on projects with a total project cost over \$2M where construction activities are highly specialized and a DB approach is critical in developing the construction methodology; or the project provides opportunity for greater innovation or efficiencies between the designer and the builder; or significant savings in project delivery time would be realized.
- D-B can be a cost-effective overall project delivery process, however it would incur increased budgetary costs for the effort to prepare the OPR and the RFQ/ RFP, stipends for shortlisted D-B teams, and some level of re-programming after the predesign phase, which are not accounted for in the allowable project budget.
- D-B project delivery requires an owner who is trained and committed to the D-B process, which LCC is not.

## Lower Columbia College Center for Vocational & Transitional Studies

### 4.0 DETAILED ANALYSIS OF PREFERRED ALTERNATIVE

## Agency Management

Lower Columbia College's project Steering Committee is responsible for making decisions on overall strategy and design issues. The Vice President of Administration will be the primary point of contact for owner decisions, direction, and coordination during all phases of the project.

The College will work through the Department of Enterprise Services (DES) Project Manager to provide formal direction to consultants and contractors. The DES Project Manager is also responsible for the overall project budget, design and construction contracts, and monitoring compliance with project requirements.

The project will be managed by the DES Project Manager, the VP of Administration and Director of Campus Services. The VP of Administration and Director of Campus Services will oversee the development and design process to ensure that the facility meets the intended goals of the project in a manner consistent with the Master Plan and Predesign. The VP of Administration will regularly review progress and issues with LCC's President, update LCC's Board of Trustees as appropriate, and regularly report to the State Board of Community and Technical Colleges (SBCTC) regarding the progress of the project.

## Schedule

The project is proposed to be completed under the Design-Bid-Build delivery method. The Design phase will begin in April 2022 pending selection of the A/E team. Phased construction is anticipated to start in September 2023 and be substantially complete in September 2025.

### Key Milestones

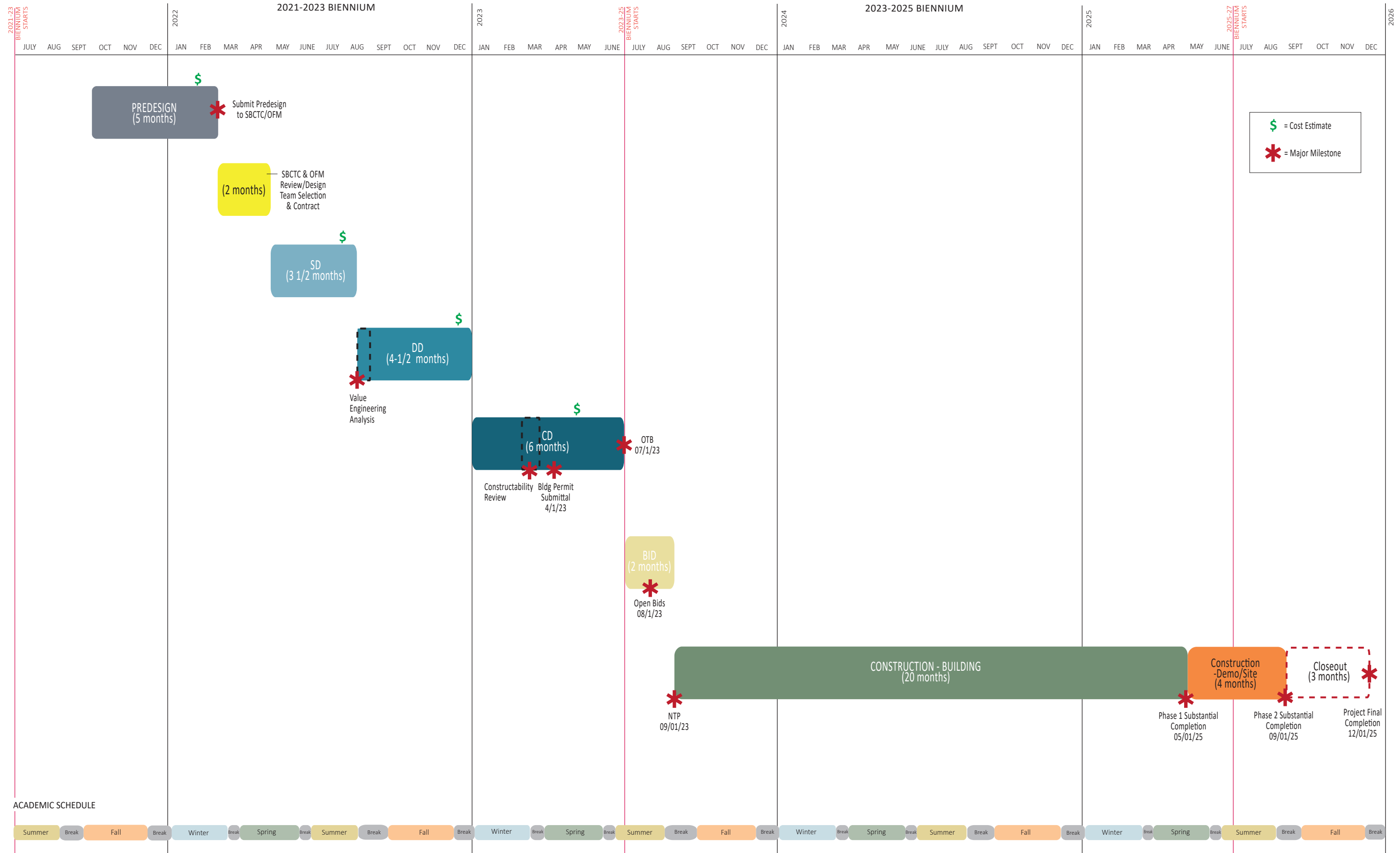
- Predesign Study: October 2022 – March 2023
- Predesign Approval: April 2023
- A/E Selection: March – April 2023
- Schematic Design: May – July 2023
- Value Engineering Analysis: August 2023
- Design Development: August – December 2023

- Construction Documents: January – June 2023
- Constructability Review: March 2023
- Bid/Contracts: July – August 2023
- Construction Phase 1- Building: August 2023 – April 2025
- Equipment Installation: March – April 2025
- Testing/Commissioning: March – April 2025
- Occupancy/Substantial Completion Phase 1: May 1, 2025
- Construction Phase 2 – Demo/Site: May – August 2025
- Substantial Completion Phase 2: September 1, 2025
- Full Operation/Final Completion: December 1, 2025

The most impactful factor that could delay the project schedule would be if construction funding is not allotted in the 2023-25 biennium and postponed to a future biennium. That could increase project costs due to potential design and document revisions for code changes, project restart fees, and escalation of construction costs.

Project permitting will be through the City of Longview. A preliminary scoping meeting was held with City staff on December 1, 2021. Since the property is currently zoned for the use and scale of the proposed CVTS building, we understand a community stakeholder process would not be required as part of the permitting process. However, the college plans to communicate with the Longview community to share information throughout the project.

# Project Schedule Diagram







# 5.0 PROJECT BUDGET ANALYSIS FOR THE PREFERRED ALTERNATIVE

## Cost Estimate

The Predesign cost estimate was prepared in February 2022 based on project diagrams, consultants’ narratives, and meetings with the estimator. The estimate anticipates a construction start date of September 2023 and duration of 24 months. It includes two primary phases of construction – 1) construct new CVTS building; 2) demolish existing Vocational, Science, Physical Science and Steam Plant buildings; construct new parking and landscaping.

The estimate is based on a design-bid-build delivery method. See detailed cost estimate in the appendix for other assumptions used in completing the estimate.

Since the June 2020 C100 was performed, the cost of construction has escalated at an extraordinarily high rate. The June 2020 C100 included a building of 54,799 SF with a rounded escalated Maximum Allowable Construction Cost (MACC) of \$25,075,000 and rounded escalated total project cost of \$35,011,000.

To meet the \$35,011,000 total project budget allowance for the predesign, the college and design team reduced the scope of the project and the college committed local funding. The predesign building is 46,267 SF with a rounded escalated MACC of \$27,443,000. The rounded escalated total cost of the project is estimated to be \$37,211,000.

### C-100 Cost Summary

The Project Budget Summary to the upper right is a summary of all project costs which include construction contingency, escalation, and sales tax. The complete C-100 Project Cost Summary is included in the appendix.

### Project Budget Summary

Item/Phase	Cost	% Budget
Acquisition	\$0	0%
Consultant Services	\$4,106,434	11.0%
Construction Contracts	\$31,153,914	83.7%
Equipment	\$1,580,917	4.3%
Artwork	185,128	0.5%
Project Management	\$0	0%
Other Costs	\$184,300	0.5%
<b>Total</b>	<b>\$37,210,693</b>	<b>100%</b>

**Rounded Escalated Total: \$37,211,000**

### Construction Cost Summary Table

<b>1) SITE WORK:</b>		Includes demo & hazmat abatement of existing bldgs
G10) Site Preparation.	\$1,204,009	
G20) Site Improvements.	\$1,210,879	
G30) Site Mechanical Utilities.	\$554,522	
G40) Site Electrical Utilities.	\$302,500	
G10) Other Site Construction.	\$0	
Z10) Contractor's GC, OH & Profit	\$579,128	
<b>SITE WORK SUBTOTAL:</b>		<b>\$3,851,038</b>
<b>3) FACILITY CONSTRUCTION:</b>		
A10) Foundations.	\$1,305,036	
A20) Basement Construction.	\$0	
B10) Superstructure.	\$2,573,648	
B20) Exterior Closure.	\$5,079,115	
B30) Roofing.	\$795,257	
C10) Interior Construction.	\$1,141,253	
C20) Stairs.	\$170,350	
C30) Interior Finishes.	\$831,694	
D10) Conveying.	\$175,000	
D20) Plumbing Systems.	\$601,471	
D30) HVAC.	\$3,212,217	
D40) Fire Protection Systems.	\$300,736	
D50) Electrical Systems.	\$2,272,620	
E10) Equipment Installed by Contractor.	\$51,650	
E20) Furnishings Installed by Contractor.	\$236,271	
Z10) Contractor's GC, OH & Profit	\$3,318,098	
<b>FACILITY CONSTRUCTION SUBTOTAL:</b>		<b>\$22,064,416</b>
<b>MACC TOTAL (unescalated):</b>		<b>\$25,915,454</b>

Summary Table - Uniformat II Level 2 Construction Cost Estimate (unescalated)

## Proposed Funding

Design phase funding for the project has been allocated through General Obligation Bonds (057) in the 2021-2023 biennium. Construction phase funding is anticipated to be from General Obligation Bonds (057) and Local Funds in the 2023-2025 biennium. Lower Columbia College has committed up to \$2,200,000 in local funds to cover escalation above OFM’s allowed rate. If bids come in under budget, LCC’s local funding would be reduced.

### Funding Summary

2021-23 Biennium                \$3,188,582  
(Funding Category 057 – General Obligation Bonds)

2023-25 Biennium                \$31,822,418  
(Funding Category 057 – General Obligation Bonds)

Subtotal                                \$35,011,000

2023-25 Biennium                \$2,200,000 (Local Funds)

**Total                                        \$37,211,000**

## Furniture, Fixtures, and Equipment

Furniture, fixtures and equipment costs are included in the project budget in both the construction cost estimate and as separate cost items outside of the construction contract. Items included in the construction cost estimate include built-in casework and other fixed equipment items that require careful coordination with building systems and utilities. Machining Lab equipment, Welding Lab equipment, other loose equipment and furniture have been accounted for in the E-10 Equipment and E-20 Furnishings line items in the C-100 form.

## Facility Operations and Maintenance Requirements

Although the estimated M&O costs for the new CVTS building are shown in the table below, the college does not expect any net additional maintenance and operation costs with this project. The annual operations and maintenance costs for the new 46,267 SF CVTS building are anticipated to be offset by the annual operations and maintenance savings from demolishing a total of 50,518 SF of existing inefficient buildings: 32,250 SF Vocational Bldg, 9,551 SF Physical Science Bldg, 6,994 SF Science Bldg, and 1,723 SF Steam Plant.

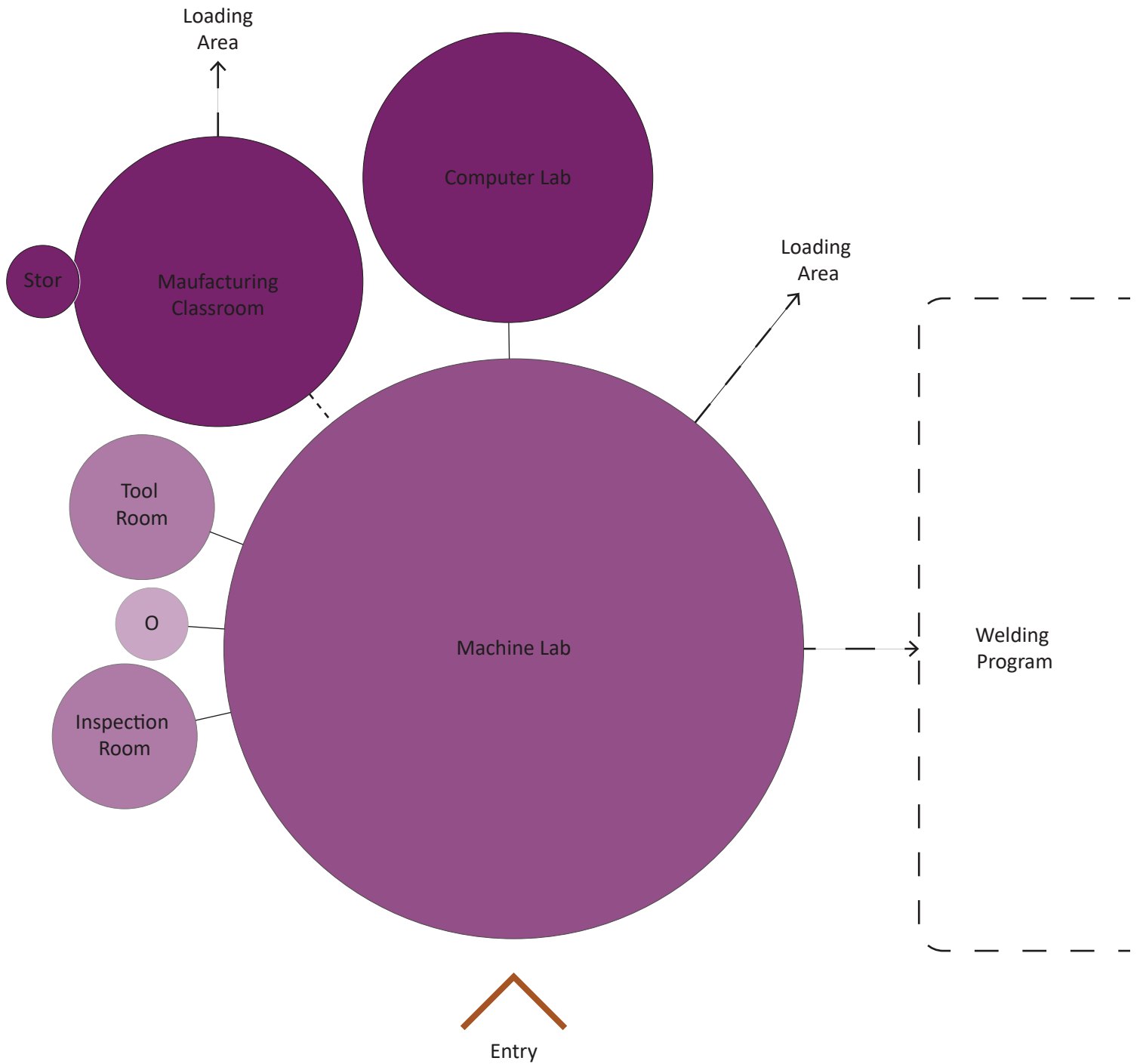
### Maintenance and Operations Cost Table

Items	Category	Cost Basis per sqft	Anticipated Annual Cost
	<b>Janitorial Supplies</b>		
	Supplies/Material/Equipment	\$0.10	\$4,700
	Custodian	\$0.86	\$40,420 1 FTE
	<b>Utility Cost</b>		
	Electricity/Gas/Water/Sewer	\$4.88	\$229,360
	Waste Disposal/Recycling	\$0.05	\$2,350
	Service Contracts	\$0.15	\$7,050
	<b>Technology</b>		
	Infrastructure/Telecom/Equipment	\$1.06	\$49,820
	Personnel	\$2.00	\$94,000
	<b>Maintenance Repairs/Furn. &amp; Equipment</b>		
	General Repairs	\$0.34	\$15,980
	Furn. & Equipment	\$0.11	\$5,170
	Personnel	\$0.94	\$44,180
	<b>Roads/Walks/Grounds</b>		
	Supplies/Material/Equipment	\$0.12	\$5,640
	Personnel	\$0.63	\$29,610
	<b>Security</b>		
	Supplies/Material/Equipment	\$0.12	\$5,640
	Personnel	\$0.72	\$33,840
	<b>Administration</b>		
	Supplies/Material	\$0.04	\$1,880
	Personnel		N/A
	<b>Total Anticipated Budget Impact</b>	<b>\$12.12</b>	<b>\$569,640</b>

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# APPENDIX A - PROGRAM ROOM DATA SHEETS



Machining/Manufacturing Programmatic Diagram

## General Information

The Machining Lab is used during all of the MASP classes. It is also used for MFG 115, MFG 130 shop demonstrations, and MFG 230.

### Activity Description

Students operate Machining equipment in the open plan lab. Students frequently move between the computer lab and Machining Lab during class hours. It is necessary for the Machining Lab to be open design without barrier walls for safety reasons.

### Basic Room Parameters

**Square Footage** 5000 SF

**Occupants** 100

### Proximity Requirements

**Adjacencies** Computer Lab, tool room, inspection room, classroom and outdoor access

### Casework, Equipment and Furniture

**Casework** (4) 48" x 24" x 78" light duty cabinets

**Technology** N/A

**Equipment** See Equipment List and Layout

**Furnishings** Workbenches with storage lockers below

### Service Requirements

**Lighting** 750-1000 lux

**Electrical** 3/Phase

General outlets that remain active at all times

Dedicated circuits for all 110V Outlets- GFCI

Dedicated circuits to equipment based on Volt/Amp

10-20 overhead cord reels throughout laboratory

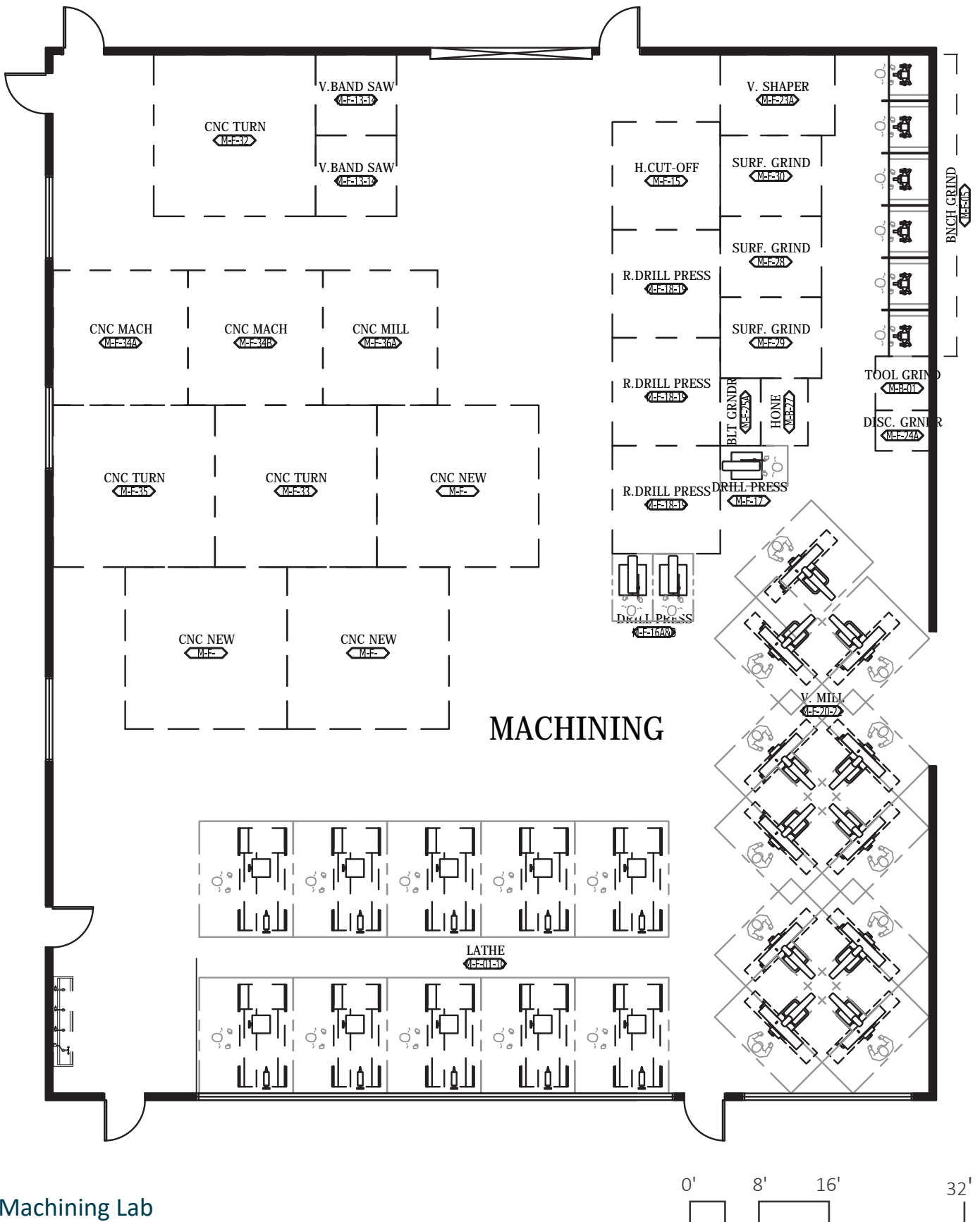
110V – GFCI outlet in each welding booth

No floor boxes

<b>HVAC</b>	High exchange rate
	Primarily cooling
<b>Plumbing</b>	Large sink for hand washing
	Outdoor faucet
	Lavatory for Hand Washing
	Emergency Eye Wash
	(2) Hose Bibs
	Compressed Air (Central) with Dryer – Valve/Gauge for Adjustment of PSI
	10-20 Overhead Air Reels throughout Laboratory
	Air Connection at CNC
	10-20 General Air Connections throughout Laboratory
<b>Special Systems</b>	Fume Extraction System Welding- Single station system
	Debris/fume extraction grinding- Ventilation/hood at each grinding station
<b>Finishes</b>	Floor                      Ground concrete
	Walls                      Concrete masonry unity- paint
	Ceiling                    Open to structure (Acoustical Deck and Insulation)
<b>Openings</b>	Windows                If windows provided, then glass should be durable/impact-resistant and sunlight should be controllable by users
	Doors                      6'0" x 8'0" (Pair) with removable Mullion
	Overhead Doors (1) 14'-0" x 16'-0" Minimum – Insulated – Electric Operation
	Relite                      Sound and smoke seals

# Lower Columbia College Center for Vocational & Transitional Studies

MACHINING | MANUFACTURING



## Machining Lab



MACHINE EQUIPMENT SCHEDULE

I.D. TAG	Machine Type	Brand	Model or Size	Electrical			Foot Print			Operator space
				Motor H.P.	Voltage	Max Amps	Width	Depth	INCHES	
M-F-01A	Engine Lathe	DoAll	LT-13	6	208-3ph	15.5	84	38	78	40
M-F-02A	Engine Lathe	Clausing Colchester	13x36	6	208-3ph	15.5	84	38	78	40
M-F-03A	Engine Lathe	Clausing Metosa	C1440	6	208-3ph	15.5	84	38	78	40
M-F-04A	Engine Lathe	Clausing Metosa	C1440S	6	208-3ph	15.5	84	38	78	40
M-F-05A	Engine Lathe	Victor	1630B	8	208-3ph	22	84	38	78	40
M-F-06A	Engine Lathe	Republic	14x40	6	208-3ph	15.5	84	38	78	40
M-F-07A	Engine Lathe	Leblond	14x60	3	208-3ph	8	96	38	78	40
M-F-08A	Engine Lathe	Lion	C400TM	8	208-3ph	22	96	38	78	40
M-F-08B	Engine Lathe	Lion	C400TM	8	208-3ph	22	112	38	78	40
M-F-09A	Engine Lathe	Monarch	16x54	10	208-3ph	30	132	41	84	43
M-F-10A	Engine Lathe	Pratt & Whitney	14x40	10	208-3ph	30	108	41	84	43
M-F-11A	Engine Lathe	ACER E-Lathe	14x40	3	208-3ph	9	96	38	78	40
M-F-11B	Engine Lathe	ACER E-Lathe	14x40	3	208-3ph	9	96	38	78	40
M-F-12A	Engine Lathe	Lodge and Shipley	16x60	20	208-3ph	50	144	60	90	30
M-F-13A	Vertical Band Saw	DoAll	2013V	2	208-3ph	7	72	72	72	
M-F-14A	Vertical Band Saw	Spartan	S20V	2	208-3ph	7	72	72	72	
M-F-15A	Horizontal Cut-Off Saw	DoAll	C916	2	208-3ph	10	96	96	96	
M-F-16A	Drill Press	Wilton	5816	1	120-1ph	7	36	60	60	
M-F-16B	Drill Press	Wilton	5816	1	120-1ph	7	36	60	60	
M-F-17A	Drill Press	Jet		2	230?	3.2/3.1				
M-F-18A	Radial Drill Press	Cincinnati Bickford		10	208-3ph	30	132	132		
M-F-18B	Radial Drill Press	Cincinnati Bickford		3	208-3ph	10	96	96		
M-F-19A	Radial Drill Press	Summit		3	208-3ph	10	60	60		
M-F-20A	Vertical Milling Machine	Bridgeport	9x48	2	208-3ph	7	96	78		
M-F-20B	Vertical Milling Machine	Bridgeport	9x48	2	208-3ph	7	96	78		
M-F-20C	Vertical Milling Machine	Bridgeport		2	208-3ph	7	96	78		
M-F-20D	Vertical Milling Machine	Bridgeport		2	208-3ph	7	96	78		
M-F-20E	Vertical Milling Machine	Bridgeport		2	208-3ph	7	96	78		
M-F-20F	Vertical Milling Machine	Bridgeport		2	208-3ph	7	96	78		
M-F-21A	Vertical Milling Machine	Lagun	9x48	2	208-3ph	7	96	78		
M-F-22A	Vertical Milling Machine	Summit	VS350B	3	208-3ph	10	120	84		

# Lower Columbia College Center for Vocational & Transitional Studies

MACHINING | MANUFACTURING

## MACHINE EQUIPMENT SCHEDULE

I.D. TAG	Machine Type	Brand	Model or Size	Electrical			Foot Print			Operator space
				Motor H.P.	Voltage	Max Amps	Width	Depth	INCHES	
M-F-22B	Vertical Milling Machine	Summit	VS350B	3	208-3ph	10	120	84		
M-F-22C	Vertical Milling Machine	Summit	VS550B	5	208-3ph	15	132	102		
M-F-22D	Vertical Milling Machine	Summit	VS550B	5	208-3ph	15	132	102		
M-F-23A	Vertical Shaper	Pratt & Whitney	Model B 6 inch	3	208-3ph	10	72	102		
M-F-24A	Sterling Disc Grinder	Sterling	12 inch	1.5	208-3ph	5	36	48		
M-F-25A	Belt Grinder	Square Wheel	2 inch	1	120-1ph	7	36	60		
M-B-05A	Bench Grinder	Milwaukie	8 inch	0.75	120-1ph	5	36	36		
M-B-05B	Bench Grinder	Milwaukie	8 inch	0.75	120-1ph	5	36	36		
M-B-05C	Bench Grinder	Milwaukie	8 inch	0.75	120-1ph	5	36	36		
M-B-05D	Bench Grinder	Milwaukie	8 inch	0.75	120-1ph	5	36	36		
M-B-05E	Bench Grinder	Milwaukie	8 inch	0.75	120-1ph	5	36	36		
M-B-05F	Bench Grinder	Milwaukie	8 inch	0.75	120-1ph	5	36	36		
M-B-01A	Tool Grinder	Cutter Master		0.5	120-1ph	5	48	48		
M-F-27A	Hone	Sunnen		0.5	120-1ph	5	42	60		
M-F-28A	Surface Grinder	Chevelier	FSG2A618	3	208-3ph	10	72	90		
M-F-29A	Surface Grinder	Chevelier	FSG-3A818	3?	208-3ph	10				
M-F-30A	Surface Grinder	K. O. Lee	6x18	3	208-3ph	10	60	60		
M-F-31A	Double Heat Treat Furnace	Lucifer			208-1ph		60	84		
M-F-32A	Turning Center	Haas	HL-2	?	208-3ph	40	144	144		
M-F-33A	Turning Center	Haas	ST-20	?	208-3ph	40	144	144		
M-F-34A	Machining Center	Haas	Mini Mill 2	?	208-3ph	40	96	120		
M-F-34B	Machining Center	Haas	Mini Mill 2	?	208-3ph	40	96	120		
M-F-35A	Machining Center	Haas	VF-2YT	?	208-3ph	40	144	144		
M-F-36A	CNC Mill	Bridgeport	E Z Trak	3	208-3ph	10	120	102		
M-F-37A	Foundry Area	Needs Natural Gas			120-1ph		120	144		
M-B-02A	Coordinate Measure Machine	Starrett	20x20x16		120-1ph		96	72		
M-B-03A	Optical Comparator	Suburban	Master View		120-1ph		36	72		
M-B-04A	3D Printer	Dimension	BST 768		120-1ph		36	60		

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## General Information

### Activity Description

Manufacturing program students use this classroom for their courses. Students typically receive lectures in this classroom.

### Basic Room Parameters

**Square Footage** 1100 SF

**Occupants** 55

### Proximity Requirements

**Adjacencies** Machining Lab

Storage

Exterior Plaza

### Casework, Equipment and Furniture

**Casework** (2) 15" x 28" x 37" File cabinets

**Technology** Sound/Audio system for presentation

Projector and screen or flat panel monitor to be confirmed during design

Wireless access points

Telephone

**Equipment** White markerboards

Computer podium for instruction

**Furnishings** Long student tables and seating

Mobile workbench for Manufacturing equipment and Instructor tools

## Service Requirements

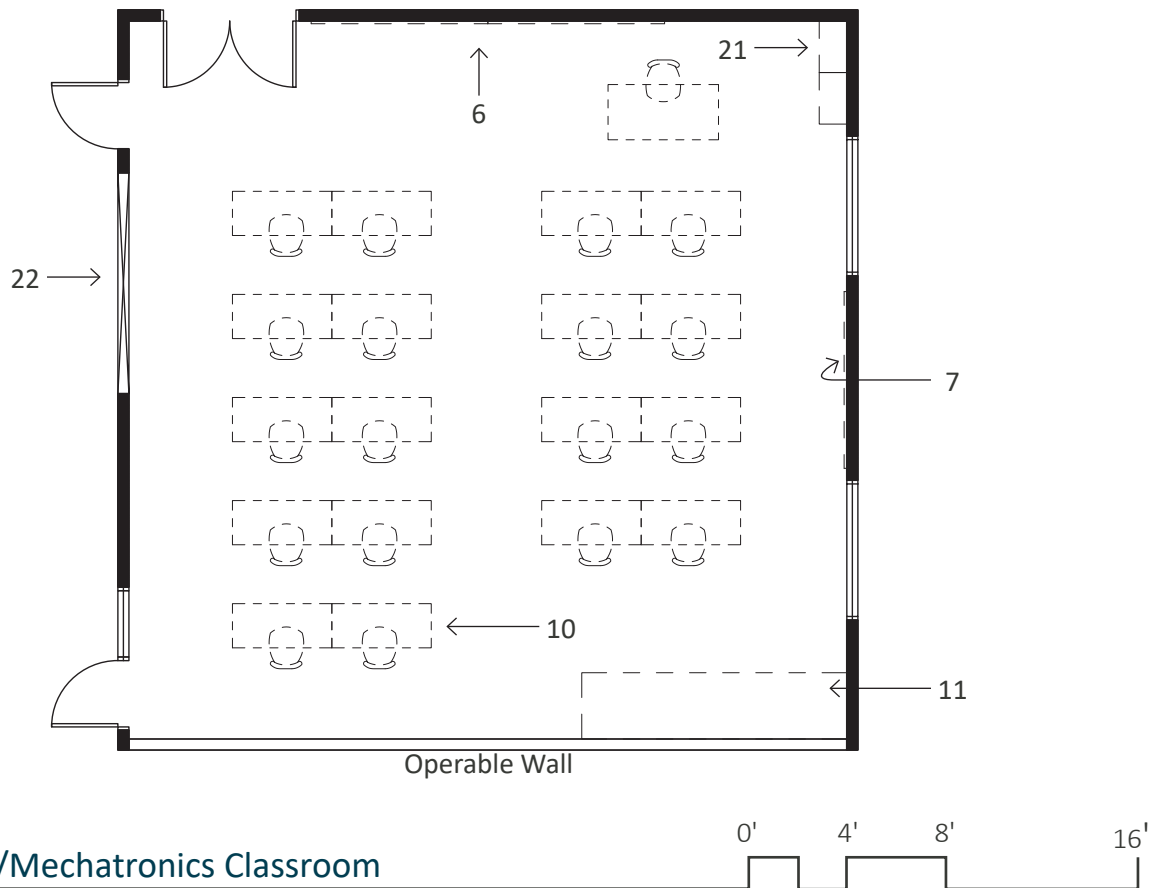
<b>Lighting</b>	Standard Lighting	
<b>Electrical</b>	Outlets that remain active at all times	
<b>HVAC</b>	Heating and Air Conditioning	
<b>Plumbing</b>	N/A	
<b>Finishes</b>	Floor	Ground Concrete
	Walls	GWB/Paint/Tackable wall covering
	Ceiling	Lay-in acoustical ceiling
<b>Openings</b>	Doors	Standard
		6'0" x 8'0" (Pair) with removable Mullion
	Overhead Doors	(1) 10'0" x 10'0" Minimum – Insulated – Electric Operation
	Relite	Sound and smoke seals

## Other Requirements

There will be an operable wall between this classroom and the adjacent Machining computer lab, which will allow for a larger event/workshop space outside of typical usual classes.

# Lower Columbia College Center for Vocational & Transitional Studies

MACHINING | MANUFACTURING



## Manufacturing/Mechatronics Classroom

### EQUIPMENT & CASEWORK

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Wall Cabinet                | 16. Workstation Desk         |
| 2. Adjustable Wall Shelves     | 17. Lateral File Cabinet     |
| 3. Tall Storage Cabinet        | 18. Small Group Table/Chairs |
| 4. Equipment Space             | 19. Guest Chair              |
| 5. Demonstration Table         | 20. Shelving                 |
| 6. White Marker board          | 21. Casework                 |
| 7. Tackboard                   | 22. Overhead door            |
| 8. Instructor Podium           | 23. Overhead counter door    |
| 9. Instructor Bench            | 24. Student computer         |
| 10. Mobile Student Desk        | 25. Mobile Table             |
| 11. Mobile Bench Workstation   | 26. Inspection Table         |
| 12. Conference Table/Chairs    | 27. Server Racks             |
| 13. Mobile Bookshelf           | 28. Refrigerator             |
| 14. Sink                       | 29. Microwave                |
| 15. Lounge Chairs/ Side Tables |                              |

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## General Information

### Activity Description

During Machining lab classes students also spend 15-30 minutes in the classroom for short lectures. The classroom is connected to the lab and shares windows looking into the shop that allow instructors/supervisors to maintain visibility of the lab space.

### Basic Room Parameters

**Square Footage** 1100 SF

**Occupants** 55

### Proximity Requirements

**Adjacencies** Machining Lab  
Manufacturing/Mechatronics

### Casework, Equipment and Furniture

**Casework** (2) 36" x 24" x 72" metal storage

**Technology** Sound/Audio system for presentation  
Projector and screen or flat panel monitor to be confirmed during design  
Wireless access points  
Telephone

**Equipment** Computers with dual monitors  
Computer podium for instruction

**Furnishings** Computer Desks



## Service Requirements

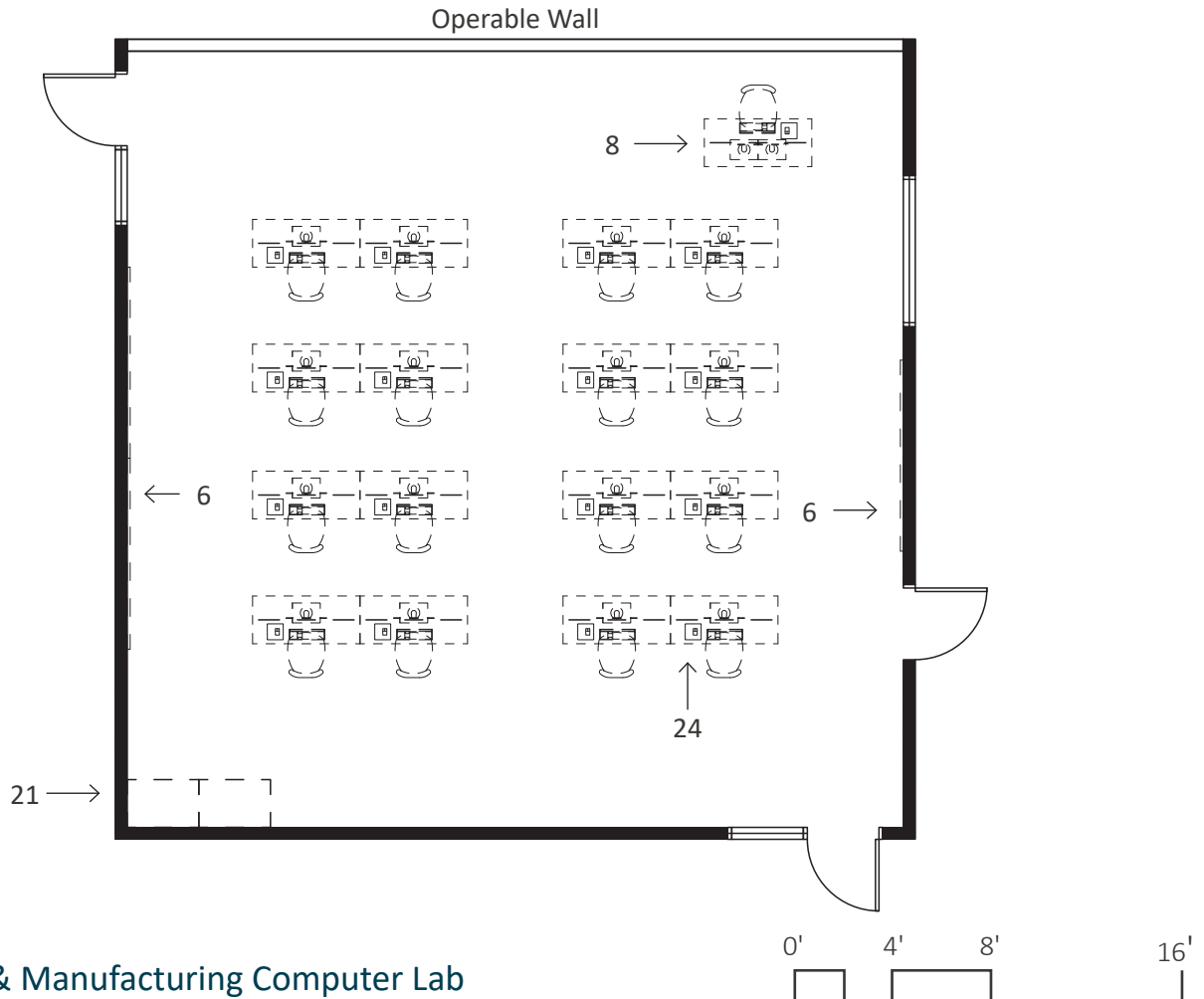
<b>Lighting</b>	Standard Lighting	
	Dimmable lighting near instructor podium	
<b>Electrical</b>	Outlets that remain active at all times	
<b>HVAC</b>	Heating and Air Conditioning	
<b>Plumbing</b>	N/A	
<b>Finishes</b>	Floor	Polished Concrete
	Walls	GWB/Paint/Tackable wall covering
	Ceiling	Lay-in acoustical ceiling
<b>Openings</b>	Doors	Standard
	Relite	Sound and smoke seals

## Other Requirements

There will be an operable wall between this classroom and the adjacent Machining computer lab, which will allow for a larger event/workshop space outside of typical usual classes.

# Lower Columbia College Center for Vocational & Transitional Studies

MACHINING | MANUFACTURING



## Machining & Manufacturing Computer Lab

### EQUIPMENT & CASEWORK

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Wall Cabinet                | 16. Workstation Desk         |
| 2. Adjustable Wall Shelves     | 17. Lateral File Cabinet     |
| 3. Tall Storage Cabinet        | 18. Small Group Table/Chairs |
| 4. Equipment Space             | 19. Guest Chair              |
| 5. Demonstration Table         | 20. Shelving                 |
| 6. White Marker board          | 21. Casework                 |
| 7. Tackboard                   | 22. Overhead door            |
| 8. Instructor Podium           | 23. Overhead counter door    |
| 9. Instructor Bench            | 24. Student computer         |
| 10. Mobile Student Desk        | 25. Mobile Table             |
| 11. Mobile Bench Workstation   | 26. Inspection Table         |
| 12. Conference Table/Chairs    | 27. Server Racks             |
| 13. Mobile Bookshelf           | 28. Refrigerator             |
| 14. Sink                       | 29. Microwave                |
| 15. Lounge Chairs/ Side Tables |                              |

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## General Information

### Activity Description

Support storage for Machining, with direct access for Manufacturing classes

### Basic Room Parameters

**Square Footage** 350 SF

**Occupants** 2

### Proximity Requirements

**Adjacencies** Machining Lab

### Casework, Equipment and Furniture

**Casework** Shelving  
Lateral file cabinets

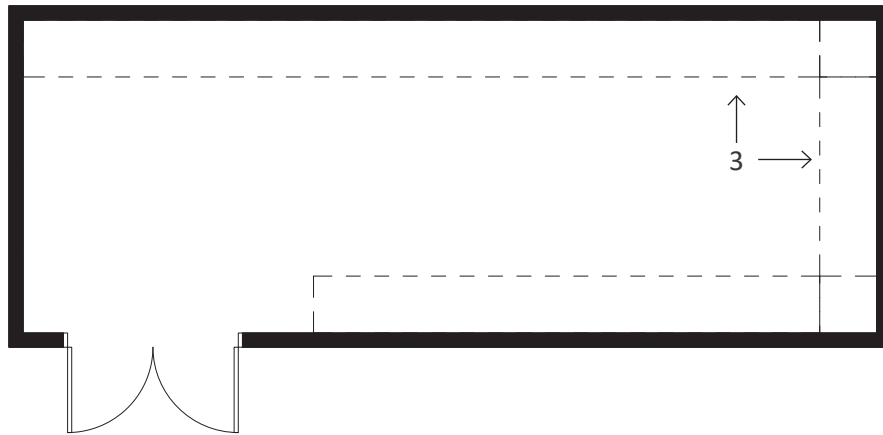
**Technology** N/A

**Equipment** N/A

**Furnishings** Mobile work bench

## Service Requirements

<b>Lighting</b>	General High Bay Lighting	
	Task Lighting at Equipment	
<b>Electrical</b>	3/Phase	
	General outlets that remain active at all times	
	Dedicated Circuits for all 110V Outlets- GFCI	
	Dedicated Circuits to Equipment based on Volt/Amp	
<b>HVAC</b>	Standard	
<b>Plumbing</b>	N/A	
<b>Finishes</b>	Floor	Ground Concrete
	Walls	Concrete Masonry Unity- Pain
	Ceiling	
<b>Openings</b>	Doors	6'0" x 8'0" (Pair) with removable Mullion
	Relite	Sound and Smoke Seals



## Machining & Manufacturing Storage



### EQUIPMENT & CASEWORK

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Wall Cabinet                | 16. Workstation Desk         |
| 2. Adjustable Wall Shelves     | 17. Lateral File Cabinet     |
| 3. Tall Storage Cabinet        | 18. Small Group Table/Chairs |
| 4. Equipment Space             | 19. Guest Chair              |
| 5. Demonstration Table         | 20. Shelving                 |
| 6. White Marker board          | 21. Casework                 |
| 7. Tackboard                   | 22. Overhead door            |
| 8. Instructor Podium           | 23. Overhead counter door    |
| 9. Instructor Bench            | 24. Student computer         |
| 10. Mobile Student Desk        | 25. Mobile Table             |
| 11. Mobile Bench Workstation   | 26. Inspection Table         |
| 12. Conference Table/Chairs    | 27. Server Racks             |
| 13. Mobile Bookshelf           | 28. Refrigerator             |
| 14. Sink                       | 29. Microwave                |
| 15. Lounge Chairs/ Side Tables |                              |

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## General Information

### Activity Description

Students enter the tool room several times a period to get tools and supplies.

### Basic Room Parameters

**Square Footage** 500-600 SF

**Occupants** 1-4

### Proximity Requirements

**Adjacencies** Machining Lab

### Casework, Equipment and Furniture

**Casework** (4) 36" x 24" x 72" metal storage

(2) LISTA SC Series Cabinet 8 drawers 88 compartments XSSC1350-0803

(2) LISTA SC Series Cabinet 10 drawers 177 compartments XSHS1350-1017

**Technology** N/A

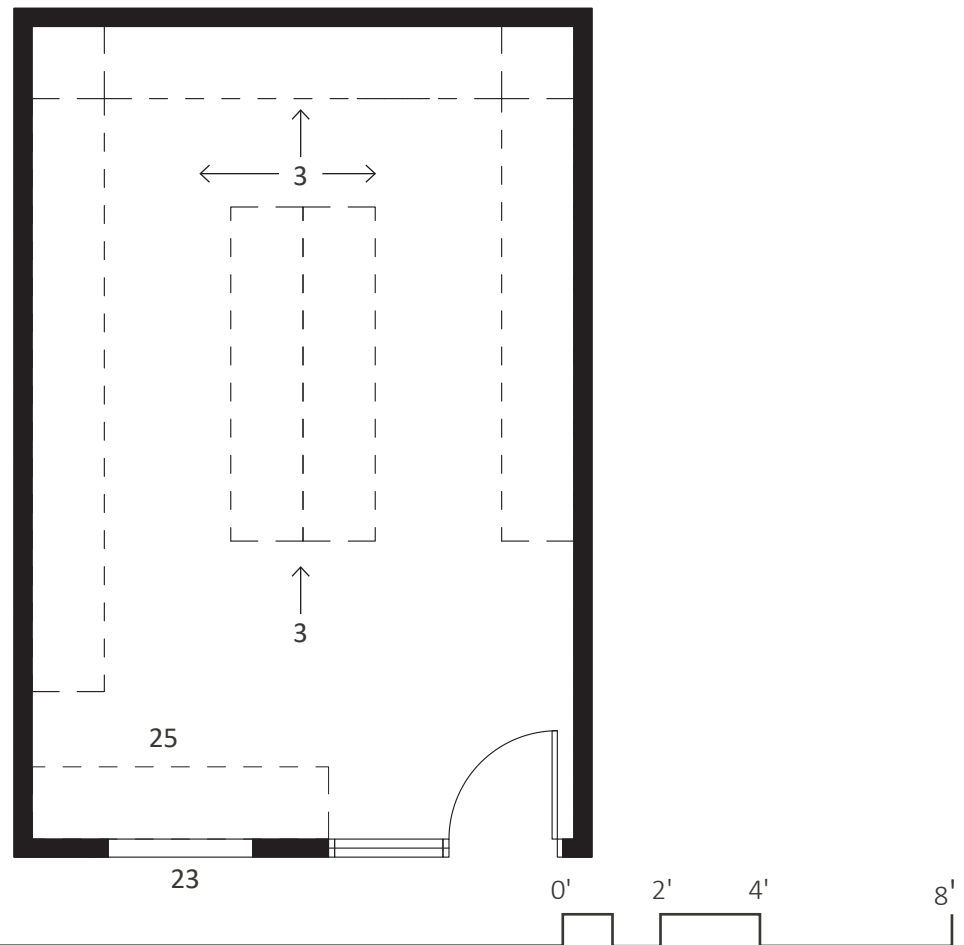
**Equipment** N/A

**Furnishings** Bench for tool checkout



## Service Requirements

<b>Lighting</b>	Standard lighting	
<b>Electrical</b>	3/Phase	
	General outlets that remain active at all times	
	Dedicated Circuits for all 110V Outlets- GFCI	
<b>HVAC</b>	Heating	
	Air Conditioning	
<b>Plumbing</b>	None	
<b>Finishes</b>	Floor	Ground Concrete
	Walls	Concrete Masonry Unity- Paint
	Ceiling	Open to Structure (Acoustical Deck and Insulation)
<b>Openings</b>	Windows	As many windows as possible looking into the Machining lab
	Doors	Standard
		Overhead counter door
	Relite	Sound and Smoke Seals



## Tool Room

### EQUIPMENT & CASEWORK

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Wall Cabinet                | 16. Workstation Desk         |
| 2. Adjustable Wall Shelves     | 17. Lateral File Cabinet     |
| 3. Tall Storage Cabinet        | 18. Small Group Table/Chairs |
| 4. Equipment Space             | 19. Guest Chair              |
| 5. Demonstration Table         | 20. Shelving                 |
| 6. White Marker board          | 21. Casework                 |
| 7. Tackboard                   | 22. Overhead door            |
| 8. Instructor Podium           | 23. Overhead counter door    |
| 9. Instructor Bench            | 24. Student computer         |
| 10. Mobile Student Desk        | 25. Mobile Table             |
| 11. Mobile Bench Workstation   | 26. Inspection Table         |
| 12. Conference Table/Chairs    | 27. Server Racks             |
| 13. Mobile Bookshelf           | 28. Refrigerator             |
| 14. Sink                       | 29. Microwave                |
| 15. Lounge Chairs/ Side Tables |                              |

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## General Information

### Activity Description

Students enter the tool room several times a period to get tools and supplies.

### Basic Room Parameters

**Square Footage** 350 SF

**Occupants** 1-4

### Proximity Requirements

**Adjacencies** Machining Lab

### Casework, Equipment and Furniture

**Casework** Storage underneath inspection counter top

**Technology** N/A

**Equipment** N/A

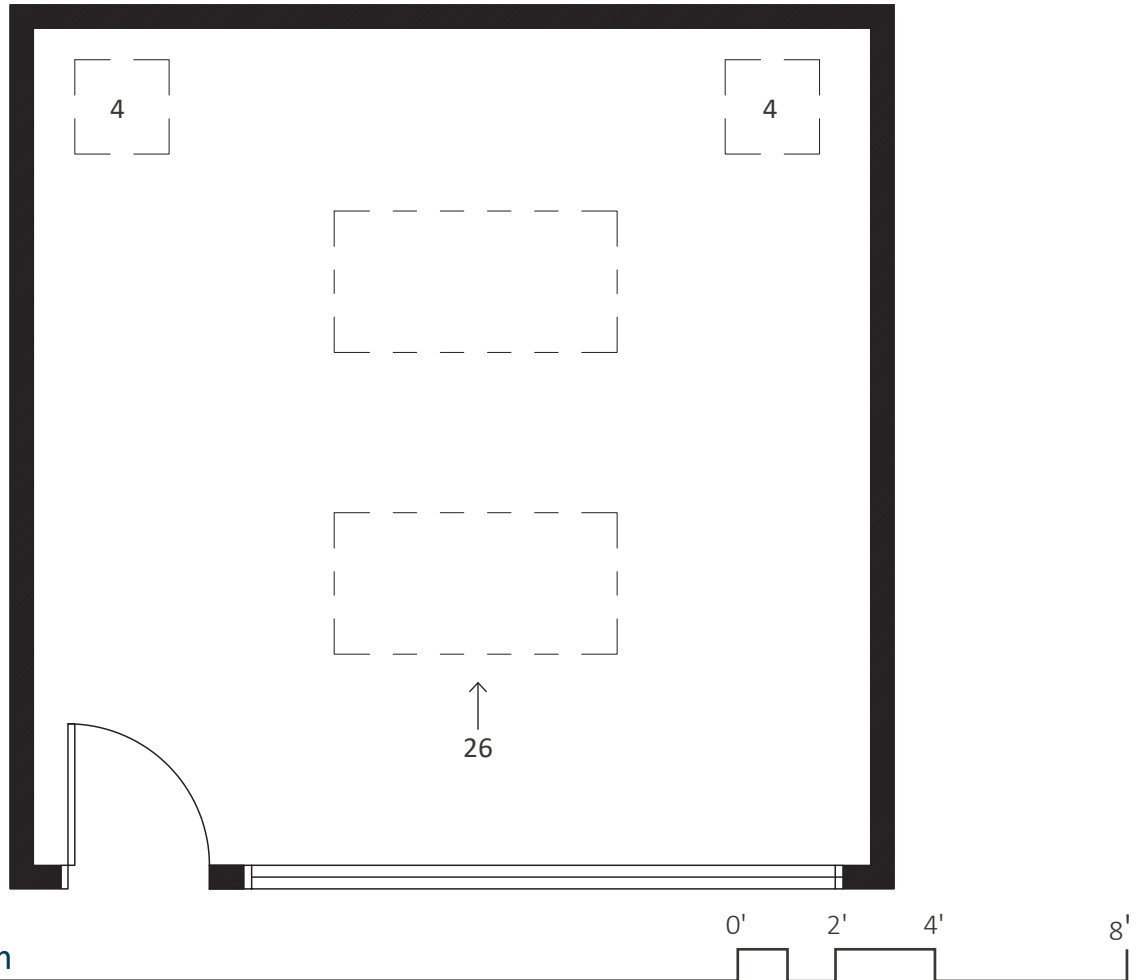
**Furnishings** Inspection Bench

## Service Requirements

<b>Lighting</b>	Standard lighting	
<b>Electrical</b>	3/Phase	
	General outlets that remain active at all times	
	Dedicated Circuits for all 110V Outlets- GFCI	
<b>HVAC</b>	Heating	
	Air Conditioning	
<b>Plumbing</b>	None	
<b>Finishes</b>	Floor	Ground Concrete
	Walls	Concrete Masonry Unity- Paint
	Ceiling	Open to Structure (Acoustical Deck and Insulation)
<b>Openings</b>	Windows	As many windows as possible looking into the Machining lab
	Doors	Standard
	Relite	Sound and Smoke Seals

# Lower Columbia College Center for Vocational & Transitional Studies

MACHINING | MANUFACTURING



## Inspection Room

### EQUIPMENT & CASEWORK

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Wall Cabinet                | 16. Workstation Desk         |
| 2. Adjustable Wall Shelves     | 17. Lateral File Cabinet     |
| 3. Tall Storage Cabinet        | 18. Small Group Table/Chairs |
| 4. Equipment Space             | 19. Guest Chair              |
| 5. Demonstration Table         | 20. Shelving                 |
| 6. White Marker board          | 21. Casework                 |
| 7. Tackboard                   | 22. Overhead door            |
| 8. Instructor Podium           | 23. Overhead counter door    |
| 9. Instructor Bench            | 24. Student computer         |
| 10. Mobile Student Desk        | 25. Mobile Table             |
| 11. Mobile Bench Workstation   | 26. Inspection Table         |
| 12. Conference Table/Chairs    | 27. Server Racks             |
| 13. Mobile Bookshelf           | 28. Refrigerator             |
| 14. Sink                       | 29. Microwave                |
| 15. Lounge Chairs/ Side Tables |                              |

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## General Information

### Activity Description

Office work, and academic meetings with students..

### Basic Room Parameters

**Square Footage** 110 SF

**Occupants** 2

### Proximity Requirements

**Adjacencies** Machining Lab

### Casework, Equipment and Furniture

**Casework** (2) 36" x 12" x 67" light duty storage

15" x 28" x 48" large file cabinet

**Technology** Same computer and screens in current use

Regular printer

**Equipment** N/A

**Furnishings** Office desk and chair

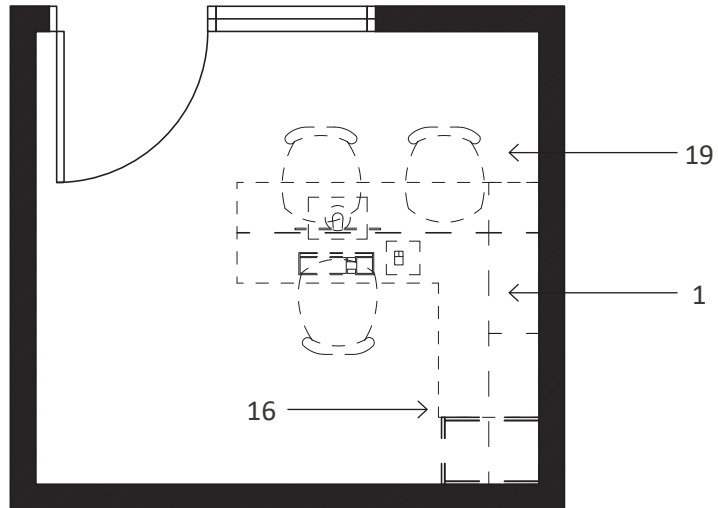


## Service Requirements

<b>Lighting</b>	Standard lighting	
<b>Electrical</b>	120v	
<b>HVAC</b>	Heating	
	Air Conditioning	
<b>Plumbing</b>	N/A	
<b>Finishes</b>	Floor	Polished concrete
	Walls	Standard
	Ceiling	GWB/Paint
<b>Openings</b>	Windows	Standard
	Doors	Standard

# Lower Columbia College Center for Vocational & Transitional Studies

MACHINING | MANUFACTURING

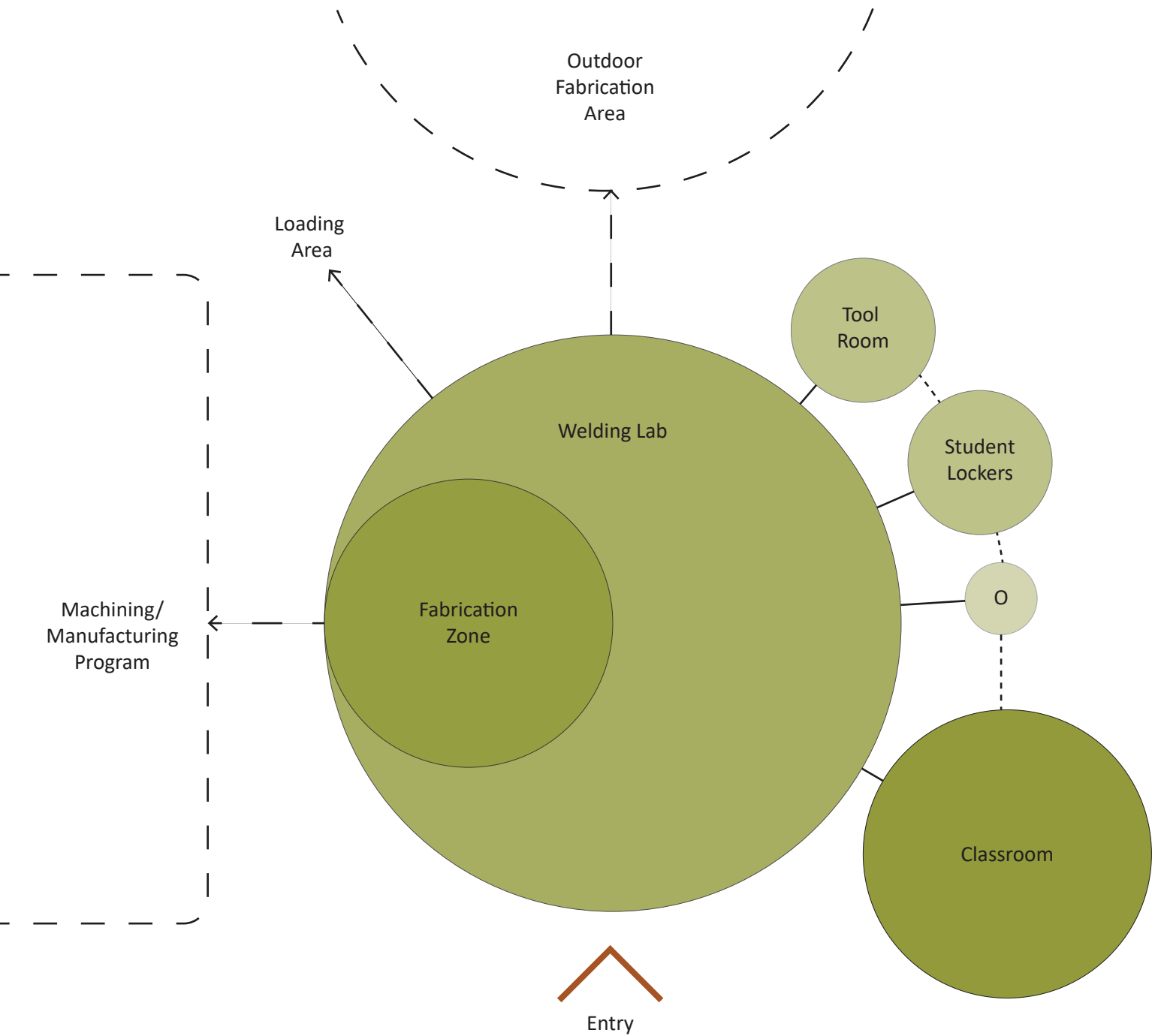


## Private Office

### EQUIPMENT & CASEWORK

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Wall Cabinet                | 16. Workstation Desk         |
| 2. Adjustable Wall Shelves     | 17. Lateral File Cabinet     |
| 3. Tall Storage Cabinet        | 18. Small Group Table/Chairs |
| 4. Equipment Space             | 19. Guest Chair              |
| 5. Demonstration Table         | 20. Shelving                 |
| 6. White Marker board          | 21. Casework                 |
| 7. Tackboard                   | 22. Overhead door            |
| 8. Instructor Podium           | 23. Overhead counter door    |
| 9. Instructor Bench            | 24. Student computer         |
| 10. Mobile Student Desk        | 25. Mobile Table             |
| 11. Mobile Bench Workstation   | 26. Inspection Table         |
| 12. Conference Table/Chairs    | 27. Server Racks             |
| 13. Mobile Bookshelf           | 28. Refrigerator             |
| 14. Sink                       | 29. Microwave                |
| 15. Lounge Chairs/ Side Tables |                              |

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Welding Programmatic Diagram

## General Information

### Activity Description

### Basic Room Parameters

**Square Footage** 4750 (5000-6000) SF

**Occupants** 60

### Proximity Requirements

**Adjacencies** Welding classroom, Student lockers,

### Casework, Equipment and Furniture

**Casework** See Equipment List and Layout

**Technology** See Equipment List and Layout

**Equipment** See Equipment List and Layout

**Furnishings** See Equipment List and Layout

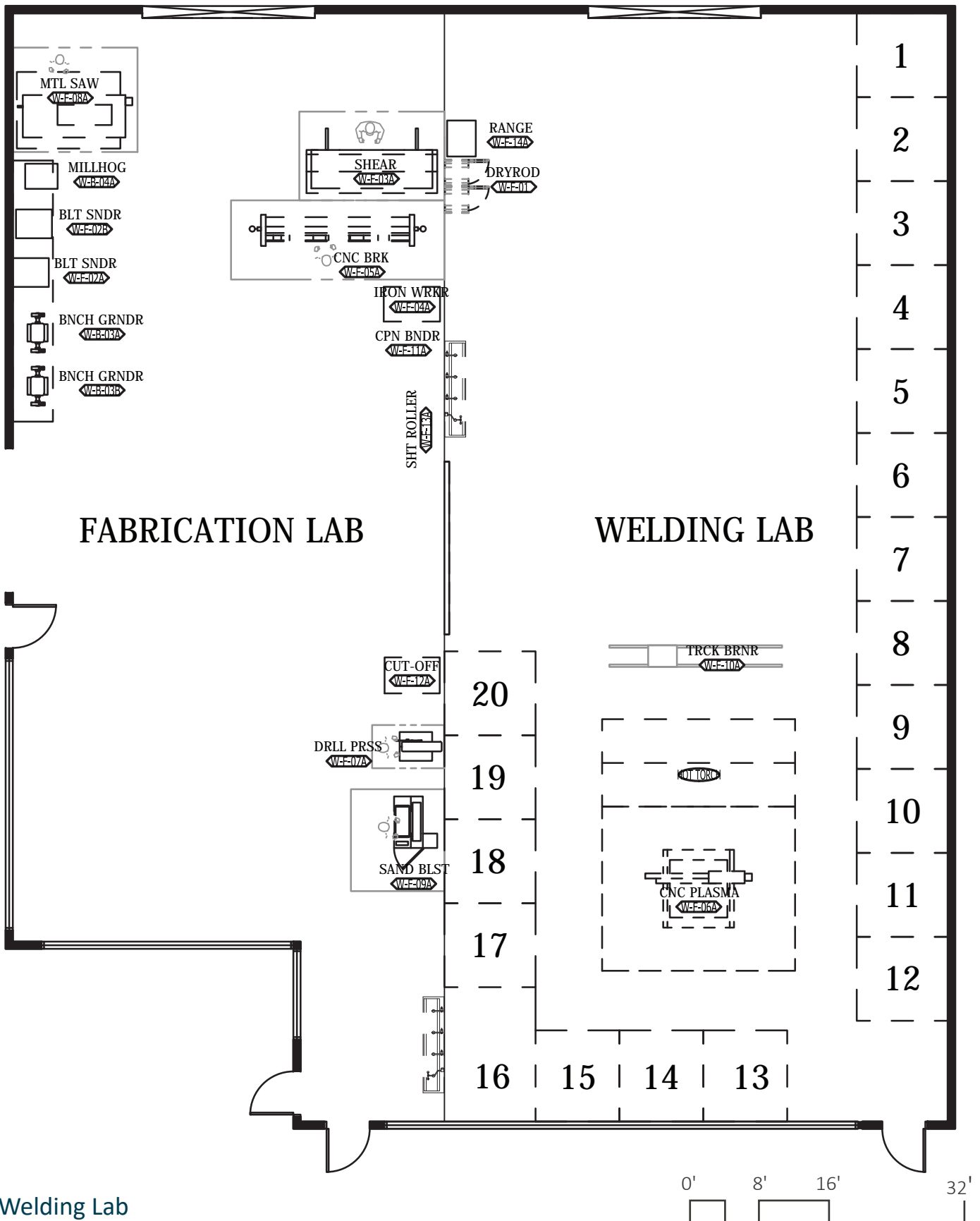
### Service Requirements

- Lighting**
- General High Bay Lighting
  - Task Lighting at Equipment
  - Lighting Inside all Ventilation/Extraction Hoods
  - Lighting on Each Snorkel
  - Lighting with Individual Switch at Each Welding Booth
- Electrical**
- 3/Phase
  - General outlets that remain active at all times
  - Busway System at Welding Booths and Station
  - Dedicated Circuits for all 110V Outlets- GFCI
  - Dedicated Circuits to Equipment based on Volt/Amp
  - 10-20 Overhead Cord Reels throughout Laboratory
  - 110V – GFCI Outlet in Each Welding Booth
  - No Floor Boxes

<b>HVAC</b>	High Exchange Rate
	Primarily Cooling
<b>Plumbing</b>	Lavatory for Hand Washing
	Emergency Eye Wash
	Emergency Shower
	(2) Hose Bibs
	Compressed Air (Central) with Dryer – Valve/Gauge for Adjustment of PSI
	10-20 Overhead Air Reels throughout Laboratory
	Air Connection at Each Welding Booth
	Air Connection at Each Plasma Cutting Station
	10-20 General Air Connections throughout Laboratory
	Argon Gas Connection at Each Welding Booth and Station
	Mixed Gas Connection at Each Welding Booth and Station
	Oxygen Connection at Each Cutting Station
	Acetylene Connection at Each Cutting Station
<b>Finishes</b>	Floor                      Polished Concrete
	Walls                      Concrete Masonry Unity- Pain
	Ceiling                    Open to Structure (Acoustical Deck and Insulation)
<b>Openings</b>	Doors                      6’0” x 8’0” (Pair) with removable Mullion
	Overhead Doors      (2) 14’-0” x 16’-0” Minimum – Insulated – Electric Operation
	Relite                      Sound and Smoke Seals

### Other Requirements

<b>Specialty Systems</b>	Fume Extraction System Welding – Snorkels at Each Welding Booth and Station
	Fume Extraction System Plasma – Hoods at Each Cutting Station
	Fume Extraction System Oxygen/Acetylene – Hoods at Each Cutting Station
	Debris/Fume Extraction Grinding – Ventilation/Hood at Each Grinding Station
<b>Specialty Furnishings</b>	Bridge Crane – Indoor Outdoor Rated



Welding Lab

WELDING EQUIPMENT SCHEDULE - WELDERS									Comments
I.D. TAG	Machine Type	Brand	Model or Size	Electrical			Foot Print		
				Motor H.P.	Voltage	Max Amps	Width	Depth	
							INCHES		
W-W-01A	Welder	Miller	XMT 350 Mpa				20	26	
W-W-01B	Welder	Miller	XMT 350 Mpa				20	26	
W-W-01C	Welder	Miller	XMT 350 Mpa				20	26	
W-W-01D	Welder	Miller	XMT 350 Mpa				20	26	
W-W-01E	Welder	Miller	XMT 350 Mpa				20	26	
W-W-01F	Welder	Miller	XMT 350 Mpa				20	26	
W-W-01G	Welder	Miller	XMT 350 Mpa				20	26	
W-W-01H	Welder	Miller	XMT 350 Mpa				20	26	
W-W-02A	Welder	Miller	XMT 350 cc/cv				20	26	
W-W-02B	Welder	Miller	XMT 350 cc/cv				20	26	
W-W-02C	Welder	Miller	XMT 350 cc/cv				20	26	
W-W-02D	Welder	Miller	XMT 350 cc/cv				20	26	
W-W-02E	Welder	Miller	XMT 350 cc/cv				20	26	
W-W-03A	Welder	Miller	XMT 304 cc/cv				24	12	
W-W-03B	Welder	Miller	XMT 304 cc/cv				24	12	
W-W-03C	Welder	Miller	XMT 304 cc/cv				24	12	
W-W-03D	Welder	Miller	XMT 304 cc/cv				24	12	
W-W-03E	Welder	Miller	XMT 304 cc/cv				24	12	
W-W-03F	Welder	Miller	XMT 304 cc/cv				24	12	
W-W-03G	Welder	Miller	XMT 304 cc/cv				24	12	
W-W-03H	Welder	Miller	XMT 304 cc/cv				24	12	
W-W-03I	Welder	Miller	XMT 304 cc/cv				24	12	
W-W-04A	Digital wire feed	Miller	S-74 Mpa PLUS				15	30	
W-W-04B	Digital wire feed	Miller	S-74 Mpa PLUS				15	30	
W-W-04C	Digital wire feed	Miller	S-74 Mpa PLUS				15	30	
W-W-04D	Digital wire feed	Miller	S-74 Mpa PLUS				15	30	
W-W-04E	Digital wire feed	Miller	S-74 Mpa PLUS				15	30	
W-W-04F	Digital wire feed	Miller	S-74 Mpa PLUS				15	30	
W-W-04G	Digital wire feed	Miller	S-74 Mpa PLUS				15	30	
W-W-04H	Digital wire feed	Miller	S-74 Mpa PLUS				15	30	

# Lower Columbia College Center for Vocational & Transitional Studies

## WELDING

WELDING EQUIPMENT SCHEDULE									Comments
I.D. TAG	Machine Type	Brand	Model or Size	Electrical			Foot Print		
				Motor H.P.	Voltage	Max Amps	Width	Depth	
							INCHES		
W-W-05A	Analogue Dial Wire Feeder	Miller	24A Wire Feeder				24	30	
W-W-05B	Analogue Dial Wire Feeder	Miller	24A Wire Feeder				24	30	
W-W-05C	Analogue Dial Wire Feeder	Miller	24A Wire Feeder				24	30	
W-W-05D	Analogue Dial Wire Feeder	Miller	24A Wire Feeder				24	30	
W-W-05E	Analogue Dial Wire Feeder	Miller	24A Wire Feeder				24	30	
W-W-06A	Analogue Dial Wire Feeder	Miller	22A Wire Feeder				24	30	
W-W-06B	Analogue Dial Wire Feeder	Miller	22A Wire Feeder				24	30	
W-W-06C	Analogue Dial Wire Feeder	Miller	22A Wire Feeder				24	30	
W-W-06D	Analogue Dial Wire Feeder	Miller	22A Wire Feeder				24	30	
W-W-06E	Analogue Dial Wire Feeder	Miller	22A Wire Feeder				24	30	
W-W-06F	Analogue Dial Wire Feeder	Miller	22A Wire Feeder				24	30	
W-W-06G	Analogue Dial Wire Feeder	Miller	22A Wire Feeder				24	30	
W-W-06H	Analogue Dial Wire Feeder	Miller	22A Wire Feeder				24	30	
W-W-06I	Analogue Dial Wire Feeder	Miller	22A Wire Feeder				24	30	
W-W-06J	Analogue Dial Wire Feeder	Miller	22A Wire Feeder				24	30	
W-W-06K	Analogue Dial Wire Feeder	Miller	22A Wire Feeder				24	30	
W-W-06L	Analogue Dial Wire Feeder	Miller	22A Wire Feeder				24	30	
W-W-06M	Analogue Dial Wire Feeder	Miller	22A Wire Feeder				24	30	
W-W-06N	Analogue Dial Wire Feeder	Miller	22A Wire Feeder				24	30	
W-W-06O	Analogue Dial Wire Feeder	Miller	22A Wire Feeder				24	30	
W-W-07A	Welder	Miller	Syncrowave 250 DX				29	41	
W-W-07B	Welder	Miller	Syncrowave 250 DX				29	41	
W-W-07C	Welder	Miller	Syncrowave 250 DX				29	41	
W-W-07D	Welder	Miller	Syncrowave 250 DX				29	41	
W-W-08A	Welder	Miller	XMT 450 cc/cv				15	27	
W-W-08B	Welder	Miller	XMT 450 cc/cv				15	27	
W-W-08C	Welder	Miller	XMT 450 cc/cv				15	27	
W-W-09A	Welder	Miller	Invision 456 P DC Inverter				48	48	1,2
W-W-09B	Welder	Miller	Invision 456 P DC Inverter				48	48	1,2
W-W-09C	Welder	Miller	Invision 456 P DC Inverter				48	48	1,2



WELDING EQUIPMENT SCHEDULE									Comments
I.D. TAG	Machine Type	Brand	Model or Size	Electrical		Foot Print			
				Motor H.P.	Voltage	Max Amps	Width	Depth	
							INCHES		
W-W-09D	Welder	Miller	Invision 456 P DC Inverter				48	48	1
W-W-09E	Welder	Miller	Invision 456 P DC Inverter				48	48	1
W-W-09F	Welder	Miller	Invision 456 P DC Inverter				48	48	1
W-W-10A	Welder	Miller	XR Control				10	12	1,2
W-W-10A	Welder	Miller	XR Control				10	12	1,2
W-W-10B	Welder	Miller	XR Control				10	12	1,2
W-W-10C	Welder	Miller	XR Control				10	12	1,2
W-W-10D	Welder	Miller	XR Control				10	12	2
W-W-10E	Welder	Miller	XR Control				10	12	2
W-W-10F	Welder	Miller	XR Control				10	12	2
W-B-11A	Welder	Miller	Dynasty 350				14	12	3
W-B-11B	Welder	Miller	Dynasty 350				14	12	3
W-W-12A	Welder	Miller	Invision 352 mPa				13	24	3
W-W-13A	Welder	RED-D-ARC	WX 300 cv/cc				12	24	
W-W-13B	Welder	RED-D-ARC	WX 300 cv/cc				12	24	
W-W-13C	Welder	RED-D-ARC	WX 300 cv/cc				12	24	
W-W-13D	Welder	RED-D-ARC	WX 300 cv/cc				12	24	
W-W-13E	Welder	RED-D-ARC	WX 300 cv/cc				12	24	
W-W-14A	Wire Feeder - Dual	Miller	D-74 Mpa Plus				13	28	3
W-W-15A	Welder	Lincoln	140C Power MIG				10	19	2,4
W-W-16A	Welder	Lincoln	180C Power MIG				10	19	2,4
W-W-17A	Plasma	Hypertherm	Powermax 85				20	9	2
W-W-18A	Plasma	Hypertherm	Powermax 65				20	9	6
W-W-18B	Plasma	Hypertherm	Powermax 65				20	9	5
W-W-19A	Plasma	Hypertherm	Powermax 30				14	7	
W-W-19B	Plasma	Hypertherm	Powermax 30				14	7	
W-W-20A	Welder	Thermal Arc	300 GTSW						

WELDING EQUIPMENT COMMENTS

- 1 Aluminum Machine
- 2 In Classroom
- 3 Instructor
- 4 MIG
- 5 CNC
- 6 Hand
- 7 MIG/TIG/Stick
- 8 On a Cart

## Lower Columbia College Center for Vocational & Transitional Studies

### WELDING

WELDING EQUIPMENT SCHEDULE - FLOOR										Comments
I.D. TAG	Machine Type	Brand	Model or Size	Electrical			Foot Print			
				Motor H.P.	Voltage	Max Amps	Width	Depth	Operator	
							INCHES			
W-F-01A	Electrode Oven	Phoenix	Dryrod				18ø	19		
W-F-01B	Electrode Oven	Phoenix	Dryrod				18ø	19		
W-F-02A	Belt Sander	Ellis	#6000				24	30		
W-F-02B	Belt Sander	Ellis	#6000				24	30		
W-F-03A	Shear	Betenbender					121	74		
W-F-04A	Iron Worker	Scotchman	#50514EC				47	29		
W-F-05A	CNC Press Brake	Accupress	#71758				178	66		
W-F-06A	CNC Plasma Table	Arc Light	Arc Pro X 4800				63	71		
W-F-07A	Drill Press	Ellis	#9400				20	29		
W-F-08A	Metal Saw	Do-All	Saw #C-916M				104	87		
W-F-09A	Sand Blast Cabinet	Skat-Blast	#960-DLX				48	30		
W-F-10A	Track Burner	L-Tec								
W-F-11A	Coupon Bender	Fischer Engineer. Co.	#BT1							
W-F-12A	Cut-Off Saw	Baileigh	#AS-350M				46	35		
W-F-13A	Sheet Roller	Niagara	#349 P							
W-F-14A	Range	Whirlpool					30	24		
W-F-15A	Smoker	Masterbuilt					20	17		

#### WELDING EQUIPMENT COMMENTS

- 1 Aluminum Machine
- 2 In Classroom
- 3 Instructor
- 4 MIG
- 5 CNC
- 6 Hand
- 7 MIG/TIG/Stick
- 8 On a Cart

WELDING EQUIPMENT SCHEDULE - BENCH										Comments
I.D. TAG	Machine Type	Brand	Model or Size	Electrical			Foot Print			
				Motor H.P.	Voltage	Max Amps	Width	Depth	Operator	
							INCHES			
W-B-01A	Welder	Thermal Arc	Fabricator 181 3-in-1							7,8
W-B-01B	Welder	Thermal Arc	Fabricator 181 3-in-1							7,8
W-B-01C	Welder	Thermal Arc	Fabricator 181 3-in-1							7,8
W-B-01D	Welder	Thermal Arc	Fabricator 181 3-in-1							7,8
W-B-02A	Welder	Thermal Arc	320 SP Powermaster							8
W-B-02B	Welder	Thermal Arc	320 SP Powermaster							
W-B-03A	Bench Grinder	Baldor					19	28		
W-B-03B	Bench Grinder	Baldor					19	28		
W-B-04A	Pipe Bevelor	Prepzilla	Millhog				27	21		

#### WELDING EQUIPMENT COMMENTS

- 1 Aluminum Machine
- 2 In Classroom
- 3 Instructor
- 4 MIG
- 5 CNC
- 6 Hand
- 7 MIG/TIG/Stick
- 8 On a Cart

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## General Information

### Activity Description

Will be utilized as a computer lab for welding students to work on online module, a desk top area for learning blueprints, & a demonstration area for repairing equipment. This classroom would also serve BLPT 160 & WELD 158 which are both welding degree classroom classes.

### Basic Room Parameters

**Square Footage** 1100 SF

**Occupants** 55

### Proximity Requirements

**Adjacencies** Welding/Fabrication Lab, Student lockers, welding storage-tool room

### Casework, Equipment and Furniture

**Casework** Locking cabinet storage

**Technology** Sound/Audio system for presentation

Projector and screen or flat panel monitor to be confirmed during design

Wireless access points

Telephone

**Equipment** Computers

Computer podium for instruction

Large white boards

**Furnishings** Computer desks,

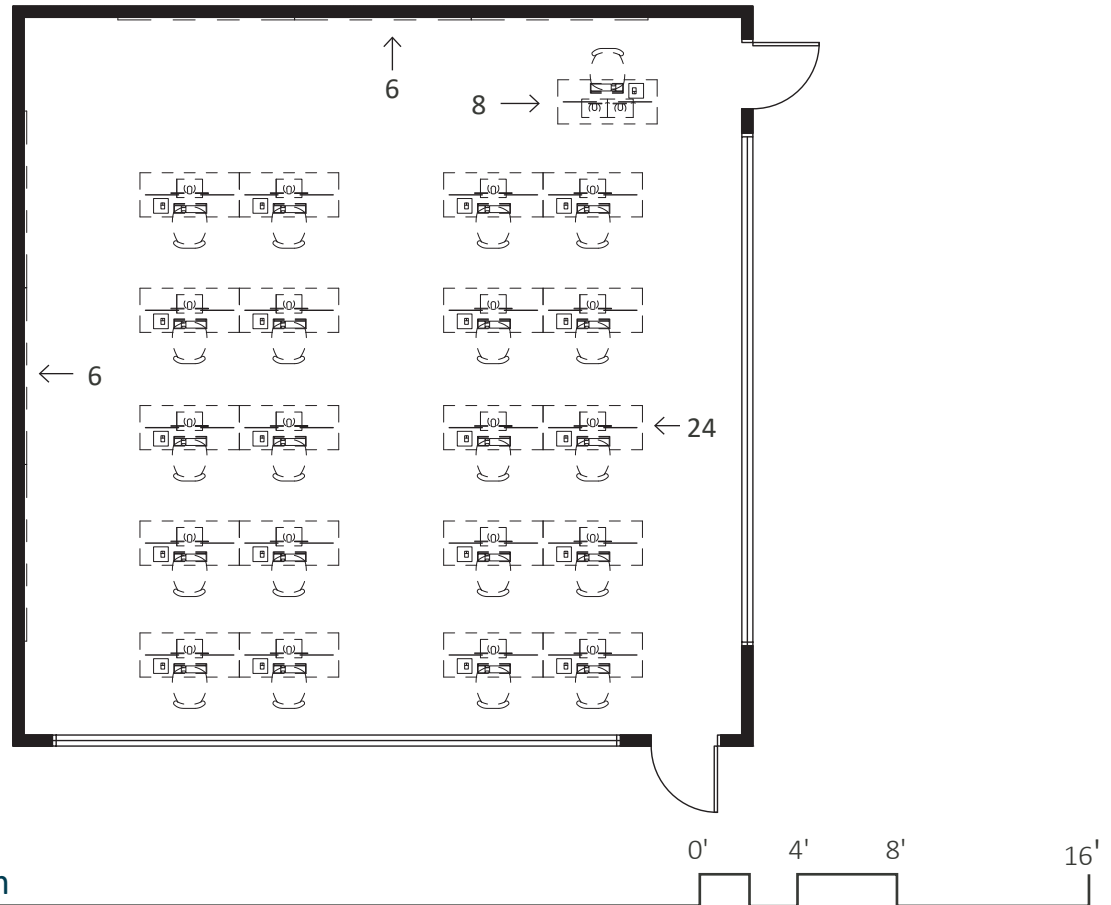
Chairs

### Service Requirements

<b>Lighting</b>	Dimmable lights near instructor station	
<b>Electrical</b>	Outlets that remain active at all times	
<b>HVAC</b>	Heating	
	Air Conditioning	
<b>Finishes</b>	Floor	Polished Concrete
	Walls	Concrete Masonry Unity- Paint
	Ceiling	Standard
<b>Openings</b>	Windows	Large windows that look into the Welding/Fabrication lab
	Doors	Standard
	Relite	Sound and Smoke Seals

# Lower Columbia College Center for Vocational & Transitional Studies

## WELDING



## Welding Classroom

### EQUIPMENT & CASEWORK

1. Wall Cabinet
2. Adjustable Wall Shelves
3. Tall Storage Cabinet
4. Equipment Space
5. Demonstration Table
6. White Marker board
7. Tackboard
8. Instructor Podium
9. Instructor Bench
10. Mobile Student Desk
11. Mobile Bench Workstation
12. Conference Table/Chairs
13. Mobile Bookshelf
14. Sink
15. Lounge Chairs/ Side Tables
16. Workstation Desk
17. Lateral File Cabinet
18. Small Group Table/Chairs
19. Guest Chair
20. Shelving
21. Casework
22. Overhead door
23. Overhead counter door
24. Student computer
25. Mobile Table
26. Inspection Table
27. Server Racks
28. Refrigerator
29. Microwave

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## General Information

### Activity Description

Welding equipment to be stored in this room. Tool room to be locked, with tools being checked out and given to students through overhead counter door

### Basic Room Parameters

**Square Footage** 350 SF

**Occupants** 2

### Proximity Requirements

**Adjacencies** Welding classroom, Student lockers,

### Casework, Equipment and Furniture

**Casework** (4) 36" x 24" x 72" metal storage

(2) LISTA SC Series Cabinet 8 drawers 88 compartments XSSC1350-0803

(2) LISTA SC Series Cabinet 10 drawers 177 compartments XSHS1350-1017

**Technology** N/A

**Equipment** N/A

**Furnishings** N/A

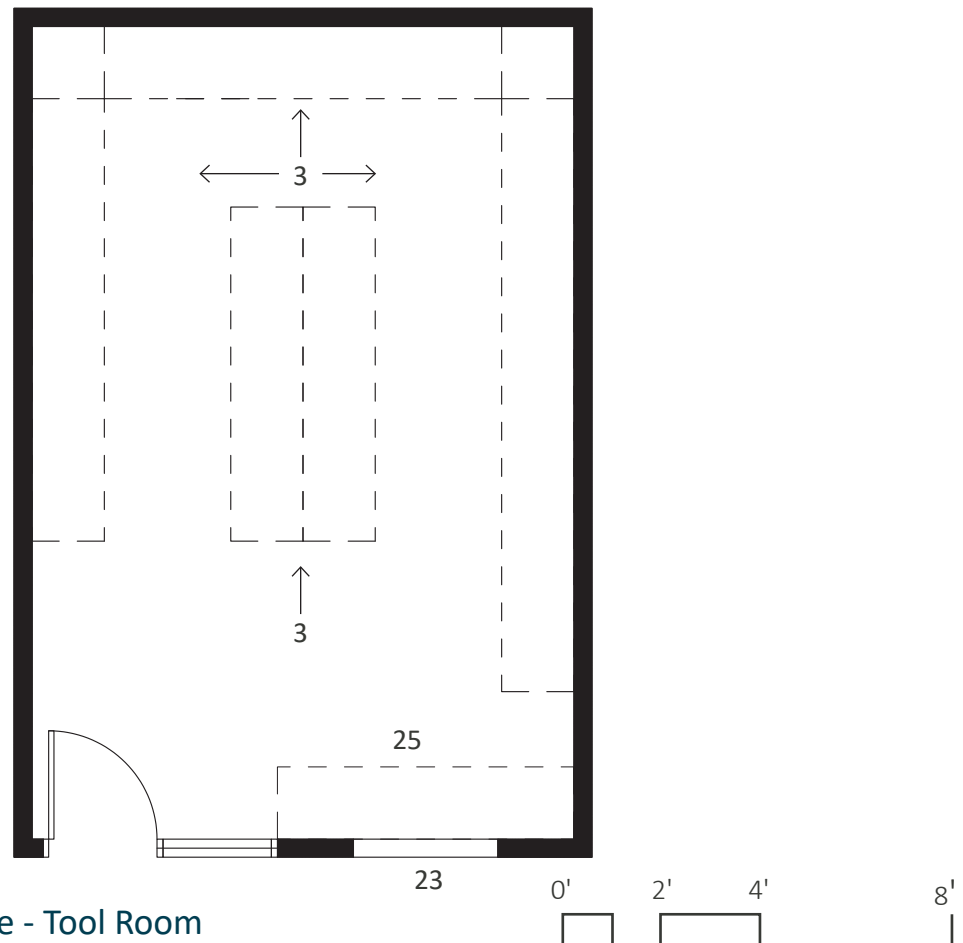


## Service Requirements

<b>Lighting</b>	General	
<b>Electrical</b>	General outlets that remain active at all times	
	Dedicated Circuits for all 110V Outlets- GFCI	
<b>HVAC</b>	Standard	
<b>Plumbing</b>	None	
<b>Finishes</b>	Floor	Polished Concrete
	Walls	Concrete Masonry Unity- Paint
	Ceiling	Standard
<b>Openings</b>	Windows	None
	Doors	Standard
		Overhead counter door
	Relite	Sound and Smoke Seals

# Lower Columbia College Center for Vocational & Transitional Studies

## WELDING



### Welding/Fabrication Storage - Tool Room

#### EQUIPMENT & CASEWORK

1. Wall Cabinet
2. Adjustable Wall Shelves
3. Tall Storage Cabinet
4. Equipment Space
5. Demonstration Table
6. White Marker board
7. Tackboard
8. Instructor Podium
9. Instructor Bench
10. Mobile Student Desk
11. Mobile Bench Workstation
12. Conference Table/Chairs
13. Mobile Bookshelf
14. Sink
15. Lounge Chairs/ Side Tables
16. Workstation Desk
17. Lateral File Cabinet
18. Small Group Table/Chairs
19. Guest Chair
20. Shelving
21. Casework
22. Overhead door
23. Overhead counter door
24. Student computer
25. Mobile Table
26. Inspection Table
27. Server Racks
28. Refrigerator
29. Microwave

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## General Information

### Activity Description

Office work, and academic meetings with students.

### Basic Room Parameters

**Square Footage** 250 SF

**Occupants** 2

### Proximity Requirements

**Adjacencies** Welding/Fabrication Lab

### Casework, Equipment and Furniture

**Casework** (2) 36" x 12" x 67" light duty storage

(2) 15" x 28" x 48" large file cabinet

**Technology** (2) Standard faculty computer and screens

Regular printer

**Equipment** N/A

**Furnishings** (2) Office desks

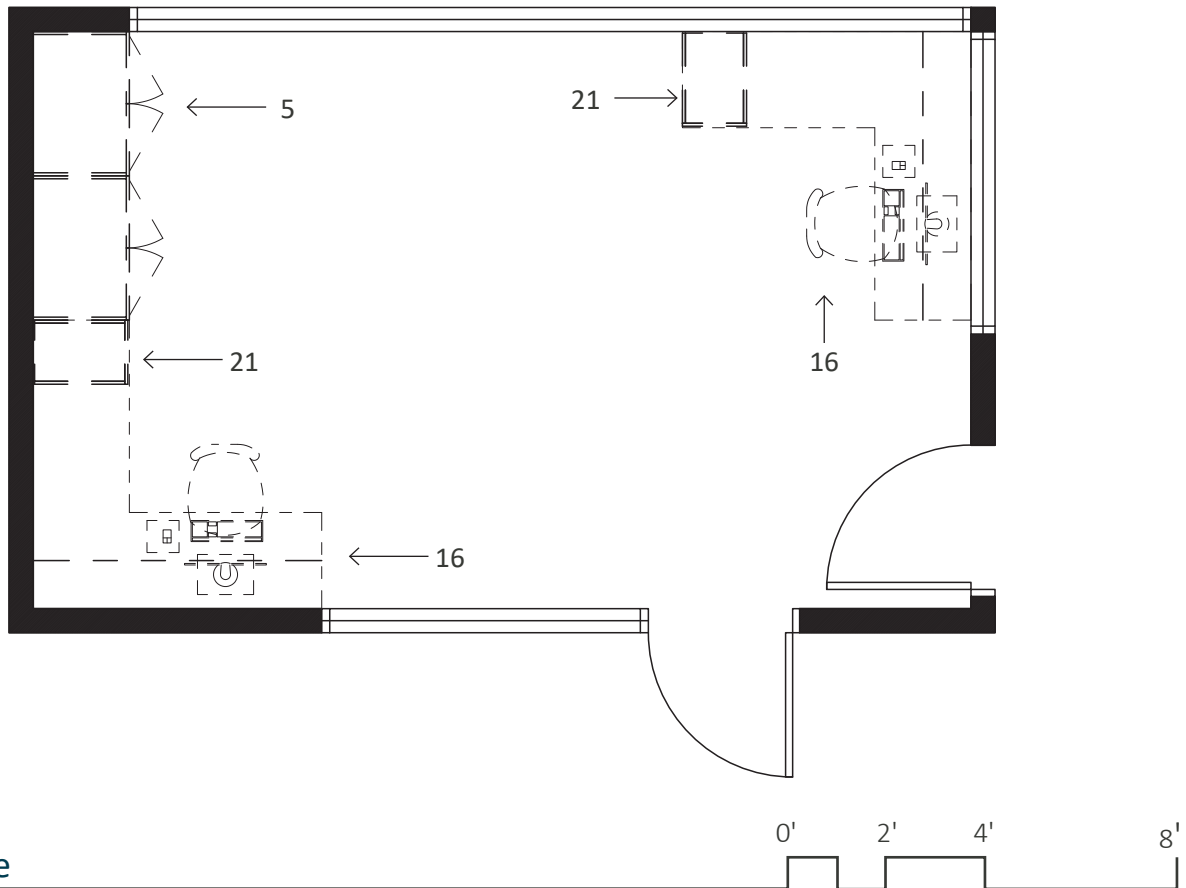
(2) Chairs

### Service Requirements

<b>Lighting</b>	Standard lighting	
<b>Electrical</b>	120v	
<b>HVAC</b>	Heating	
	Air Conditioning	
<b>Plumbing</b>	None	
<b>Finishes</b>	Floor	Polished Concrete
	Walls	GWB/Paint
	Ceiling	GWB/Paint
<b>Openings</b>	Windows	Large windows that look into the Welding/Fabrication lab
	Doors	Standard

# Lower Columbia College Center for Vocational & Transitional Studies

## WELDING



### Shared Office

#### EQUIPMENT & CASEWORK

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Wall Cabinet                | 16. Workstation Desk         |
| 2. Adjustable Wall Shelves     | 17. Lateral File Cabinet     |
| 3. Tall Storage Cabinet        | 18. Small Group Table/Chairs |
| 4. Equipment Space             | 19. Guest Chair              |
| 5. Demonstration Table         | 20. Shelving                 |
| 6. White Marker board          | 21. Casework                 |
| 7. Tackboard                   | 22. Overhead door            |
| 8. Instructor Podium           | 23. Overhead counter door    |
| 9. Instructor Bench            | 24. Student computer         |
| 10. Mobile Student Desk        | 25. Mobile Table             |
| 11. Mobile Bench Workstation   | 26. Inspection Table         |
| 12. Conference Table/Chairs    | 27. Server Racks             |
| 13. Mobile Bookshelf           | 28. Refrigerator             |
| 14. Sink                       | 29. Microwave                |
| 15. Lounge Chairs/ Side Tables |                              |

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## General Information

### Activity Description

Office work, and academic meetings with students..

### Basic Room Parameters

**Square Footage** 110 SF

**Occupants** 2

### Proximity Requirements

**Adjacencies** Machining Lab

### Casework, Equipment and Furniture

**Casework** (2) 36" x 12" x 67" light duty storage

15" x 28" x 48" large file cabinet

**Technology** Same computer and screens in current use

Regular printer

**Equipment** N/A

**Furnishings** Office desk and chair

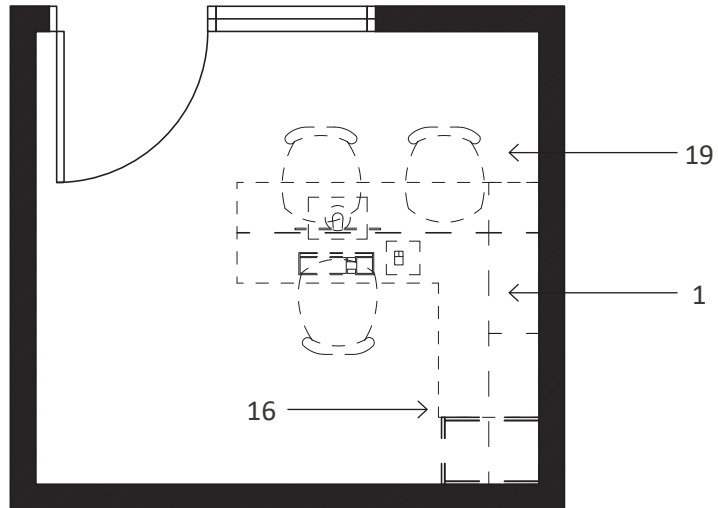


### Service Requirements

<b>Lighting</b>	Standard lighting	
<b>Electrical</b>	120v	
<b>HVAC</b>	Heating	
	Air Conditioning	
<b>Plumbing</b>	N/A	
<b>Finishes</b>	Floor	Polished concrete
	Walls	Standard
	Ceiling	GWB/Paint
<b>Openings</b>	Windows	Standard
	Doors	Standard

# Lower Columbia College Center for Vocational & Transitional Studies

## WELDING



### Private Office



#### EQUIPMENT & CASEWORK

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Wall Cabinet                | 16. Workstation Desk         |
| 2. Adjustable Wall Shelves     | 17. Lateral File Cabinet     |
| 3. Tall Storage Cabinet        | 18. Small Group Table/Chairs |
| 4. Equipment Space             | 19. Guest Chair              |
| 5. Demonstration Table         | 20. Shelving                 |
| 6. White Marker board          | 21. Casework                 |
| 7. Tackboard                   | 22. Overhead door            |
| 8. Instructor Podium           | 23. Overhead counter door    |
| 9. Instructor Bench            | 24. Student computer         |
| 10. Mobile Student Desk        | 25. Mobile Table             |
| 11. Mobile Bench Workstation   | 26. Inspection Table         |
| 12. Conference Table/Chairs    | 27. Server Racks             |
| 13. Mobile Bookshelf           | 28. Refrigerator             |
| 14. Sink                       | 29. Microwave                |
| 15. Lounge Chairs/ Side Tables |                              |

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## General Information

Student storage for individual metal projects, welding tools and equipment, and PPE.

### Activity Description

Large lockers (ideally 40-50) able to store student tools, and welding equipment during class time

### Basic Room Parameters

**Square Footage** 300 SF

**Occupants** 6

### Proximity Requirements

**Adjacencies** Welding & Fabrication Lab, Welding Computer lab, Welding

### Casework, Equipment and Furniture

**Casework** 40-50 lockers (more if shared with other programs)

pad-lockable, with transparent doors to allow for instructor supervision and to prevent abuse

### Service Requirements

**Lighting** Standard lighting

**Electrical** None

**HVAC** N/A

**Plumbing** None

**Finishes** Floor Polished concrete

Walls N/A

Ceiling N/A

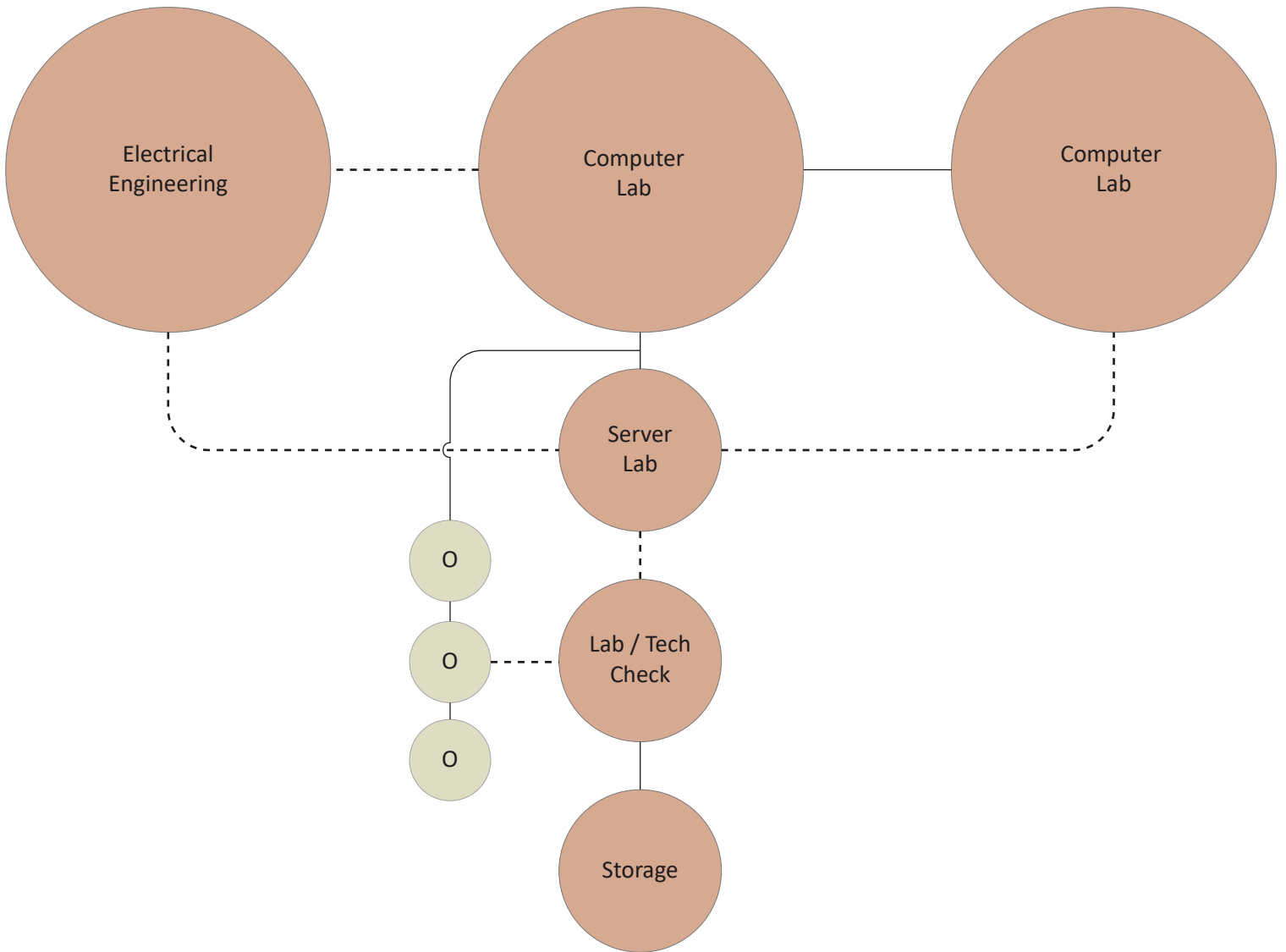
**Openings** Windows N/A

Doors N/A

### Other Requirements

Lockers to be located in the hallway between the Machining Lab and Welding/Fabrication Lab.

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IT Programmatic Diagram

## General Information

### Activity Description

The Electrical Engineering Lab (Vocational 118) is used for ENGR& 204, ENGR 205, and ENGR 206 lab work.  
Basic Room Parameters

**Square Footage** 1100 SF

**Occupants** 22

### Proximity Requirements

**Adjacencies** IT Storage room

### Casework, Equipment and Furniture

**Casework** Roughly 20' of 30" wide counter tops  
20" deep lockable cabinets above counter top  
30" deep lockable cabinets below counter tops

**Technology** Projector and screen or flat panel monitor to be confirmed during design  
Wireless access points  
Telephone  
Instructor podium  
Dual monitor computers

**Equipment** N/A

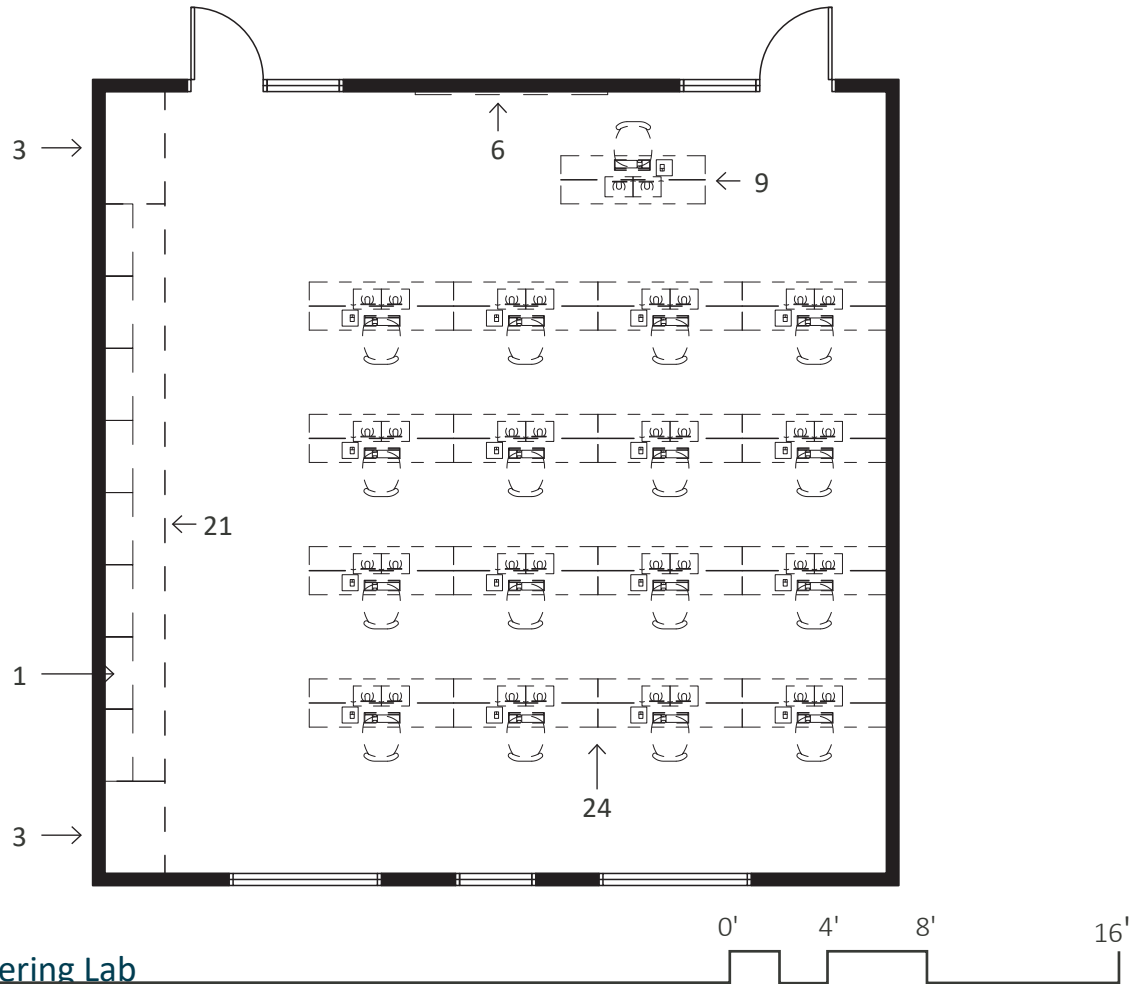
**Furnishings** (16) Student work benches  
Instructor station

## Service Requirements

<b>Lighting</b>	Standard Lighting	
<b>Electrical</b>	outlets located above counter tops	
	(5) 120V 20A	
	CAT V	
<b>HVAC</b>	Heating and Air Conditioning	
<b>Plumbing</b>	N/A	
<b>Finishes</b>	Floor	Polished Concrete
	Walls	GWB/Paint/Tackable wall covering
	Ceiling	Lay-in acoustical ceiling
<b>Openings</b>	Doors	Standard

# Lower Columbia College Center for Vocational & Transitional Studies

IT



## Electrical Engineering Lab

### EQUIPMENT & CASEWORK

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Wall Cabinet                | 16. Workstation Desk         |
| 2. Adjustable Wall Shelves     | 17. Lateral File Cabinet     |
| 3. Tall Storage Cabinet        | 18. Small Group Table/Chairs |
| 4. Equipment Space             | 19. Guest Chair              |
| 5. Demonstration Table         | 20. Shelving                 |
| 6. White Marker board          | 21. Casework                 |
| 7. Tackboard                   | 22. Overhead door            |
| 8. Instructor Podium           | 23. Overhead counter door    |
| 9. Instructor Bench            | 24. Student computer         |
| 10. Mobile Student Desk        | 25. Mobile Table             |
| 11. Mobile Bench Workstation   | 26. Inspection Table         |
| 12. Conference Table/Chairs    | 27. Server Racks             |
| 13. Mobile Bookshelf           | 28. Refrigerator             |
| 14. Sink                       | 29. Microwave                |
| 15. Lounge Chairs/ Side Tables |                              |

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## General Information

### Activity Description

Students will receive instruction on computers, specifically software and applications.

### Basic Room Parameters

**Square Footage** 1100 SF

**Occupants** 44

### Proximity Requirements

**Adjacencies** Server room, IT Storage

### Casework, Equipment and Furniture

**Casework** Locking cabinet storage

**Technology** Sound/Audio system for presentation

Projector and screen or flat panel monitor to be confirmed during design

Wireless access points

Telephone

**Equipment** Computers

Computer podium for instruction

Large white boards

**Furnishings** Computer desks,

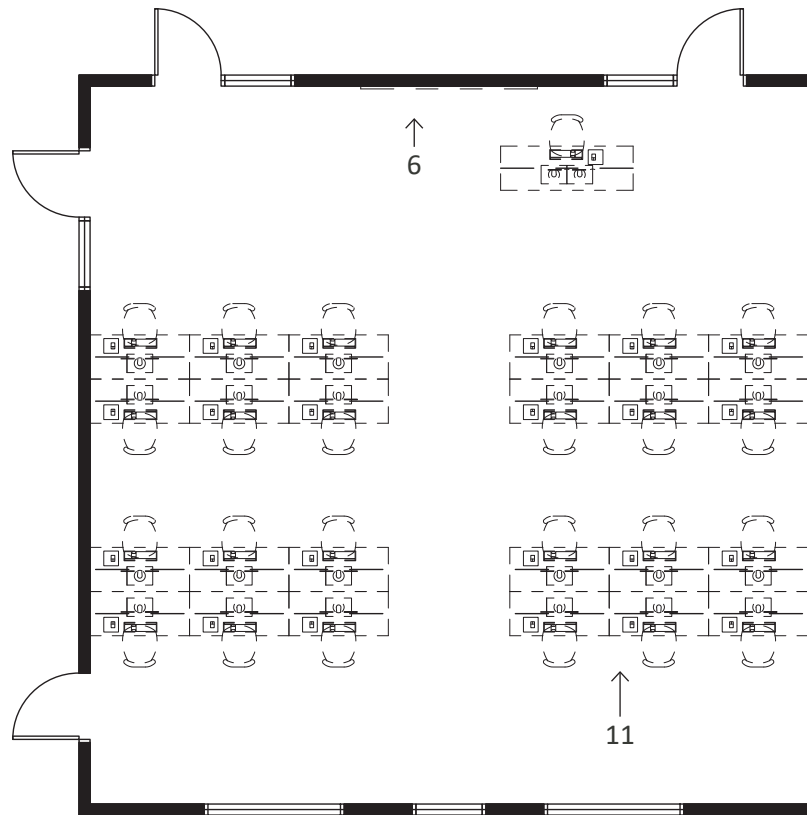
Chairs

## Service Requirements

<b>Lighting</b>	Standard Lighting	
<b>Electrical</b>	outlets located above counter tops	
	(5) 120V 20A	
	CAT V	
<b>HVAC</b>	Heating and Air Conditioning	
<b>Plumbing</b>	N/A	
<b>Finishes</b>	Floor	Polished Concrete
	Walls	GWB/Paint/Tackable wall covering
	Ceiling	Lay-in acoustical ceiling
<b>Openings</b>	Doors	Standard

# Lower Columbia College Center for Vocational & Transitional Studies

IT



## Software Lab



### EQUIPMENT & CASEWORK

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Wall Cabinet                | 16. Workstation Desk         |
| 2. Adjustable Wall Shelves     | 17. Lateral File Cabinet     |
| 3. Tall Storage Cabinet        | 18. Small Group Table/Chairs |
| 4. Equipment Space             | 19. Guest Chair              |
| 5. Demonstration Table         | 20. Shelving                 |
| 6. White Marker board          | 21. Casework                 |
| 7. Tackboard                   | 22. Overhead door            |
| 8. Instructor Podium           | 23. Overhead counter door    |
| 9. Instructor Bench            | 24. Student computer         |
| 10. Mobile Student Desk        | 25. Mobile Table             |
| 11. Mobile Bench Workstation   | 26. Inspection Table         |
| 12. Conference Table/Chairs    | 27. Server Racks             |
| 13. Mobile Bookshelf           | 28. Refrigerator             |
| 14. Sink                       | 29. Microwave                |
| 15. Lounge Chairs/ Side Tables |                              |

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## General Information

Computer lab will be used as a space where students can work on computers, servers, and coursework directly related to hardware

### Activity Description

Computers will be taken apart and put back together, lab instruction will be given, students will work on servers and switches.

### Basic Room Parameters

**Square Footage** 1100 SF

**Occupants** 44

### Proximity Requirements

**Adjacencies** Server room, storage

### Casework, Equipment and Furniture

**Casework** Locking cabinet storage

**Technology** Wireless access points  
Telephone

**Equipment** Computers  
Instructor work bench  
Large white boards

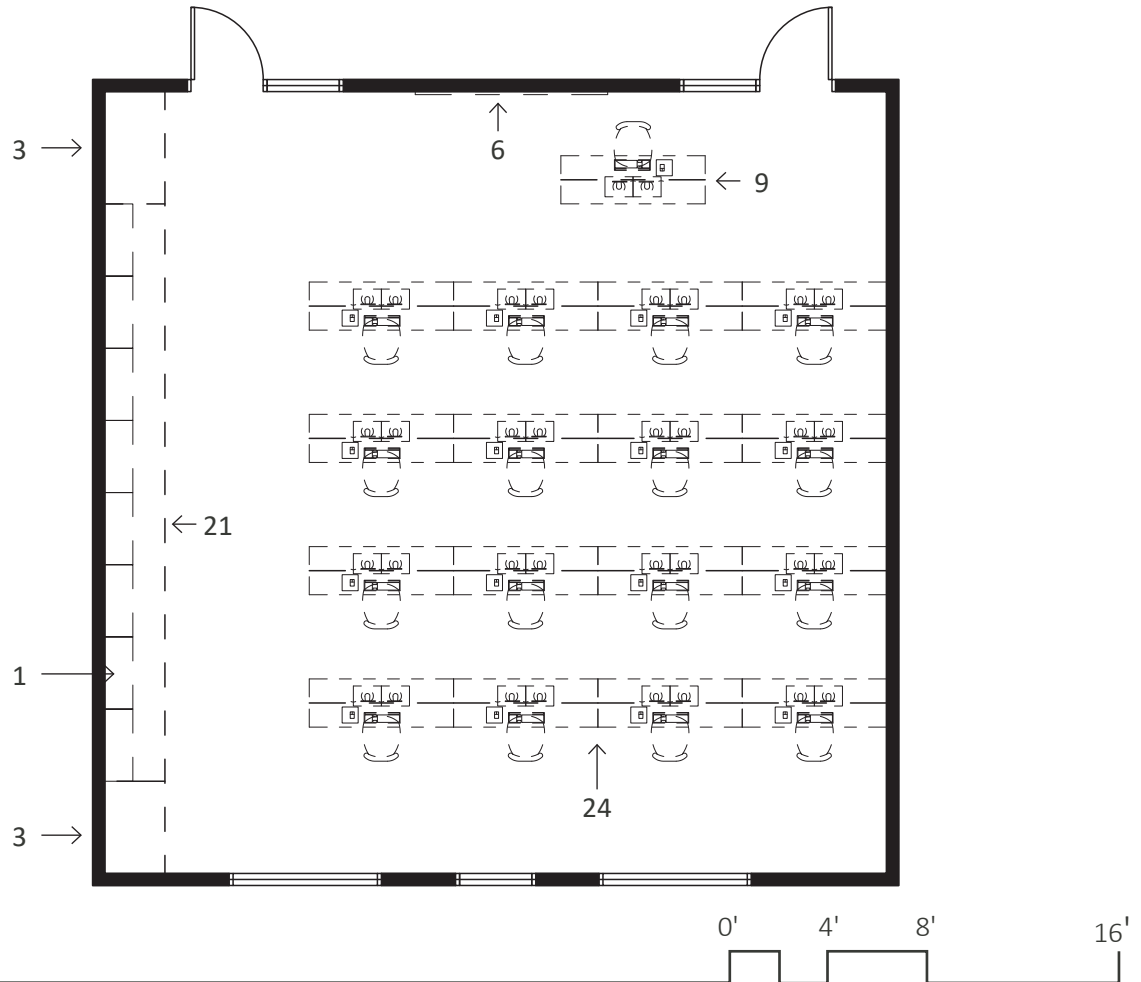
**Furnishings** Student work bench,  
Chairs

## Service Requirements

<b>Lighting</b>	Standard Lighting	
<b>Electrical</b>	outlets located above counter tops	
	(5) 120V 20A	
	CAT V	
<b>HVAC</b>	Heating and Air Conditioning	
<b>Plumbing</b>	N/A	
<b>Finishes</b>	Floor	Polished Concrete
	Walls	GWB/Paint/Tackable wall covering
	Ceiling	Lay-in acoustical ceiling
<b>Openings</b>	Doors	Standard

# Lower Columbia College Center for Vocational & Transitional Studies

IT



## Hardware Lab

### EQUIPMENT & CASEWORK

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Wall Cabinet                | 16. Workstation Desk         |
| 2. Adjustable Wall Shelves     | 17. Lateral File Cabinet     |
| 3. Tall Storage Cabinet        | 18. Small Group Table/Chairs |
| 4. Equipment Space             | 19. Guest Chair              |
| 5. Demonstration Table         | 20. Shelving                 |
| 6. White Marker board          | 21. Casework                 |
| 7. Tackboard                   | 22. Overhead door            |
| 8. Instructor Podium           | 23. Overhead counter door    |
| 9. Instructor Bench            | 24. Student computer         |
| 10. Mobile Student Desk        | 25. Mobile Table             |
| 11. Mobile Bench Workstation   | 26. Inspection Table         |
| 12. Conference Table/Chairs    | 27. Server Racks             |
| 13. Mobile Bookshelf           | 28. Refrigerator             |
| 14. Sink                       | 29. Microwave                |
| 15. Lounge Chairs/ Side Tables |                              |

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## General Information

Space to house servers for classes and application accessible from network and off campus.

### Activity Description

Students and faculty manage network and servers. Room has server and networking racks.

### Basic Room Parameters

**Square Footage** 250 SF

**Occupants** 5

### Proximity Requirements

**Adjacencies** Centrally located within building and IT spaces

### Casework, Equipment and Furniture

**Casework** None

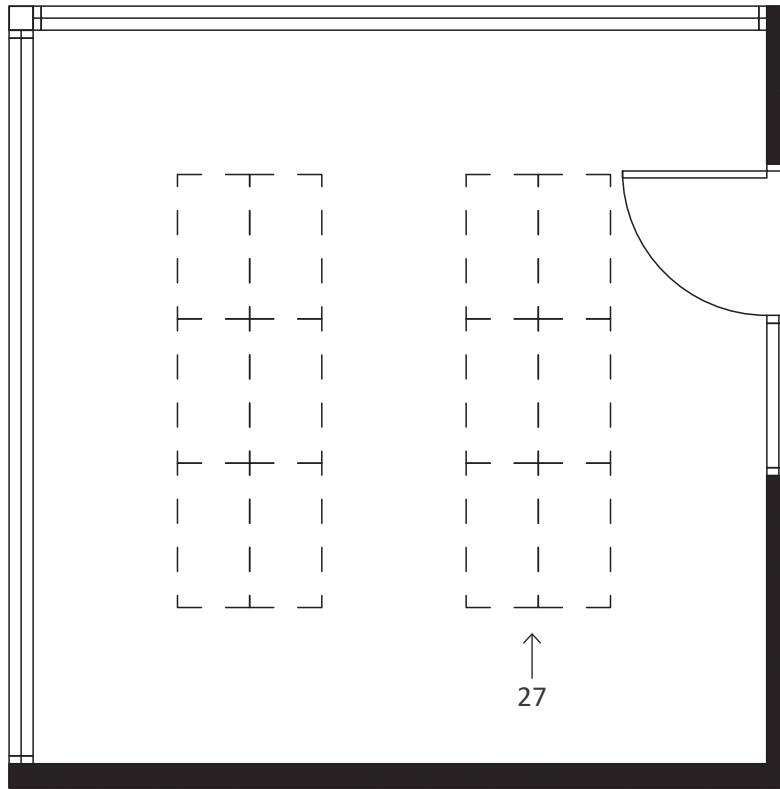
**Technology** Server/networking racks, UPS  
wiring trays/bridges with conduits to run wiring to others rooms.

**Equipment** Racks to hold servers

**Furnishings** None

## Service Requirements

<b>Lighting</b>	Standard Lighting	
<b>Electrical</b>	Wiring and power to support campus servers	
<b>HVAC</b>	Cooled space for computer server room	
<b>Plumbing</b>	N/A	
<b>Finishes</b>	Floor	Polished Concrete
	Walls	GWB/Paint
	Ceiling	Lay-in acoustical ceiling
<b>Openings</b>	Doors	Standard
	Windows	View into server lab from informal learning spaces
	Relite	High visibility into server lab room to promote curiosity



## IT Server Lab

### EQUIPMENT & CASEWORK

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Wall Cabinet                | 16. Workstation Desk         |
| 2. Adjustable Wall Shelves     | 17. Lateral File Cabinet     |
| 3. Tall Storage Cabinet        | 18. Small Group Table/Chairs |
| 4. Equipment Space             | 19. Guest Chair              |
| 5. Demonstration Table         | 20. Shelving                 |
| 6. White Marker board          | 21. Casework                 |
| 7. Tackboard                   | 22. Overhead door            |
| 8. Instructor Podium           | 23. Overhead counter door    |
| 9. Instructor Bench            | 24. Student computer         |
| 10. Mobile Student Desk        | 25. Mobile Table             |
| 11. Mobile Bench Workstation   | 26. Inspection Table         |
| 12. Conference Table/Chairs    | 27. Server Racks             |
| 13. Mobile Bookshelf           | 28. Refrigerator             |
| 14. Sink                       | 29. Microwave                |
| 15. Lounge Chairs/ Side Tables |                              |

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## General Information

### Activity Description

Student lab assistants will support other students and faculty with IT support, and checking out available campus IT equipment

### Basic Room Parameters

**Square Footage** 250 SF

**Occupants** 2

### Proximity Requirements

**Adjacencies** IT computer labs

### Casework, Equipment and Furniture

**Casework** Tall heavy duty storage cabinets

**Technology** None

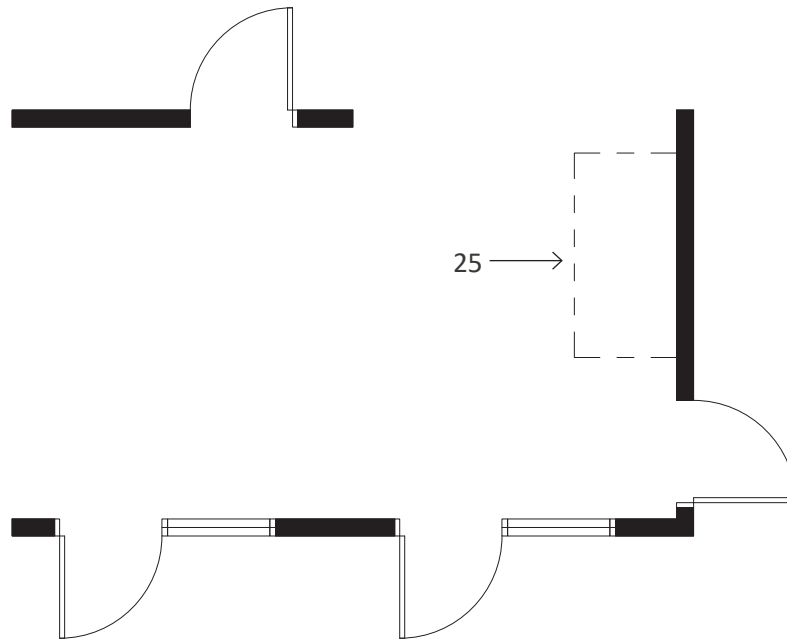
**Equipment** N/A

**Furnishings** Large work bench to hold computer equipment

Chairs for lab assistants

## Service Requirements

<b>Lighting</b>	Standard	
<b>Electrical</b>	Standard	
<b>HVAC</b>	Standard	
<b>Plumbing</b>	N/A	
<b>Finishes</b>	Floor	Polished Concrete
	Walls	GWB/Paint
	Ceiling	Lay-in acoustical ceiling
<b>Openings</b>	Doors	Standard
	Windows	Standard



## Lab Check/Tech Check Room



### EQUIPMENT & CASEWORK

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Wall Cabinet                | 16. Workstation Desk         |
| 2. Adjustable Wall Shelves     | 17. Lateral File Cabinet     |
| 3. Tall Storage Cabinet        | 18. Small Group Table/Chairs |
| 4. Equipment Space             | 19. Guest Chair              |
| 5. Demonstration Table         | 20. Shelving                 |
| 6. White Marker board          | 21. Casework                 |
| 7. Tackboard                   | 22. Overhead door            |
| 8. Instructor Podium           | 23. Overhead counter door    |
| 9. Instructor Bench            | 24. Student computer         |
| 10. Mobile Student Desk        | 25. Mobile Table             |
| 11. Mobile Bench Workstation   | 26. Inspection Table         |
| 12. Conference Table/Chairs    | 27. Server Racks             |
| 13. Mobile Bookshelf           | 28. Refrigerator             |
| 14. Sink                       | 29. Microwave                |
| 15. Lounge Chairs/ Side Tables |                              |

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## General Information

### Activity Description

Storage to hold Computer hardware, and other IT equipment. Instructors may be

### Basic Room Parameters

**Square Footage** 250 SF

**Occupants** 1

### Proximity Requirements

**Adjacencies** IT Classrooms and Computer labs

### Casework, Equipment and Furniture

**Casework** Tall heavy duty storage cabinets

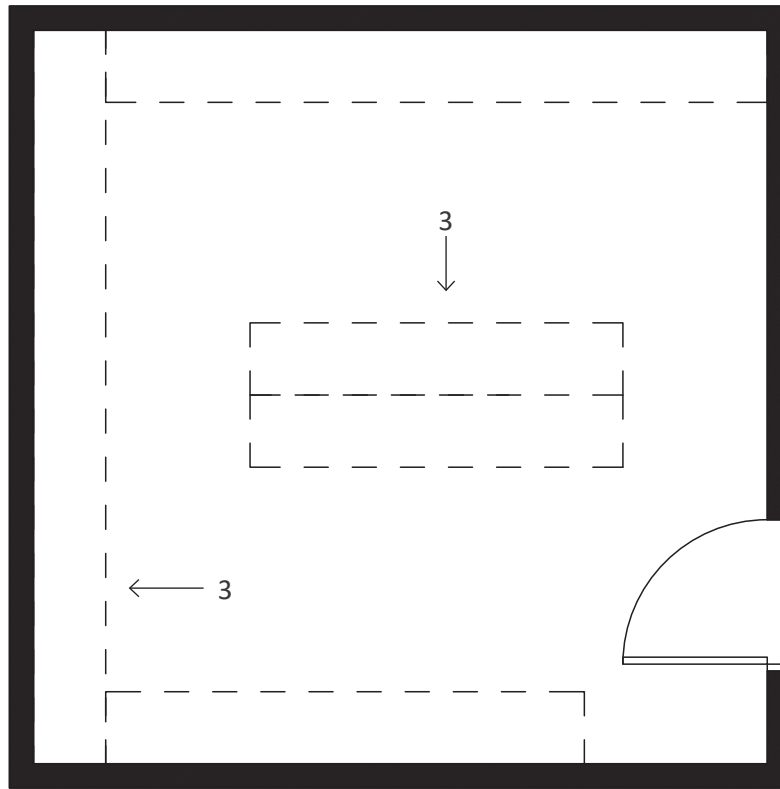
**Technology** None

**Equipment** N/A

**Furnishings** None

## Service Requirements

<b>Lighting</b>	Standard	
<b>Electrical</b>	Standard	
<b>HVAC</b>	Standard	
<b>Plumbing</b>	N/A	
<b>Finishes</b>	Floor	Polished Concrete
	Walls	GWB/Paint
	Ceiling	Lay-in acoustical ceiling
<b>Openings</b>	Doors	Standard
	Windows	Standard



## IT Storage



### EQUIPMENT & CASEWORK

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Wall Cabinet                | 16. Workstation Desk         |
| 2. Adjustable Wall Shelves     | 17. Lateral File Cabinet     |
| 3. Tall Storage Cabinet        | 18. Small Group Table/Chairs |
| 4. Equipment Space             | 19. Guest Chair              |
| 5. Demonstration Table         | 20. Shelving                 |
| 6. White Marker board          | 21. Casework                 |
| 7. Tackboard                   | 22. Overhead door            |
| 8. Instructor Podium           | 23. Overhead counter door    |
| 9. Instructor Bench            | 24. Student computer         |
| 10. Mobile Student Desk        | 25. Mobile Table             |
| 11. Mobile Bench Workstation   | 26. Inspection Table         |
| 12. Conference Table/Chairs    | 27. Server Racks             |
| 13. Mobile Bookshelf           | 28. Refrigerator             |
| 14. Sink                       | 29. Microwave                |
| 15. Lounge Chairs/ Side Tables |                              |

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## General Information

### Activity Description

Office work, and academic meetings with students..

### Basic Room Parameters

**Square Footage** 110 SF

**Occupants** 2

### Proximity Requirements

**Adjacencies** Machining Lab

### Casework, Equipment and Furniture

**Casework** (2) 36" x 12" x 67" light duty storage

15" x 28" x 48" large file cabinet

**Technology** Same computer and screens in current use

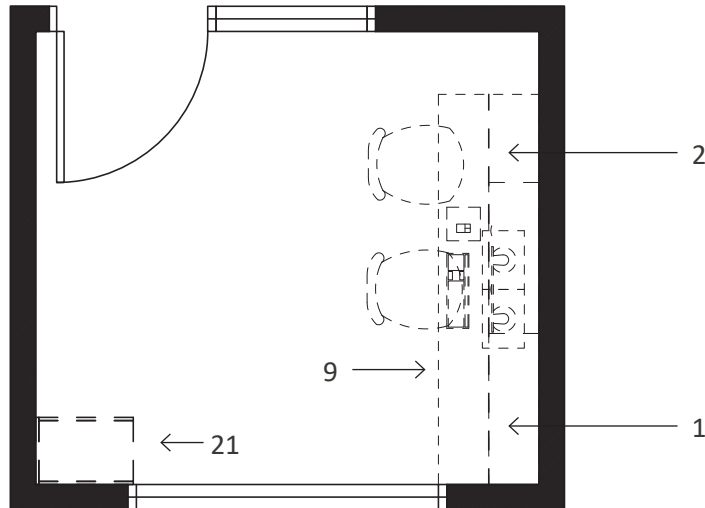
Regular printer

**Equipment** N/A

**Furnishings** Office desk and chair

## Service Requirements

<b>Lighting</b>	Standard lighting	
<b>Electrical</b>	120v	
<b>HVAC</b>	Heating	
	Air Conditioning	
<b>Plumbing</b>	N/A	
<b>Finishes</b>	Floor	Polished concrete
	Walls	Standard
	Ceiling	GWB/Paint
<b>Openings</b>	Windows	Standard
	Doors	Standard



## IT Private Office

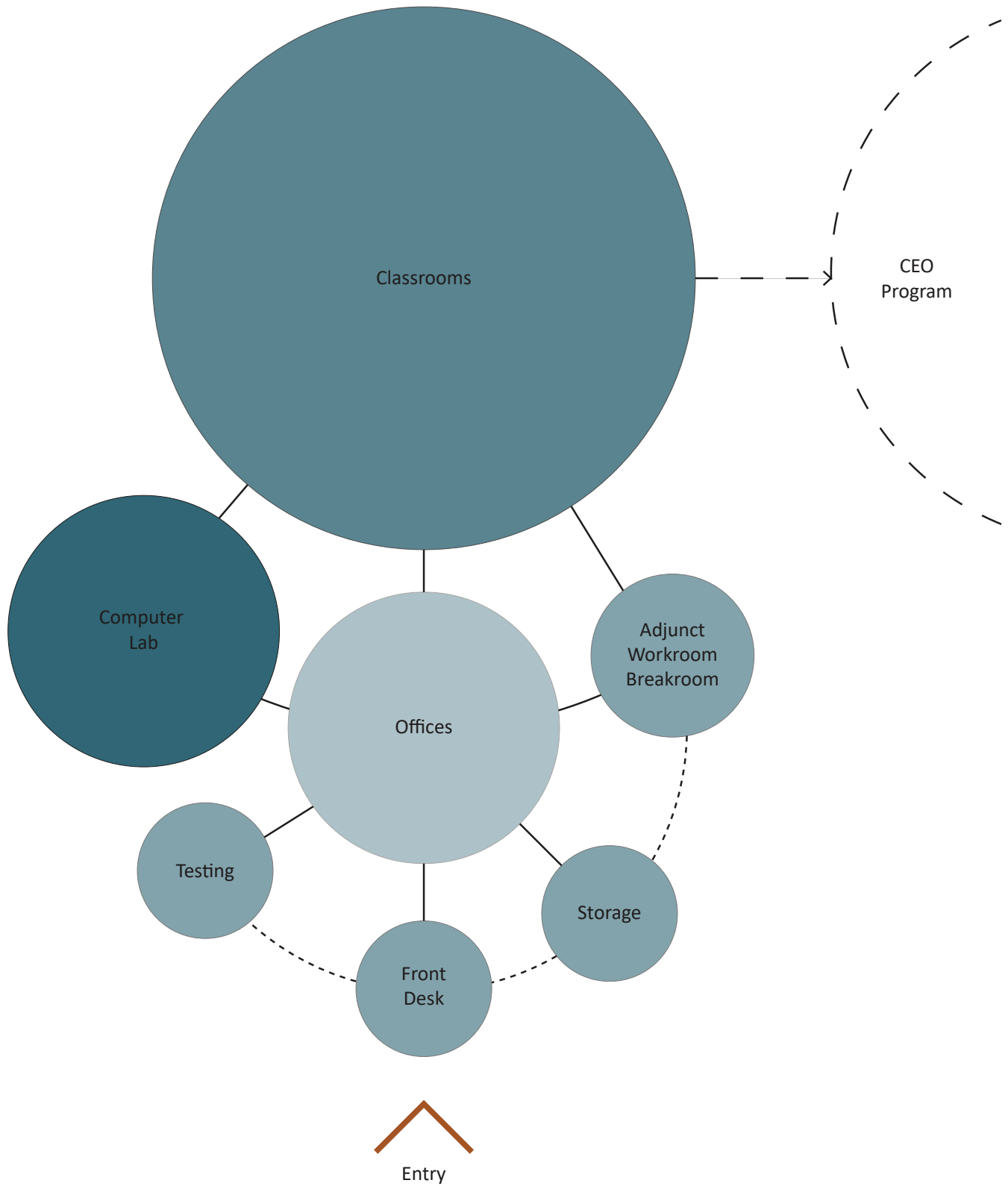


### EQUIPMENT & CASEWORK

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Wall Cabinet                | 16. Workstation Desk         |
| 2. Adjustable Wall Shelves     | 17. Lateral File Cabinet     |
| 3. Tall Storage Cabinet        | 18. Small Group Table/Chairs |
| 4. Equipment Space             | 19. Guest Chair              |
| 5. Demonstration Table         | 20. Shelving                 |
| 6. White Marker board          | 21. Casework                 |
| 7. Tackboard                   | 22. Overhead door            |
| 8. Instructor Podium           | 23. Overhead counter door    |
| 9. Instructor Bench            | 24. Student computer         |
| 10. Mobile Student Desk        | 25. Mobile Table             |
| 11. Mobile Bench Workstation   | 26. Inspection Table         |
| 12. Conference Table/Chairs    | 27. Server Racks             |
| 13. Mobile Bookshelf           | 28. Refrigerator             |
| 14. Sink                       | 29. Microwave                |
| 15. Lounge Chairs/ Side Tables |                              |

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Transitional Studies Programmatic Diagram

## General Information

Rooms are used for direct instruction, group work, and class activities. Classroom enrollment ranges from 15-40 students depending on the quarter and subject.

### Activity Description

Direct instruction: Teacher uses white boards, smart boards (or equivalent) to display videos with sound to aid students in their learning. Instruction includes lecture, group discussion and peer groups. Lecture includes instructor presentations, videos and demonstrations.

Group work: Students move tables/chairs in order to create a working space that involves groups of 3-5 students.

### Basic Room Parameters

**Square Footage** 1100 SF

**Occupants** 55

### Proximity Requirements

**Adjacencies** Other TS classrooms, Transitional studies faculty offices

### Casework, Equipment and Furniture

**Casework** Storage for textbooks, science equipment and art supplies

(2) 15" x 28" x 37" File cabinets

**Technology** Sound/Audio system for presentation

Projector and screen or flat panel monitor to be confirmed during design

Wireless access points

Telephone

Instructor podium

**Equipment** (2) White markerboards

Computer podium for instruction

**Furnishings** Long student tables and seating for up to 40 students

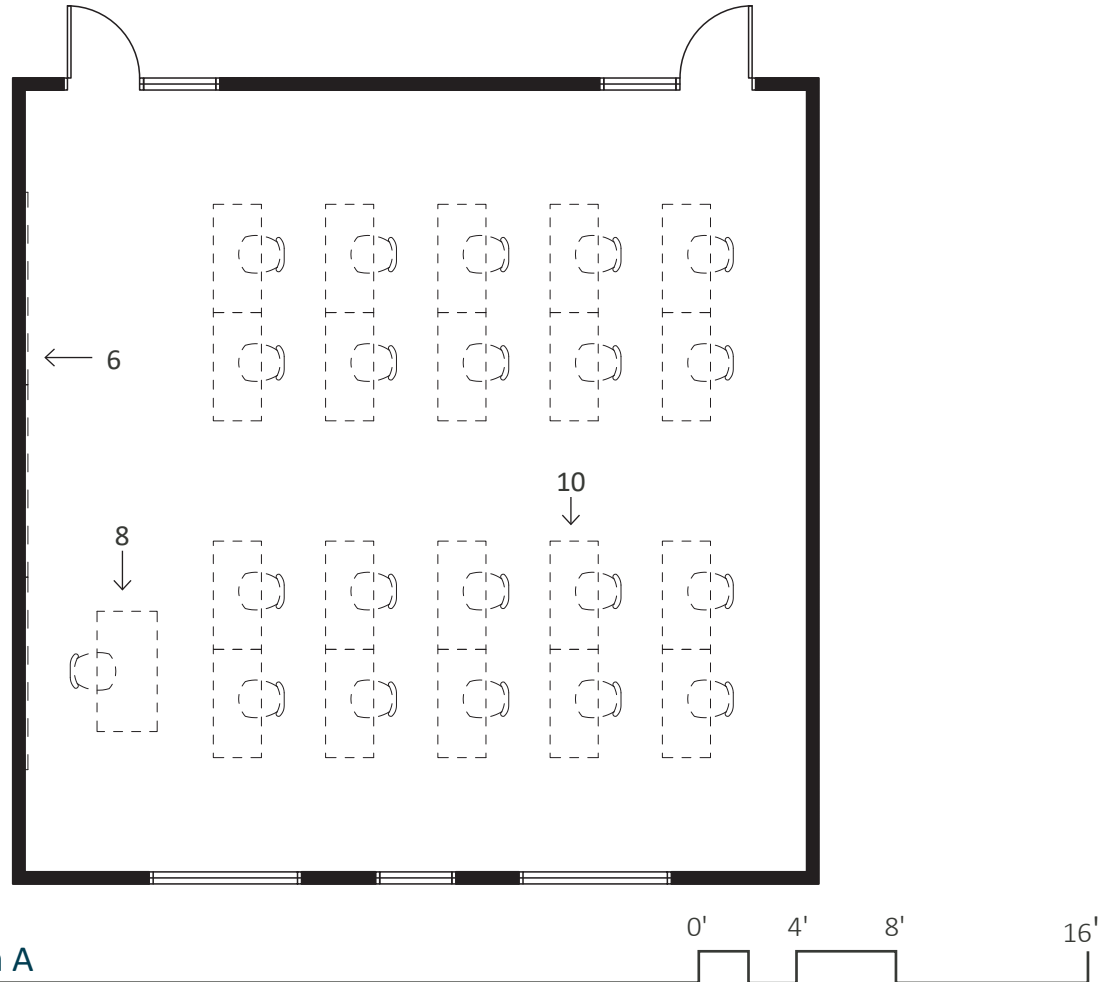
Mobile tables and chairs for group work

## Service Requirements

<b>Lighting</b>	Dimmable Lights	
<b>Electrical</b>	Outlets that remain active at all times	
	Lighting control located at both ends of the room	
<b>HVAC</b>	Heating and Air Conditioning	
<b>Plumbing</b>	N/A	
<b>Finishes</b>	Floor	Carpet
	Walls	GWB/Paint
	Ceiling	Lay-in acoustical ceiling
<b>Openings</b>	Doors	Standard
	Windows	Standard

# Lower Columbia College Center for Vocational & Transitional Studies

## TRANSITIONAL STUDIES



### General Classroom A

#### EQUIPMENT & CASEWORK

1. Wall Cabinet
2. Adjustable Wall Shelves
3. Tall Storage Cabinet
4. Equipment Space
5. Demonstration Table
6. White Marker board
7. Tackboard
8. Instructor Podium
9. Instructor Bench
10. Mobile Student Desk
11. Mobile Bench Workstation
12. Conference Table/Chairs
13. Mobile Bookshelf
14. Sink
15. Lounge Chairs/ Side Tables
16. Workstation Desk
17. Lateral File Cabinet
18. Small Group Table/Chairs
19. Guest Chair
20. Shelving
21. Casework
22. Overhead door
23. Overhead counter door
24. Student computer
25. Mobile Table
26. Inspection Table
27. Server Racks
28. Refrigerator
29. Microwave

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## General Information

Rooms are used for direct instruction, group work, and class activities. Classroom enrollment ranges from 15-40 students depending on the quarter and subject.

### Activity Description

Direct instruction: Teacher uses white boards, smart boards (or equivalent) to display videos with sound to aid students in their learning. Instruction includes lecture, group discussion and peer groups. Lecture includes instructor presentations, videos and demonstrations.

Group work: Students move tables/chairs in order to create a working space that involves groups of 3-5 students.

### Basic Room Parameters

**Square Footage** 950 SF

**Occupants** 47

### Proximity Requirements

**Adjacencies** Informal learning space

### Casework, Equipment and Furniture

**Casework** Storage for textbooks, science equipment and art supplies

(2) 15" x 28" x 37" File cabinets

ADA height counters with sink

**Technology** Sound/Audio system for presentation

Projector and screen or flat panel monitor to be confirmed during design

Wireless access points

Telephone

Instructor podium

**Equipment** (2) White markerboards

Computer podium for instruction

**Furnishings** Long student tables and seating for up to 40 students

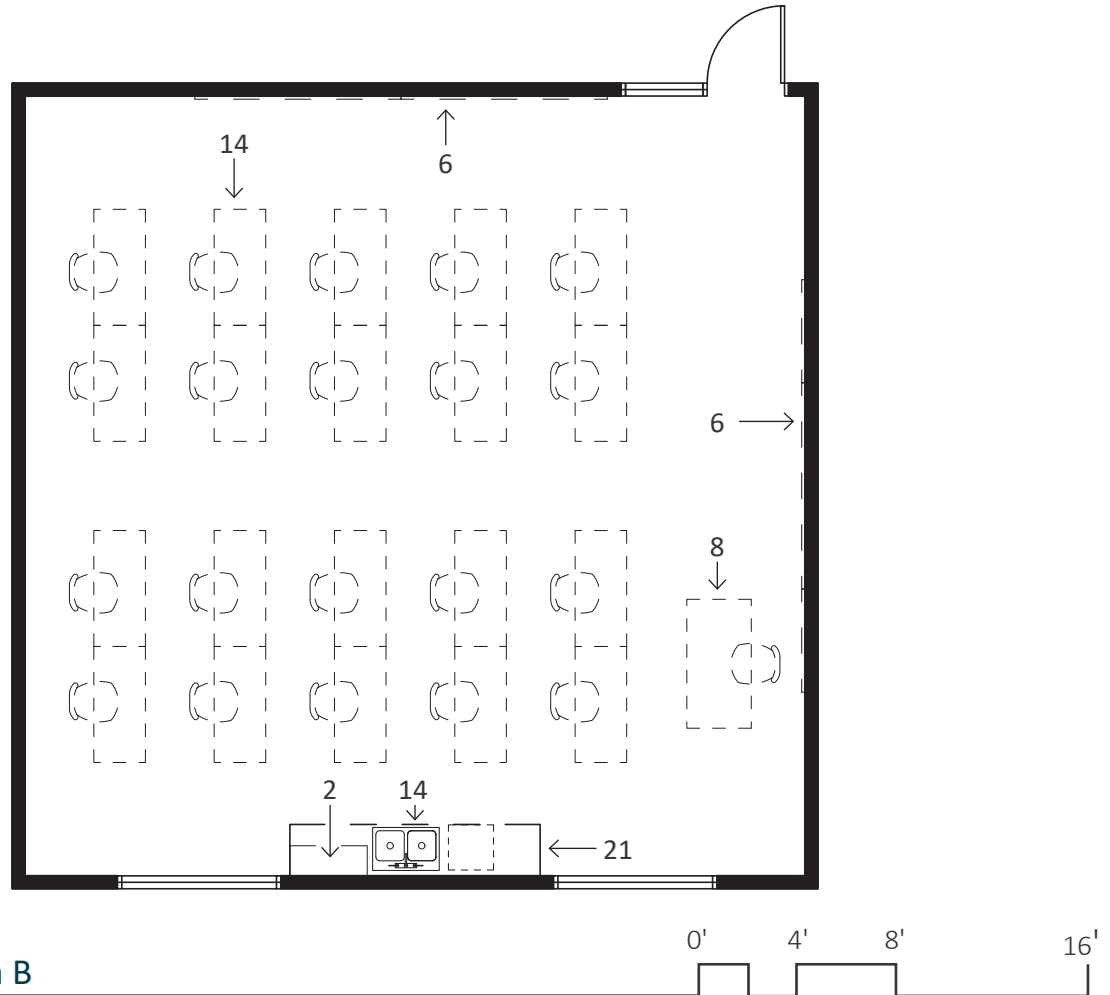
Mobile tables and chairs for group work

## Service Requirements

<b>Lighting</b>	Dimmable Lights	
<b>Electrical</b>	Outlets that remain active at all times	
	Lighting control located at both ends of the room	
<b>HVAC</b>	Heating and Air Conditioning	
<b>Plumbing</b>	N/A	
<b>Finishes</b>	Floor	Carpet
	Walls	GWB/Paint
	Ceiling	Lay-in acoustical ceiling
<b>Openings</b>	Doors	Standard
	Windows	Standard

# Lower Columbia College Center for Vocational & Transitional Studies

## TRANSITIONAL STUDIES



### General Classroom B

#### EQUIPMENT & CASEWORK

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Wall Cabinet                | 16. Workstation Desk         |
| 2. Adjustable Wall Shelves     | 17. Lateral File Cabinet     |
| 3. Tall Storage Cabinet        | 18. Small Group Table/Chairs |
| 4. Equipment Space             | 19. Guest Chair              |
| 5. Demonstration Table         | 20. Shelving                 |
| 6. White Marker board          | 21. Casework                 |
| 7. Tackboard                   | 22. Overhead door            |
| 8. Instructor Podium           | 23. Overhead counter door    |
| 9. Instructor Bench            | 24. Student computer         |
| 10. Mobile Student Desk        | 25. Mobile Table             |
| 11. Mobile Bench Workstation   | 26. Inspection Table         |
| 12. Conference Table/Chairs    | 27. Server Racks             |
| 13. Mobile Bookshelf           | 28. Refrigerator             |
| 14. Sink                       | 29. Microwave                |
| 15. Lounge Chairs/ Side Tables |                              |

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## General Information

Classroom space for Transitional Studies courses that require computers.

### Activity Description

Students can make use of the computers in this space to complete coursework. Lectures and presentations requiring student participation through computers will also be held in this space.

### Basic Room Parameters

**Square Footage** 900 SF

**Occupants** 45

### Proximity Requirements

**Adjacencies** General Classrooms, Informal learning space

### Casework, Equipment and Furniture

**Casework** Locking cabinet storage

**Technology** Sound/Audio system for presentation

Projector and screen or flat panel monitor to be confirmed during design

Wireless access points

Telephone

**Equipment** Computers

Computer podium for instruction

Large white boards

**Furnishings** Computer desks,

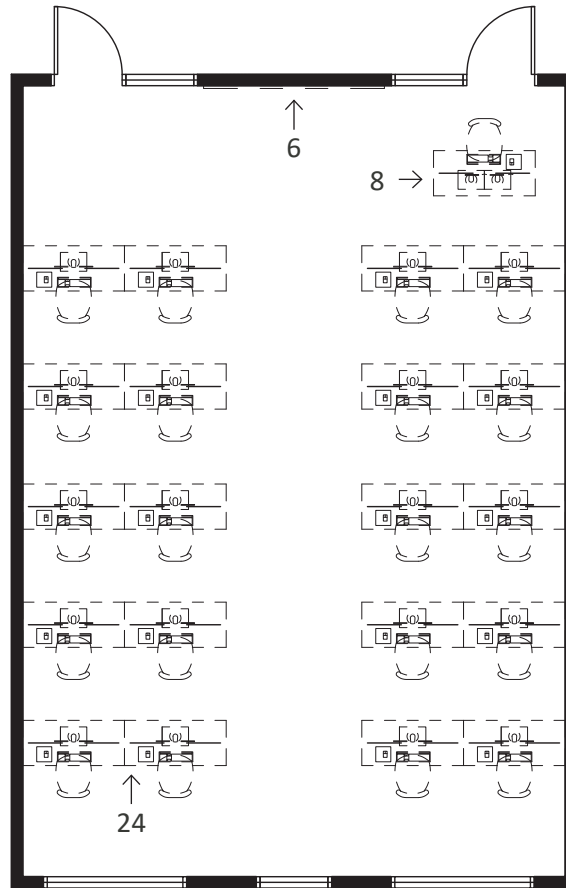
Chairs

## Service Requirements

<b>Lighting</b>	Dimmable lights near instructor station	
<b>Electrical</b>	Outlets that remain active at all times	
<b>HVAC</b>	Suitable temperature control for computer lab	
<b>Finishes</b>	Floor	Carpet
	Walls	GWB/Paint
	Ceiling	Lay-in acoustical ceiling
<b>Openings</b>	Doors	Standard
	Windows	Standard

# Lower Columbia College Center for Vocational & Transitional Studies

## TRANSITIONAL STUDIES



## Transitional Studies Computer Lab



### EQUIPMENT & CASEWORK

1. Wall Cabinet
2. Adjustable Wall Shelves
3. Tall Storage Cabinet
4. Equipment Space
5. Demonstration Table
6. White Marker board
7. Tackboard
8. Instructor Podium
9. Instructor Bench
10. Mobile Student Desk
11. Mobile Bench Workstation
12. Conference Table/Chairs
13. Mobile Bookshelf
14. Sink
15. Lounge Chairs/ Side Tables
16. Workstation Desk
17. Lateral File Cabinet
18. Small Group Table/Chairs
19. Guest Chair
20. Shelving
21. Casework
22. Overhead door
23. Overhead counter door
24. Student computer
25. Mobile Table
26. Inspection Table
27. Server Racks
28. Refrigerator
29. Microwave

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## General Information

### Activity Description

Eating (preparing food), coffee, chatting, checking emails, copying, printing, relaxing for Faculty and Staff. Available computer and work spaces for adjunct faculty to use as workstations.

### Basic Room Parameters

**Square Footage** 500 SF

**Occupants** 4

### Proximity Requirements

**Adjacencies** private offices of staff and faculty, Transitional Studies classrooms

### Casework, Equipment and Furniture

**Casework** Long counter tops with cabinets below, shelves mounted above cabinets

Sink

Refrigerator

Microwave

**Technology** 2-4 Computer stations

Printer & copy machine

**Equipment** N/A

**Furnishings** Couch/lounge chairs

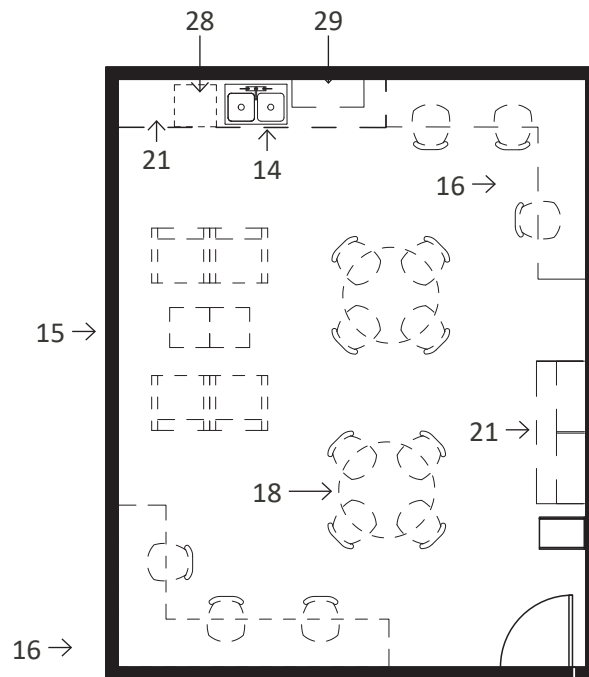
Table and chairs (preferably seating 6)

## Service Requirements

<b>Lighting</b>	Standard Lighting	
<b>Electrical</b>	Standard	
<b>HVAC</b>	Heating and Air Conditioning	
<b>Plumbing</b>	Plumbing for sin	
<b>Finishes</b>	Floor	Carpet
	Walls	GWB/Paint
	Ceiling	Lay-in acoustical ceiling
<b>Openings</b>	Doors	Standard
	Windows	Standard

# Lower Columbia College Center for Vocational & Transitional Studies

## TRANSITIONAL STUDIES



### Adjunct Workroom - Breakroom



#### EQUIPMENT & CASEWORK

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Wall Cabinet                | 16. Workstation Desk         |
| 2. Adjustable Wall Shelves     | 17. Lateral File Cabinet     |
| 3. Tall Storage Cabinet        | 18. Small Group Table/Chairs |
| 4. Equipment Space             | 19. Guest Chair              |
| 5. Demonstration Table         | 20. Shelving                 |
| 6. White Marker board          | 21. Casework                 |
| 7. Tackboard                   | 22. Overhead door            |
| 8. Instructor Podium           | 23. Overhead counter door    |
| 9. Instructor Bench            | 24. Student computer         |
| 10. Mobile Student Desk        | 25. Mobile Table             |
| 11. Mobile Bench Workstation   | 26. Inspection Table         |
| 12. Conference Table/Chairs    | 27. Server Racks             |
| 13. Mobile Bookshelf           | 28. Refrigerator             |
| 14. Sink                       | 29. Microwave                |
| 15. Lounge Chairs/ Side Tables |                              |

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## General Information

This room is used to administer required testing as part of the intake process as well as ongoing quarterly testing for all students in the Transitional Studies Department.

### Activity Description

This room is used as a quiet space for students to complete their required CASAS testing, which is done on computers. Multiple testing appointments are set throughout each day, generally morning, afternoon, and evening, Monday-Friday. Students enter the space, store their personal items in a safe space away from their computer station, then are seated at their designated station

### Basic Room Parameters

**Square Footage** 300 SF

**Occupants** 15

### Proximity Requirements

**Adjacencies** Intake

### Casework, Equipment and Furniture

**Casework** Tall storage cabinet

Locking file cabinet

**Technology** Wireless access points

Telephone

Instructor computer for administering test

**Equipment** Testing computers

Computer station for instruction

**Furnishings** Computer desks,

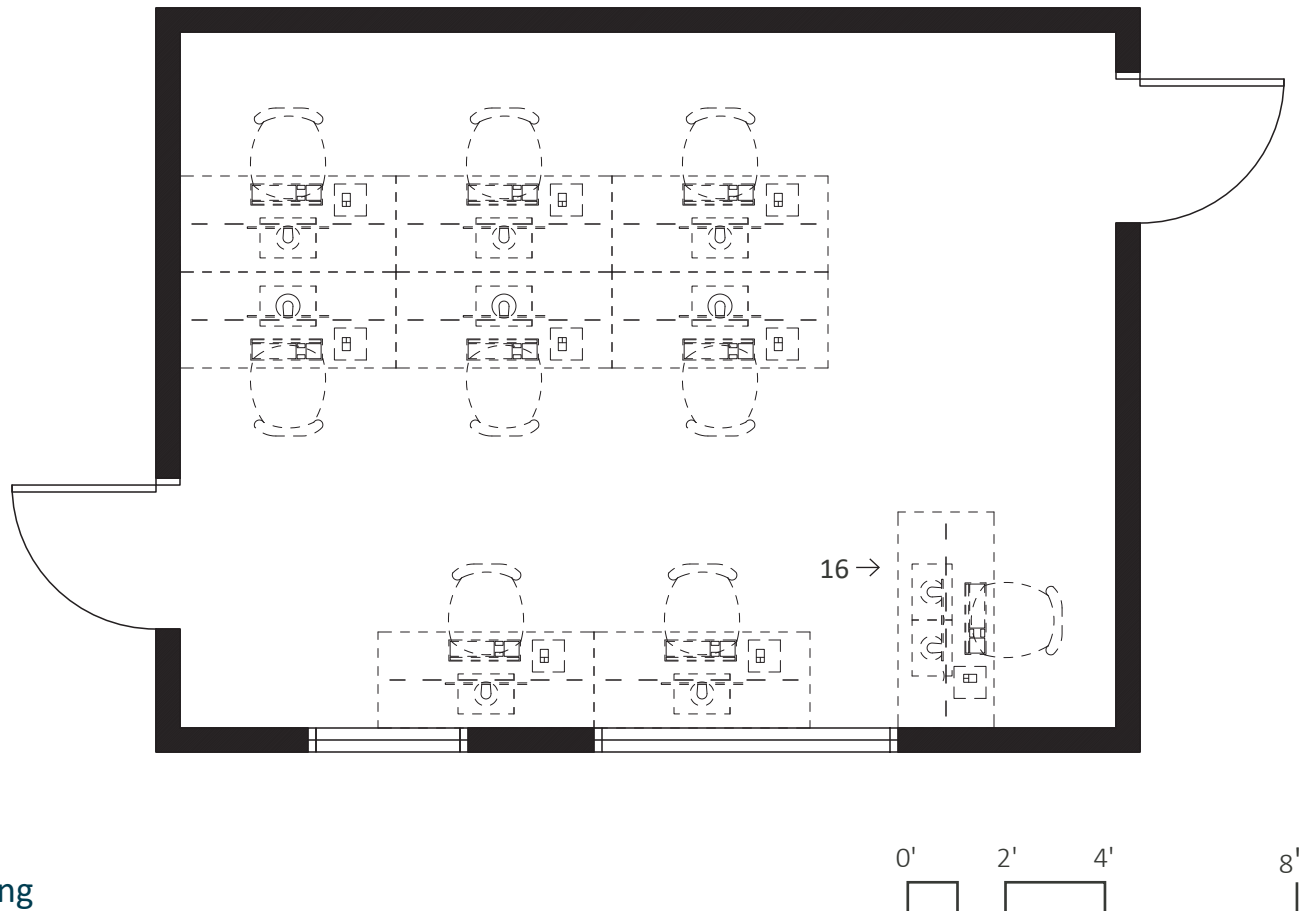
Chairs

## Service Requirements

<b>Lighting</b>	Standard Lighting	
<b>Electrical</b>	Standard	
<b>HVAC</b>	Heating and Air Conditioning that can support a small computer lab	
<b>Plumbing</b>	N/A	
<b>Finishes</b>	Floor	Carpet
	Walls	GWB/Paint
	Ceiling	Lay-in acoustical ceiling
<b>Openings</b>	Doors	Standard
	Windows	None
	Relite	View between testing space and reception

# Lower Columbia College Center for Vocational & Transitional Studies

## TRANSITIONAL STUDIES



## Testing

### EQUIPMENT & CASEWORK

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Wall Cabinet                | 16. Workstation Desk         |
| 2. Adjustable Wall Shelves     | 17. Lateral File Cabinet     |
| 3. Tall Storage Cabinet        | 18. Small Group Table/Chairs |
| 4. Equipment Space             | 19. Guest Chair              |
| 5. Demonstration Table         | 20. Shelving                 |
| 6. White Marker board          | 21. Casework                 |
| 7. Tackboard                   | 22. Overhead door            |
| 8. Instructor Podium           | 23. Overhead counter door    |
| 9. Instructor Bench            | 24. Student computer         |
| 10. Mobile Student Desk        | 25. Mobile Table             |
| 11. Mobile Bench Workstation   | 26. Inspection Table         |
| 12. Conference Table/Chairs    | 27. Server Racks             |
| 13. Mobile Bookshelf           | 28. Refrigerator             |
| 14. Sink                       | 29. Microwave                |
| 15. Lounge Chairs/ Side Tables |                              |

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## General Information

Reception area for Transitional Studies testing

### Activity Description

Students enter this area prior to gaining access to the testing space. Staff are available to support students, and answer questions they may have about testing. Space is available for those who need extra time/assurance prior to entering the testing space.

### Basic Room Parameters

**Square Footage** 120 SF

**Occupants** 1

### Proximity Requirements

**Adjacencies** Testing, Main Entrance

### Casework, Equipment and Furniture

**Casework** Multiple Lateral file cabinets

**Technology** (2) Faculty computers

Internet access point

Telephone

**Equipment** None

**Furnishings** (2) Faculty work desks for administrative assistants

Lounge seating and tables

## Service Requirements

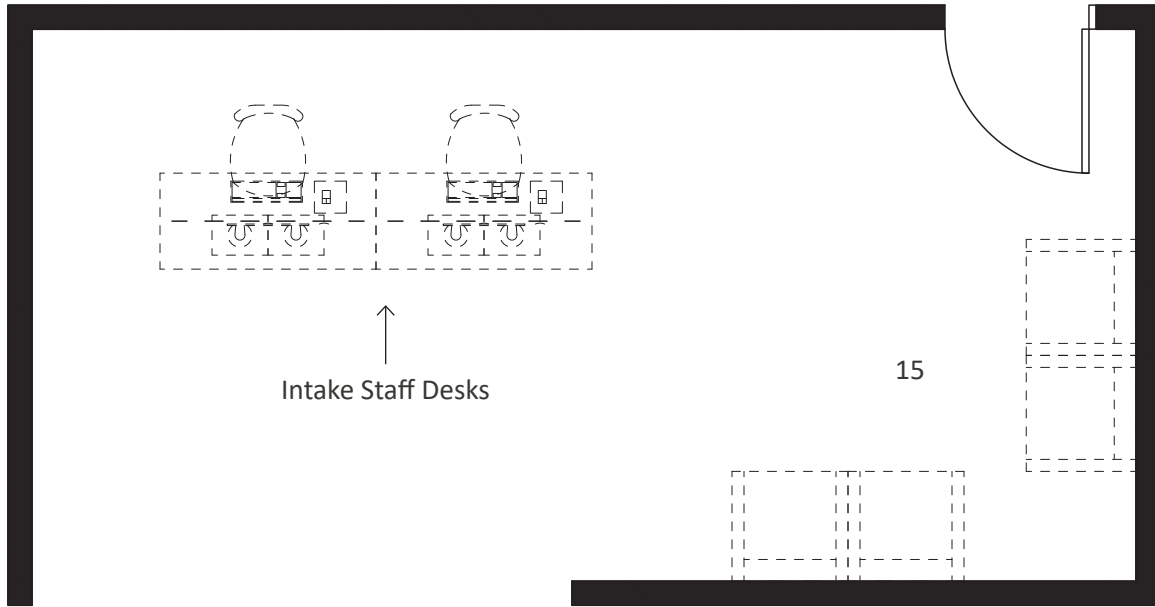
<b>Lighting</b>	Standard Lighting	
<b>Electrical</b>	Standard	
<b>HVAC</b>	Heating and Air Conditioning	
<b>Plumbing</b>	N/A	
<b>Finishes</b>	Floor	Carpet
	Walls	GWB/Paint
	Ceiling	Lay-in acoustical ceiling
<b>Openings</b>	Doors	Standard
	Windows	Standard

## Other Requirements

Located on the first floor, with a partial wall opening into the building entryway, to allow for immediate access for students looking for Testing.

# Lower Columbia College Center for Vocational & Transitional Studies

## TRANSITIONAL STUDIES



### Intake

#### EQUIPMENT & CASEWORK

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Wall Cabinet                | 16. Workstation Desk         |
| 2. Adjustable Wall Shelves     | 17. Lateral File Cabinet     |
| 3. Tall Storage Cabinet        | 18. Small Group Table/Chairs |
| 4. Equipment Space             | 19. Guest Chair              |
| 5. Demonstration Table         | 20. Shelving                 |
| 6. White Marker board          | 21. Casework                 |
| 7. Tackboard                   | 22. Overhead door            |
| 8. Instructor Podium           | 23. Overhead counter door    |
| 9. Instructor Bench            | 24. Student computer         |
| 10. Mobile Student Desk        | 25. Mobile Table             |
| 11. Mobile Bench Workstation   | 26. Inspection Table         |
| 12. Conference Table/Chairs    | 27. Server Racks             |
| 13. Mobile Bookshelf           | 28. Refrigerator             |
| 14. Sink                       | 29. Microwave                |
| 15. Lounge Chairs/ Side Tables |                              |

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## General Information

### Activity Description

Office work, and academic meetings with students..

### Basic Room Parameters

**Square Footage** 110 SF

**Occupants** 2

### Proximity Requirements

**Adjacencies** TS classrooms

### Casework, Equipment and Furniture

**Casework** (2) 36" x 12" x 67" light duty storage

15" x 28" x 48" large file cabinet

**Technology** Faculty computer

Printer/copier

Internet access point

**Equipment** N/A

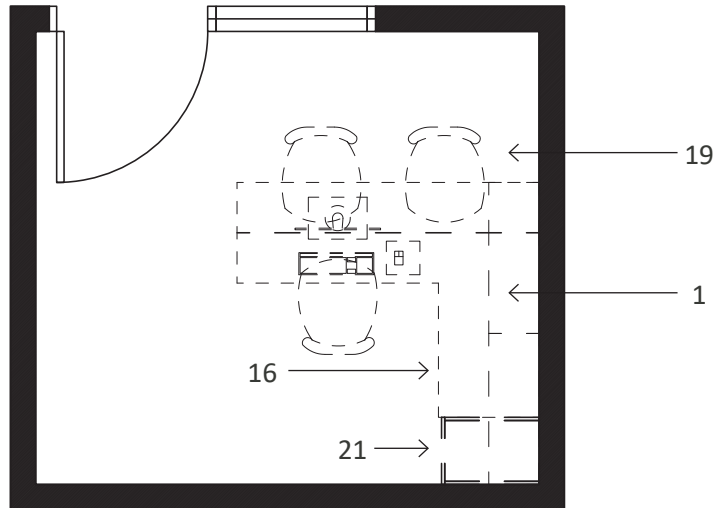
**Furnishings** Office desk and chair

## Service Requirements

<b>Lighting</b>	Standard lighting	
<b>Electrical</b>	120v	
<b>HVAC</b>	Heating	
	Air Conditioning	
<b>Plumbing</b>	N/A	
<b>Finishes</b>	Floor	Polished concrete
	Walls	Standard
	Ceiling	GWB/Paint
<b>Openings</b>	Windows	Standard
	Doors	Standard

# Lower Columbia College Center for Vocational & Transitional Studies

## TRANSITIONAL STUDIES



### Transitional Studies Private Office



#### EQUIPMENT & CASEWORK

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Wall Cabinet                | 16. Workstation Desk         |
| 2. Adjustable Wall Shelves     | 17. Lateral File Cabinet     |
| 3. Tall Storage Cabinet        | 18. Small Group Table/Chairs |
| 4. Equipment Space             | 19. Guest Chair              |
| 5. Demonstration Table         | 20. Shelving                 |
| 6. White Marker board          | 21. Casework                 |
| 7. Tackboard                   | 22. Overhead door            |
| 8. Instructor Podium           | 23. Overhead counter door    |
| 9. Instructor Bench            | 24. Student computer         |
| 10. Mobile Student Desk        | 25. Mobile Table             |
| 11. Mobile Bench Workstation   | 26. Inspection Table         |
| 12. Conference Table/Chairs    | 27. Server Racks             |
| 13. Mobile Bookshelf           | 28. Refrigerator             |
| 14. Sink                       | 29. Microwave                |
| 15. Lounge Chairs/ Side Tables |                              |

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## General Information

Storage for all paper records for the department including student, staff, and faculty records.

### Activity Description

This space will need to be able to be secured and have limited access as it will have sensitive information stored within.

### Basic Room Parameters

**Square Footage** 120 SF

**Occupants** 1

### Proximity Requirements

**Adjacencies** Directly connected to Administrative Assistant workspace

### Casework, Equipment and Furniture

**Casework** Multiple Lateral file cabinets

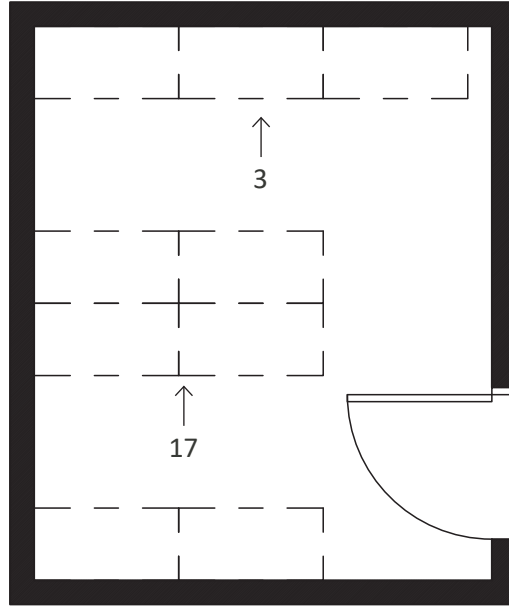
**Technology** None

**Equipment** None

**Furnishings** None

## Service Requirements

<b>Lighting</b>	Standard Lighting	
<b>Electrical</b>	Standard	
<b>HVAC</b>	Heating and Air Conditioning	
<b>Plumbing</b>	N/A	
<b>Finishes</b>	Floor	Carpet
	Walls	GWB/Paint
	Ceiling	Lay-in acoustical ceiling
<b>Openings</b>	Doors	Standard
	Windows	Standard



## Transitional Studies Storage

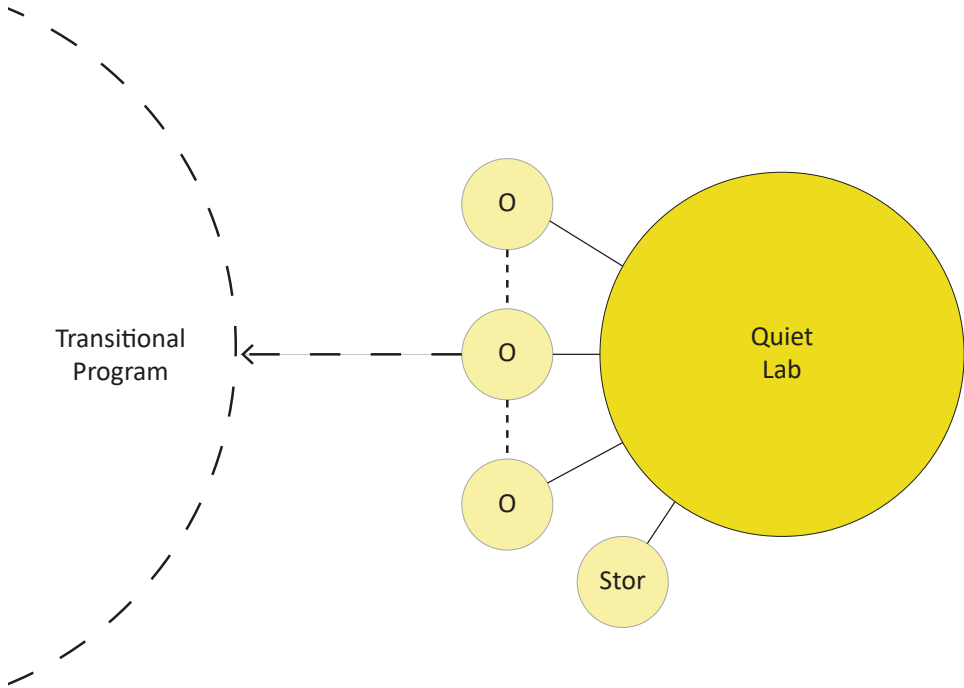


### EQUIPMENT & CASEWORK

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Wall Cabinet                | 16. Workstation Desk         |
| 2. Adjustable Wall Shelves     | 17. Lateral File Cabinet     |
| 3. Tall Storage Cabinet        | 18. Small Group Table/Chairs |
| 4. Equipment Space             | 19. Guest Chair              |
| 5. Demonstration Table         | 20. Shelving                 |
| 6. White Marker board          | 21. Casework                 |
| 7. Tackboard                   | 22. Overhead door            |
| 8. Instructor Podium           | 23. Overhead counter door    |
| 9. Instructor Bench            | 24. Student computer         |
| 10. Mobile Student Desk        | 25. Mobile Table             |
| 11. Mobile Bench Workstation   | 26. Inspection Table         |
| 12. Conference Table/Chairs    | 27. Server Racks             |
| 13. Mobile Bookshelf           | 28. Refrigerator             |
| 14. Sink                       | 29. Microwave                |
| 15. Lounge Chairs/ Side Tables |                              |

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CEO Programmatic Diagram

## General Information

CEO lab space dedicated for student work space, small group collaboration, and instructor tutoring. Also used several times a quarter for student activities and eating. Open with moveable tables for alternate arrangement options.

### Activity Description

Open concept lab dedicated individual and collaborative study. Tutoring at instructor or student desks. Social activities (occasional), eating (daily) and occasional events involving food. Computers available for student use.

### Basic Room Parameters

**Square Footage** 900 SF

**Occupants** 18

### Proximity Requirements

**Adjacencies** CEO and transitional studies classrooms, and faculty offices

### Casework, Equipment and Furniture

**Casework** N/A

**Technology** 8 student computer

2 staff computers

**Equipment** 4 white marker boards

3 tackboards

**Furnishings** (16) 24" x 36" student tables

(10) 24" x 60" student tables

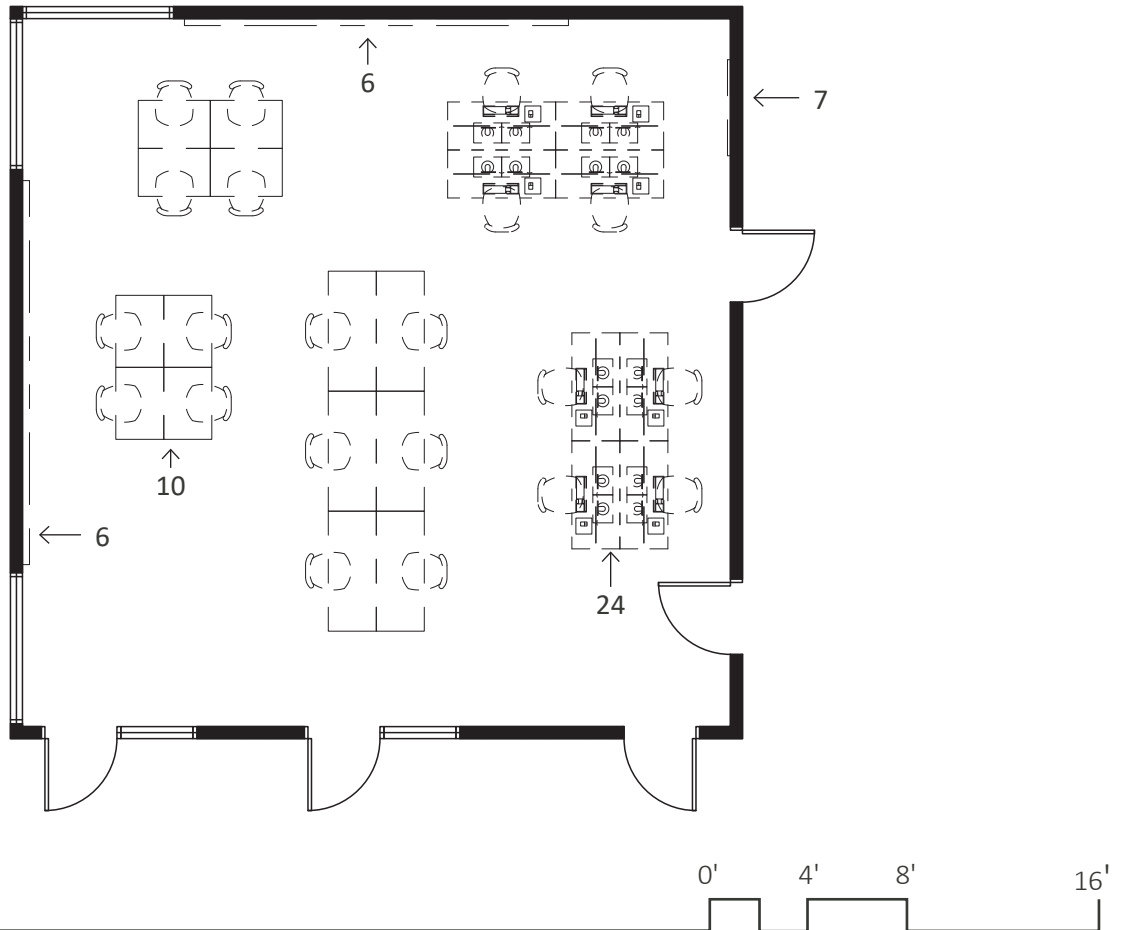
(2) Instructor/supervisor desks

## Service Requirements

<b>Lighting</b>	Standard Lighting	
<b>Electrical</b>	wiring for student and staff computers	
<b>HVAC</b>	Heating and Air Conditioning	
<b>Plumbing</b>	N/A	
<b>Finishes</b>	Floor	Carpet
	Walls	GWB/Paint
	Ceiling	Lay-in acoustical ceiling
<b>Openings</b>	Doors	Standard
	Windows	Standard

# Lower Columbia College Center for Vocational & Transitional Studies

CEO



## Quiet Lab

### EQUIPMENT & CASEWORK

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Wall Cabinet                | 16. Workstation Desk         |
| 2. Adjustable Wall Shelves     | 17. Lateral File Cabinet     |
| 3. Tall Storage Cabinet        | 18. Small Group Table/Chairs |
| 4. Equipment Space             | 19. Guest Chair              |
| 5. Demonstration Table         | 20. Shelving                 |
| 6. White Marker board          | 21. Casework                 |
| 7. Tackboard                   | 22. Overhead door            |
| 8. Instructor Podium           | 23. Overhead counter door    |
| 9. Instructor Bench            | 24. Student computer         |
| 10. Mobile Student Desk        | 25. Mobile Table             |
| 11. Mobile Bench Workstation   | 26. Inspection Table         |
| 12. Conference Table/Chairs    | 27. Server Racks             |
| 13. Mobile Bookshelf           | 28. Refrigerator             |
| 14. Sink                       | 29. Microwave                |
| 15. Lounge Chairs/ Side Tables |                              |

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## General Information

### Activity Description

Office work, and academic meetings with students..

### Basic Room Parameters

**Square Footage** 110 SF

**Occupants** 2

### Proximity Requirements

**Adjacencies** Machining Lab

### Casework, Equipment and Furniture

**Casework** (2) 36" x 12" x 67" light duty storage

15" x 28" x 48" large file cabinet

**Technology** Same computer and screens in current use

Regular printer

**Equipment** N/A

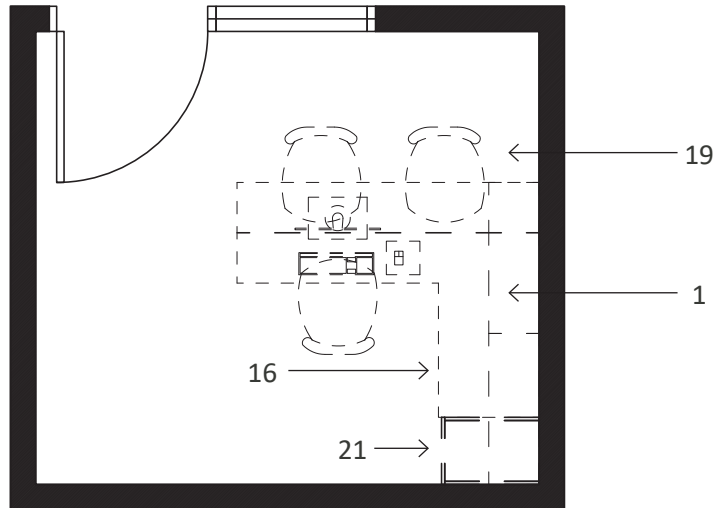
**Furnishings** Office desk and chair

## Service Requirements

<b>Lighting</b>	Standard lighting	
<b>Electrical</b>	120v	
<b>HVAC</b>	Heating	
	Air Conditioning	
<b>Plumbing</b>	N/A	
<b>Finishes</b>	Floor	Polished concrete
	Walls	Standard
	Ceiling	GWB/Paint
<b>Openings</b>	Windows	Standard
	Doors	Standard

# Lower Columbia College Center for Vocational & Transitional Studies

CEO



## Transitional Studies Private Office



### EQUIPMENT & CASEWORK

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Wall Cabinet                | 16. Workstation Desk         |
| 2. Adjustable Wall Shelves     | 17. Lateral File Cabinet     |
| 3. Tall Storage Cabinet        | 18. Small Group Table/Chairs |
| 4. Equipment Space             | 19. Guest Chair              |
| 5. Demonstration Table         | 20. Shelving                 |
| 6. White Marker board          | 21. Casework                 |
| 7. Tackboard                   | 22. Overhead door            |
| 8. Instructor Podium           | 23. Overhead counter door    |
| 9. Instructor Bench            | 24. Student computer         |
| 10. Mobile Student Desk        | 25. Mobile Table             |
| 11. Mobile Bench Workstation   | 26. Inspection Table         |
| 12. Conference Table/Chairs    | 27. Server Racks             |
| 13. Mobile Bookshelf           | 28. Refrigerator             |
| 14. Sink                       | 29. Microwave                |
| 15. Lounge Chairs/ Side Tables |                              |

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## General Information

### Activity Description

Faculty shared offices for work, and academic meetings with students..

### Basic Room Parameters

**Square Footage** 580 SF

**Occupants** 4

### Proximity Requirements

**Adjacencies** Student Lounge, Informal learning spaces

### Casework, Equipment and Furniture

**Casework** Tall storage cabinets

Lateral file cabinets

**Technology** Staff computer

Telephone

#### Equipment

**Furnishings** Staff desks (L-shaped) and chairs

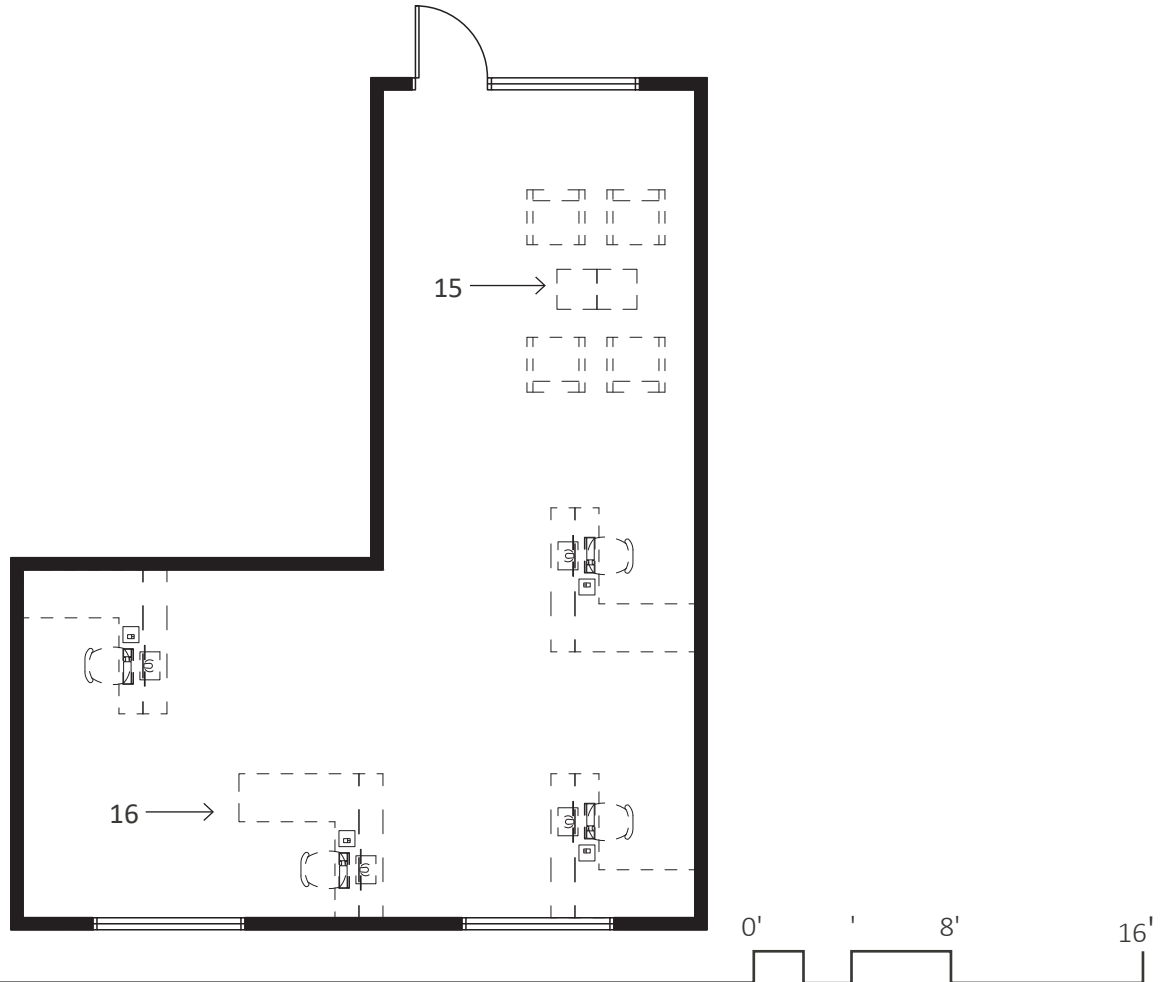
Visitor chairs

## Service Requirements

<b>Lighting</b>	Standard Lighting	
<b>Electrical</b>	Standard	
<b>HVAC</b>	Heating and Air Conditioning	
<b>Plumbing</b>	N/A	
<b>Finishes</b>	Floor	Carpet
	Walls	GWB/Paint
	Ceiling	Lay-in acoustical ceiling
<b>Openings</b>	Doors	Standard
	Windows	Standard

# Lower Columbia College Center for Vocational & Transitional Studies

BUILDING SUPPORT



## Office Suite

### EQUIPMENT & CASEWORK

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Wall Cabinet                | 16. Workstation Desk         |
| 2. Adjustable Wall Shelves     | 17. Lateral File Cabinet     |
| 3. Tall Storage Cabinet        | 18. Small Group Table/Chairs |
| 4. Equipment Space             | 19. Guest Chair              |
| 5. Demonstration Table         | 20. Shelving                 |
| 6. White Marker board          | 21. Casework                 |
| 7. Tackboard                   | 22. Overhead door            |
| 8. Instructor Podium           | 23. Overhead counter door    |
| 9. Instructor Bench            | 24. Student computer         |
| 10. Mobile Student Desk        | 25. Mobile Table             |
| 11. Mobile Bench Workstation   | 26. Inspection Table         |
| 12. Conference Table/Chairs    | 27. Server Racks             |
| 13. Mobile Bookshelf           | 28. Refrigerator             |
| 14. Sink                       | 29. Microwave                |
| 15. Lounge Chairs/ Side Tables |                              |

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## General Information

This room is used to segregate and store waste classified by Washington State as “dangerous” or “universal.” All regulated waste generated by the campus will be stored in this area, unless it is exempt.

### Activity Description

### Basic Room Parameters

**Square Footage** 400 SF

**Occupants** 2

### Proximity Requirements

**Adjacencies** External roadway, loading dock

### Casework, Equipment and Furniture

- Casework**
  - Corrosive storage cabinets
  - Flammable cabinets
  - Chemical storage cabinets
  - Storage for glassware (above sink)
  - Storage for instrumentation and PPE
  - Laboratory bench
  - Emergency Shower
- Technology**
  - Telephone
  - internet access points
- Equipment**
  - Counter top fume hood
  - Floor to ceiling fume hood
  - Benchtop autoclave
  - Explosion proof refrigerator

- Furnishings**
- 4-drawer locking file cabinet
  - book shelf
  - shelving
  - Staff desk

## Service Requirements

- Lighting** Motion activated lighting
- Electrical** outlets for charging instrumentation.
- HVAC**
- Air exchange specification for chemical laboratory
  - Chemical storage vented outside of building
  - Stand-alone ventilation
- Plumbing**
- Floor drain for emergency shower
  - Eyewash station
  - Sink
  - Secondary spill containment (concrete trench with steel grates)
- Finishes**
- Floor Chemically resistant concrete
  - Grouting rods installed in floor to attach steel drums, etc
  - Walls Dividing wall to "separate universal and dangerous waste"
  - Ceiling Minimum 12' floor to ceiling clearance
- Openings**
- Doors Standard
  - Overhead door
  - Windows Standard

## Other Requirements

Hazmat storage to store waste products for the entire campus, and located on the first floor of the new CVTS building. Primary access from building exterior.

## General Information

### Activity Description

Staff meetings, small group tutoring. Archive file storage, book storage.

### Basic Room Parameters

**Square Footage** 280 SF

**Occupants** 19

### Proximity Requirements

**Adjacencies** Student lounge, Staff offices

### Casework, Equipment and Furniture

**Casework** Locking cabinets  
(3-4) Lateral file cabinets

**Technology** Network connected production copier.  
Projector

**Equipment** White markerboards

**Furnishings** Conference table to seat 6-8

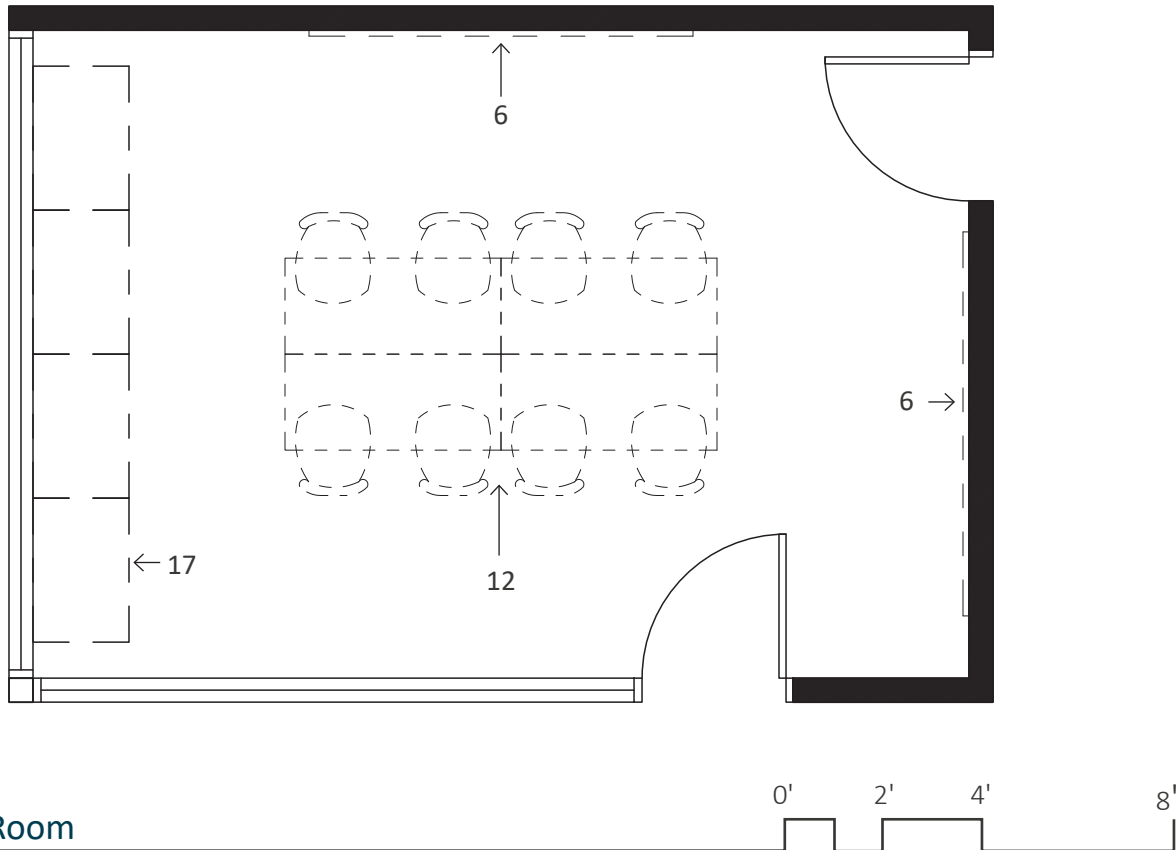


## Service Requirements

<b>Lighting</b>	Dimmable lighting	
<b>Electrical</b>	Standard	
<b>HVAC</b>	Heating and Air Conditioning	
<b>Plumbing</b>	N/A	
<b>Finishes</b>	Floor	Carpet
	Walls	GWB/Paint
	Ceiling	Lay-in acoustical ceiling
<b>Openings</b>	Doors	Standard
	Windows	Standard

# Lower Columbia College Center for Vocational & Transitional Studies

BUILDING SUPPORT



## Conference Room

### EQUIPMENT & CASEWORK

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Wall Cabinet                | 16. Workstation Desk         |
| 2. Adjustable Wall Shelves     | 17. Lateral File Cabinet     |
| 3. Tall Storage Cabinet        | 18. Small Group Table/Chairs |
| 4. Equipment Space             | 19. Guest Chair              |
| 5. Demonstration Table         | 20. Shelving                 |
| 6. White Marker board          | 21. Casework                 |
| 7. Tackboard                   | 22. Overhead door            |
| 8. Instructor Podium           | 23. Overhead counter door    |
| 9. Instructor Bench            | 24. Student computer         |
| 10. Mobile Student Desk        | 25. Mobile Table             |
| 11. Mobile Bench Workstation   | 26. Inspection Table         |
| 12. Conference Table/Chairs    | 27. Server Racks             |
| 13. Mobile Bookshelf           | 28. Refrigerator             |
| 14. Sink                       | 29. Microwave                |
| 15. Lounge Chairs/ Side Tables |                              |

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## General Information

### Activity Description

Eating (preparing food), coffee, chatting

### Basic Room Parameters

**Square Footage** 200 SF

**Occupants** 2

### Proximity Requirements

**Adjacencies** private offices of staff and faculty

### Casework, Equipment and Furniture

**Casework** Microwave

Refrigerator

(5-7) Cabinets

**Technology** N/A

**Equipment** White markerboards

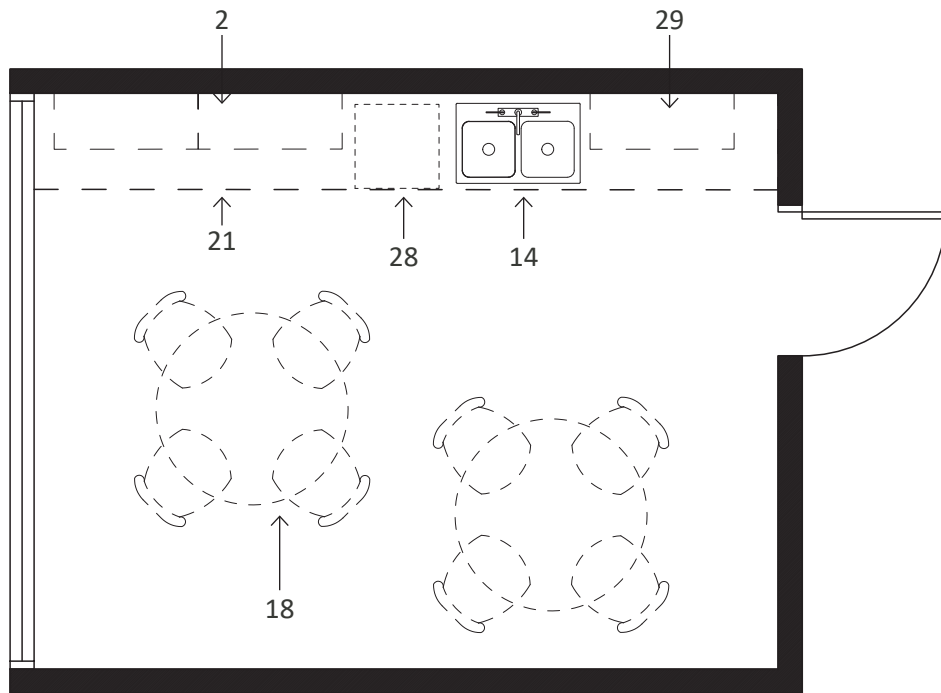
**Furnishings** Table and chairs (preferably seating 6)

## Service Requirements

<b>Lighting</b>	Motion Lighting	
<b>Electrical</b>	Standard	
<b>HVAC</b>	Heating and Air Conditioning	
<b>Plumbing</b>	Plumbing for sink	
<b>Finishes</b>	Floor	Carpet
	Walls	GWB/Paint
	Ceiling	Lay-in acoustical ceiling
<b>Openings</b>	Doors	Standard
	Windows	Standard

# Lower Columbia College Center for Vocational & Transitional Studies

BUILDING SUPPORT



## Breakroom



### EQUIPMENT & CASEWORK

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Wall Cabinet                | 16. Workstation Desk         |
| 2. Adjustable Wall Shelves     | 17. Lateral File Cabinet     |
| 3. Tall Storage Cabinet        | 18. Small Group Table/Chairs |
| 4. Equipment Space             | 19. Guest Chair              |
| 5. Demonstration Table         | 20. Shelving                 |
| 6. White Marker board          | 21. Casework                 |
| 7. Tackboard                   | 22. Overhead door            |
| 8. Instructor Podium           | 23. Overhead counter door    |
| 9. Instructor Bench            | 24. Student computer         |
| 10. Mobile Student Desk        | 25. Mobile Table             |
| 11. Mobile Bench Workstation   | 26. Inspection Table         |
| 12. Conference Table/Chairs    | 27. Server Racks             |
| 13. Mobile Bookshelf           | 28. Refrigerator             |
| 14. Sink                       | 29. Microwave                |
| 15. Lounge Chairs/ Side Tables |                              |

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## APPENDIX B - PREDESIGN CHECKLIST AND OUTLINE

1. COMPLETED LIFE CYCLE COST MODEL
2. COST ESTIMATE
3. C-100 COST ESTIMATE
4. LETTER OF LOCAL FUNDING COMMITMENT
5. DAHP LETTER
6. CAMPUS MASTER PLAN
7. DRAWINGS AND DIAGRAMS
8. GREENHOUSE REDUCTION PLAN
9. LEED CHECKLIST AND INTEGRATED DESIGN WORKSHOP NOTES
10. CIVIL NARRATIVE
11. LANDSCAPE NARRATIVE
12. STRUCTURAL NARRATIVE
13. MECHANICAL NARRATIVE
14. ELECTRICAL NARRATIVE
15. COLLEGE MISSION & VISION
16. VOCATIONAL TOURS



**Project and Existing Facility Information Sheet**

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

*	<b>Agency</b>	Lower Columbia College
*	<b>Project Title</b>	Center for Vocational & Transitional Studies

\* **Date of Analysis:**      3/22/2022

\* **Analysis Period**  
 Years of Analysis (If not 30 or 50)      20

<b>Existing Facility Description</b>	This project is a new building to replace the existing Vocational & Transitional Studies Building.
--------------------------------------	--

Existing Lease Information	Lease 1	Lease 2	Lease 3	Lease 4	Lease 5	Lease 6	Total
Existing Square Feet							-
Lease Start Date / Last Lease Increase							
Lease End Date							
Lease Rate per Month							\$ -
Lease Rate per SF per Year at End Date							
Additional Operating Costs per Month	\$ -						\$ -
Total Lease Costs per Month							\$ -
* Persons Relocating							-
SF per Person Calculated							
Estimated Lease Renewal Rate - 5 Year							\$ -

**Lease Option 1 Information Sheet**

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

\* **New Lease Option 1 Description**      Move Vocational & Transitional Studies related programs to an off-site leased space suitable for programmatic requirements.

**New Lease Information**

* Lease Location	Longview	Market Area:	Southwest Washington
* Lease Square Feet Type	Gross		
* New Facility Square Feet	46,267		
* New Lease Start Date	9/1/2025		
SF per Person Calculated			

<b>New Lease Costs</b>	<b>Years of Term</b>	<b>Rate / SF / Year</b>	<b>Rate / Month</b>	<b>Adjusted to FS Rate</b>	<b>Total FS Rate / Month</b>	<b>Estimated FSG Market Rate</b>	<b>Estimated FSG Rate / Month</b>	<b>Real Estate Transaction Fees for Term</b>
* Years 1 - 5	5				\$ 173,150	\$ 44.91	\$ 173,150	\$ 236,547
Years 6 - 10	5				\$ 243,584	\$ 63.18	\$ 243,584	\$ 171,099
Years 11 - 15	5				\$ 342,669	\$ 88.88	\$ 342,669	\$ 245,413
Years 16 - 20	5				\$ 482,059	\$ 125.03	\$ 482,059	\$ 349,956
Years								
Total Length of Lease	20							\$ 1,003,015
Transaction Fee for first 5 Years	2.50%	<i>of total rent for first 5 years of term</i>						
Transaction Fee for Additional Years	1.25%	<i>of total rent for term beyond 5 years</i>						

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

Added Services	New Lease Operating Costs (Starting in current year)	Known Cost / SF / Year	Estimated Cost / SF / Year in 2025 - Gross	Total Cost / Year	Cost / Month	Escalated to lease start date
<input checked="" type="checkbox"/>	Energy (Electricity, Natural Gas)	\$ -	\$ 1.51	\$ 69,912	\$ 5,826	
<input checked="" type="checkbox"/>	Janitorial Services	\$ -	\$ 1.84	\$ 85,110	\$ 7,092	
<input checked="" type="checkbox"/>	Utilities (Water, Sewer, & Garbage)	\$ -	\$ 0.66	\$ 30,396	\$ 2,533	
<input checked="" type="checkbox"/>	Grounds	\$ -	\$ 0.08	\$ 3,648	\$ 304	
<input checked="" type="checkbox"/>	Pest Control	\$ -	\$ 0.13	\$ 6,079	\$ 507	
<input checked="" type="checkbox"/>	Security	\$ -	\$ 0.12	\$ 5,471	\$ 456	
<input checked="" type="checkbox"/>	Maintenance and Repair	\$ -	\$ 7.27	\$ 336,184	\$ 28,015	
<input checked="" type="checkbox"/>	Management	\$ -	\$ 1.20	\$ 55,321	\$ 4,610	
<input type="checkbox"/>	Road Clearance	\$ -	\$0.00	\$ -	\$ -	
<input type="checkbox"/>	Telecom	\$ -	\$0.00	\$ -	\$ -	
	Additional Parking	\$ -	\$ -	\$ -	\$ -	
	Other	\$ -	\$ -	\$ -	\$ -	
	<b>Total Operating Costs</b>	<b>\$ -</b>	<b>\$ 12.80</b>	<b>\$ 592,122</b>	<b>\$ 49,344</b>	

	New Lease One Time Costs	Current Estimate	Calculated (for reference)	
*	Real Estate Transaction Fees	\$ 500,000	\$ 1,003,015	Per Std %
*	Tenant Improvements	\$ 10,000,000	\$ 694,005	\$216.14 per SF
*	IT Infrastructure	\$ 1,000,000	\$ -	
*	Furniture Costs	\$ 1,600,000	\$ -	
*	Building Security and Access Systems	\$ 200,000		\$450 per person
*	Moving Vendor and Supplies	\$ 300,000	\$ -	
	Other / Incentive			
	<b>Total</b>	<b>\$ 13,600,000</b>	<b>\$ 1,697,020</b>	

Biennium Budget Impacts for New Lease	Biennium Time Period Start	Biennium Time Period Finish	Existing Lease Option	New Lease Option 1	Biennium Impact:
23-25 Biennium Lease Expenditure	7/1/2023	6/30/2025	\$ -	\$ -	\$ -
25-27 Biennium Lease Expenditure	7/1/2025	6/30/2027	\$ -	\$ 17,409,293	\$ 17,409,293
27-29 Biennium Lease Expenditure	7/1/2027	6/30/2029	\$ -	\$ 4,155,592	\$ 4,155,592
29-31 Biennium Lease Expenditure	7/1/2029	6/30/2031	\$ -	\$ 4,859,931	\$ 4,859,931
31-33 Biennium Lease Expenditure	7/1/2031	6/30/2033	\$ -	\$ 5,846,006	\$ 5,846,006

### Ownership Option 1 Information Sheet

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

\* **Project Description** Construct new Center for Vocational & Transitional Studies building on the Lower Columbia College campus.

\* **Construction or Purchase/Remodel** Construction

\* **Project Location** Longview Market Area = Southwest Washington

Statistics	
Gross Sq Ft	46,267
Usable Sq Ft	32,590
Space Efficiency	70%
Estimated Acres Needed	2.00
MACC Cost per Sq Ft	\$593.14
Estimated Total Project Costs per Sq Ft	\$815.07
Escalated MACC Cost per Sq Ft	\$727.93
Escalated Total Project Costs per Sq Ft	\$1,000.30

\* **Move In Date** 9/1/2025

Interim Lease Information	Start Date
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced (\$/SF/Year)	
One Time Costs (if double move)	

<b>Construction Cost Estimates (See Capital Budget System For Detail)</b>				
	<b>Known Costs</b>	<b>Estimated Costs</b>	<b>Cost to Use</b>	
<b>Acquisition Costs Total</b>				
		\$ 500,000	\$ 500,000	
<b>A &amp; E</b>	<b>Consultant Services</b>			
	A & E Fee Percentage (if services not specified)	6.92%	6.68% Std	6.92%
	Pre-Schematic Design services	\$ 220,836		
	Construction Documents	\$ 1,321,049		
	Extra Services	\$ 1,264,428		
	Other Services	\$ 1,098,780		
	Design Services Contingency	\$ 201,341		
	<b>Consultant Services Total</b>	<b>\$ 4,106,434</b>	<b>\$ 3,430,330</b>	<b>\$ 4,106,434</b>
<b>MACC</b>	<b>Construction Contracts</b>			
	Site Work	\$ 3,996,993		
	Related Project Costs	\$ -		
	Facility Construction	\$ 23,445,649		
	<b>MACC SubTotal</b>	<b>\$ 27,442,642</b>	<b>\$ 16,743,102</b>	<b>\$ 27,442,642</b>
	Construction Contingency (5% default)	\$ 1,376,889	\$ 1,372,132	\$ 1,376,889
	Non Taxable Items	\$ -		\$ -
	Sales Tax	\$ 2,334,383	\$ 2,799,149	\$ 2,334,383
	<b>Construction Additional Items Total</b>	<b>\$ 3,711,272</b>	<b>\$ 4,171,282</b>	<b>\$ 3,711,272</b>
	<b>Equipment</b>			
Equipment	\$ 1,462,457			
Non Taxable Items				
Sales Tax	\$ 118,460			
<b>Equipment Total</b>	<b>\$ 1,580,917</b>		<b>\$ 1,580,917</b>	
<b>Art Work Total</b>	<b>\$ 185,128</b>	<b>\$ 137,213</b>	<b>\$ 185,128</b>	
<b>Other Costs</b>				
LEED Registration / Certification fees	\$ 5,041			
Permit Review Fees	\$ 179,259			
<b>Other Costs Total</b>	<b>\$ 184,300</b>		<b>\$ 184,300</b>	
<b>Project Management Total</b>			<b>\$ -</b>	
<b>Grand Total Project Cost</b>	<b>\$ 37,210,693</b>	<b>\$ 24,981,927</b>	<b>\$ 37,710,693</b>	

Construction One Time Project Costs		
One Time Costs	Estimate	Calculated
Moving Vendor and Supplies		\$ -
Other (not covered in construction)		
<b>Total</b>	\$ -	\$ -

\$300 / Person in FY22

Ongoing Building Costs					
Added Services	New Building Operating Costs	Known Cost /GSF/ 2025	Estimated Cost /GSF/ 2025	Total Cost / Year	Cost / Month
<input checked="" type="checkbox"/>	Energy (Electricity, Natural Gas)	\$ -	\$ 1.51	\$ 69,912	\$ 5,826
<input checked="" type="checkbox"/>	Janitorial Services	\$ -	\$ 1.84	\$ 85,110	\$ 7,092
<input checked="" type="checkbox"/>	Utilities (Water, Sewer, & Garbage)	\$ -	\$ 0.66	\$ 30,396	\$ 2,533
<input checked="" type="checkbox"/>	Grounds	\$ -	\$ 0.08	\$ 3,648	\$ 304
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<input checked="" type="checkbox"/>	Security	\$ -	\$ 0.12	\$ 5,471	\$ 456
<input checked="" type="checkbox"/>	Maintenance and Repair	\$ -	\$ 7.27	\$ 336,184	\$ 28,015
<input checked="" type="checkbox"/>	Management	\$ -	\$ 1.20	\$ 55,321	\$ 4,610
<input type="checkbox"/>	Road Clearance	\$ -	\$ 0.00	\$ -	\$ -
<input type="checkbox"/>	Telecom	\$ -	\$ 0.00	\$ -	\$ -
	Additional Parking	\$ -	\$ -	\$ -	\$ -
	Other	\$ -	\$ -	\$ -	\$ -
	<b>Total Operating Costs</b>	\$ -	\$ 12.67	\$ 586,043	\$ 48,837



**Life Cycle Cost Analysis - Project Summary**

<b>Agency</b>	Lower Columbia College
<b>Project Title</b>	Center for Vocational & Transitional Studies

<b>Existing Description</b>	This project is a new building to replace the existing Vocational & Transitional Studies Building.
-----------------------------	--

<b>Lease Option 1 Description</b>	Move Vocational & Transitional Studies related programs to an off-site leased space suitable for programmatic requirements.
-----------------------------------	---

<b>Lease Option 2 Description</b>	
-----------------------------------	--

<b>Ownership Option 1 Description</b>	Construct new Center for Vocational & Transitional Studies building on the Lower Columbia College campus.
---------------------------------------	---

<b>Ownership Option 2 Description</b>	
---------------------------------------	--

<b>Ownership Option 3 Description</b>	
---------------------------------------	--

Lease Options Information	Existing Lease	Lease Option 1	Lease Option 2
Total Rentable Square Feet	-	46,267	-
Annual Lease Cost (Initial Term of Lease)	\$ -	\$ 2,077,796	\$ -
Full Service Cost/SF (Initial Term of Lease)	\$ -	\$ 44.91	\$ -
Occupancy Date	n/a	9/1/2025	
Project Initial Costs	n/a	\$ 13,600,000	\$ -
Persons Relocating	-	-	-
RSF/Person Calculated			

Ownership Information	Ownership 1	Ownership 2	Ownership 3
Total Gross Square Feet	46,267	-	-
Total Rentable Square Feet	32,590	-	-
Occupancy Date	9/1/2025		
Initial Project Costs	\$ -	\$ -	\$ -
Est Construction TPC (\$/GSF)	\$ 1,000	\$ -	\$ -
RSF/Person Calculated	-	-	-

**Financial Analysis of Options**

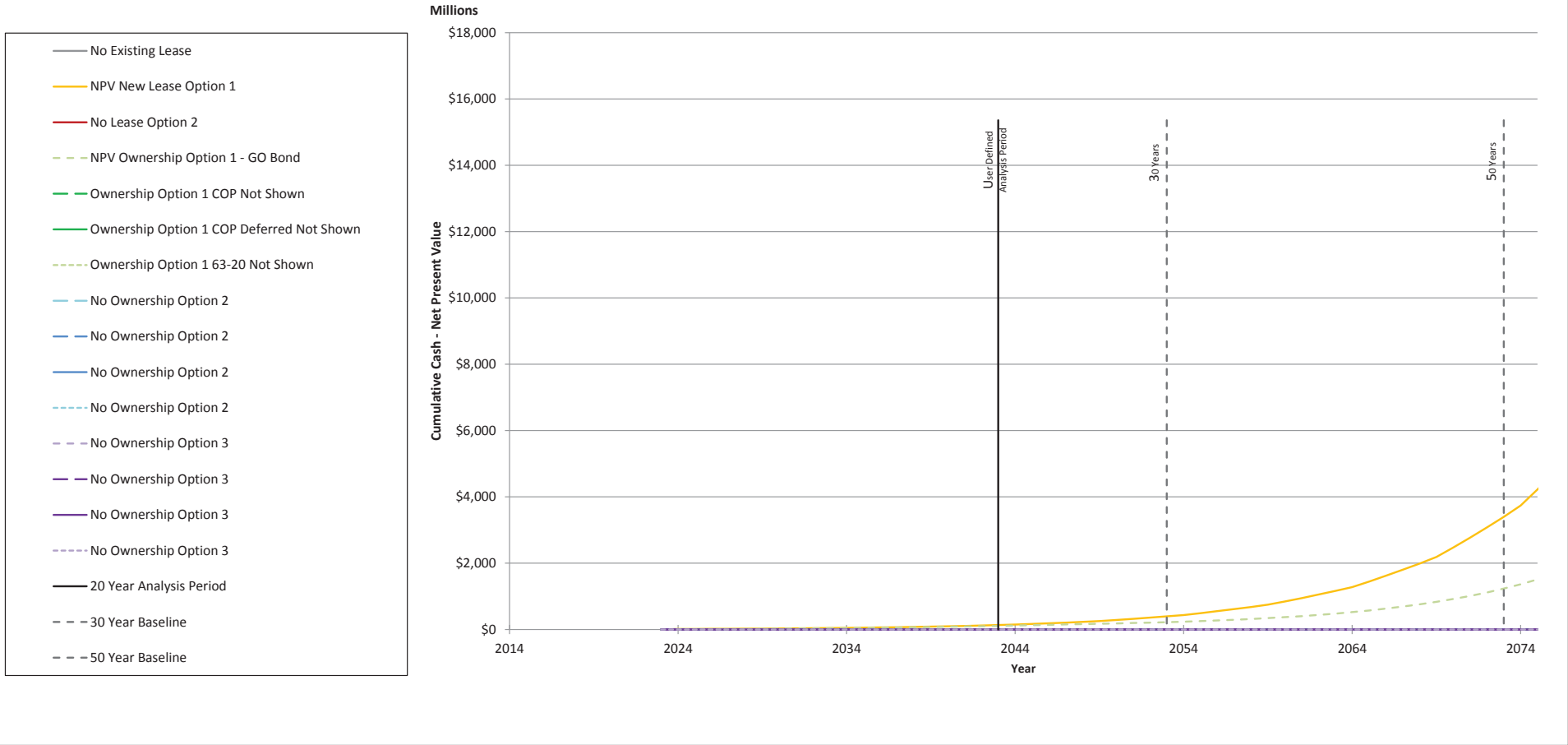
		Display Option?														
		Yes	Yes	Yes	Yes	No	No	No	No	No	Yes	No	No	No	Yes	No
Financial Comparisons		Existing Lease	Lease 1	Lease 2	Ownership 1			Ownership 2			Ownership 3					
Years	Financing Means	Current	Current	Current	GO Bond	COP	COP Deferred *	63-20	GO Bond	COP	COP Deferred	63-20	GO Bond	COP	COP Deferred	63-20
20	20 Year Cumulative Cash	\$ -	\$ 76,518,252	\$ -	\$ 62,870,063						\$ -				\$ -	
	20 Year Net Present Value	\$ -	\$ 119,938,903	\$ -	\$ 98,905,269						\$ -				\$ -	
	Lowest Cost Option (Analysis Period)		2		1											

		Display Option?														
		Yes	Yes	Yes	Yes	No	No	No	No	No	Yes	No	No	No	Yes	No
Financial Comparisons		Existing Lease	Lease 1	Lease 2	Ownership 1			Ownership 2			Ownership 3					
Years	Financing Means	Current	Current	Current	GO Bond	COP	COP Deferred *	63-20	GO Bond	COP	COP Deferred	63-20	GO Bond	COP	COP Deferred	63-20
30	30 Year Cumulative Cash	\$ -	\$ 163,121,175	\$ -	\$ 103,681,268						\$ -				\$ -	
	30 Year Net Present Value	\$ -	\$ 355,468,552	\$ -	\$ 206,296,238						\$ -				\$ -	
	Lowest Cost Option (30 Years)		2		1											

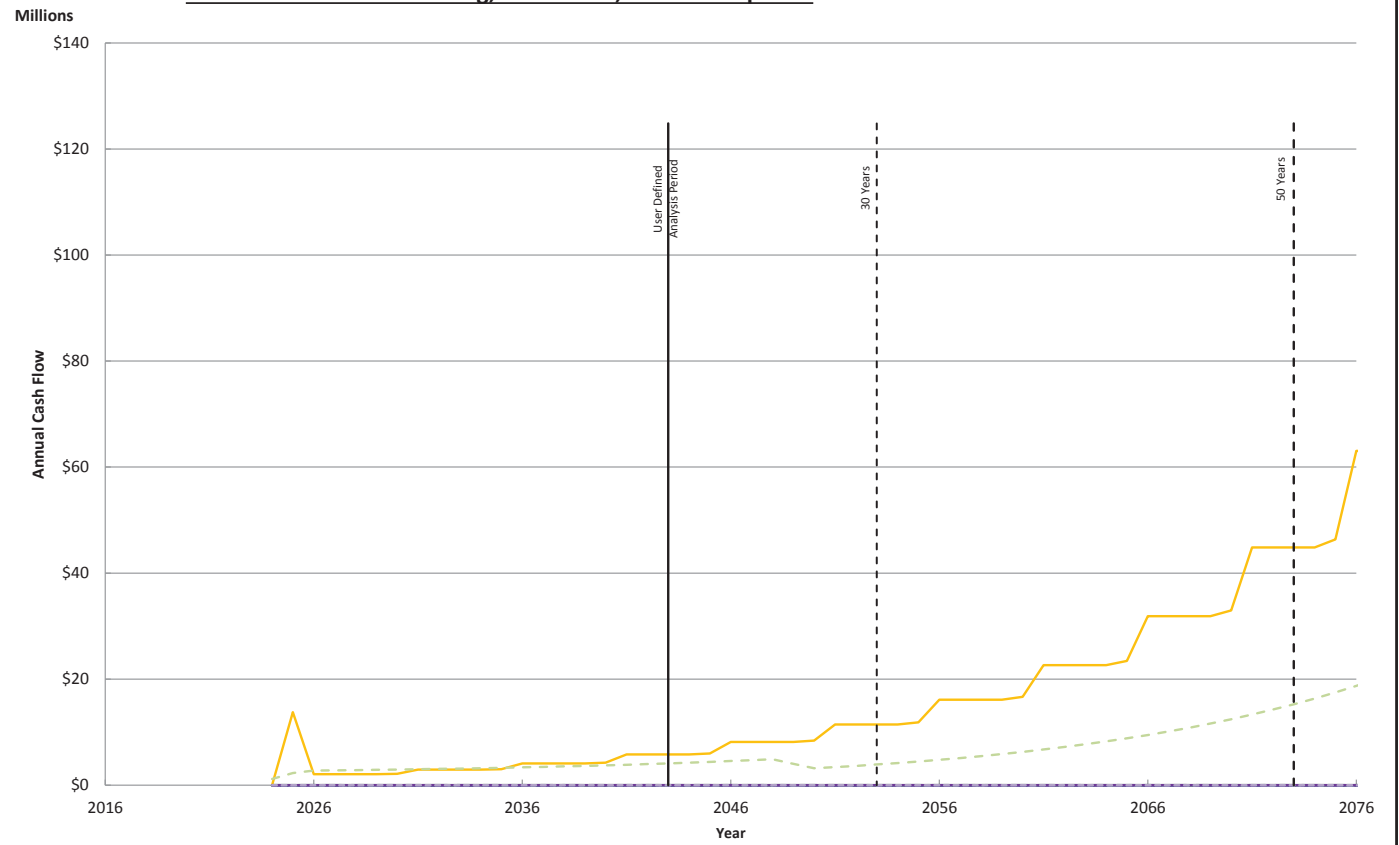
		Display Option?														
		Yes	Yes	Yes	Yes	No	No	No	No	No	Yes	No	No	No	Yes	No
Financial Comparisons		Existing Lease	Lease 1	Lease 2	Ownership 1			Ownership 2			Ownership 3					
Years	Financing Means	Current	Current	Current	GO Bond	COP	COP Deferred *	63-20	GO Bond	COP	COP Deferred	63-20	GO Bond	COP	COP Deferred	63-20
50	50 Year Cumulative Cash	\$ -	\$ 673,696,963	\$ -	\$ 274,989,014						\$ -				\$ -	
	50 Year Net Present Value	\$ -	\$ 3,050,688,032	\$ -	\$ 1,108,814,429						\$ -				\$ -	
	Lowest Cost Option (50 Years)		2		1											

\* - Defers payment on principle for 2 years while the building is being constructed. See instructions on Capitalized Interest.

### Cumulative Cash - NPV of Exist, Lease, and Own Options



**Annual Cash Flow of Existing, New Lease, and Own Options**



- No Existing Lease
- New Lease Option 1 Annual Cash
- No New Lease Option 2
- Ownership Option 1 - GO Bond Annual Cash
- Ownership Option 1 COP Not Shown
- Ownership Option 1 COP Deferred Not Shown
- Ownership Option 1 63-20 Not Shown
- - - No Ownership Option 2
- - - No Ownership Option 2
- - - No Ownership Option 2
- - - No Ownership Option 3
- - - No Ownership Option 3
- - - No Ownership Option 3
- - - No Ownership Option 3
- - - No Ownership Option 3
- - - No Ownership Option 3
- 20 Year Analysis Period
- - - 30 Year Baseline
- - - 50 Year Baseline

**Financial Assumptions**

Date of Life Cycle Cost Analysis:	3/22/2022
Analysis Period Start Date	9/2/2023
User Input Years of Analysis	20

All assumptions subject to change to reflect updated costs and conditions.

	Lease Options			Ownership Option 1			Ownership Option 2			Ownership Option 3		
	Existing Lease	Lease Option 1	Lease Option 2	GO Bond	COP	63-20	GO Bond	COP	63-20	GO Bond	COP	63-20
Inflation / Interest Rate	7.064%	7.064%	7.064%	2.881%	2.981%	3.081%	2.881%	2.981%	3.131%	2.881%	2.981%	3.131%
Discount Rate	-3.814%	-3.814%	-3.814%	-3.814%	-3.814%	-3.814%	-3.814%	-3.814%	-3.814%	-3.814%	-3.814%	-3.814%
Length of Financing	N/A	N/A	N/A	25	25	25	25	25	25	25	25	25

See Financial Assumptions tab for more detailed information

COP Deferred and 63-20 Financing defer the payment on principle until construction completion.

**New Lease Assumptions**

Real Estate Transaction fees are 2.5% of the lease for the first 5 years and 1.25% for each year thereafter in the initial term of the lease.

Tenant Improvements are estimated at \$216.14 per rentable square foot.

IT infrastructure is typically estimated at \$1500 per person.

Furniture costs are typically estimated at \$7000 per person and do not include new workstations.

Moving Vendor and Supplies are typically estimated at \$300 per person.

**Default Ownership Options Assumptions**

Assumes a 2 month lease to move-in overlap period for outfitting building and relocation.

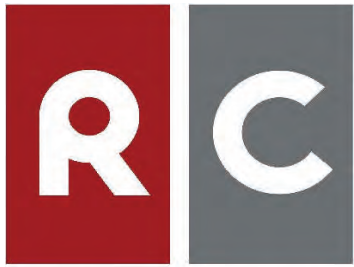
Assumes surface parking.

The floor plate of the construction option office building is 25,000 gross square feet.

The estimated total project cost for construction is \$506.63 per square foot.

See the Capital Construction Defaults tab for more construction assumptions.





**COST GROUP**

**LOWER COLUMBIA COLLEGE  
CENTER FOR VOCATIONAL AND TRANSITIONAL STUDIES  
LONGVIEW, WASHINGTON  
PREDESIGN**

**ESTIMATE ISSUE DATE: February 11, 2022**

**ESTIMATE REVISION: 8 March 3, 2022**

**Submitted To:**

**MATT LANE**

**McGRANAHAN ARCHITECTS**

**2111 PACIFIC AVENUE, SUITE 100**

**TACOMA, WA 98402**

## CLARIFICATIONS AND ASSUMPTIONS

### RC Cost Group Estimating Team:

Lead Estimator: John Perry  
Architectural: Andy Cluness / John Perry  
Structural: Andy Cluness  
Mechanical: BCE  
Electrical: BCE  
Civil: John Perry  
Landscape: John Perry  
QA/QC: Mark Richardson

### 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  
Moving owners equipment and furniture  
Compression of schedule, premium or shift work  
Assessments, finance, legal and development charges  
Builder's risk, project wrap-up and other owner provided insurance program  
Washington State Sales Tax

### Assumption used in establishing the estimate:

The project will be procured utilizing the Design-Bid-Build Project Delivery Method  
Open and competitive bidding among all proportions of the work  
Construction Start Date: September 2023  
Escalation has been excluded and will be included in the C-100

### 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.



**Assumptions used in establishing the estimate:**

**A10: Foundations:**

Scope of work continuous, brace frame footings and spread footings, perimeter drainage, reinforced concrete slab on grade, elevator pit.

**B10: Superstructure:**

Vertical and horizontal steel structure including BRB brace frames, metal deck and reinforced concrete topping slab at floor structure and housekeeping pads.

**B20: Exterior enclosure:**

Scope of work includes laid up brick and metal panel and metal panel soffits. Glazing scope includes curtain wall and storefront glazing. The extent of the glazing would be at approximately 25% to the gross wall area. Other scope would include louvers. Exterior door scope would include glazed aluminum doors at vestibules and hollow metal doors at other locations.

**B30: Roofing:**

Roof scope of work includes a membrane roofing system with rigid insulation, sheet metal flashings, rough carpentry. Scope includes skylights, fall restraint anchors.

**C10: Interior Construction:**

Interior partitions consist of metal stud framing, batt insulation and gypsum board, some hard walls/cmu interior glazing, railings at open to below areas, interior doors. Fittings and specialties will include toilet partitions, signage, miscellaneous, restroom accessories fire extinguishers and cabinets.

**C20: Stairs**

Scope includes exit stairs and architectural stairs.

**C30: Interior Finishes**

Wall finishes include paint to gypsum board, tile at restroom wet walls, minor specialty wall finishes. Floor finishes include polished concrete, carpet tile, resilient flooring, walk off mats and sealed concrete at MEP rooms. Ceiling finishes include ACT and grid, gypsum board painted, painted open structure.

**D10: Conveying systems**

One passenger elevator going to the penthouse

**D20: Plumbing**

Plumbing include sanitary fixtures, sanitary waste, vent and service piping, water treatment, storage and circulation, surface water drainage, gas piping, fittings and specialties.

**D30: Heating, Ventilation and Air Conditioning (HVAC)**

Variable refrigerant flow (VRF) system in all areas except machining, welding and mechatronics lab. Ventilation supplied by dedicated outdoor air system (DOAS). HVAC in machining, welding and mechatronics labs will be serviced by individual air flow handling units (AHU). General exhaust will route through the DOAS units along with building return air to recover the energy from the outgoing air to pretreat the incoming ventilation air prior to it being treated for final delivery. Labs have specialty exhaust systems. Machining lab will have central dust/material collection.

**D40: Fire Protection Systems**

Wet pipe sprinkler system, standpipe systems to stairs.

**D50: Electrical**

Campus primary power distribution is owned by the college and maintained by the utility. Several modifications are required. (see electrical narrative). LED lighting will be utilized throughout the facility. A 480V service will be provided for the new Center for Vocational and Transitional Studies. Receptacles will be provided throughout the facility for general purpose. Special purpose outlets and overhead bussing with disconnects will be provided for lab equipment. Other special systems provided: telecommunications, audio visual systems, intrusion detection, access control system, closed circuit television.

**E10: Equipment**

Equipment includes lab casework, equipment and accessories and residential appliances.

**E20: Fixed Furnishing**

Fixed furnishings include casework and interior and exterior window treatments.

Date: **February 11, 2022**

**OVERALL SUMMARY CONSTRUCTION COST** Prepared By: JP

	GFA	\$/SF	\$
<b><u>Preferred Option-East Site</u></b>			
Vocational Building	46,267 SF	476.89	22,064,414
Sitework			3,851,039
<b>TOTAL CONSTRUCTION COST</b>			<b>25,915,453</b>

<b>Alternative Option-West Site</b>			
Vocational Building	46,267 SF	476.89	22,064,414
Sitework- (C-100 June 2020)			4,601,087
<b>TOTAL CONSTRUCTION COST</b>			<b>26,665,501</b>

**OVERALL SUMMARY CONSTRUCTION COST**

	GFA	\$/SF	\$
Building	46,267 SF	476.89	22,064,414
Sitework			3,201,409
Building Demolition			649,630
<b>TOTAL CONSTRUCTION COST</b>			<b>25,915,453</b>

**BUILDING DATA**

**Building Area:**

Level 1	24,805 SF
Level 2	10,533 SF
Level 3	10,929 SF

<b>Total Gross Floor Area</b>	<b>46,267 SF</b>
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2nd floor mech platform	2,100 SF
Enclosed penthouse	4,275 SF
Mech yard at roof with screen wall	2,222 SF
Outdoor fab area	3,374 SF

<b>Total Unoccupied Space (Excluded from GFA)</b>	<b>11,971 SF</b>
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	Quantity	Unit	Ratio to Gross Area
Number of stories (x1,000)	3	EA	0.065
Gross Area	46,267	SF	1.000
Enclosed Area	46,267	SF	1.000
Footprint Area	24,805	SF	0.536
Suspended Slab	21,462	SF	0.464
Basement Volume	-	CF	
Gross Wall Area	30,806	SF	0.666
Retaining Wall Area (Excludes Stem Walls)	-	SF	
Opaque Finished Wall Area	23,957	SF	0.518
Windows or Glazing Area	6,850	SF	0.148
Roof Area	28,179	SF	0.609
Exterior canopy's	935	SF	0.020
Interior Partition Length	3,100	LF	0.067
Interior Doors Per Leaf "Excludes Specialty"	88	EA	0.002
Interior Glazing	1,619	SF	0.035
Finished Area	46,267	SF	1.000
Elevators (x10,000)	1	EA	0.022

**LOWER COLUMBIA COLLEGE  
CENTER FOR VOCATIONAL AND TRANSITIONAL STUDIES  
LONGVIEW, WASHINGTON  
PREDESIGN  
BUILDING**

GROSS FLOOR AREA: 46,267 SF  
DATE: February 11, 2022



No.	ELEMENT DESCRIPTION	ELEMENT TOTAL	GROUP TOTAL	COST PER SF
A10	FOUNDATIONS		\$ 1,305,036	\$ 28.21
A1010	Standard Foundation	\$ 436,389	\$ 9.43	
A1020	Special Foundation	\$ 507,222	\$ 10.96	
A1030	Slab on grade	\$ 361,424	\$ 7.81	
A20	BASEMENT WALL CONSTRUCTION		\$ -	\$ -
A2010	Basement Excavation	\$ -	\$ -	
A2020	Basement Wall Construction	\$ -	\$ -	
B10	SUPERSTRUCTURE		\$ 2,573,648	\$ 55.63
B1010	Floor & Roof Construction	\$ 2,573,648	\$ 55.63	
B20	EXTERIOR ENCLOSURE		\$ 5,079,115	\$ 109.78
B2010	Exterior Walls	\$ 4,333,619	\$ 93.67	
B2020	Exterior Windows	\$ 605,496	\$ 13.09	
B2030	Exterior Doors	\$ 140,000	\$ 3.03	
B30	ROOFING		\$ 795,257	\$ 17.19
B3010	Roofing	\$ 795,257	\$ 17.19	
C10	INTERIOR CONSTRUCTION		\$ 1,141,253	\$ 24.67
C1010	Partitions	\$ 776,619	\$ 16.79	
C1020	Interior Doors	\$ 242,027	\$ 5.23	
C1030	Fittings and Specialties	\$ 122,608	\$ 2.65	
C20	STAIRS		\$ 170,350	\$ 3.68
C2010	Stair Construction	\$ 170,350	\$ 3.68	
C30	INTERIOR FINISHES		\$ 831,694	\$ 17.98
C3010	Wall Finishes	\$ 328,496	\$ 7.10	
C3020	Floor Finishes	\$ 300,736	\$ 6.50	
C3030	Ceiling Finishes	\$ 202,463	\$ 4.38	
D10	CONVEYING		\$ 175,000	\$ 3.78
D1010	Elevators & Lifts	\$ 175,000	\$ 3.78	
D20	PLUMBING		\$ 601,471	\$ 13.00
D2010	Plumbing	\$ 601,471	\$ 13.00	
D30	HVAC		\$ 3,212,217	\$ 69.43
D3010	HVAC	\$ 3,212,217	\$ 69.43	
D40	FIRE PROTECTION		\$ 300,736	\$ 6.50
D4010	Sprinkler System	\$ 300,736	\$ 6.50	
D50	ELECTRICAL		\$ 2,272,620	\$ 49.12
D5000	Electrical	\$ 2,272,620	\$ 49.12	
E10	EQUIPMENT		\$ 51,650	\$ 1.12
E1010	Equipment	\$ 51,650	\$ 1.12	
E20	FIXED FURNISHINGS		\$ 236,271	\$ 5.11
E2010	Fixed Furnishings	\$ 236,271	\$ 5.11	
F10	SPECIAL CONSTRUCTION		\$ -	\$ -
F1010	Special Structure	\$ -		
F1020	Special Construction	\$ -		
F20	SELECTIVE BUILDING DEMOLITION		\$ -	\$ -
F2010	Building Elements Demolition	\$ -		
<b>Sub-Total Direct Cost</b>			<b>\$ 18,746,316</b>	<b>\$ 405.18</b>
Estimating / Design Contingency-included in line items			\$ -	\$ -
General Conditions / General Requirements 10.00%			\$ 1,874,632	\$ 40.52
General Contractor Fee, Bonds and Insurance 7.00%			\$ 1,443,466	\$ 31.20
<b>Sub-Total</b>			<b>\$ 22,064,414</b>	<b>\$ 476.89</b>
Escalation: Excluded			\$ -	
<b>TOTAL CONSTRUCTION COST</b>			<b>\$ 22,064,414</b>	<b>\$ 476.89</b>



ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
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**A10 FOUNDATIONS**

**A1010 Standard Foundation**

A1011 Foundations

Reinforced concrete continuous wall footings

Excavate for continuous footings	153	CY	36.50	5,597
Backfill, assume imported fill	97	CY	35.60	3,457
Disposal of excavated material off-site within 8 miles, assumed a 33% swell factor	204	CY	22.00	4,487
Fine grade bottom of footing	2,391	SF	0.75	1,793
Formwork to foundations - sides	1,380	SF	8.40	11,592
Reinforcing steel in foundations	8,433	LB	1.55	13,072
Concrete, 4,000 psi	56	CY	260.00	14,618
Finish to top of footing	1,380	SF	1.00	1,380

Reinforced concrete brace frame footings/BRB footings

Excavate for continuous footings	461	CY	36.50	16,818
Backfill, assume imported fill	302	CY	35.60	10,747
Disposal of excavated material off-site within 8 miles, assumed a 33% swell factor	613	CY	22.00	13,482
Fine grade bottom of footing	3,154	SF	0.75	2,366
Formwork to foundations - sides	975	SF	8.40	8,190
Reinforcing steel in foundations	27,011	LB	1.55	41,867
Concrete, 4,000 psi	159	CY	260.00	41,311
Finish to top of footing	1,560	SF	1.00	1,560

A1012 Column foundations

Reinforced concrete spread footings

Excavate for spread footings	606	CY	36.50	22,101
Backfill, assume imported fill	458	CY	35.60	16,299
Disposal of excavated material off-site within 8 miles, assumed a 33% swell factor	805	CY	22.00	17,717
Fine grade bottom of footing	2,900	SF	0.75	2,175
Formwork to foundations - sides	2,030	SF	8.40	17,052
Reinforcing steel in foundations	19,938	LB	1.55	30,903
Concrete, 4,000 psi	148	CY	260.00	38,398
Finish to top of footing	2,900	SF	1.00	2,900

A1013 Perimeter drainage and insulation

Perimeter drain pipe and rock	690	LF	22.80	15,732
Perimeter insulation, rigid	1,553	SF	4.77	7,405

Miscellaneous

Reinforced concrete stem walls	70	CY	1,044.00	73,370
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**Total For Standard Foundations**

**436,389**

**A1020 Special Foundation**

A1029 Other special conditions

Geopier ground improvement allowance	28,179	SF	18.00	507,222
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**Total For Special Foundations**

**507,222**

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
<b>A1030 Slab on Grade</b>				
A1031 Standard slab on grade				
Reinforced concrete slab on grade including base-8"	10,350	SF	13.60	140,760
Reinforced concrete slab on grade including base-4"	14,455	SF	10.35	149,609
Reinforced concrete slab on grade, including base, at outdoor fab, compressors, gas, dust-4"	3,374	SF	10.35	34,921
A1034 Trenches, pits and bases				
Reinforced concrete pads / slab thickening	28,179	SF	0.75	21,134
Elevator pit including waterproofing	1	EA	15,000.00	15,000
<b>Total For Slab on Grade</b>				<b>361,424</b>
<b>A20 BASEMENT CONSTRUCTION</b>				
<b>A2010 Basement Excavation</b>				
No work anticipated				N/A
<b>Total For Basement Excavation</b>				
<b>A2010 Basement Walls</b>				
No work anticipated				N/A
<b>Total For Basement Walls</b>				
<b>B1010 Floor &amp; Roof Construction</b>				
B1012 Upper floors construction				
Level 2 Framing				
Structural steel at floor framing, allow 10.5#/SF	110,597	LB	3.25	359,439
Metal deck, 3", 20 ga.	10,533	SF	7.85	82,684
Reinforced concrete topping slab, 5 1/2" thick	10,533	SF	6.30	66,358
Level 3 Framing				
Structural steel at floor framing, allow 10.5#/SF	114,755	LB	3.25	372,952
Metal deck, 3", 20 ga.	10,929	SF	7.85	85,793
Reinforced concrete topping slab, 5 1/2" thick	10,929	SF	6.30	68,853
2nd floor platform and Penthouse Framing				
Structural steel at floor framing, allow 10.5#/SF	66,938	LB	3.25	217,547
Metal deck, 3", 20 ga.	6,375	SF	7.85	50,044
Reinforced concrete topping slab, 5 1/2" thick	6,375	SF	6.30	40,163
Bracing				
BRB's/Brace frames, allow 1.3#/GFA	60,147	LB	3.25	195,478
B1020 Roof construction				
Structural steel at roof framing, allow 8.5#/SF	239,522	LB	3.25	778,445
Metal deck, 1 1/2", 20 ga.	28,179	SF	7.85	221,205
Canopies allowance				
Structural steel at canopies, allow 9#/SF	8,415	LB	3.25	27,349
Metal deck, 3", 20 ga.	935	SF	7.85	7,340



ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
<b>Total For Floor &amp; Roof Construction</b>				<b>2,573,648</b>
<b>B20 EXTERIOR CLOSURE</b>				
<b>B2010 Exterior Walls</b>				
B2011 Exterior wall construction				
Building, Penthouse				
Claddings-building	20,549	SF	44.00	904,134
Claddings-penthouse	3,408	SF	34.00	115,872
8" Stud framing-external wall	23,957	SF	8.35	200,037
Thermal clips	23,957	SF	5.10	122,178
Rigid insulation, 2-1/2" mineral wool	23,957	SF	3.85	92,233
Batt Insulation, 5-1/2"	23,957	SF	1.30	31,143
GWB sheathing	23,957	SF	3.15	75,463
Fluid applied wrb	23,957	SF	5.68	136,073
Vapor barrier	23,957	SF	0.75	17,967
Glass-mat faced gypsum board, 5/8"	23,957	SF	3.60	86,243
Sealing, ledgers, misc trim, flashing	1	LS	42,000.00	42,000
B2013 Exterior louvers, screens and fencing				
Mechanical yard screening	141	LF	440.00	62,040
Screen/fence at outdoor fabrication	130	LF	440.00	57,200
B2014 Exterior sun control devices				
				N/A
B2016 Exterior soffits				
				N/A
Caulking, sealants and firestopping				
Caulking, sealants and firestopping	46,267	GFA	0.72	33,312
<b>Total For Exterior Walls</b>				<b>4,333,619</b>
<b>B2020 Exterior Windows</b>				
B2022 Curtain walls				
Curtain wall-8% building wall area	2,192	SF	102.00	223,568
B2023 Storefronts/Curtain wall				
Storefront-17% building wall area	4,658	SF	82.00	381,928
<b>Total For Exterior Windows</b>				<b>605,496</b>
<b>B2030 Exterior Doors</b>				
B 2030 Exterior Doors				
Aluminum glazed door, per leaf	10	EA	5,800.00	58,000
HM per leaf	4	EA	3,000.00	12,000
Specialty hardware	1	LS	12,500.00	12,500
B2034 Overhead doors				
Overhead doors, allow	5	EA	11,500.00	57,500
<b>Total For Exterior Doors</b>				<b>140,000</b>



ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
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**B30 ROOFING**

**B3010 Roof Covering**

B3011 Roof finishes				
Roofing system including vapor barrier, protection board and rigid insulation	28,179	SF	20.60	580,487
Cricketing	28,179	SFA	0.75	21,134
Add for green roof-potential alternate	12,216	SF		
Add for third floor outdoor deck-railings, pavers, planters	509	SF	65.00	33,085
Canopy roofing	935	SF	14.00	13,090
B3012 Traffic toppings and paving membranes				N/A
B3014 Flashings and trim				
Sheet metal flashings and trim	1	LS	62,800.00	62,800
B3016 Gutters and downspouts				
Roof drainage-in plumbing costs				N/A
B3021 Glazed roof openings				
Skylights, solotube	12	EA	2,880.00	34,560
B3022 Roof hatches				N/A
Miscellaneous				
Rough carpentry	1	LS	20,800.00	20,800
Fall restraint anchors	1	LS	29,300.00	29,300

**Total For Roofing 795,257**

**C10 INTERIOR CONSTRUCTION**

**C1010 Partitions**

C1011 Fixed partitions				
Interior partitions	38,750	SF	15.65	606,438
C1013 Retractable partitions				
Assumed not required				N/A
C1016 Interior balustrades and screens				
Interior railings at open to below areas	190	LF	265.00	50,350
C1017 Interior windows and storefronts				
Interior glazed elements " Kawneer Trifab 400"	1,619	SF	74.00	119,832

**Total For Interior Partitions 776,619**

**C1020 Interior Doors**

C1021 Interior doors				
Interior doors, frames, hardware-per leaf	88	EA	2,540.00	223,520



ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
Access doors and panels	1	LS	4,626.70	4,627
Specialty hardware	1	LS	13,880.10	13,880
<b>Total For Interior Doors</b>				<b>242,027</b>
<b>C1030 Specialties</b>				
C1030 Specialties				
Specialties and fittings	46,267	GFA	2.65	122,608
<b>Total For Fittings and Specialty Items</b>				<b>122,608</b>
<b>C20 STAIRS</b>				
<b>C2010 Stair Construction</b>				
C 2010 Stair Construction				
Central architectural stair to 2nd floor including railings, landings	1	FLT	46,000.00	46,000
West exit stairs, Level 1 to penthouse	3	FLT	24,870.00	74,610
East exit stairs, Level 1 to level 3	2	FLT	24,870.00	49,740
<b>Total For Stair Construction</b>				<b>170,350</b>
<b>C30 INTERIOR FINISHES</b>				
<b>C3010 Wall Finishes</b>				
C3012 Wall finishes to interior walls				
Interior painting	46,267	GFA	4.10	189,695
Other wall finishes	46,267	GFA	3.00	138,801
<b>Total For Wall Finishes</b>				<b>328,496</b>
<b>C3020 Floor Finishes</b>				
C3024 Flooring including base				
Flooring and base allowance	46,267	SF	6.50	300,736
<b>Total For Floor Finishes</b>				<b>300,736</b>
<b>C3030 Ceiling Finishes</b>				
C3031 Ceiling finishes				
Ceiling finish/acoustic allowance	46,267	SF	3.68	170,263
Unistrut grid at machining	7,000	SF	4.60	32,200
<b>Total For Ceiling Finishes</b>				<b>202,463</b>
<b>D10 VERTICAL TRANSPORTATION</b>				
<b>D1010 Elevator &amp; Lift</b>				
D1011 Passenger elevators				
Passenger elevator to penthouse, 4 stops	1	EA	175,000.00	175,000

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
<b>Total For Elevator &amp; Lifts</b>				<b>175,000</b>
<b>D20 PLUMBING</b>				
<b>D2010 <u>Plumbing</u></b>				
BCE estimate 2-4-2022				
D 2010 Plumbing				
Plumbing systems, complete	1	LS	601,471.00	601,471
<b>Total For Plumbing</b>				<b>601,471</b>
<b>D30 HVAC</b>				
<b>D3010 HVAC</b>				
BCE estimate 2-4-2022				
D 3010 HVAC				
HVAC -Refrigeration	1	LS	1,249,209.00	1,249,209
HVAC - Airside	1	LS	462,670.00	462,670
Controls / EMCS	1	LS	347,002.50	347,003
TAB- Air/Water Balancing	1	LS	69,400.50	69,401
Compressed Air System	10,850	SFA	5.00	54,250
Oxy/Ace/Arg/Mix Gas Piping Systems	10,850	SFA	5.00	54,250
HVAC MUA AHU's	10,850	SFA	10.00	108,500
Welding Lab Exhaust Systems	2	EA	175,000.00	350,000
Welding Lab Exhaust Terminals	30	EA	6,000.00	180,000
Machining Lab Exhaust Systems	1	EA	175,000.00	175,000
General Conditions	1	LS	92,534.00	92,534
Cx Support and Closeout	1	LS	69,400.50	69,401
<b>Total For HVAC</b>				<b>3,212,217</b>
<b>D40 FIRE PROTECTION</b>				
<b>D4010 <u>Fire Protection</u></b>				
BCE estimate 2-4-2022				
D 4010 Sprinklers				
Fire suppression	1	LS	300,735.50	300,736
<b>Total For Fire Sprinkler System</b>				<b>300,736</b>
<b>D50 ELECTRICAL</b>				
<b>D5000 <u>Electrical</u></b>				
BCE estimate 2-4-2022				
D 5000 Electrical				
Mobilization, Permit, Submittals, Closeout & Project Management	1	LS	69,400.50	69,401
Conduit, Wiring & Feeders (Lab Spaces)	1	LS	130,200.00	130,200



ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
Conduit, Wiring & Feeders (non-Lab)	1	LS	283,336.00	283,336
Power rough-in devices & system rough-in	1	LS	231,335.00	231,335
Gear, Disconnects & Starters	1	LS	277,602.00	277,602
Interior Lighting Fixtures	1	LS	370,136.00	370,136
Lighting Controls	1	LS	115,667.50	115,668
Special Lab Power (bussing, encl. brkr, etc)	50	EA	1,500.00	75,000
Fire Alarm	1	LS	127,234.25	127,234
Data	1	LS	122,607.55	122,608
DAS Conduit System (1-1/4")	1	LS	18,506.80	18,507
Photovoltaic System (10% of energy)-potential alternate	65,000	W		
Elevator communication system	1	LS	5,000.00	5,000
Access Control System	5	EA	5,000.00	25,000
CCTV System	24	EA	3,500.00	84,000
Misc Systems (small A/V, etc)	1	LS	57,833.75	57,834
Lab Sound Systems	3	EA	4,000.00	12,000
Classroom A/V Systems	12	EA	15,000.00	180,000
Intrusion Alarm	1	LS	27,760.20	27,760
Performance and Payment Bond	1	LS	60,000.00	60,000
<b>Total For Electrical</b>				<b>2,272,620</b>
<b>E10 EQUIPMENT</b>				
<b>E1010 Equipment</b>				
E1094 Residential equipment Residential equipment at break rooms	1	LS	11,600.00	11,600
E1099 Other equipment 5'x5' welding booths	18	EA	2,225.00	40,050
<b>Total For Equipment</b>				<b>51,650</b>
<b>E20 FIXED FURNISHINGS</b>				
<b>E2010 Fixed Furnishing</b>				
E2012 Fixed casework Casework	46,267	GFA	3.75	173,501
E2013 Blinds and other window treatments Window treatments at aluminum windows	4,658	SF	10.00	46,577
Mesh roll shades interior relites/glazing	1,619	LS	10.00	16,193
<b>Total For Fixed Furnishings</b>				<b>236,271</b>
<b>F10 SPECIAL STRUCTURES</b>				
<b>F1010 Special Structure</b>				
No work anticipated				N/A
<b>Total For Special Structure</b>				



ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
<b>F1020</b> <u>Special Construction</u>				
No work anticipated				N/A
<b>Total For Special Construction</b>				
<b>F20</b> <u>SELECTIVE BUILDING DEMOLITION</u>				
<b>F2010</b> <u>Building Elements Demolition</u>				
No work anticipated				N/A
<b>Total For Selective Building Demolition</b>				

PREFERRED SITEWORK SUMMARY

ELEMENTAL ESTIMATE SUMMARY

DATE: February 11, 2022 COST GROUP

No.	ELEMENT DESCRIPTION	ELEMENT TOTAL	GROUP TOTAL
<b>G10</b>	<b>SITE PREPARATION</b>		\$ 652,072
G1010	Site Clearing	\$ -	
G1020	Site Demolition and Relocations	\$ 277,229	
G1030	Site Earthwork	\$ 374,843	
G1040	Hazardous Waste Remediation	\$ -	
<b>G20</b>	<b>SITE IMPROVEMENTS</b>		\$ 1,210,879
G2010	Roadways	\$ -	
G2020	Parking Lots	\$ 318,752	
G2030	Pedestrian Paving	\$ 337,580	
G2040	Site Development	\$ 225,000	
G2050	Landscaping	\$ 329,547	
<b>G30</b>	<b>SITE MECHANICAL UTILITIES</b>		\$ 554,522
G3010	Water Supply	\$ 129,022	
G3020	Sanitary Sewer	\$ 46,500	
G3030	Storm Sewer	\$ 379,000	
G3040	Heating Distribution	\$ -	
G3050	Cooling Distribution	\$ -	
G3060	Fuel Distribution	\$ -	
G3090	Other Site Mechanical Utilities	\$ -	
<b>G40</b>	<b>SITE ELECTRICAL UTILITIES</b>		\$ 302,500
G4010	Electrical Distribution	\$ 75,000	
G4020	Site Lighting	\$ 117,000	
G4030	Site Communications and Security	\$ -	
G4090	Other Site Electrical Utilities	\$ 110,500	
	<b>Sub-Total Direct Cost</b>		\$ 2,719,974
	Estimating / Design Contingency-included in line items		\$ -
	General Conditions / General Requirements 10.00%		\$ 271,997
	General Contractor Fee, Bonds and Insurance 7.00%		\$ 209,438
	<b>Sub-Total</b>		\$ 3,201,409
	Escalation: Excluded		\$ -
	<b>TOTAL CONSTRUCTION COST</b>		\$ 3,201,409

Date: February 11, 2022

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
<b>G10 SITE PREPARATION</b>				
<b>G1010 Site Clearing</b>				
G 1010 Site Clearing Site area	183,992	SFA		
<b>Total For Site Clearing</b>				
<b>G1020 Site Demolition and Relocations</b>				
G1022 Demolition of site components				
Misc. site demolition, protection, sawcutting	1	LS	25,000.00	25,000
Salvaged area of parking/landscape-protect	25,532	SF	0.15	3,830
Salvaged area of landscape within salvaged parking-protect	2,164	SF	0.15	325
Removing, hardscapes, landscape	158,460	SF	1.25	198,075
Utility Relocations/protection	1	LS	50,000.00	50,000
<b>Total For Site Demolition and Relocations</b>				<b>277,229</b>
<b>G1030 Site Earthwork</b>				
G 1030 Site Earthwork Earthwork allowance/ grading, backfill foundations at demolished buildings	158,460	SF	2.05	324,843
G1037 Erosion control Erosion control	1	LS	50,000.00	50,000
<b>Total For Site Earthwork</b>				<b>374,843</b>
<b>G1040 Hazardous Waste Remediation</b>				
No work anticipated				N/A
<b>Total For Hazardous Waste Remediation</b>				
<b>G20 SITE IMPROVEMENTS</b>				
<b>G2010 Roadways</b>				
Paving included in estimate section G2030				N/A
<b>Total For Roadways</b>				
<b>G2020 Parking Lots</b>				
G2012 Paving and surfacing				
New parking and drive-asphalt, base courses	63,715	SF	3.95	251,674
Curbing allowance	1	LS	32,000.00	32,000
Striping and signage @ new lot/drives	63,715	SFA	0.25	15,929
Striping, signage, refresh salvaged parking	25,532	SFA	0.75	19,149
<b>Total For Parking Lots</b>				<b>318,752</b>

Date: February 11, 2022

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
<b>G2030 <u>Pedestrian Paving</u></b>				
G2031 Paving and surfacing				
Cement concrete plaza, sidewalks-including base courses	33,758	SF	10.00	337,580
<b>Total For Pedestrian Paving</b>				<b>337,580</b>
<b>G2040 <u>Site Development</u></b>				
G2040 Site development				
Allowance for site development-benches, trash receptacles, wayfinding, seatwalls, washdown of amphitheater	1	LS	225,000.00	225,000
<b>Total For Site Development</b>				<b>225,000</b>
<b>G2050 <u>Landscaping</u></b>				
G2053 Top soil and planting beds				
Import/Place Topsoil / Sand / Amendments	1,376	CY	56.00	77,061
Mounding allowance at interim area	1	LS	7,500.00	7,500
G2055 Planting				
Shrubs / Accents / Groundcover	30,144	SF	4.85	146,198
Plantings at salvaged parking	2,164	SF	4.85	10,495
Deciduous Trees @ new building	24	EA	650.00	15,600
G2057 Irrigation system				
Irrigation system, complete	32,308	SF	2.25	72,693
<b>Total For Landscaping</b>				<b>329,547</b>
<b>G30 <u>SITE MECHANICAL UTILITIES</u></b>				
<b>G3010 <u>Water Supply</u></b>				
G3010 Water Utilities				
Water Meter	1	EA	5,800.00	5,800
Water pipe domestic service	1	LS	42,000.00	42,000
Fire water service line	1	LS	55,000.00	55,000
Fire Meter & Vault	1	LS	16,000.00	16,000
Post Indicator Valve	1	EA	2,195.00	2,195
Fire Department Connection - 6"	1	EA	2,452.00	2,452
Connections	1	LS	5,575.00	5,575
<b>Total For Water Supply</b>				<b>129,022</b>
<b>G3020 <u>Sanitary Sewer</u></b>				
G3020 Sanitary Sewer				
Sanitary sewer allowance	1	LS	46,500.00	46,500
<b>Total For Sanitary Sewer</b>				<b>46,500</b>
<b>G3030 <u>Storm Sewer</u></b>				



Date: February 11, 2022

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
G3030 Storm Drainage Storm system-rain gardens, collection, treatment allowance	1	LS	379,000.00	379,000
<b>Total For Storm Sewer</b>				<b>379,000</b>
<b>G3040 Heating Distribution</b>				
No work anticipated				N/A
<b>Total For Heating Distribution</b>				
<b>G3050 Cooling Distribution</b>				
No work anticipated				N/A
<b>Total For Cooling Distribution</b>				
<b>G3060 Fuel Distribution</b>				
No work anticipated				N/A
<b>Total For Fuel Distribution</b>				
<b>G3090 Other Site Mechanical Utilities</b>				
No work anticipated				N/A
<b>Total For Other Site Mechanical Utilities</b>				
<b>G40 SITE ELECTRICAL UTILITIES</b>				
<b>G4010 Electrical Distribution</b>				
BCE estimate 2-4-2022				
G4010 Electrical distribution				
Misc Site Items	1	LS	25,000.00	25,000
Site Utilities- Conduits for Power and Systems	2,000	LF	15.00	30,000
Site Utility Vaults	3	EA	5,000.00	15,000
Site handholes	5	EA	1,000.00	5,000
<b>Total For Electrical Distribution</b>				<b>75,000</b>
<b>G4020 Site Lighting</b>				
BCE estimate 2-4-2022				
G4021 Fixtures & transformers				
Site Lighting - Parking (2 head)	6	EA	7,500.00	45,000
Site Lighting - Drives (1 head)	4	EA	6,000.00	24,000
Site Lighting - Pedestrian	12	EA	4,000.00	48,000
<b>Total For Site Lighting</b>				<b>117,000</b>
<b>G4030 Site Communications and Security</b>				
No work anticipated				N/A

Date: February 11, 2022

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
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**Total For Site Communications and Security**

**G4090 Other Site Electrical Utilities**

BCE estimate 2-4-2022

G4090 Other site electrical

Vehicle Charging Station	3	EA	3,500.00	10,500
Utility Coordination/Shutdowns	1	LS	10,000.00	10,000

G4092 Site emergency power generation

Generator Relocation	1	LS	15,000.00	15,000
Primary Switch Replacement-potential alternate	1	EA	75,000.00	75,000

**Total For Other Site Electrical Utilities 110,500**

**LOWER COLUMBIA COLLEGE**  
**CENTER FOR VOCATIONAL AND TRANSITIONAL STUDIES**  
**LONGVIEW, WASHINGTON**  
**PREDESIGN**  
**PREFERRED BUILDING DEMOLITION AND HAZMAT ABATEMENT**

Date: **February 11, 2022**



ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
F 2020 Hazardous Components Abatement Hazmat Abatement allowance	51,914	SFA	2.50	129,785
G1021 Building demolition				
Steam plant	1,710	GFA	12.00	20,520
Vocational building	34,136	GFA	8.00	273,088
Science building	6,972	GFA	8.00	55,776
Physical science building	9,096	GFA	8.00	72,768
	<b>Sub-Total</b>			<b>551,937</b>
Estimating / Design Contingency-included in line items				
General Conditions / General Requirements	10.00%			55,194
General Contractor Fee, Bonds and Insurance	7.00%			42,499
	<b>Sub-Total</b>			<b>649,630</b>
Escalation: Excluded				
	<b>Total Construction Cost</b>			<b>649,630</b>

ALTERNATIVE SITEWORK SUMMARY

ELEMENTAL ESTIMATE SUMMARY

DATE: February 11, 2022 COST GROUP

No.	ELEMENT DESCRIPTION	ELEMENT TOTAL	GROUP TOTAL
<b>G10</b>	<b>SITE PREPARATION</b>		\$ 597,350
G1010	Site Clearing	\$ -	
G1020	Site Demolition and Relocations	\$ 597,350	
G1030	Site Earthwork	\$ -	
G1040	Hazardous Waste Remediation	\$ -	
<b>G20</b>	<b>SITE IMPROVEMENTS</b>		\$ 1,019,109
G2010	Roadways	\$ -	
G2020	Parking Lots	\$ 897,760	
G2030	Pedestrian Paving	\$ -	
G2040	Site Development	\$ -	
G2050	Landscaping	\$ 121,349	
<b>G30</b>	<b>SITE MECHANICAL UTILITIES</b>		\$ 1,234,750
G3010	Water Supply	\$ 120,830	
G3020	Sanitary Sewer	\$ 17,470	
G3030	Storm Sewer	\$ 488,950	
G3040	Heating Distribution	\$ 600,000	
G3050	Cooling Distribution	\$ -	
G3060	Fuel Distribution	\$ 7,500	
G3090	Other Site Mechanical Utilities	\$ -	
<b>G40</b>	<b>SITE ELECTRICAL UTILITIES</b>		\$ 260,845
G4010	Electrical Distribution	\$ 260,845	
G4020	Site Lighting	\$ -	
G4030	Site Communications and Security	\$ -	
G4090	Other Site Electrical Utilities	\$ -	
	<b>Sub-Total Direct Cost</b>		\$ 3,112,054
	GC fee, bond, insurance and estimating contingency	\$ 429,492	\$ 3,541,546
	General conditions, sub bond, GC O&P 12.31%		\$ 436,009
	<b>Sub-Total</b>		\$ 3,977,555
	Escalation: Excluded		\$ -
	<b>TOTAL CONSTRUCTION COST</b>		\$ 3,977,555
	<b>TOTAL CONSTRUCTION WITH COST ADDED 2020</b>		\$ 4,197,642

Date: February 11, 2022

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
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**G10 SITE PREPARATION**

**G1010 Site Clearing**

G 1010 Site Clearing  
 See G1020

**Total For Site Clearing**

**G1020 Site Demolition and Relocations**

G1022 Demolition of site components

Water main reroute	1	LS	87,500.00	87,500
Civil demolition, see CPL estimate	1	LS	219,800.00	219,800
Demolition and capping of existing tunnels, allowance by PDA	1	LS	15,000.00	15,000
Utility tunnel backfill	1	LS	5,000.00	5,000
Site prep and erosion control	1	LS	160,000.00	160,000
Excavation and earthwork	1	LS	110,050.00	110,050
Hazardous Site Waste Remediation - not included				

**Total For Site Demolition and Relocations 597,350**

**G1030 Site Earthwork**

G 1030 Site Earthwork  
 Included in G1022

G1037 Erosion control  
 Included in G1022

**Total For Site Earthwork**

**G1040 Hazardous Waste Remediation**

No work anticipated N/A

**Total For Hazardous Waste Remediation**

**G20 SITE IMPROVEMENTS**

**G2010 Roadways**

Paving included in estimate section G2030 N/A

**Total For Roadways**

**G2020 Parking Lots**

G2012 Paving and surfacing

Asphalt concrete	1	LS	275,100.00	275,100
Cement concrete hardscape	1	LS	355,550.00	355,550
Additional parking lot	1	LS	165,000.00	165,000
Parking turn around	1	LS	102,110.00	102,110

**Total For Parking Lots 897,760**

Date: February 11, 2022

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
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**G2030 Pedestrian Paving**

G2031 Paving and surfacing  
 Included in G2031

**Total For Pedestrian Paving**

**G2040 Site Development**

G2040 Site development  
 Not in estimate

**Total For Site Development**

**G2050 Landscaping**

G2053 Top soil and planting beds  
 Mulch 4" deep at shrub plantings

203 CY 45.00 9,127

G2055 Planting

Shrub planting areas per SAA take offs

12,650 SF 5.50 69,575

Lawn area patching due to construction damage

2,500 SF 0.75 1,875

Trees

8 EA 325.00 2,600

Landscape allowance at new parking lot

1 LS 5,000.00 5,000

G2057 Irrigation system

Irrigation system at planting areas

12,650 SF 1.75 22,138

Irrigation system at lawn

2,500 SF 0.75 1,875

Site irrigation reroutes at new footprint

30,799 SF 0.20 6,160

Irrigation to new parking lot

1 LS 3,000.00 3,000

**Total For Landscaping 121,349**

**G30 SITE MECHANICAL UTILITIES**

**G3010 Water Supply**

G3010 Water Utilities

Water supply and distribution systems

1 LS 120,830.00 120,830

**Total For Water Supply 120,830**

**G3020 Sanitary Sewer**

G3020 Sanitary Sewer

Sanitary sewer systems

1 LS 17,470.00 17,470

**Total For Sanitary Sewer 17,470**

**G3030 Storm Sewer**

G3030 Storm Drainage

Storm systems

1 LS 488,950.00 488,950

**Total For Storm Sewer 488,950**

Date: February 11, 2022

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
<b>G3040 Heating Distribution</b>				
G3041 Steam supply				
New boiler in admissions	1	LS	50,000.00	50,000
Replace pneumatic valves	1	LS	150,000.00	150,000
Demo steam lines to vocational	1	LS	25,000.00	25,000
Demo steam lines to admin	1	LS	75,000.00	75,000
MC OH +P 15%	1	LS	300,000.00	300,000
<b>Total For Heating Distribution</b>				<b>600,000</b>
<b>G3050 Cooling Distribution</b>				
No work anticipated				N/A
<b>Total For Cooling Distribution</b>				
<b>G3060 Fuel Distribution</b>				
G3061 Fuel piping				
Natural gas service	1	LS	7,500.00	7,500
<b>Total For Fuel Distribution</b>				<b>7,500</b>
<b>G3090 Other Site Mechanical Utilities</b>				
No work anticipated				N/A
<b>Total For Other Site Mechanical Utilities</b>				
<b>G40 SITE ELECTRICAL UTILITIES</b>				
<b>G4010 Electrical Distribution</b>				
G4010 Electrical distribution				
Electrical service per CPL	1	LS	7,500.00	7,500
Relocate OH utility to underground	1	LS	50,000.00	50,000
Telecom tunnel fiber relocation impact	1	LS	147,300.00	147,300
Telcom tunnel copper wire relocation impact	1	LS	23,000.00	23,000
EC OH + P 15%	1	LS	33,045.00	33,045
<b>Total For Electrical Distribution</b>				<b>260,845</b>
<b>G4020 Site Lighting</b>				
See building electrical				
<b>Total For Site Lighting</b>				
<b>G4030 Site Communications and Security</b>				
No work anticipated				N/A
<b>Total For Site Communications and Security</b>				
<b>G4090 Other Site Electrical Utilities</b>				



Date: February 11, 2022

COST GROUP

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
No work anticipated				N/A
<b>Total For Other Site Electrical Utilities</b>				



ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
F 2020 Hazardous Components Abatement Hazmat Abatement allowance- EXCLUDED		SFA	2.50	
G1021 Building demolition				
Demolish Physical Science 1970 circa	9,551	SFA	6.00	57,306
Demolish Vocational 1960-1970 circa	34,604	SFA	6.50	224,926
Demolish Vocational Covered Walkway	1,957	SFA	3.50	6,850
Demolish Science 1960 circa	6,994	SFA	6.00	41,964
Demolish of Steam Plant	1,723	SFA	12.00	20,676
Added mob/demob for Vocational phasing	1	LS	7,500.00	7,500
		<b>Sub-Total</b>		<b>359,222</b>
General conditions, sub bond, GC O&P		12.31%		44,224
		<b>Sub-Total</b>		<b>403,445</b>
Escalation: Excluded				
		<b>Total Construction Cost</b>		<b>403,445</b>



**STATE OF WASHINGTON**  
**AGENCY / INSTITUTION PROJECT COST SUMMARY**

*Updated June 2020*

Agency	Lower Columbia Community College	
Project Name	The Center for Vocational & Transitional Studies	
OFM Project Number	40000106	

Contact Information	
Name	Matt Lane
Phone Number	(253) 383-3084
Email	<a href="mailto:matt.lane@mcgranahan.com">matt.lane@mcgranahan.com</a>

Statistics			
Gross Square Feet	46,267	MACC per Square Foot	\$560
Usable Square Feet	32,590	Escalated MACC per Square Foot	\$593
Space Efficiency	70.4%	A/E Fee Class	B
Construction Type	College classroom facilit	A/E Fee Percentage	6.90%
Remodel	No	Projected Life of Asset (Years)	50

Additional Project Details			
Alternative Public Works Project	No	Art Requirement Applies	Yes
Inflation Rate	2.38%	Higher Ed Institution	Yes
<a href="#">Sales Tax Rate %</a>	8.10%	Location Used for Tax Rate	1600 Maple St, Longview, WA 98632
Contingency Rate	5%		
Base Month	February-22	OFM UFI# (from FPMT, if available)	to demolish A09213 (Science), A03581 (Vocational), A01344 (Physical Science)
Project Administered By	DES		

Schedule			
Predesign Start	October-21	Predesign End	March-22
Design Start	April-22	Design End	August-23
Construction Start	September-23	Construction End	September-25
Construction Duration	24 Months		

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Project Cost Estimate			
Total Project	<b>\$35,244,868</b>	Total Project Escalated	<b>\$37,210,693</b>
		Rounded Escalated Total	<b>\$37,211,000</b>

**STATE OF WASHINGTON**  
**AGENCY / INSTITUTION PROJECT COST SUMMARY**

*Updated June 2020*

Agency	Lower Columbia Community College	
Project Name	The Center for Vocational & Transitional Studies	
OFM Project Number	40000106	

**Cost Estimate Summary**

Acquisition			
<b>Acquisition Subtotal</b>	<b>\$0</b>	<b>Acquisition Subtotal Escalated</b>	<b>\$0</b>

Consultant Services			
Predesign Services	\$220,000		
A/E Basic Design Services	\$1,295,527		
Extra Services	\$1,240,000		
Other Services	\$1,034,048		
Design Services Contingency	\$189,479		
<b>Consultant Services Subtotal</b>	<b>\$3,979,053</b>	<b>Consultant Services Subtotal Escalated</b>	<b>\$4,106,434</b>

Construction			
Construction Contingencies	\$1,295,773	Construction Contingencies Escalated	\$1,376,889
Maximum Allowable Construction Cost (MACC)	\$25,915,454	Maximum Allowable Construction Cost (MACC) Escalated	\$27,442,642
Sales Tax	\$2,204,109	Sales Tax Escalated	\$2,334,383
<b>Construction Subtotal</b>	<b>\$29,415,336</b>	<b>Construction Subtotal Escalated</b>	<b>\$31,153,914</b>

Equipment			
Equipment	\$1,376,300		
Sales Tax	\$111,480		
Non-Taxable Items	\$0		
<b>Equipment Subtotal</b>	<b>\$1,487,780</b>	<b>Equipment Subtotal Escalated</b>	<b>\$1,580,917</b>

Artwork			
<b>Artwork Subtotal</b>	<b>\$185,128</b>	<b>Artwork Subtotal Escalated</b>	<b>\$185,128</b>

Agency Project Administration			
Agency Project Administration Subtotal	\$0		
DES Additional Services Subtotal	\$0		
Other Project Admin Costs	\$0		
<b>Project Administration Subtotal</b>	<b>\$0</b>	<b>Project Administration Subtotal Escalated</b>	<b>\$0</b>

Other Costs			
<b>Other Costs Subtotal</b>	<b>\$177,570</b>	<b>Other Costs Subtotal Escalated</b>	<b>\$184,300</b>

Project Cost Estimate			
Total Project	<b>\$35,244,868</b>	Total Project Escalated	<b>\$37,210,693</b>
		Rounded Escalated Total	<b>\$37,211,000</b>

## 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					
<b>ACQUISITION TOTAL</b>	<b>\$0</b>		<b>NA</b>	<b>\$0</b>	

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## Cost Estimate Details

Consultant Services				
Item	Base Amount	Escalation Factor	Escalated Cost	Notes
<b>1) Pre-Schematic Design Services</b>				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study	\$220,000			
Other				
Insert Row Here				
<b>Sub TOTAL</b>	<b>\$220,000</b>	<b>1.0038</b>	<b>\$220,836</b>	Escalated to Design Start
<b>2) Construction Documents</b>				
A/E Basic Design Services	\$1,295,527			69% of A/E Basic Services
Other				
Insert Row Here				
<b>Sub TOTAL</b>	<b>\$1,295,527</b>	<b>1.0197</b>	<b>\$1,321,049</b>	Escalated to Mid-Design
<b>3) Extra Services</b>				
Civil Design (Above Basic Svcs)	\$180,000			
Geotechnical Investigation	\$40,000			
Commissioning	\$30,000			
Site Survey	\$40,000			
Testing				
LEED Services	\$100,000			
Voice/Data Consultant	\$35,000			
Value Engineering	\$50,000			
Constructability Review	\$50,000			
Environmental Mitigation (EIS)				
Landscape Consultant	\$75,000			
Document Reproduction during design	\$5,000			
Acoustical Consultant	\$30,000			
Hazardous Materials Consultant	\$50,000			
VE Participation of Design Team	\$40,000			
Constructability Review Participation of Design Team	\$40,000			
Document repro for VE and CR	\$5,000			
CTE Lab Planning Consultant	\$125,000			
Roof & Envelope Consultant	\$20,000			
Audio/Visual, & CATV Consultant	\$35,000			
Stormwater Report (SWPP, NOI), & Permitting	\$20,000			
Energy Conservation Report (ELCCA)	\$25,000			
Interior Design Consultant	\$25,000			
Art Work Design Coordination	\$5,000			
Energy Modeling	\$10,000			
Signage Consultant	\$25,000			
Executive Order 13-03 (LCCA) for predesign and design	\$25,000			
SEPA Services	\$15,000			
PV Solar Array Design	\$10,000			

FF&E Coordination	\$10,000				
CTE Lab Equipment Selection/Procurement Coordination	\$40,000				
Specialized MEP System Design for CTE Lab Areas	\$60,000				
Special Renderings and Presentations	\$20,000				
Other					
Other					
Insert Row Here	\$0				
<b>Sub TOTAL</b>	<b>\$1,240,000</b>	<b>1.0197</b>	<b>\$1,264,428</b>	Escalated to Mid-Design	
<b>4) Other Services</b>					
Bid/Construction/Closeout	\$582,048			31% of A/E Basic Services	
HVAC Balancing					
Staffing					
Post bid Commissioning and Training, and A/E Participation	\$100,000				
As-Built Documentation	\$40,000				
Construction Observation	\$100,000				
Roof/Envelope Inspection	\$20,000				
Advertising	\$2,000				
Geotechnical Construction Services	\$30,000				
Building Envelope (WAB) Testing	\$20,000				
Haz Mat Monitoring and Inspections	\$20,000				
Document Reproduction for base bid and construction	\$10,000				
Executive Order 13-03 (LCCA) after construction	\$10,000				
Construction Inspection and Materials Testing	\$100,000				
Insert Row Here					
<b>Sub TOTAL</b>	<b>\$1,034,048</b>	<b>1.0626</b>	<b>\$1,098,780</b>	Escalated to Mid-Const.	
<b>5) Design Services Contingency</b>					
Design Services Contingency	\$189,479				
Other					
Insert Row Here					
<b>Sub TOTAL</b>	<b>\$189,479</b>	<b>1.0626</b>	<b>\$201,341</b>	Escalated to Mid-Const.	
<b>CONSULTANT SERVICES TOTAL</b>	<b>\$3,979,053</b>		<b>\$4,106,434</b>		

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## Cost Estimate Details

Construction Contracts				
Item	Base Amount	Escalation Factor	Escalated Cost	Notes
<b>1) Site Work</b>				
G10 - Site Preparation	\$652,072			
G20 - Site Improvements	\$1,210,879			
G30 - Site Mechanical Utilities	\$554,522			
G40 - Site Electrical Utilities	\$302,500			
G60 - Other Site Construction				
Demolition and Hazmat Abatement of Existing Buildings	\$551,937			
General Conditions	\$327,191			
Contractor's Overhead and Profit	\$251,937			
Insert Row Here				
<b>Sub TOTAL</b>	<b>\$3,851,038</b>	<b>1.0379</b>	<b>\$3,996,993</b>	
<b>2) Related Project Costs</b>				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Contractor's Overhead and Profit				
General Conditions				
Insert Row Here				
<b>Sub TOTAL</b>	<b>\$0</b>	<b>1.0379</b>	<b>\$0</b>	
<b>3) Facility Construction</b>				
A10 - Foundations	\$1,305,036			
A20 - Basement Construction	\$0			
B10 - Superstructure	\$2,573,648			
B20 - Exterior Closure	\$5,079,115			
B30 - Roofing	\$795,257			
C10 - Interior Construction	\$1,141,253			
C20 - Stairs	\$170,350			
C30 - Interior Finishes	\$831,694			
D10 - Conveying	\$175,000			
D20 - Plumbing Systems	\$601,471			
D30 - HVAC Systems	\$3,212,217			
D40 - Fire Protection Systems	\$300,736			
D50 - Electrical Systems	\$2,272,620			
F10 - Special Construction	\$0			
F20 - Selective Demolition	\$0			
General Conditions	\$1,874,632			
E10 - Equipment	\$51,650			
E20 - Fixed Furnishings	\$236,271			
Contractor's Overhead and Profit	\$1,443,466			
Insert Row Here				
<b>Sub TOTAL</b>	<b>\$22,064,416</b>	<b>1.0626</b>	<b>\$23,445,649</b>	
<b>4) Maximum Allowable Construction Cost</b>				
<b>MACC Sub TOTAL</b>	<b>\$25,915,454</b>		<b>\$27,442,642</b>	



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**7) Construction Contingency**

Allowance for Change Orders	\$1,295,773		
Other			
Insert Row Here			
<b>Sub TOTAL</b>	<b>\$1,295,773</b>	<b>1.0626</b>	<b>\$1,376,889</b>

**8) Non-Taxable Items**

Other			
Insert Row Here			
<b>Sub TOTAL</b>	<b>\$0</b>	<b>1.0626</b>	<b>\$0</b>

**Sales Tax**

<b>Sub TOTAL</b>	<b>\$2,204,109</b>		<b>\$2,334,383</b>
<b>CONSTRUCTION CONTRACTS TOTAL</b>	<b>\$29,415,336</b>		<b>\$31,153,914</b>

Green cells must be filled in by user

## Cost Estimate Details

Equipment					
Item	Base Amount		Escalation Factor	Escalated Cost	Notes
E10 - Equipment	\$782,602				
E20 - Furnishings	\$593,698				
F10 - Special Construction					
Other					
Insert Row Here					
<b>Sub TOTAL</b>	<b>\$1,376,300</b>		<b>1.0626</b>	<b>\$1,462,457</b>	
<b>1) Non Taxable Items</b>					
Other					
Insert Row Here					
<b>Sub TOTAL</b>	<b>\$0</b>		<b>1.0626</b>	<b>\$0</b>	
<b>Sales Tax</b>					
<b>Sub TOTAL</b>	<b>\$111,480</b>			<b>\$118,460</b>	
<b>EQUIPMENT TOTAL</b>					
<b>EQUIPMENT TOTAL</b>	<b>\$1,487,780</b>			<b>\$1,580,917</b>	

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 total project cost for new construction
Higher Ed Artwork	\$185,128			0.5% of total project cost for new and renewal construction
Other				
Insert Row Here				
<b>ARTWORK TOTAL</b>	<b>\$185,128</b>	<b>NA</b>	<b>\$185,128</b>	

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				
Other				
Insert Row Here				
<b>PROJECT MANAGEMENT TOTAL</b>	<b>\$0</b>	<b>1.0626</b>	<b>\$0</b>	

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					
LEED Registration / Certification fees	\$4,857				
Permit Review Fees	\$172,713				
Insert Row Here					
<b>OTHER COSTS TOTAL</b>	<b>\$177,570</b>		<b>1.0379</b>	<b>\$184,300</b>	

Green cells must be filled in by user

**C-100(2020)**  
**Additional Notes**

**Tab A. Acquisition**

*Insert Row Here*

**Tab B. Consultant Services**

*Insert Row Here*

**Tab C. Construction Contracts**

Lower Columbia College has committed up to \$700,000 in local funds.

*Insert Row Here*

**Tab D. Equipment**

Lower Columbia College has committed up to \$1,500,000 in local funds.

*Insert Row Here*

**Tab E. Artwork**

*Insert Row Here*

**Tab F. Project Management**

*Insert Row Here*

**Tab G. Other Costs**

*Insert Row Here*

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March 21, 2022

To Whom It May Concern,

Lower Columbia College will commit, if necessary, up to \$2.2 MM to cover costs incurred during the construction and furniture and equipment procurement for the Center for Vocational & Transitional Studies Buildings (CVTS). These funds will come from a combination of local funds and funds received from the LCC Foundation as part of its future capital campaign tied to the CVTS project.

Respectfully,

A handwritten signature in blue ink, appearing to read "C. Bailey", is written over a light blue background.

Christopher C. Bailey, J.D.  
President  
Lower Columbia College

1600 Maple Street

P.O. Box 3010

Longview, WA 98632

(360) 442-2311

lowercolumbia.edu

[Back to Table of Contents](#)



<b>DAHP USE ONLY</b>
Date Received: 2/17/2022
DAHP Log #: 2022-03-01300
Reviewer(s): RW & HB
<input checked="" type="checkbox"/> ARCHY <input checked="" type="checkbox"/> BEU



**EZ-1 FORM**

Request to initiate consultation for Governor's Executive Order 21-02 (GEO 21-02) projects

**GEO 21-02**

New Consultation?  YES  NO  ADDITIONAL INFORMATION PROVIDED PER REQUEST

Questions? Contact DAHP at 2102@dahp.wa.gov or (360) 586-3065. You may also find answers to your questions online at www.dahp.wa.gov/2102.

**SECTION 1: PROJECT INFORMATION**

Project Title: <b>Center for Vocational &amp; Transitional Studies</b>	Provide 1-2 sentence summary of the project. Demolition of 4 aging existing buildings at Lower Columbia College, to be replaced with 1 new building. New building will be 3 stories high, and 46,267 sf.
Property Name: <b>Lower Columbia College</b> <small>if applicable</small>	
Project Address: <b>1600 Maple Street</b>	
City / State / Zip: <b>Longview, WA 98632</b>	County: <b>Cowlitz</b> Township / Range / Section: <b>T8-0N R2-0W S2E</b> <small>leave blank if unsure</small>

**SECTION 2: PROJECT DESCRIPTION**

Project includes (check all that apply):  NEW CONSTRUCTION  DEMOLITION  GROUND DISTURBANCE  REHABILITATION / RENOVATION  ACQUISITION

Does the project involve any buildings, objects, sites, structures or districts that are over 45 years old?  YES  NO  NOT SURE \*Contact DAHP  Check here if the project involves multiple resources. If so, attach a table including all information in Sections 1 and 2 for each resource.

Does the project involve any properties determined eligible for or listed in the National Register of Historic Places or Washington Heritage Register? <input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NOT SURE	Is the building, structure or site already recorded in WISAARD? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> NOT SURE <small>[!] See Note *Contact DAHP</small>	If Yes, what is the Property ID # or Site #? <input checked="" type="checkbox"/> <b>[!] If the resource is not recorded in WISAARD, please contact DAHP Staff. Go to www.dahp.wa.gov/wisaard for more information. Check the box when complete.</b>
--	---	---

Are there any Federal funds, lands, permits, or licenses involved in/required by this project?  YES  NO  NOT SURE If Yes, what Federal Agency?

What is the nature of your request? (Check all that apply)  PREDESIGN  DESIGN  CONSTRUCTION  APPLYING FOR GRANT / LOAN  TRYING TO GET UNDER CONTRACT  NOT SURE

**SECTION 3: STATE AGENCY INFORMATION**

State Agency: **Lower Columbia College (0657)** Grant / Loan Program Name: **none**  Direct Appropriation?

Contact Person: **Nolan Wheeler** Phone: **(360) 442-2201** e-mail: **nwheeler@lcc.ctc.edu**

Funding biennium? **2023-2025** Requested grant / loan amount: **0** Total project amount: **0**

**SECTION 4: CONTACT INFORMATION**

If different from State Agency contact person.

Submitter Name: **Matt Lane** Submitter Organization: **McGranahan Architects**

Submitter Address: **2111 Pacific Ave** City / State / Zip: **Tacoma, WA 98402**


Submitter Phone: **(253) 383-3084** Submitter e-mail: **matt.lane@mcgranahan.com**

**SECTION 5: ATTACHMENTS**

Please email completed form and all attachments to: **2102@dahp.wa.gov**

<input checked="" type="checkbox"/> MAP / APE - Be sure to show the project boundary and location of property(ies). See Section 7 on Page 3 for optional template. May also submit online through WISAARD using eAPE.	<input checked="" type="checkbox"/> SITE PLAN / DRAWINGS - Indicate location and dates of resources, proposed improvements and ground disturbance, etc.
<input checked="" type="checkbox"/> DESCRIPTION / SCOPE OF WORK - Describe the project, including any ground disturbance. See Section 6 on Page 2 for optional template.	<input checked="" type="checkbox"/> PHOTOGRAPHS - Attach digital photographs showing the project site, including images of all resources. Photos submitted through WISAARD may suffice.

**DAHP DETERMINATION (DAHP USE ONLY)**

<input type="checkbox"/> EXEMPT from GEO 21-02 review.	<input type="checkbox"/> The project will have an <b>ADVERSE IMPACT</b> on historic properties.	 DAHP REVIEWER <b>3/4/2022</b> DATE
<input checked="" type="checkbox"/> There are <b>NO HISTORIC PROPERTIES IMPACTED</b> by the proposed project.	<input type="checkbox"/> DAHP requires <b>ADDITIONAL INFORMATION</b> in order to complete review (see attached).	
<input type="checkbox"/> The project will have <b>NO ADVERSE IMPACT</b> on historic properties.	<input type="checkbox"/> SURVEY REQUIRED <input type="checkbox"/> IDP REQUIRED	
	<input type="checkbox"/> MONITORING REQUIRED	

**Instructions:** Please describe the type of work to be completed. Be as detailed as possible to avoid a request for additional information. Be sure to describe all ground disturbing activities in the appropriate box below, and provide photos of areas of work.

### SECTION 6: ADD'L PROJECT INFORMATION

**NOTE:** To save this fillable form you must fill it out in Adobe Acrobat or use the PRINT to PDF function in Acrobat Reader. In Reader choose File > Print and choose Adobe PDF as the printer. The fill will save to your computer.

Please be aware that this form may only initiate consultation. For some projects, DAHP may require additional information to complete our review such as plans, specifications, and photographs. An historic property inventory form may need to be completed by a qualified cultural resource professional.

Provide a detailed description of the proposed project:

Lower Columbia College plans to construct a new 46,267 square foot Center for Vocational and Transitional Studies, which will replace the existing Vocational, Science, Physical Science, and Steam Plant buildings. The new three-story CVTS building will house LCC's welding, machining, manufacturing, information technologies, and transitional studies programs, as well as faculty offices, informal learning areas, and support spaces. The project will also include improvements to campus accessibility, infrastructure, parking, and open space.

Describe the existing project site conditions (include building age, if applicable):

The Vocational Building was built in 1960 as an auto-shop. The 32,250 sf building is wood framed, and one-story in height.

The Science Building was built in 1960. The 6,944 sf building is wood framed, and one-story in height.

The Physical Science Building was built in 1971. The 9,551 sf building is steel framed, and one-story in height.

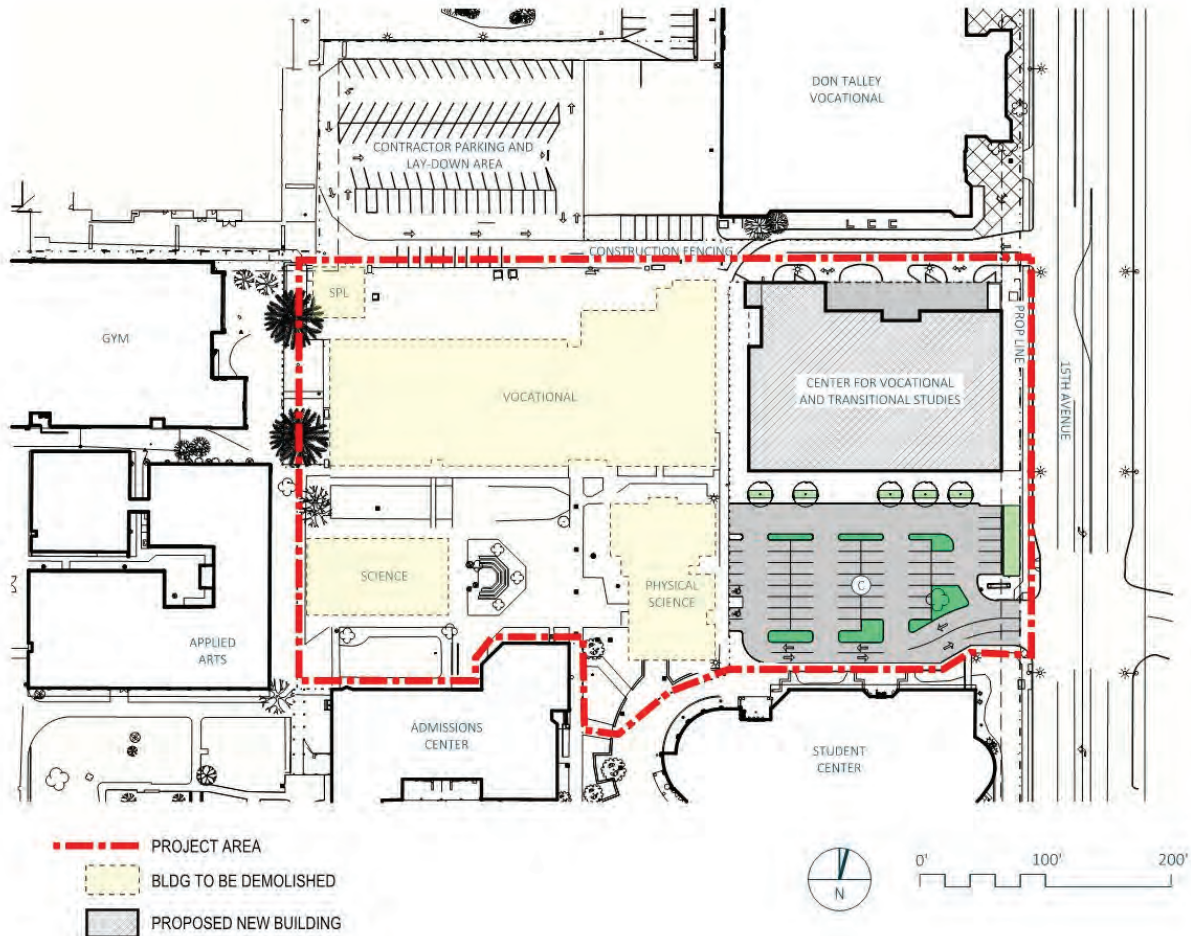
The Steam Plant was built in 1982. The 1,723 sf building is steel framed, and one-story in height.

If there are ground disturbing activities proposed, describe them *including the approximate depth of ground disturbance*:

The new project proposes ground disturbance at the sites of demolition, as well as the site for the proposed new building. Ground disturbance at the demolition sites would be limited to building removal, and restoration of the ground plane. Ground disturbance at the site of the new building would be for foundation work, and is dependent on the recommendations of a geotechnical engineer, but we expect that disturbance for foundation would be approximately 4 feet below grade (+/-), and that piles are likely to be required up to a much greater depth (30-50 feet below grade, for example).

Instructions: Please attach a MAP of the project area. (Use WISAARD with USA Topo Basemap background. Click HERE for Snipping Tool Tutorial. Draw an outline of the Area of Potential Effect (APE) that clearly delineates the project boundary.

SECTION 7: MAP / Area of Potential Effect







February 25, 2022

Delano Saluskin, Chairman  
Confederated Tribes and Bands of the Yakama Nation  
P.O. Box 151  
Toppenish, WA 98948

Subject: Center for Vocational and Transitional Studies  
Lower Columbia College

Dear Mr. Saluskin,

Pursuant to Governor's Executive Order 21-02, and out of respect to our local tribal communities, I am writing to inform you of Lower Columbia College's intent to construct a new instructional building located on our campus at 1600 Maple St. in Longview. The College is requesting capital funding for the project and hopes to begin construction in 2023.

We have contacted the Washington State Department of Archaeology and Historic Preservation (DAHP) and have submitted all relevant forms for consideration. We will provide any and all information to DAHP should a further review be required.

In addition, Lower Columbia College is committed to the immediate stoppage of work if any archaeological resources are discovered during construction.

If you have any comments or concerns regarding this matter, please direct them to Nolan Wheeler, VP of Administration, by phone at (360) 442-2201 or by email at [nwheeler@lowercolumbia.edu](mailto:nwheeler@lowercolumbia.edu) by March 11, 2022.

Respectfully,

A handwritten signature in blue ink, appearing to read "C. Bailey", is written over a faint, larger signature.

Christopher C. Bailey, J.D.  
President  
Lower Columbia College

1600 Maple Street

P.O. Box 3010

Longview, WA 98632

(360) 442-2311

[lowercolumbia.edu](http://lowercolumbia.edu)



February 25, 2022

Cheryle A. Kennedy, Chairwoman  
Confederated Tribes of Grand Ronde  
9615 Grand Ronde Road  
Grand Ronde, OR 97347

Subject: Center for Vocational and Transitional Studies  
Lower Columbia College

Dear Ms. Kennedy,

Pursuant to Governor's Executive Order 21-02, and out of respect to our local tribal communities, I am writing to inform you of Lower Columbia College's intent to construct a new instructional building located on our campus at 1600 Maple St. in Longview, WA. The College is requesting capital funding for the project and hopes to begin construction in 2023.

We have contacted the Washington State Department of Archaeology and Historic Preservation (DAHP) and have submitted all relevant forms for consideration. We will provide any and all information to DAHP should a further review be required.

In addition, Lower Columbia College is committed to the immediate stoppage of work if any archaeological resources are discovered during construction.

If you have any comments or concerns regarding this matter, please direct them to Nolan Wheeler, VP of Administration, by phone at (360) 442-2201 or by email at [nwheeler@lowercolumbia.edu](mailto:nwheeler@lowercolumbia.edu) by March 11, 2022.

Respectfully,

A handwritten signature in blue ink, appearing to read "C. Bailey", with a long horizontal flourish extending to the right.

Christopher C. Bailey, J.D.  
President  
Lower Columbia College

1600 Maple Street

P.O. Box 3010

Longview, WA 98632

(360) 442-2311

[lowercolumbia.edu](http://lowercolumbia.edu)





February 25, 2022

Raymond Tsumpti, Chairman  
Confederated Tribes of Warm Springs Reservation of Oregon  
PO Box 1299  
Warm Springs, OR 97761

Subject: Center for Vocational and Transitional Studies  
Lower Columbia College

Dear Mr. Tsumpti,

Pursuant to Governor's Executive Order 21-02, and out of respect to our local tribal communities, I am writing to inform you of Lower Columbia College's intent to construct a new instructional building located on our campus at 1600 Maple St. in Longview. The College is requesting capital funding for the project and hopes to begin construction in 2023.

We have contacted the Washington State Department of Archaeology and Historic Preservation (DAHP) and have submitted all relevant forms for consideration. We will provide any and all information to DAHP should a further review be required.

In addition, Lower Columbia College is committed to the immediate stoppage of work if any archaeological resources are discovered during construction.

If you have any comments or concerns regarding this matter, please direct them to Nolan Wheeler, VP of Administration, by phone at (360) 442-2201 or by email at [nwheeler@lowercolumbia.edu](mailto:nwheeler@lowercolumbia.edu) by March 11, 2022.

Respectfully,

A handwritten signature in blue ink, appearing to read "C. Bailey", is written over a horizontal line.

Christopher C. Bailey, J.D.  
President  
Lower Columbia College

1600 Maple Street

P.O. Box 3010

Longview, WA 98632

(360) 442-2311

lowercolumbia.edu



February 25, 2022

David Barnett, Executive General Council Chair  
Cowlitz Indian Tribe  
1055 9<sup>th</sup> Avenue Suite B  
Longview, WA 98632

Subject: Center for Vocational and Transitional Studies  
Lower Columbia College

Dear Mr. Barnett,

Pursuant to Governor's Executive Order 21-02, and out of respect to our local tribal communities, I am writing to inform you of Lower Columbia College's intent to construct a new instructional building located on our campus at 1600 Maple St. in Longview. The College is requesting capital funding for the project and hopes to begin construction in 2023.

We have contacted the Washington State Department of Archaeology and Historic Preservation (DAHP) and have submitted all relevant forms for consideration. We will provide any and all information to DAHP should a further review be required.

In addition, Lower Columbia College is committed to the immediate stoppage of work if any archaeological resources are discovered during construction.

If you have any comments or concerns regarding this matter, please direct them to Nolan Wheeler, VP of Administration, by phone at (360) 442-2201 or by email at [nwheeler@lowercolumbia.edu](mailto:nwheeler@lowercolumbia.edu) by March 11, 2022.

Respectfully,

Christopher C. Bailey, J.D.  
President  
Lower Columbia College

1600 Maple Street

P.O. Box 3010

Longview, WA 98632

(360) 442-2311

lowercolumbia.edu



February 25, 2022

Kristopher Peters, Chairman  
Squaxin Island Tribe  
10 SE Squaxin Lane  
Shelton, WA 98584

Subject: Center for Vocational and Transitional Studies  
Lower Columbia College

Dear Mr. Peters,

Pursuant to Governor's Executive Order 21-02, and out of respect to our local tribal communities, I am writing to inform you of Lower Columbia College's intent to construct a new instructional building located on our campus at 1600 Maple St. in Longview. The College is requesting capital funding for the project and hopes to begin construction in 2023.

We have contacted the Washington State Department of Archaeology and Historic Preservation (DAHP) and have submitted all relevant forms for consideration. We will provide any and all information to DAHP should a further review be required.

In addition, Lower Columbia College is committed to the immediate stoppage of work if any archaeological resources are discovered during construction.

If you have any comments or concerns regarding this matter, please direct them to Nolan Wheeler, VP of Administration, by phone at (360) 442-2201 or by email at [nwheeler@lowercolumbia.edu](mailto:nwheeler@lowercolumbia.edu) by March 11, 2022.

Respectfully,

Christopher C. Bailey, J.D.  
President  
Lower Columbia College

1600 Maple Street

P.O. Box 3010

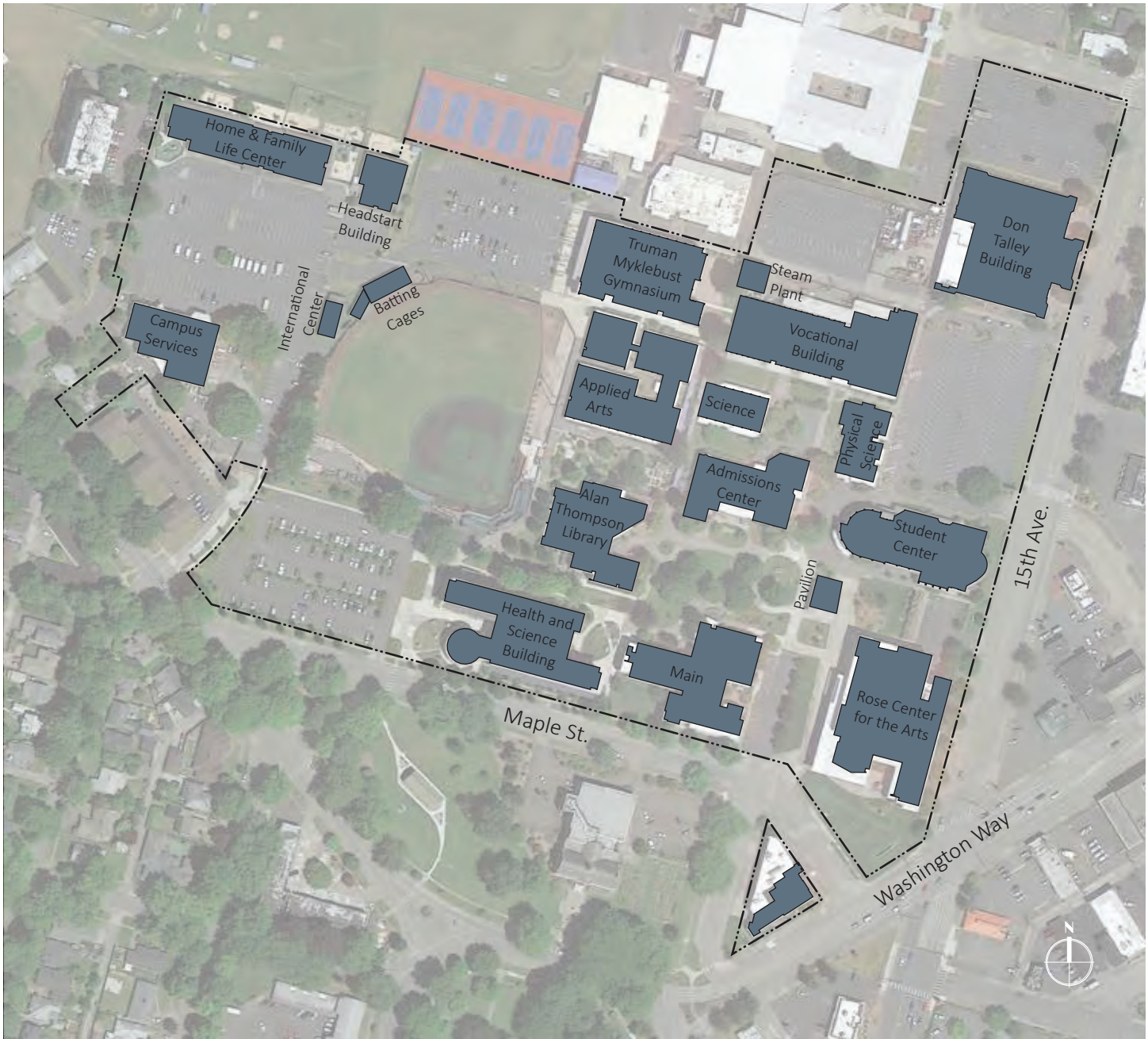
Longview, WA 98632

(360) 442-2311

[lowercolumbia.edu](http://lowercolumbia.edu)

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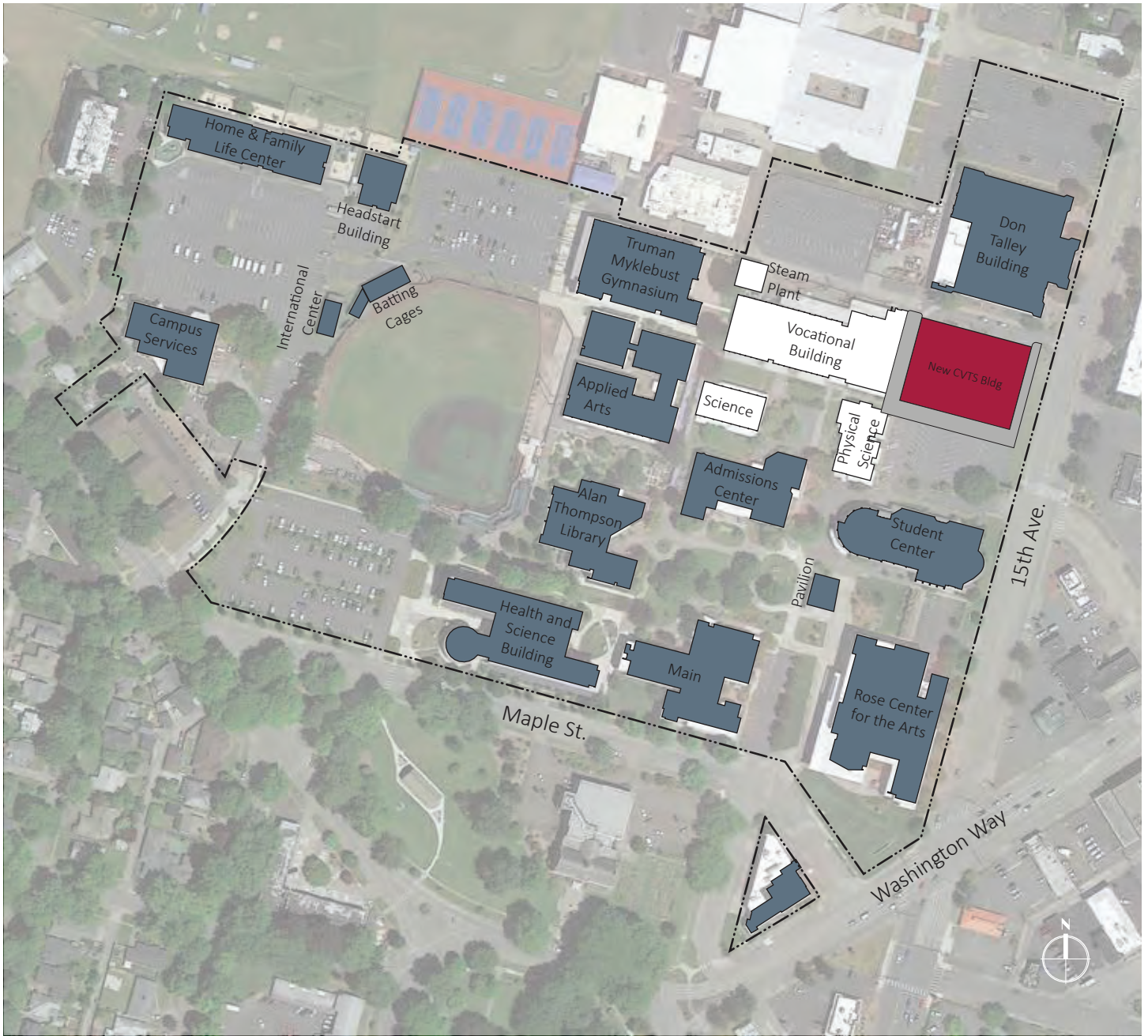


**Legend**

- Existing Building
- New/Replacement Building
- Future Building Zone
- Campus Green
- Proposed Demolition
- Parking
- Pedestrian Circulation
- Focal Point
- Node

**EXISTING CAMPUS PLAN**

MASTER PLAN UPDATE  
 LOWER COLUMBIA COLLEGE  
 06 DECEMBER 2021

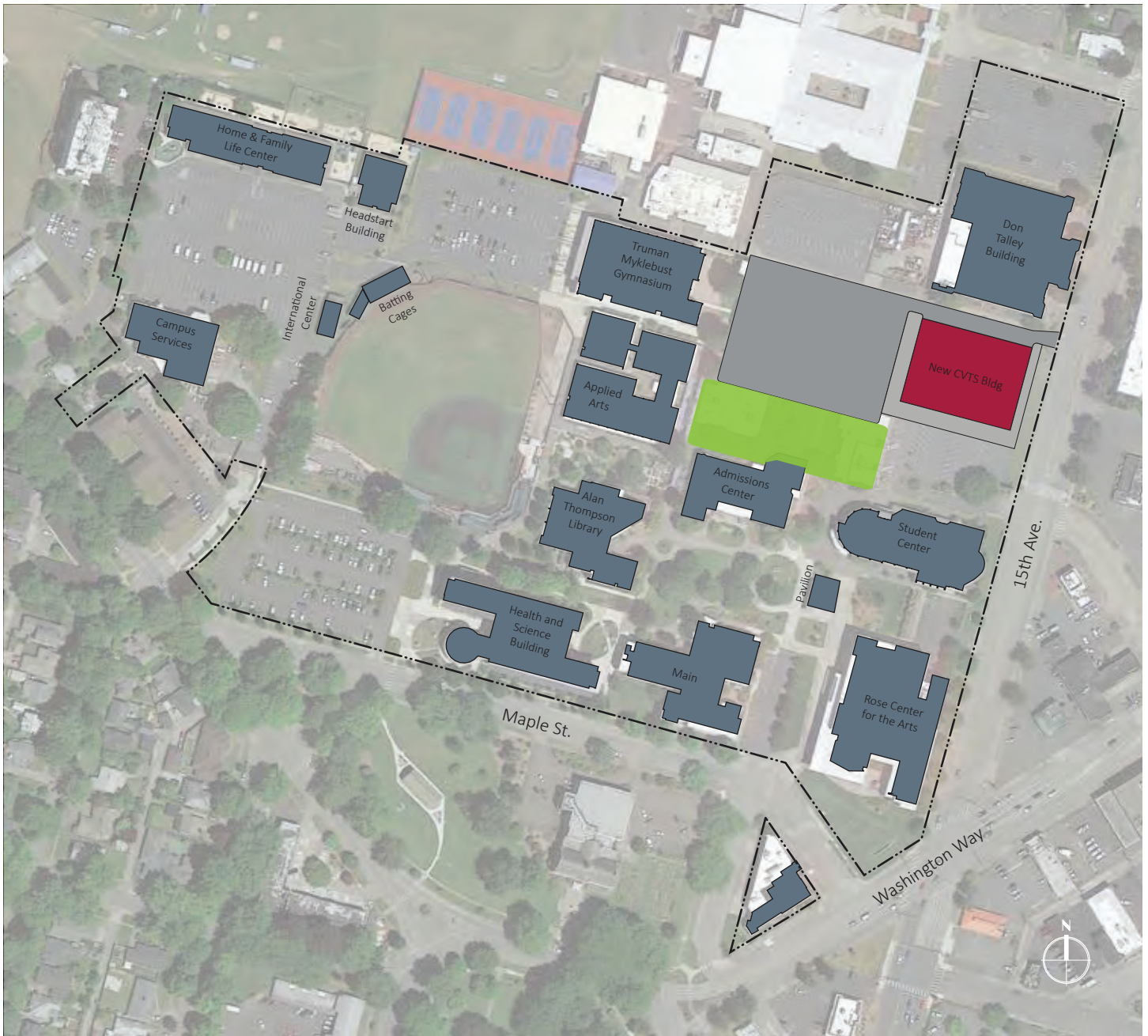


**Legend**

- Existing Building
- New/Replacement Building
- Future Building Zone
- Campus Green
- Proposed Demolition
- Parking
- Pedestrian Circulation
- Focal Point
- Node

**CAPITAL PROJECT ONE - CVTS PHASE 1**

MASTER PLAN UPDATE  
 LOWER COLUMBIA COLLEGE  
 06 DECEMBER 2021

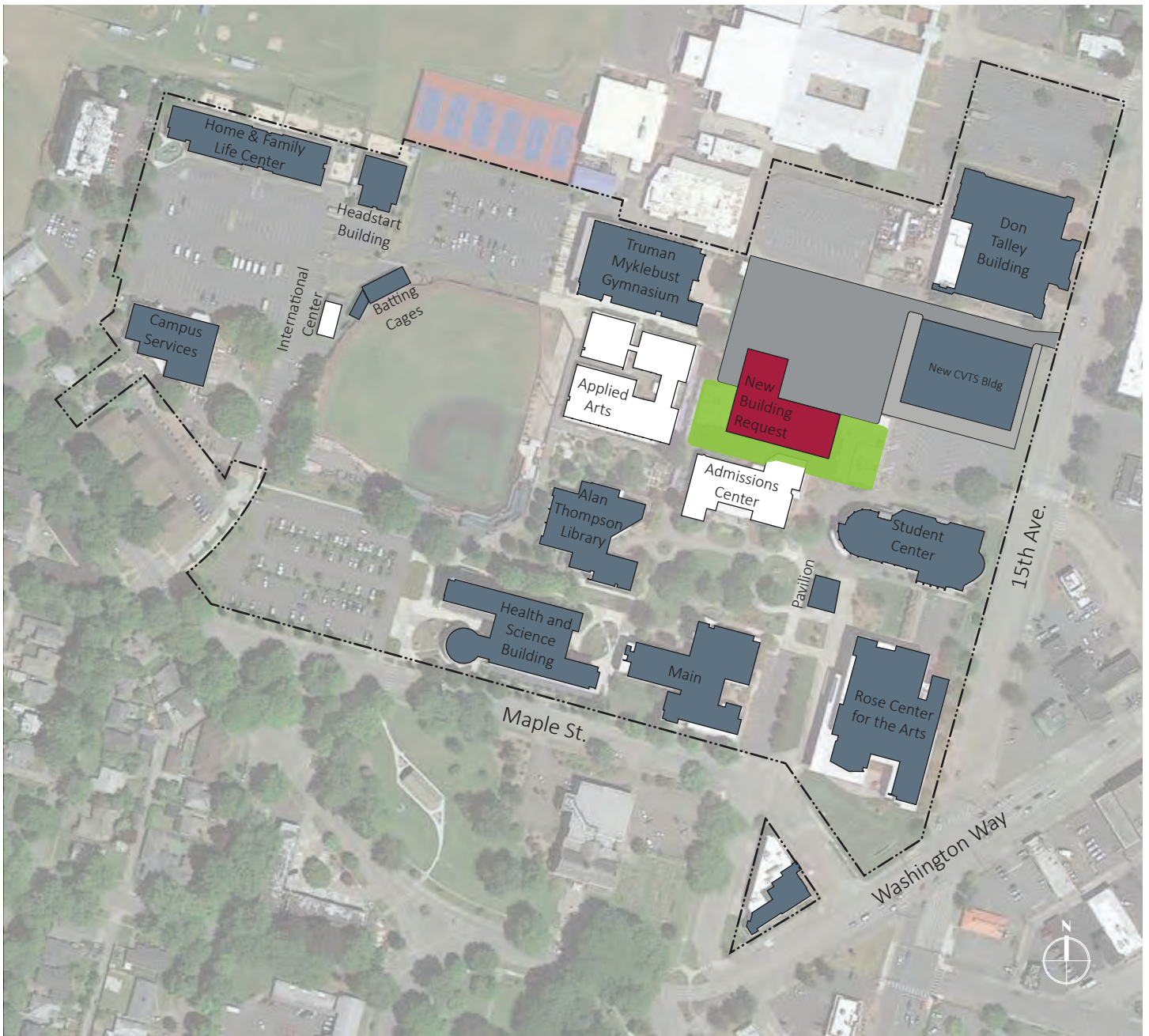


**Legend**

- Existing Building
- Future Building Zone
- Proposed Demolition
- New/Replacement Building
- Campus Green
- Parking
- Pedestrian Circulation
- ✱ Focal Point
- Node

**CAPITAL PROJECT ONE - CVTS PHASE 2**

MASTER PLAN UPDATE  
 LOWER COLUMBIA COLLEGE  
 06 DECEMBER 2021



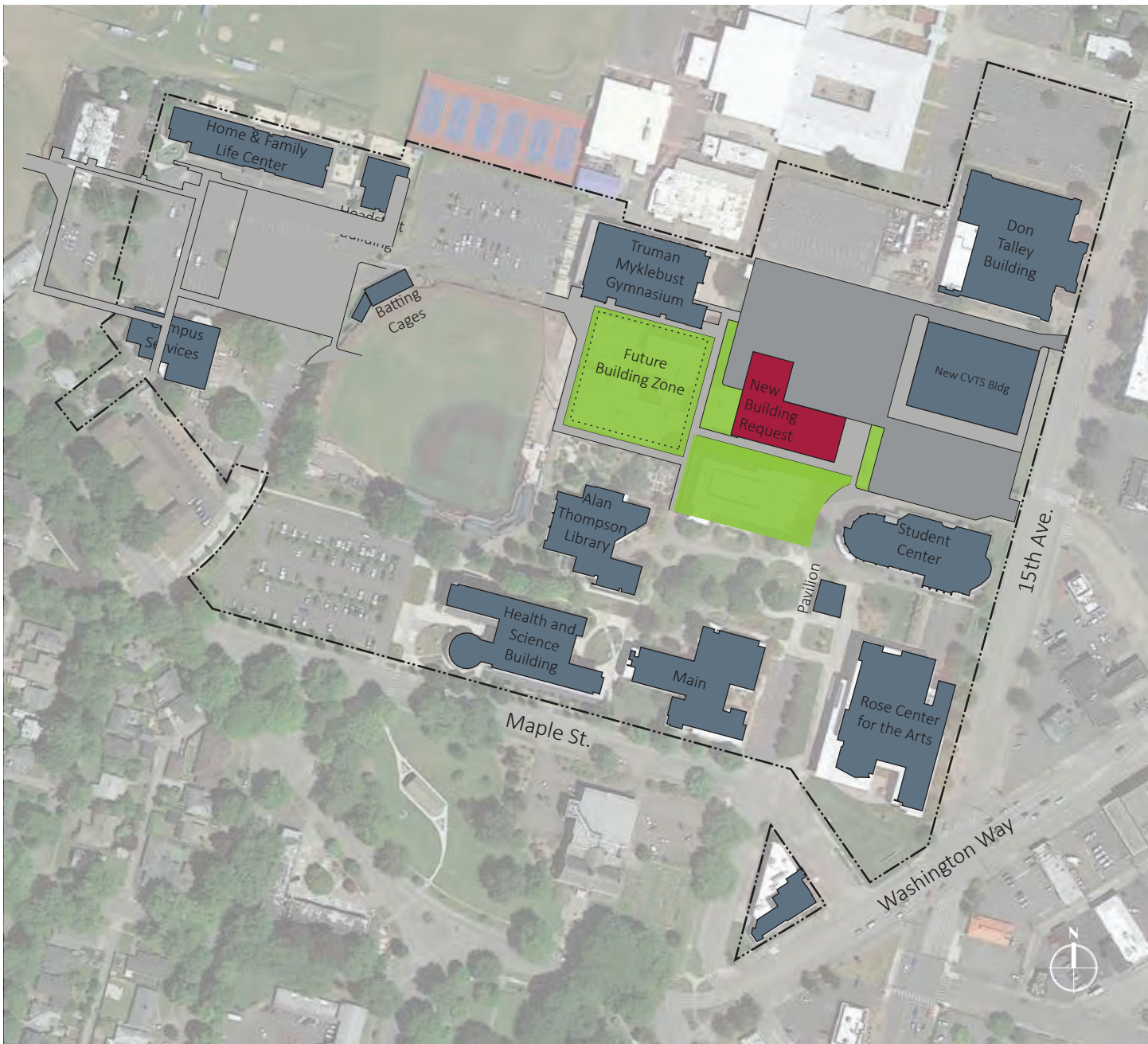
**Legend**

- Existing Building
- New/Replacement Building
- Campus Green
- Future Building Zone
- Parking
- Pedestrian Circulation
- Focal Point
- Node

**CAPITAL PROJECT TWO - WELCOME CENTER PHASE 1**

MASTER PLAN UPDATE  
 LOWER COLUMBIA COLLEGE  
 06 DECEMBER 2021



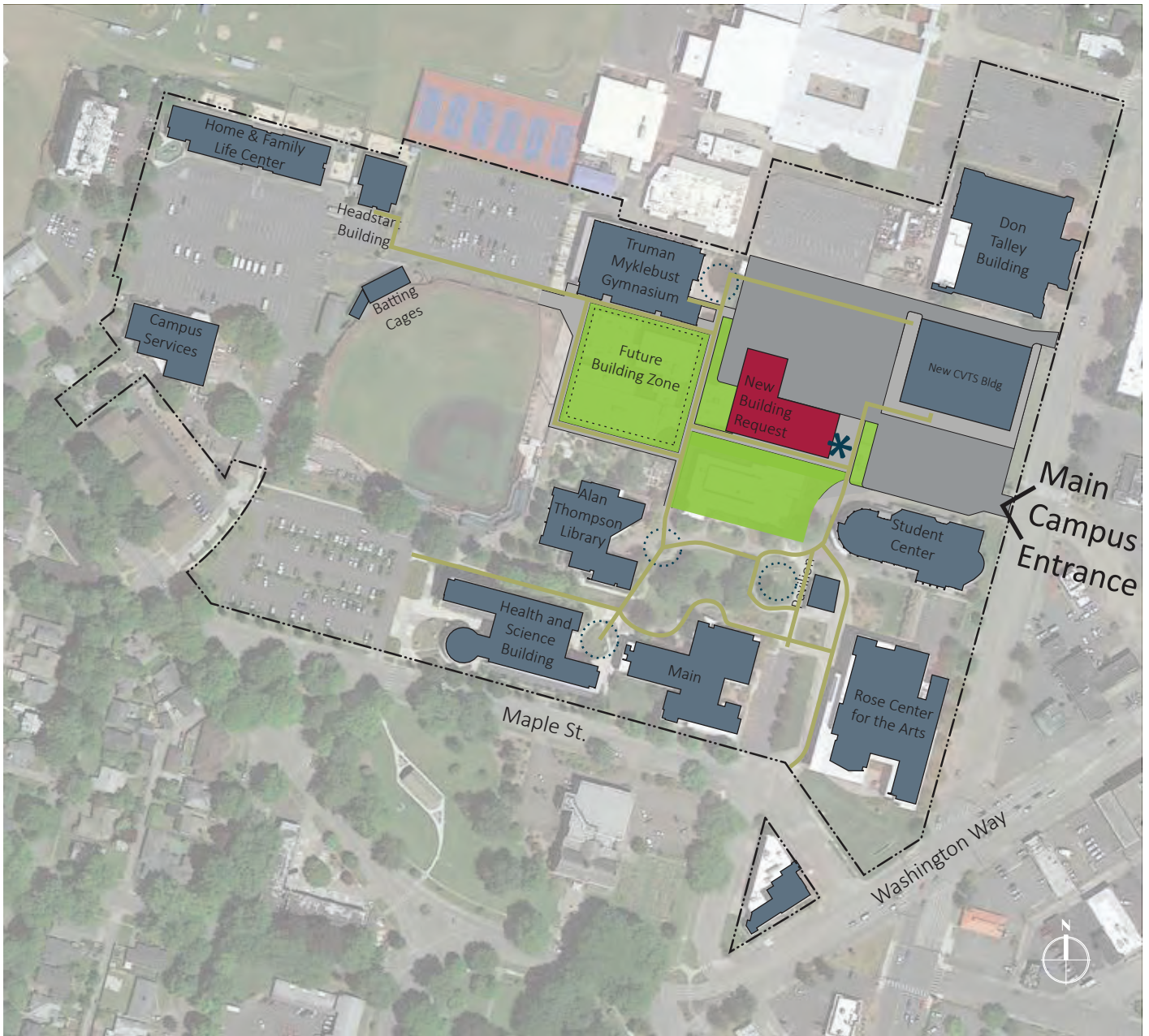


**Legend**










- Existing Building
- New/Replacement Building
- Future Building Zone
- Campus Green
- Proposed Demolition
- Parking
- Pedestrian Circulation
- ✱ Focal Point
- Node

**CAPITAL PROJECT TWO - WELCOME CENTER PHASE 2**

MASTER PLAN UPDATE  
 LOWER COLLUMBIA COLLEGE  
 06 DECEMBER 2021



**Legend**

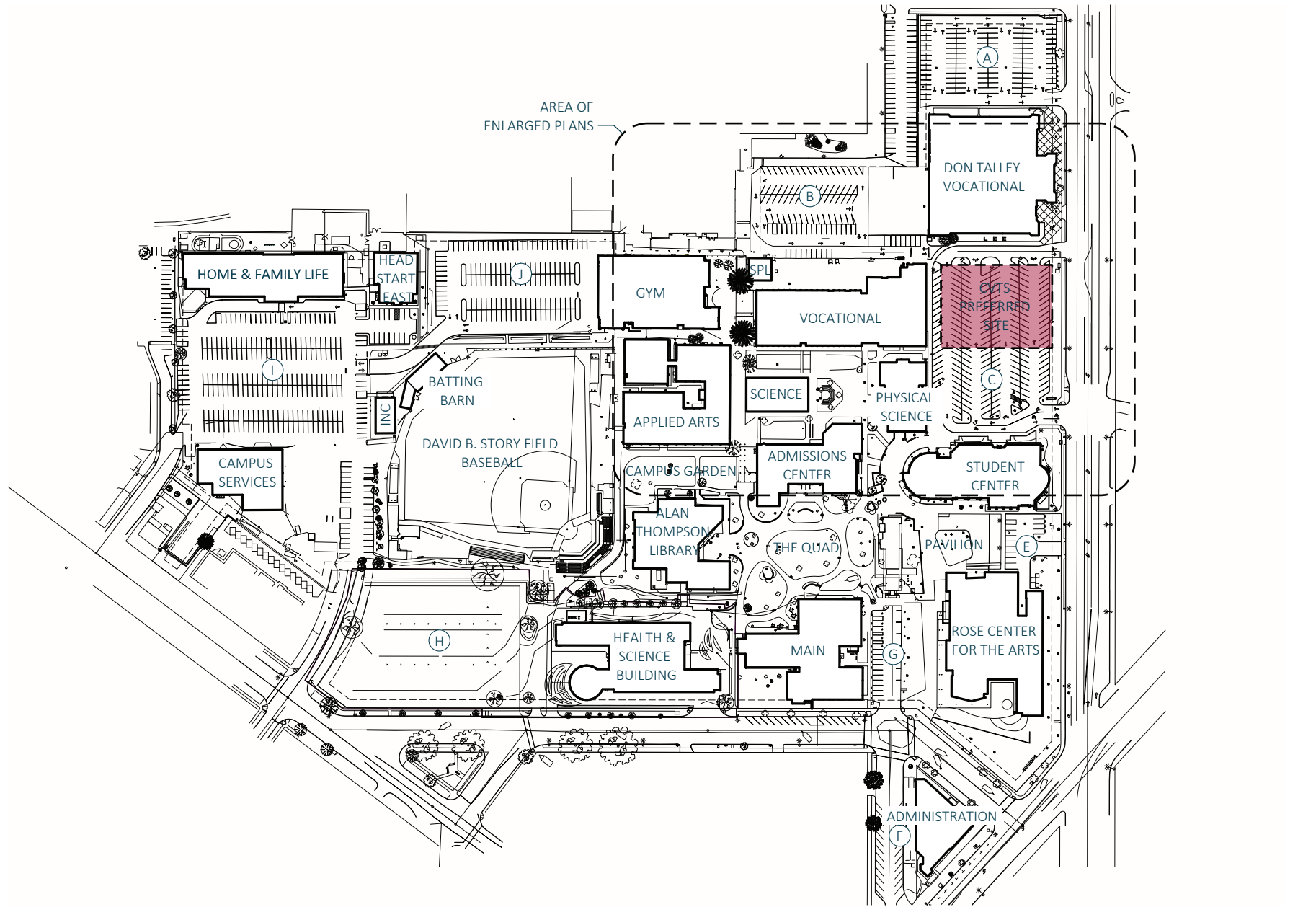
- |  |  |  |
|--|--|--|
|  Existing Building    |  New/Replacement Building |  Pedestrian Circulation |
|  Future Building Zone |  Campus Green             |  Focal Point            |
|  Proposed Demolition  |  Parking                  |  Node                   |

**LONG TERM CAMPUS MASTER PLAN**

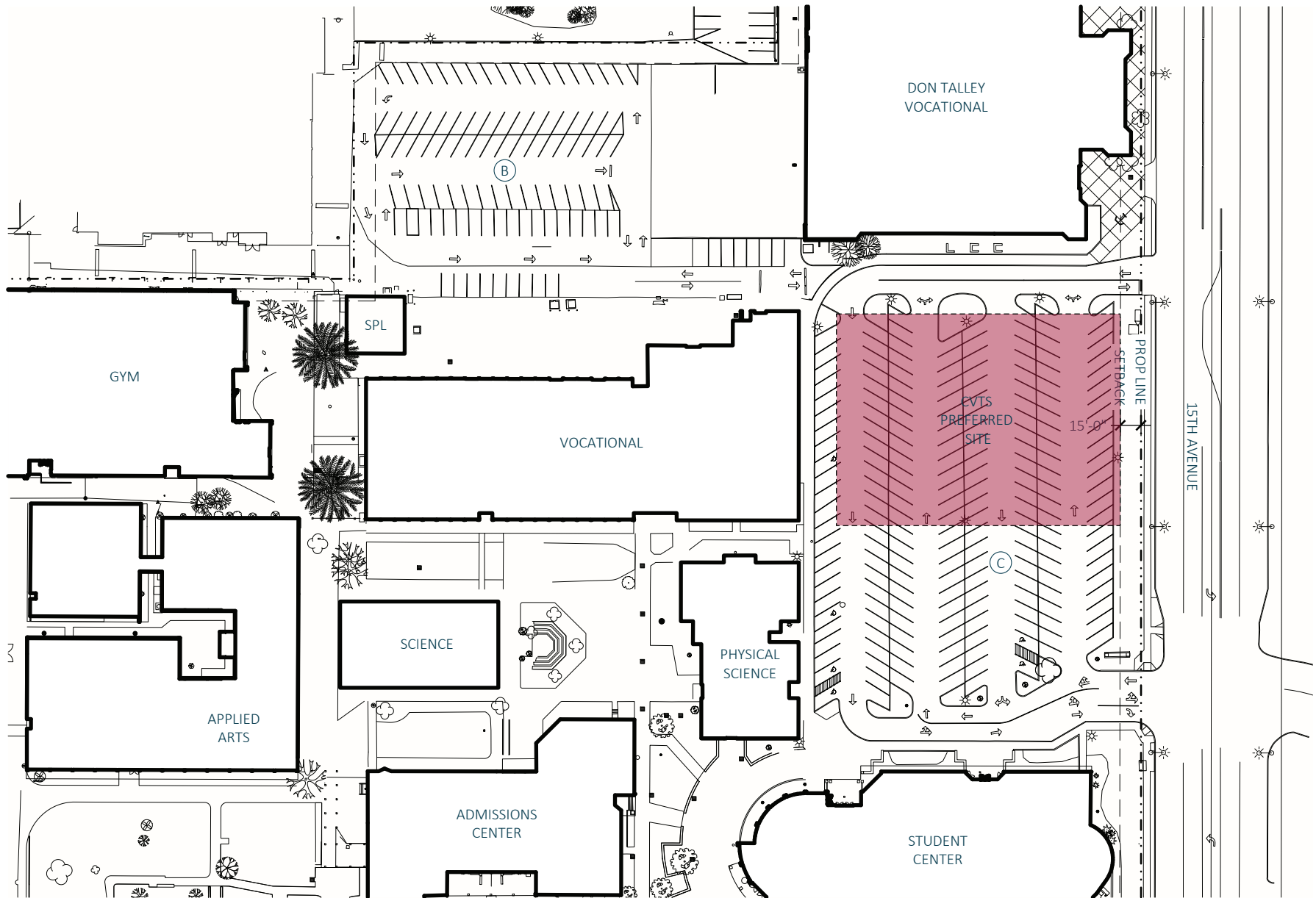
MASTER PLAN UPDATE  
 LOWER COLUMBIA COLLEGE  
 06 DECEMBER 2021

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**CAMPUS MAP w/ PREFERRED LOCATION**  
 CENTER FOR VOCATIONAL AND TRANSITIONAL STUDIES  
 LOWER COLUMBIA COLLEGE  
 15 FEBRUARY 2022

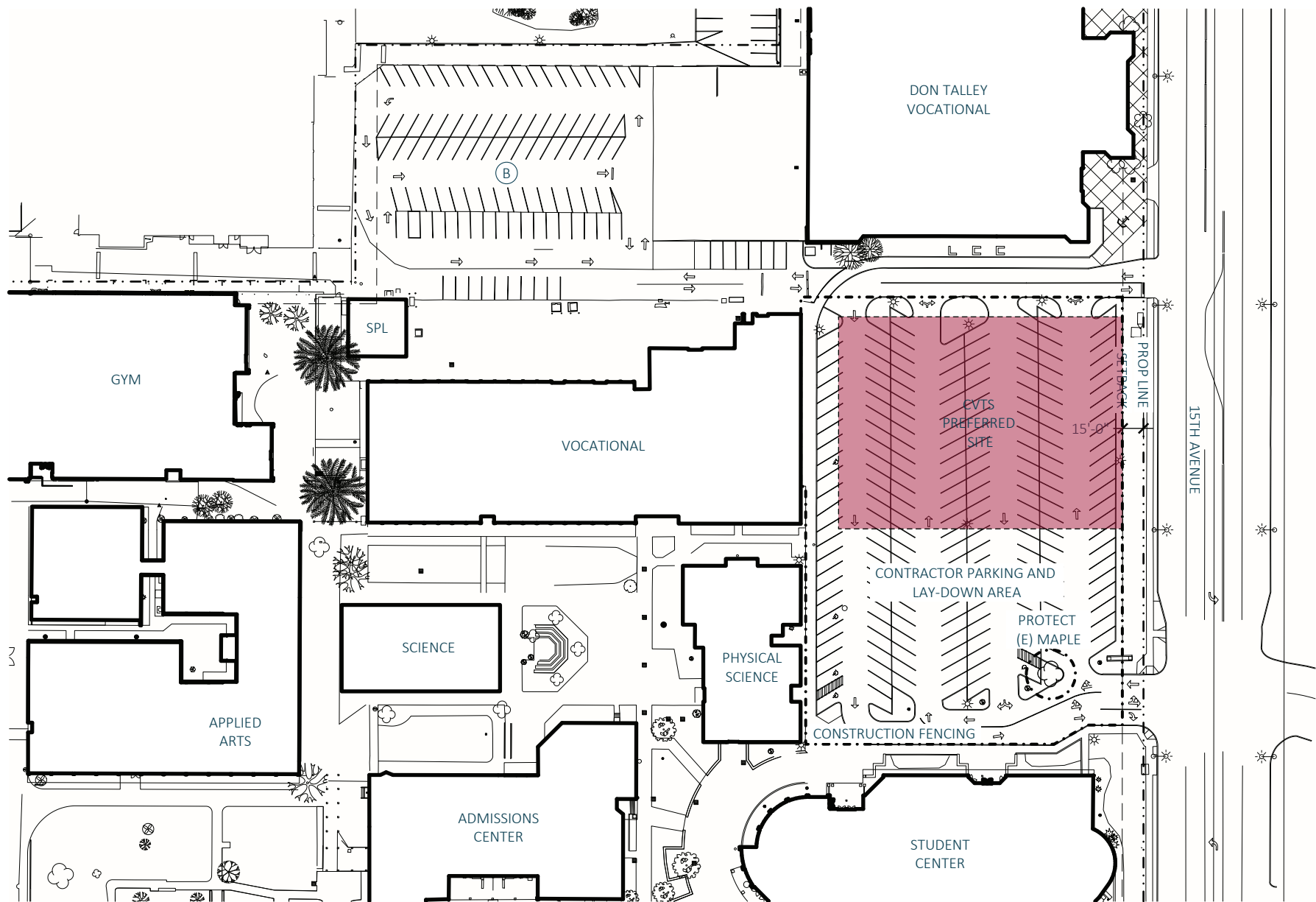


# EXISTING SITE PLAN

CENTER FOR VOCATIONAL AND TRANSITIONAL STUDIES  
 LOWER COLUMBIA COLLEGE

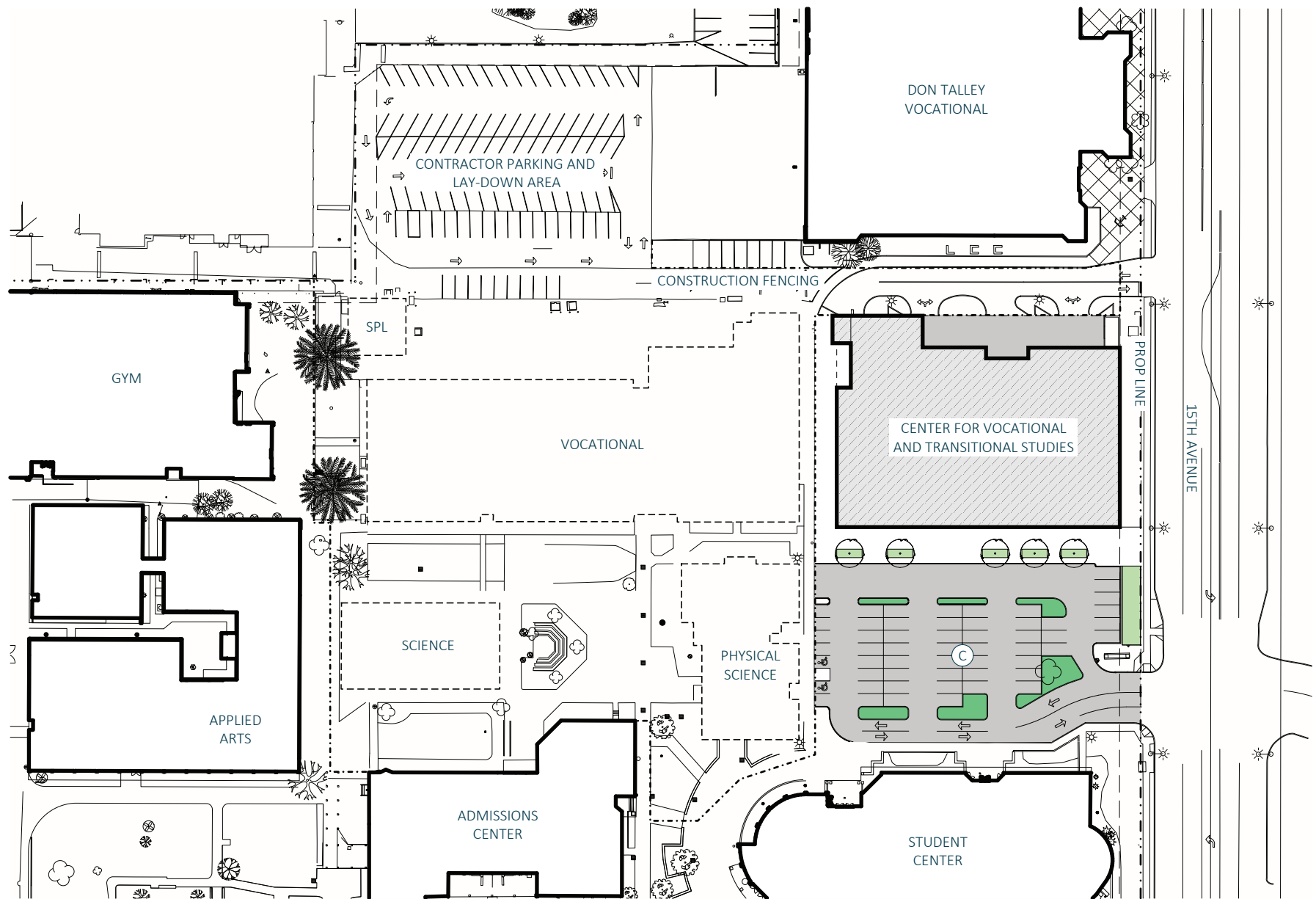
15 FEBRUARY 2022





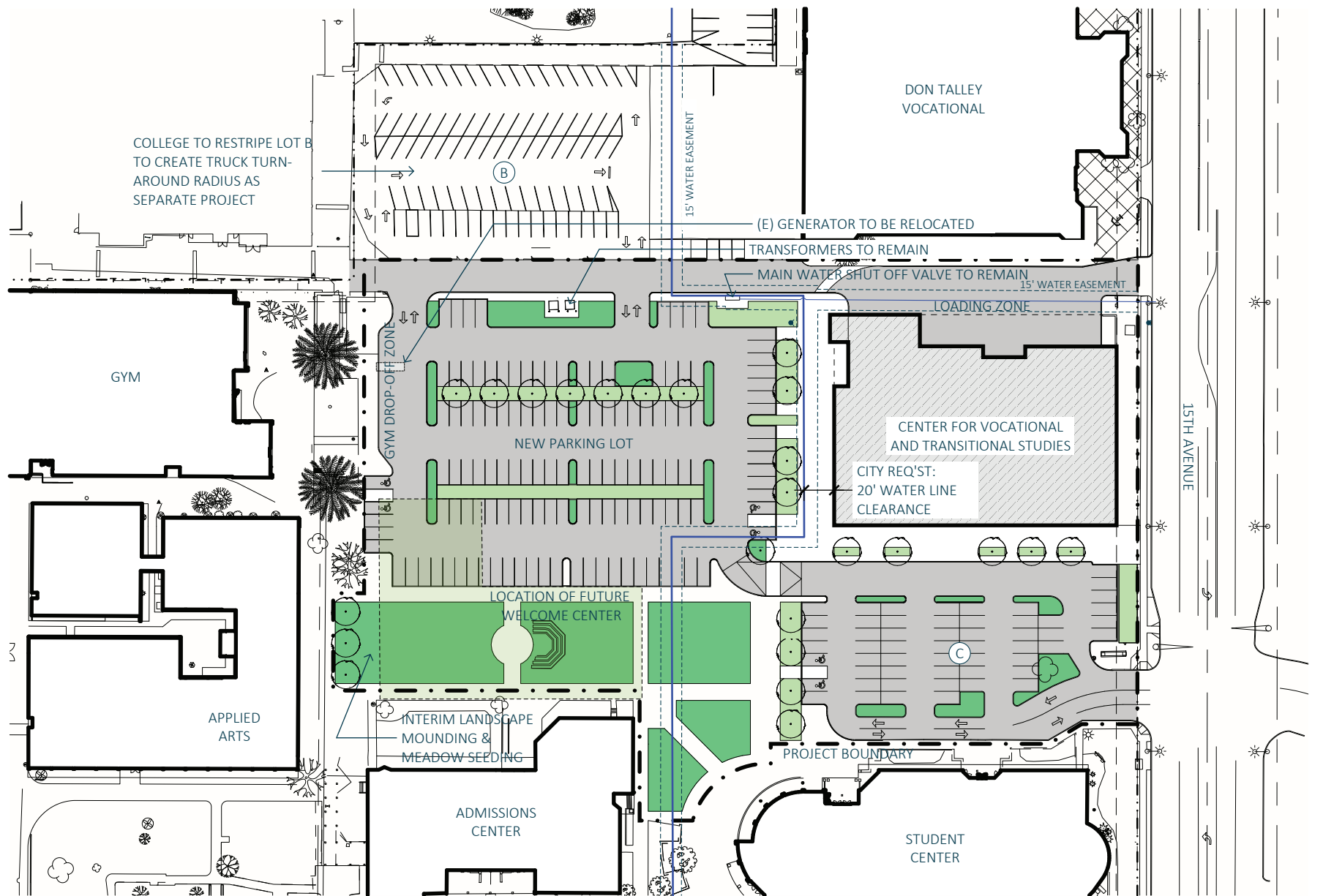
**CONSTRUCTION IMPACT - PHASE 1**  
 CENTER FOR VOCATIONAL AND TRANSITIONAL STUDIES  
 LOWER COLUMBIA COLLEGE  
 15 FEBRUARY 2022





**CONSTRUCTION IMPACT - PHASE 2**  
 CENTER FOR VOCATIONAL AND TRANSITIONAL STUDIES  
 LOWER COLUMBIA COLLEGE  
 15 FEBRUARY 2022





# PROPOSED SITE PLAN

CENTER FOR VOCATIONAL AND TRANSITIONAL STUDIES  
 LOWER COLUMBIA COLLEGE

15 FEBRUARY 2022



 MACHINING / MANUFACTURING  
CLASSROOMS AND LABS

 MACHINING / MANUFACTURING  
OFFICES

 WELDING  
CLASSROOMS AND LABS

 WELDING  
OFFICES

 TRANSITIONAL STUDIES  
CLASSROOMS AND LABS

 TRANSITIONAL STUDIES  
OFFICES

 CEO  
CLASSROOMS AND LABS

 CEO  
OFFICES


 INFORMATION TECHNOLOGY  
CLASSROOMS AND LABS

 INFORMATION TECHNOLOGY  
OFFICES

 WORK FORCE  
OFFICES

 BUILDING  
SUPPORT SPACES

 ACCESSIBLE ADJACENCY

 OPERABLE WALL

 TRANSPARENCY

## FLOOR PLAN DRAWING KEY

CENTER FOR VOCATIONAL AND TRANSITIONAL STUDIES  
LOWER COLUMBIA COLLEGE

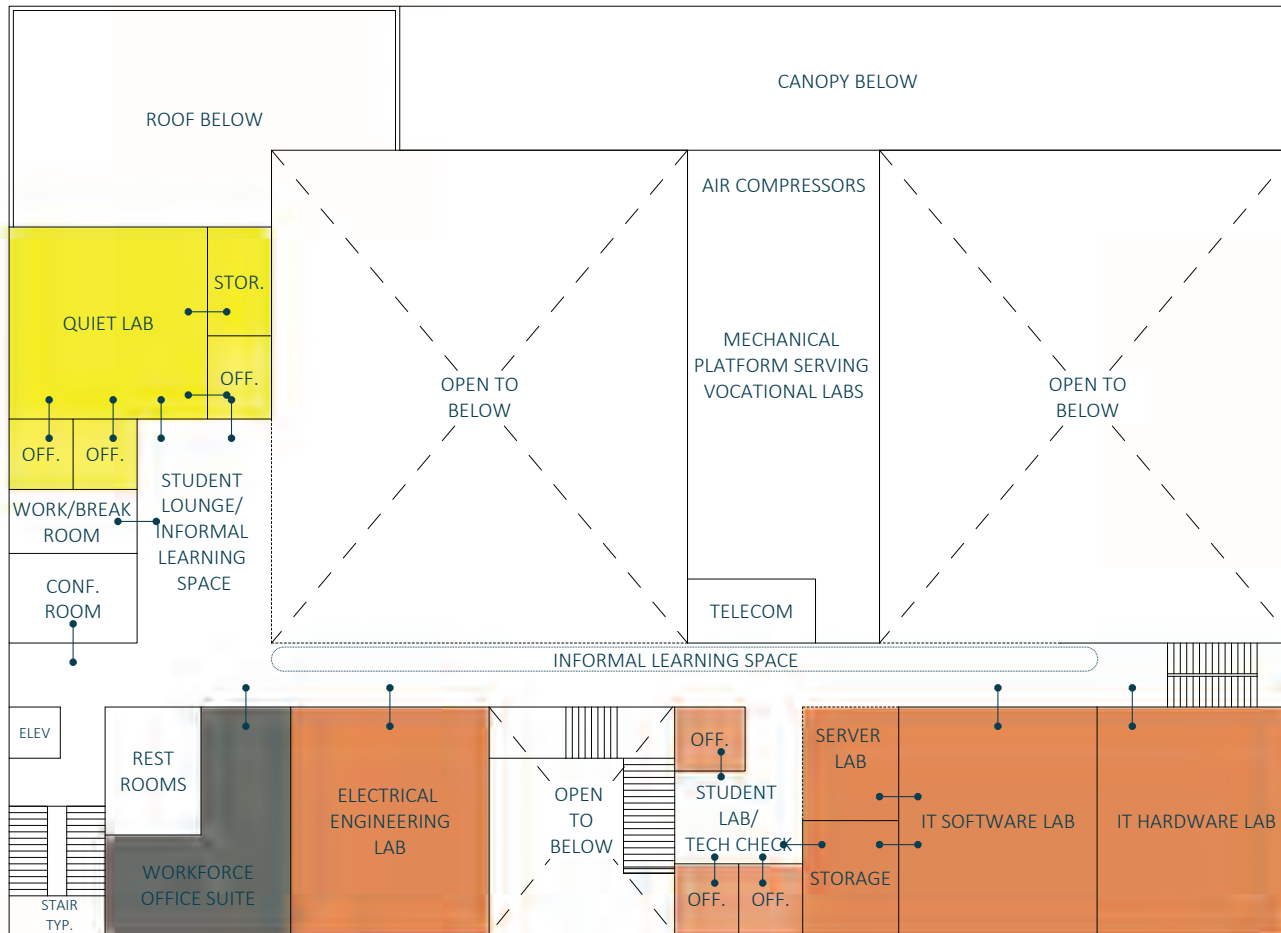
15 FEBRUARY 2022



## FIRST FLOOR PLAN

CENTER FOR VOCATIONAL AND TRANSITIONAL STUDIES  
 LOWER COLUMBIA COLLEGE

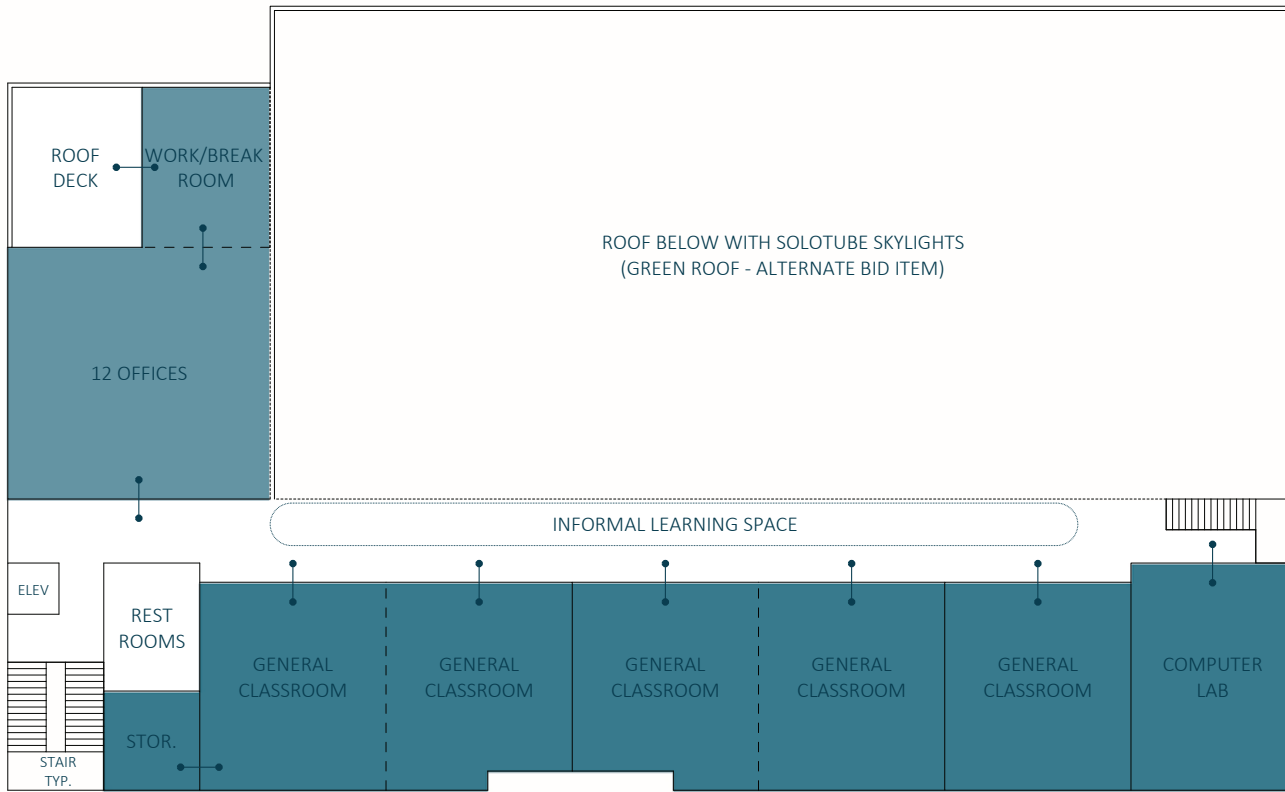
15 FEBRUARY 2022



## SECOND FLOOR PLAN

CENTER FOR VOCATIONAL AND TRANSITIONAL STUDIES  
 LOWER COLUMBIA COLLEGE

15 FEBRUARY 2022

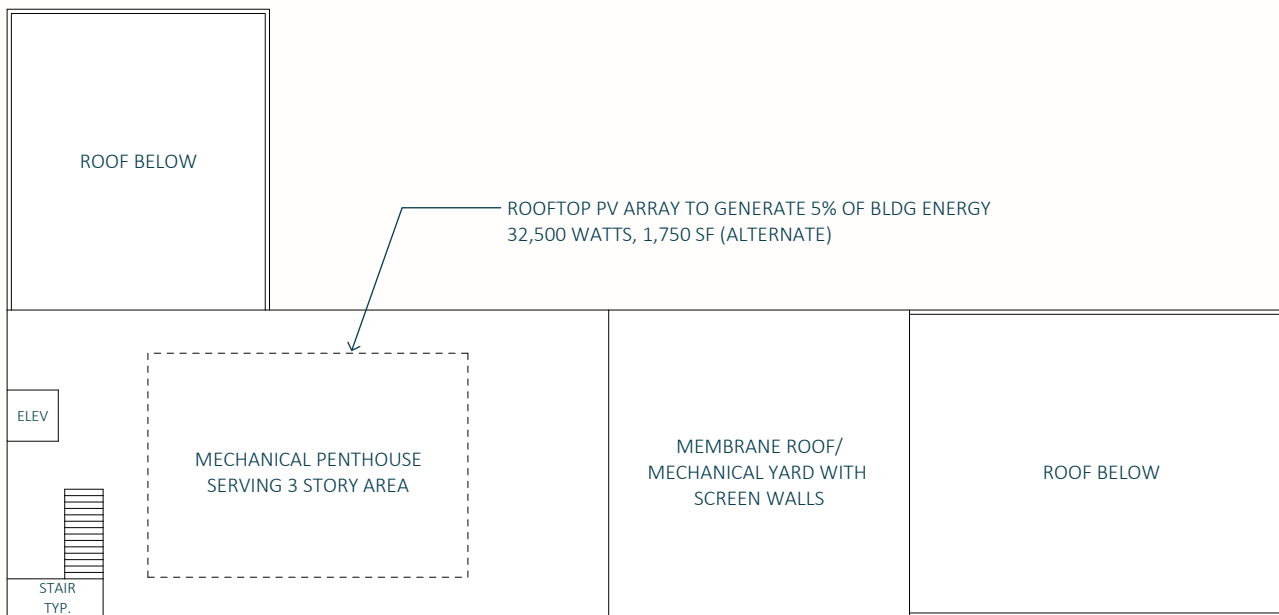


### THIRD FLOOR PLAN

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## MECHANICAL PENTHOUSE PLAN

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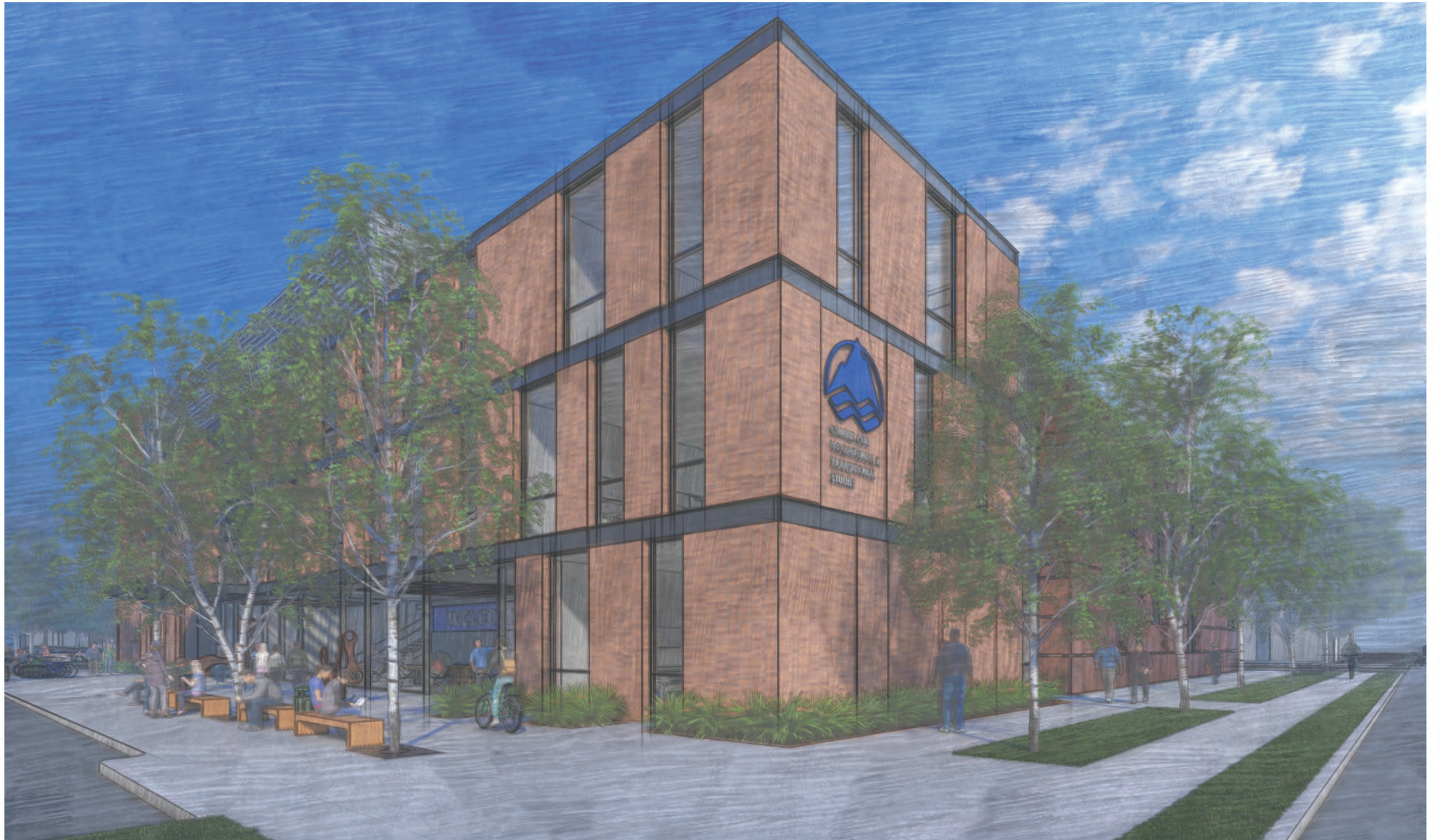


**PREDESIGN CONCEPT SKETCH 01**  
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FEBRUARY 2022



PREDESIGN CONCEPT SKETCH 02  
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**PREDESIGN CONCEPT SKETCH 03**  
CENTER FOR VOCATIONAL AND TRANSITIONAL STUDIES  
LOWER COLUMBIA COLLEGE  
FEBRUARY 2022

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# Lower Columbia College

## Strategy for Reducing Greenhouse Gas Emissions

June 30, 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)

Lower Columbia College’s mission is to prompt educational excellence in a multicultural environment. We ensure opportunities for academic achievement, workplace preparation and service to our community by creating a learning environment that is accessible, diverse, responsive and innovative. Sustainable practices are an extension of our mission and values to improve the economic and environmental performance of LCC’s campus facilities and grounds. LCC will strive to model the basic principles of sustainability as they relate to building, construction, activities and procurement and transportation management.

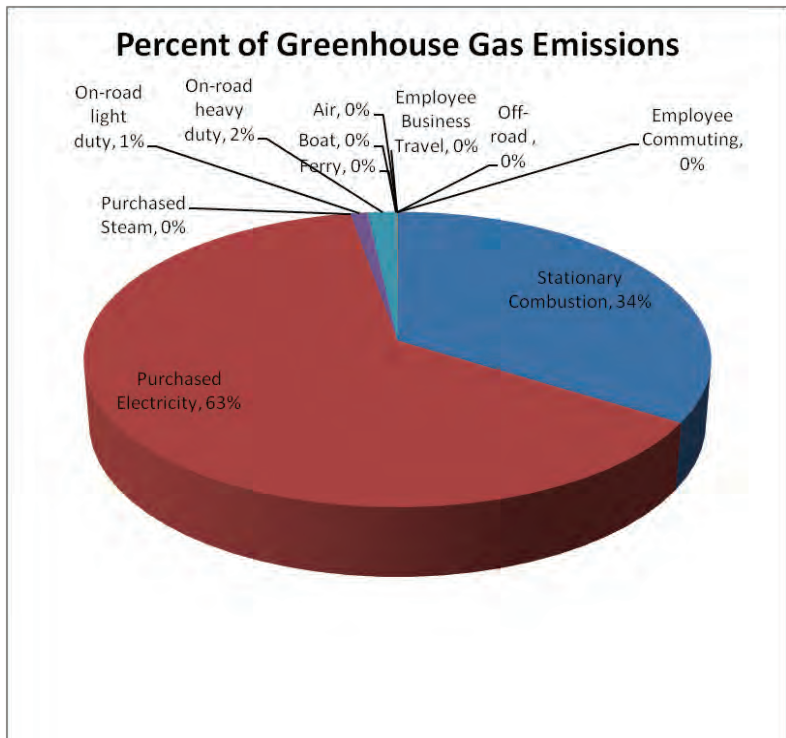
### 2. Greenhouse Gas Emissions from Agency Operations

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

<b>Year</b>	<b>Greenhouse Gas Emissions (metric tons carbon dioxide equivalent, MTCO<sub>2</sub>e)</b>
2005	2,576.7
2009	3,112.1
2020 (projected)	3,768.2
2035 (projected)	4,371.8

(Note: Figures do not include GHG emissions from buildings owned by General Administration. However, they do include GHG emissions from use of the GA Motor Pool.)

**B. Main sources of direct GHG emissions**



GHG emissions from building and fleet energy use for 2009

**C. Greenhouse Gas Reduction Targets**

Year	GHG Reduction Target (MTCO <sub>2</sub> e)
2020 (15% below 2005)	2,190.195
2035 (36% below 2005)	1,674.855
2050 (57.5% below 2005)	1,095.097

**D. Level of GHG Reduction Needed to Meet Targets**

Year	Amount of GHG Reduction Needed to meet Targets (MTCO <sub>2</sub> e)
2020	1578.005
2035	3276.703

### **3. Overarching Strategies (if applicable)**

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

After the completion of the 2010 GHG survey of 2005, 2008 and 2009 we have reevaluated how we approach and track our GHG emissions. We have improved the tracking of our information and now have a better understanding of what information is necessary to measure throughout the year. In some cases, such as fleet energy use, the data is tracked on a weekly basis. We are also increasing awareness of the importance of reducing GHG through our college website (in-progress) and making recycling readily available to campus employees, students and guests. At the end of every fiscal year will re-examine how our tracking and monitoring can be improved for the next year and what additional steps can be implemented to better reduce our GHG emissions.

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

#### **A. Strategies and Actions with Low to No Cost**

<b>Strategies and Actions</b>	<b>GHG Reduction Estimate Annual (MTCO<sub>2e</sub>)</b>	<b>Upfront Cost Estimate (\$)</b>	<b>Payback Period Estimate (Years)</b>	<b>Date to Implement Estimate</b>
<b>Building Energy Use</b>				
Use power management settings on computers	200	0	-	11-13 biennium
Increase recycling awareness and availability	35	\$500	1	11-13 biennium
Upgrade HVAC units of three buildings	10	-	-	11-13 biennium
<b>Fleet Energy Use</b>				
Reduce all vehicle idling	35	0	-	11-13 biennium
Increase vehicle use awareness (less miles)	10	0	-	11-13 biennium
<b>TOTALS:</b>	290	\$500	N/A	N/A

#### **B. Strategies and Actions with Payback up-to Twelve Years (or other time period determined by your agency)**

<b>Strategies and Actions</b>	<b>GHG</b>	<b>Upfront Cost</b>	<b>Payback</b>	<b>Date to</b>
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	<b>Reduction Estimate (MTCO<sub>2e</sub>)</b>	<b>Estimate (\$)</b>	<b>Period Estimate (Years)</b>	<b>Implement Estimate</b>
<b>Building Energy Use</b>				
Install new LED parking lot lights	5	\$2,500	7	13-15 biennium
Efficient lighting retrofits	30	\$1,500	.5	11-13 biennium
Implement "lights out at night" policy	415	\$12,000	.5	11-13 biennium
Install lighting occupancy sensors	415	\$12,000	.5	11-13 biennium
Build new construction to green building standards	50	New buildings/remodels	-	2011-2015
Build new construction to green building standards	200	New building	-	13-15 biennium
<b>Fleet Energy Use</b>				
<b>TOTALS:</b>	1,115	\$25,400	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)**

<b>Strategies and Actions</b>	<b>GHG Reduction Estimate (MTCO<sub>2e</sub>)</b>	<b>Upfront Cost Estimate (\$)</b>	<b>Payback Period Estimate (Years)</b>	<b>Date to Implement Estimate</b>
<b>Building Energy Use</b>				
Plant trees to shade buildings	5	\$280.00	16	11-13 biennium
Replace computers, monitors, printers and copiers with ENERGY STAR	155	Unknown	60	11-13 biennium
<b>Fleet Energy Use</b>				
Replace vehicles with smaller more fuel efficient vehicles	10	\$75,000	30	2011-2020

<b>TOTALS:</b>	170		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.

<b>Source of GHG Emissions</b>	<b>GHG Emissions, 2009 (or most recent year) (MTCO<sub>2</sub>e)</b>
Business Travel	
Employee Commuting	

\* If you don't have rough information leave these blank.

<b>Strategies and Actions</b>	<b>GHG Reduction Estimate (MTCO<sub>2</sub>e)</b>	<b>Upfront Cost Estimate (\$)</b>	<b>Payback Period Estimate (Years)</b>	<b>Date to Implement Estimate</b>
<b>Employee Business Travel</b>				
<b>Employee Commuting</b>				
<b>TOTALS:</b>			N/A	N/A

**6. Additional Sustainability Strategies and Actions (if applicable)**

<b>Strategies and Actions</b>	<b>Co-benefits for</b>	<b>Implementation</b>
-------------------------------	------------------------	-----------------------

	<b>GHG Reduction</b>	<b>Date Estimate</b>
Purchase eco-friendly products: <ul style="list-style-type: none"> <li>• Graduation caps and gowns made of plastic</li> <li>• Whole campus using 100% recycle paper</li> <li>• More green cleaning supplies</li> </ul>		2010-2011
Recycling: <ul style="list-style-type: none"> <li>• Plastic, wood, cardboard, aluminum, computers and monitors</li> <li>• All ink and toner cartridges are returned to HP for recycling</li> </ul>	Less garbage produced	2010-2011
Teleconferencing program “Elluminate” <ul style="list-style-type: none"> <li>• This program will reducing traveling for meetings and conferences</li> </ul>	Less road and air travel	2011

## **7. Next Steps and Recommendations**

Now that we have goals for reducing the college’s GHG emissions our next step is to implement the plan. As we implement our plan in reducing GHG emissions we will be able to evaluate what works and what needs to be modified or changed. New construction that takes place will be LEED certified buildings and will replace outdated buildings. Our newest building has daylight lighting and can be controlled through building management system (BMS). This is a feature that will be implemented in other buildings. Our motor pool fleet will be reduced and more fuel efficient vehicles will replace old vehicles. Awareness and resources to help reduce the college’s footprint will be made available to employees and students.

Please contact:  
 Richard Hamilton, Director of Campus Services  
 rhamilton@lcc.ctc.edu  
 360-442-2263  
 www.lowercolumbia.edu (website in progress)

OR

Kaylyn Smith, Administrative Assistant  
 kdsmith@lcc.ctc.edu  
 360-442-2261

When finalized, e-mail to [joanna.ekrem@ecy.wa.gov](mailto:joanna.ekrem@ecy.wa.gov), [Hedia.adelsman@ecy.wa.gov](mailto:Hedia.adelsman@ecy.wa.gov), and [Karisa.duffey@ecy.wa.gov](mailto:Karisa.duffey@ecy.wa.gov) . The file name should include the agency acronym, the word GHG strategy, and the submission date – for example, ECY GHG Strategy June 30 2011.doc.



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10. LEED checklist & integrated design  
workshop notes



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

## Project Checklist

Project Name: LCC Center for Vocational & Transitional Studies

Date: 1/6/2022

Y ? N

1		Credit	Integrative Process	1
---	--	--------	---------------------	---

6	5	5	Location and Transportation	16
		0	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
1	1	3	Credit Access to Quality Transit	5
1			Credit Bicycle Facilities	1
	1		Credit Reduced Parking Footprint	1
1			Credit Green Vehicles	1

7	3	0	Sustainable Sites	10
Y			Prereq Construction Activity Pollution Prevention	Required
1			Credit Site Assessment	1
2			Credit Site Development - Protect or Restore Habitat	2
1			Credit Open Space	1
2	1		Credit Rainwater Management	3
	2		Credit Heat Island Reduction	2
1			Credit Light Pollution Reduction	1

4	2	5	Water Efficiency	11
Y			Prereq Outdoor Water Use Reduction	Required
Y			Prereq Indoor Water Use Reduction	Required
Y			Prereq Building-Level Water Metering	Required
1	1		Credit Outdoor Water Use Reduction	2
2	1	3	Credit Indoor Water Use Reduction	6
		2	Credit Cooling Tower Water Use	2
1			Credit Water Metering	1

13	12	8	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
4	2		Credit Enhanced Commissioning	6
5	8	5	Credit Optimize Energy Performance	18
1			Credit Advanced Energy Metering	1
		2	Credit Demand Response	2
1	2		Credit Renewable Energy Production	3
		1	Credit Enhanced Refrigerant Management	1
2			Credit Green Power and Carbon Offsets	2

6	3	4	Materials and Resources	13
Y			Prereq Storage and Collection of Recyclables	Required
Y			Prereq Construction and Demolition Waste Management Planning	Required
3		2	Credit Building Life-Cycle Impact Reduction	5
1	1		Credit Building Product Disclosure and Optimization - Environmental Product Declarations	2
	1	1	Credit Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
	1	1	Credit Building Product Disclosure and Optimization - Material Ingredients	2
2			Credit Construction and Demolition Waste Management	2

10	6	0	Indoor Environmental Quality	16
Y			Prereq Minimum Indoor Air Quality Performance	Required
Y			Prereq Environmental Tobacco Smoke Control	Required
1	1		Credit Enhanced Indoor Air Quality Strategies	2
2	1		Credit Low-Emitting Materials	3
1			Credit Construction Indoor Air Quality Management Plan	1
2			Credit Indoor Air Quality Assessment	2
1			Credit Thermal Comfort	1
	2		Credit Interior Lighting	2
1	2		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	4	0	Regional Priority	4
	1		Credit Regional Priority: Specific Credit	1
	1		Credit Regional Priority: Specific Credit	1
	1		Credit Regional Priority: Specific Credit	1
	1		Credit Regional Priority: Specific Credit	1

<b>51</b>	<b>37</b>	<b>22</b>	<b>TOTALS</b>	Possible Points: <b>110</b>
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Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 110



1 0 0			Integrative Process		Possible Points: 1			
Y	?	N	d/C			Resp	Notes:	
1			d Credit	Integrative Process	1		Beginning in pre-design and continuing throughout the design phases, identify and use opportunities to achieve synergies across disciplines and building systems. Use the following analyses to inform the owner's project requirements (OPR), basis of design (BOD), design documents, and construction documents: Energy-related and Water-related systems - Discovery & Implementation.	

6 5 5			Location and Transportation		Possible Points: 16			
Y	?	N	d/C			Resp	Notes:	
			d Credit	LEED for Neighborhood Development Location	16		N/A	
1			d Credit	Sensitive Land Protection	1	MCG	McG 1/6/22: Development footprint is located on land that has been previously developed.	
		2	d Credit	High Priority Site	2		McG 1/6/22: Project is not in historic district, federal priority designation site or brownfield remediation site.	
2	3		d Credit	Surrounding Density and Diverse Uses	5	PBS	Option 1 - Surrounding Density: Locate on site whose surrounding existing density within 1/4 mile radius of project boundary meets values in Table 1 (2-3 pts); and/or Option 2 - Diverse Uses: Building's main entrance is within a 1/2 mile walking distance of main entrance of 4-7 (1 pt) or 8 or more (2 pts) existing and publicly available diverse uses (listed in Appendix 1).	
1	1	3	d Credit	Access to Quality Transit	5	PBS	Locate any functional entry of the project within 1/4-mile walking distance of existing or planned bus or informal transit stops, or within a 1/2-mile walking distance of existing or planned bus rapid transit stops. The transit service at those stops and stations must meet the minimums listed in Tables 1 and 2. LCC 1/6/22: LCC partners with local transit, has 2 stops along 15th, and LCC students are able to ride free.	
1			d Credit	Bicycle Facilities	1	MCG	1. Bicycle Network: Confirm site complies. 2. Bicycle Storage & Shower Rooms: Provide short-term bicycle storage for at least 2.5% of all peak visitors, but no fewer than four storage spaces per building. Provide long-term bicycle storage for at least 5% of all regular building occupants, but no fewer than four storage spaces per building in addition to the short-term bicycle storage spaces. Provide at least one on-site shower with changing facility for the first 100 regular building occupants and one additional shower for every 150 regular building occupants thereafter. LCC 1/6/22: Avoid shower in bldg if possible. See if showers in nearby Gym bldg would comply.	
	1		d Credit	Reduced Parking Footprint	1		This point is likely not feasible because we expect to get pts from Surrounding Density & Diverse Uses and Access to Quality Transit	
1			d Credit	Green Vehicles	1	PBS, BCE	Designate 5% of all parking spaces used by the project as preferred parking for green vehicles. Distribute preferred parking spaces proportionally among various parking sections (e.g. between short-term and long-term spaces). Install electrical vehicle supply equipment (EVSE) in 2% of all parking spaces used by the project. LCC 1/6/22:	

7 3 0			Sustainable Sites		Possible Points: 10			
Y	?	N	d/C			Resp	Notes:	
Y			C Prereq 1	Construction Activity Pollution Prevention				
1			d Credit	Site Assessment	1	PBS, SW, MCG	See USGBC's site assessment worksheet, a spreadsheet that teams can use to fulfill a portion of the documentation requirements.	

2			d Credit	Site Development - Protect or Restore Habitat	2	SW	Preserve and protect from all development and construction activity 40% of the greenfield area on the site (if such areas exist); and ON-SITE RESTORATION (2 pts) Using native or adapted vegetation, restore 30% (including the building footprint) of all portions of the site identified as previously disturbed. SW: will do quick calc for predesign.
1			d Credit	Open Space	1	SW	Provide outdoor space greater than or equal to 30% of the total site area (including building footprint). A minimum of 25% of that outdoor space must be vegetated (turf grass does not count as vegetation) or have overhead vegetated canopy. SW: will do quick predesign calc.
2	1		d Credit	Rainwater Management	3	PBS	PBS to clarify preferred option.
	2		d Credit	Heat Island Reduction	2	PBS, SW, MCG	Requires nonroof and roof measures. LCC: TPO roofing or metal; SW: site will be challenge.
1			d Credit	Light Pollution Reduction	1	BCE	

4	2	5	<b>Water Efficiency</b>	Possible Points: 11
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Y	?	N					Resp	Notes:
Y			d Prereq	Outdoor Water Use Reduction			SW	No irrigation or reduced irrigation.
Y			d Prereq	Indoor Water Use Reduction			BCE	For fixtures and fittings listed in Table 1, as applicable to the project scope, reduce aggregate water consumption by 20% from the baseline.
Y			d Prereq	Building-Level Water Metering			SW, BCE	Install water meters that measure total potable water use for building and associated grounds. Commit to sharing with USGBC the resulting whole-project water usage data for 5-year period beginning on date the project accepts LEED certification or typical occupancy, whichever comes first.
1	1		d Credit	Outdoor Water Use Reduction	2	SW		No irrigation or reduce landscape water requirement (LWR) by at least 50% from baseline for site's peak watering month. LCC: want permanent irrigation system w/ water & irrigation meter. Don't turn off, but reduce usage after initial.
2	1	3	d Credit	Indoor Water Use Reduction	6	BCE		25% reduction = 1 pt; 30% = 2; 35% = 3; 40% = 4; 45% = 5; 50% = 6. BCE: no showers means limited to restrooms so prob 2 pts w/o rainwater harvesting. LCC does not want harvesting.
		2	d Credit	Cooling Tower Water Use	2			N/A
1			d Credit	Water Metering	1	BCE		Install water meters for 2 or more of the following water subsystems, as applicable to the project: Irrigation, indoor plumbing fixtures, domestic hot water, boiler, reclaimed water.

13	12	8	<b>Energy and Atmosphere</b>	Possible Points: 33
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Y	?	N					Resp	Notes:
Y			C Prereq	Fundamental Commissioning and Verification			LCC	
Y			d Prereq	Minimum Energy Performance			BCE	BCE: Whole building energy simulation.
Y			d Prereq	Building-Level Energy Metering			BCE, LCC	Install new building-level energy meters, or submeters that can be aggregated to provide building-level data representing total building energy consumption. Utility-owned meters capable of aggregating building-level resource use are acceptable. Commit to sharing with USGBC the resulting energy consumption data and electrical demand data (if metered) for a 5-year period beginning on the date the project accepts LEED certification.
Y			d Prereq	Fundamental Refrigerant Management			BCE	
4	2		C Credit	Enhanced Commissioning	6	LCC, BCE		Enhanced Cx = 4 pts; Envelope Cx = 2 pts.
5	8	5	d Credit	Optimize Energy Performance	18	BCE		BCE: Chilled beam system preferred by LCC. Target 15% cost savings = 5 pts.
1			d Credit	Advanced Energy Metering	1	BCE		Install advanced energy metering for all whole-building energy sources used by the building; and any individual energy end uses that represent 10% or more of the total annual consumption of the building.
		2	d Credit	Demand Response	2	BCE		Design building and equipment for participation in demand response programs through load shedding or shifting. On-site electricity generation does not meet the intent of this credit.

1	2	d Credit	Renewable Energy Production	3	BCE	Use renewable energy systems to offset building energy costs. 1% = 1 pt; 5% = 2 pts; 10% = 3 pts. LCC: Solar
		d Credit	Enhanced Refrigerant Management	1	BCE	BCE: No with VRF system, but VRF helps energy performance category.
2		c Credit	Green Power and Carbon Offsets	2	LCC	Engage in contract for qualified resources for min. 5 yrs: specify provision of at least 50% (1 pt) or 100% (2 pts) of the project's energy from green power, carbon offsets, or renewable energy certificates (RECs).

6	3	4	<b>Materials and Resources</b>				Possible Points: 13
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Y	?	N					Resp	Notes:
Y			d Prereq	Storage and Collection of Recyclables			LCC, MCG	Provide dedicated areas accessible to waste haulers and building occupants for the collection and storage of recyclable materials for the entire building. Collection and storage areas may be separate locations. Recyclable materials must include mixed paper, corrugated cardboard, glass, plastics, and metals. Take appropriate measures for the safe collection, storage, and disposal of two of the following: batteries, mercury-containing lamps, and electronic waste.
Y			c Prereq	Construction and Demolition Waste Management Planning			MCG	Develop and implement a construction and demolition waste management plan.
3	2		d Credit	Building Life-Cycle Impact Reduction	5		MCG	Demonstrate reduced environmental effects during initial project decision-making by reusing existing building resources or demonstrating a reduction in materials use through life-cycle assessment. Achieve one of the following options: Bldg & Material reuse (2-4 pts) or Whole Bldg Life-Cycle Assessment (3 pts) - conduct life-cycle assessment of the project's structure and enclosure that demonstrates a min 10% reduction, compared with a baseline building, in at least 3 of 6 impact categories, one of which must be global warming potential. No impact category assessed as part of the life-cycle assessment may increase by more than 5% compared with the baseline building.
1	1		c Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2		MCG	V4 = Option 1 - EPD (1 pt): Use at least 20 different permanently installed products sourced from at least 5 different manufacturers that meet one of the disclosure criteria; Option 2 - Multi-attribute Optimization (1 pt): Use products that comply with one of the criteria below for 50%, by cost, of the total value of permanently installed products in the project. (Use V4.1 which is less stringent)
	1	1	c Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2		MCG	V4 = Option 1 - Raw Material Source & Extraction Reporting (1 pt): Use at least 20 different permanently installed products from at least 5 different manufacturers that have publicly released a report from their raw material suppliers which include raw material supplier extraction locations, a commitment to long-term ecologically responsible land use, a commitment to reducing environmental harms from extraction and/or manufacturing processes, and a commitment to meeting applicable standards or programs voluntarily that address responsible sourcing criteria; Option 2 - Leadership Extraction Practices (1 pt): Use products that meet at least one of the responsible extraction criteria below for at least 25%, by cost, of the total value of permanently installed building products in the project. (Use V4.1 which is less stringent.)

1	1	C Credit	Building Product Disclosure and Optimization - Material Ingredients	2	MCG	V4 = Option 1 - Material Ingredient Reporting (1 pt): Use at least 20 different permanently installed products from at least 5 different manufacturers that use any of the following programs to demonstrate the chemical inventory of the product to at least 0.1% (1000 ppm); Option 2 - Material Ingredient Optimization (1 pt): Use products that document their material ingredient optimization using the paths below for at least 25%, by cost, of the total value of permanently installed products in the project; Option 3 - Product Manufacturer Supply Chain Optimization: Use building products for at least 25%, by cost, of the total value of permanently installed products in the project that... (Use V4.1 which is less stringent.)
2		C Credit	Construction Waste Management	2	MCG	Recycle and/or salvage nonhazardous construction and demolition materials. Calculations can be by weight or volume but must be consistent throughout. Option 1: Divert 50% and 3 material streams (1 pt); divert 75% and 4 material streams (2 pts). Option 2: Do not generate more than 2.5 pounds of construction waste per square foot of the building's floor area (2 pts).

10	6	0	<b>Indoor Environmental Quality</b>	Possible Points: 16
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Y	?	N				Resp	Notes:
Y			d Prereq	Minimum Indoor Air Quality Performance		BCE	Meet the requirements for both ventilation and monitoring.
Y			d Prereq	Environmental Tobacco Smoke Control		LCC	Prohibit smoking inside the building. Prohibit smoking outside the building except in designated smoking areas located at least 25 ft from all entries, outdoor air intakes, and operable windows.
1	1		d Credit	Enhanced Indoor Air Quality Strategies	2	BCE, MCG	Enhanced IAQ Strategies (1 pt); Additional Enhanced IAQ Strategies (1 pt).
2	1		C Credit	Low-Emitting Materials	3	MCG, LCC	Includes requirements for product manufacturing as well as project teams. It covers VOC emissions in the indoor air and the VOC content of materials, as well as the testing methods by which indoor VOC emissions are determined. Different materials must meet different requirements to be considered compliant for this credit. The building interior and exterior are organized in 6 categories, each with different thresholds of compliance. Option 1: Product Category Calculations; Option 2: Budget Calculation Method (Question for LCC - include furniture?)
1			C Credit	Construction Indoor Air Quality Management Plan	1	MCG	Develop and implement an indoor air quality (IAQ) management plan for the construction and preoccupancy phases of the building.
2			d Credit	Indoor Air Quality Assessment	2	BCE, MCG	Option 1: Flush-out (1 pt); or Option 2: Air Testing (2 pts)
1			d Credit	Thermal Comfort	1	BCE	Option 1: ASHRAE Standard 55-2010; or Option 2: ISO & CEN Standards; and provide individual thermal comfort controls for at least 50% of individual occupant spaces. Provide group thermal comfort controls for all shared multioccupant spaces.
2			d Credit	Interior Lighting	2	BCE	Option 1: Lighting Control (1 pt) - for at least 90% of individual occupant spaces, provide individual lighting controls that enable occupants to adjust the lighting to suit their individual tasks and preferences, with at least three lighting levels or scenes (on, of, midlevel); and/or Option 2: Lighting Quality (1 pt) - Choose 4 of qualifying strategies.

1	2		d Credit	Daylight	3	MCG	Provide manual or automatic (with manual override) glare-control devices for all regularly occupied spaces; and Option 1: Simulation - Spatial Daylight Autonomy & Annual Sunlight Exposure (2-3 pts) - demonstrate through annual computer simulations that spatial daylight autonomy of at least 55%, 75%, or 90% is achieved and annual sunlight exposure of no more than 10% is achieved; or Option 2: Simulation - Illuminance Calculations (1-2 pts) - demonstrate through computer modeling that illuminance levels will be between 300 lux and 3,000 lux for 9 a.m. and 3 p.m., both on a clear-sky day at the equinox, for the floor area indicated in Table 2.
1			d Credit	Quality Views	1	MCG	Achieve direct line of sight to the outdoors via vision glazing for 75% of all regularly occupied floor area; and 75% of all regularly occupied floor area must have at least 2 of qualifying 4 kinds of views.
1			d Credit	Acoustic Performance	1	AE	For all occupied spaces, meet requirements, as applicable, for HVAC background noise, sound isolation, reverberation time, and sound reinforcement and masking.

4	2	0	<b>Innovation</b>		Possible Points: 6	
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Y	?	N					Resp	Notes:
1			d/C Credit	Innovation in Design: Educational Program	1	MCG		
1			d/C Credit	Innovation in Design: Green Housekeeping	1	LCC		
1			d/C Credit	Innovation in Design: Exemplary Construction Waste Management	1	GC		
	1		d/C Credit	Innovation in Design: TBD	1	MCG		
	1		d/C Credit	Innovation in Design: TBD	1	MCG		
1			d/C Credit	LEED Accredited Professional	1	MCG		

0	4	0	<b>Regional Priority Credits</b>		Possible Points: 6	
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Y	?	N					Resp	Notes: Earn up to 4 of the 6 Regional Priority credits.
			d/C Credit	Regional Priority: Demand Response	1	MCG		Required point threshold: 1
	1		d/C Credit	Regional Priority: Bldg Product Disclosure & Optimization - Sourcing of Raw Materials	1	MCG		Required point threshold: 1
	1		d/C Credit	Regional Priority: Renewable Energy Production	1	MCG		Required point threshold: 2
	1		d/C Credit	Regional Priority: Bldg Product Disclosure & Optimization - Environmental Product Declarations	1	MCG		Required point threshold: 1
			d/C Credit	Regional Priority: Rainwater Management	1	MCG		Required point threshold: 3
	1		d/C Credit	Regional Priority: Indoor Water Use Reduction	1	MCG		Required point threshold: 4

51	37	22	<b>Total</b>		Possible Points: 112	
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Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110



## Meeting Notes

LEED Integrated Design Workshop

Prepared by: Dennis N. Adjetej

January 6, 2022, 12:30 pm

### Attendees:

■ Nolan Wheeler (NW)	LCC	■ Ben Hedin (BH)	BCE Electrical
■ Richard Hamilton (RH)	LCC	■ Scott Zimbelman	BCE Mechanical
■ Maureen White (MW)	PBS	■ Matt Lane (ML)	mcg-ARC
■ Vinita Sidhu (VS)	Site Workshop	■ Ben Fields (BF)	mcg-ARC
■ Avee Oabel (AO)	Site Workshop	■ Dennis Adjetej (DA)	mcg-ARC

### ITEMS DISCUSSED

#### I. GENERAL SUSTAINABILITY PRIORITY GOALS

- A. Team members proposed sustainability priorities for the project:
  1. NW: Improve parking areas and stormwater drainage
  2. RH: Add electric vehicle charging stations
  3. MW: Increase pervious space and improve stormwater systems
  4. VS: Balance footprint of parking with pedestrian paths; provide a “good edge” along 15th Ave
  5. AO: Rain gardens
  6. BH: Electric vehicle charging stations
  7. SZ: Identify optimally performing mechanical system for this specific building
  8. BF: Select healthy materials
  9. ML: Renewable energy production – implement PV system, not just “PV ready”
- B. BF summarized project goals established by LCC’s design committee.

#### II. LCC LESSONS LEARNED

- A. NW summarized the college’s lessons learned from previous projects:
  1. Electric vehicle charging stations have worked well. However, they operate off a diesel generator when campus power is out, which is not preferred.
  2. NW prefers not to use rainwater recycling in building. The college has no prior experience but they have heard of poor experiences from other schools (e.g. discolored water).
  3. Stormwater filtration could be beneficial since the campus’s current stormwater feeds into nearby Lake Sacagawea.
  4. Indoor air filtration and air quality is a priority, especially with the welding lab.
  5. Health & Science Building (HSB) has PV panels on the roof and on exterior sunshades. The college likes that the panels are able to be seen by people using the building. The college has not been tracking how much energy the PV system is producing. They’re interested in a better way to be able to see and track the performance.

6. The HSB project received LEED Gold certification. NW is uncertain that LEED Gold can be afforded within the budget of the CVTS project, considering the high cost escalation of construction and materials. LEED Silver would be acceptable, but Gold would be better if feasible within budgetary constraints.
7. A portion of the HSB roof is a green roof on the 3<sup>rd</sup> floor deck. The college likes that it is adjacent to a roof patio, so can be seen and enjoyed by people using the building, as well as a teaching tool. A green roof application for this project would be good if it is visible/accessible.
8. Current LCC sustainability efforts are being led by student organization.
9. Waste management does not currently recycle plastic. Chilled water bottle fill stations would be good.

### III. LEED CATEGORIES

- A. See Project Checklist and Notes column for point targets and relevant notes for each LEED category. Additional discussion is summarized below:
- B. Integrative Process - beginning in predesign, the team is identifying and using opportunities to achieve synergies across disciplines and building systems, and will continue throughout the design phases.
- C. Location & Transportation
  1. Bike facilities – south plaza of new bldg would be good location for bike racks.
  2. Parking:
    - a) Meld new parking with existing north parking lot visually, as well as with any proposed water treatment.
    - b) Pervious asphalt – college prefers to avoid if possible - concerned about maintenance cost.
- D. Sustainable Sites
  1. Rainwater management: Raingardens - generally want to designate equivalent of 5-6% of impervious area for rain gardens; college wants to improve remainder of existing parking lot C with raingardens and connect new parking lot with lot C.
- E. Water Efficiency – generally, college wants to emulate existing systems from the HSB.
- F. Energy & Atmosphere
  1. Minimum Energy Performance – BCE will do some preliminary box modeling, then entire building energy simulation in the design phase.
  2. Building Level Energy Metering – college has previous experience with the 5-year reporting period and is comfortable with that expectation moving forward.
  3. Enhanced Commissioning – college has previous experience with this and commits to it.
  4. Optimize energy performance:
    - a) Using chilled beams and other elements (sim to HSB), BCE would anticipate a 15% “energy cost savings” which would accomplish approx. 5 points, and up to 5 additional points through other integrated elements. Using VRF system, would anticipate a 15% savings for approx. 5 points, and up to 8 additional points through other integrated elements. A ground-source geothermal system with vertical wells in parking lot could improve energy performance, but would have greater first cost.
    - b) The college has limited experience with geothermal and prefers not to use it. Maintenance is familiar with, but does not prefer, chilled beams because of sweating and other complexities. The college does not currently have a VRF system but is open to considering it for this project.

- c) Note: A VRF system was later agreed upon as the preferred system for this project, as a balanced solution between budget, energy performance and maintenance considerations, with a baseline Energy Use Intensity (EUI) target of 35-45 kBtu/ft<sup>2</sup> for this holistic building type. Energy simulation modeling will be performed in the design phase to support developing the optimal integrated design of the mechanical system, electrical lighting & loads, natural daylighting & shading, and building massing & envelope within the allowable budget.
- 5. Advanced energy metering – college wants to include; increases first cost, but data provided would be helpful.
- 6. Renewable energy production:
  - a) The college would like to include a PV array generating between 1% - 10% of the new building's energy.
  - b) Note: BCE/McG later confirmed rooftop of penthouse could fit PV array to provide 10% of new building's energy. Other roof and sunscreen areas could fit PV to provide higher percentages and move closer to net zero energy. Through the predesign scope/budget alignment process, the college decided to assign "PV ready" as base bid scope and a PV array generating 5% as additive alternate bid item, and to further analyze cost-feasibility in the design phase.
- 7. Green power and carbon offsets – the college committed to achieving these as buffer points.
- G. Materials & Resources
  - 1. Building Product Disclosure and Optimization - Environmental Product Declarations - important to the team to use healthy materials, committed to achieving 1 point min.
  - 2. Construction Waste Management – we been able to receive up to 95% in previous projects and will specify that goal for this project.
- H. Indoor Environmental Quality
  - 1. Low-emitting Materials – McG specifies low VOC materials and committed to achieving 2 points.
  - 2. Daylight – the relatively narrow 3-story building footprint will help maximize natural daylight. The college likes the idea of Rooftop Solatube skylights for the welding and machining labs. The team set a goal to provide, at a minimum, direct daylight to all primary formal educational spaces and indirect, or borrowed, daylight to all informal educational spaces and offices.
- I. Innovation in Design
  - 1. ML as LEED-accredited professional achieves 1 point in this category. McG has been able to accomplish an additional 3 points in this category for previous projects, e.g. with Educational Program, Green Housekeeping, and Exemplary Construction Waste Management. The team committed to pursue an additional 3 points in this category, with 2 possible (TBD during the design phase).
- J. Regional Priority
  - 1. McG identified up to the maximum 4 allowable Regional Priority points that may be able to achieve, depending on the required point thresholds the project ultimately earns for these items.

#### IV. LEED BOUNDARY & SUMMARY

- A. LEED Site Boundary: Team agreed to define LEED site boundary to include the entire construction area – phase 1 – location of new building; and phase 2 – location of demolition of existing buildings / new parking and landscaping.
- B. Summary: Considering the high number of "yes" and "maybe" points that could be earned in the project, the team agreed to set a goal to achieve LEED Gold certification (to be confirmed with estimating/budgeting at each design phase.)





**LOWER COLUMBIA COLLEGE (LCC)  
CENTER FOR VOCATIONAL AND TRANSITIONAL STUDIES**

Longview, Washington

January 24, 2022

***Civil Engineering Narrative***

The project entails the construction of a new Center for Vocational and Transitional Studies (CVTS) building. The new three-story building will be located on the north side of the LCC campus, along 15<sup>th</sup> Avenue, east of the existing Vocational Building, and south of the Dan Talley Building. Construction of the new building includes associated parking areas, pedestrian/ADA access, utility extensions and demolition of existing buildings.

Emergency Access/ Vehicle Circulation

The new CVTS building will have access through 15<sup>th</sup> Avenue. Access drives from 15<sup>th</sup> Avenue exist north and south of the proposed building location. The new building will be constructed on an existing parking area. The south portion of the parking lot will remain to serve the building. Vehicular circulation will be provided through the connection of the remaining portion of the south parking lot and a new parking lot that will be constructed on the west side of the new building.

Pedestrian/ADA Access

The project will meet the American with Disability Act (ADA) requirements by providing accessible parking stalls and sidewalks/pathways as close to the building as possible and in both, the south and west parking lots. Additional pedestrian connectivity will be provided through the campus for access to other buildings.

Utility Connections

Utility connections are readily available at the site. The City of Longview is the sanitary sewer, stormwater, and potable water purveyor.

- *Water*

There are two 8-inch public water lines near the building. One line is located in the access drive just north of the new building; the second water line is in 15<sup>th</sup> Avenue. The new building will require a new domestic water service (meter) and fire line connection for the sprinkler system. The required backflow protection units will be located inside the building. Two existing fire hydrants are located nearby on the east and west sides of the proposed building.

- *Sanitary Sewer*

An 8-inch sanitary sewer line is located south of the proposed building in the portion of the existing parking lot to remain. This existing sewer line will be utilized to serve the building.

- *Stormwater*

Stormwater runoff collection, conveyance, treatment, and disposal facilities will be constructed. New pollution producing impervious surfaces, such as parking lots will require runoff treatment; runoff from the new roof will only require collection and disposal. Rain Gardens (bio-infiltration facilities) are proposed to treat the post development runoff, and disposal will be achieved through infiltration.

In addition to providing stormwater runoff treatment for the new parking areas, a new rain garden will be provided to treat the runoff from the portion of the south parking lot that will remain.

An additional benefit to the project and the campus – an alternate will be provided to construct a new rain garden to treat the runoff of the existing parking lot west of the Don Talley Building – Lot B.

Infiltration testing will be required prior to design, to confirm the infiltration rates of the existing soils.

- *Dry utilities*

Dry utilities, such as gas, cable, and power are also available at the site. Survey information shows a gas line located in the access drive, north of the proposed building. Overhead power lines are also located along the same access and will need to be relocated underground.

### Offsite Improvements

No off-site improvements are anticipated

### Construction Sequencing/ Considerations

- *Demolition*

Four buildings will be demolished as part of the project, the Steam Plant, Vocational Building, Science Building, and the Physical Science Building. Demolition of these buildings will follow the construction of the CVTS building. The area currently occupied by these buildings will become a parking lot and open space.

The demolition phase of the project will require careful consideration of the existing utilities to ensure no disruptions to the rest of the campus.

- *20-inch water line*

There is an existing 20-inch steel public water main located just west of the proposed CVTS building. Due to the water line's existing conditions, including pipe material, age, and lack of proper cover, the line will need to be protected during construction.

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## **Landscape Architectural Predesign Narrative.**

Phase 1 of the LCC 15-Year Development Plan for Facilities proposes replacing the existing Vocational, Applied Arts, and Science Classroom buildings with a singular building: the Center for Transitional and Vocational Studies (CVTS).

The design for the CVTS Building addresses LCC's need for a flexible space to accommodate the College's machine trades, manufacturing, welding, informational technology, and transitional studies programs. The design features labs, classrooms, and informal study spaces that prioritize creating an environment conducive to active learning, interdisciplinary collaboration, and teamwork.

The open spaces around the CVTS Building will support the College's goals of creating a more welcoming campus entrance, establishing a hierarchy of pedestrian corridors that connect the site to both the campus core and historic downtown Longview, and providing open spaces that support outdoor recreation, learning, and gathering.

This narrative provides an overview of the project's goals and outlines the open spaces associated with Phase 1 of the LCC 15-Year Development Plan for Facilities.

## **Project Goals**

LCC establishes the following master planning strategies in their 2015 Facilities Master Plan:

- Establish a clear hierarchy of pathways and outdoor areas on campus through use of materials, plantings, and site lines to improve safety and way finding.
- Standardize plantings, trees, and site furnishings to give the campus a cohesive character and aesthetic.
- Make the edges of campus more inviting by adding street trees and improving the landscaping and trees in the outer parking lots.
- Create a front door experience on the east side of campus (along 15<sup>th</sup> Ave) that connects it to the historic downtown.
- Improve parking's relationship to campus and create a safe drop-off for pedestrians with lighting, pedestrian circulation paths, and landscaping.
- Provide appropriate fire department access in conjunction with the new larger buildings that will have specific fire department access requirements.
- Implement Low Impact Development (LID) Principles in selecting plants and topsoil to capture and retain stormwater thereby limiting the runoff entering the municipal system.
- Select plantings for drought tolerance and sustainability.
- Add sub-metering for existing irrigation to reduce costs.
- Link outlying buildings to the campus core via pedestrian paths, landscaping, and shared parking.
- Provide open spaces that serve a variety of outdoor activities including open lawn for informal recreation and hardscape spaces for outdoor gathering.
- Strengthen the civic presence of the College, especially as it relates to historic R. A. Long Square.

The LCC Vocational Education and Classroom Building 2016 Project Request Report (PRR) sets the following goals for the project site:

- Locate facility in a highly visible location on axis with the campus pedestrian mall and immediately adjacent to the main campus entry, the Admissions Building, and the Student Center Building.
- Connect the college's vocational and preparatory programs with the rest of campus, improving access and giving students a sense of pride in their educational pursuits.
- Provide spaces for formal and informal learning, interdisciplinary collaboration, and local workforce training.

## **Proposed Improvements**

### Third Floor Occupiable Roof Deck

The third floor of the CVTS Building features an occupiable roof deck adjacent to the Transitional Studies offices. The roof deck provides flexible space for events, outdoor learning, and everyday use by both students and faculty, meeting the College's goal of providing more outdoor space for events and faculty student engagement. Proposed improvements would include pedestal paving, site furnishings and raised planters. Planting approach to be determined based on structural capacity to support soil depths. A minimum of 36" depth soil is recommended if trees are desired, 18" minimum for larger perennial and shrubaceous plantings, 8"-12" for prairie species, and 6" minimum for sedums.

### Third Floor Green Roof (Additive Alternate)

The third floor of the CVTS Building could also feature a green roof above the first floor Vocational Labs. This green roof would support the project's sustainability goals by reducing heat island effects, absorbing stormwater, and improving air quality. 6" – 8" soil depth is recommended to allow for a mix of sedums, forbs, and grasses selected for their drought tolerance and resilience in exposed conditions.

### North Work Court

The outdoor space to the north of the building will be designed to support fabrication activities such as welding and the delivery and removal of materials. A functional space, pavements are to be designed to support vehicular loads and the wear and tear of fabrication activities. Vehicular strength concrete paving is recommended. A decorative metal fencing enclosure is to be designed to provide a safe and secure facility, but also aesthetic appeal and some visual porosity.

### South Building Entry Court

The main entry plaza to the south of the building will provide a welcoming entry for students and faculty and a place to spill outside and interact in the outdoors. It is envisioned that this long and narrow plaza will be populated with a grove of deciduous trees, allowing for solar access in the winter months and shading in the summer months. Additional low plantings, benches, seat walls and platforms are proposed to support informal studying, gathering or outdoor eating.

### West Building Court

The open area to the west of the CVTS Building is another opportunity to provide a green and welcoming edge for outdoor use. A line of deciduous trees is proposed to serve as a buffer between the building and the adjacent parking lot and to reduce heat island effect. The trees also serve to enhance the North-South pedestrian corridor and facilitate movement into the campus core. A bioretention planting area forms the west edge of this court, capturing water from the building and courts and from the parking lot to the west. As with the South Court, site furnishings interspersed with new tree plantings are proposed to provide a spot for students and faculty to sit outside for study and social interaction.

### Interim Campus Green

The area immediately south of the proposed west parking lot is an opportunity for the college to introduce an interim open space for outdoor learning, gathering, and recreation. The Interim Campus Green will also serve as a gateway to the LCC campus core for those entering from the 15<sup>th</sup> Ave. entrance.

As a portion of this site is a possible location for the future Welcome Center Building, improvements made in this area are temporary and intended to be replaced with the development of Phase 2 of the 2015 Facilities Master Plan.

This Interim Campus Green could utilize fill from other areas of the CVTS site to create a mounded meadow landscape. Introducing low mounds could shield this open space from the adjacent parking lots while still allowing for clear visibility and sight lines, creating a more welcoming and comfortable space for students, faculty, and campus visitors to enjoy. Introducing regenerative meadow plantings to LCC campus provides ecological diversity and habitat for pollinators. To provide additional seating and gathering space, the existing amphitheater could be maintained.

A mounded landscape also provides the campus open space that is different from existing open spaces on campus (the David B. Story Baseball field, Old Main courtyard, and Student/Rose Center hardscaped plaza) which feature flat, open areas for recreation and paved spaces for gathering. Providing a variety of open spaces enriches the student experience and creates opportunities for different learning styles and recreational activities.

### Vehicular Circulation & Parking

The CVTS site includes two parking lots: one to the south of the building (the southern half of existing Lot C) and one to the west. The south parking lot will be restriped to maximize parking efficiency. The west lot includes a pedestrian drop off area that leads to the existing Myklebust Gymnasium. Both lots integrate bioretention planting areas that address stormwater management and create a stronger, more inviting entry into campus for students, faculty, and visitors arriving by car.

To the north of the building, the existing east/west vehicular access path will be maintained.

### Pedestrian Corridors & Campus Edges

The 2015 Facilities Master Plan proposes a North-South Pedestrian Axis that connects to 16<sup>th</sup> Ave., terminating at historic R.A. Long Square and the Longview Public Library. This pedestrian axis will strengthen LCC's connection to and civic presence in the city of Longview.

Two North-South pedestrian paths: one that cuts through the interim campus green and one that follows the west edge of the south parking lot and connects to the existing Student Center: will converge to create this axis connecting to 16<sup>th</sup> Ave.

Along 15<sup>th</sup> Ave., an improved North-South pedestrian corridor could create a more welcoming campus edge and further support the campus connection to historic downtown Longview. Siting the CVTS Building along 15<sup>th</sup> Ave. sets the stage for a stronger "front door" experience for the college. Including a line of trees framing the building's east entry could support this goal by creating a more welcoming and comfortable pedestrian entry experience.

Additionally, two east-west pedestrian paths will border the west parking lot and connect the CVTS site to the rest of campus.

## Hardscape

Materials are to be selected for their durability and value and sustainable benefit to the project. Plaza and court areas are to be primarily cast in place concrete with sawcut joints, an exposed aggregate or sandblast finish. Sidewalks within parking areas to be broom finish. Sidewalk improvements as required along 15<sup>th</sup> Avenue to meet City of Longview standards.

## Site furnishings

The open spaces around the proposed CVTS building are to be populated with furnishings of a high level of finish and durability. Furnishings are located to create spaces for informal and formal learning and cross-disciplinary collaboration, outdoor eating, everyday social gathering, and larger events. Furnishings are anticipated in the plaza areas around the perimeter of the Center for Vocational and Transitional Studies and on the occupied roof terrace.

In the interim open space to the south of the new parking area, the existing concrete amphitheater is proposed to be maintained and refreshed. With more space around it and proposed re-grading, its utility and appeal as an outdoor gathering area is expected to increase. It is proposed that the concrete structure be power washed, and sand blasted to refresh the concrete surface.

## Tree & Plant Protection

Existing trees to remain are to be protected during construction. Contractor will be required to engage an Arborist to review tree protection measures and to be on site when work occurs within the critical root zone of existing trees to remain. No work shall occur within the inner critical root zone (inner half of the canopy) and work shall be minimized within the outer critical root zone.

## Planting

In all the open space and parking areas, an overlay of bioretention planting areas, meadow landscapes, and shade trees enhance the pedestrian experience, providing a visually engaging and comfortable outdoor environment for gathering.

Plant species will be selected for aesthetic function, ecological fit, drought tolerance, habitat value and ease of maintenance. Native species will be used where appropriate to strengthen the feeling of the geographical region and provide educational opportunities for learning about this environment. Adaptive species will also be used to add variety and seasonal interest to the plantings. Individual planting areas will group together species with similar watering needs selected to respond to site-specific micro-climate and soil conditions.

Bio-retention areas collect storm water off impervious surfaces in the site, provide temporary storage during storm events and water quality by filtering water through plantings and soil. (See civil drawings and specifications for depth calculations.) These bio-retention areas simultaneously help the project meet its water quality goals, introduce green welcoming edges, and enhance pedestrian corridors and parking areas.

Soil preparation shall apply best management practices for long-term health, water reduction, and reduced maintenance. Soil import to be as follows: 18" at bio-retention planting areas, 36" at new trees in a 3'x3' area, 12" at planting areas within plazas and 6" at lawn and meadow areas.

## Irrigation

Irrigation systems are to be designed to maximize resource efficiency and achieve project sustainability goals. The system is to be fully automatic and underground. Current water saving technologies are to be utilized, including evapo-transpiration monitoring and rain sensor overrides. A sub-meter shall be installed

to reduce sewer charges to the College. All systems components shall meet Lower Columbia College standards.

Irrigation is expected to run from May – October, with peak watering during the summer months. The system will be designed to maximize water efficiency with zones defined by site microclimates and plant types and groupings. The irrigation system is to be designed to meet LEED Outdoor Water Use prerequisite requirements and one point for Outdoor Water Use Reduction.





## OVERVIEW

The Center for Vocational and Transitional Studies (CVTS) project at Lower Columbia College (LCC) consists of approximately 46,267 square foot, 3-story steel framed building to house administrative and instructional program. Poor soils are present anticipating the need for soil improvements or deep foundations to support the building. Being located on a flat site, the anticipated risk of lateral spreading during a liquifiable event is thought to be relatively low. Structural systems will be provided to meet the criteria outlined in this report and be coordinated with the architecture and other building systems.

## BASIC SYSTEM

The foundation system and grade level framing are dependent on the geotechnical recommendations for the building site. Based on previous geotechnical studies and recommendations, the soil is known to be liquefiable meaning it generally loses the ability to support the foundations and building loads during a seismic event. Lateral spreading is the phenomenon where the soil will flow downhill as it loses stiffness in the liquefiable state. We do not believe lateral spreading is a concern for this building. However, this determination will need to be made by the geotechnical engineer and we anticipate they will recommend soil improvements or deep foundations for this project.

Soil improvements may consist of stone columns or deep soil mixing. Either of these methods change the soil characteristics and permit the use of conventional spread footings for the building. Conventional spread footings at interior steel columns will have an anticipated service load of 265 kips and roughly 8-foot square while exterior columns will have an anticipated service load of 150 kips and bear on 6-foot square spread footings cast integral with a continuous stem wall and strip footing at the building perimeter. At shop spaces an 8" slab on grade is expected while other programmatic spaces will require a 4" slab on grade. However, soil improvements have limitations on their effectiveness and cost efficiency depending on the depth of poor soils encountered. Also, due to the installation methods of soil improvements, noise and vibration should be considered as the nearby existing buildings built using conventional spread footings on these poor soils may be susceptible to increased settlement due to the soil improvements at CVTS.

If deep foundations are employed to address the poor soils, auger-cast concrete piles supporting grade beams and a structural slab on grade are anticipated to provide adequate performance while minimizing vibrations to nearby structures which would be associated with driven piles. A structural slab on grade supported by grade beams, pile caps and deep foundations is thought to be on the order of 12" thick at shop spaces requiring a higher live load capacity and 8" thick at administrative and instructional spaces where heavy loading is not required. The slab soffits are anticipated to be set at the same elevations and the height difference between these two structural slabs is to be bridged by installing an isolated topping slab to mitigate the noise and vibration present at the shop spaces. Grade beam size and grid spacing will depend on geotechnical recommendations. We anticipate recommended pile size will be on the order of 18" to 24" diameter and will be set on a 15 ft x 15 ft grid. Slabs will span to pile supported grade beams with an expected width of 18" and a depth of 24" below the slab soffit. Pile caps are expected to be on the order of 4 ft x 4 ft x 24" thick. The size and spacing of piles will be coordinated with the requirements of

**LOWER COLUMBIA COLLEGE CENTER FOR VOCATIONAL  
AND TRANSITIONAL STUDIES  
STRUCTURAL BASIS OF DESIGN**

the geotechnical engineer and these recommendations will necessarily impact the final design and size of the grade beams and thickness of the structural slabs on grade. The cost estimator is encouraged to hold a contingency to account for unknown geotechnical recommendations.

The primary above grade structure chosen for this building is composite steel beams with concrete on metal deck slab floor framing at the second & third floor and light gage metal decking supported from steel bar joists at the roof (level 4). The typical floor slab thickness is anticipated to be approximately 5 ½" thick and will be reinforced with rebar. At lab space with sensitive equipment, floor vibrations may control the design of the composite steel framed floor and a total slab thickness of 6 ½" is expected. Wide flange steel columns will have an approximate width and depth of 10" and will be set on a grid approximately 30 feet x 20 feet. Typical composite steel wide flange beams will be spaced approximately 7'-6" on center with a depth of 18", typical and 21" deep at vibration sensitive locations. Steel girders will be roughly 24" deep leading to an overall structural floor assembly of nearly 30" deep. Floor framing member depth may be reduced with further analysis in coordination with the owner's floor deflection and vibration tolerance. Typical roof framing is anticipated to consist of 12" deep wide flange beams approximately 7'-6" on center and 21" deep wide flange girders with metal roof deck. Roof framing will be designed to support mechanical equipment, a green roof, photovoltaic arrays, fall protection and window washing stations. A contingency of 20% should be carried to account for the variability in the owner's vibration criteria.

Wind and seismic forces will be resisted by steel buckling restrained braced frames located at the building perimeter and along the main corridor. Braced frames will be supported by either conventional spread footings and soil improvements or supported by grade beams and auger cast concrete piles. Elevator pit walls will be supported by 12" thick mat foundations with integrated sump pit below the slab. Concrete retaining walls at grade level are not anticipated given the relatively flat site.

The exterior wall assembly is anticipated to consist of light gage metal framing, densglass and architectural siding. Roof top mechanical screening and parapets will consist of a combination of light gage metal framing and tube steel supports cantilevered from the roof framing. Fall restraints and window washing equipment tie-off points will be coordinated to align with roof framing members below the metal deck.

The shop space includes an overhead bridge crane that is independently supported and isolated from the building columns. Additional heavy machinery and fabrication equipment is intended to be supported from the level 1 slab. Equipment anchorage will vary and areas of thickened slab at equipment are anticipated as needed.

### **Constraints**

1. The selection of the individual members of the structural system shall consider the overall structure depth of each floor level and the effect on ceiling cavity and other systems.
2. Floor vibration criteria to be determined with owner input.
3. The lateral force-resisting system is located to have the least interference with the openness of the office floor plate.

### **CODES, REGULATIONS AND STANDARDS**

- 2018 International Building Code (2018 IBC)
- ASCE 7-16 Minimum Design Loads for Buildings and Other Structures



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- ACI 318-14 Building Code Requirements for Structural Concrete
- AISC 341-16 & 360-16 Steel Construction Manual, Fifteenth Edition

**LOADINGS**

**Live Loads**

<b>Live Load</b>	<b>Min per ASCE 7 (psf)</b>	<b>Design for this project (psf)</b>	<b>Concentrated (lbs)<sup>4</sup></b>
Level 1 Lobbies, Corridors	100	<b>100</b>	2000
Shop space	100	<b>250</b>	25,000
Within 15' of Core on Upper Floors	80	<b>100</b>	2000
Corridors above Level 1	80	<b>80</b>	2000
Offices & Classrooms	50 <sup>3</sup>	<b>80</b>	2000
Roof (snow)	25	<b>25</b>	Fall protection, PV Array
Sidewalk with Fire truck accessibility	250	<b>250</b>	40,000 on outrigger
Storage – light & mechanical rooms	125 NR	<b>125 NR</b>	2000

NR: Not reducible

1. No live load reduction for beams, 20% max for columns
2. No live load reduction is used on beams because of future flexibility and vibration considerations. Columns have LL reduction limited as noted below.
3. Partition live load of 15 psf for all offices or other buildings where partition locations may be subject to change unless live load exceeds 80 psf.
4. Concentrated loads are distributed over an area of 2.5 ft x 2.5ft.

Live Load Reduction:

- ASCE 7-16 Sect 4.8: when  $K_{LL}A_T > 400 \text{ ft}^2$
- $A_T$  = tributary area,  $K_{LL}$  = element factor per Table 4-2
- $L = L_o(0.25 + 15/\sqrt{K_{LL}A_T})$ , but not less than  $0.5L_o$  for members supporting 1 floor and not less than  $0.4L_o$  for other members.
- Live loads over 100 psf may not be reduced except for members supporting two or more floors may be reduced by maximum 20%. Same for passenger car garages.

**Wind Design Criteria**

All components on the exterior of the building must resist wind forces. These forces often control the design of window glass, enclosure systems, canopies, sunshades, roofing and mechanical screens. The main structural system will be checked for wind force resistance.

Basic wind speed:	Special Wind Region
Exposure	B
Importance Factor:	included in Wind Speed
Internal Pressure Coefficient:	+0.18 and -0.18
No topographical influence	

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Wind on Cladding and Windows

Load maps to be provided

**Seismic Design Criteria**

The first issue in establishing seismic design requirements per the building code is to determine the classification of the building for Importance Factors for seismic, wind and snow. The Categories for purpose of determining Importance Factors for the structural design are not the same as the Occupancy Classifications in IBC Chapter 3. This is because the requirements in Chapter 3 are specific to the life-safety issues of each occupancy group (e.g. fire and exiting). The structural Occupancy Categories are established to assign levels of risk of structural damage relative to the need for the building after a catastrophic event, or the risk based upon the number of people in the facility and the ability to evacuate the building, if needed, in a timely manner.

This building will be designed as Structural Category III. For this category the building code requires the following:

1. Structure designed for a Seismic Importance Factor of 1.25 and Snow Importance Factor of 1.10.
2. Seismic Design Criteria:

Site Class:	D	
	$F_a = 1.20$	
	$F_v = 1.86$	
Seismic Design Category:	D	
Structural System:		
Buckling Restrained Braced Frames	$R = 8$	
	$\Omega_o = 2.5$	
	$C_d = 5$	
Site coefficients:	$S_s = 0.898$	
	$S_{DS} = 0.718$	
	$S_1 = 0.436$	
	$S_{D1} = 0.542$	
Seismic Base Shear:	$C_s = 0.113$	
3. Life-safety components required to function after an earthquake and components containing hazardous contents will be designed for an Importance Factor of 1.5. (ASCE 7-16 Section 13.1.3) These include:
  - Fire protection sprinkler system
  - Egress stairway framing
  - Stairway pressurization fans (if used)
  - Egress lighting and exit signage
4. The following non-structural components shall be designed and constructed to resist seismic forces with an importance factor of 1.0:

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- Mechanical and electrical components that are mounted 4 ft or less above the floor and weigh more than 400 lb.
- Mechanical and electrical components, weighing more than 20 lb mounted above 4 ft from the floor.
- Distribution systems weighing more than 5 lb/ft.
- Suspended ceilings & access floors
- Exterior enclosure systems
- Canopies
- Interior non-structural partitions

Special Inspections for Seismic Resistance per IBC 1707 and testing per 1708. This includes structural inspections and inspections of erection and fastening of exterior enclosure, mechanical, electrical and piping installation.

## **BUILDING ISSUES**

### **Geotechnical and Foundations**

Preliminary foundation sizes indicated are based on an assumed bearing pressure of 4,000 psf consistent with soil improvements outlined in the geotechnical report for a nearby project titled "Lower Columbia College Fine Arts Center, Longview, Washington" dated September 2004 prepared by Geocon Incorporated. While recommendations provided in the referenced Geotech report are consistent with our expectations for the site, a formalized geotechnical report will be required prior to submitting for permit and structural design will be revised to be consistent with the geotechnical recommendations.

### **Excavation of site**

Ground water is expected to be encountered relatively near the depth of excavations. Conventional sump pumping techniques are anticipated for dewatering the excavation if needed. Slope stability for open cutting is anticipated to be 1.5 to 1.

### **Floor Vibrations**

The perceptibility of vibrations of floor systems is often a concern for selection of a structural system. Vibrations are not an indication of a strength problem within a structure but can be uncomfortable to people using the facility. Vibrations may also be a concern for rooms utilizing vibration-sensitive equipment. The design of this facility will consider perceptibility by occupants, as well as sensitive equipment (if applicable) at laboratory spaces. The owner will need to provide vibration criteria for lab spaces in the design phase. We recommend an acoustical consultant be engaged during design to assist in determining acceptable floor vibration criteria.

Vibrations of floor systems that are perceptible to humans are most often induced by someone walking nearby. In addition to the requirements at the lab space, floor framing will be reviewed for vibrations and limited to levels that are considered acceptable to human perceptibility. The acceptable levels, measured by accelerations, are different depending on the activities in the areas. The general criteria for the floors in this building is an acceleration limit of 0.5% gravity. The analysis is dependent upon the configuration and sizes of the framing along with the type of finishes within the space. The factors used to represent finishes are subjective numbers that make the calculation of vibration perceptibility an approximation. Often conditions change if the area is redesigned or remodeled, and perception of vibrations may change as a result.

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Transmission of mechanical equipment noise and vibration will be considered based on recommendations of the acoustical consultant in conjunction with the mechanical engineer.

**TABLE 1**

<b>Recommended Acceleration Limit for Occupancies (expressed as % of gravity)</b>		
<b>Published Occupancy</b>	<b>Acceleration Limit</b>	<b>Areas in this project</b>
Offices, Residences, Churches	0.5%	Lobbies, Office floors
Shopping Malls	1.5%	
Footbridges – Indoor	1.5%	
Footbridges – Outdoor	5%	

(Table 1 taken from the American Institute of Steel Construction Design Guide 11 – Floor Vibrations Due to Human Activity)

**MATERIAL STRENGTH**

**Concrete**

- Foundations  $f'_c = 3,500$  psi
- Slab on Grade  $f'_c = 4,000$  psi
- Cast-in-place Walls  $f'_c = 4,000$  psi
- Slab on Metal Deck  $f'_c = 4,000$  psi

**Concrete Reinforcing**

- Reinforcing Steel ASTM A615,  $F_y = 60$  ksi
- WWF ASTM A185

**Structural Steel**

- Rolled Sections ASTM A-992,  $F_y = 50$  ksi
- Plates ASTM A-36,  $F_y = 36$  ksi
- Square & Rectangular HSS Sections ASTM A-500,  $F_y = 46$  ksi
- Round HSS Sections ASTM A-500,  $F_y = 42$  ksi
- Steel Pipes ASTM A-53,  $F_y = 35$  ksi

**Foundations**

- Bearing Pressures 4,000 psf (assumed)

Please note the anticipated structure outlined above is based on our understanding of the architectural programing and aesthetic goals using our experience in similar buildings. Structural recommendations will necessarily change as our design develops to accommodate architectural, mechanical, acoustical, and other design team coordination.

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# Lower Columbia College Vocational Building Predesign

## Mechanical Narrative

### CODES AND STANDARDS

The mechanical, plumbing, and fire protection design and construction will be in accordance with the applicable requirements of the following:

- Washington State Energy Code – Latest Approved Edition
- International Building Code – Latest Approved Edition
- International Mechanical Code – Latest Approved Edition
- Uniform Plumbing Code – Latest Approved Edition
- State and County Department of Health
- International Fire Code – Latest Approved Edition
- Local Fire Marshal
- National Fire Protection Association (NFPA)
- Washington Administrative Code (WAC) – latest approved edition
- The Americans with Disabilities Act (ADA)

### HEATING VENTILATING AND AIR CONDITIONING

The general Heating and Air Conditioning system shall be a Variable Refrigerant Flow (VRF) system. The system piping will be all copper with elastomeric insulation utilizing Branch Circuit Selector boxes to distribute the refrigeration to each terminal VRF unit. This system will serve all areas of the building except the Machining Lab, the Welding Lab and the Mechatronics Lab areas.

For this general system, each space will be heated and cooled with the VRF terminals which contain refrigerant based heat pump coils. Ventilation air to each zone will be supplied by a Dedicated Outdoor Air System (DOAS). Each DOAS will contain ECM type supply and exhaust fans, a total enthalpy heat exchanger, refrigerant based VRF coils, and filters. The DOAS units will be zoned to serve distinct areas in an effort to reduce the size and amount of distribution ducting from the DOAS to each individual space. A zone damper in each zone will modulate ventilation air based on space CO2 levels and occupancy. All DOAS units will be located in the upper mechanical penthouse.

Heating, ventilation, and air conditioning for the Machining Lab, Welding Lab, and Mechatronics Lab will be provided by individual variable air flow air handling units (AHU). The units will be located in the second floor Air Handling Unit Room that is directly adjacent to the lab areas. Each AHU will include refrigerant based VRF coils, filter/mixing box, and variable-capacity ECM (or VFD) supply fan motor to adjust supply airflow seasonally based on space heating and cooling requirements.

In addition to this equipment, make-up air louvers will be provided in each space for when the specialty exhaust systems are operating within each lab area. This make-up air will be tempered utilizing electric unit heaters to maintain Lab space temperature setpoints.

Generalized exhaust will be provided for the storage, utility, and toilet rooms. This air will be routed through the DOAS units along with building return air to recover the energy from the outgoing air to pretreat the incoming ventilation air prior to it being treated for final delivery by the heating and chilled water coils within the DOAS units.

Specialty Lab exhaust systems will be provided:

- Welding Lab will have (2) separate Exhaust collection systems:
  - (1) serving the (20) welding booths, (5) Oxy-Ace cutting stations, (5) Plasma cutting stations.
    - Each of the (20) welding booths will include a blast gate with snorkel and/or grated box top meet the curriculum requirements.
  - (1) serving the large Plasma cutting station (that is located outside in the storage area).
- Machining Lab will have (1) Central dust/material collection system and (1) collection system serving the welding/cutting station
  - The Welding/Cutting station may be self-contained and not a central collection system.

The elevator machine room, electrical rooms with transformers in them, and all communications rooms (MDF, IDF) will be provided with a ductless split system cooling unit.

Electric unit heaters will be provided in the upper penthouse mechanical room. A thermostatically controlled exhaust fan will cool the upper penthouse mechanical room to within 10 degrees of ambient outdoor air temperature. The ground level mechanical space will utilize an electric wall heater to provide freeze protection.

Access clearances for maintenance, repair, and removal of each piece of equipment shall be accommodated in all mechanical spaces.

#### **TEMPERATURE CONTROLS AND ENERGY MANAGEMENT**

A Direct Digital Control (DDC) system will be provided to control the new mechanical system. The DDC system will utilize the Honeywell Niagara platform and fully integrate with the campus-wide EMCS system. The global controller will be located within the upper penthouse mechanical room. Each classroom and administrative space will have individual temperature control. Occupant temperature adjustability will be  $\pm 1.3$  degrees Fahrenheit. The DDC system will also monitor power usage, domestic water, and natural gas consumption.



## **PLUMBING**

Institutional quality plumbing fixtures are to be utilized throughout the facility along with copper domestic water piping. Joints will be soldered or press type. PEX may be used for under-slab trap primer connection piping. All domestic waste and vent pipe within the building will be no-hub cast iron. Clean-outs will be located in walls to the greatest extent possible.

The domestic water header, including the backflow prevention device, shall be located in the ground level mechanical space. Domestic water is to be heated by high efficiency storage type gas-fired water heaters located in the upper penthouse mechanical room. The storage temperature shall be 140F with individual point of use mixing valves to temper the distribution hot water to 120F.

Each system shall be circulated as necessary to ensure hot water is delivered, in a timely manner, to all areas and fixtures. Water saving fixtures shall be used with manual flush valves and manual metered lavatory faucets. Water closet flush valves will be 1.28 gallon per flush type and urinal flush valves will be 0.13 gallon per flush.

Floor drains will be provided for each restroom, including single water closet restrooms and lab areas for wash down. The floor drains within the Lab areas will be routed to an oil/water separator. Hose bibbs will be provided in larger restrooms for convenience as well as in the Lab areas for general purpose use. Janitor's closets will be provided with utility sinks and floor drains. Exterior wall hydrants will be flush mount with door for protection from vandalism.

Fuel piping for the mechanical systems (Natural Gas) shall be run throughout the necessary areas in Schedule 40 Steel pipe.

Gas Piping storage for the Lab areas (Oxygen, Acetylene, Mixed Gas, Argon) will utilize large tanks that are brought in and stored in an exterior area. These tanks will include full and empty tanks for each gas and will include manifold systems for each. The tanks will be separated in areas to house Oxygen in one area, and the other gases in the other. The piping will be routed to specific areas within each lab to accommodate the curriculum:

- Argon/Mixed Gas to each of the (20) welding booths.
- Acetylene/Oxygen to (5) cutting stations in the Welding Lab and (1) cutting station in the Machining Lab.

Compressed Air shall be provided by a central screw type compressor with dedicated storage tank and air dryer. The system shall be located in the exterior area adjacent to the Welding and Machining Labs. The distribution piping shall be copper and include filtration and PRV stations at each outlet. Hose reels are to be provided in areas in the Lab areas.

## **FIRE SPRINKLING**

The building will be provided with fire sprinkler protection in accordance with NFPA #13. Sprinkler head guards will be provided for all sprinkler heads installed below 7 feet AFF and where subject to damage. A wet pipe sprinkler system is to be used for all spaces not subject to freezing (attic to be warm) and a dry pipe sprinkler system is to be used for all areas subject to freezing, including but not limited to the exterior covered areas.

Most spaces will be protected to the requirements of Light Hazard, Ordinary Hazard Group 1 and Ordinary Hazard Group 2 occupancies, but Extra Hazard protection may be required in selected areas (such as Compressed Flammable Gas storage). The fire sprinkler riser with double check valve assembly, wet system flow switch, dry system alarm valve and appurtenances shall be located in the ground level mechanical space. A floor control valve will be provided at each floor per NFPA #13 requirements for buildings exceeding two stories in height.

A Fire Department Connection (FDC) and Post Indicator Valve (PIV) will be provided on the building or in the yard in accordance with local AHJ requirements (yet to be determined). A mix of prescriptive and performance-based design specifications will be issued as part of the contract documents. The design of the fire protection system, including sprinkler layout and building department permit application, will be provided by the fire protection sprinkler system contractor.

**End of Mechanical Narrative**

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# Lower Columbia College Vocational Building Predesign

## Electrical Narrative

### CODES AND STANDARDS

The lighting, power, low voltage systems, and fire alarm design and construction will be in accordance with the applicable requirements of the following:

- Washington State Energy Code – Latest Approved Edition
- International Building Code – Latest Approved Edition
- National Electrical Code (NEC – NFPA 70) – Latest Approved Edition
- State and County Department of Health
- International Fire Code – Latest Approved Edition
- Local Fire Marshal
- National Fire Protection Association (NFPA)
- Washington Administrative Code (WAC) – Latest approved edition
- The Americans with Disabilities Act (ADA)
- EIA/TIA Standards – Latest Editions
- Illuminating Engineering Society of North America – 11<sup>th</sup> Edition Handbook

### SITE ELECTRICAL

The campus primary power distribution system is owned by the college and maintained by the utility via an operating agreement.

Several system modifications are required:

- The existing overhead distribution circuit between the proposed building location and the Don Talley Building will be rerouted underground from the street to the existing primary switch location.
  - Much of the underground work will be completed prior to disconnecting the overhead power lines.
  - The campus is set up with two Utility connection points, which should allow the overhead line to be isolated and replaced with minimal downtime to the majority of campus.
  - Special provisions will need to be made for the Don Talley Building to reduce/eliminate downtime.

- A new primary meter will be installed to accommodate the underground circuit and replace the existing overhead primary meter.
- The existing transformer, located in the to-be demolished Science Building, will need to remain (and be protected) in order to continue serving the Applied Arts Building.

In addition, the generator that is currently located between the Vocational Building and Steam plant will be relocated to a location closer to the Fitness Center.

A new service transformer will be located near the new Building and be served from the new portion of the underground primary distribution system.

New LED site lighting will be provided at new parking areas and pedestrian pathways. New fixtures will match the existing campus-standard luminaires. Lighting circuits will originate, and be controlled, from the new facility. Controls will consist of photocells inputs, astronomical time clocks, motion sensing and dimming systems.

Telecommunications cabling will be routed from the existing campus utilidor to the new facility. Existing conduits and fiber optic cabling will be intercepted where possible and reused.

## **BUILDING LIGHTING**

LED fixtures will be utilized throughout the facility. Special consideration will be given to each space type to ensure the selected fixtures synergize with the intended use of the space and type of ceiling. Occupancy, vacancy, and daylight harvesting sensors will be provided throughout most spaces as required by the Washington State Energy Code for automatic controls.

- Large aperture lensed industrial type fixtures will be utilized in the large open Lab spaces to ensure the spaces are bright, inviting, and adequately lit for the tasks involved.
  - Lighting controls will generally be on-off, and any daylight harvesting dimming systems will be designed to gradually adjust fixture brightness in response to incoming daylight.
  - Occupancy sensors will be avoided for safety purposes.
- Classrooms will be provided with recessed volumetric or direct/indirect illumination pendant fixtures as appropriate to the ceiling type.
  - Manual dimming and scene selection controls will be provided for each classroom to allow instructors to control the lighting levels appropriately for each activity.
  - An additional control point will be provided at the instructor podium.
- Offices will be provided with recessed volumetric or direct/indirect illumination pendant fixtures as appropriate to the ceiling type.
  - Manual dimming will be provided for each office to allow users to control their own lighting levels.
- Smaller labs will be provided with higher levels of lighting to ensure detailed tasks can be accomplished. Task lighting will be incorporated where appropriate to accommodate specialized tasks.
  - Manual dimming and scene selection controls will be provided for each small lab to allow instructors to control the lighting levels appropriately for each activity.
  - An additional control point will be provided at the instructor podium.

- Common spaces will be provided with linear recessed and pendant fixtures as appropriate for the ceiling and space type.
  - Controls will be centralized to allow the College to schedule when the fixtures are turned off, on, or dimmed.
- Utility and Storage spaces will be provided with lensed strip lights
  - Manual on-off and vacancy sensors will generally be provided for these spaces.
- Exterior building-mounted fixtures will be full cut-off type to limit light pollution. Fixture aesthetics will be carefully coordinated to ensure synergy with the surrounding architecture.
  - Controls will be centralized to allow the College to schedule when the fixtures are turned off, on, or dimmed.

### **BUILDING POWER**

A 480V service will be provided for the new Center for Vocational and Transitional Studies. Large mechanical equipment, select Lab Equipment, and lighting will be served at 480V to reduce conductor and gear sizing. Step-down transformers will be provided to reduce voltage to 120/208V for receptacles and small equipment. Branch panelboards will be provided throughout the facility as required to serve the loads and will contain approximately 20% spare load and circuit breaker capacity for future equipment additions. Lab spaces will be provided with dedicated panelboards as necessary to accommodate equipment. Circuits and Feeders will generally be routed in conduit throughout the facility.

Receptacles will be provided throughout the facility for general purpose use, office workstations, and fixed appliances/office equipment. Special purpose outlets and overhead bussing with disconnects will be provided for Lab equipment where identified. Connections for mechanical and architectural equipment will be provided as required.

A solar PV array is anticipated for the facility. The size is yet to be determined. The system will be connected to the utility via the main distribution board to allow excess power to be “banked”. An energy dashboard will be provided at a central location to display the amount of power generated.

### **BUILDING LOW VOLTAGE SYSTEMS**

Telecommunications:

The main telecommunications room will be centralized on the 2<sup>nd</sup> level to simplify and minimize cable routing. Separate data racks will be provided for each level to ensure cables are organized. Space will be maintained in each rack for owner-provided rack-mounted switches and UPS systems. Additional rack space will be provided for servers and miscellaneous equipment. Open wall space within the room will be provided with fire resistant plywood for equipment mounting. Ladder tray will be provided throughout the space for cable distribution.

Cabling will be Category 6 to all workstation and equipment outlets, except that Category 6A will be utilized for Wireless Access Points to increase bandwidth. Each workstation outlet will be provided with 3 or 4 jacks and associated cables to the centralized telecommunications room. Each private office will be provided with at least (2) data outlets to allow multiple furniture arrangements. Additional outlets and jacks will be provided as required for specialized equipment (network printers/copiers, AV systems, CCTV cameras, etc).

#### Audio Visual Systems:

Each classroom (and lab as appropriate) will be provided with an instructor podium that contains the room's Audio-Visual equipment. The equipment will control the voice enhancement/sound system, projector/monitor display, any recording or video teleconference equipment, and room lighting controls. The exact system type will be coordinated with the owner during design, but will be set up to allow IT staff to maintain the systems in lieu of outside vendors.

#### Electronic Security Systems:

The building will be provided with electronic security systems for safety and security of the occupants and equipment.

- Intrusion Detection System
  - Door position switches at exterior entry points
  - Motion sensors in interior high value spaces and corridors
  - Keypads at select entries
- Access Control System
  - Door position switches at exterior entry points
  - Proximity Card Readers at select exterior and interior doors
  - Shelter in place controls (as desired)
- Closed Circuit Television System
  - IP based Megapixel cameras
  - Interior and Exterior for entrances and perimeter
  - NVR upgrades (as needed)

All systems will be coordinated with the existing system types on campus.

#### Fire Alarm Systems:

A new addressable fire alarm system will be provided for the building. The system will consist of a centralized manual pull station, smoke detection, heat detection, and fire sprinkler monitoring as appropriate to each space and to meet code. Notification will consist of horns, strobes, and speakers as appropriate to each space and to meet code.

**End of Electrical Narrative**



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## Workforce and Economic Development

Objectives	Key Performance Indicators
1. Provide quality professional/technical education for employment, skills enhancement, and career development.	<ul style="list-style-type: none"> <li>a. Student performance</li> <li>b. Demonstration of program competencies</li> <li>c. College level math and English in first year</li> <li>d. Completion</li> <li>e. Licensure/certification rates</li> <li>f. Success after completion (placement rate in the workforce)</li> </ul>
2. Partner with business, community groups, and other educational entities to provide workforce development and customized programs and services.	<ul style="list-style-type: none"> <li>g. Client assessment of programs and services</li> </ul>

Strategic Initiative: Refine and revise our program mix to better serve the community, ensure that all students have access to viable career pathways, and expand our mission to incorporate bachelor of applied science degree programs.

Planning Category	Annual Priorities
Academic	<ul style="list-style-type: none"> <li>• Implement Bachelor of Applied Science (BAS) in Organizational Leadership and Technical Management.</li> <li>• Increase number of available Nursing program spots.</li> <li>• Continue to refine the Commercial Driver's License (CDL) program, including addressing program sustainability, staffing, maintenance and facilities needs.</li> <li>• Explore new curriculum and cooperative education opportunities for industrial trades' programs.</li> <li>• Analyze and apply lessons learned from the COVID-19 pandemic to instructional delivery methods and schedules to promote flexibility and support student success.</li> <li>• Continue to implement Guided Pathways workplan.</li> </ul>
Diversity/Equity	<ul style="list-style-type: none"> <li>• Utilize Curriculum &amp; Program Review process to reduce equity gaps in professional/technical programs.</li> </ul>
Facilities	<ul style="list-style-type: none"> <li>• Begin the planning/design process for the new vocational building.</li> <li>• Develop plans for a remodel and improvements to the Don Talley Vocational Building.</li> </ul>
Safety	<ul style="list-style-type: none"> <li>• Dispose of unneeded equipment in industrial trades' labs.</li> </ul>
Student & Community Engagement	<ul style="list-style-type: none"> <li>• Promote Washington College Grant opportunities with K-12 partners, including offering regular FAFSA (financial aid application) workshops.</li> <li>• Expand professional/technical program enrollment in high school dual enrollment programs.</li> <li>• Promote adult re-engagement in workforce programs.</li> <li>• Expand Continuing Education workforce training.</li> </ul>
Technology	<ul style="list-style-type: none"> <li>• Develop equipment lists for new vocational building.</li> </ul>

# Preparation for College Level Studies

Objectives	Key Performance Indicators
1. Ensure that students who are under-prepared for college level studies have access to developmental coursework and bridge opportunities to college level work.	<ul style="list-style-type: none"> <li>a. Basic skills achievement</li> <li>b. Preparation of incoming students</li> <li>c. Academic performance of developmental education students</li> </ul>

Strategic Initiative: Redesign our certificate and degree pathways and associated supports, addressing identified equity gaps, in order to maximize student achievement and learning.

Planning Category	Annual Priorities
Academic	<ul style="list-style-type: none"> <li>• Implement Basic Skills and Precollege integration as part of Guided Pathways.</li> <li>• Expand I-BEST offerings.</li> </ul>
Diversity/Equity	<ul style="list-style-type: none"> <li>• Increase the proportion of students transitioning from Basic Education for Adults to college level studies.</li> </ul>
Facilities	<ul style="list-style-type: none"> <li>• Analyze Transitional Studies' needs for the new vocational building.</li> </ul>
Student & Community Engagement	<ul style="list-style-type: none"> <li>• Assess students' knowledge of technology prior to the start of each quarter and provide resources as needed.</li> </ul>
Technology	<ul style="list-style-type: none"> <li>• Continue to expand technology access for Transitional Studies and other students.</li> </ul>

## Academic Transfer

Objectives	Key Performance Indicators
1. Offer courses and support for students to meet the requirements for transfer from Lower Columbia College.	<ul style="list-style-type: none"> <li>a. Student performance.</li> <li>b. Transfer readiness.</li> <li>c. Demonstration of General Education Outcomes</li> <li>d. College level math and English in first year</li> </ul>
2. Provide the support for transfer students to successfully transition to upper division college and university programs.	<ul style="list-style-type: none"> <li>e. Completion and academic transfer rate.</li> <li>f. Success after completion/transfer</li> </ul>

Strategic Initiative: Redesign our certificate and degree pathways and associated supports, addressing identified equity gaps, in order to maximize student achievement and learning.

Planning Category	Annual Priorities
Academic	<ul style="list-style-type: none"> <li>• Continue to implement Guided Pathways workplan.</li> <li>• Implement pre-nursing associate degree pathway.</li> <li>• Analyze and apply lessons learned from the COVID-19 pandemic to instructional delivery methods and schedules to promote flexibility and support student success.</li> </ul>
Diversity/Equity	<ul style="list-style-type: none"> <li>• Utilize Curriculum &amp; Program Review process to reduce equity gaps in academic transfer programs.</li> </ul>
Facilities	<ul style="list-style-type: none"> <li>• Finish renovating the Learning Commons.</li> </ul>
Student & Community Engagement	<ul style="list-style-type: none"> <li>• Strengthen recruiting and enrollment efforts, including promotion of opportunities available through the University Center.</li> </ul>
Technology	<ul style="list-style-type: none"> <li>• Maintain remote learning technology systems.</li> </ul>

## Student Access, Support and Completion

Objectives	Key Performance Indicators
1. Offer a full array of educational programs and support services to meet the diverse needs of Cowlitz and Wahkiakum counties.	a. Participation rates in service district b. Enrollment
2. Provide students with the support needed to pursue and achieve their educational goals.	c. Student persistence (overall) d. Completion (overall) e. Student satisfaction with support services f. Faculty-student engagement g. Student satisfaction with instruction

Strategic Initiative: Simplify our onboarding, advising and related support services to get and keep more students, including those from historically underrepresented groups and vulnerable populations, on the path to completion.

Planning Category	Annual Priorities
Academic	<ul style="list-style-type: none"> <li>• Continue to engage faculty in recruitment activities with prospective students, including building sustainable multicultural outreach to assist with developing key strategies, and planning and delivering events.</li> <li>• Continue to expand educational opportunities for high school students through the 'Open Doors' and 'College in the High School' programs.</li> <li>• Continue to work toward implementing alternative degree/certificate completion options for those pursuing selective admission programs such as nursing (e.g. pre-nursing DTA/MRP).</li> </ul>
Diversity/Equity	<ul style="list-style-type: none"> <li>• Identify and partner with culturally specific organizations and community leaders to better understand and support the needs of underrepresented students.</li> <li>• Continue to analyze data regarding barriers to onboarding and retaining underrepresented student populations.</li> <li>• Seek ways to increase enrollment of male students.</li> </ul>
Facilities	<ul style="list-style-type: none"> <li>• Refine comprehensive plan for college-owned housing for students.</li> </ul>
Student & Community Engagement	<ul style="list-style-type: none"> <li>• Improve timely and effective communication with students regarding financial aid, transfer, and other services and resources.</li> <li>• Continue to implement Guided Pathways workplan.</li> </ul>
Technology	<ul style="list-style-type: none"> <li>• Continue efforts to digitize student processes, including ongoing development of electronic forms, to promote accessibility and support modernization.</li> </ul>

## Institutional Excellence and Community Enrichment

Objectives	Key Performance Indicators
1. Demonstrate our commitment to institutional integrity by investing in our campus, students and employees.	a. Employee satisfaction and morale b. Condition of infrastructure
2. Uphold our reputation for high quality and contribute to the value of the community by promoting excellence in our programs, services and activities.	c. External perceptions/satisfaction with LCC

Strategic Initiative: Restructure our operating budget and systems to promote long-term viability, sustainability, and equity.

Planning Category	Annual Priorities
Personnel	<ul style="list-style-type: none"> <li>Analyze and apply lessons learned from COVID-19 pandemic to increase employee satisfaction and engagement, such as through expanded teleworking and remote attendance at meetings.</li> </ul>
Diversity/Equity	<ul style="list-style-type: none"> <li>Continue to expand recruitment efforts to reach underrepresented populations and continually assess hiring practices to ensure an inclusive and equitable process.</li> <li>Assess diversity of scholarship applicants to reduce potential equity gaps.</li> <li>Integrate Diversity and Equity Institutional Plan.</li> <li>Increase multicultural representation in public art on campus.</li> </ul>
Financial	<ul style="list-style-type: none"> <li>Maintain and promote sufficient revenues and reserves to provide sustainability for the College, particularly in light of the pandemic and subsequent enrollment declines.</li> </ul>
Safety	<ul style="list-style-type: none"> <li>Continue to manage and adjust COVID-19 health and safety protocols as needed.</li> <li>Explore implementation of emergency texting platform.</li> </ul>
Technology	<ul style="list-style-type: none"> <li>Continue implementation of ctcLink.</li> <li>Continue to work on integration of third-party applications with ctcLink.</li> <li>Continue to explore implementation of customer relations management (CRM) software.</li> <li>Maintain remote work technology systems.</li> </ul>





# Vocational Tour Notes

Prepared by: Dennis N. Adjetej

## I. GENERAL DISCUSSION

### LCC Comments and Preferences

- Hoping to have welding equipment outside of actual booths
- Zip Crane
- 3,000 SQFT outdoor welding space
- Every receptacle to its own breaker
- Flat outdoor workspace
- Enough space in locker area to store toolboxes (Stronghold cabinets)
- 135 decibels of sounds at the loudest
- Forklift: roughly 10 ft tall equipment lifted a few feet into the air

## II. LOWER COLUMBIA COLLEGE (LCC): NOVEMBER 29, 2021

### 1. Welding

- Adjacent classroom
  - Dedicated for welding
    - Classroom for machine/manufacturing cannot be shared with welding because of time conflicts
- Workable station within welding lab for instructor demonstration
- Open table workspace
- Computers that could potentially be mobile
- One of our goals was to have the fabrication space connected to weld shop classroom
- Booths
  - 5'x5' at the absolute minimum
  - 8'x9' maximum
  - Miller & Lincoln make welding booths
  - No preference in fume extraction, as long as it is future proof (regarding regulation)
  - 20 booths

### 2. Machine

- Remove partition walls where possible
- Centrally located service door
- Zones
  - Mill
  - Lathes
  - CNC equipment
    - More on display
    - Currently crammed together

- Heat-treat ovens
- Casting ovens
  - o May not be needed
- Single welding booth
  - o May not be needed
- Outdoor
  - o Needs material storage
  - o Flammable storage
- Inspection area
- Current classroom may not be needed
  - Lectures primarily in computer lab
- Visibility into workspace for passerby
- Classroom space directly adjacent to machine lab

### 3. Manufacturing

- Noise from machines currently interferes with lectures
- Manufacturing lab preferable has space for work done
- Lecture is the primary focus of these classrooms
  - Perimeter power
  - Power drops
  - White boards
- Dedicated storage
  - 120 SQFT
  - Adjacent to classroom
  - Lockable
- Classroom may share space layout with I.T. classrooms

## III. PCC OMIC: NOVEMBER 19, 2021

### 1. Welding Program

- Runs 8 weeks (normally 12 weeks with full enrollment)

### 2. 3-hour shop periods (5 hours with full enrollment)

### 3. Lifted outlets

- Within reach of workspaces

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### 4. Stationary, modular worktables



### 5. Tool Room

- Wide open
- Visible from machine shop

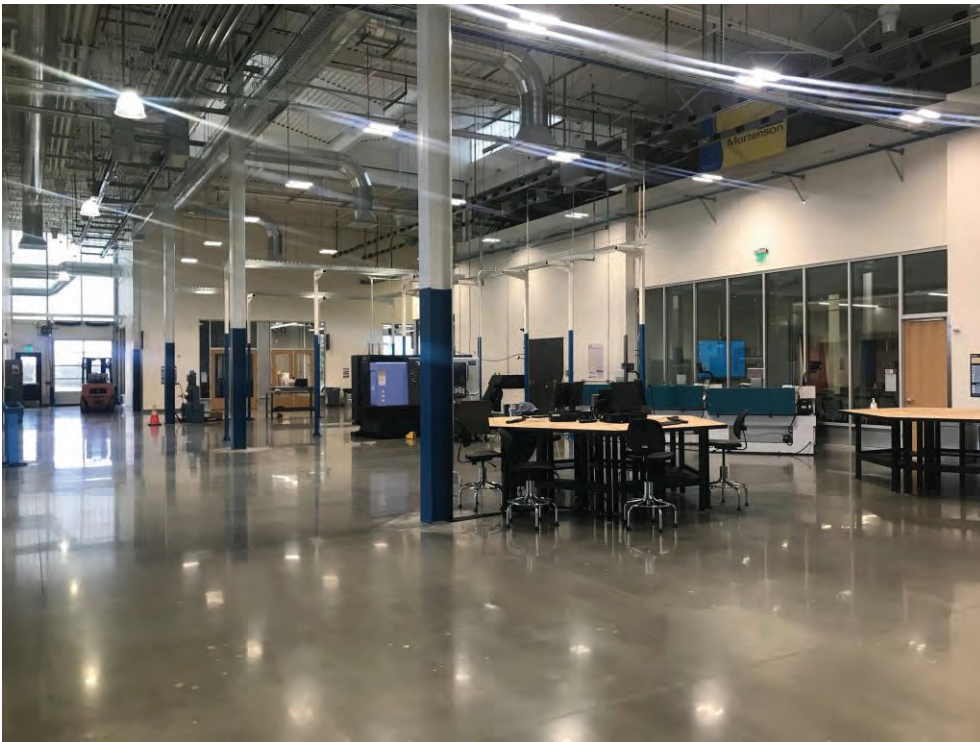


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### 6. Weld shop & Fabrication

- LCC would prefer:
- Booths along the walls (Larger than 5'x5')
- Wide open space
- Avoid wood
- Classroom between both shops
- Visibility into shop from as many angles, and locations within the shop as possible



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### 7. Booths

- Located in enclosed space (Not preferred)
- Manifold, lighting and switch within each individual booth
- Universal plugs

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8. LCC Welding Booths (comparison)

- Only contain wire feed
- No main power within booths
- 110V outlets in each booth
- Manifold: 2 Gasses
- Light access in each

9. Outdoor

- Underneath outside cover, running alongside building exterior
- Large enough to place small shed
- Well lit (from multiple directions/articulating modular fixtures)
- Crane
- Security for outdoor storage
  - Large quantity of gasses will need to be stored
  - Flammable gasses require distance from each other
- Storage & manifold in one
- Outdoor storage needs to be easily accessible from lab
- Enough space to maneuver semis

10. Fabrication & Classrooms





## 11. General Comments

- Locker room
  - 40+ lockers
  - If lockers are shared with Fabrication will need more
- Lobby/Lounging areas
  - “Not a concern” for welding students
- Concentrating transitional studies offices

## IV. GRAYS HARBOR COLLEGE: NOVEMBER 19, 2021

### 1. General Comments

- Sound echoing that could interfere with instruction
- Designed 2005
  - Built (2007-2008)
  - Moved in (2009)
- Recommend double the lighting/ventilation standards
- Wall space for tools



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### 2. Office space

- With view of shop floor
- Opening into shop brings in dust & air pollution that could negatively impact computers

### 3. Booths

- Along the edge of the shop
  - Leaves some open space in the center
- Upper ventilation is not enough
  - Additional side ventilation when possible



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4. Outdoor



# Center for Vocational & Transitional Studies Predesign

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## Grays Harbor College, Aberdeen, WA

Shop was designed for 16 students. Main shop work area is 5,100 square feet (85' x 60'), this excludes store rooms, office, classroom, bathroom, locker room, etc. Outdoor welding area is 3,000 square feet (60' x 50'). Upon moving in, for unrelated reasons the class capacity was raised to 20 students and this has proven miserably crowded. The outdoor area can reasonably accommodate up to 8 welders at one time, though 4 is more ideal.

We have eight booths measuring 9' x 8' and eight more measuring 6' x 6'. Would have liked all 9' x 8' but didn't have enough room. 9' x 8' allows for multi-process / any process use of the same booth.

Compressor noise - compressor too close to classroom and interferes with group instruction, both in the classroom and in the shop/outdoor weld area. Should be WELL removed from the building.

Compressor plumbing should link it to other shop(s) with a compressor so that when one shop's compressor goes down, both shops can temporarily run on a compressor that still works until repairs are made.

Saw and shear noise – tensioned rebar / floor transmits way too much noise into classroom area

Excessive shop noise – despite two walls and two sets of doors between the shop and classroom, there is still too much noise in the classroom when the shop is in operation.

Excessive HVAC noise in the shop. There needs to be a single “off” button in the shop for ALL HVAC so that when the instructor is giving lessons in the shop, the (likely) computer controlled heaters don't kick on making a racket and requiring the lesson to be shouted at the students.

HVAC servicing – initially no catwalks, and the ones put in as afterthoughts pretty dicey and not user friendly

HVAC - controls needlessly complicated, troublesome, and hard to make work as desired due to computer controls. Should just be off/on light switches for each fan unit

HVAC – despite being designed to move way more air than “recommended” by various standards, still not adequate.

Lighting – despite being designed to be way brighter than “recommended” by various standards, still should be more light.

Electrical – pretty good for welding power, but 120V should have maximum sized breakers and there should be few receptacles on the same breaker, especially in the outdoor welding area where each receptacle should be on its own breaker. One 15 amp grinder maxes out a typical breaker, and any other additional load causes tripping. Not well thought through.

Power source location – would prefer welding power sources to be located immediately outside of each booth, but we didn’t have enough room for that.

Auto locking doors – total waste of money, not desired, not used due to necessary security of tools and equipment, and should never have been installed.

Roof drain pipes – clog easily even at 6” diameter, should be bigger

Designed right before state IBEST program came in, bringing another instructor (part time) into the program. There should be an additional office just for the IBEST instructor and/or other part time welding faculty. Contractually, full time faculty are supposed to have their own office. Likely same at LCC.

Recommend private restroom with shower for welding program staff.



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