CLOVER PARK TECHNICAL COLLEGE

PROJECT REQUEST REPORT

CENTER FOR ADVANCED MANUFACTURING TECHNOLOGIES (REPLACEMENT OF BUILDING 22)

2015/2017 CAPITAL BUDGET REQUEST

CPTC Center for Advanced Manufacturing Technologies
(Replacement of Building 22)

Appendix

a. project costs
total project cost estimate – SBCTC form
cost estimate detail - MACC
b. project parameters
c. minimum and overarching criteria
d. diagrams and sketches
site plan diagram
preliminary concept diagram
e. economic demand for manufacturing programs at CPTC
f. program areas
g. structural engineering report
h. mechanical engineering report
i. electrical engineering report
j. excerpts from strategic plan
k. excerpts from Master Plan
l. excerpts from facility condition survey
m. CPTC strategy for reducing greenhouse gas emissions
n. LEED checklist
o. Building 22 – existing photos
p. excerpts from consolidated scoresheet
q. DAHP letter
r. industry partners – letters of support

1.0 EXECUTIVE SUMMARY

Problem Statement

Within the Puget Sound area, a large number of manufacturing-related jobs are already going unfilled due to the lack of a trained workforce, and future industry projections indicate that demand for these skilled workers will increase dramatically in the next 7-15 years due to the retirement of baby-boomers currently in the manufacturing workforce. Replacing these workers is critical so that Washington will not lose manufacturing work to other states.

Many of the replacement workers needed over the coming years are likely to come from Pierce County. Not only is Pierce County the second most populous county in Washington State (after King County), but also the population is generally younger than the rest of the state. Furthermore, Pierce County is also home to Joint Base Lewis-McChord (JBLM) through which thousands of service personnel are expected to transition from active duty to the civilian workforce over the coming years.

Because of its location and program mix, Clover Park Technical College (CPTC) is uniquely placed to make a significant impact. The College has the technical programs, faculty, and expertise to train, retrain, or upgrade the skills of local students to meet position requirements. Its proximity to the Interstate 5 Corridor and JBLM also allows it to service a wide geographical area, and it is highly accessible to potential students including service members transitioning from the military. However, CPTC currently lacks the space to expand existing programs and/or to create new programs that meet future manufacturing workforce demand in support of our communities and state.

Proposed Solution

Building 22 is unsuited for instructional use and is currently used primarily for warehousing and maintenance. CPTC proposes to replace Building 22 with a new building that will bring together CPTC's manufacturing-related degrees and certificates, workforce development programs, and continuing education courses in a state-of-the art Center for Advanced Manufacturing Technologies.

The building will be designed to replicate best industrial practices in order to provide students with a fully immersive experience – whether they are enrolled in a short-term training course or in a certificate, AAS, or BAS program – in order to make them work-ready as quickly as possible. The colocation of CPTC's manufacturing programs will also allow the college to develop new capabilities that overlap existing programs (for example, additive manufacturing, advanced composites, metrology and calibration, and engineering technology) and will also allow for the efficient shared use of learning resources such as equipment, classrooms, and computer labs across multiple programs.

This new building will significantly enhance the mission of CPTC as a technical college and support its Strategic Plan by addressing workforce needs with improved and innovative course offerings.

This replacement project is CPTC's highest facilities priority.

Programs Addressed by the Project
The existing and currently planned programs addressed by this project will include:

AAT Manufacturing Technologies	AAS-T Material Science - Non Destructive Testing
AAS-T Mechatronics Technician	AAS-T Advanced Composites Technology (planned)
BAS Manufacturing Operations	AAS-T Engineering Technology (planned)

The College is also considering a number of other manufacturing-related programs including a potential BAS in Computer Integrated Manufacturing.

The project also addresses the critical needs of CPTC's Division of Workforce and Economic Development which provides services including, but not limited to, retraining for dislocated workers, transitioning veterans, vulnerable workers, and students pursuing programs that are not financial aid-eligible, and continuing education and recertification.

Probable Cost Summary and Comparison to Benchmark
The escalated MACC is $24,108,160. The total project cost is $36,182,000. In comparison, this is **less than the expected cost** for a similar-type facility. This is further elaborated on in Section 8.0.

Project Schedule
Predesign is anticipated to begin July 2015, design in December 2015, construction in July 2017, and building occupancy in January 2019. Please see Section 10.0 for a more detailed breakdown of the project schedule.

Project Funding
Clover Park Technical College anticipates 100 percent state funding for design and construction of the new Center for Advanced Manufacturing Technologies, which replaces Building 22.

2.0 SCOPE AND PROJECT DESCRIPTION

Project Description
This project is for a new Center for Advanced Manufacturing Technologies, which will replace Building 22 on campus. Building 22, constructed in the 1940s as a Navy supply warehouse, is in exceedingly poor condition with a Facility Condition score of 500 and is not suitable for instructional use. This project will replace Building 22 with a new facility that meets CPTC's needs for existing and emerging manufacturing programs.

The proposed Center for Advanced Manufacturing Technologies will be 62,478 gross square feet, and contain manufacturing and related labs that reflect industry best practices. The new building will also include classrooms, computer labs, and collaborative office space, in support of the manufacturing programs.

Benefits of Proposed Solution

The elimination of Building 22 will:

- Reduce the high costs associated with operating an outdated and obsolete building.
- Eliminate significant seismic and life/safety risks.

The proposed Center for Advanced Manufacturing Technologies will:

- Replace existing inadequate program and classroom space with technologically advanced spaces designed specifically to support advanced manufacturing programs.
- Allow colocation of CPTC's advanced manufacturing programs in one building which will, in turn, provide opportunities for the cost-effective sharing of equipment and teaching resources between programs and for the development of innovative new programs to meet the future demand for manufacturing workers in the Puget Sound region.
- Provide much-needed space to increase enrollment in key areas through special initiatives such as the new Mechatronics, Manufacturing Operations, and Engineering Technology programs.
- Provide flexible space and access to equipment that will support the work of CPTC's Division of Workforce and Economic Development with dislocated workers, transitioning veterans, vulnerable workers, and students pursuing programs that are not financial aid-eligible.

Area Summary Table

The following space needs were identified after an analysis of existing program space, current deficiencies, anticipated program growth, and program delivery. Please see Appendix F for a more detailed breakdown of program spaces.

Program Space	**ASF**	**GSF**
Mechatronics and Automation Labs	3,200	4,706
Manufacturing Technologies Labs	16,825	25,037
Nondestructive Testing Lab	5,200	7,647
Advanced Composites Labs	3,860	5,676
Engineering Technology Lab	1,600	2,353
Theory Classrooms	4,400	6,471
Computer Labs – (2)	2,400	3,529
Workforce Development Lab	1,900	2,794
Instructional Support – Faculty offices and meeting spaces	3,100	4,559
Total	**42,485**	**62,478**

Note: ASF = Assignable Square Feet; GSF = Gross Square Feet. GSF based on 68% efficiency

The percentage of assignable square feet is as follows:

Classrooms and Computer Labs:	16%
Program Labs:	77%
Faculty Offices:	7%

Increased FTEs Accommodated by This Project

	2013 FTEs	2023 FTEs
Existing Programs		
AAT Manufacturing Technologies	34	96
AAS-T Material Science - Nondestructive Testing	44	64
Special Initiatives/New Programs		
AAS-T Mechatronics Technician	0	53
AAS-T Advanced Composites Technology	0	64
AAS-T Engineering Technology	0	53
BAS Manufacturing Operations	0	40
Workforce Development Projects	10	44
TOTAL	88	414
Projected Growth	33	FTE/Year

This project will **increase CPTC's program capacity by 326 FTE students in the next 10 years**, bringing the total to 414 FTEs served by this project.

There are currently 88 FTEs in CPTC's existing manufacturing-related programs. The Manufacturing Technologies program has a current waitlist of 27 students, and the Aerospace Composite Technician Certificate program has a waitlist of 75 students; so they are clearly in high demand. However, because of physical space limitations, it is unlikely that students currently on these waitlists could be accommodated before Spring Quarter 2015. Demand for these programs is expected to remain high for at least the next 10 years.

CPTC is also developing new programs and special initiatives in response to the rapid growth of the aerospace sector in the Pierce and South King County areas and the projected large-scale retirement of baby-boomers currently employed in the manufacturing workforce over the next 7-15 years (see Appendix E). Since many of the positions will be filled by retraining workers from other industry sectors, and by "upskilling" existing workers, the projected FTE growth rate for CPTC's manufacturing-related programs is significantly greater than the projected population growth rate for the college's service area.

Buildings Affected by This Project

Building Affected	Identifier	Date Built	FCS Score	GSF	Comments
Building 22	A01800	1940	500	59,331	Demolish and Replace

3.0 PRIOR PLANNING

History of the Building

Building 22 was constructed in 1940 as a warehouse for the Navy Supply Depot and was never intended to be used for instructional purposes. Building 22 has been primarily used as warehousing and maintenance; but as the center of campus becomes more developed, this is an inappropriate place for housing those functions.

Relationship to College Facilities Master Plan

Replacement of Building 22 by the new Center for Advanced Manufacturing Technologies is the highest priority identified in the Facilities Master Plan. Existing facilities do not have the technology and infrastructure requirements for these programs. A new facility to improve instructional space and program delivery for the manufacturing programs is critical to meet the needs of the College.

Building 22 is currently located in a prominent location in the center of campus. The majority of this space is utilized by warehouse and maintenance functions that could be relocated elsewhere on campus. This prominent location, as indicated in the Master Plan, should be utilized to house CPTC's growing manufacturing programs. The current deteriorating building can lead to a poor first impression of the physical campus. This proposed project would replace Building 22 with a new Center for Advanced Manufacturing Technologies, highlighting CPTC's programs. This location would also place the new building in proximity to Building 25, the Industrial Trades Building, where complementary programs are housed.

This project will also include site improvements to the central campus entry, enhance connections to the Student Center, and extend the Pedestrian Mall to connect with the Industrial Trades Building, thereby creating a more integrated collegial environment.

Relationship to College Strategic Plan and Institutional Goals

CPTC has a long history of professional and technical education that dates back to the 1940s when the Clover Park School District established a War Production Program training civilians as auto mechanics for the Mt. Rainier Ordnance Depot; aircraft mechanics for McChord Field and the Fort Lewis Army Post; and shipfitters, welders, and blueprint readers for Tacoma shipyards during World War II.

Over the years, the College has changed but has always remained faithful to its origins and continues to provide professional and technical education in a broad range of career fields to meet the needs of local students, businesses, and industries

CPTC's current Strategic Plan[1], published in May 2013, restates this commitment to the local community. The plan includes seven goals (shown below) and 26 related objectives.

1. Promote student success
2. Champion equity
3. Build an educated community
4. Enhance institutional capacity

[1] http://www.cptc.edu/sites/all/modules/ckeditor/ckfinder/userfiles/files/college-brain-trust-report.pdf

5. Promote innovation
6. Create and maintain a sustainable college community
7. Foster community engagement and social responsibility

The proposed Advanced Manufacturing Technology Building and the programs that will be housed in the building support several of these goals – most notably Goal 3 ("Build an educated community") where the strategic objectives are:

i. Ensure student learning outcomes are aligned with current professional standards
ii. Respond to labor market needs and close workforce gaps
iii. Expand lifelong learning and professional credentialing opportunities
iv. Strengthen educational transitions between K-12 and higher education

The capacity and flexibility that the proposed Advanced Manufacturing Technology Building provides will help CPTC make significant progress towards achieving these four strategic objectives as well as support for Workforce Development and continuing education.

Building on the College Strategic Plan, CPTC's President and Board of Trustees have identified three Strategic Initiatives.[2] The proposed building aligns with and supports all three of these initiatives.

1. Increase Student Success and Educational Access	This building will increase capacity in high-demand areas thus increasing the number of students served and decreasing program waiting lists. Students will have opportunities to work on equipment that is reflective of the current industry technology in a building designed to reflect industrial best-practices and therefore be better prepared for employment.
2. Respond to Local Community and Business and Industry	This building will be designed to allow flexible use of space which will enable CPTC to respond rapidly to changing and emerging industry needs. Space for CPTC's Workforce and Economic Development programs will allow and encourage the development of short-term certificates that allow rapid response to local business and industry needs.
3. Become More Entrepreneurial	The flexible and state-of-the-art space in this building will increase opportunities to partner with local business, industries, and associations to provide custom training – a potential source of revenue for the college and future employment for students.

[2] http://www.cptc.edu/vision

	Colocation of CPTC's manufacturing programs will provide opportunities for developing courses that cross traditional disciplinary boundaries and anticipate the future needs of manufacturing businesses.

Relationship to SBCTC System Direction Goals and Mission

The proposed Center for Advanced Manufacturing Technologies Building at CPTC directly supports the goals as set out in SBCTC's System Direction Report[3] ("Creating Opportunities for Washington's Future"). This document was published in September 2006 and established three 10-year goals. The proposed Center for Advanced Manufacturing Technologies at CPTC directly supports the attainment of all three of these goals.

Goal 1 – Economic Demand

- Strengthen state and local economies by meeting the demands for a well-educated and skilled workforce.
- Continually reassess the knowledge and skills needed for a thriving economy at local and state levels.
- Meet the needs of changing local economies by increasing the number of skilled employees in the areas of greatest unmet need.
- Support strategic industries by appropriately focusing program growth and development.
- Meet the unique needs of innovative, entrepreneurial people who are operating small businesses and working as creative, independent contractors in a knowledge-based society.
- Be responsive to the changing needs of the business community by offering high quality, relevant, and flexible programs.

The programs to be housed in the new building will increase the number of skilled employees in areas of unmet need such as CNC machinists, composite technicians, and automation technicians and thereby support strategic industries in the manufacturing sector.

Goal 2 – Student Success

- Achieve increased educational attainment for all residents across the state.
- Enroll more underserved populations.
- Improve academic achievement for all students.
- Ensure community and technical college is affordable and accessible, especially for basic skills and part-time students, by developing bold, creative, and innovative methods, including low tuition, need-based tuition waivers, and restructured financial aid.
- Provide smooth transitions from K-12 to colleges to universities.
- Expand the pipeline to associate's and bachelor's degrees, particularly in math, science, engineering, and health sciences.

The programs that will occupy the proposed new building form part of a career ladder that CPTC is developing with local skill centers and high schools, including the Northwest Career and Technical High School located on the CPTC campus. Alignment of CPTC's college-level

[3] http://www.sbctc.ctc.edu/general/a_systemdirection.aspx

curriculum with high school manufacturing programs built on the Boeing/MIC Manufacturing Core Plus curriculum[4] will provide for much-improved articulation between the K-12 and college systems. Collocating the new BAS Manufacturing Operations in the building means that students will be able to move smoothly from the K-12 system through CPTC programs to the baccalaureate level and beyond.

Goal 3 – Innovation

- Use technology, collaboration, and innovation to meet the demands of the economy and improve student success.
- Recognize and adapt to the changing nature of how people learn, how they access information, and communication by making technological advancement part of the system's strategic direction.
- Ensure state-of-the-art lifelong education that is relevant, convenient, and efficient.
- Produce better education that meets the needs of local communities by taking full advantage of cost-effective partnerships and leveraging outside resources.
- Accomplishment of these goals rests upon the shoulders of our faculty and staff. They are essential to innovation in our colleges.

Bringing together CPTC's manufacturing-related programs and workforce development activities in one building will enable the College to develop new and innovative programs that cross disciplines and will also allow multiple programs to share state-of-the-art equipment.

In May 2010, SBCTC published the results of its Mission Study[5] in which it described a 20-year plan based on the three goals defined in the System Direction Report. Ten (10) challenges were identified:

1. Serve more people, including groups which have been underserved in the past.
2. Close the statewide skills gap for technically trained workers.
3. Increase funding for adult basic skills programs.
4. Contribute more to the production of baccalaureate degrees.
5. Work with our partners in the P-20 education system to create seamless, easy-to-navigate pathways for all students.
6. Use performance measures and funding as incentives to improve student retention and achievement.
7. Invest in sustaining faculty and staff excellence.
8. Build a 21st century learning infrastructure.
9. Promote the adoption of web-based and mobile technology tools for eLearning and online student services.
10. Devote a larger share of system resources to teaching and learning by making smarter use of technology and promoting efficiencies in college district governance.

The proposed Advanced Manufacturing Technology Building addresses a number of these challenges:

- It will expand capacity and enable CPTC to serve more students (Challenge 1).

[4] http://www.seattleindustry.org/13041Bulletin.php and http://www.seattleindustry.org/13041Bulletin2ndstory.php
[5] http://www.sbctc.ctc.edu/general/a_missionstudy.aspx

- It focuses on technical training in areas of need which will help to narrow the skills gap (Challenge 2).
- The BAS Manufacturing Operations degree program to be housed in the building will contribute to the production of baccalaureate degrees (Challenge 4) and is also part of an educational pathway that will be able to take a student from high school through an associate's degree, to a baccalaureate degree, and ultimately to graduate study (Challenge 5).
- By bringing together manufacturing-related programs in one building, state-of-the art equipment can be used more efficiently and therefore more resources can be devoted to teaching and learning (Challenge 10).

4.0 NEEDS ANALYSIS

Capital Problem

Building 22 is over seventy years old and has a Building Condition score of 500. (Appendix L). Deficiencies of Buildings 22 include:

- **Seismic risk** – exterior walls are unreinforced and ungrouted concrete masonry units (CMU), which pose **significant life safety threats** to building occupants. There is visible cracking noted on all exterior walls. In an earthquake, the unreinforced masonry could break apart. This failure would result in loss of support for portions of the roof, leading to collapse. Further, major portions of the roof decks are rotting and getting worse. Besides seismic lateral-force deficiencies, vertical loading code violations also are present. Roof/canopy framing members and connections are not sufficient. The Structural Engineering Report is included in the Appendix.

Visible cracks in exterior unreinforced CMU walls.

- **Life/Safety** – Emergency egress and exit lighting are virtually nonexistent. This poses significant safety hazards to building occupants during a power outage. There are many occupied windowless spaces within the building that would not have enough light for safe or effectual way-finding in an emergency.
- Inadequate electrical systems – original nonmetallic sheathed wiring is still in place, posing safety hazards of occupants. Branch panels are scattered throughout the building and are well past their life expectancy. The power distribution system is not easily renovated and would need to be entirely replaced.
- Fire Protection – existing fire alarms in the building do not meet code and would need to be replaced with a new addressable system.
- **Accessibility challenges** – raised loading docks on the north and south sides of the building make student accessibility and building operations difficult. Existing ramps do not meet current codes. Significant modifications would need to be made to the existing entries and ramps for accessibility compliance.

- Hazardous materials – the roof and windows need to be replaced and contain hazardous materials. The sliding doors in the firewalls contain asbestos, as do all pipe insulation throughout the buildings.
- **Poor energy efficiency** – this building does not meet current energy codes as there is **no insulation** in the unreinforced CMU walls. Existing glazed openings are single-pane windows with steel frames and are neither energy efficient nor environmentally safe. The windows have been installed with caulking that is known to contain hazardous material, and many panes are missing and patched over.
- Inadequate mechanical systems – ventilation is absent in numerous areas, and HVAC units are past their useful life. The original boiler system is beyond repair.
- Poor function – essentially, this building is not suited for the instructional programs currently needed by the College. It lacks the technology infrastructure, poses seismic and numerous life/safety threats, and is an inefficient use of space.

<u>Project Drivers and Critical Needs</u>

- **New space to meet demand for manufacturing programs**
  There is clear future demand for more spaces in manufacturing programs based on CPTC's existing waiting lists for manufacturing programs, the expected population growth in Pierce County, and the retirement of thousands of baby-boomers currently employed in local manufacturing businesses. CPTC cannot currently respond to these demands due to a lack of space to build new programs. Many of these programs have significant equipment requirements that cannot be accommodated in our current limited space.

- **Consolidation of manufacturing technology programs to improve program delivery**
  By consolidating the manufacturing programs into shared space, CPTC will build a facility that allows for increased capacity as well as shared use of high-dollar and state-of-the-art equipment. Additionally, cross-discipline collaborations will provide the opportunity for students to be exposed to and be familiar with a wide variety of industries and tools which allows for a better prepared worker for our industries, communities, and state.

  Bringing together CPTC's manufacturing-related programs in one building will also enable the college to develop new and innovative programs that crosses disciplines and anticipates the future needs of local manufacturing businesses.

- **Very poor condition of Building 22**
  Building 22 is in very poor condition, poses significant life/safety concerns, and needs to be replaced with space to meet programmatic needs. The poor structural condition and numerous inadequacies of the existing building systems dictate that the replacement of this facility is more cost-effective than repair and renovation, and the Facility Condition Survey supports this view.

- **Accreditation**
  Accrediting bodies (including NWCCU) require that technical programs are taught in appropriate space with technology and equipment that are adequate to provide realistic training. The proposed new facility will make it possible for CPTC to improve this aspect of program delivery.

- **Student Success**
  Student success is enhanced when technical courses are taught in a learning environment that reflects industry best practices. By designing the proposed new facility to industry guidelines, students will be better prepared for employment in the manufacturing industry.

Alternatives Considered

Due to the vast amount of structural upgrades required, the significant deterioration of the roof which would need to be replaced, and obsolete mechanical and electrical systems, Building 22 would be **cost prohibitive to renovate** and is therefore not an option**.** The extremely poor building condition and life/safety issues make it prohibitively nonviable as instructional space.

CPTC has considered leasing facilities as a way to provide space for several of the new programs (Mechatronics Technician and Engineering Technology); additional sections of existing programs (Aerospace Composite Technician); and, most recently, short-term training courses delivered by CPTC's Workforce and Economic Development Division. Some of the sites explored included the old Kmart Building, warehouse space to the south of CPTC's Lakewood campus, and warehouse space in Tacoma.

There are, however, very significant downsides to leasing temporary space.

- The cost to prepare and operate leased space for use by manufacturing-related instructional programs would include facility rental, utility costs, remodeling of interior spaces, office equipment for the offsite location, provision of network connection to the main campus, potential power upgrades, and the transportation and installation of large (and expensive) equipment.
- Accessibility would be limited for students who are reliant on bus transportation.
- For short-term training opportunities, the time and expense for preparing facilities for a short period of use would be cost prohibitive.

These factors would mean significant additional costs to the college and provide a suboptimal teaching environment for students. Therefore, this alternative was deemed not feasible.

Replacement of Building 22 for a new Center for Advanced Manufacturing Technologies is the best option to meet the program needs of the College.

The consequences of doing nothing would severely hamper CPTC's effort to meet its mission of delivering quality education, training, and support focused on student success in an evolving economy.

5.0 ISSUES ANALYSIS

Life of Proposed Facility

New construction will be made of durable materials and be complementary to the newer buildings on campus. Life expectancy will be beyond 50 years for this proposed facility.

Sustainability

Clover Park is committed to progressing towards a healthy, sustainable, and resilient campus. The College has implemented a Sustainability Committee to spearhead efforts to reduce waste, increase recycling, and promote alternative transportation options. This project will be designed to meet or exceed LEED Silver certification. The LEED checklist is included in the Appendix.

Further, the College has a greenhouse gas emission reduction plan, with overarching strategies to choose high efficiency, sustainable systems in new construction and renovations; use recycled products where possible, and improve tracking of information to quantify GHG emissions.

This project will meet at least 11 of the Best Practices to reduce greenhouse gas emissions, including:

- Above-code HVAC system efficiency
- Utilize natural gas instead of electricity for heating
- Post occupancy commissioning
- Photovoltaic panels
- Time-of-day and occupancy-programmed lighting
- Energy-efficient lighting
- Roofing materials with high solar reflectance and reliability
- Green roofs for a portion of the building to absorb heat and act as insulators
- The building will be oriented for natural light and reduced heating and cooling loads
- Paving materials will have a high solar reflectance
- Increase transportation choices and promoting commute trip reduction

Impact on Deferred Maintenance Backlog

Building 22 has a **deferred maintenance backlog of over $5,000,000.** There is severe cracking in the unreinforced exterior concrete masonry walls, which is estimated at $4.7 million to repair. The roof is in poor condition, with a deferred maintenance of $450,000 to repair. Further, mechanical and electrical systems are obsolete and in need of replacement. Building 22 is a drain on the College's resources and must be replaced with a building that is suitable to meet CPTC's instructional needs.

6.0 SITE FEASIBILITY

Mitigation and Neighborhood-Related Issues

The CPTC Master Plan was granted an Administrative Use Permit by the City of Lakewood in 2004. As of this date, there are no known code, easement, mitigation, or regulatory issues that would impact this project. As the proposed site is internal to the campus, neighborhood impact is expected to be minimal.

Parking Expansion, Roads, and Signals

Existing grades within the project area are relatively flat. Site work will include regrading the project area to provide the building subgrade, asphalt parking and concrete walks. Other site work will include improvements to the central campus entry located directly adjacent to the site and the development of Hageness Circle, as indicated in the Facilities Master Plan.

The College has already installed a traffic signal at this entrance in anticipation of campus development. Redwood Road, which is located on the college campus and borders the north side of the project site, is in poor condition and will be repaired with this project. Parking expansion will occur on the west side of the site (see site plan diagram in the Appendix).

Permit Issues/Variances Required
The campus is located in the Public Institutional zone in the city of Lakewood. No permit issues or variances are anticipated.

Utility and Other Infrastructure Needs
The fiber optic cabling that serves the west side of the campus currently runs above ground and is poorly secured to the walls of Building 22, making it susceptible to damage. This project would replace the existing conduits with new underground conduits and fiber optic cables. This will help ensure that the campus fiber optic infrastructure is secure and will protect the integrity of the cabling that supports multiple buildings. Further, it will provide enough fiber to support the future needs of the campus network in this area.

Existing sanitary sewer and water is available at the site. Pierce County Utilities is the sewer purveyor, and Lakewood Water District is the water purveyor. It is likely that some upgrades to the existing sewer and water systems will be needed.

Stormwater and Other Environmental Issues
The existing soils within the campus are generally well-graded sands and gravels and are suited for storm water infiltration. Storm water runoff will be collected, treated, and infiltrated within underground infiltration trenches.

As the campus site was initially a Navy supply depot, there have been occurrences of localized contaminated soils, on previous projects. Soils testing and an allowance for potential contaminated soils mitigation is included in the cost estimate.

Department of Archeology and Historical Preservation (DAHP) and Tribal Reviews
There are no known issues with the demolition and replacement of Building 22. A historic inventory survey was completed, and the Department of Archeology and Historic Preservation (DAHP) determined that Building 22 is not eligible for the National Historic Register (see attached letter in the Appendix).

7.0 SPACE UTILIZATION

Capacity and Utilization Analysis
CPTC's current AAT Manufacturing Technologies program is at capacity in terms of lab space. The waitlist extends to Spring Quarter 2015, and the program labs and classroom space are utilized 37.5 hours per week. The AAS-T Material Science - Nondestructive Testing program has a similar classroom and lab utilization. They are unable to offer more sections in their current space due to physical limitations and constraints.

The CAM analysis provided by the SBCTC does not account for manufacturing labs or other technical lab spaces. These programs require larger lab spaces due to the significant quantity of equipment, size of equipment, and clearances required for safety. It is essential that the building be designed with the capacity to accommodate the state of the art equipment and space that models the industry.

New Programs/Changing Mix of Programs
In addition to the existing programs:

AAT Manufacturing Technologies
AAS-T Material Science - Nondestructive Testing
AAS-T Mechatronics Technician

CPTC is currently awaiting final approval to offer its new BAS Manufacturing Operations degree starting in Fall Quarter 2014.

Further programs being planned include AAS-T Advanced Composites Technology and AAS-T Engineering Technology degrees, and the student and employer demand for a potential BAS in Computer Integrated Manufacturing is also being evaluated.

New Space and Vacated Space
Space vacated in Building 25 by the Manufacturing Technologies and Nondestructive Testing programs will be utilized by other technical programs such as the Electrician Low Voltage Fire/Security program, which is a complementary program to the HVAC and Welding programs currently located in Building 25. This is anticipated to be a minor improvement in a future biennium and is not part of this request.

Need and Availability of Surge Space
The College plans to locally fund a Facilities/Maintenance Building to relocate maintenance, custodial, facilities, and warehouse functions from Building 22 in anticipation for the new Center for Advanced Manufacturing Technology, as envisioned in the update to the CPTC Facilities Master Plan. This will be funded locally and is not part of this request.

Flexibility and Adaptability of Proposed Space
The new facility will be designed for flexibility and adaptability as well as to reflect manufacturing industry best practices. The labs are envisioned to be high bay spaces with utilities such as compressed air and power/data drops provided overhead on a suspended grid to provide flexibility for equipment placement. The labs will be sized to allow adaptability for new equipment in the future. Further, large garage doors will be provided at each of the labs for future equipment loading.

The proximity of the Workforce Development lab to the manufacturing lab will allow for the use of shared resources between programs. A collaborative office area with shared work spaces will further encourage integration amongst programs. Large corridors will allow break-out spaces for informal study areas, and shared meeting rooms will allow for group study and faculty/student interactions.

8.0 CAPITAL COST DEVELOPMENT

Overall Project Cost
The escalated MACC for this project is $24,108,160. The escalated overall project cost is $36,182,000. See Appendix A for the detailed cost estimates.

Comparisons of $/FTE to similar CTC and related projects
There have not been any new manufacturing facilities in the CTC system to allow or make an accurate comparison. The closest facility type to determine reasonableness of cost is a science lab-type building. The **total project cost is less than the expected cost for a facility of this type** (see Appendix P). While the infrastructure and equipment needs for manufacturing can be significantly more than that of a science building, the level of finishes are anticipated to be less, as the manufacturing programs will have concrete floors and open ceilings in all lab spaces.

To most efficiently utilize resources, CPTC will re-utilize a majority of existing manufacturing equipment, including recently purchased new equipment for the Mechatronics Technician program. As manufacturing equipment is costly, the College will collaborate with industry partners to provide equipment that meets their respective needs. Further, as the evolution of CNC machines and manufacturing technologies develop, the new building will be designed to have the utility infrastructure in place to accommodate future equipment.

Anticipated Funding Sources
The College anticipates 100 percent state funding for this project.

9.0 OPERATING BUDGET IMPACTS

Maintenance and Operations Costs
According to the Recent and Projected M&O Funding Rates for Washington State Community and Technical Colleges, the anticipated annual impact on the College's operating and maintenance budget is $7.37 per net new area (gsf) projected to 2019:

New Building – Building 22 replaced area = net new area
62,478 sf – 59,331 sf = 3,147 sf net new area.
(3,147)* (7.37) = $23,193

Summary:
0.3 FTE (staff) $23,193 (Operating costs/fiscal year)

10.0 SCHEDULE

Predesign	July 2015
Design	December 2015
Bid/Contract Negotiations	May 2017
Notice to Proceed	July 2017
50 percent Construction Completion	March 2018
Substantial Completion	November 2018
Final Completion	January 2019

11.0 IMPLEMENTATION

Timing of the Budget Request and College Priority

Predesign and design funds are requested for the 2015/2017 biennium, and construction funds are requested for the 2017/2019 biennium. **This project is CPTC's number-one priority.**

Anticipated Method of Construction

Delivery Method	Design-Bid-Build

APPENDIX: REPLACEMENT OF BUILDING 22: CENTER FOR ADVANCED MANUFACTURING TECHNOLOGIES

a. project costs
   total project cost estimate – SBCTC form
   cost estimate detail – MACC
b. project parameters
c. minimum and overarching criteria
d. diagrams and sketches
   site plan diagram
   preliminary concept diagram
e. economic demand for manufacturing programs at CPTC
f. program areas
g. structural engineering report
h. mechanical engineering report
i. electrical engineering report
j. excerpts from strategic plan
k. excerpts from Master Plan
l. excerpts from facility condition survey
m. CPTC strategy for reducing greenhouse gas emissions
n. LEED checklist
o. Building 22 – existing photos
p. excerpts from the consolidated scoresheet
q. DAHP letter
r. industry partners – letters of support

a. project costs

Clover Park
Center for Advanced Manufacturing Technologies
OFM Project Number will be assigned in CBS

	Project Budget for 2015-17 Request					Notes
Scope						
Title	Total		Primary	Secondary	Tertiary	
Gross Square Footage		62,478	62,478			
A/E Schedule?	B		B	B		
Remodel?	No		No	No		
Schedule						
Acquisition						
Predesign - Start	Jul-15		Jul-15			
Predesign - End	Nov-15		Nov-15			
Design - Start	Dec-15		Dec-15			
Design - End	May-17		May-17			
Construction - Start	Jul-17		Jul-17			
Construction - End	Nov-18		Nov-18			
Base Month	Jan-14		Jan-14	Jan-14		
Construction Contingency Rate	10.00%		10.00%	10.00%		
Sales Tax Rate	9.40%					
Escalation Rate	3.00%					
Cost Summary	Escalated	Unescalated				
Acquisition	-	-	-			
	-	-				
	-	-				
	-	-				
	-	-				
	-	-				
	-	-				
Predesign						
Environmental Analysis	-	-				
Programming/Site Analysis	10,582	10,000	10,000			
Predesign Study	228,580	216,000	216,000			
Destailed Bldg Investigations	-	-				
Basic Services Prior To Bid						
A/E Basic Design Services	1,134,039	1,134,039	1,134,039	-	-	
Correct for CBS Basic Services error - before bid	-	-				
Extra Services Prior To Bid						
Civil Design (Above Basic Services)	145,885	135,000	135,000			
Geotechnical Investigation	16,209	15,000	15,000			
Commissioning (Systems Check)	16,209	15,000	15,000			
Site Survey	16,209	15,000	15,000			
Testing	-	-	-			moved to line 87
	-	-	-			
Energy Conservation Report	4,323	4,000	4,000			
Voice/Data Consultant	27,016	25,000	25,000			
Value Engineering Participation & Implementation	21,613	20,000	20,000			
Constructability Review Participation	21,613	20,000	20,000			
Landscape Consultant	91,853	85,000	85,000			
Environmental Mitigation Services (EIS)	10,806	10,000	10,000			
Haz Mat Abatement Consultant	32,419	30,000	30,000			
Life Cycle Cost Analysis	54,031	50,000	50,000			
Reimburseables Including Reprographics prior to bi	81,047	75,000	75,000			
Advertising	2,161	2,000	2,000			
Computer Modeling/Animation	27,016	25,000	25,000			
Interior Design	54,031	50,000	50,000			
Acoustic Design	43,225	40,000	40,000			
Security Consultant	32,419	30,000	30,000			
Audio/Visual Consultant	54,031	50,000	50,000			
Value Engineering Study	43,225	40,000	40,000			
Cost Estimating	43,225	40,000	40,000			
LEED Design	102,660	95,000	95,000			
Lighting Consultant	37,822	35,000	35,000			
Materials/Equiment Consultant	81,047	75,000	75,000			
Envelope Consultant	37,822	35,000	35,000			
Traffic Consultant	21,613	20,000	20,000			
Constructability Review	43,225	40,000	40,000			
Design Services Contingency Prior To Bid	263,245	243,604	243,604	-	-	
Correct for CBS Basic Services error -prior to bid	-	-				
Other Services For Bid and Construction Administration						
Bid/Construction/Closeout	509,496	509,496	509,496	-	-	
Commissioning and Training	113,108	100,000	100,000			
LEED Reporting and Monitoring	73,520	65,000	65,000			
Reimbursables and Reprographics for bid and const	45,243	40,000	40,000			
Testing	147,041	130,000	130,000			
	-	-				
Design Services Contingency for Bid and Construction	95,519	84,450	84,450	-	-	

Clover Park
Center for Advanced Manufacturing Technologies
OFM Project Number will be assigned in CBS

	Project Budget for 2015-17 Request					Notes
Scope						
Title	Total		Primary	Secondary	Tertiary	
Gross Square Footage		62,478	62,478			
A/E Schedule?	B		B	B		
Remodel?	No		No	No		
Correct for CBS Basic Services error - after bid	-	-				
Site Work (start of construction)						
G10 - Site Preparation	745,656	659,241	659,241			Includes Bldg 22 Demolition
G20 - Site Improvements	1,501,427	1,327,425	1,327,425			
G30 - Site Mechanical Utilities	418,732	370,205	370,205			
G40 - Site Electrical Utilities	186,380	164,780	164,780			
General Conditions	149,303	132,000	132,000			Check Sum
General Contractor OH&P	225,113	199,024	199,024			2,852,675
Related Project Costs						
Hagness Circle Development	521,936	470,657	470,657			
Redwood Drive Improvements	89,997	81,155	81,155			
Facility Construction						
A10 - Foundations	1,234,859	1,091,750	1,091,750			
B10 - Superstructure	1,838,813	1,625,711	1,625,711			
B20 - Exterior Closure	2,024,590	1,789,957	1,789,957			
B30 - Roofing	1,151,844	1,018,356	1,018,356			
C10 - Interior Construction	1,164,619	1,029,650	1,029,650			
C20 - Stairs	38,570	34,100	34,100			
C30 - Interior Finishes	1,859,527	1,644,024	1,644,024			
D10 - Conveying	114,466	101,200	101,200			
D20 - Plumbing Systems	929,759	822,008	822,008			
D30 - HVAC Systems	3,575,789	3,161,387	3,161,387			
D40 - Fire Protection Systems	326,486	288,649	288,649			
D50 - Electrical Systems	3,476,364	3,073,484	3,073,484			
F10 - Special Construction	-	-				
F20 - Selective Demolition	-	-				Bldg 22 Demolition includetd in G10 - Site Prep
General Conditions	1,119,772	990,000	990,000			
Bldg Related Sitework	-	-				
General Contractor OH&P	1,414,160	1,250,271	1,250,271			
	-	-				
	-	-				
	-	-				Check Sum
	-	-				17,920,546
Construction Contingencies						
Allowance for Change Orders	2,412,037	2,132,503	2,132,503	-	-	
Construction Sales Tax	2,492,899	2,205,008	2,205,008	-	-	
Equipment						
E10 - Equipment	508,987	450,000	450,000			
E20 - Furnishings	452,433	400,000	400,000			
A/V Systems	169,662	150,000	150,000			
Telecom/Data Cabling/Equipment	197,939	175,000	175,000			
Mfg Tech Equipment	859,623	760,000	760,000			
	-	-				
	-	-				
	-	-				
	-	-				
	-	-				
	-	-				
Equipment Sales Tax	205,733	181,890	181,890	-	-	
Art Set-Aside	106,625	106,625	106,625	-		
Other Costs (start of construction)						
Hazardous Material Remediation/Removal	436,623	393,726	393,726			
Permit Fee & Plan Check	221,790	200,000	200,000			
LEED Registration/Certification	4,990	4,500	4,500			
CPTC/Agency Management	221,790	200,000	200,000			
	-	-				
	-	-				
	-	-				
	-	-				
Subtotals	36,182,420	32,292,873	32,292,873	-	-	
Total Cost Rounded to Nearest $1,000	**36,182,000**	**32,293,000**				
Prior Local Cash	-					
Current Local Cash	-					
Current Local COP	-					
Current State COP	-					
Design Appropriation Request	2,799,000					
Future Local Cash	-					

Clover Park
Center for Advanced Manufacturing Technologies
OFM Project Number will be assigned in CBS

	Project Budget for 2015-17 Request				Notes
Scope					
Title	Total	Primary	Secondary	Tertiary	
Gross Square Footage	62,478	62,478			
A/E Schedule?	B	B	B		
Remodel?	No	No	No		
Future Local COP	-				
Future State COP	-				
Construction Appropriation Request	33,383,000				
Total Appropriations	**36,182,000**				
Over (Under) Budget	**-**				

THE ROBINSON COMPANY

CLOVER PARK TEHNICAL COLLEGE

ADVANCED MANUFACTURING TECHNOLOGY

PROJECT REQUEST REPORT

FEBRUARY 4, 2014 Rev. FEB. 14, 2014

New Building	$	17,920,545
Site Development and Bldg Demolition	$	2,852,674
Hagness Circle Development	$	470,657
Redwood Drive Improvements	$	81,155
TOTAL CONSTRUCTION COST (2014 DOLLARS)	**$**	**21,325,031**
Escalation to March 2018 @ 12.24%	$	2,610,184
TOTAL CONSTRUCTION COST (ESCALATED)	**$**	**23,935,215**
Other Costs: Bldg Abatement	$	393,726

EXCLUSIONS:

STATE SALES TAX
TESTING AND INSPECTIONS
CONSTRUCTION CONTINGENCY
ARCHITECT/ENGINEERING FEES
OWNER CONSULTANTS
BUILDERS RISK INSURANCE
CONSTRUCTION MANAGEMENT
PERMITS
JURISDICTIONAL/UTILITY CO FEES
FURNISHINGS & EQUIPMENT
PROJECT CONTINGENCY
UTILITY FEES/CONNECTIONS/CHARGES
ALTERNATIVE CONTRACTING PROCUREMENT

THE ROBINSON COMPANY

PROJECT: CPTC CENTER ADVANCED MANUFACTURING TECHNOLOGIES - BUILDING
LOCATION: LAKEWOOD, WA
BLDG SF: 62,478
ESTIMATE: 2014026
EST TYPE: PROJECT REQUEST REPORT

DIVISION	DESCRIPTION		TOTAL	$/SF
A10	FOUNDATIONS		992,500	15.89
B10	SUPERSTRUCTURE		1,477,919	23.66
B20	EXTERIOR CLOSURE		1,627,234	26.04
B30	ROOFING		925,778	14.82
C10	INTERIOR CONSTRUCTION		936,045	14.98
C20	STAIRS		31,000	0.50
C30	INTERIOR FINISHES		875,348	14.01
D10	CONVEYING SYSTEMS		92,000	1.47
D20	PLUMBING		747,280	11.96
D30	HVAC		2,873,988	46.00
D40	FIRE PROTECTION		262,408	4.20
D50	ELECTRICAL		2,794,076	44.72
E10	EQUIPMENT		140,576	2.25
E20	FURNISHINGS		478,643	7.66
Z10	GENERAL REQUIREMENTS		900,000	14.41
	ESTIMATE SUBTOTAL		15,154,795	242.56
	DESIGN CONTINGENCY @	10.00%	1,515,480	
	SUBTOTAL		16,670,275	
	GENERAL CONTRACTOR'S OH & P @	7.50%	1,250,271	
	SUBTOTAL		17,920,545	
	ESCALATION TO 01-MAR-18 (3.00%/YR) @	12.24%	2,193,180	
	TOTAL		20,113,725	321.93

EXCLUSIONS:
SEE ESTIMATE SUMMARY

PROJECT: CPTC CENTER ADVANCED MANUFACTURING TECHNOLOGIES - BUILDING
LOCATION: LAKEWOOD, WA
BLDG SF: 62,478
ESTIMATE: 2014026
EST TYPE: PROJECT REQUEST REPORT

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL	$/SF
A10	FOUNDATIONS					
03000	6" SLAB ON GRADE/GRAVEL/VAPOR BARRIER	49,000	SF	7.50	367,500	
03000	STANDARD FOUNDATIONS	49,000	SFA	12.50	612,500	
03300	ELEVATOR PIT	1	LS	12,500	12,500	
A10	FOUNDATIONS			DIVISION TOTAL	992,500	15.89
B10	SUPERSTRUCTURE					
05000	STEEL FLOOR STRUCTURE/DECK/TOPPING	13,478	SF	30.26	407,844	
05120	OVERHANGS/COVERED AREA/CANOPIES	5,465	SFA	25.00	136,625	
05120	STEEL ROOF STRUCTURE/BEAMS/OW JOISTS/DECK	49,000	SFA	19.05	933,450	
B10	SUPERSTRUCTURE			DIVISION TOTAL	1,477,919	23.66
B20	EXTERIOR CLOSURE					
03000	EXTERIOR WALLS GROSS AREA	34,572	SF			
03100	EXT.WALLS-FRAME W/ MIX BRICK, MTL CLAD	23,741	SF	39.45	936,582	
08000	14' X 14' OVERHEAD DOORS-(145 SF OF GLAZE EA)	9	EA	7,500	67,500	
08000	EXT DOORS/FRAME/HARDWARE	62,478	SFA	1.05	65,602	
08500	EXT. WINDOWS	8,613	SF	60.00	516,780	
08500	EXT. WINDOWS/CURTAIN WALL	453	SF	90.00	40,770	
	5% WINDOW AREA					
B20	EXTERIOR CLOSURE			DIVISION TOTAL	1,627,234	26.04
B30	ROOFING					
07410	MEMBRANE ROOFING/INSUL/SHEETMETAL	49,000	SF	13.50	661,500	
07410	MEMBRANE/FINISH INSIDE PARAPET	4,812	SF	6.50	31,278	
07550	GREEN ROOF (10% ROOF AREA)	4,900	SF	20.00	98,000	
08600	SKYLIGHTS (APPROX 3% ROOF AREA)	45	EA	3,000	135,000	
B30	ROOFING			DIVISION TOTAL	925,778	14.82
C10	INTERIOR CONSTRUCTION					
03100	INT. STANDARD PARTITION WALLS	44,520	SF	10.50	467,460	
08000	INTERIOR DOORS/FRAME/HARDWARE	62,478	SFA	3.25	203,054	
08510	INTERIOR RELITES/GLAZING-ALLOW	62,478	SFA	1.00	62,478	
10000	FITTINGS/MISC SPECIALTIES-BASIC	62,478	SFA	3.25	203,054	
C10	INTERIOR CONSTRUCTION			DIVISION TOTAL	936,045	14.98
C20	STAIRS					
05000	STAIRS W/RAILS	2	FLT	15,500	31,000	
C20	STAIRS			DIVISION TOTAL	31,000	0.50
C30	INTERIOR FINISHES					

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL	$/SF
09000	TILE @ RESTROOMS	1,124	SF	12.50	14,050	
09260	GWB CEILINGS @ RESTROOM	1,124	SF	5.50	6,182	
09305	BASIC WALL FINISHES	62,478	SFA	2.00	124,956	
09305	PREM. IMPACT RESIST GWB	34,920	SF	1.75	61,110	
09330	MISC. WALL FINISHES/ACOUSTICS	62,478	SFA	1.25	78,098	
09510	CEILING FINISHES- EXPOSED CEILINGS	48,068	SF			
09610	CEILINGS - CLASS/OFFICES/LECTURE	20,000	SF	5.50	110,000	
09610	FLOORING - CLASS/OFFICES/LECTURE	13,286	SF	4.50	59,787	
09620	RETROPLATE CONCRETE	9,702	SF	6.50	63,063	
09630	BASE ALLOWANCE	62,478	SF	0.40	24,991	
09800	CEILING ACOUSTICS/BAFFLES/CLOUDS	62,478	SFA	2.00	124,956	
09900	INT. PAINT/SEAL-TOUCH UP	62,478	SFA	1.95	121,832	
09900	SEAL/HARDENER AT CONC FLOOR	38,366	SF	2.25	86,324	
C30	INTERIOR FINISHES			DIVISION TOTAL	875,348	14.01
D10	CONVEYING SYSTEMS					
14000	ELEVATOR 2-STOP (KONE)	1	LS	92,000	92,000	
D10	CONVEYING SYSTEMS			DIVISION TOTAL	92,000	1.47
D20	PLUMBING					
15000	INDUSTRIAL GASES/AIR	49,000	SF	2.50	122,500	
15000	PLUMBING	62,478	SFA	10.00	624,780	
D20	PLUMBING			DIVISION TOTAL	747,280	11.96
D30	HVAC					
15500	HVAC SYSTEM	62,478	SFA	46.00	2,873,988	
D30	HVAC			DIVISION TOTAL	2,873,988	46.00
D40	FIRE PROTECTION					
15000	FIRE PROTECTION SYSTEM	62,478	SFA	4.20	262,408	
D40	FIRE PROTECTION			DIVISION TOTAL	262,408	4.20
D50	ELECTRICAL					
16000	ELECTRICAL	62,478	SFA	36.00	2,249,208	
16000	PV PANELS	1	LS	170,000	170,000	
	ALLOWANCE					
16000	SECURITY/ACCESS/CONTROLS	62,478	SFA	2.50	156,195	
16470	PHONE/DATA CABELING AND EQUIPMENT	62,478	SFA	3.50	218,673	
16880	AV @ CLASSES,COMPUTER LAB, OFFICE		EA	22,000		
	OWNER FURNISHED					
D50	ELECTRICAL			DIVISION TOTAL	2,794,076	44.72
E10	EQUIPMENT					
05000	MISC.STRUCTURAL EQUIPMENT SUPPORT	62,478	SFA	1.75	109,337	
11000	MFG TECH EQUIPMENT - EXCLUDED	62,478	SFA			
11000	MISC. EQUIPMENT/FOIC ITEMS	62,478	SFA	0.50	31,239	
E10	EQUIPMENT			DIVISION TOTAL	140,576	2.25

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL	$/SF
E20	FURNISHINGS					
12320	BUILT- IN CASEWORK,DISPLAYS,COUNTERS	62,478	SFA	6.50	406,107	
12490	WINDOW TREATMENT	9,067	SF	8.00	72,536	
E20	FURNISHINGS			DIVISION TOTAL	478,643	7.66
Z10	GENERAL REQUIREMENTS					
01000	GENERAL CONDITIONS (TWO MONTHS IN SITE)	15	MO	60,000	900,000	
Z10	GENERAL REQUIREMENTS			DIVISION TOTAL	900,000	14.41
				ESTIMATE SUBTOTAL	15,154,795	242.56

THE ROBINSON COMPANY

PROJECT: CPTC CENTER ADVANCED MANUFACTURING TECHNOLOGIES - SITE DEVELOPMENT
LOCATION: LAKEWOOD, WA
BLDG SF:
ESTIMATE: 2014026
EST TYPE: PROJECT REQUEST REPORT

DIVISION	DESCRIPTION		TOTAL	$/SF
G10	SITE PREPARATION		599,310	
G20	SITE IMPROVEMENTS		1,206,750	
G30	SITE CIVIL / MECHANICAL UTILITIES		336,550	
G40	SITE ELECTRICAL UTILITIES		149,800	
Z10	GENERAL REQUIREMENTS		120,000	
	ESTIMATE SUBTOTAL		2,412,410	
	DESIGN CONTINGENCY @	10.00%	241,241	
	SUBTOTAL		2,653,650	
	GENERAL CONTRACTOR'S OH & P @	7.50%	199,024	
	SUBTOTAL		2,852,674	
	ESCALATION TO 01-MAR-18 (3.00%/YR) @	12.24%	349,120	
	TOTAL		3,201,795	

EXCLUSIONS:
SEE ESTIMATE SUMMARY

PROJECT: CPTC CENTER ADVANCED MANUFACTURING TECHNOLOGIES - SITE DEVELOPMENT
LOCATION: LAKEWOOD, WA
BLDG SF:
ESTIMATE: 2014026
EST TYPE: PROJECT REQUEST REPORT

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL	$/SF
G10	SITE PREPARATION					
02055	BUILDING DEMO	59,331	SFA	4.50	266,990	
02200	CONTAMINATED SOIL ALLOWANCE	1	LS	10,000	10,000	
02300	SITE DEMOLITION AND CLEARING	170,200	SFA	0.50	85,100	
02310	SITE PREPARATION/EARTHWORK	170,200	SFA	1.10	187,220	
02315	EROSION CONTROL	1	LS	50,000	50,000	
G10	SITE PREPARATION			DIVISION TOTAL	599,310	
G20	SITE IMPROVEMENTS					
02740	PARKING LOT PAVING W/15% BIO RETENTION	60,000	SF	4.64	278,400	
02775	PEDSTRIAN PLAZA	15,200	SFA	10.50	159,600	
02870	MISC. SITE FURNISHINGS-ALLOWANCE	1	LS	25,000	25,000	
02900	LANDCAPE/IRRIGATION-ALLOWANCE	95,000	SFA	6.25	593,750	
03100	CONCRETE STAIRS/RAILS/RAMPS/WALLS	1	LS	150,000	150,000	
G20	SITE IMPROVEMENTS			DIVISION TOTAL	1,206,750	
G30	SITE CIVIL / MECHANICAL UTILITIES					
02510	WATER/FIRE WATER SYSTEMS	1	LS	40,000	40,000	
02530	SANITARY SYSTEMS	1	LS	15,000	15,000	
02630	STORM COLLECTION MINOR BEYOND BIO SWALES @ PARKING	60,000	SFA	0.50	30,000	
02630	STORM COLLECTION @ PED PAVING/PLAZA	15,200	SFA	2.25	34,200	
02630	STORM DETENTION/WATER QUALITY	124,200	SF	1.75	217,350	
G30	SITE CIVIL / MECHANICAL UTILITIES			DIVISION TOTAL	336,550	
G40	SITE ELECTRICAL UTILITIES					
16000	FIBER OPTIC CABLE	1	LS	37,000	37,000	
16000	SITE LIGHTING/SITE ELECTRICAL	75,200	SFA	1.50	112,800	
G40	SITE ELECTRICAL UTILITIES			DIVISION TOTAL	149,800	
Z10	GENERAL REQUIREMENTS					
01000	GENERAL CONDITIONS	2	MO	60,000	120,000	
Z10	GENERAL REQUIREMENTS			DIVISION TOTAL	120,000	
				ESTIMATE SUBTOTAL	2,412,410	

THE ROBINSON COMPANY

PROJECT: CPTC CENTER ADVANCED MANUFACTURING TECHNOLOGIES - HAGNESS CIRCLE DEVELOPMENT
LOCATION: LAKEWOOD, WA
BLDG SF:
ESTIMATE: 2014026
EST TYPE: PROJECT REQUEST REPORT

DIVISION	DESCRIPTION		TOTAL	$/SF
G10	SITE PREPARATION		57,621	
G20	SITE IMPROVEMENTS		221,631	
G30	SITE CIVIL / MECHANICAL UTILITIES		59,670	
G40	SITE ELECTRICAL UTILITIES		34,097	
G90	OTHER SITE CONSTRUCTION		25,000	
	ESTIMATE SUBTOTAL		398,019	
	DESIGN CONTINGENCY @	10.00%	39,802	
	SUBTOTAL		437,820	
	GENERAL CONTRACTOR'S OH & P @	7.50%	32,837	
	SUBTOTAL		470,657	
	ESCALATION TO 01-MAR-18 (3.00%/YR) @	12.24%	57,601	
	TOTAL		528,258	

EXCLUSIONS:
SEE ESTIMATE SUMMARY

PROJECT: CPTC CENTER ADVANCED MANUFACTURING TECHNOLOGIES - HAGNESS CIRCLE DEVELOPMENT
LOCATION: LAKEWOOD, WA
BLDG SF:
ESTIMATE: 2014026
EST TYPE: PROJECT REQUEST REPORT

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL	$/SF
G10	SITE PREPARATION					
02300	SITE DEMOLITION AND CLEARING	34,097	SFA	0.50	17,049	
02310	SITE PREPARATION	34,097	SFA	0.75	25,573	
02315	EROSION CONTROL	1	LS	15,000	15,000	
G10	SITE PREPARATION			DIVISION TOTAL	57,621	
G20	SITE IMPROVEMENTS					
02740	HAGNESS CIRLCE PAVING	34,097	SF	6.50	221,631	
G20	SITE IMPROVEMENTS			DIVISION TOTAL	221,631	
G30	SITE CIVIL / MECHANICAL UTILITIES					
02630	STORM COLLECTION @ PARKING/PAVING	34,097	SFA	1.75	59,670	
G30	SITE CIVIL / MECHANICAL UTILITIES			DIVISION TOTAL	59,670	
G40	SITE ELECTRICAL UTILITIES					
16000	SITE LIGHTING	34,097	SFA	1.00	34,097	
G40	SITE ELECTRICAL UTILITIES			DIVISION TOTAL	34,097	
G90	OTHER SITE CONSTRUCTION					
02200	MISC. SITEWORK/CONTINGENCY	1	LS	25,000	25,000	
G90	OTHER SITE CONSTRUCTION			DIVISION TOTAL	25,000	
				ESTIMATE SUBTOTAL	398,019	

THE ROBINSON COMPANY

PROJECT: CPTC CENTER ADVANCED MANUFACTURING TECHNOLOGIES - REDWOOD DRIVE IMPROVEMENTS
LOCATION: LAKEWOOD, WA
BLDG SF:
ESTIMATE: 2014026
EST TYPE: PROJECT REQUEST REPORT

DIVISION	DESCRIPTION		TOTAL	$/SF
G10	SITE PREPARATION		10,384	
G20	SITE IMPROVEMENTS		45,106	
G30	SITE CIVIL / MECHANICAL UTILITIES		13,140	
	ESTIMATE SUBTOTAL		68,630	
	DESIGN CONTINGENCY @	10.00%	6,863	
	SUBTOTAL		75,493	
	GENERAL CONTRACTOR'S OH & P @	7.50%	5,662	
	SUBTOTAL		81,155	
	ESCALATION TO 01-MAR-18 (3.00%/YR) @	12.24%	9,932	
	TOTAL		91,087	

EXCLUSIONS:
SEE ESTIMATE SUMMARY

PROJECT: CPTC CENTER ADVANCED MANUFACTURING TECHNOLOGIES - REDWOOD DRIVE IMPROVEMENTS
LOCATION: LAKEWOOD, WA
BLDG SF:
ESTIMATE: 2014026
EST TYPE: PROJECT REQUEST REPORT

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL	$/SF
G10	SITE PREPARATION					
02300	SITE DEMOLITION AND CLEARING	5,256	SFA	0.75	3,942	
02310	SITE PREPARATION	5,256	SFA	0.75	3,942	
02315	EROSION CONTROL	1	LS	2,500	2,500	
G10	SITE PREPARATION			DIVISION TOTAL	10,384	
G20	SITE IMPROVEMENTS					
02740	DRIVE ENTRIES	2	EA	3,500	7,000	
02740	MINOR PAVING/PATCH	438	LF	15.00	6,570	
02775	REDWOOD DRIVE SIDEWALKS	2,628	SFA	5.75	15,111	
02900	LANDCAPE RESTORATION	2,628	SFA	6.25	16,425	
G20	SITE IMPROVEMENTS			DIVISION TOTAL	45,106	
G30	SITE CIVIL / MECHANICAL UTILITIES					
02630	STORM COLLECTION - ALLOWANCE	5,256	SFA	2.50	13,140	
G30	SITE CIVIL / MECHANICAL UTILITIES			DIVISION TOTAL	13,140	
				ESTIMATE SUBTOTAL	68,630	

THE ROBINSON COMPANY

PROJECT: CPTC CENTER ADVANCED MANUFACTURING TECHNOLOGIES - BUILDING ABATEMENT
LOCATION: LAKEWOOD, WA
BLDG SF:
ESTIMATE: 2014026
EST TYPE: PROJECT REQUEST REPORT

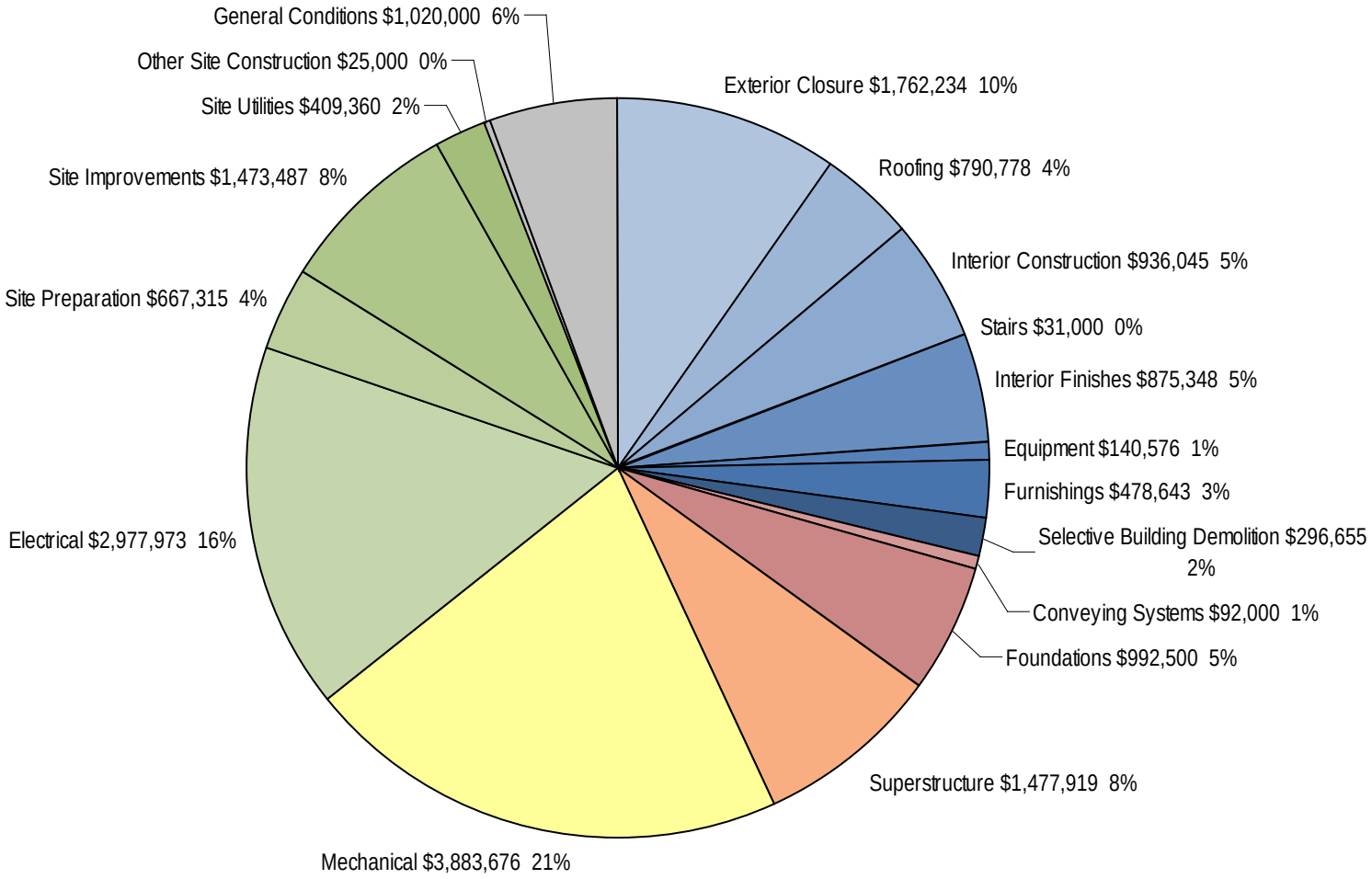
DIVISION	DESCRIPTION		TOTAL	$/SF
F20	SELECTIVE BUILDING DEMOLITION		296,655	
	ESTIMATE SUBTOTAL		296,655	
	DESIGN CONTINGENCY @	10.00%	29,666	
	SUBTOTAL		326,321	
	GENERAL CONTRACTOR'S OH & P @	7.50%	24,474	
	SUBTOTAL		350,795	
	ESCALATION TO 01-MAR-18 (3.00%/YR) @	12.24%	42,931	
	TOTAL		393,726	

EXCLUSIONS:
SEE ESTIMATE SUMMARY

PROJECT: CPTC CENTER ADVANCED MANUFACTURING TECHNOLOGIES - BUILDING ABATEMENT
LOCATION: LAKEWOOD, WA
BLDG SF:
ESTIMATE: 2014026
EST TYPE: PROJECT REQUEST REPORT

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL	$/SF
F20	SELECTIVE BUILDING DEMOLITION					
02000	BUILDING ABATEMENT	59,331	SFA	5.00	296,655	
	ALLOWANCE					
F20	SELECTIVE BUILDING DEMOLITION			DIVISION TOTAL	296,655	
				ESTIMATE SUBTOTAL	296,655	

THE ROBINSON COMPANY



b. project parameters

Project Parameters

Type of Space	Square Footage	Percent
Renovation of Existing		**0**
New Space	62,478	**100%**
Demolished Area	59,331	**95%**
Total Affected Area	**62,478**	**100%**
Net Area Change = New – Demo *(see Note 1)*	3,147	**5%**
Overarching	(O4) = 1.0	

Costs	Dollars	Percent
Acquisition		**0%**
Consultant Services	3,738,128	**10%**
Construction Contracts	29,013,096	**80%**
Equipment	2,394,377	**7%**
Artwork	106,625	**0%**
Other Costs	663,404	**2%**
Project Management	221,790	**1%**
Total Project Cost (C1)	**36,182,420**	**100%**

Funding	Dollars	Percent
State Appropriation	36,182,420	**100%**
Financed – backed by State Appropriation		
Local Funds – Cash (see list of qualifying funds)		
Financed – backed by Local Funds		
Total Project Funding	**36,182,420**	**100%**
Matching		
Variance = Cost - Funding		

Project Weighting	Equivalent Area	Percent
Matching	0	0
Renovation	0	0
Replacement	59,331	95%
New *(see Note 1)*	3,147	5%
Total	**62,478**	**100%**

Note 1: If more area is being demolished than built, then enter zero for this parameter.

Enrollment Calculations

Use for projects with New area.
Enrollment projections based on current participation rates are available here – http://sbctc.edu/college/finance/SBCTC2015-1710-yearEnrollmentProjections10Dec12.pdf
Building GSF are available here - http://www.ofm.wa.gov/budget/facilities/documents/FacilitiesInventorySystem2013FinalReport.xlsx

Enrollment Trend	**Variable or Formula**	**Value**
Fall 2012 Type 1 FTE	FTE_{2012}	2225
Fall 2022 Type 1 FTE	FTE_{2022} CPTC Projections	2551*
Projected 10 year change in Type 1 FTE	$FTE_{2022} - FTE_{2012}$	326
FTE/Year for New area Enrollment Increase criteria	**FTE/Year = $(FTE_{2022} - FTE_{2012})/10$**	33

*CPTC projections based on special initiatives, new programs and economic demand – see Appendix E

Area Efficiency – new area	**Variable or Formula**	**Value**
This Project net New GSF	S5	3147
This Project net New Type 1 FTE	$FTE_{project}$	327
Project GSF/FTE for New area Efficiency criteria	S5 / $FTE_{project}$	9.62

Cost Efficiency	**Variable or Formula**	**Value**
Project Cost	C1	36,182,420
Projected 10 year change in Type 1 FTE	$FTE_{2022} - FTE_{2012}$	326
$/ Net new FTE	**C1 / $(FTE_{2022} - FTE_{2012})$**	110,989

Building Efficiency	**Variable or Formula**	**Value**
Project Assignable Square Footage	ASF	42,485
Total Affected Area	S4	62,478
ASF / GSF	**ASF / S4**	0.68

Reviewers may award a point for "reasonable cost estimate and building efficiency." The following information may be useful in their determination:

Area Efficiency – entire campus	**Variable or Formula**	**Value**
College Fall 2012 GSF	GSF_{2012}	595,026
This Project net New GSF	S5	3,147
College GSF after project	GSF_{2012} + S5	598,173
Campus GSF/FTE after project	(GSF_{2012} + S5) / (FTE_{2022}	234

Vocational labs like Manufacturing are not accounted for in the CAM. These programs require larger spaces due to quantity and size of equipment needs, space clearances for safety, and lab activities.

Replacement Calculations

Use for projects with Demolished area.

Building UFI, Year Built, and GSF are available here - http://www.ofm.wa.gov/budget/facilities/documents/FacilitiesInventorySystem2013FinalReport.xlsx

Area weighted Building Age for buildings to be demolished.				
Building Name	**UFI**	**GSF**	**Year Built**	**GSF * Year Built**
22	A01800	59,331	1940	115102140
		59,331		Sum of (GSF * Year Built)

Area Weighted Year Built = (Sum of (GSF * Year Built)) / (Sum or GSF) **= 1940**
Building Age for Replacement portion of project = 74

Building Facility Condition Scores are available here – http://sbctc.edu/college/_f-facility-condition-survey.aspx

Area weighted Facility Condition Score for buildings to be demolished.				
Building Name	**UFI**	**GSF**	**2013 FCS**	**GSF * FCS**
22	A01800	59,331	500	29665500
		59,331		Sum of (GSF * FCS)

Area Weighted FCS for Replacement portion of project **= 500**

Appendix – Best Practices to Reduce Greenhouse Gas Emissions

System / Best Practices	**Included in Project?**
Mechanical	
Solar water heating	
Above code HVAC system efficiency	Yes
Use natural gas instead of electricity for heating	Yes
Geothermal heat pump	
Post occupancy commissioning	Yes
Electrical	
Photovoltaic energy systems	Yes
Time of day and occupancy programming of lighting	Yes
Efficient lighting	Yes
Envelope	
Minimize building surface area for necessary floor area	
Roofing materials with high solar reflectance and reliability	Yes
Green roofs to absorb heat and act as insulators for ceilings	Yes
Site	
Orient building for natural light and reduced heating and cooling loads	Yes
Trees and vegetation planted to directly shade building	
Paving materials with high solar reflectance, enhanced water evaporation, or otherwise designed to remain cooler ore require less lighting than conventional pavements	Yes
Increase transportation choices – drive, walk, bike, or public transit	Yes
Total number of these best practices included in project:	**11**

c. minimum and overarching criteria

2015-17 Minimum and Overarching Criteria Points

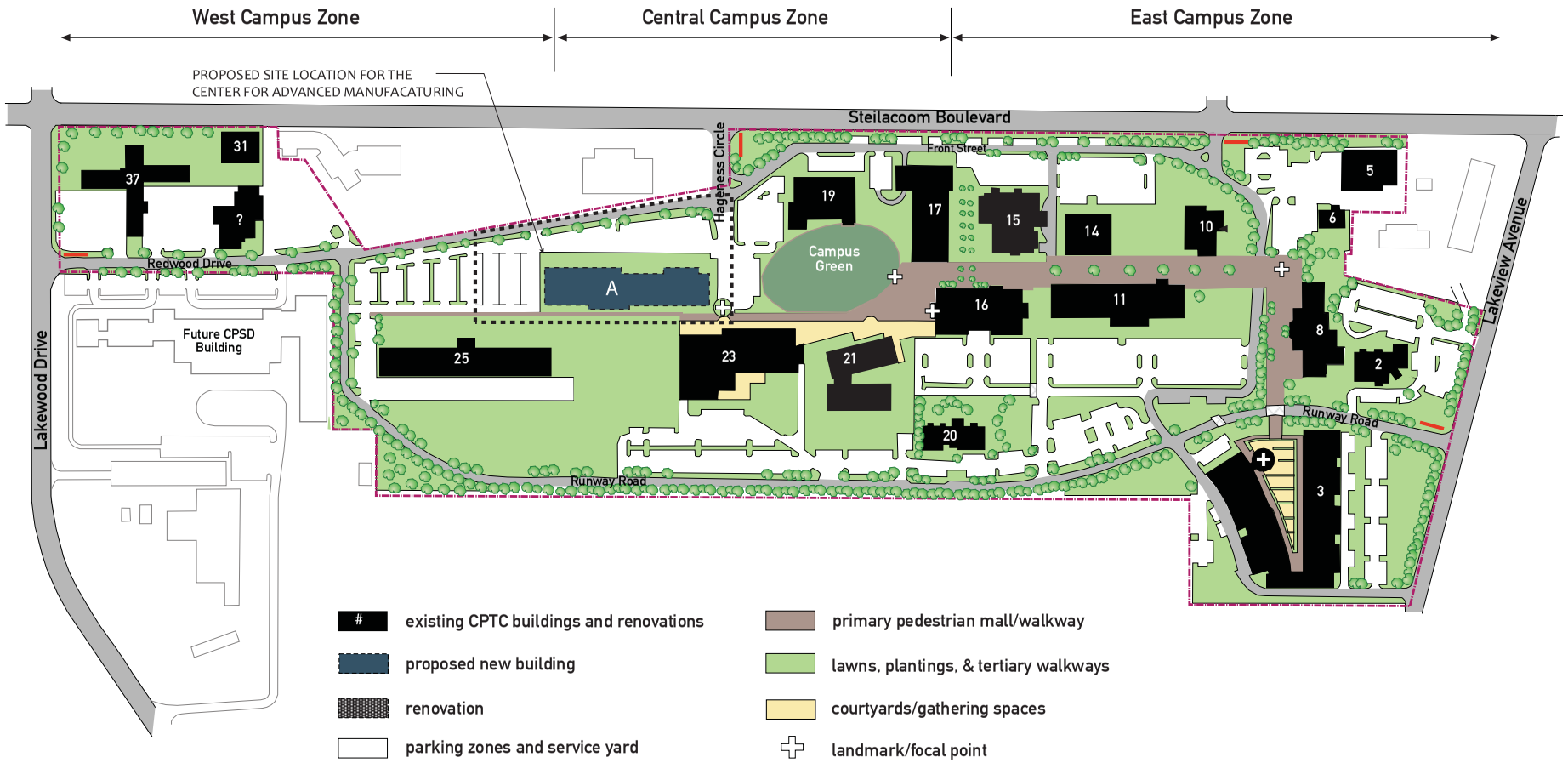
Evaluation Criteria	Scoring Standard	
College Response	Affected buildings are at a single site.	**Yes** / **No**
College Response	Project does not include improvements to temporary or portable facilities..	**Yes** / **No**
College Response	Project is not a gymnasium or recreational facility.	**Yes** / **No**
College Response	Project is not an exclusive enterprise function such as a bookstore, dormitory or contract food service.	**Yes** / **No**
College Response	Project is not dependent on another project in the current request.	**Yes** / **No**
College Response	Project meets LEED Silver Standard requirements.	**Yes** / **No**
College Response NEW	College has a Greenhouse Gas Emission Reduction plan.	**Yes** / **No**
College Response	The facility is state owned or a condominium interest is held (state capital funds cannot be spent on leased space).	**Yes** / **No**
College Response	Project is not less than 25,000 gsf or does not exceed 70,000 gsf without WACTC Capital Budget Committee approval.	**Yes** / **No**
College Response	If project includes renovation or replacement, then affected buildings have been owned by the college for 20 years at the time of the request.	**Yes** / **No**
College Response No Renovation included	If project includes renovation, then the project extends the useful life of the affected building at least 20 years.	**Yes / No** N/A
College Response No Renovation included	If project includes renovation, then the cost does not exceed 80% of the current replacement cost.	**Yes / No** N/A
College Response	*Select one* 1st priority 2nd priority 3rd priority	 **5** **3** **1**
Ability to enhance state and institution's achievement of goals NEW	*Add up points from each category: (Max 6)* Directly tied to facilities master plan Directly tied to strategic plan Directly tied to institutional goals Includes partnerships with K-12, 4 yrs, business, etc. Project includes at least seven of the best practices identified in Appendix A to reduce greenhouse gas emissions.	 **2** **2** **1** **1** **1**
	Overarching Subtotal (O1)	12
	Overarching Weighting (O2)	1.92
	Overarching Weighted Subtotal (O3 = O1 x O2)	23
	Overarching Portion of Project (O4)	1.00
	Overarching Points (O5 = O3 x O4)	23

d. diagrams and sketches

CPTC CENTER FOR ADVANCED MANUFACTURING TECHNOLOGIES

McGRANAHAN architects

PRR DIAGRAM 01.28.14



MASTER PLAN/SITE PLAN

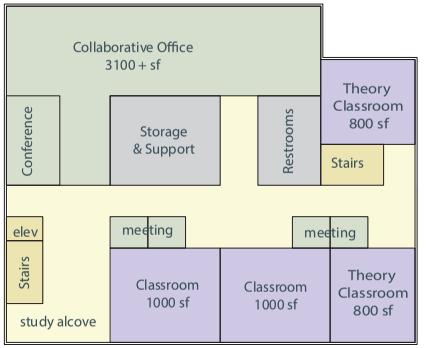
NORTH

1014.020

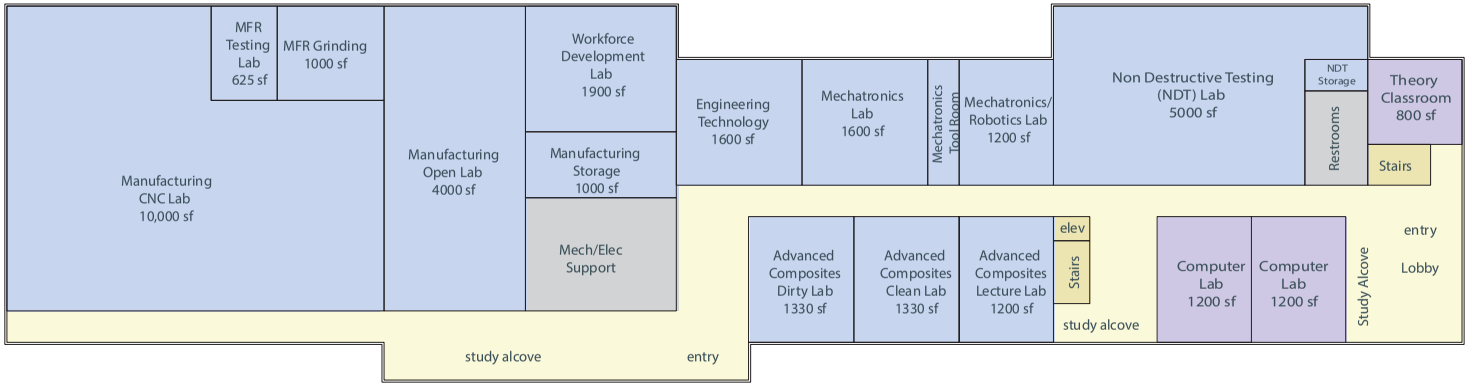
CPTC CENTER FOR ADVANCED MANUFACTURING TECHNOLOGIES

McGRANAHAN architects

PRR DIAGRAM 02.04.14



SECOND FLOOR



FIRST FLOOR

LEGEND

- Shared Classrooms & Computer Labs
- Program Labs
- Office & Meeting Space
- Support Space
- Lobby, Informal Study, and Circulation

NORTH

e. economic demand for manufacturing programs at CPTC

Appendix E – Economic Demand for Manufacturing Programs at CPTC

Figure 1 – CPTC and the Seattle-Tacoma-Bellevue Metropolitan Statistical Area (MSA) [1]

The region served by Clover Park Technical College is part of the Seattle-Tacoma-Bellevue Metropolitan Statistical Area (MSA) as defined by the US Census Bureau which includes Pierce, King, and Snohomish counties. The region is home to 3,500,026, people, which is more than half of Washington's population, making it the 15th largest Metropolitan Statistical Area in the United States[1].

Most of CPTC's students live in Pierce County. However, the economies of the three counties in the MSA are very closely connected, and many people commute daily between them, with the biggest traffic flows being into King County from Snohomish and Pierce. As a result, the three counties are best considered as a single entity when assessing employment trends.

[1] "Annual Estimates of the Population of Metropolitan and Micropolitan Statistical Areas: April 1, 2010 to July 1, 2011" (CSV). 2011 Population Estimates. United States Census Bureau, Population Division. April 2012. Retrieved April 12, 2012. Quoted on http://en.wikipedia.org/wiki/Seattle_metropolitan_area

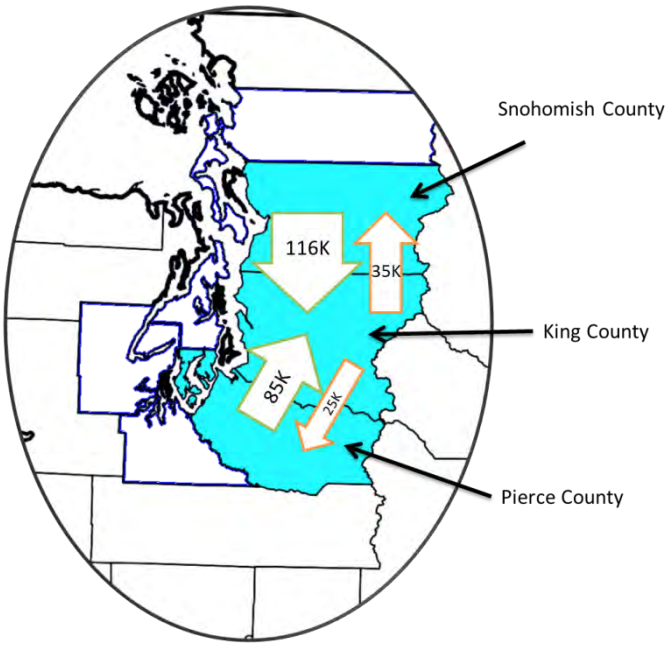


Figure 2 – Major Inter-County Daily Commuting within the Seattle-Tacoma-Bellevue MSA [5]

Pierce County Demographics

Pierce County is the second-most populous county in Washington (behind King County), with a population of 811,681 as of 2012. The population grew thirteen and a half percent between 2000 and 2010 [12].

Pierce County has proportionately more young people (below the age of 18) and fewer older residents (65 and older) than the state[13].

- Pierce County had 7 percent of its population under the age of 5 years compared to the state's share of 6.5 percent.
- Those under the age of 18 made up 24.9 percent of Pierce County's population compared to 23.5 percent of the state's population.
- The oldest age group, those 65 and older, made up 11 percent of Pierce County's population compared to 12.3 percent of the state's population. The baby-boomers are projected to continue to increase for the next 20 years.

As of 2013, about 16,000 people were employed in manufacturing jobs located in Pierce County[4]. However, many more Pierce County residents are part of the 85,000 per day commuting traffic from Pierce to King County and work in manufacturing jobs there.

Manufacturing in the Seattle-Tacoma-Bellevue Metropolitan Statistical Area (MSA)

The Seattle-Tacoma-Bellevue metropolitan area includes nearly two thirds of Washington State's manufacturing employees [4]. Within this geographical area, manufacturing is the second largest employment sector (behind only health care and social assistance) providing about 175,000 well-paid jobs in over 3,500 manufacturing establishments [2,3].

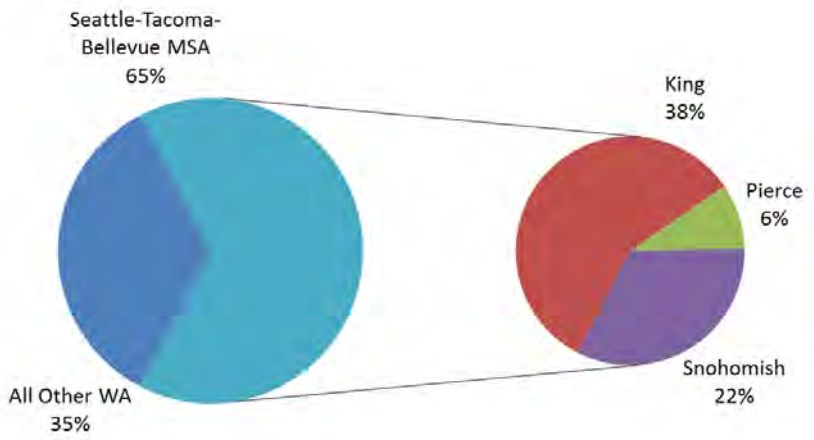


Figure 3 - Distribution of Manufacturing Employment in Washington and the Seattle-Tacoma-Bellevue MSA

The Aging Manufacturing Workforce

Within the Seattle-Tacoma-Bellevue area, the manufacturing sector faces a massive aging-workforce problem. Fifty-six percent of the current workforce (nearly 100,000 workers) is over 45, and more than 40,000 of those workers are within 10 years of retirement. This means that thousands of new workers will be required in the coming decades just to maintain the sector at its current level.

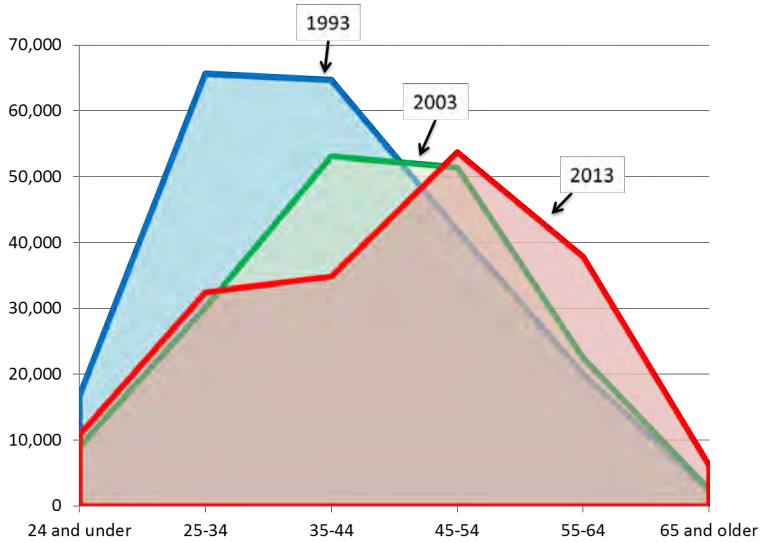


Figure 4 - The Aging Manufacturing Workforce in the Seattle-Tacoma-Bellevue MSA [6]

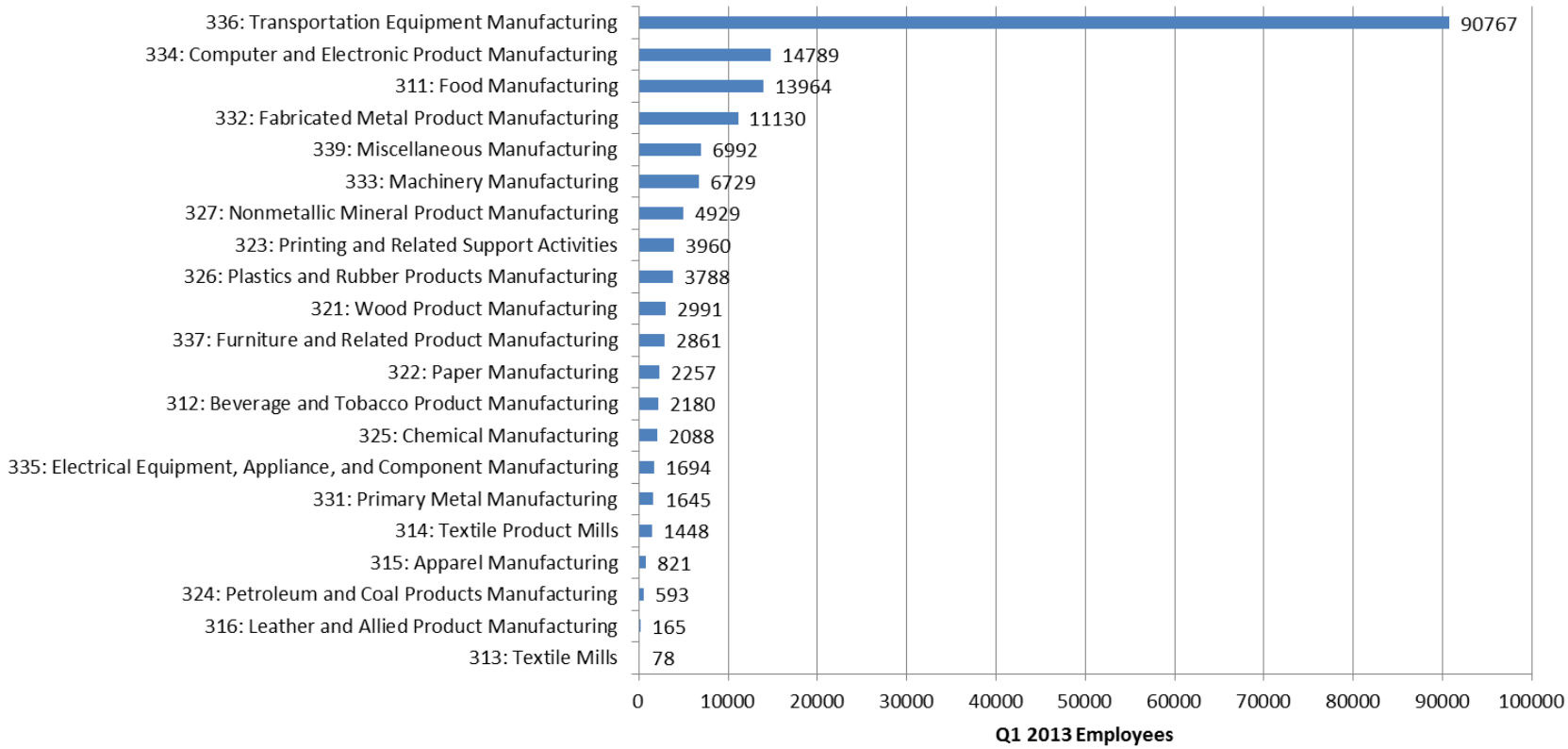


Figure 5 - Employment in the Seattle-Tacoma-Bellevue MSA by Manufacturing Sub-Sector - Q1 2013 [11]

The Importance of the Aerospace Sector

The aerospace sector is, of course, a huge driver for the manufacturing sector in the Seattle-Tacoma-Bellevue area[11]. The problem of the aging workforce is again significant, and new programs such as the 777X will increase the need for skilled workers. The need for new students in aerospace-related programs was clearly identified by the Aerospace and Advanced Materials Manufacturing Pipeline Advisory Committee in their 2012 Annual Report – "Aerospace Manufacturing Skills – Supply, Demand and Outcomes for Washington's Aerospace Training Programs" [9].

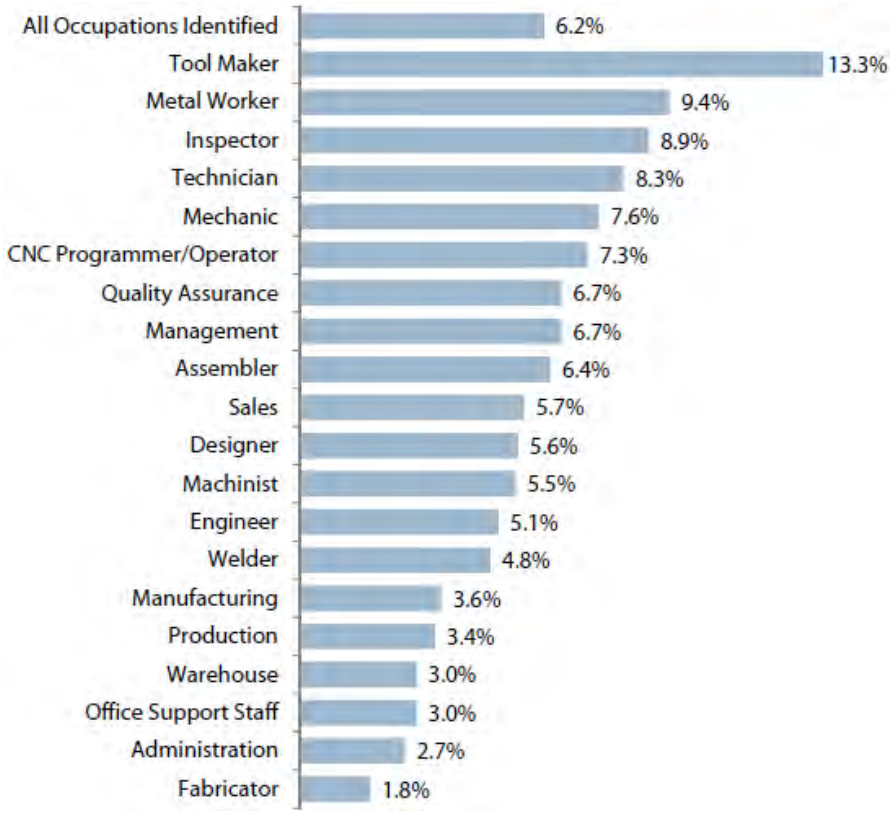


Figure 6 – Aerospace Jobs - Average Annual Increase in Employer Identified Openings Over Next 5 to 10 Years [9]

In the report, the Aerospace and Advanced Materials Manufacturing Pipeline Advisory Committee noted that, based on employer surveys:

> *More than 5,000 annual job openings in these 20 fields are projected over the next five to 10 years, based on an extrapolation from the employment increases anticipated by surveyed employers. The number of average annual job openings includes 760 inspectors and quality assurance (350 more than the latest long-term occupational projection in aerospace), 850 job openings for welders, machinists, CNC programmer/operators, metal workers and tool makers (400 more than the latest long-term occupational projection in aerospace), and 880 engineering jobs (nearly 200 more than the latest long-term occupational projection in aerospace).*

In order to address some of these needs and to support the campaign for keeping the 777X project in Washington, local legislators drafted House Bill 2088 (Aerospace Industry Appropriations) providing $8 million for an additional 1,000 full-time equivalent students in the 2014-15 academic year. The bill received cross-party support and was recently signed into law. [7]

Projected Demand for Mid-Level Occupations

The overall demand for mid-level occupations (those requiring a two-year degree, a long-term certificate, or an apprenticeship) was also highlighted by the recent report from State Board for Community and Technical Colleges, Washington Student Achievement Council, and the Workforce Training and Education Coordinating Board. To meet the need for additional manufacturing and production staff, an additional 355 graduates per year would be required – an increase of forty-four percent. The shortage of qualified installation, maintenance, and repair personnel is even more dramatic and would require an increase of over four hundred percent in the production of such graduates.

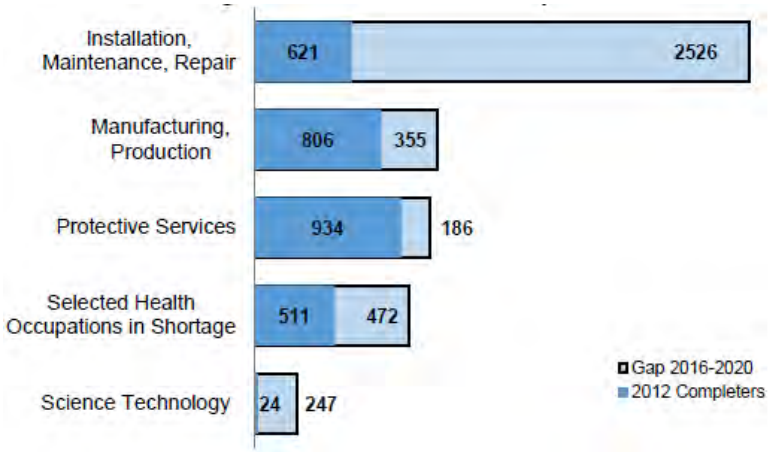


Figure 7 - Comparison of Current Supply with Future Demand for High Demand Mid-Level Occupations [8]

Education Required to Support Advanced Manufacturing

Finally, manufacturing technology continues to advance at a rapid pace. Innovations such as additive manufacturing (3D printing), flexible manufacturing cells, and the increasing use of composite materials mean that new workers will have to have a greater array of technical skills; and incumbent workers will have to be retrained to keep their skills current. The level of education in the manufacturing sector is already relatively high – over sixty percent of manufacturing workers in the MSA have some college, and over thirty percent have a baccalaureate degree or higher. This level is expected to be maintained, or even rise, due to rapid advances in technology.

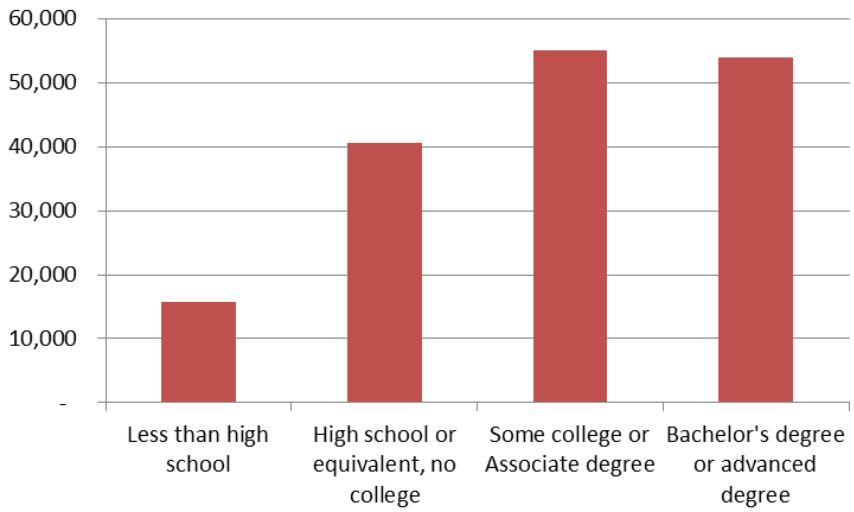


Figure 8 - Number of Manufacturing Employees in the Seattle-Tacoma-Bellevue MSA by Educational Level

References and Supporting Data

Note – all data downloaded 1/4/2014.

1. The Seattle–Tacoma–Bellevue, Washington Metropolitan Statistical Area (MSA)
The United States Census Bureau officially defines the metropolitan area as the Seattle–Tacoma–Bellevue, Washington, Metropolitan Statistical Area (MSA) which includes the city of Seattle, King County, Snohomish County, and Pierce County. With an estimated population of 3,500,026 in 2012 (more than half of Washington State's population), it is the 15th largest metropolitan statistical area in the United States.
Source: http://en.wikipedia.org/wiki/Seattle_metropolitan_area

2. Q1 2013 employment by NAICS code for the Seattle-Tacoma-Bellevue MSA
Source: US Census Quarterly Workforce Indicators - http://ledextract.ces.census.gov/

NAICS Code	Description	Q1 2013 Employment
62	Health Care and Social Assistance	202,555
31-33	Manufacturing	175,870
44-45	Retail Trade	170,855
61	Educational Services	131,137
72	Accommodation and Food Services	124,591
54	Professional, Scientific, and Technical Services	122,211
51	Information	98,269
56	Administrative and Support and Waste Management and Remediation Services	86,662
42	Wholesale Trade	81,428
23	Construction	73,924
81	Other Services (except Public Administration)	69,409
48-49	Transportation and Warehousing	66,921
52	Finance and Insurance	58,202
92	Public Administration	50,626
71	Arts, Entertainment, and Recreation	36,428
53	Real Estate and Rental and Leasing	31,358
55	Management of Companies and Enterprises	30,578
22	Utilities	6,850
11	Agriculture, Forestry, Fishing, and Hunting	3,476
21	Mining, Quarrying, and Oil and Gas Extraction	675
	TOTAL (All NAICS Sectors)	1,622,026

3. Manufacturing Establishments in the Seattle-Tacoma-Bellevue MSA.
Source: 2011 data from http://censtats.census.gov/

Total establishments	3,562
Annual payroll	$ 8,929,491,000
Paid employees for pay period including March 12	138,987

4.Q1 2013 Manufacturing Sector Employment in Washington State
Source: US Census Quarterly Workforce Indicators http://ledextract.ces.census.gov/

Geographical Area	Number Employed	Percentage of WA State Total
Washington State	269,342	100%
Seattle-Tacoma-Bellevue MSA	175,870	65%
- King County	101,701	38%
- Snohomish County	58,034	22%
- Pierce County	16,136	6%

5. Residence County to Workplace County Daily Commuting Flows for the Seattle-Tacoma-Bellevue MSA: 2006-2010
Source: http://www.census.gov/population/metro/data/other.html

		FROM		
		Pierce	King	Snohomish
TO	Pierce	261,035	25,047	1,578
	King	84,697	907,833	116,232
	Snohomish	1,526	35,926	217,426

6. Age of Manufacturing Sector Workers in the Seattle-Tacoma-Bellevue MSA
Source: US Census Quarterly Workforce Indicators http://ledextract.ces.census.gov/
Data for Q1 1993, Q1 2003, and Q1 2013.

	1993	2003	2013
24 and under	16,751	9,036	10,819
25-34	65,691	30,163	32,504
35-44	64,731	53,159	34,890
45-54	41,922	51,423	53,721
55-64	20,052	22,488	37,823
65 and older	2,287	2,513	6,114

7. Engrossed House Bill 2088 – Aerospace Industry Appropriations
Source: http://apps.leg.wa.gov/billinfo/summary.aspx?bill=2088&year=2013

8. A Skilled and Educated Workforce – 2013 Update
Source: http://www.wsac.wa.gov/sites/default/files/2013.11.16.Skills.Report.pdf

9. Aerospace Pipeline Advisory Committee Annual Report 2012
Source: Aerospace Manufacturing Skills – Supply, Demand, and Outcomes for Washington's Aerospace Training Programs - http://www.wtb.wa.gov/Documents/Aerospace2012report.pdf

10. Educational Levels
Source: Q1 2013 data for Seattle-Tacoma-Bellevue MSA from US Census Quarterly Workforce Indicators http://ledextract.ces.census.gov/

	Employees	
Educational attainment not available (workers aged 24 or younger)	10,818	6%
Less than high school	15,667	9%
High school or equivalent, no college	40,581	23%
Some college or Associate degree	54,952	31%
Bachelor's degree or advanced degree	53,852	31%
TOTALS	175,870	

11. Manufacturing Sub-Sector Employment
Source: Source: US Census Quarterly Workforce Indicators http://ledextract.ces.census.gov/
Data for Q1 2013 downloaded 1/3/2014.

NAICS Sub-Sector - Seattle-Tacoma-Bellevue MSA	Employees
336: Transportation Equipment Manufacturing	90,767
334: Computer and Electronic Product Manufacturing	14,789
311: Food Manufacturing	13,964
332: Fabricated Metal Product Manufacturing	11,130
339: Miscellaneous Manufacturing	6,992
333: Machinery Manufacturing	6,729
327: Nonmetallic Mineral Product Manufacturing	4,929
323: Printing and Related Support Activities	3,960
326: Plastics and Rubber Products Manufacturing	3,788
321: Wood Product Manufacturing	2,991
337: Furniture and Related Product Manufacturing	2,861
322: Paper Manufacturing	2,257
312: Beverage and Tobacco Product Manufacturing	2,180
325: Chemical Manufacturing	2,088
335: Electrical Equipment, Appliance, and Component Manufacturing	1,694
331: Primary Metal Manufacturing	1,645
314: Textile Product Mills	1,448
315: Apparel Manufacturing	821
324: Petroleum and Coal Products Manufacturing	593
316: Leather and Allied Product Manufacturing	165
313: Textile Mills	78

Note that, although dominated by aerospace, sub-sector 336: Transportation Equipment Manufacturing also includes other transportation companies such as Paccar.

12. Population of Pierce County
Source: US Census State and County Quick Facts
http://quickfacts.census.gov/qfd/states/53/53053.html

	Pierce County	Washington State
Population 2012 (estimate)	811,681	6,895,318
Population 2010	795,225	6,724,540
Population 2000	700,820	5,894,121
Percent Change, 2000 to 2010	13.5%	14.1%

13. Demographics of Pierce County
Source: US Census State and County Quick Facts
http://quickfacts.census.gov/qfd/states/53/53053.html

	Pierce County	Washington State
Population by age, 2010		
Under 5 years old	7.0%	6.5%
Under 18 years old	24.9%	23.5%
65 years and older	11.0%	12.3%
Females, 2010	50.6%	50.2%
Race/ethnicity, 2010		
White	74.2%	77.3%
Black	6.8%	3.6%
American Indian, Alaskan Native	1.4%	1.5%
Asian, Native Hawaiian, Other Pacific Islander	7.3%	7.8%
Hispanic or Latino, any race	9.2%	11.2%

f. program areas

Clover Park Technical College

McGRANAHAN architects

Center for Advanced Manufacturing Technology - ASF Needs

01.24.14

Program	2013 FTEs	Exist ASF	Projected Space Needs	2023 FTEs	ASF Need
Mechatronics	**0**			**53**	
New Progarm; no current space on campus			Lab 1 Fundamentals of Mechatronics		1600
			Lab 2 - Mechatronics/Robotics Lab		1200
			Tool Room and Storage		400
Existing ASF		**0**	**ASF Need**		**3200**
Bachelors of Applied Sciences in Manufacturing Operations	**0**			**40**	
New Program beginning in 2014			Lab shared with Manufacturing - see below		*
			Compter Lab and Theory Classroom (see shared use below)		*
			BAS Storage		200
Existing ASF		**0**	**ASF Need**		**200**
Manufacturing	**34**			**96**	
CNC Lab		1420	CNC Lab		10000
Open Lab		7957	Open Lab		4000
Grinding Room		795	Grinding Room		1000
Storage		848	Storage		1000
Classroom		895	Testing? Lab (lockable)		625
			Classroom (see Shared Classrooms Below)		*
Existing ASF		**11915**	**ASF Need**		**16625**
Non Destructive Testing	**44**			**64**	
Existing Lab in Building 25		1770	Lab with bench tables, xray space, dark room, equipment testing, capacity for 50 students		5000
Classroom		895	Compter Lab (see shared Computer Labs below)		*
Classroom in B10			Storage		200
			Classroom (see Shared Classrooms Below)		*
Existing ASF		**2665**	**ASF Need**		**5200**
Advanced Composites	**0**			**64**	
New Progarm; no current space on campus			Compostites/Lecture Lab		1200
			Clean Room Lab (twice the area as South Hill Lab)		1330
			Dirty Room Lab (twice the area as South Hill Lab)		1330
Existing ASF		**0**	**ASF Need**		**3860**
Engineering Technology - New Program	**0**			**53**	
			Engineering Technology Lab		1600
			Classroom (see Shared Classrooms Below)		*
Existing ASF		**0**	**ASF Need**		**1600**
Shared Classrooms and Computer Labs	**see above**			**see above**	
Classroom in Manufacturing Lab		895	Theory Classrooms w/ capacity for 25 - (3) at 800 sf each		2400
			Classroom w/ workdesks - (2) @ 1000 sf each		2000
			Computer Labs - (2) @ 1200 sf each		2400
Existing ASF		**895**	**ASF Need**		**6800**
Workforce Development	**10**			**44**	
					1900
Existing ASF		**0**	**ASF Need**		**1900**
Instructional Support Spaces - all programs					
Faculty Offices - Mechatronics			(2) @ 120 sf each		240
Faculty Offices - NonDestructive Testing		120	(2) @ 120 sf each		240
Faculty Offices - BAS in Manufacturing			(2) @ 120 sf each		240
Faculty Offices - Manufacturing		120	(2) @ 120 sf each		240
Faculty Offices - Advanced Composites			(2) @ 120 sf each		240
Faculty Office - Workforce Development			(1) @ 120 sf each		120
Faculty Office - Engineering Technology			(1) @ 120 sf each		120
Faculty - Flex workstations			(6) @ 80 sf each		480
			Conference Room		500
			Faculty Workroom		200
			Shared Meeting Rooms (4) @ 120 sf each		480
Existing ASF		**240**	**ASF Need**		**3100**
Total Existing FTEs	**88**		**Total Projected FTEs**	**414**	
Total Existing ASF		**14,820**	**Grand Total ASF Need**		**42,485**
			Non-Assignable (based on 68% efficiency)		19,993
			Total GSF		**62,478**

g. structural engineering report

Project Memorandum

To: Mike Anderson
Clover Park Technical College
Director Plant Services & Security
4500 Steilacoom Blvd. SW
Lakewood, WA 98499

Phone No.: (253) 589-5529
Email: Mike.anderson@cptc.edu

Date: August 19, 2013
Project No.: 2130191.22 **Task:** 00
Project Name: CPTC Structural Review – Bldg 22
Regarding: Structural Review of Bldg 22

WE ARE SENDING: (4) pages including the cover sheet. A hard copy will ☐ will not ☒ be sent.

THESE ARE TRANSMITTED:

☐ For your review and comment
☒ For your use
☐ Reviewed as noted
☒ As requested

REMARKS:

In August 2013, AHBL, Inc. was asked by Clover Park Technical College to provide engineering services associated with a structural review of Clover Park Technical College Building 22 in Lakewood, Washington. The anticipated scope of work involved a general structural review of the existing building framing in order to develop a list of likely structural deficiencies. It should be noted that our scope of work involved only a general structural review of the vertical and lateral load resisting systems, and does not include a detailed review of other building systems (including foundations and existing soils). Additionally, we did not review the building for compliance with programming, building system efficiency, life safety or ADA requirements.

In order to provide a structural analysis of the existing framing, AHBL, Inc. reviewed existing documentation that was associated with Clover Park Technical College Building 25 (which was originally constructed around the same time as Building 22, and utilized similar construction materials and techniques). This documentation had previously been made available to AHBL, Inc., as part of a seismic upgrade of Building 25, which was performed by AHBL, Inc. in 2003. The seismic upgrade work of Building 25 also included non-destructive testing and selected destructive testing of the existing framing in order to verify the as-built condition of the existing structural framing of Building 25. The information obtained by these tests was incorporated into our review of Building 22, due to the similarities between the observed structural systems. AHBL, Inc. also visited the project site on August 14, 2013 in order to review the as-built condition of the existing framing. Our site observations were limited to elements that were exposed to view from below, and did not include selective demolition of existing wall and ceiling finishes.

Based upon the information provided to AHBL, as well as our field investigation, the following information regarding the existing structural framing could be determined:

- CPTC Building 22 was constructed in the early 1940's as part of the original military campus construction. Building 22 consists of a one-story building, with loading docks along the exterior longitudinal walls of the building. The existing roof framing

TACOMA

2215 North 30th Street
Suite 300
Tacoma, WA 98403-3350
253.383.2422 TEL
253.383.2572 FAX

www.ahbl.com

extends past the longitudinal exterior walls in order to create canopy elements over the exterior loading docks.

- The roof framing consists of heavy timber construction. Tongue and groove timber decking spans between solid sawn timber purlins. The purlins in turn span between built-up heavy timber trusses, which are supported by either timber columns at the building interior, or masonry pilasters at the exterior walls.
- Exterior walls consist of unreinforced concrete masonry units (CMU), with nominally reinforced CMU pilasters at truss bearing locations.
- Openings in the exterior CMU walls are framed with nominally reinforced CMU lintels.
- Several interior "fire-walls" are located at the interior of the building. These walls are constructed of un-reinforced CMU, which extend from the foundation up through the roof framing. These walls extend through the roof, terminating above the roof with parapet elements.
- Based upon observations made during our field visit, the condition of the existing roof framing appears to fall within the range anticipated for conventional heavy timber construction for buildings of this age. The roof framing appears to be in very good condition, and did not show any signs of excessive rot or decay. The framing also did not exhibit unusual deflections or damage (which would indicate an overload condition).
- The condition of the existing interior and exterior masonry walls appears to be consistent with conventional unreinforced masonry. Several diagonal cracks were noted throughout the CMU walls. These diagonal cracks follow CMU head and bed joints, and occur primarily around windows and other openings. The observed cracking did not appear to be excessive for a building of this age, and did not appear to indicate an immediate collapse condition or significant risk to building occupants.

Based upon our review of the existing framing, we feel that the existing framing for Building 22 likely has several deficiencies in both the vertical and lateral load resisting systems when compared with modern code requirements. These deficiencies, which represent significant vulnerabilities in the lateral load resisting systems, are typical for buildings constructed in the same time period as Building 22, which was constructed long before the current Building Code was in effect. The types of deficiencies (and suggested upgrade options) that are likely present in Building 22 are as follows:

- The existing roof framing likely does not include a layer of plywood sheathing. Therefore, the roof decking is inadequate for lateral forces due to wind or earthquake loading.
    - Upgrade: We recommend that plywood sheathing be added throughout the existing roof. This sheathing could be added incrementally as part of re-roofing projects for the building.
- The existing roof purlin connections are likely inadequate for wind uplift forces.
    - Upgrade: We recommend that vertical light gage straps be added where each purlin is supported by existing framing.
- The existing heavy timber truss connections are likely inadequate. The existing truss vertical and diagonal webs do not appear to have positive connections between the webs and truss top and bottom chord members.

  - Upgrade: We recommend that connection plates be added at the ends of each of the existing truss web members. These connection plates could consist of steel plates that would be placed on either side of the existing webs, and screwed or through-bolted into the existing framing.
- The existing unreinforced masonry walls are inadequate for both out-of-plane and in-plane lateral loads. Under lateral (wind or seismic) loads, the unreinforced masonry could break apart, resulting in collapse of the wall elements and roof framing supported by the walls.
  - Upgrade: For out-of-plane lateral loads, we recommend that the existing CMU walls be "strong-backed" with the addition of new 2x wood studs or light gage steel studs on the inside face of the building. These studs would be attached to the existing CMU with three or four rows of anchors along the height of the walls. The new studs would also be anchored into the existing slab on grade and roof structure.
  - Upgrade: For in-plane lateral loads, we recommend that a series of braced frames (X braces consisting of tension only rods or tube steel members) be added around the exterior perimeter of the structure. Additionally, braced frames would be added in the transverse direction at each endwall, as well as on either side of the existing interior CMU partition walls.
- The diaphragm chords around the exterior perimeter of the existing building are likely inadequate.
  - Upgrade: The diaphragm chords can be upgraded with the addition of horizontal light gage steel straps at all existing purlin splices at the exterior perimeter of the building.
- The connection of the existing roof framing to supporting CMU walls is likely inadequate. Under lateral (wind or seismic) loading, these walls could pull away from the roof diaphragm, resulting in a partial collapse of the walls and supported roof structure.
  - Upgrade: Horizontal straps or ties should be added at all locations where the existing timber purlins connect to existing unreinforced masonry walls. The ties would act to prevent the CMU walls from pulling away from the roof diaphragms.
- The existing building appears to be larger than what is currently required for the Clover Park Technical College warehouse and maintenance programs.
  - It would be possible to reduce the size of the existing building by demolishing selected portions of the building. The most practical method for reducing the size of the building would be to demolish all existing framing on one side of the existing interior CMU "fire walls". Since the existing framing is completely interrupted by the "fire walls", it is unlikely that additional modification would be necessary if the framing on one side of the wall is completely removed (effectively turning an interior CMU wall into an exterior building endwall).

Due to the construction materials used on the building, and current building use, it would be relatively economical to upgrade the building structural frame. Very few structural

elements are concealed from view, so a majority of the building framing is readily accessible from below. This would allow upgrades to be installed with few obstructions and limited demolition necessary to expose the framing. This concludes our summary of the structural capacity of the existing framing at CPTC Building 22. Feel free to contact AHBL, Inc. if you have any questions, or would like to discuss any of our findings in greater detail.

Signed:

Andrew D. McEachern, P.E., S.E.
Project Manager

AHBL

TACOMA • SEATTLE
253.383.2422 TEL
253.383.2572 FAX
www.ahbl.com

Q:\2013\2130191\20_STR\NON_CAD\22 CPTC Bldg 5 and 22\2130191.22 memo02 - Bldg 22.doc

Clover Park Technical College – Lakewood Campus
Building 22 - Mechanical Assessment
June 27, 2013

Introduction:

A detailed walk through at the existing Building 22 was completed on June 14th, 2013. The purpose of the walk through was to confirm the mechanical systems in place and identify any code or safety deficiencies that require repair or replacement. The following report is broken out per area of the building with each system broken out as appropriate.

General:

HVAC

- The overall building was fed by a central steam generating system with high bay fan powered unit heaters at the bottom chord of the roof trusses. This system has been decommissioned, the piping and the unit heater casings (interior components removed) remain in place. Over time this could be cause for concern with the fact that no seismic restraint appears to be present for any of this old equipment and piping.
    - Cost opinion to remove all the decommissioned items that are no longer in service is approximately $35,000.
- Ventilation is not present in numerous areas, and several HVAC units are past their useful life.
    - The cost opinion to add and replace these systems is approximately $276,050. See the individual area descriptions below for more detail and additional items.

Building Wide Controls

- Cost Opinion to gain control of existing systems and replacement systems would be approximately $240,000.

Fire Sprinkling

- The entire building appears to be protected by an existing fire sprinkler system at the roof level and out at the loading dock areas. See the individual area descriptions for additional fire sprinkling items.

West End/Maintenance:

High-Bay Area

- Radiant heating is used throughout this area.
    - Low-intensity tube type heaters are located throughout, but are not used (they are operational).
    - 1 unit heater and 1 High intensity radiant heater are being used currently.
- Ventilation is not present in this area, required by code.

  - Cost Opinion to provide ventilation to this space to meet code is approximately $7,500
- Wood working area
  - Internal dust collection system with full recirculation and bag filters inside the occupied area. Shop equipment ducted to the dust collection system.
  - Cost Opinion to replace the dust collection system with similar sized equipment, located outside with recirculation would be approximately $90,000.
  - Fire sprinkling is not present in this area. Cost opinion to add FS to this occupied space would be approximately $1,800.

Storage Area Underneath Wood Mezzanine

- Wood bench work areas and storage shelving/closets are present in this area.
  - Ventilation is not present. Cost Opinion to provide ventilation/exhaust for this space would be approximately $3,000.
  - Heating is not present. Cost Opinion to provide heating for this space would be approximately $4,200
  - Fire sprinkling is not present in this area. Cost opinion to add FS to this occupied/storage space would be approximately $3,000

Kitchenette under wood mezzanine

- Range hood exhausts and terminates out of a window pane. This would need to be relocated to obtain proper distance from building opening. Cost opinion to replace the range hood vent termination to meet code would be approximately $300
- Split System DX unit serving heating and cooling to this space.
  - Unit does not include economizer or relief.
  - Unit does not have proper ventilation air intake
  - Ductwork is not sealed properly
  - Cost opinion to replace the unit due to exceeding its useful lifespan and to meet code for the installation, including programmable control, would be approximately $3,300
- Outdoor unit serving kitchenette SS unit is located inside the high bay area. Cost opinion to replace the outdoor unit due to age would be approximately $1,200
- Fire sprinkling is not present in this area. Cost opinion to add FS to this occupied space would be approximately $2,400

Paint Booth

- Paint booth is open type, no separation from occupied space under mezzanine. The switch for the paint booth operation is outside the paint booth area. There is paint storage and flammable lockers in this area as well.
  - Overall, this configuration does not appear to be code compliant due to lack of separation, items being stored in this area and control of the equipment.
  - If paint booth operation requires remaining in place, a packaged unit would need to be installed, or an architectural separation would be required. Cost opinion to replace the paint booth with a self-contained unit providing appropriate ventilation and exhaust would be approximately $100,000
  - Proper storage areas with appropriate separation and ventilation for the storage items would need to be provided. Cost opinion to include appropriate ventilation and exhaust for new storage areas would be approximately $2,800
- Fire sprinkling is not present in this area. Cost opinion to add FS to this high hazard area would be approximately $2,800

Maintenance Staff Office / Storage area built w/ wood inside the high bay area

- Lower Maintenance Office Area
  - Area fed by HVAC unit located outside on platform above loading dock. Unit includes programmable control.
    - Unit exceeds useful life expectancy and appears to be lacking ventilation per current code requirements.
    - Cost Opinion to replace the HVAC unit would be approximately $22,000
  - Area includes fire sprinkling coverage.

- Lower and Upper crew office and storage areas
  - Areas fed by inline fan coil with no OSA connections, it is pulling air from open high bay.
  - Storage spaces do not include exhaust
  - Offices, ventilation is not present with some areas with no air connections at all.
  - Cost Opinion to replace the HVAC equipment serving these areas would be approximately $7,500
  - Area includes fire sprinkling coverage.

Grounds Maintenance Area:

- Workshop office, there is no heating source and no active ventilation.
  - Cost opinion to add heat and ventilation to the office area would be approximately $1,500.
- The high bay area is open throughout.
  - Low intensity, tube type radiant heaters are present and operational, not used.
  - No ventilation is present.
  - One vehicle exhaust fan with ducting and (3) drops are used for localized exhaust when working on machines.
  - Grounds keeping equipment (riding mowers, trimmers, tractor type units are stored and appear to be operated inside (for transportation outside the space.
  - Cost opinion to provide ventilation for the high bay area would be approximately $7,500.
- High rack storage for plastics (hand hole boxes, wrapping, etc.) is in place.
  - Cost opinion to add fire sprinkler coverage for the high rack storage area would be approximately $16,500.

Custodial Staff Area:

- Meeting room
  - Electrical baseboard heaters, appear to be in disrepair. Ventilation is not present in this meeting/assembly type space.
  - Cost Opinion to replace the HVAC system for this area would be approximately $11,000.
  - Sprinkler coverage is not present in this space. Cost opinion to add fire sprinkler protection for this space would be approximately $5,200.
- Office
  - No HVAC is present in the space. Cost Opinion to add HVAC would be approximately $6,800.
  - Sprinkler coverage is not present in this space. Cost opinion to add fire sprinkler protection for this space would be approximately $3,400.

- Storage
  - Low intensity, tube type radiant heaters are present and operational.
  - No ventilation is present. Cost opinion to provide ventilation for the storage area would be approximately $5,600.
  - Large trench/utility system
    - Used previously for cleaning/commercial laundry program in the 80's
    - Mostly decommissioned
    - Washer unit currently installed drains to open trench, which is oversized for current installation and is not positively draining with the current buildup of debris.
    - The dryer unit connects to an existing duct collection duct, which does not appear to meet code for distance and sizing.
    - Cost opinion to demolish the unused utilities and replace the necessary connections for the washer and dryer units currently present, to meet code, would be approximately $2,500.
- Record storage
  - Open high bay area is for document box storage. No racking, just piled up boxes to about 4-5 feet. Heat is present with tube type low intensity radiant heaters.
  - Secure storage area (wood framed area within high bay area) does not include heat, ventilation or fire sprinkler protection.
    - Cost Opinion to add HVAC would be approximately $6,200.
    - Cost opinion to add fire sprinkler protection for this space would be approximately $3,100.
  - Upper storage area has heat present with tube type low intensity radiant heaters.
    - Ventilation is not present in this space. Cost opinion to add ventilation to this space would be approximately $3,700.
- Restroom
  - The current restroom is not ADA compliant with new urinals and old remaining fixtures that are not in good shape.
    - Cost opinion to replace the fixtures in the same location would be approximately $9000.
  - The current ventilation/exhaust fan discharges to the open bay, which does not meet code.
    - Cost opinion to replace the exhaust fan would be approximately $500.

Veterans Resource Center:

- This area consists of non-full height walls that create semi-separate spaces that include the main entry/gathering space, and two classroom type spaces.
  - Due to no full height walls or ceilings, the fire sprinkler coverage at the roof level appears to be adequate for the space.
  - There is a unit heater located above the non-full height wall systems. It appears to be operational, but would not allow for proper coverage of heating. No ventilation is present in this space.
  - Cost opinion to replace the heating and ventilation system for this space would be approximately $56,000.
  - Cost Opinion with ceilings added to this area would be an extra $28,000.

Clover Park School District Warehouse:

- This area is strictly high rack storage for CPSD. There does not appear to be any heat or ventilation for the space. There is fire sprinkling coverage at the roof level, but nothing for the high rack storage.
    - Cost opinion to replace the heating and ventilation system for this space would be approximately $30,000.
    - Cost opinion to add fire sprinkler protection for the high rack storage in this space would be approximately $42,000.

Boiler Room:

- These boilers have been decommissioned.
- The domestic hot water heater appears to be operational, which feeds the Bathroom. The DHW is a natural draft type, which requires combustion air in the room and vents through a b-vent type flue. There was a natural gas odor in the space.
    - Cost opinion to remove the decommissioned boilers would be approximately $5,000.
    - Cost opinion to replace the water heater with a sealed combustion type unit to not allow gas and flue products to accumulate in the central location (no exterior walls) would be approximately $6,000.

Warehouse:

- Office Space, which was stick built within the high bay area, has HVAC fed by a split system heat pump unit with the indoor unit located above the office area and the outdoor condensing unit out on loading dock. Supply and returns are located in each of the spaces. A vent is cut in to provide ventilation, but is not adequate for the spaces served. A non-programmable thermostat is controlling the heat pump unit.
    - Cost opinion to replace the HVAC and controls for this office area would be approximately $28,600.
    - No exhaust is present in the storage room.
        - Cost opinion to provide exhaust for the storage room would be approximately $500.
    - No fire sprinkling is present in the lower areas.
        - Cost opinion to provide fire sprinkling in the lower area would be approximately $14,300.
- Warehouse space includes high bay storage area and a mezzanine with restrooms underneath and storage above and below, but open to the high bay area. The high bay area includes gas fired unit heaters, no ventilation and fire sprinklers at the roof level.
    - Cost opinion to add ventilation to this space would be approximately $7,500.
    - The restroom fixtures are not in good shape, the faucets don't fully close so water runs continuously and the exhaust is not operational
        - Cost opinion to provide exhaust would be approximately $600.
        - Cost opinion to replace the fixtures in the same location would be approximately $7,500.
    - Mezzanine
        - Cost opinion to provide fire sprinkling in the lower areas that would require protection would be approximately $10,100.

East End Boiler Room:

- Hot water generators are present and operating with an air compressor for pneumatic controls that appear to serve the entire east end of the building with radiant heaters.
    - This equipment is past its useful life. Cost Opinion to replace the hot water generators and appropriate controls would be approximately $8,000.

International Studies:

- This area is served by rooftop HVAC equipment with supply and return ducted to the space that appears to be still operating, but is nearing or past its useful life. The hot water convectors are located around the perimeter with little control and no apparent ability to eliminate simultaneous heating and cooling. The kitchenette has range exhaust as a fan in the ceiling. The storage and office spaces separated from the main area do not have supply, return or exhaust present.
    - Cost opinion to replace the HVAC in this area with appropriate controls would be approximately $12,800.
    - Cost opinion to replace the kitchen range hood exhaust to a hood directly vented to the exterior would be approximately $250.

I.T. Area:

- The office area is broken up into individual areas, without total separation so all spaces communicate. There is an open ceiling grid (no tiles) throughout the space. Roof mounted equipment serves supply and return to the area, but there is not distribution in all of the individual spaces. Fire sprinkling is present above the ceiling grid system, but not below.
    - Cost opinion to replace the HVAC system and controls for this area would be approximately $32,500.
    - Cost opinion to provide fire sprinkling below the ceiling grid system would be approximately $16,200.
- The restrooms are not ADA compliant and have fixtures that are not in good shape, except the urinals which are new. There is no exhaust present and heat is by the hot water convectors with pneumatic control.
        - Cost opinion to provide exhaust would be approximately $1000.
        - Cost opinion to replace the fixtures in the same location would be approximately $9000.
        - Cost opinion to replace the heating in the restroom areas would be approximately $2000.

END OF MECHANICAL ASSESSMENT REPORT

i. electrical engineering report

Clover Park Technical College – Lakewood Campus
Building 22 - Electrical Assessment
June 24, 2013

Introduction:

A detailed walk through at the existing Building 22 was completed on June 4th, 2013. The purpose of the walk through was to confirm the electrical systems in place and identify any code or safety deficiencies that require repair or replacement. The following report approaches the building holistically and then provides additional detail for individual building areas.

General:

Power System:

The building is powered from aging panels in the core of the building. An assortment of branch panels are scattered throughout the building- most of which are very old and well past their life expectancy. Finding breakers for aging panels is extremely difficult and costly. Several panels are installed in a manner that does not meet code.

- Cost opinion to replace outdated electrical system: $150,000.

Lighting:

Light fixtures within the building have recently been upgraded to T8 linear fluorescent fixtures. The fixtures appear to have been restored properly and are in good condition. Lighting controls typically do not meet current Washington State Energy Code. Some areas do not have manual control, most areas do not have occupancy sensing controls, and no areas have daylight harvesting controls. The lighting system is not required to be corrected because it was grandfathered in under a previous code, but substantial maintenance and cost savings could be realized by adding occupancy sensors.

- Cost opinion to add occupancy sensors: $40,000.

Emergency egress and exit lighting are virtually non-existent. This situation poses significant safety hazards to building occupants during a power outage. There are many occupied windowless spaces within the building that would have no light or way-finding.

- Cost opinion to add emergency battery packs and illuminated exit signs: $36,000.

Fire Alarm:

The entire building appears to be protected by an existing fire alarm system. The system is comprised of bells, pull stations, and a few strobes. The bells are typically at the roof deck level in high-bay areas and on the ceiling in rooms with lower ceiling heights. Manual pull stations are located at most exits and strobes are located sporadically throughout the building. The current device layout appears to be adequate for able-bodied personnel, but is not adequate for anyone with a hearing disability (ADA). Many strobes will have to be added in order to meet Accessibility standards. It is unlikely that the existing alarm system can be economically upgraded to include this quantity of additional strobes. Replacing the entire system is likely the most cost effective approach.

- Cost opinion to replace the fire alarm system: $120,000.

Additional Space Details:

West End/Maintenance

Power

- At least two panelboards are located more than 6'-0" above the floor
- At least two panelboards are mounted above a countertop that limits access

Lighting

- Emergency egress lighting is minimal to non-existent
- There are no illuminated exit signs
- There do not appear to be any occupancy sensors or similar automatic controls

Fire Alarm

- There are a few scattered strobes throughout the space, but not enough for full coverage
- Pull stations are missing at the top of the stairways

Grounds Maintenance Area and Maintenance Offices

Power

- At least one panelboard is located more than 6'-0" above the floor and obstructed by a counter
- At least one panelboard is partially obstructed by hoses

Lighting

- Emergency egress lighting is minimal to non-existent
- There are no illuminated exit signs
- There are a few occupancy sensors in the office area, but it's not fully covered

Fire Alarm

- There are a few scattered strobes throughout the space, but not enough for full coverage
- Pull stations are missing in several areas

Custodial Spaces

Power

- At least two panelboards are located more than 6'-0" above the floor
- The service panelboards do not have the code required working clearance- a trench runs in front of them

Lighting

- Emergency egress lighting is minimal to non-existent
- There are no illuminated exit signs
- There do not appear to be any occupancy sensors or similar automatic controls

Fire Alarm

- There are a few scattered strobes throughout the space, but not enough for full coverage
- Pull stations are missing at the top of the stairways and other egress points

Veteran's resource center

Power

- At least two panelboards are located more than 6'-0" above the floor

Lighting

- Emergency egress lighting is minimal to non-existent
- Manual controls are missing from several spaces
- There are no illuminated exit signs
- There do not appear to be any occupancy sensors or similar automatic controls

Fire Alarm

- There are a few scattered strobes throughout the space, but not enough for full coverage

OPSD maintenance warehouse

Power

- At least two panelboards are located more than 6'-0" above the floor

Lighting

- Emergency egress lighting is minimal to non-existent
- There are no illuminated exit signs
- There do not appear to be any occupancy sensors or similar automatic controls

Fire Alarm

- There are a few scattered strobes throughout the space, but not enough for full coverage

Warehouse

Power

- At least two panelboards are located more than 6'-0" above the floor

Lighting

- Emergency egress lighting is minimal to non-existent
- There are no illuminated exit signs
- There do not appear to be any occupancy sensors or similar automatic controls

Fire Alarm

- There are a few scattered strobes throughout the space, but not enough for full coverage
- Pull stations are missing at the top of the stairways

East end

Power

- At least one panel has the code required clearance impacted by the boiler

Lighting

- Emergency egress lighting is minimal to non-existent

- There are no illuminated exit signs
- There do not appear to be any occupancy sensors or similar automatic controls
- Daylight harvesting is not utilized (newer Washington State Energy Code requirement)

Fire Alarm

- There are a few scattered strobes throughout the space, but not enough for full coverage
- Pull stations are missing at the top of the stairways and other egress points

j. excerpts from strategic plan

Core Beliefs

VISION

Transforming lives, enriching communities, and enhancing futures by creating an environment of innovation, equity, and excellence through education.

MISSION

We are a values-driven institution that delivers quality education, training, and support focused on student success in an evolving economy.

VALUES

- Equity
- Respect
- Diversity
- Innovation
- Excellence
- Student Success
- Lifelong Learning
- Social Responsibility

VALUES DEFINITIONS

Equity:

> We recognize that the unique needs, goals, and circumstances of the individual have a direct impact on a person's ability to access and benefit from college activities and opportunities.

Excellence:

> We seek opportunities to consistently exceed our best individual and institutional performance.

Respect:

> We consider respect to be the inherent dignity we give all people.

Diversity:

> We celebrate the many individuals that make up our community and embrace the opportunity to learn from both their differences and similarities.

Innovation:

> We pursue the development and application of new ideas that lead to creative solutions.

Student Success:

> We support our students to reach or exceed their personal goals or other desirable outcomes.

Lifelong Learning:

> We promote ongoing pursuit of knowledge for both personal and professional reasons.

Social Responsibility:

> We commit to decisions and actions that are socially aware and make us a strong community partner.

Strategic Goals and Objectives

Promote student success

i. Provide an environment that supports student retention, persistence, and completion
ii. Invest in personal and professional growth for all employees
iii. Celebrate staff and student achievement, success, and creativity

Champion equity

i. Create an understanding of equitable principles
ii. Identify and implement opportunities for increasing equity
iii. Identify and address achievement gaps

Build an educated community

i. Ensure student learning outcomes are aligned with current professional standards
ii. Respond to labor market needs and close workforce gaps
iii. Expand lifelong learning and professional credentialing opportunities
iv. Strengthen educational transitions between K-12 and higher education

Enhance institutional capacity

i. Create and improve systems to support a culture of inquiry and evidence-based decision making
ii. Review and revise systems and processes for effectiveness
iii. Judiciously manage the acquisition, use, and maintenance of goods and materials
iv. Integrate technology across the college

Promote innovation

i. Upgrade the college's innovation support structures
ii. Create a culture where all ideas can be shared and validated
iii. Develop entrepreneurial attitudes, behaviors, and skills that can be applied across the college
iv. Develop collaborative and innovative partnerships with internal and external stakeholders.

Create and maintain a sustainable college community

i. Cultivate relationships and explore options to find and utilize alternative funding sources
ii. Maintain and update existing infrastructure
iii. Implement sustainable practices
iv. Document our institutional knowledge

Foster community engagement and social responsibility

i. Build and maintain community partnerships
ii. Promote and strengthen internship and service opportunities
iii. Identify and develop opportunities for community education and outreach
iv. Promote a welcoming and safe environment

k. excerpts from Master Plan

limited to staff email and a legacy host system. Since then, 66% of the instructional programs have added a computer or internet component to their curriculum. This number is expected to increase as an increasing amount of information and resources becomes available in electronic form.

Quality facilities to support program needs continues to be a high priority with the College. Programs that are projected to have the most growth, as indicated by occupational projections and enrollment trends, include the Allied Health programs, Manufacturing, and the Technology programs. Future needs call for an increased number of biology and science labs as the Environmental Sciences program and the NWCTHS are anticipated to experience growth.

Utilization and Adjacency Issues

There are a number of related programs scattered across campus, such as those related to Computer/Information Technology. The College has been systematically moving towards centralized facilities for related programs. Consolidation improves utilization of equipment and space, increase the ability to share resources and facilitate the interdisciplinary teamwork necessary in many of today's work environments. The recently completed Health Sciences building brought together 12 of the College's healthcare programs under one roof, and provided a collaborative office area to encourage integration amongst faculty and programs. As opportunities become available, consolidating existing on-campus programs would enable to college to offer better services to students and more efficiently utilize operating dollars.

Program Space Needs

To determine program space needs for current and anticipated new projects, the College contracted with McGranahan Architects to determine space needs for the Capital Planning process. The programming team toured existing facilities and interviewed the VP of Instruction, Division Deans, and key faculty regarding program needs and anticipated new programs. Projected space needs are based on the projected growth in programs as well as an analysis of the functional adequacy of existing facilities. In addition, the CPTC delivery model is considered. Many of the programs at the College are both equipment and technology intensive, and require dedicated lab space.

A new facility to improve instructional space and program delivery for the Manufacturing Technology programs is the next critical program need of the College. Existing facilities do not have the technology and infrastructure requirements for these programs. New programs including Mechatronics Technician, BAS in Manufacturing Operations, Engineering Technology, and Advanced Composites Technology cannot be adequately accommodated in existing space. Further, Workforce Development would also benefit with adjacency to the manufacturing programs, to meet the needs of Industry Partners in the manufacturing fields. The program space analysis for this project conducted in the programming phase has identified an Assignable Square Foot (ASF) need of 42,485 sf. Based on a 68% building efficiency factor (i.e. 32% of total area to accommodate circulation, mechanical/electrical spaces, structure/walls, and restrooms), the anticipated Gross Square Foot (GSF) need is 62,478 sf. **Replacement of Building 22, a 1940s maintenance/warehouse facility in deteriorating condition, to accomplish this project is CPTC's highest facilities priority.**

Additional program space needs for the campus include Culinary Arts and Restaurant Management, Environmental/Sustainability programs, classrooms for Basic Skills, and labs for emerging STEM fields.

The following projects are currently active or recently completed:

- **Health Sciences Building**
  CPTC recently completed the Health Sciences Building to expand the existing Health Care programs to meet the growing need in the community for Health care professionals. The site for the location of this new building is in the Central Campus Zone.

After an analysis of Program Needs and Facilities Conditions, the College prioritized projects by each biennium. The anticipated schedules for the following planned projects are dependent upon approval of State Capital funding.

2015/2017 Biennia Requests:

- **Replacement Project Building 22 – Center for Advanced Manufacturing Technologies**
  Replacement of Building 22, a former Navy Supply Warehouse in poor condition, with **a new instructional facility for the manufacturing programs is the highest priority of CPTC.** Due to the significant amount of seismic and structural deficiencies (un-reinforced concrete masonry unit walls), accessibility challenges due to raised loading docks at both buildings, inadequacy of electrical/mechanical systems, and poor overall condition of the buildings, renovation of Building 22 is not feasible and Replacement is the best option. The proposed facility will include the following manufacturing programs: Manufacturing Technologies, BAS in Manufacturing Operations, Mechatronics Technician, Advanced Composites Technology, Materials Science-Non-Destructive Testing, Engineering Technology, and workforce development. The Potential site for this new building is in the Central Campus Zone on the Master Plan diagram.

  Anticipated Project Schedule:
  Pre-Design: July 2015 – November 2015
  Design: December 2015 – April 2017
  Bid: May 2017
  Construction: July 2017 – January 2019

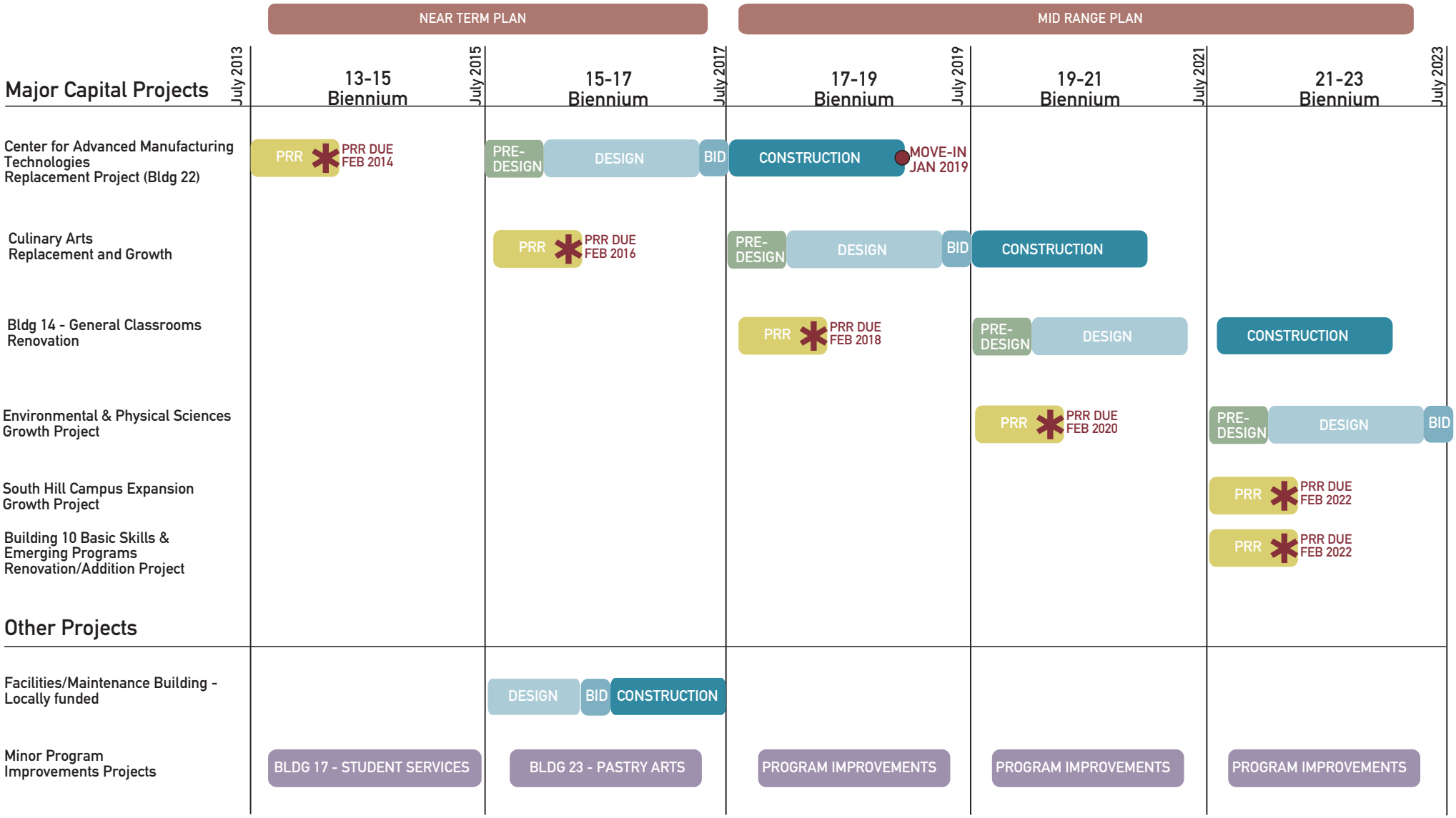
Future Biennia Requests:

Upon successful approval of funding for the Center for Advanced Manufacturing Technologies, the next priorities (listed in order) for the College are as follows:

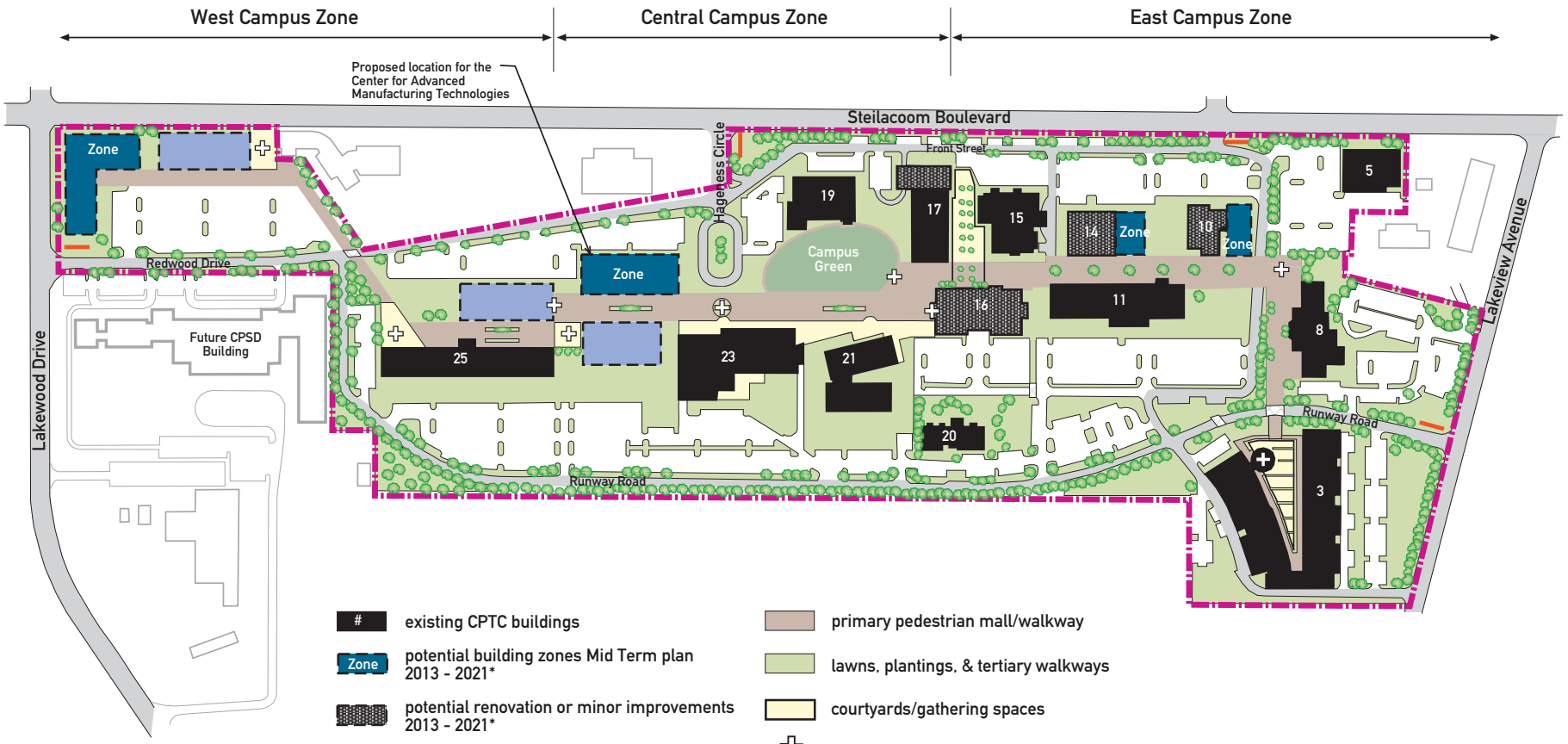
- **Culinary Arts – Growth and Replacement of Building 31**
  The Culinary Arts and Restaurant Management programs continue to grow. They have outgrown their space in Building 31. Building 31 was constructed in 1974 and is less than 6,000 sf. The Culinary

Clover Park Technical College
10 Year Capital Plan DRAFT
Updated February 2014

McGRANAHAN architects



1014.080-2



Note that potential building zones do not represent actual building footprints - refer to Design Guidelines in Master Plan.
*Timing of proposed/potential projects is dependent upon approval and availability of State Capital Funding

N

Clover Park Technical College Mid - Long Term Master Plan Diagram

McGranahan Architects 03.12.12

Scale: 1" = 300'-0"

l. excerpts from facility condition survey

BUILDING CONDITION RATING

COLLEGE: Clover Park Technical College *SITE:* Lakewood Campus
BLDG: 29022 Auxiliary Services *STATE UFI:* A01800
59,331 SF *BUILT:* 1940 *REMODELED:* *PREDOMINANT BLDG. USE:* Maintenance
CONSTRUCTION TYPE: Medium *CRV/SF:* $211 *CURRENT REPLACEMENT VALUE:* $12,518,841
MGMT. CODE: Major Renovation - $100-$200/SF

Component	*Score*	*Comment*
Primary Systems		
Structure	40	Significant structural defects apparent in superstructure; visible settlement and potential structural failure; safety hazard
		Un-reinforced CMU; heavy timber columns & roof trusses; seismic deficiencies
Exterior Closure	24	Exterior walls, doors, windows, soffits and finishes are sound and weatherproof, but with moderate deterioration evident
		CMU
Roofing	50	Membrane leaks and significant deterioration is evident; replacement is warranted
		Built-up roof-replacement funded in 2005-funds diverted
	Subtotal =	**114**
Secondary Systems		
Floor Finishes	30	A majority of floor surfaces exhibit extensive wear and deterioration and should no longer be maintained
		Carpet, asphalt and concrete
Walls - Finishes	18	Wall surfaces exhibit random finish deterioration and moderate wear and/or damage; maintenance is required
		CMU
Ceiling Finishes	18	Ceiling surfaces exhibit random finish deterioration and moderate wear and/or component damage; maintenance is required
		Lay-in tile; exposed wood roof trusses & deck
Doors-Hardware	30	Extensive deterioration/damage/wear of door surfaces is evident; door hardware is old, deteriorated, and malfunctions frequently
		Interior wood doors/frames; exterior aluminum doors/frames and wood sliding doors
	Subtotal =	**96**
Service Systems		
Elevators	6	One story building
Plumbing	24	Piping is older but serviceable; some recurring leaks are reported or some pipe deterioration is evident; fixtures show some wear but are serviceable; maintenance is required
		Galvanized and cast iron piping; vitreous fixtures
HVAC	24	HVAC system is generally adequate but older; minor to moderate deterioration of components is evident; maintenance/repair is required
		HW boiler; packaged HVAC units; unit heaters
Electrical Service	24	Service capacity is adequate, but there may be distribution panel capacity issues
		1200amp 480/277v; original lighting panels
Lights/Power	8	Contemporary lighting with good work area and instructional space illumination
		Lighting upgrade 2012

***Subtotal* = 86**

Safety Systems

Life/Safety	30	Building generally meets codes for vintage of construction
Fire Safety	10	Fire alarm present w locally monitored detection; sprinklers at minimum in high hazard areas; illuminated exit signs and/or emergency lights
		Zoned FA, sprinklers except for facilities office area funded 2007
Haphazard Modification	21	Modifications are of average quality; HVAC and electrical service only partially support space
		Most modifications only average

***Subtotal* = 61**

Quality Standards

Maint. Quality	35	General deterioration is evident; lack of adequate maintenance is evident; impact is moderate to severe
Remaining Life	18	Life expectancy is between 5 and 15 years; moderate building system deterioration
		Building structure is solidly constructed; interior is basically a warehouse
Appearance	30	Average construction, but generally unattractive exterior and interior spaces

***Subtotal* = 83**

Energy

Wall/Ceiling Insulation	30	Building is not insulated
Glazing	30	Windows have single-glazing

***Subtotal* = 60**

Total Score* = 500** *(Score Range = 146 -* ***Previous Biennium **516**
Recommended Rating is: Replace or Renovate

FACILITY CONDITION SURVEY ***DEFICIENCY DETAIL***

Clover Park Technical College *SURVEY DATE:* 7/13
Lakewood Campus Page 7

FACILITY: 29022 Auxiliary Services *STATE UFI:* A01800

DEFICIENCY: R02 **Roof Fund in 2015-17 biennium**
UNIFORMAT BUILDING SYSTEM: B30-Roofing Maintenance
AFFECTED COMPONENT: Built-up roofing

DEFICIENCY/CORRECTION:
The mineral coated built-up roofing has become weather worn and delaminated. In some areas the roofing has been blown off in past storms. The roof is well beyond its useful life and should be replaced. The west end of the roof and one of the two parapets is currently funded for replacement in the 2013-15 capital budget. The remaining roofing should be replaced.

LOCATION: East section of building

Probable Cause of Deficiency is Age/Wear

ESTIMATED REMAINING LIFE:	3 Yrs.	*LIFE EXPECTANCY NEW:*	30 Yrs.	*QUANTITY:*
50Yr. Life Cycle	Replace in 2016	2046		596 SQ

PRIORITY

Bldg. Function Use	1000		
Deficiency Severity	**80**	Estimated MACC Repair Cost in	**2013= $450,000**

FACILITY CONDITION SURVEY ***DEFICIENCY DETAIL***

Clover Park Technical College *SURVEY DATE:* 7/13
Lakewood Campus Page 9

FACILITY: 29022 Auxiliary Services *STATE UFI:* A01800

DEFICIENCY: F02 **Facility Use Alternative Funding**
UNIFORMAT BUILDING SYSTEM: B20-Exterior Enclosure Maintenance
AFFECTED COMPONENT: Concrete Masonry Unit exterior walls

DEFICIENCY/CORRECTION:
There is significant structural damage evident in the exterior walls. The grout joints have multiple cracks that typically occur in CMU buildings after seismic events. The large number of cracks likely contributes to the structural weakness of the walls. The walls should be braced with a secondary structural system to maintain a safe building. At the time of the survey, it was recommended that a structural analysis take place immediately to determine the safety of the building.

LOCATION: Exterior perimeter

Probable Cause of Deficiency is Seismic

ESTIMATED REMAINING LIFE: 3 Yrs. *LIFE EXPECTANCY NEW:* 30 Yrs. *QUANTITY:*

Additional Analysis or Study is Required

PRIORITY			
Health/Safety	70		
Bldg. Function Use	30		
Deficiency Severity	**24**	Estimated MACC Repair Cost in	**2013= $4,700,000**

m. CPTC strategy for reducing greenhouse gas emissions

CLOVER PARK TECHNICAL COLLEGE

Strategy for Reducing Greenhouse Gas Emissions

JUNE 30, 2011 (updated February 2014)

1. Background

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

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

The Act, codified in RCW 70.235.050-070 directed agencies to annually measure their greenhouse gas emissions, estimate future emissions, track actions taken to reduce emissions, and develop a strategy to meet the reduction targets. The strategy is required by law in RCW 70.235.050 section (3):

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

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

- Clover Park Technical College is committed to progressing towards a healthy, sustainable and resilient campus. We will become better stewards of the use of our natural resources and will research, develop and implement plans to reduce our output of greenhouse gases.

2. Greenhouse Gas Emissions from Agency Operations

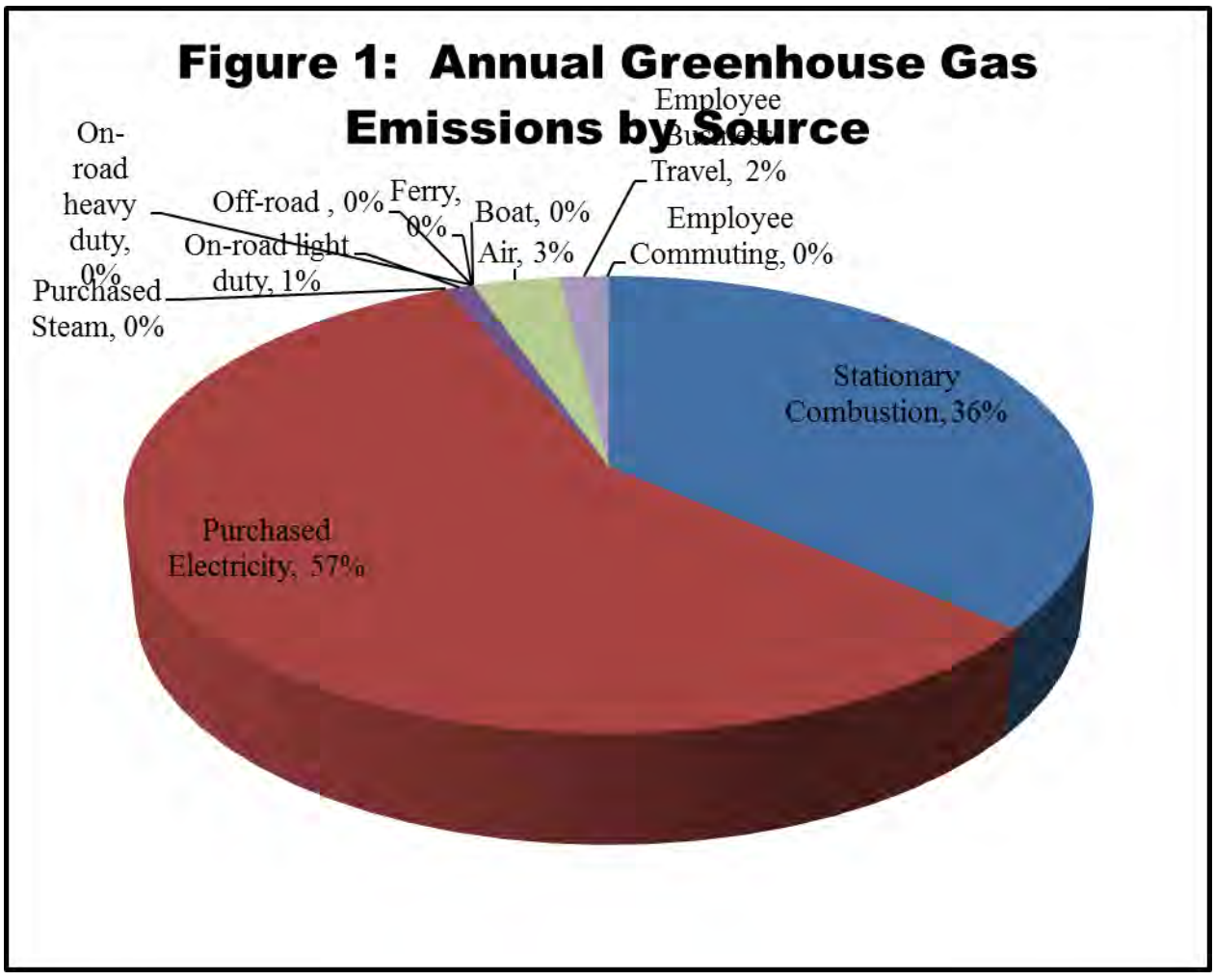
A. Direct sources of GHG emissions from building and fleet energy use

Year	**Greenhouse Gas Emissions** (metric tons carbon dioxide equivalent, $MTCO_2e$)
2005	4975

2013	(Do not include business travel or commuting emission here) 5256
2020 (projected)	6511.5
2035 (projected)	7554.6

(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



C. Greenhouse Gas Reduction Targets

Year	GHG Reduction Target ($MTCO_2e$)
2020 (15% below 2005)	**4229**
2035 (36% below 2005)	**3184**
2050 (57.5% below 2005)	**2114**

D. Level of GHG Reduction Needed to Meet Targets

Note 2050 is not included below because the estimate would be highly uncertain. This strategy should focus on meeting the 2020 and 2035 targets.

Agencies that are growing need to account for future growth to achieve the targets. These agencies should use the projected 2020 and 2035 emissions from the projection tool, or use internal agency projection estimates to determine the amount of GHG reduction needed.

Year	Amount of GHG Reduction Needed to meet Targets ($MTCO_2e$)
2020	**1256**
2035	**1615**

3. Overarching Strategies (if applicable)

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

- Improve tracking of information used to quantify GHG emissions
- Integrate GHG reduction goals and actions into sustainability efforts and track progress
- Elevate the Sustainability Task Force to a standing Sustainability Committee.
- Choose recycled products where possible. Choose high efficiency sustainable systems in new construction and renovations.
- Research benefits of energy savings projects through Department of Commerce.

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

A. Strategies and Actions with Low to No Cost

Strategies and Actions	GHG Reduction Estimate Annual ($MTCO_2e$)	Upfront Cost Estimate ($)	Payback Period Estimate (Years)	Date to Imple-ment Estimate
Building Energy Use				
• Before extended breaks in occupancy (i.e. spring and summer breaks, holiday break) send reminder email requesting computers shut down and off, power bars turned off, refrigerators emptied and unplugged, and all	250.0	0	immediate	11-13 biennium

other appliances turned off.				
• At time of appliance failure, if necessary to replace, choose high rated Energy Star appliances		0	immediate	11-13 biennium
Fleet Energy Use				
• Increase instances of security patrols out of autos and instead on foot		0	immediate	11-13 biennium
• Replace two of the three 14-15 year old security vehicles with efficient hybrid models	10.0	Needed replacement anyway	Upon replacement	11-13 biennium
TOTALS:	260.0	0	N/A	N/A

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

Strategies and Actions	GHG Reduction Estimate ($MTCO_2e$)	Upfront Cost Estimate ($)	Payback Period Estimate (Years)	Date to Imple-ment Estimate
Building Energy Use				
• Enter into 2nd ESCO agreement for upgraded low flow plumbing fixtures, lighting retrofit, slip metering, and a dashboard to monitor utility usage.	187.0	$844,439	15.0	11-13 biennium
Fleet Energy Use				
• Begin phasing out the six 29-30 year old step vans and replacing with smaller more fuel efficient vehicles for the maintenance staff	20.0	$180,000	6.0	13-15 biennium
TOTALS:	207.0	$1,024,439	N/A	N/A

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

Strategies and Actions	GHG Reduction Estimate ($MTCO_2e$)	Upfront Cost Estimate ($)	Payback Period Estimate (Years)	Date to Imple-ment Estimate
Building Energy Use				
• Enter into ESCO agreement to replace chillers, install occupancy sensors, modify and extend control system. Replace compressors and clean refrigerant systems. Replace heat pumps and electric boilers. Upgrade controls to water heaters and circulation pumps. Upgrade lighting and controls.	303	$2,059,689	36.56	11-13 biennium
• Plan all new construction to meet LEED Gold standard at a minimum.				11-13 biennium
Fleet Energy Use				
TOTALS:	303	$2,059,689	N/A	N/A

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

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

Source of GHG Emissions	GHG Emissions, 2009 (or most recent year) 2013 ($MTCO_2e$)
Business Travel	102.4
Employee Commuting	n/a

Strategies and Actions	GHG Reduction Estimate ($MTCO_2e$)	Upfront Cost Estimate ($)	Payback Period Estimate (Years)	Date to Imple-ment Estimate
Employee Business Travel				
• Reduce employee travel by 15%	15.0	0	immediate	13-15 biennium
Employee Commuting				
• While we don't have direct control over employee mode of commute, we are able to create carpool parking spaces in advantageous spots for employees who rideshare (carpool).		0	immediate	13-15 biennium
TOTALS:	15.0	0	N/A	N/A

6. Additional Sustainability Strategies and Actions (if applicable)

Strategies and Actions	Co-benefits for GHG Reduction	Implementation Date Estimate
• 2nd ESCO project included low flow toilets		11-13 biennium
• Provided more recycling containers across campus		11-13 biennium

7. Next Steps and Recommendations

- Clover Park Technical College is committed to reducing its carbon emissions. The college will plan its future new construction and renovations with reducing its carbon

footprint in the forefront. Clean alternative energy resources for heating and cooling will be researched and implemented wherever practical. The college will encourage the use of passive solar energy for natural heating through design, construction and landscaping techniques. Designers of exterior building space will be advised that we are looking to increase accessibility, convenience, safety and security for pedestrian and bicyclists.

Clover Park Technical College staff will continue to seek alternatives to single person personal occupancy vehicle travel miles-whether that is through other forms of communication rather than face to face, seeking carpools with other college staff or even nearby colleges' staff, or using mass transportation when economically feasible.

The college Sustainability Committee will spearhead efforts to reduce waste and increase recycling amongst staff and students. College custodial and facilities staff will endeavor to use more green cleaning products and low VOC paints.

The Associated Student Government at Clover Park Technical College is also interested in seeking ways to promote refillable water bottle filling stations and reducing individual student automobile travel by partnering with Pierce Transit to provide free bus transportation to college students.

- For additional information contact the office of the Vice President of Finance and Administration, Linda Schoonmaker, 4500 Steilacoom Blvd SW, Lakewood WA 98499, 253-589-5555.

n. LEED checklist

LEED 2009 for New Construction and Major Renovations

Project Checklist

Clover Park Technical College Center for Advanced Manufacturing Technologies

Date

Sustainable Sites — Possible Points: 26

Y	?	N			
Y			Prereq 1	Construction Activity Pollution Prevention	
1			Credit 1	Site Selection	1
	5		Credit 2	Development Density and Community Connectivity	5
		1	Credit 3	Brownfield Redevelopment	1
	6		Credit 4.1	Alternative Transportation—Public Transportation Access	6
	1		Credit 4.2	Alternative Transportation—Bicycle Storage and Changing Rooms	1
3			Credit 4.3	Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles	3
2			Credit 4.4	Alternative Transportation—Parking Capacity	2
		1	Credit 5.1	Site Development—Protect or Restore Habitat	1
		1	Credit 5.2	Site Development—Maximize Open Space	1
1			Credit 6.1	Stormwater Design—Quantity Control	1
1			Credit 6.2	Stormwater Design—Quality Control	1
	1		Credit 7.1	Heat Island Effect—Non-roof	1
1			Credit 7.2	Heat Island Effect—Roof	1
1			Credit 8	Light Pollution Reduction	1

Water Efficiency — Possible Points: 10

Y			Prereq 1	Water Use Reduction—20% Reduction	
2			Credit 1	Water Efficient Landscaping	2 to 4
2			Credit 2	Innovative Wastewater Technologies	2
2			Credit 3	Water Use Reduction	2 to 4

Energy and Atmosphere — Possible Points: 35

Y			Prereq 1	Fundamental Commissioning of Building Energy Systems	
Y			Prereq 2	Minimum Energy Performance	
Y			Prereq 3	Fundamental Refrigerant Management	
11			Credit 1	Optimize Energy Performance	1 to 19
1			Credit 2	On-Site Renewable Energy	1 to 7
2			Credit 3	Enhanced Commissioning	2
2			Credit 4	Enhanced Refrigerant Management	2
	3		Credit 5	Measurement and Verification	3
	2		Credit 6	Green Power	2

Materials and Resources — Possible Points: 14

Y			Prereq 1	Storage and Collection of Recyclables	
		1	Credit 1.1	Building Reuse—Maintain Existing Walls, Floors, and Roof	1 to 3
		1	Credit 1.2	Building Reuse—Maintain 50% of Interior Non-Structural Elements	1
2			Credit 2	Construction Waste Management	1 to 2
2			Credit 3	Materials Reuse	1 to 2

Materials and Resources, Continued

Y	?	N			
2			Credit 4	Recycled Content	1 to 2
1			Credit 5	Regional Materials	1 to 2
1			Credit 6	Rapidly Renewable Materials	1
1			Credit 7	Certified Wood	1

Indoor Environmental Quality — Possible Points: 15

Y			Prereq 1	Minimum Indoor Air Quality Performance	
Y			Prereq 2	Environmental Tobacco Smoke (ETS) Control	
1			Credit 1	Outdoor Air Delivery Monitoring	1
1			Credit 2	Increased Ventilation	1
1			Credit 3.1	Construction IAQ Management Plan—During Construction	1
1			Credit 3.2	Construction IAQ Management Plan—Before Occupancy	1
1			Credit 4.1	Low-Emitting Materials—Adhesives and Sealants	1
1			Credit 4.2	Low-Emitting Materials—Paints and Coatings	1
1			Credit 4.3	Low-Emitting Materials—Flooring Systems	1
1			Credit 4.4	Low-Emitting Materials—Composite Wood and Agrifiber Products	1
1			Credit 5	Indoor Chemical and Pollutant Source Control	1
1			Credit 6.1	Controllability of Systems—Lighting	1
1			Credit 6.2	Controllability of Systems—Thermal Comfort	1
1			Credit 7.1	Thermal Comfort—Design	1
1			Credit 7.2	Thermal Comfort—Verification	1
1			Credit 8.1	Daylight and Views—Daylight	1
1			Credit 8.2	Daylight and Views—Views	1

Innovation and Design Process — Possible Points: 6

1			Credit 1.1	Innovation in Design: Green Education Plan	1
1			Credit 1.2	Innovation in Design: Green Housekeeping	1
			Credit 1.3	Innovation in Design: Specific Title	1
			Credit 1.4	Innovation in Design: Specific Title	1
			Credit 1.5	Innovation in Design: Specific Title	1
1			Credit 2	LEED Accredited Professional	1

Regional Priority Credits — Possible Points: 4

1			Credit 1.1	Alternative Transportation Parking Capacity	1
			Credit 1.2	Regional Priority: Specific Credit	1
			Credit 1.3	Regional Priority: Specific Credit	1
			Credit 1.4	Regional Priority: Specific Credit	1

60	18	5	Total	Possible Points: 110

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

o. building 22 – existing photos

Appendix: Existing Photographs Building 22

South façade Building 22. Evident roof deterioration.

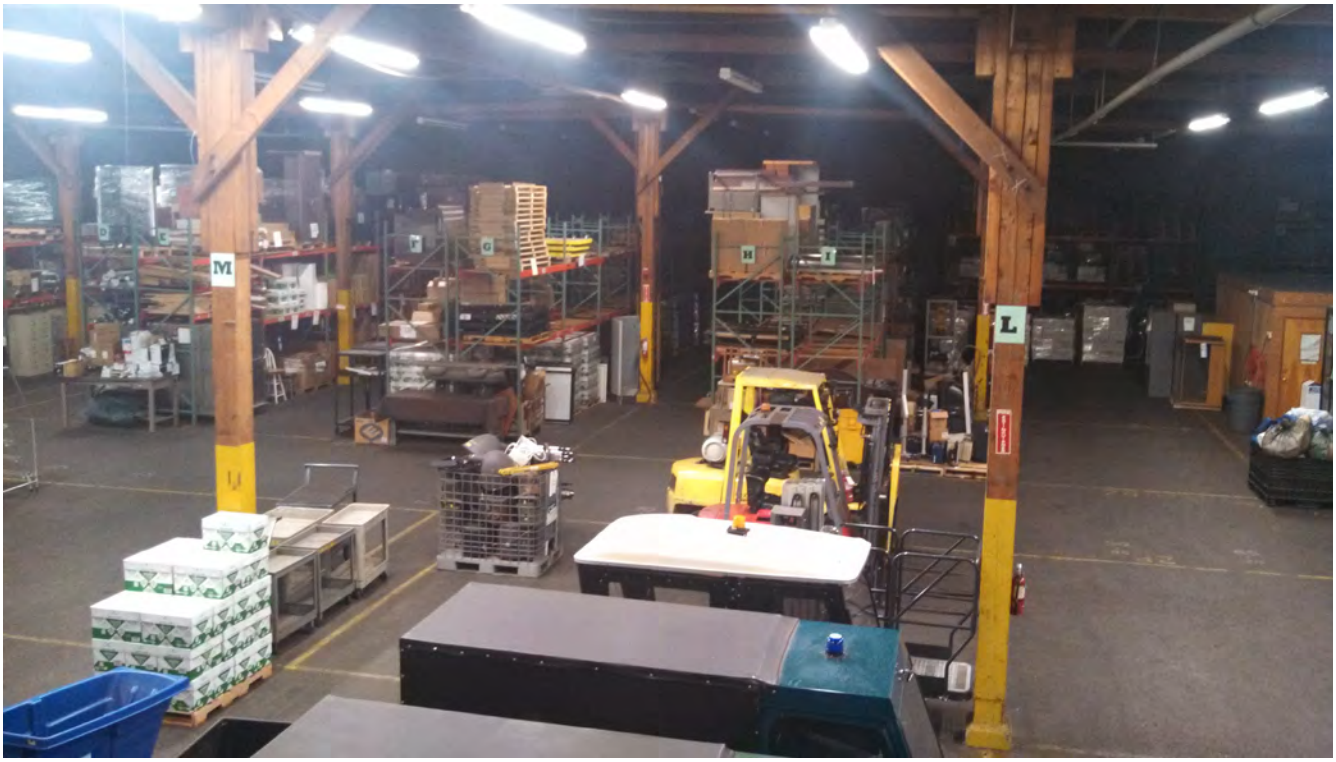
Raised loading docks on both the north and south of the building pose accessibility challenges.

North façade.

West Façade. Evident cracking in existing non reinforced concrete masonry units (CMU)

Multiple cracks in existing non reinforced CMU throughout the building – seismic risk and life safety concerns!

Roof is deteriorating and requires replacement.



Building 22 houses the warehouse, but space is underutilized.

Walls are not insulated. Poor energy efficiency.

Failing building systems

p. excerpts from the consolidated scoresheet

Expected Cost Calculations

		Start (Bid)	End (SC)
Construction Mid-point:	3/2/2018	7/1/2017	11/1/2018
Expected Cost Multiplier:	1.365	from Appendix B	
Project GSF:	62,478	S4 from Project Parameters	

Facility Type	Expected Cost / GSF in 2008$	Expected Cost / GSF	GSF by Type	Expected Cost	Point Thresholds	My Project
Classrooms	$420	$573	10,000	$ 5,733,000		
Communications buildings	$378	$516	-	$ -		
Science labs (teaching)	$437	$597	47,919	$ 28,583,923		
Research facilities	$623	$850	-	$ -		
Administrative buildings	$309	$422	4,559	$ 1,922,918		
Day care facilities	$283	$386	-	$ -		
Libraries	$336	$459	-	$ -		
			62,478	**$ 36,239,841**	**100%**	**$ 36,182,420**
			-	**$ 40,226,223**	**111%**	
				$ 49,648,582	**137%**	
					<137%	

Category	Criteria	Standard	Possible	Yes/No	Points
Overarching	Goals	***Max 6***			
		Directly tied to facilities master plan	2	Yes	2
		Directly tied to institutional goals	1	Yes	1
		Directly tied to strategic plan	2	Yes	2
		Includes partnerships with K-12, 4yrs, business, etc.	1	Yes	1
		Project includes at least 7 of the best practices identified to reduce gr	1	Yes	1
Overarching	Priority	***Select one based on college preference***			
		1st	5	Yes	5
		2nd	3		0
		3rd	1		0

Overarching Subtotal	12	out of 12 possible.
Category Weighting	1.98	
Category Weighted Subtotal	23.75	out of 23.75 possible.
Project Weighting	1.00	
Overarching Category Total	**23.75**	

Category	Criteria	Standard		Possible	Yes/No	Points
Replacement	Building Age	***Select one based on facility inventory data***				
		Over 50		6	Yes	6
		41 - 50		5	No	0
		36 - 40		4		0
		31 - 35		3		0
		26 - 30		2		0
		20 - 25		1		0
		< Less than 20 years		0		0
Replacement	Building Condition	***Select one based on 2013 facility condition survey***				
		681 - 730		6		0
		601 - 680		5		0
		526 - 600		4		0
		476 - 525		3	Yes	3
		451 - 475		2	No	0
		351 - 450		1		0
		276 - 350		0		0
		0 - 275		-2		0
Replacement	Cost	***Calculated based on Project and Expected Costs***				
		Total project cost is less than or equal to the expected cost per square foot for the facility type, escalated to the construction mid-point.		7	Yes	7
		Project cost is between 100% and 111% of expected cost.		5	No	0
		Project cost is between 111% and 137% of expected cost.		2	No	0
		Project cost is more than 137% of expected cost.		0	No	0
Replacement	Improvements	***Max 5 based on facility programming***	**ASF**		**Percent of total ASF**	
		Classroom, labs	39,385	5	93%	4.64
		Student Services	-	5	0%	0.00
		Library	-	5	0%	0.00
		Childcare	-	4	0%	0.00
		Faculty offices	3,100	3	7%	0.22
		Administration	-	2	0%	0.00
		Maintenance/Central Stores/Student Center	-	1	0%	0.00
Replacement	Issues	***Max 6***				
		Seismic (documentation required)		2	Yes	2
		Life safety		2	Yes	2
		ADA access		1	Yes	1
		Energy code		1	Yes	1
Replacement	Suitability	***Max 3***				
		Adequact for use		3	Variable	3
	Replacement Category Subtotal			Replacement Category Subtotal		30 out of 33 possible.
				Category Weighting		2.31
				Category Weighted Subtotal		68.98 out of 76.25 possible.
				Project Weighting		0.95
				Replacement Category Total		**65.51**

Category	Criteria	Standard	Possible	Yes/No	Points
New	Enrollment Increase	***Select one based on CAM enrollment projection***			
		Over 100 FTE/year	9		0
		76 - 99 FTE/year	8		0
		50 - 75 FTE/year	7		0
		36 - 49 FTE/year	5		0
		26 - 35 FTE/year	3	Yes	3
		0 - 25 FTE/year	1	No	0
New	Efficiency	***Select one based on facility inventory and enrollment***			
		SF / FTE - Community Colleges			
		< 90	3		0
		< 110	2		0
		< 110	1		0
		> 150	0	No	0
		SF / FTE - Technical Colleges			
		< 125	3		0
		< 140	2		0
		> 140	1		0
		> 165	0	Yes	0
New	Planning	***Max 10***			
		Space improves program delivery and student support	4	Variable	4
		Programs and student support space are identified by usage and square footage	2	Variable	2
		Location of project is identified by site	1	Yes	1
		Special initiatives beyond participation rates	1	Yes	1
		Reasonable cost estimate and building efficiency	1	Yes	1
		Expected building life - 50 years or greater	1	Yes	1
New	Efficiency	***Max 3***			
		$/Net new FTE	1	Yes	1
		Building efficiency (ASF/GSF)	2	Yes	2
New	Cost	***Calculated based on Project and Expected Costs***			
		Total project cost is less than or equal to the expected cost per square foot for the facility type, escalated to the construction mid-point.	7	Yes	7
		Project cost is between 100% and 111% of expected cost.	5	No	0
		Project cost is between 111% and 137% of expected cost.	2	No	0
		Project cost is more than 137% of expected cost.	0	No	0
	New Category Subtotal			New Category Subtotal	23 out of 32 possible.
				Category Weighting	2.26
				Category Weighted Subtotal	52.06 out of 76.25 possible.
				Project Weighting	0.05
				New Category Total	**2.62**

Category Score Subtotal:	68.13	out of 76.25 possible.
Overarching Score Subtotal:	23.75	out of 23.75 possible.
Project Score:	**91.88**	**out of 100 possible.**

q. DAHP letter

DEPARTMENT OF
ARCHAEOLOGY &
HISTORIC PRESERVATION
Protect the Past, Shape the Future

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

February 18, 2014

Mr. Dino Othieno
Department of Enterprise Services
MS 41012
Olympia, WA 98504-1012

In future correspondence please refer to:
Log: 021814-13-DES
Property: Clover Park Technical College Building 22
Re: NOT Eligible

Dear Mr. Othieno:

McGranahan and Associates recently contacted the Washington State Department of Archaeology and Historic Preservation (DAHP) regarding Building 22 on the Clover Park Technical College campus. The above referenced property has been reviewed on behalf of the State Historic Preservation Officer under provisions of Governor's Executive Order 05-05. My review is based upon documentation contained in your communication.

Research indicates that the above referenced property is not currently listed in the Washington Heritage Register or National Register of Historic Places. The referenced property is NOT ELIGIBLE for the National Register of Historic Places. As a result of this finding, further contact with DAHP is not necessary. However, if additional information on the property becomes available, or if any archaeological resources are uncovered during construction, please halt work in the area of discovery and contact the appropriate Native American Tribes and DAHP for further consultation.

Thank you for the opportunity to review and comment. Should you have any questions, please contact me.

Sincerely,

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

r. industry partners – letters of support

AFA
Aerospace Futures Alliance
of Washington

The Aerospace Futures Alliance
25332 145th Place SE
Kent, WA 98042

Wayne Doty, PE
Capital Budget Director
State Board for Community and Technical Colleges

RE: Letter in Support of Clover Park Technical College's Application for Capital Funds to Build a Center for Advanced Manufacturing Technologies

Mr. Doty,

The Aerospace Futures Alliance of Washington fully supports Clover Park Technical College's proposal to create a new Center for Advanced Manufacturing Technologies.

The AFA is proud to represent the aerospace industry in Washington. However, we also strongly believe that the health of all sectors of the manufacturing industry is hugely beneficial to the economy of our state, and to the livelihood and well-being of the people of Washington.

Clover Park Technical College's proposed new Center for Advanced Manufacturing Technologies would directly support the development of the highly skilled workforce that we need right now, and will continue to need in the foreseeable future. Because of its location in the South Puget Sound, it would also complement workforce development initiatives in the Everett and Renton areas, and would help to provide the pool of skilled workers that we need throughout the Greater Puget Sound area.

We therefore support this proposal as a way to help build highly competitive manufacturing and aerospace industries, and thus strengthen the future economy of Washington State.

Yours sincerely,

Linda Lanham

Linda Lanham
AFA President & Executive Director

CENTER OF EXCELLENCE
for Aerospace and Advanced Materials Manufacturing

February 26, 2014

Wayne Doty, PE
Capital Budget Director
State Board for Community and Technical Colleges
1300 Quince Street SE
Olympia, WA 98504

Dear Wayne:

The Center of Excellence for Aerospace and Advanced Manufacturing is pleased to support the Clover Park Technical College Center for Manufacturing Technologies proposal. CPTC has been a leader within the State in developing programs in response to employer needs in advanced manufacturing. The aerospace industry in Washington continues to be a very strong economic driver and as new technologies are being developed we are experiencing increased training opportunities across a variety of industry sectors. A new Manufacturing Technologies Center at CPTC will complement the State's recent investments in training locations in Everett and Renton.

Clover Park Technical College is uniquely qualified to host this kind of Center because of its breadth of programs at both the Bachelor's and Associate's degree levels. With CPTC's involvement in local and national grant consortiums, the college has demonstrated its commitment to innovative thinking, collaboration and student success.

In looking to the future of aerospace and advanced manufacturing within Washington, we see only heightened demand for training in emerging technologies. We need to secure adequate facilities that will house state-of-the-art equipment that mirrors what is found in industry.

The Clover Park Technical College proposal for the Center for Manufacturing Technologies is well thought-out, perfectly timed, and supports the state-wide efforts in securing Washington State as the leader in providing a diverse and talented workforce. The Center of Excellence for Aerospace and Advanced Manufacturing commends Clover Park TC for its continued leadership.

Sincerely,

Mary Kaye Bredeson

Mary Kaye Bredeson
Executive Director

9711 32nd Place West, Building C-80
Paine Field, Everett, WA 98204
www.a2m2.net