Capital Outlay Plan 2017-2021

Washtenaw Community College

50 YEARS

OPENING DOORS

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SECTION A - Executive Summary

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EXECUTIVE SUMMARY

Once again, Washtenaw Community College is pleased to submit its Five-Year Capital Outlay Plan for fiscal years 2017-2021 as required by Section 242 (2) of 1984 P.A. 431. The central focus of the College's future capital needs will involve the continued improvement, renovation, and adaptive reuse of its existing buildings; reduction or elimination of leased space for instructional programs; and installation of energy saving equipment. The College's primary instructional buildings are over 40 years old and do not adequately support current and future instructional programming and technology needs without considerable upgrades and improvements.

The College's Five-Year Capital Outlay Plan 2017-2021 describes its current and future instructional programming needs along with an assessment of present and projected enrollments that drive it. It also takes a look at existing facilities through a condition survey of all buildings on campus. It must be emphasized that the College's existing campus buildings are, on average, 30 to 40 years old and will continue to require renovations and additions to support future instructional programming given our enrollment trends as described herein.

- Section C describes the College's current academic programs along with projected programming changes during the next five years due to changes in our physical facilities. It describes the College's unique academic mission, focusing on providing an open-door learning environment that is supported by a high level of student services, outreach to those with barriers to success, and active partnering with the greater Washtenaw community. This section also describes other initiatives that impact the use of facilities as well as the impact on economic development due to our current and future programs.

- Section D of the plan includes current enrollment levels and is reviewed by program area with projections of expected increases in both enrollment and credit hours. Future staffing needs are also discussed and the impact on future enrollment estimates.

- Section E of the plan includes the current facilities assessment with a critical evaluation of the overall condition of all buildings on the College's main campus. It describes current room utilization rates and provides usage rates for both peak, off-peak, and evening and weekend periods. The plan also discusses the replacement value of existing facilities and reviews the real estate owned by the College and its capacity to provide adequate space for development needs.

- Section F describes how the College intends to implement the plan. It describes our number one priority for a major capital project that will be requested from the State (see attachment B), its purpose, estimated cost, and completion date. As mentioned earlier, all of the capital and maintenance projects anticipated during the next five years involve the renovation and adaptive reuse of existing facilities.

As always, the College appreciates the support it has received from the State as it continues to fulfill its mission of serving the citizens of Washtenaw County.

SECTION B - Mission Statement

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College Mission, Values and Vision

The College's Mission, Values and Vision statements provide the foundation for the priorities that emerged from the strategic planning process.

MISSION:

Our college strives to make a positive difference in people's lives through accessible and excellent educational programs and services.

VALUES:

Teaching and Learning:

We embrace teaching and learning as our central purpose.

Support:

We make every effort to help learners achieve success.

Diversity:

We respect differences in people and in ideas.

Partnerships:

We plan and work together with respect, trust, and honesty within the college and with the communities we serve.

Innovation:

We seek the best possible ways to conduct our work.

VISION:

WCC is a learner-centered, open-door college dedicated to student, community, and staff success. We offer a wide spectrum of community college services with an emphasis on premier technical and career educational programs. The College staff continuously learns to improve learning.

Student Success:

Our students come first. We are committed to their learning, success, and satisfaction. We strive to serve every student in an effective, caring, and supportive way. In order to enhance student learning outcomes, we engage in continuous improvement of teaching, programs, processes, and structures. We increase our accessibility by reaching learners where, when, and how they need instruction through the use of learning-technologies, workplace learning experiences and flexible scheduling of classes.

Community Success:

We are committed to community learning, success, and satisfaction. WCC's primary contribution to community success is the development of a highly skilled workforce. A strong partnership with area employers emphasizes customized employee training and rapid adaptation of WCC programs to changing job training needs. Through strategic alliances with business, government, labor, other educational institutions, WCC increases its emphasis on applied technology education, joint technical education programs with the public schools, and basic job-training services to underserved and at-risk groups.

Staff Success:

We are committed to staff learning, success, and satisfaction. As a staff, we emphasize teamwork within college units and between the units. We support our colleagues and help them to be successful. We learn to improve learning; that is, we continuously increase our capacity to meet the educational requirements of the students, employers, and communities we serve. Through staff learning, we continuously improve services at each stage of the flow of students through WCC. All staff members align their work to contribute to improved teaching and increased student and community learning.

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SECTION C - Instructional Programming

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INSTRUCTIONAL PROGRAMMING

Overview of current academic programs and major academic initiatives

a. Describe existing academic programs and projected programming changes during the next five years, in so far as academic programs are affected by specific structural considerations (i.e., laboratories, classrooms, current and future distance learning initiatives, etc.).

Disruptive change is transforming the transportation and manufacturing industries due to new governmental standards related to safety and energy efficiency, along with the development of mobility technologies – the point where advanced manufacturing and information technology intersect.

Ann Arbor is becoming a hotbed for the intelligent transportation industry, and this fall Washtenaw Community College began offering training and activities for students who want to work in this fast-growing field. The main components of Intelligent Transportation Systems are devices and software that enable vehicles to communicate with one another and prevent accidents. The U.S. Department of Transportation estimates that such technology could eliminate up to 80 percent of crashes by unimpaired drivers by providing alerts. Vehicle crashes remain the leading cause of death for those under age 35, taking nearly 34,000 lives each year.

Washtenaw Community College has positioned itself as a leader in Intelligent Transportation Systems through interdisciplinary program development between its auto and information technology programs. The college has been aggressive in developing programs that prepare students in the rapidly growing connected car sector. As the use of smart phones increase along with the development of a variety of other devices dependent upon technology, WCC has added a key programming language, C#, to its current Information Technology program offerings.

A new certificate, C# Programming for Modern Computing, does not simply teach students the C# programming language, but it will provide students the opportunity to apply the skills they acquire in connected vehicle applications and intelligent transportation systems. C# skills will also prepare students to work with embedded technologies in a variety of devices.

While learning the C# programming language, students will progress through a series of courses starting with basic development, database theory and object-oriented programming techniques. The program culminates in a hands-on capstone project developing an application for modern embedded computing environments.

As the world becomes more interconnected, WCC will be on the forefront of preparing students to take advantage of jobs that support a safer, more efficient and sustainable transportation system.

Intelligent transportation technology is being rapidly developed by auto manufacturers as well. At a recent ITS conference in Detroit, Honda demonstrated technology that could prevent pedestrian-auto crashes by analyzing the GPS coordinates of a vehicle and a pedestrian's smartphone. At WCC, such technology will be utilized in many ways. The business, auto, and computer information departments are uniting to develop and deliver courses and programs that provide training for students who want to develop, analyze and work on the new vehicles and technology that will soon be a standard part of daily transportation.

The creation of the advanced transportation technology programs represents an innovative and focused initiative integrating automotive, computer programming, mechatronics and welding and fabrication. Currently, the component disciplines that would come together to create and inform the work of intelligent transportations systems are physically separated and housed in different facilities. WCC is working to find solutions that allow students to work collaboratively either in a virtual or physical environment. While the technology is still in the formative stage, there will be a need to have workers ready for intelligent transportation systems, automotive and automation transportation-related jobs between 2017 and 2020. WCC is working to be forward thinking and focused on future jobs while remaining flexible as technology and job demands mature in this new arena.

The **Advanced Transportation Center**, a groundbreaking effort, will bring together specialized curricula and state-of-the-art equipment to the WCC campus that is designed to support the rapidly growing industries of Intelligent Transportation Systems, Advanced Manufacturing and Automotive Transportation Servicing. WCC is preparing to address one of the most important challenges facing a national deployment of connected vehicle technology: qualified, job ready employees who are trained in the latest intelligent transportation systems.

According to Nigel Francis, Vice President for Corporate Planning at American Axle & Manufacturing, Inc. "Michigan's automotive industry, and the intersection between automotive and the evolving sphere of big data and cloud based computing will accelerate our automotive industry of the next decade. Michigan's competitive strategy begins and ends with its ability to develop, attract and retain the most talented workforce in the world. The proposed center at WCC can create a meaningful advantage for Michigan's Industry stakeholder."

Research has shown there is tremendous job growth in the areas of Advanced Transportation Systems and a corresponding need for trained technicians and a skilled workforce in the areas of Intelligent Transportation Systems, Advanced Manufacturing, and Automotive Transportation Servicing. These advanced technologies are radically reshaping the transportation landscape with automated and connected vehicles. They will help prevent collisions, better manage traffic patterns and enhance the safety of a variety of transportation modes.

WCC's Advanced Transportation Center is distinguished in that no other community college in the nation has created IT-intensive intelligent transportation systems curricula uniting these academic training programs in such a holistic and inter-disciplinary manner.

Furthermore, WCC faculty hold extensive industry experience which they will bring to their collaborative work within the Center's laboratories and classrooms.

The Center's programs will contain a unique mix of experiential learning, traditional classroom learning, e-learning and hands-on training to prepare students for technician certificates and provide transfer degree options to four-year university programs in electrical, software, traffic safety and computer and engineering programs.

Washtenaw Community College developed eight (8) new programs in response to economic, technological, employment and educational needs and opportunities for the 2015-2016 academic year.

Table 1. New Programs for 2015-2016

Area of Study	Program Name	Award
Advanced Transportation Technology and Mechatronics	Machine Tool Setup and Operation	Certificate
	Machine Tool Programming	Certificate
	C# Programming for Modern Computing	Certificate
	Automotive Test Technician	Associate in Applied Science
	Powertrain Development Technician	Associate in Applied Science
Health Care	Magnetic Resonance Imaging	Post-Associate Certificate
Information Technology	Applied Data Science	Certificate
Language	English as a Second Language	Certificate

Washtenaw Community College offers 139 for-credit programs, with 1,406 credit courses in 94 disciplines. The programs represent an array of credentials from certificates of completion to associate degrees and post-associate certificates. Table 2 summarizes the number of current programs of study sorted by level of award.

Table 2. All Programs by Type of Award

Type of Award	Number of WCC Programs
Certificate of Completion	1
Certificate	56
Advanced Certificate	22
Post-Associate Certificate	4
Certificates	83
Associate in Applied Science	30
Associate in Arts	16

Associate in Science	10
Degrees	56
Total WCC Programs by Award Type	**139**

These programs are categorized as either career degree/certificate programs or as university transfer programs. Career degree/certificate programs prepare students for jobs and career advancement.

Within the career degree/certificate classification, WCC offers 116 programs. The programs are listed in Section C Appendix A.

WCC offers 23 programs designed specifically for transfer students. These programs are listed in Section C Appendix B.

b. Identify the unique characteristics of the institution's academic mission. (Two-year degree and certificated technical/vocational training, workforce development activities, adult education focus, continuing or lifelong educational programming, partnerships with intermediate school districts(s), community activities; geographic service delivery area(s), articulation agreements or partnerships with four-year institutions, etc.)

WCC's mission focuses institutional efforts on providing an open-door learning environment, a high level of service to students, outreach to those with barriers to success, a means to progress in academic and career pursuits, and active partnering with the community.

Directed by this mission, WCC provides academic programming in eight areas for those members of the community desiring educational experiences.

1. *University of Michigan Transportation Research Institute (UMTRI)*

   WCC has partnered with the UMTRI, which is researching the real-world effectiveness of the Intelligent Transportation Systems technology. Thousands of drivers in the Ann Arbor area have volunteered their cars to be outfitted with the dedicated short range communications (DSRC) devices. UMTRI is learning how effective the devices are in weather events, traffic and curvy or hilly roads. UMTRI recently donated two of the DSRC devices for WCC's fleet vehicles, which will be used to enhance the curriculum in a variety of subjects. Intelligent transportation systems utilize many technologies and require the efforts of engineers, computer scientists, network and database administrators as well as field service technicians.

   Dr. Peter Sweatman, Director of the University of Michigan Transportation Research Institute stated "Washtenaw Community College is preparing to address one of the most important challenges facing a national deployment of connected vehicle technology: qualified, job ready employees who are trained in the latest intelligent transportation systems. Located within a mile of the largest connected vehicle deployment test bed in the world, WCC faculty and students will benefit from the test sites, the experts and the

technology that will play a part in transforming our current transportation system as well as playing a critical role in the revitalization of the economy of the state of Michigan."

2. *Career and occupational education.*

    - ❖ New state-wide High School Career and Technical Education articulation agreement for 30 WCC courses
        - This year, WCC moved from working with individual high schools toward a State-wide Articulation Agreement. Any student who completed all 12 segments of an approved CTE program at a Michigan High School with a final grade of "B" or better can be awarded college credit for high school career and technical education course work.
    - ❖ 19 additional articulated WCC courses with local High Schools
    - ❖ In 2014-2015, 144 CTE courses were approved for 26 students resulting in a savings of nearly $14,544 in tuition and fees.
    - ❖ New partnership with Square One Educational Network to jointly develop and deliver K-12 teacher applied education workshops in connected vehicle design and construction projects.
    - ❖ Pursuing a possible partnership with the Michigan Polytech Academy to develop entry-level manufacturing occupational skills and competencies with disadvantaged youth in the Region 9 area.
    - ❖ 46.6% of WCC students are in occupational programs
        - The line between transfer and occupational programs is becoming less distinct as some certificates and associate degrees are within an occupation while also being articulated. As colleges and universities continue to recognize occupational programs as degree worthy, WCC will continue to foster relationships that will benefit students.

3. *Washtenaw Technical Middle College (WTMC).* Washtenaw Community College houses a charter high school on its campus. This award winning school continues to attract more students that can be admitted. Space and classroom issues will need to be addressed.

    - ❖ WTMC was selected as the best of nine highly effective, cutting-edge educational programs in the state of Michigan, earning the 2014 Governor's Education Summit award for collaboration and innovation.
    - ❖ Because our students achieve in the top 1% of all high school students in Michigan, the middle college has earned "Reward School" status.
    - ❖ Research done by Columbia University's NCREST has documented that our students pass 95% of the college courses they take, and our program's grade point average in college courses in 2013 was 3.39
    - ❖ In 2014, WTMC was selected as the *Arts School of the Year* by UMS, the University Musical Society of the University of Michigan.
    - ❖ Nationally recognized by U.S. News and World Report.

4. *Transfer education*. Programs and courses in this area provide students with the option of transferring to a four-year college or university, as well as supporting personal growth. Approximately seventy percent of WCC students plan to transfer to a four-year institution. Currently, some students in occupational programs are already able to transfer

to colleges and universities. The College continues to work with four-year institutions to secure additional agreements that promote seamless and equitable transitions for students.

- WCC has 119 articulation agreements with various colleges and universities.
- Thirteen of those allow students to transfer to WCC.
- 106 are designed for students to transfer on to the next phase of their education.
- 26 agreements allow occupational programs as the starting point or transfer.
- 35 – 3+1 agreements that allow students to complete over 82 credit hours at WCC.

These agreements can reduce by up to three (3) years the time and expense spent at the 4-year college, potentially saving each student more than $23,000 in tuition and fees when compared to the average cost for Michigan public four-year colleges and universities. In support of the completion agenda, WCC has completed and signed reverse transfer agreements with six (6) four-year colleges. These agreements allow us to communicate with students who have completed much of their associate degree coursework at WCC to transfer back courses completed at a four-year institution. The institution will benefit from this agreement through an increase in the number of degrees conferred. Students will benefit as they gain documentable credentials.

5. *Continuing education and community services.* Both credit and noncredit programs address community needs, ranging from personal growth courses to technology training programs for business and industry. In addition, much of the GED preparation and testing in Washtenaw County is conducted by WCC's Adult Transitions Department.

6. *Developmental education*. Courses in this area strengthen writing, reading, mathematical, and computer skills, as well as instruction for those learning English as a second language. Developmental reading courses are assigned to those who read below college level. The college also works with Washtenaw Literacy and other community agencies in order to assist students who have reading skills below the high school level.

7. *Student support services.* A variety of services at the College prepare students to fully use and benefit from academic programs and courses. These services include orientation, entry assessment, computer and information literacy testing, academic advising, financial aid, transfer assistance, career counseling, personal counseling, computer email accounts, tutoring, child care, job placement, special needs services, instructional labs, and library services.

8. *Workforce development and community enrichment.* In support of the WCC mission, the Economic and Community Development Division professionally develops and personally enriches the lives of people and organizations by providing relevant training programs, services and solutions, which meet the needs of the Greater Washtenaw Community. Its staff: plays a catalytic role in economic development, by participating and supporting local, regional and state economic development initiatives and by staying abreast of occupational trends that lead to training and organizational development opportunities; serves the educational needs of employers, by identifying customer needs, creating and delivering customer-driven solutions and providing accessibility to training, services and information; creates partnerships that support local and regional economic and

community development; and establishes initiatives to ensure student success through programming, assessment, articulation and support services. Serving more than 6,000 students annually, WCC develops and delivers more than 400 classes in foundation skills, entry-level employment training, professional development seminars, customized contract training and personal interest.

As society continues to move to models of lifelong learning and open education for its members, the residents of Washtenaw County will look toward WCC for programs and courses that help them achieve their personal and career goals, and they will do this several times during their lives. The implications of the lifelong learning trend as related to space, facilities, and equipment will have a major influence on planning for the next five years. Washtenaw County is unique in the state in terms of its high percentage (48%) of adults, those 25 and older, who hold at least a Bachelor's Degree. Reflective of this demographic and of the need for lifelong learning, a significant portion of the WCC student body already holds a Bachelor's Degree or higher. WCC accepts this unique situation and melds these students into the educational programs of the school, an effort that is a benefit to all of our students, broadening perspectives, raising awareness, modeling continuous learning, and sharing in success and growth.

c. Identify other initiatives which may impact facilities usage.

The College continues to address the changing environment by creating new programs. Therefore, WCC has continued to examine a variety of ways to meet the community's demand for programs that prepare workers for newly-emerging fields in technology, balancing this need with the growing need for appropriate space. Several initiatives have resulted from this examination.

Advanced Transportation Technology Center. The center exists to fill the gap for technician training related to green mobility (vehicle light weighting) and intelligent transportation systems (ITS) in the Greater Ann Arbor and S.E. Michigan regions. Creating an Advanced Transportation Center will position Washtenaw Community College to deploy world class applied STEM training using state-of-the-art equipment (lasers, robotics, etc.) and software used in business and industry.

United Association Union of Plumbers, Pipefitters, Welders and HVAC Service Technicians (UA). For the last 21 years, approximately 1,500 student instructors for the UA and an additional 200 faculty, industry representatives and staff visit Ann Arbor and WCC for an intensive week of hands-on instruction. The WCC campus facilities, including classrooms, computer labs, mechatronics facility, welding labs, to name a few, are used by UA members. The Advanced Transportation Facilities and equipment will be available for their use as they return for their annual week-long event.

International Association of Bridge, Structural, Ornamental and Reinforcing Ironworkers Union. WCC signed a five-year contract extension to continue to hold the Iron Workers Instructor Training Program (ITP) on the WCC campus. Approximately 600 participants attend the program that trains for proficiency in jobs involving welding, structural steel erection, architectural and ornamental ironwork, concrete reinforcement, rigging and machinery moving and installation – as well as blueprint reading and computer skills for the

ever-changing job market. The regional community benefits when the program comes each year, it generates nearly $3 million in economic impact within Washtenaw County.

Blended courses. WCC continues to offer classes that blend both online and face-to-face delivery that take advantage of both formats. We continue to increase the number of blended courses offered each semester. WCC offered 68 sections of 48 different courses in fall 2015.

College on Demand (COD). These online courses utilize materials such as video of faculty lectures, commercially produced DVDs of movies and lectures, text- and workbooks, and any other supplemental materials desired by faculty. Faculty members engage with students through a course management system—BlackBoard in this case—in which students receive feedback from instructors and complete exercises and examinations. In fall 2015, 206 sections of 93 different courses were offered.

Square One Education Network [SOEN] Partnership. WCC has partnered with SOEN to develop and deliver K-12 teacher education workshops in connected vehicle technologies, applied to innovative vehicle design and construction projects. WCC hopes to host these workshops on campus.

WCC is pursuing a possible partnership with the *Michigan Polytech Academy in Region 9* to possibly offer its advanced manufacturing laboratory learning facilities for disadvantaged youth in day-time training and re-developing their potential to competently fill entry-level manufacturing jobs.

d. Demonstrate the economic development impact of current/future programs (i.e., technical training centers, life science corridor initiatives, etc.).

Locating the Advanced Transportation Center at Washtenaw Community College is supported by both the commitment of the institution and the location of the college. Uniquely, Washtenaw Community College has access to the world's leaders in connected car development. The Center is strategically located near:

- The University of Michigan Transportation Research Institute (UMTRI), which is currently conducting a USDOT-sponsored Connected Vehicle Safety Pilot Program
- M-City
- Michigan-based automotive engineering facilities
- US Environmental Protection Agency's National Fuel and Emissions Laboratory
- The Center for Automotive Research (CAR)
- The Mobility Transformation Center
- University of Michigan Schools of Engineering and Information
- Merit Networks
- Office of Google

In April 2012, WCC presented a strategic plan for 2012-2015. One of the priorities outlined in the Strategic Plan called for WCC to increase institutional agility and responsiveness to external needs, forces and trends through rapid curricular responsiveness to meet employer needs. Toward that end, WCC has been in the forefront of the area of advanced

transportation and intelligent transportation systems. Five new programs for the 2015-2016 academic year are directly related to the knowledge and skills needed in this area. Furthermore, recent grant proposals have secured funding for equipment necessary to develop effective programs. With the overarching goal of developing a Center of Advanced Transportation at WCC, we need to intelligently and intentionally allocate contiguous space for these areas.

The college was awarded $4.4 million in funding from the state's Community College Skilled Trades Equipment Program (CCSTEP). The funding supports the purchase of state-of-the-art equipment for education and training related to the Advanced Transportation Center, which will provide training in the rapidly growing industries of intelligent transportation systems, advanced manufacturing and automotive transportation servicing. WCC programs in machine tool technology, welding and fabrication, auto body repair and automotive services will also benefit from the program. The grant provides opportunities for our students to work with the most sophisticated and innovative tools and technologies inherent in skilled trade and in-demand jobs. A skilled workforce is the key to long-term economic prosperity, not just for Washtenaw County but for the state, the country and the world.

Playing a recognized role on the national stage of workforce development, WCC was awarded a coveted $2.9 million TAACCCT U.S. Department of Labor Grant to develop blended (combination of online and on-ground) java programming and Unix/Linux systems learning programs, which feature accelerated sections and the incorporation of gaming, to prepare students to work in the field of Information Technology. It has additionally participated in a number of other state and federally funded grants to provide education and training in the areas of innovation, entrepreneurship and advanced manufacturing. Most recently, WCC opened an Entrepreneurship Center to provide support that is free of charge to any student or community member interested in starting his/her own business and is also pursuing a National Science Foundation grant to develop community college curriculum in ITS (Intelligent Transportation Systems) Embedded Systems. This is in alignment with a vision to position the college to become a National Center for Expertise in ITS, which is reflected in developing the Advanced Transportation Center, endorsed by the Detroit Regional Chamber's MICHauto initiative..

Further reflecting the local economy, health care, information technology and STEM continue to exert a strong influence on the development of programs at WCC. Student enrollments remain strong in the areas of criminal justice, automotive, business management, video production, human services worker, health and science. Preparing highly skilled technical support personnel through occupational programs will continue to be a critical target for the College. A concomitant need, then, will be to expand facilities to house equipment so that these programs can flourish.

WCC plays a significant role in the local economy and is a sound investment from multiple perspectives. Students benefit from improved lifestyles and increased earnings. Taxpayers benefit from a larger economy and lower social costs. Finally, the community as a whole benefits from increased job and investment opportunities, higher business revenues, greater availability of public funds, and an eased tax burden.

WCC's important partnership with the United Association has spurred initiatives such as College on Demand courses. The success of this national partnership has additionally led to the development of national partnerships with the Ironworkers and the IBEW unions as well.

Additionally, through its active partnership with the Ann Arbor SPARK Economic Development Organization, the WCC President has led the development and recruitment of talent for Washtenaw County through the SPARK Talent Committee. The WCC Workforce Development Department has served as a contractor to provide the Washtenaw County Michigan Works! Agency with business and career services that address the needs of the un- and underemployed. Finally, the Vice President of Economic, Community & College Development serves on the Workforce Intelligence Network's (WIN) Board of Directors for Southeast Michigan, as well as the Washtenaw County Workforce Development Board, Educational Advisory Group and Prosperity Initiative Region 9 (Greater Ann Arbor Region) Talent Council.

Appendix A. Career Degree/Certificates

• **Advanced Manufacturing Systems (9)**
o Computer Systems Technology Certificate
o Fluid Power Certificate
o Industrial Electronics Technology Certificate
o Industrial Electronics Technology II Advanced Certificate
o Machine Tool Programming (CNC) Certificate
o Machine Tool Setup and Operation Certificate
o Machine Tool Technology Certificate
o Mechatronics Associate in Applied Science
o Numerical Control Programming Certificate
• **Apprenticeship Studies (12)**
o Accelerated Training in HVACR Certificate
o Accelerated Training in Welding Certificate
o Apprentice Completion Certificate
o Construction Supervision Associate in Applied Science
o Construction Supervision Associate in Applied Science
o Construction Supervision Associate in Science
o Construction Supervision Certificate
o Industrial Training Associate in Applied Science
o Industrial Training Associate in Science
o Journeyman Industrial Associate in Applied Science
o Occupational Studies Associate in Applied Science
o Sustainable Technologies in HVACR Associate in Applied Science
• **Automotive and Motorcycle Technology (10)**
o Auto Body Repair Certificate
o Automotive Service Technology Associate in Applied Science
o Automotive Services Technician Certificate
o Automotive Test Technician Associate in Applied Science
o Collision Repair and Refinish Technician Advanced Certificate
o Custom Auto Body Fabrication and Chassis Design Advanced Certificate
o Motorcycle Service Technology I Certificate
o Motorcycle Service Technology II Advanced Certificate
o Powertrain Development Technician Associate in Applied Science
o Welding Mechanics Advanced Certificate
• **Business and Entrepreneurial Studies (18)**
o Accounting Associate in Applied Science
o Accounting for Business Certificate
o Administrative Assistant I Certificate
o Administrative Assistant II Advanced Certificate
o Applied Data Science Certificate
o Business Office Administration Associate in Applied Science
o Business Sales and Marketing Certificate
o Computer Software Applications Certificate
o Entrepreneurship and Innovation Certificate

- Human Resource Management (HRM) Certificate
- Management Advanced Certificate
- Management Associate in Applied Science
- Medical Billing and Coding Certificate
- Medical Office Administration Certificate
- Retail and Business Operations Certificate
- Retail Management Associate in Applied Science
- Supply Chain Management Associate in Applied Science
- Supply Chain Operations Certificate

- **Child Care Professional (3)**
  - Child Care and Education Advanced Certificate
  - Child Care Professional Associate in Applied Science
  - Child Development Certificate

- **Construction Technology (16)**
  - Cabinetmaking/Millwork Technology Advanced Certificate
  - Construction Management Associate in Arts
  - Construction Technology Associate in Science
  - Construction Technology I Certificate
  - Construction Technology II Advanced Certificate
  - Engineering and Design Technology Certificate
  - Facility and Energy Management Certificate
  - Heating, Ventilation, Air Conditioning and Refrigeration - Commercial Trade Advanced Certificate
  - Heating, Ventilation, Air Conditioning and Refrigeration - Industrial Trade Advanced Certificate
  - Heating, Ventilation, Air Conditioning and Refrigeration Associate in Applied Science
  - Heating, Ventilation, Air Conditioning, and Refrigeration - Residential Certificate
  - HVAC Energy Management Technician Advanced Certificate
  - Sustainable Building Practices Certificate
  - Welding Associate in Applied Science
  - Welding Certificate
  - Welding Mechanics Advanced Certificate

- **Criminal Justice and Law Enforcement (2)**
  - Criminal Justice - Law Enforcement Associate in Applied Science
  - Police Academy Certificate

- **Culinary Arts (5)**
  - Baking and Pastry Arts Associate in Applied Science
  - Baking and Pastry Certificate
  - Culinary and Hospitality Management Associate in Applied Science
  - Culinary Arts Certificate
  - Hospitality Management Certificate

- **Digital Media Arts (13)**
  - 3D Animation Associate in Applied Science

- 3D Animation Certificate
- Digital Video Advanced Production Advanced Certificate
- Digital Video Production Associate in Arts
- Digital Video Production Certificate
- Graphic Design Associate in Applied Science
- Graphic Design Certificate
- Photographic Imaging Certificate
- Photographic Technology Associate in Applied Science
- Web Design Advanced Certificate
- Web Design and Development Associate in Applied Science
- Web Design and Development Certificate
- Web Development Advanced Certificate

- **Information Technology (13)**
  - Applied Data Science Certificate
  - C# Programming for Modern Computing Environments Certificate
  - C++ Programming Advanced Certificate
  - Computer Networking Academy I Advanced Certificate
  - Computer Networking Operating Systems I Advanced Certificate
  - Computer Systems and Networking Associate in Applied Science
  - Computer Systems Technology Certificate
  - Foundations of Computer Security Certificate
  - Foundations of Information Systems Certificate
  - Linux/UNIX Systems Certificate
  - Network Security Advanced Certificate
  - Program in Java Advanced Certificate
  - Web Database Programming Advanced Certificate

- **Music and Performing Arts (2)**
  - Fine and Performing Arts Certificate
  - Music Production/Engineering Certificate

- **Nursing and Health Sciences (12)**
  - Computed Tomography (CT) Post-Associate Certificate
  - Dental Assisting Certificate
  - Health Care Foundations Certificate
  - Magnetic Resonance Imaging (MRI) Post-Associate Certificate
  - Mammography Post-Associate Certificate
  - Nursing Assistant Skills Training Certificate of Completion
  - Nursing Transfer (EMU School of Nursing) Associate in Applied Science
  - Nursing, Registered Associate in Applied Science
  - Pharmacy Technology Certificate
  - Physical Therapist Assistant Associate in Applied Science
  - Radiography Associate in Applied Science
  - Surgical Technology Associate in Applied Science

- **Professional Communications (1)**
  - Technical Communications Certificate

Appendix B. Transfer Degrees and Certificates

Addiction Studies Post-Associate Certificate
Broadcast Arts Associate in Arts
Business Associate in Arts
Criminal Justice Associate in Arts
Computer Science: Programming in Java Associate in Science
Early Childhood Education Associate in Arts
Elementary Education Associate in Arts
English as a Second Language Certificate
Environmental Science Associate in Science
Exercise Science Associate in Science
Film Studies Associate in Arts
General Studies in Math and Natural Sciences Associate in Science
Global Studies Associate in Arts
Health Program Preparation Associate in Science
Honors in the Liberal Arts Associate in Arts
Human Services Associate in Arts
Information Systems: Programming in C++ Associate in Science
Journalism Associate in Arts
Liberal Arts Transfer Associate in Arts
Math and Science Associate in Science
Paralegal Studies/Pre-Law Associate in Arts
Secondary Education Associate in Arts
Technical Communication Associate in Arts

SECTION D - Staffing/Enrollment

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STAFFING AND ENROLLMENT

Colleges and universities must include staffing and enrollment trends in the annual 5-year comprehensive master plans.

a. Describe current full-and part-time student enrollment levels by academic program and define how the programs are accessed by the student (i.e., main or satellite campus instruction, collaboration efforts with other institutions, Internet or distance learning, etc.)

As of October 15, 2015; 12,211 students are enrolled for the Fall 2015 semester. Overall, 29 percent of these students are enrolled on a full-time basis (12 or more credits). The percentage of full-time students varies by program area.

For the Fall 2015 semester, the program area full-time enrollments are as follows:

Division	Percent Full-Time
Humanities and Social Science	32%
Business and Computer Technologies	32%
Math, Science, and Engineering	31%
Advanced Technologies & Public Service	26%
Health	21%
WCC Total Enrollment	29%

The vast majority of the College's programs are accessed through traditional classroom experiences. In Fall 2015, the College is offering 93 credit courses through College on Demand (206 sections) and 48 credit courses (68 sections) in a blended (½ on-line, ½ traditional classroom) format.

b. Project enrollment patterns over the next five years (including distance learning initiatives)

While the college's current enrollment for Fall 2015 has decreased slightly over Fall 2014, since 2012-13 enrollments have seen very small decreases or been flat in an environment in which most community colleges have seen large enrollment deficits. The college has put many factors in place in the last year to enhance recruitment, enrollment, and retention, including personal calling campaigns, targeted recruitment, increased flexible scheduling, expanded student services, and many other measures to attract and keep students at WCC. It is expected that over the next five years,

enrollment will remain flat or see incremental increases, with a principal growth occurring in distance learning courses and programs.

In considering enrollments over the next five years, several factors need to be examined:

- SEMCOG projections indicate that the overall population in the region will rise slightly through 2025; there will be slightly slower growth in traditional age groups, but substantial increases in the older adult population. This college expects to see enrollment growth in the next five years in the older adult population and need address this population's needs, particularly for retraining and career changing in high demand careers.
- Over the last five years, there has been steady growth in the college's distance education offerings, with a 106% increase in online enrollments and 35% increase in mixed mode enrollments during that time. Online credit hours have increased by 26%% over the last year. The college is authorized or exempt to offer online programming in 45 states and approved by the Higher Learning Commission to offer up to 100% of its programs online. The college expects this to be a significant growth area over the next five years, consistent with past enrollment patterns.

c. Evaluate enrollment patterns over the last five years

Over the past few years the College has experienced decreased enrollments, and the trend continues for Fall 2015, which is down slightly (-0.7%). WCC has seen a 13.9% drop in enrollment over the last five years. This is consistent with the experience of other Michigan colleges.

Several areas have gone against these enrollment trends. In particular, we note two-year enrollment increases in areas related to Intelligent Transportation Systems:

Instructional Area	Percent change 2012-2013 through 2013-2014
Automotive Services	3.6%
Welding and Fabrication	5.3%
Computer Programing	15.1%
Robotics	21.5%

The College continues to earn and enjoy the support of the community and of our constituents. We respond to the changing needs of our students, adding sections and courses as appropriate. The current economic situation has driven many students to seek retraining and skills upgrades. WCC has both marketed its ability to provide such services and we have enrolled many new students as a result. In a different direction, we see more of our students continue their formal education beyond the levels provided here at the College. We expect that pattern to continue.

d. Student/Faculty Ratios

The ratios for instructional staff to students for major program areas at the College may be calculated using credit hour or by contact hour generation. Student / faculty FTE ratios based on student credit hours where one student FTE equals 31 semester hours are as follows:

General Education	19.6
Business / Computer	15.3
Technical	7.5
Health care	6.8

Student / faculty FTE ratios based on contact hour generation where one student FTE equals 496 contact hours are as follows:

General Education	22.5
Business / Computer	18.7
Technical	12.3
Health care	12.8

e. Project future staffing needs based on 5-year enrollment estimates and future programming changes.

It is anticipated that the college's current staffing models will accommodate projected program growth. Positions that are currently vacant will be filled as required and should meet the anticipated needs. Under the leadership of current full-time faculty members, part-time instructors will be employed to meet any additional demand.

The average credit hours taken per student has remained at 8.5 over the last few semesters. This is, of course, a statistic that is relatively fixed given the large number of our students. An analysis of our underlying financial base indicates that, in order to fund the institution, we need to increase both headcount and credit hours. The use of part-time faculty remains at acceptable levels. During the previous academic year, 2013-14, we experienced less than a 31% use of part-time staff (according to the computation specified in the collective bargaining agreement) whereas the agreed upon limit is 37%. Thus, the College has room to adjust to new initiatives and demands. At the same time, the College continues to manage its staffing allocations to provide full-time faculty support appropriate to the growth and decline within given academic areas.

f. Identify current average class size and projected average class size based on institution's mission and planned programming changes.

Average class size is determined by many factors, not the least of which is the maximum allowed class size, a factor that is influenced by facilities, collective bargaining agreements, accreditation specifications, safety, and enrollment demand. Also influencing enrollment is the location and type of course. We calculated the classroom

utilization at the end of the semester, though enrollment is often higher at the beginning of the semester. It has been calculated that we lose approximately two (2) students from our larger sections through attrition. At the end of the semester we calculate an average class utilization of 84% of the maximum enrollment. Shown below are the average class size and utilization percentage by some of our common maximum enrollment options.

Max Enrollment	Fall 2014	Winter 2015	Both	Average for Both
30	24.9	24.4	24.7	82%
25	21.8	21.8	21.8	87%
24	20.2	19.9	20.0	84%
22	19.9	19.0	19.5	88%
20	18.2	17.3	17.7	88%
All	19.8	19.2	19.5	84%

Further influencing the utilization of classroom space is the location of courses. Main campus courses have the highest utilization rate with an average 84% of the seats filled at the end of the semester. Other locations range from a low of 74% to a high of 84%.

SITE	AVERAGE
Main Campus	84%
Clinical	77%
Extension	84%
NRT	74%

We continue to work to increase our fill ratio for all of our sections while balancing our other obligations. We must provide the courses that students need to complete their degree program even if those sections are not at full enrollment. Further, we have an obligation to our constituents to provide courses at convenient locations throughout the county. The small number of off-campus sites has a minimal impact (approximately -0.7%) on our overall fill rate. The value of these off-campus sections is reviewed on a regular basis and we work to balance fiscal responsibility with service to the community. We anticipate that the average class size will remain constant over the next few years.

SECTION E - Facility Assessment

Washtenaw Community College
50 YEARS
OPENING DOORS

FACILITY ASSESSMENT

A professionally developed comprehensive facilities assessment is required. The assessment must identify and evaluate the overall condition of capital facilities under college or university control. The description must include facility age, use patterns and an assessment of general physical condition. The assessment must specifically identify:

a. Summary description of each facility (administrative, classroom, biology, hospital, etc.) according to categories outlined in "net-to-gross ratio guidelines for various building types," DMB-Office of Design and Construction Major Project Design Manual, appendix 7. If facility is of more than one "type", please identify the percentage of each type within a given facility.

See attached assessment document

b. Building and/or classroom utilization rates (percentages of rooms used, and percent capacity.) Identify building/classroom usage rates for peak (M-F 10-3), off-peak (M-F, 8-10 a.m., 3-5 p.m.) evening and weekend periods.

See facility assessment data in attachments

c. Mandated facility standards for specific programs, where applicable (i.e., federal/industry standards for laboratory, animal, or agricultural research facilities, hospitals use of industrial machinery, etc.)

See attached assessment document

d. Functionality of existing structures and space allocation to program areas served

See attached assessment document

e. Replacement value of existing facilities (insured value of structures to the extent available).

The replacement value of existing College facilities as of 6/30/2015, excluding land: $238,102,843.

f. Utility system condition (i.e., heating, ventilation, and air conditioning (HVAC), water and sewage, electrical, etc.)

See attached assessment document

g. Facility infrastructure condition (i.e., roads, bridges, parking structures, lots, etc.)

See attached assessment document

h. Adequacy of existing utilities and infrastructure systems to current and five-year projected programmatic needs

See attached assessment document

i. Does the institution have an enterprise-wide energy plan? What are its goals? Have energy audits been completed on all facilities, if not, what is the plan/timetable for completing such audits?

The College does have a campus-wide energy plan with the goals of improving overall efficiency of the campus operations and reducing energy consumption and greenhouse gas inventories. An energy audit of the campus buildings was conducted in December 2012 by an outside firm to assess the areas needing greater attention and to help develop the energy plan.

j. Land owned by the institution, and includes a determination of whether capacity exists for future development, additional acquisitions are needed to meet future demands, or surplus land can be conveyed for a different purpose

The College currently owns 291 acres of land. This acreage provides the College with the capacity to expand in the future, if needed, but also serves as an "outdoor laboratory" with its wetlands and wildlife. The land is in a very desirable location, and could be sold, if necessary subject to rezoning.

k. What portions of existing buildings, if any, are currently obligated to the State Building Authority and when are these State Building Authority leases set to expire.

The College currently has five buildings obligated to the State Building Authority for leases. These buildings include:

1. Business Education Building (BEB) in 1997. The lease expires in 2032.
2. Technology Education Building (GMB) in 2002. The lease expires in 2037.
3. Plumbers and Pipefitters Addition (GLRTC) in 2005. The lease expires in 2040.
4. Skilled Trades Training Program Renovations (OEB) in 2012. The lease expires in 2052.
5. Skilled Trades Training Program Renovations (HLC) in 2012. The lease expires in 2052.

SECTION E Supplements:

Fall Term 2015 Room Usage Data
Deferred Maintenance Report

Washtenaw Community College
50 YEARS
OPENING DOORS

Fall Term 2015 Room Usage Data

	Peak	Off Peak	Evening
All Main Campus	68%	67%	68%
ASV-Related Rooms	63%	63%	64%
CPS-Related Rooms	92%	86%	85%
WAF-Related Rooms	77%	77%	74%

*The main campus **average fill rate** in the peak period was **68%**, in the off-peak period it was **67%**, and in the evening period it was **68%**.*

*For Automotive Services (ASV) courses only, the **average fill rate** in the peak period was **63%**, in the off-peak period it was **63%**, and in the evening period it was **64%**.*

*For Computer Science (CPS) courses only, the **average fill rate** in the peak period was **92%**, in the off-peak period it was **86%**, and in the evening period it was **85%**.*

*For Welding and Fabrication (WAF) courses only, the **average fill rate** in the peak period was **77%**, in the off-peak period it was **77%**, and in the evening period it was **74%**.*

This data supports our capital outlay request. Both Welding/Fabrication and Computer Programing courses significantly exceed the main campus average fill rate. The addition of new ASV courses for the Advanced Transportation Systems has the potential to exceed the average fill rate. Furthermore, little space is available during peak hours for the interactive work so important to this project.

Methodology

The source documents are available upon request. These three spreadsheets show the fill rate for classrooms during three periods; the peak start times (10:00 a.m. to 3:00 p.m.), the off-peak start times (before 10:00 a.m. and 3:00 p.m. to 5:00 p.m.), and the evening start times (5:00 p.m. and later). Sections will appear on two spreadsheets if they straddle two time frames. The right-most column shows percent of seating capacity used by enrolled students in mid-September in the Fall 2015 semester after cancellation of low enrollment classes. The spreadsheets also display the **average fill rate** at the bottom right.

The data is for main campus buildings only, not extension centers and other off-campus locations. The Family Education Building is excluded. The rooms included are main classrooms only; adjunct spaces and special purpose rooms are excluded. WCC has about 250 main campus classrooms (the precise number depends on what spaces are counted).

Only credit courses are included; excluded are all non-credit courses, distance learning classes (except Blended Classes, which have some on-campus meetings and are therefore included), special events, meetings, open labs, classroom prep tasks, Police Academy classes, and classes that are exclusively for Washtenaw Technical Middle College (WTMC), a separately administered charter school. Cancelled classes are excluded. Also excluded are the many sections that meet in

the English Department's Writing Lab, since these students come and go at will; including these separately or combined would distort the averages because of the large number of sections involved.

We have many cross-listed classes, which are separate sections scheduled to meet together in the same room. These were consolidated and the enrollments combined. Where two or more cross-listed classes have been combined, the spreadsheet lists one of the classes with an entry in the "Xlist" column and the enrollment listed on that line is the combined enrollment for all sections in that room.

The averages are lowered somewhat by the inclusion of some large spaces hosting small classes, such as the dining room (SC 122) used sometimes for Culinary Arts classes and large lecture halls (such as LA 375) and by the peculiarities of scheduling in the Welding Lab.

Also, many of the lecture portions of science classes meet in combined lectures and this is not reflected in the spreadsheet. If there was a practical way to combine these lines of the spreadsheet, it would also have the effect of raising the fill rate averages. The spreadsheet shows only the enrollment by section, typically a half or third of the total number of students in the large lecture halls at one time.

Also, of course, room fill rates were higher at the beginning of the semester before students drop out.

It should also be noted that since classrooms have other uses not included here, such as the non-credit classes, meetings, special events, charter school classes, and other uses mentioned above, the efficiency of room utilization is higher than these fill rate numbers suggest.

Deferred Maintenance Report

Updated September 2015
Facilities Management

Glossary

Current Replacement Value (CRV)

The CRV is the cost to construct a replacement building in today's dollars. The figure is based on the square footage of the current structure and the estimated current construction cost for that type of structure.

One Year Deferred Maintenance Backlog (1 YR DMB)

This is the value of projects that have been deferred and require completion in order to safely maintain facilities and related infrastructure for their current use. The 1 year DMB amounts shown are for items requiring immediate attention to fix critical problems.

Facilities Condition Index (FCI)

Simply put, the FCI is the current DMB divided by the CRV. The resulting number is compared against nationally accepted standards and used to determine the condition of the building, campus or college.

FCI < 5% = Good
FCI > 5% and < 10% = Fair
FCI > 10% = Poor

One Year DMB Excess

This represents the amount the DMB exceeds the APPA benchmark of a building with a 5% FCI - essentially the dollar amount to be spent immediately to reduce the DMB to attain the APPA rating of "Good". In situations where a building is in better than Good" condition (FCI < 5%), the one year DMB excess is shown as zero.

Five Year Deferred Maintenance Backlog (5 Yr DMB)

Similar to the One Year DMB, the Five Year DMB represents the total value of projects that will require attention within the next five years to repair and/or replace problems items before they become critical.

Five Year DMB Excess

Similar to the One Year DMB Excess value, this amount represents the investment to bring the DMB in line with the APPA benchmark of 5% of the Current Replacement Value. In situations where a building is in better than "Good" condition - a bit more difficult over a five year span, the five year DMB excess is shown as zero.

FCI SUMMARY FOR ALL CAMPUS BUILDINGS

	Building	FCI	Rating
1	Athletic Field House	0.80%	Good
2	Business Education Building	7.40%	Fair
3	**Chemical Storage Building**	**12.60%**	**Poor**
4	Crane LASB	5.10%	Fair
5	**Energy Center**	**16.60%**	**Poor**
6	**Family Education Building**	**21.10%**	**Poor**
7	Great Lakes Regional Training Center	3.30%	Good
8	Gunder Myran Building	3.80%	Good
9	**Hazardous Materials Building**	**14.20%**	**Poor**
10	Health and Fitness Center	3.90%	Good
11	Landau Skilled Trades Building	0.70%	Good
12	**Maintenance Building**	**32.20%**	**Poor**
13	**Morris Lawrence Building**	**22.20%**	**Poor**
14	Motorcycle Storage Building	6.40%	Fair
15	Whitworth Occupational Education Building	4.90%	Good
16	Parking Structure	1.90%	Good
17	**Plant Operations Building**	**27.80%**	**Poor**
18	Pump House (Campus Utility Building)	0.70%	Good
19	**Storage and Receiving Building**	**11.40%**	**Poor**
20	**Student Center Building**	**13.60%**	**Poor**
21	Technical and Industrial Building	4.90%	Good

College Stats

Number of Buildings	21
Oldest Building	1970
Newest Building	2012
Avg.Building Age	22
Avg. Cost per S.F. (total = 1,145,923 s.f.)	$205

Facilities Condition Index - Entire College

	First Year Data					Five Year Data				
1,145,923	$234,955,208	$19,033,429	$7,285,669	8.1%	Fair	$60,066,410	$48,318,650	25.6%	$4,699,104	$14,362,834
TOTAL S.F.	CRV	DMB	EXCESS	FCI	RATING	DMB	EXCESS	FCI	$/YR MAINTAIN	$/YR REDUCE

Deferred Maintenance Detail Report - Athletic Field House

Campus:	Main	**Use Types:**	**Notes:**
Bldg. No.:	AFH (027)	100% Athletics	
Building:	Athletic Field House		
Area (s.f.):	2417		
Year Built:	2010		
Floors:	1		

Components	CRV of Component		% of Component Requiring Repair/Replace in:				Notes:
	%	$	0-1 Yr	2017 Cost	1-5 Yrs	2021 Cost	
Structure	57	$209,000	0.5	$1,045	1	$2,090	
Roof	13	$47,025	0.5	$235	3	$1,411	
Glazing	2	$6,270	0.5	$31	2	$125	
Cladding		$0		$0		$0	
HVAC	1	$3,135	3	$94	4	$125	
Plumbing	2	$7,838	3	$235	5	$392	
Primary/Secondary	4	$13,063	2	$261	5	$653	
Distribution	4	$15,675	0	$0	1	$157	
Lighting	1	$5,225	1	$52	2	$105	
Voice/Data	1	$2,090	0	$0		$0	
Ceilings	2	$5,748	0.5	$29	2	$115	
Walls	4	$16,198	1	$162	2	$324	
Doors	4	$15,675	2	$314	5	$784	
Floors	1	$3,135	1	$31	5	$157	
Bldg., Fire, ADA, Elevator	1	$5,225	1	$52	2	$105	
Immed. Site, Ext. Ltg., etc.	3	$10,450	2	$209	3	$314	
CRV Totals:	**100**	**$365,752**		**$2,751**		**$6,855**	

First Year Data					Five Year Data				
$365,752	$2,751	($15,537)	0.8%	Good	$9,606	($8,681)	0.0%	$7,315	$9,236
CRV	DMB	EXCESS	FCI	RATING	DMB	EXCESS	FCI	$/YR MAINTAIN	$/YR REDUCE

Deferred Maintenance Detail Report - Business Education Building

Campus:	Main	**Use Types:**	**Notes:**
Bldg. No.:	BE (013)	15% Lab	
Building:	Business Education	25% Administration	
Area (s.f.):	41,673	60% Classroom	
Year Built:	1996		
Floors:	2		

Components	CRV of Component		% of Component Requiring Repair/Replace in:				Notes:
	%	$	0-1 Yr	2017 Cost	1-5 Yrs	2021 Cost	
Structure	20	$1,416,882	2	$28,338	10	$141,688	Interior floor settlement causing tile to crack and loosen in corridor 142. Gypsum Board exterior soffits deteriorating along east elevation. Type of gypsum board used and location of vapor barrier on insulation above soffit suspect.
Roof	5	$354,220	20	$70,844	50	$177,110	Original single ply EDPM ballast roof, in fair condition.
Glazing	4	$283,376	0	$0	5	$14,169	Original, no problems identified.
Cladding	7	$495,909	15	$74,386	15	$74,386	Brick/Precast. Minor efflorescence on surface of brick on west elevation of building. Exterior soffit along north and east elevations needs to be replaced.
HVAC	14	$991,817	10	$99,182	15	$148,773	Two gravity boiler, some issues starting occasionally. HVAC system is noicy. Glycol system for perimeter heat has leaked occasionally at joints causing ceiling damage.
Plumbing	9	$637,597	2	$12,752	5	$31,880	Minor issues reported.
Primary/Secondary	5	$354,220	0	$0	0	$0	No reported problems.
Distribution	6	$425,064	0	$0	0	$0	No reported problems.
Lighting	5	$354,220	5	$17,711	10	$35,422	Retrofitted ballasts to provide for dimming have control failures. Motorola ballasts averaging replacement of 25 per year since building has opened.
Voice/Data	3	$212,532	0	$0	0	$0	No reported problems.
Ceilings	4	$283,376	1	$2,834	5	$14,169	Ceiling grid damaged at pull own screens when screens were mounted to grid. Screens are now hung from structure above.
Walls	4	$283,376	5	$14,169	5	$14,169	Damage to Zolotone finsh on gypsum board walls has been difficult to repair.
Doors	3	$212,532	5	$10,627	8	$17,003	Exterior door hardware has had to be repaired, presently operating ok. Interior door hardware and cores need to be upgraded
Floors	4	$283,376	25	$70,844	25	$70,844	Quarry tile cracks in corridor 142 from floor settlement, otherwise no problems identified. Carpet was replaced in 2014 with rubber floor tile on the second floor.
Bldg., Fire, ADA, Elevator	4	$283,376	25	$70,844	0	$0	Fully sprinkled building; fire alarm system was upgraded to an addressable system in 2014; ADA compliant.
Immed. Site, Ext. Ltg., etc.	3	$212,532	25	$53,133	5	$10,627	Some exterior paving heaving along the southeast corner of the building potential tripping hazard. Additional exterior security camera is required to cover west portion of Parking lot #4
CRV Totals:	**100**	**$7,084,408**		**$525,663**		**$750,239**	

First Year Data					Five Year Data				
$7,084,408	$525,663	$171,443	7.4%	Fair	$1,275,902	$921,681	18.0%	$141,688	$396,869
CRV	DMB	EXCESS	FCI	RATING	DMB	EXCESS	FCI	$/YR MAINTAIN	$/YR REDUCE

Deferred Maintenance Detail Report - Chemical Storage

Campus:	Main	**Use Types:**	**Notes:**
Bldg. No.:	CS (019)	100% Chemical Storage	Prefabricated unit.
Building:	Chemical Storage		
Area (s.f.):	193		
Year Built:	2001		
Floors:	1		

Components	CRV of Component		% of Component Requiring Repair/Replace in:				Notes:
	%	$	0-1 Yr	2017 Cost	1-5 Yrs	2021 Cost	
Structure	60	$56,843	10	$5,684	15	$8,526	Self contained prefabricated storage unit. Roof, walls and floors are integral parts of structure.
HVAC	20	$18,948	25	$4,737	50	$9,474	Replace ventilation system.
Plumbing	5	$4,737	0	$0	0	$0	Spill containment drain system.
Primary/Secondary	2	$1,895	5	$95	10	$189	Primary: none. Secondary: minimal, PM and parts replacement.
Distribution	2	$1,895	5	$95	15	$284	Minimal, no reported problem.
Lighting	2	$1,895	5	$95	10	$189	Minimal explosion-proof fixtures, no reported problems.
Doors	5	$4,737	25	$1,184	25	$1,184	Door hardware needs to be upgraded including all door cyclinder cores.
Bldg., Fire, ADA, Elevator	2	$1,895	0	$0	0	$0	Not sprinkled.
Immed. Site, Ext. Ltg., etc.	2	$1,895	0	$0	0	$0	Minimal, no reported problems.
CRV Totals:	**100**	**$94,738**		**$11,890**		**$19,848**	

First Year Data					Five Year Data				
$94,738	$11,890	$7,153	12.6%	Fair	$31,737	$27,000	33.5%	$1,895	$8,242
CRV	DMB	EXCESS	FCI	RATING	DMB	EXCESS	FCI	$/YR MAINTAIN	$/YR REDUCE

Deferred Maintenance Detail Report - Crane Liberal Arts and Science Building

Campus:	Main	**Use Types:**	**Notes:**
Bldg. No.:	LASB1 (002)	10% Auditorium	Major addition in 1999. Major lab remodeling in 2003
Building:	Liberal Arts/Science	15% Administration	
Area (s.f.):	177,797	30% Lab	
Year Built:	1970	45% Classroom	
Floors:	4		

Components	CRV of Component		% of Component Requiring Repair/Replace in:				Notes:
	%	$	0-1 Yr	2017 Cost	1-5 Yrs	2021 Cost	
Structure	19	$8,445,358	0	$0	0	$0	Cast-in-place concrete showing signs of cracks admitting water into building on north and south elevations. Waterproofing was replaced in 2014.
Roof	5	$2,222,463	10	$222,246	10	$222,246	Last re-roofing was done during the 2004 renovations for the original 1970 building. The 1999 addition has its original roof.
Glazing	4	$1,777,970	5	$88,898.50	5	$88,899	Very little glazing. Original glazing, some repair over the years. Windows have been replaced on the first floor in 2015.
Cladding	8	$3,555,940	2	$71,119	7	$248,916	Brick, precast concrete. Precast showing rust damage, source unconfirmed. Precast concrete sill were replaced in 2015.
HVAC	14	$6,222,895	10	$622,290	20	$1,244,579	Hair handling systems in the original 1970 building are 13 year old and in good working order. Systems in the 1999 addition have no reported problems.
Plumbing	10	$4,444,925	15	$666,739	30	$1,333,478	Laboratory plumbing, restroom plumbing, and genaral plumbing throughout the original 1970 building have been replaced in the last 13 years and have no reported problems.
Electrical Systems	6	$2,666,955	1	$0	5	$133,348	Original transformer and switchgear were replaced in 2015.
Electrical Distribution	4	$1,777,970	2	$35,559	5	$88,899	The existing FPE panels and feeders were replaced in 2015 with Square D.
Lighting	4	$1,777,970	5	$88,899	5	$88,899	Original ballast. Many needing to be replaced each year.
Voice/Data	4	$1,777,970	0	$0	0	$0	No reported problems.
Ceilings	4	$1,777,970	2	$35,559	5	$88,899	Some tiles damaged or stained due to water.
Walls	4	$1,777,970	5	$88,898.50	10	$177,797	Mold and asbestos has been abated on the first floor in 2014.
Doors	2	$888,985	10	$88,899	10	$88,899	Door hardware needs to be upgraded including all door cyclinder cores. Some wood doors must be replaced.
Floors	5	$2,222,463	5	$111,123	15	$333,369	Carpet has been replaced in 50% of classrooms in 2014. Epoxy penthouse floors.
Bldg., Fire, ADA, Elevator	4	$1,777,970	0	$0	0	$0	Fully sprinkled building; original fire alarm system with horns and pull, and smoke detectors in ceiling. Toilet rooms updated in 1999 to comply with ADA. Elevator replaced in 2000.
Immed. Site, Ext. Ltg., etc.	3	$1,333,478	10	$133,348	25	$333,369	Pavement is heaving and cracks exposed on north side of building.
CRV Totals:	**100**	**$44,449,250**		**$2,253,577**		**$4,471,595**	

First Year Data					Five Year Data				
$44,449,250	$2,253,577	$31,114	5.1%	Fair	$6,725,172	$4,502,709	15.1%	$888,985	$2,234,019.31
CRV	DMB	EXCESS	FCI	RATING	DMB	EXCESS	FCI	$/YR MAINTAIN	$/YR REDUCE

Deferred Maintenance Detail Report - Energy Center

Campus:	Main	**Use Types:**	**Notes:**
Bldg. No.:	EC (017)	95% Power House	
Building:	Energy Center	5% Offices	
Area (s.f.):	15,724		
Year Built:	1999		
Floors:	1		

Components	CRV of Component		% of Component Requiring Repair/Replace in:				Notes:
	%	$	0-1 Yr	2017 Cost	1-5 Yrs	2021 Cost	
Structure	10	$720,000	0	$0	5	$36,000	minor cracks in foundation walls
Roof	0	$0	0	$0	0	$0	Basement space, no roof.
HVAC	60	$4,320,000	25	$1,080,000	50	$2,160,000	Heating pumps need to be replaced. Small boiler needs to be replaced. Boiler controller package needs to be replaced.
Plumbing	10	$720,000	5	$36,000	10	$72,000	No reported problems.
Primary/Secondary	12	$864,000	5	$43,200	15	$129,600	Main switchgear to entire campus, no reported problems.
Distribution	1	$72,000	5	$3,600	15	$10,800	No reported problems.
Lighting	1	$72,000	0	$0	5	$3,600	Lighting was upgraded to LED in 2015.
Voice/Data	1	$72,000	0	$0	1	$720	No reported problems.
Ceilings	1	$72,000	1	$720	5	$3,600	Some ceiling tile damage reported.
Walls	1	$72,000	2	$1,440	5	$3,600	Some wall damage.
Doors	1	$72,000	20	$14,400	5	$3,600	Some damage to doors and hardware needs to be replaced. Door hardware needs to be upgraded including all door cyclinder cores.
Floors	1	$72,000	10	$7,200	25	$18,000	Epoxy floor finish is 14 years old and needs to be replaced.
Bldg., Fire, ADA, Elevator	1	$72,000	5	$3,600	10	$7,200	No reported problems.
Immed. Site, Ext. Ltg., etc.	0	$0	0	$0	0	$0	Underground - n/a.
CRV Totals:	**100**	**$7,200,000**		**$1,190,160**		**$2,448,720**	

First Year Data					Five Year Data				
$7,200,000	$1,190,160	$830,160	16.5%	Poor	$3,638,880	$3,278,880	50.5%	$144,000	$871,776
CRV	DMB	EXCESS	FCI	RATING	DMB	EXCESS	FCI	$/YR MAINTAIN	$/YR REDUCE

Deferred Maintenance Detail Report - Family Education Building

Campus:	Main	**Use Types:**	**Notes:**
Bldg. No.:	FE (006)	100% Day Care	
Building:	Family Education		
Area (s.f):	8,923		
Year Built:	1980		
Floors:	1		

Components	CRV of Component		% of Component Requiring Repair/Replace in:				Notes:
	%	$	0-1 Yr	2017 Cost	1-5 Yrs	2021 Cost	
Structure	18	$321,228	5	$16,061	10	$32,123	Potential settlement causing cracking in gypsum board walls sporadically throughout building - mostly at clearstory windows.
Roof	6	$107,076	50	$53,538	50	$53,538	Roof replaced in 1999. 80% roof is shingled; 20% is fully adhered single ply EDPM.
Glazing	5	$89,230	50	$44,615	50	$44,615	Flashing at clearstory windows leaks depending on direction of wind driven rain. Storefront aluminum entrance needs to be modified.
Cladding	10	$178,460	50	$89,230	50	$89,230	Metal panels and brick. Metal panel finish peeling, needs to be replaced Steel plate lintel rusting at entrance opening. Brick spalling at site walls.
HVAC	18	$321,228	10	$32,123	55	$176,675	HVAC system was upgraded in 2004 and again in 2013. No problems reported.
Plumbing	7	$124,922	25	$31,231	30	$37,477	Hard water has damaged water heater, faucets and flush valves; water softener needed.
Primary/Secondary	5	$89,230	0	$0	0	$0	Primary: none in building. Secondary: no reported problems.
Distribution	3	$53,538	25	$13,385	30	$16,061	Distribution system needs to be upgraded
Lighting	4	$71,384	25	$17,846	25	$17,846	Premature burnout of lamps, possibly caused by electromagnetic ballasts. Averaging replacement of S0 ballasts and 300 lamps per year.
Voice/Data	3	$53,538	0	$0	10	$5,354	No reported problems.
Ceilings	4	$71,384	50	$35,692	50	$35,692	Many gypsum board ceilings limit access to equipment above. Some cracking in sypsum board ceilings near clearstory windows.
Walls	4	$71,384	10	$7,138	20	$14,277	Gypsum board on wood stud framing. Some cracking in gypsum board at windows.
Doors	3	$53,538	25	$13,385	50	$26,769	Exterior metal doors at classrooms are rusting out. Have not been able to make main entrance door ADA automatic assist as no headroom at top of door for hardware. Interior doors are knob type. Door hardware needs to be upgraded including all door cyclinder cores. Hardware needs continued repair lately.
Floors	3	$53,538	10	$5,354	25	$13,385	Carpet was replaced in 2014.
Bldg., Fire, ADA, Elevator	4	$71,384	5	$3,569	20	$14,277	Minimal smoke detectors; building is not sprinkled. Fire alarm system was upgraded in 2014. There was an upgrade for exit and emergency lighting. Toilet rooms not ADA compliant.
Immed. Site, Ext. Ltg., etc.	3	$53,538	25	$13,385	50	$26,769	Walk to entrance slippery in winter due to slope.
CRV Totals:	**100**	**$1,784,600**		**$376,551**		**$604,087**	

First Year Data					Five Year Data				
$1,784,600	$376,551	$287,321	21.1%	Poor	$980,638	$891,408	55.0%	$35,692	$231,820
CRV	DMB	EXCESS	FCI	RATING	DMB	EXCESS	FCI	$/YR MAINTAIN	$/YR REDUCE

Deferred Maintenance Detail Report - Great Lakes Regional Training Center

Campus:	Main	**Use Types:**	**Notes:**
Bldg. No.:	GL (025)	50% Classrooms	This building connects directly to the Occupational Education Building
Building:	Great Lakes RTC	30% Labs	
Area (s.f.):	25,820	10% Office	
Year Built:	2003	10% Computer labs	
Floors:	2		

Components	CRV of Component		% of Component Requiring Repair/Replace in:				Notes:
	%	$	0-1 Yr	2017 Cost	1-5 Yrs	2021 Cost	
Structure	18	$975,996	1	$9,760	5	$48,800	Exterior concrete stairs are deteriorating and need to be repaired. Stairs were repaired in 2014
Roof	6	$325,332	5	$16,267	50	$162,666	No reported problems.
Glazing	5	$271,110	0	$0	3	$8,133	
Cladding	10	$542,220	2	$10,844	2	$10,844	
HVAC	18	$975,996	2	$19,519.92	30	$292,799	HVAC system was retro-commissioned and temperature controls replaced in 2015.
Plumbing	7	$379,554	10	$37,955	25	$94,889	Storm and sanitary lift station pumps need to be replaced.
Primary/Secondary	5	$271,110	2	$5,422	10	$27,111	
Distribution	3	$162,666	2	$3,253	5	$8,133	
Lighting	4	$216,888	2	$4,338	5	$10,844	No reported problems.
Voice/Data	3	$162,666	0	$0	2	$3,253	
Ceilings	4	$216,888	2	$4,338	5	$10,844	Some ceiling tiles are water damaged and need to be replaced.
Walls	4	$216,888	2	$4,338	5	$10,844	No reported problems.
Doors	3	$162,666	5	$8,133	5	$8,133	Door hardware needs to be upgraded including all door cyclinder cores.
Floors	3	$162,666	25	$40,667	50	$81,333	Carpet in some spaces need to be replaced
Bldg., Fire, ADA, Elevator	4	$216,888	3	$6,507	5	$10,844	No reported problems.
Immed. Site, Ext. Ltg., etc.	3	$162,666	3	$4,880	15	$24,400	
CRV Totals:	**100**	**$5,422,200**		**$176,222**		**$813,872**	

First Year Data					Five Year Data				
$5,422,200	$176,222	$0	3.3%	Good	$990,094	$718,984	18.3%	$108,444	$306,463
CRV	DMB	EXCESS	FCI	RATING	DMB	EXCESS	FCI	$/YR MAINTAIN	$/YR REDUCE

Deferred Maintenance Detail Report - Gunder Myran Building

Campus:	Main	**Use Types:**	**Notes:**
Bldg. No.:	GM (022)	10% faculty offices	5th level is a mechanical penthouse
Building:	Gunder Myran Building	30% Library	
Area (s.f.):	139,390	40% classrooms	
Year Built:	2002	20% computer labs	
Floors:	5		

Components	CRV of Component		% of Component Requiring Repair/Replace in:				Notes:
	%	$	0-1 Yr	2017 Cost	1-5 Yrs	2021 Cost	
Structure	18	$5,268,942	2	$105,379	5	$263,447	No reported problelms
Roof	5	$1,463,595	5	$73,180	10	$146,360	Minor flashing and roof curb deterioration
Glazing	5	$1,463,595	2	$29,272	5	$73,180	No reported problelms
Cladding	9	$2,634,471	1	$26,345	1	$26,345	Joint sealant replacement required
HVAC	15	$4,390,785	10	$439,079	10	$439,079	Vibration and isolation springs for air-handling equipment need to be replaced. VFD's need to be replaced. Humidifiers need to be replaced.
Plumbing	10	$2,927,190	2	$58,544	2	$58,544	Minor leaks in garden level copper lines.
Primary/Secondary	6	$1,756,314	2	$35,126	2	$35,126	No reported problelms
Electrical Distribution	4	$1,170,876	2	$23,418	2	$23,418	No reported problelms
Lighting	4	$1,170,876	2	$23,418	3	$35,126	Emergency lighting replacement required
Voice/Data	4	$1,170,876	0	$0	1	$11,709	No reported problelms
Ceilings	4	$1,170,876	2	$23,418	3	$35,126	Stained ceiling tiles throughout
Walls	4	$1,170,876	1	$11,709	2	$23,418	damaged column corners; wall protection required;
Doors	3	$878,157	5	$43,908	4	$35,126	minimal door hardware replacement; some doors damaged. Door hardware needs to be upgraded including all door cyclinder cores.
Floors	4	$1,170,876	15	$175,631	25	$292,719	Carpeting needs to be replaced throughout. Carpet on the 2nd floor replaced in 2013.
Bldg., Fire, ADA, Elevator	2	$585,438	1	$5,854	2	$11,709	Elevator load tests required; overhaul
Immed. Site, Ext. Ltg., etc.	3	$878,157	3	$26,345	3	$26,345	Repairs to parking lot 6; fix underground lighting break.
CRV Totals:	**100**	**$29,271,900**		**$1,100,623**		**$1,536,775**	

First Year Data					Five Year Data				
$29,271,900	$1,100,623	$0	3.8%	Good	$2,637,398	$1,173,803	9.0%	$585,438	$1,112,917.64
CRV	DMB	EXCESS	FCI	RATING	DMB	EXCESS	FCI	$/YR MAINTAIN	$/YR REDUCE

Deferred Maintenance Detail Report - Hazardous Materials Shed

Campus:	Main	**Use Types:**	**Notes:**
Bldg. No.:	HMS (014)	100% HazMat Storage	
Building:	Hazardous Materials Building		
Area (s.f.):	564		
Year Built:	1997		
Floors:	1		

Components	CRV of Component		% of Component Requiring Repair/Replace in:				Notes:
	%	$	0-1 Yr	2017 Cost	1-5 Yrs	2021 Cost	
Structure	25	$12,690	5	$635	15	$1,904	Metal roof showing signs of corrosion and should be painted.
Roof	20	$10,152	25	$2,538	50	$5,076	Minor leaks reported.
Glazing	0	$0	0	$0	0	$0	None
Cladding	20	$10,152	15	$1,523	25	$2,538	Metal siding showing signs of rust.
HVAC	0	$0	0	$0	0	$0	None
Plumbing	0	$0	0	$0	0	$0	None
Primary/Secondary	3	$1,523	5	$76	10	$152	Primary: none. Secondary: no reported problems.
Distribution	0	$0	5	$0	10	$0	Minimal, no reported problems.
Lighting	4	$2,030	5	$102	25	$508	Minimal, maybe too low light level.
Voice/Data	0	$0	0	$0	0	$0	None
Ceilings	0	$0	0	$0	0	$0	None
Walls	0	$0	10	$0	15	$0	No interior partitions.
Doors	12	$6,091	25	$1,523	50	$3,046	Door hardware needs to be upgraded including all door cyclinder cores.
Floors	12	$6,091	5	$305	15	$914	Floor needs to be re-sealed.
Bldg., Fire, ADA, Elevator	0	$0	0	$0	0	$0	None
Immed. Site, Ext. Ltg., etc.	4	$2,030	25	$508	50	$1,015	Minimal, no reported problems.
CRV Totals:	**100**	**$50,760**		**$7,208**		**$15,152**	

First Year Data					Five Year Data				
$50,760	$7,208	$4,670	14.2%	Poor	$22,360	$0	0.0%	$1,015	$5,487
CRV	DMB	EXCESS	FCI	RATING	DMB	EXCESS	FCI	$/YR MAINTAIN	$/YR REDUCE

Deferred Maintenance Detail Report - Health and Fitness Center

Campus:	Main	**Use Types:**	**Notes:**
Bldg. No.:		5% Administrative Offices	
Building:	Health & Fitness Center	2% conference	
Area (s.f.):	75,000	10% Mechanical	
Year Built:	2007		
Floors:			

Components	CRV of Component		% of Component Requiring Repair/Replace in:				Notes:
	%	$	0-1 Yr	2017 Cost	1-5 Yrs	2021 Cost	
Structure	17	$2,868,750	3	$86,063	5	$143,438	Precast concrete bowing, cracking. Precast at west stair shows structural damage. Soffit at main entrance should be replaced.
Roof	7	$1,181,250	0	$0	15	$177,188	No reported problems.
Glazing	5	$843,750	2	$16,875	5	$42,188	No reported problems.
Cladding	7	$1,181,250	5	$59,063	15	$177,188	Exterior brick showing signs of cracking and movement.
HVAC	16	$2,700,000	7	$189,000	15	$405,000	Energy Recovery Unit #3 needs fan motor replacement. Temperature controls need to be upgraded.
Plumbing	8	$1,350,000	5	$67,500	20	$270,000	Steam generators for steam room need to be replaced. Pool sand filters need to be replaced.
Primary/Secondary	5	$843,750	0	$0	0	$0	No reported problems.
Distribution	4	$675,000	0	$0	15	$101,250	No reported problems.
Lighting	4	$675,000	5	$33,750	0	$0	Minor problems reported.
Voice/Data	1	$168,750	20	$33,750	0	$0	No reported problems.
Ceilings	2	$337,500	2	$6,750	5	$16,875	Minor problems reported.
Walls	2	$337,500	2	$6,750	2	$6,750	Minor problems reported.
Doors	3	$506,250	2	$10,125	10	$50,625	Door hardware needs to be upgraded including all door cyclinder cores. Locker room locks need to be replaced
Floors	2	$337,500	10	$33,750	5	$16,875	Carpet in fitness area showing signs of wear. Lap pool and therapy pool surface needs to be replaced. Tile in pool area needs to be re-grouted.
Bldg., Fire, ADA, Elevator	4	$675,000	0	$0	5	$33,750	No reported problems.
Pool Equipment	10	$1,687,500	5	$84,375	10	$168,750	The TMI water balance control unit needs to be serviced and/or replaced. Family locker room showers need to be replaced. Pool handrails need to be replaced. Trench drains need to be replaced.
Immed. Site, Ext. Ltg., etc.	3	$506,250	5	$25,313	5	$25,313	Platform tennis deck surface needs to be refinished.
CRV Totals:	**100**	**$16,875,000**		**$653,063**		**$1,635,188**	

First Year Data					Five Year Data				
$16,875,000	$653,063	$0	3.9%	Good	$2,288,250	$1,444,500	13.6%	$337,500	$795,150.00
CRV	DMB	EXCESS	FCI	RATING	DMB	EXCESS	FCI	$/YR MAINTAIN	$/YR REDUCE

Deferred Maintenance Detail Report - Henry S. Landau Skilled Trades Building

Campus:	Main	**Use Types:**	**Notes:**
Bldg. No.:	HL (005)	100% Vo/tech	Major Renovations: Capital Outlay project completed: October 2011
Building:	Henry S. Landau Skilled Trades Building		
Area(s.f.):	7,337		
Year Built:	1978		
Floors:	1		

Components	CRV of Component		% of Component Requiring Repair/Replace in:				Notes:
	%	$	0-1 Yr	2017 cost	1-5 Yrs	2021 Cost	
Structure	19	$287,850	0	$0	0	$0	No reported problems.
Roof	13	$196,950	0	$0	20	$39,390	No reported problems.
Glazing	2	$30,300	0	$0	5	$1,515	No reported problems.
Cladding	15	$227,250	0	$0	20	$45,450	No reported problems.
HVAC	15	$227,250	2	$4,545	25	$56,813	No reported problems.
Plumbing	4	$60,600	0	$0	0	$0	No reported problems.
Primary/Secondary	2	$30,300	0	$0	0	$0	No reported problems.
Distribution	4	$60,600	0	$0	0	$0	No reported problems.
Lighting	4	$60,600	0	$0	5	$3,030	No reported problems.
Voice/Data	2	$30,300	0	$0	0	$0	No reported problems.
Ceilings	1	$15,150	0	$0	2	$303	No reported problems.
Walls	4	$60,600	0	$0	2	$1,212	No reported problems.
Doors	4	$60,600	5	$3,030	15	$9,090	Door hardware needs to be upgraded including all door cyclinder cores.
Floors	4	$60,600	2	$1,212	25	$15,150	No reported problems.
Bldg., Fire, ADA, Elevator	4	$60,600	0	$0	0	$0	No reported problems.
Immed. Site, Ext. Ltg., etc.	3	$45,450	5	$2,273	25	$11,363	No reported problems.
CRV Totals:	**100**	**$1,515,000**		**$11,060**		**$183,315**	

First Year Data					Five Year Data				
$1,515,000	$11,060	$0	0.7%	Good	$194,375	$118,625	12.8%	$30,300	$69,175
CRV	DMB	EXCESS	FCI	RATING	DMB	EXCESS	FCI	$/YR MAINTAIN	$/YR REDUCE

Deferred Maintenance Detail Report - Maintenance Building

Campus:	Main	**Use Types:**	**Notes:**
Bldg. No.:	MB (012)	100% Maintenance	With mezzanine above east half of building and a 5-door garage addition at west end.
Building:	Maintenance Building		
Area (s.f.):	15,356		
Year Built:	1992		
Floors:	1		

Components	CRV of Component		% of Component Requiring Repair/Replace in:				Notes:
	%	$	0-1 Yr	2017 Cost	1-5 Yrs	2021 Cost	
Structure	20	$388,400	10	$38,840	15	$58,260	Rusting at bases of steel columns at salt storage area.
Roof	10	$194,200	30	$58,260	100	$194,200	No reported problems.
Glazing	0	$0	0	$0	0	$0	None
Cladding	10	$194,200	15	$29,130	50	$97,100	Rusting around salt storage area.
HVAC	15	$291,300	80	$233,040	25	$72,825	No reported problems.
Plumbing	9	$174,780	25	$43,695	25	$43,695	No reported problems.
Primary/Secondary	6	$116,520	10	$11,652	50	$58,260	Primary: none. Secondary: no reported problems.
Distribution	5	$97,100	50	$48,550	50	$48,550	Electrical service needs to be upgraded
Lighting	5	$97,100	50	$48,550	25	$24,275	Lighting needs to be upgraded to LED.
Voice/Data	2	$38,840	0	$0	0	$0	No reported problems.
Ceilings	0	$0	0	$0	0	$0	None
Walls	4	$77,680	10	$7,768	10	$7,768	No reported problems.
Doors	4	$77,680	10	$7,768	5	$3,884	Exterior doors don't align properly and bind. Door to salt storage area rusting, won't close completely. Door hardware needs to be upgraded including all door cyclinder cores.
Floors	4	$77,680	50	$38,840	50	$38,840	No reported problems.
Bldg., Fire, ADA, Elevator	4	$77,680	50	$38,840	50	$38,840	No reported problems.
Immed. Site, Ext. Ltg., etc.	2	$38,840	50	$19,420	50	$19,420	Not paved.
CRV Totals:	**100**	**$1,942,000**		**$624,353**		**$705,917**	

First Year Data					Five Year Data				
$1,942,000	$624,353	$527,253	32.2%	Poor	$1,330,270	$1,233,170	68.5%	$38,840	$304,894
CRV	DMB	EXCESS	FCI	RATING	DMB	EXCESS	FCI	$/YR MAINTAIN	$/YR REDUCE

Deferred Maintenance Detail Report - Morris Lawrence Building

Campus:	Main	**Use Types:**	**Notes:**
Bldg. No.:	ML1 (011)	10% Administration	Original building, with 2 additions. A 1,365 s.f. storage addition
Building:	Morris Lawrence	40% Auditorium	was completed in 2013.
Area (s.f.):	72,742	50% Classroom	
Year Built:	1990		
Floors:	1		

Components	CRV of Component		% of Component Requiring Repair/Replace in:				Notes:
	%	$	0-1 Yr	2017 Cost	1-5 Yrs	2021 Cost	
Structure	18	$3,211,965	15	$481,795	20	$642,393	Settlement caused sanitary line under building to sag. Condition has been corrected. Cracks in concrete and block walls possibly caused by settlement. Exposed structural steel under skylight at each entrance is rusting, needs to be repainted. Exterior columns at each entrance, some cracking, efflorescence on brick surfaces. Rust from rebar showing through exposed beams at each entrance. Slabs in mechanical room don't slope to drain.
Roof	7	$1,249,098	30	$374,729	50	$624,549	Original roof was replaced in 2005. Firing range roof needs to be replaced. Flashing needs to be replaced.
Glazing	5	$892,213	25	$223,053	25	$223,053	Glazed curtain wall at main lobby has leaked in the past and been repaired. Future leaks are anticipated. Blance of glazing on building has no reported problems.
Cladding	7	$1,249,098	5	$62,455	25	$312,274	Precast/brick. Water is getting into cavity between brick and block, possibly through wind driven rain through roof flashing, or other openings, and not weeping back out causing efflorescence in some areas and potential mold.
HVAC	16	$2,855,080	25	$713,770	100	$2,855,080	Five original air handling units. the two reciprocationg chillers are over 25 years old and beyond their useful life, and must be replaced. Keeping filters clean for unit at firing range is difficult. Controls upgraded to combination DDC & pneumatic as part of recent addition. Only one compressor, no back-up. Boiler piping not accessible for maintenance.
Plumbing	8	$1,427,540	15	$214,131	75	$1,070,655	Plumbing lines are both black iron and copper. Corrosion damage at joints from hard-untreated water, causing leaking. Water softener at end of life, beginning to need more than normal maintenance.
Primary/Secondary	5	$892,213	20	$178,443	50	$446,106	Primary: power supply is adequate. One transformer replaced recently. Secondary: no identified issues.
Distribution	4	$713,770	15	$107,066	50	$356,885	Not enough power to seminar rooms, conference and lobby space. (Need to confirm if upgrade for this area is presently funded.)
Lighting	4	$713,770	50	$356,885	50	$356,885	Original. Conversion to LED in Towsley Auditorium. Other incandescent lamps in high lobby space should be replaced.
Voice/Data	4	$713,770	2	$14,275	0	$0	No identified issues.
Ceilings	4	$713,770	50	$356,885	50	$356,885	Suspended lay-in and gypsum board ceiling show minor damage from previous leaking through roof flashing.
Walls	4	$713,770	25	$178,443	30	$214,131	Vinyl wall covering recently replaced in some areas with Acrovyn wall covering.
Doors	3	$535,328	25	$133,832	50	$267,664	Exterior door hardware wearing out needing more maintenance. Door hardware needs to be upgraded including all door cyclinder cores. Sliding doors failing on regular basis, due partially to orientation. Controls need to be repaired or replaced. Interior doors have lock hardware assembly failures. Exterior sliding doors should be replaced.

Deferred Maintenance Detail Report - Morris Lawrence Building

Campus:	Main	93	**Use Types:**	**Notes:**
Bldg. No.:	ML1 (011)		10% Administration	Original building, with 2 additions. A 1,365 s.f. storage addition
Building:	Morris Lawrence		40% Auditorium	was completed in 2013.
Area (s.f.):	72,742		50% Classroom	
Year Built:	1990			
Floors:	1			

Components	CRV of Component		% of Component Requiring Repair/Replace in:				Notes:
	%	$	0-1 Yr	0-1 Yr Cost	1-5 Yrs	1-5 Yrs Cost	
Floors	4	$713,770	50	$356,885	50	$356,885	Most existing carpet needs to be replaced. Severe chipping in quarry tile near entries needs to be replaced.
Bldg., Fire, ADA, Elevator	4	$713,770	10	$71,377	25	$178,443	Door hardware has knobs instead of lever handles. Building fully sprinkled. Fire alarm system is combination of new and existing.
Immed. Site, Ext. Ltg., etc.	3	$535,328	25	$133,832	50	$267,664	Exterior pavement at east entrance heaved up; holding water at entrance doors; potential tripping hazard.
CRV Totals:	**100**	**$17,844,250**		**$3,957,855**		**$8,529,552**	

First Year Data					Five Year Data				
$17,844,250	$3,957,855	$3,065,642	22.2%	Poor	$12,487,406	$11,595,194	70.0%	$356,885	$2,854,366
CRV	DMB	EXCESS	FCI	RATING	DMB	EXCESS	FCI	$/YR MAINTAIN	$/YR REDUCE

Deferred Maintenance Detail Report - Motorcycle Storage

Campus:	Main	**Use Types:**	**Notes:**
Bldg. No.:	MS (026)	100% Storage	
Building:	Motorcycle Storage		
Area (s.f.):	871		
Year Built:	2008		
Floors:	1		

Components	CRV of Component		% of Component Requiring Repair/Replace in:				Notes:
	%	$	0-1 Yr	2017 Cost	1-5 Yrs	2021 Cost	
Structure	27	$19,989	2	$400	15	$2,998	No reported problems.
Roof	27	$19,989	5	$999	25	$4,997	Asphalt shingles, no reported problems.
Glazing	0	$0	0	$0	0	$0	None
Cladding	27	$19,989	5	$999	25	$4,997	
HVAC	0	$0	0	$0	0	$0	None
Plumbing	0	$0	0	$0	0	$0	None
Primary/Secondary	3	$2,221	0	$0	0	$0	Primary: none. Secondary: Minimal, no reported problems.
Distribution	3	$2,221	0	$0	2	$44	
Lighting	3	$2,221	100	$2,221	0	$0	Interior lighting is needed.
Voice/Data	0	$0	0	$0	0	$0	None
Ceilings	0	$0	0	$0	0	$0	None
Walls	0	$0	2	$0	5	$0	No interior partitions.
Doors	10	$7,404	2	$148	5	$370	Single overhead door, no reported problems.
Floors	0	$0	2	$0	5	$0	
Bldg., Fire, ADA, Elevator	0	$0	0	$0	0	$0	None
Immed. Site, Ext. Ltg., etc.	0	$0	10	$0	25	$0	None
CRV Totals:	**100**	**$74,035**		**$4,768**		**$13,408**	

First Year Data					Five Year Data				
$74,035	$4,768	$0	6.4%	Fair	$18,176	$14,474	24.6%	$1,481	$5,116
CRV	DMB	EXCESS	FCI	RATING	DMB	EXCESS	FCI	$/YR MAINTAIN	$/YR REDUCE

Deferred Maintenance Detail Report - Larry L. Whitworth Occupational Education Building

Campus:	Main	**Use Types:**	**Notes:**
Bldg. No.:	OE (007)	10% Administration	With partial mezzanine, with Auto Service addition.
Building:	Occupational Education	40% Vo/tech	Major Renovations completed October 2011.
Area (s.f.):	118,554	50% Classroom	
Year Built:	1980		
Floors:	1		

Components	CRV of Component		% of Component Requiring Repair/Replace in:				Notes:
	%	$	0-1 Yr	2017 Cost	1-5 Yrs	2021 Cost	
Structure	20	$5,334,930	0	$0	0	$0	Some cracking of steps due to settlement, repairs are funded.
Roof	5	$1,333,733	15	$200,060	70	$933,613	No reported problems.
Glazing	3	$800,240	0	$0	5	$40,012	Some minimal moisture/air penetration through original glazing mostly at southwest corner of building.
Cladding	7	$1,867,226	2	$37,345	10	$186,723	Brick and precast. Extensive spalling of brick face on building walls.
HVAC	16	$4,267,944	15	$640,192	60	$2,560,766	New Energy Recovery Units installed in penthouse of original (1981) building. However, Auto Center addition of 1990 HVAC units are original and need to be replaced.
Plumbing	9	$2,400,719	10	$240,072	15	$360,108	Solar panels and related hot water storage tank needs to be repaired.
Primary/Secondary	6	$1,600,479	2	$32,010	0	$0	No reported problems.
Distribution	4	$1,066,986	0	$0	0	$0	No reported problems.
Lighting	4	$1,066,986	0	$0	5	$53,349	No reported problems.
Voice/Data	3	$800,240	0	$0	0	$0	No reported problems.
Ceilings	4	$1,066,986	0	$0	0	$0	No reported problems.
Walls	5	$1,333,733	0	$0	0	$0	No reported problems.
Doors	3	$800,240	15	$120,036	10	$80,024	Exterior doors: some hardware deterioration. Door hardware needs to be upgraded including all door cyclinder cores. Interior doors: wood faced gypsum core doors swell in humid weather and bind on frames. Hardware beginning to deteriorate and is not ADA compliant. Overhead doors in Auto Center need to be replaced.
Floors	4	$1,066,986	0	$0	5	$53,349	Most floor are VCT and epoxy, offices are carpet. No reported problems.
Bldg., Fire, ADA, Elevator	4	$1,066,986	0	$0	5	$53,349	Toilets have been upgraded to meet intent of ADA. Door hardware is not ADA compliant. Building is 100% sprinkled. Fire alarm system is up to date with strobe pulls and duct detectors.
Immed. Site, Ext. Ltg., etc.	3	$800,240	5	$40,012	5	$40,012	Cracking in pavement outside main entrance. North brick retaining walls - brick faces spalling.
CRV Totals:	**100**	**$26,674,650**		**$1,309,725**		**$4,361,305**	

First Year Data					Five Year Data				
$26,674,650	$1,309,725	$0	4.9%	Good	$5,671,031	$4,337,298	21.3%	$533,493	$1,667,699
CRV	DMB	EXCESS	FCI	RATING	DMB	EXCESS	FCI	$/YR MAINTAIN	$/YR REDUCE

Deferred Maintenance Detail Report - Parking Structure

Campus:	Main	**Use Types:**	**Notes:**
Bldg. No.:	PS (029)	3% Administration	
Building:	Parking Structure	97% Parking	Opened January 2012
Area (s.f.):	154,248		
Year Built:	2012		
Floors:	1		

Components	CRV of Component		% of Component Requiring Repair/Replace in:				Notes:
	%	$	0-1 Yr	2017 Cost	1-5 Yrs	2021 Cost	
Structure	70	$8,067,150	2	$161,343	2	$161,343	Some cracking of steps due to settlement, repairs are funded. Waterproofing membrane over occuppied areas needs to be replaced.
Roof	2	$230,490	5	$11,525	30	$69,147	No reported problems.
Glazing	1	$115,245	0	$0	5	$5,762	East tower elevator glazing has cracked and needs to be replaced.
Cladding	7	$806,715	2	$16,134	5	$40,336	No reported problems.
HVAC	5	$576,225	2	$11,525	30	$172,868	Minor air flow and temperature issues reported.
Plumbing	1	$115,245	1	$1,152	15	$17,287	Some toilet drainage reported.
Primary/Secondary	3	$345,735	1	$3,457	0	$0	No reported problems.
Distribution	1	$115,245	0	$0	0	$0	No reported problems.
Lighting	2	$230,490	0	$0	15	$34,574	Multiple LED fixtures have to be replaced; dimming controls must be adjusted.
Voice/Data	1.25	$144,056	0	$0	0	$0	No reported problems.
Ceilings	0.75	$86,434	0	$0	0	$0	No reported problems.
Walls	1	$115,245	0	$0	0	$0	No reported problems.
Doors	0.5	$57,623	3	$1,729	10	$5,762	No reported problems.
Floors	1	$115,245	0	$0	5	$5,762	Some deterioration of deck waterproofing over occupied areas needs to be replaced.
Bldg., Fire, ADA, Elevator	0.5	$57,623	0	$0	5	$2,881	No reported problems.
Immed. Site, Ext. Ltg., Security cameras, etc.	3	$345,735	5	$17,287	5	$17,287	Additional security cameras are needed.
CRV Totals:	**100**	**$11,524,500**		**$224,152**		**$533,008**	

First Year Data					Five Year Data				
$11,524,500	$224,152	$0	1.9%	Good	$757,160	$180,935	6.6%	$230,490	$381,922
CRV	DMB	EXCESS	FCI	RATING	DMB	EXCESS	FCI	$/YR MAINTAIN	$/YR REDUCE

Deferred Maintenance Detail Report - Plant Operations Building

Campus:	Main	**Use Types:**	**Notes:**
Bldg. No.:	PO (008)	100% Administration	
Building:	Plant Operations		
Area (s.f.):	7,368		
Year Built:	1983		
Floors:	1		

Components	CRV of Component		% of Component Requiring Repair/Replace in:				Notes:
	%	$	0-1 Yr	2017 Cost	1-5 Yrs	2021 Cost	
Structure	20	$191,568	5	$9,578	10	$19,157	Suspected settlement causing cracking to walls and floor at locker/lounge end of building.
Roof	6	$57,470	70	$40,229	50	$28,735	Roof shingles and plywood need to be replaced. Edge flashing not extended high enough up curbs facilitating ice damage and snow build up.
Glazing	2	$19,157	2	$383	2	$383	No reported problems.
Cladding	6	$57,470	2	$1,149	10	$5,747	No reported problems.
HVAC	16	$153,254	80	$122,604	30	$45,976	Six of the seven air handling units were replaced in 2002. One remaining HVAC unit needs to be replaced. Exhaust fans are worn out, requiring extensive maintenance. Duct smoke detectors due for replacement. Telecommunication closet not air conditioned, Overheating of equipment potentially will reduce equipment life.
Plumbing	9	$86,206	25	$21,551	20	$17,241	Existing water heater is oversized, also is nearing end of life. Copper piping joints continue to sprink leaks.
Primary/Secondary	6	$57,470	5	$2,874	20	$11,494	Primary: original, still working ok, but undersize required for present operations. Secondary: electric radiant heating overhead at perimeter entrances is not working.
Distribution	5	$47,892	60	$28,735	20	$9,578	System is at capacity and needs to be upgraded. Current FPE panels are no longer in production.
Lighting	5	$47,892	5	$2,395	10	$4,789	Original, no reported problems.
Voice/Data	4	$38,314	0	$0	0	$0	No reported problems except for non air-conditioned telecommunication closet causing premature wear.
Ceilings	4	$38,314	2	$766	5	$1,916	No reported problems. Lack of access to equipment in ceilings above toilet rooms.
Walls	3	$28,735	2	$575	5	$1,437	Gypsum board on metal stud. No reported problems.
Doors	3	$28,735	5	$1,437	10	$2,874	Exterior galvanized steel doors are corroded from salt and weather. Hardware is worn and requiring continued repair. Door hardware needs to be upgraded including all door cyclinder cores.
Floors	4	$38,314	50	$19,157	50	$19,157	Carpet and VCT in most areas has no reported problems. VCT in restroom is worn and should be replaced. Carpet should be replaced in Small Business offices.
Bldg., Fire, ADA, Elevator	4	$38,314	0	$0	0	$0	Knob hardware on doors does not meet ADA. No sprinkler system in building. Fire alarm system has been upgraded with strobes and horns.
Immed. Site, Ext. Ltg., etc.	3	$28,735	50	$14,368	50	$14,368	Grading at north door slopes to building causing water in building at door entrance and adjacent conference room when heavy rain. Wall pack lighting is failing. The Building's sanitary sewer line and manhole need to be repaired.
CRV Totals:	**100**	**$957,840**		**$265,801**		**$182,852**	

First Year Data					Five Year Data				
$957,840	$265,801	$217,909	27.8%	Poor	$448,652	$400,760	46.8%	$19,157	$108,887
CRV	DMB	EXCESS	FCI	RATING	DMB	EXCESS	FCI	$/YR MAINTAIN	$/YR REDUCE

Deferred Maintenance Detail Report - Pump House

Campus:	Main	**Use Types:**	**Notes:**
Bldg. No.:	CU (032)	100% Utility	
Building:	Campus Utility		
Area (s.f.):	800 s.f.		
Year Built:	2012		
Floors:	1		

Components	CRV of Component		% of Component Requiring Repair/Replace in:				Notes:
	%	$	0-1 Yr	2017 Cost	1-5 Yrs	2021 Cost	
Structure	15	$135,000	0	$0	1	$1,350	
Roof	2	$19,000	0.5	$95	2	$380	
Glazing	0	$0		$0		$0	
Cladding	7	$63,000	0	$0	2	$1,260	
HVAC	1	$5,225	0.5	$26	5	$261	
Plumbing	52	$472,000	1	$4,720	5	$23,600	
Primary/Secondary	9	$80,000	0.5	$400	3	$2,400	
Distribution	9	$78,000	1	$780	2	$1,560	
Lighting	1	$3,000	0.5	$15	1	$30	
Voice/Data	1	$1,045	0	$0	2	$21	
Ceilings	0	$0	0	$0		$0	
Walls	1	$3,135	0	$0	2	$63	
Doors	1	$3,135	0.5	$16	2	$63	
Floors	0	$0	0	$0		$0	
Bldg., Fire, ADA, Elevator	0	$0	0.5	$0		$0	
Immed. Site, Ext. Ltg., etc.	1	$5,225		$0	2	$105	
CRV Totals:	**100**	**$867,765**		**$6,052**		**$31,092**	

First Year Data					Five Year Data				
$867,765	$6,052	($37,336)	0.7%	Good	$37,144	($6,244)	4.3%	$17,355	$24,784
CRV	DMB	EXCESS	FCI	RATING	DMB	EXCESS	FCI	$/YR MAINTAIN	$/YR REDUCE

Deferred Maintenance Detail Report - Storage and Receiving Building

Campus:	Main	**Use Types:**	**Notes:**
Bldg. No.:	SRB (016)	25% Maintenance	With two partial mezzanines.
Building:	Storage & Receiving Bldg	75% Storage	
Area (s.f.):	23,013		
Year Built:	1997		
Floors:	1		

Components	CRV of Component		% of Component Requiring Repair/Replace in:				Notes:
	%	$	0-1 Yr	2017 Cost	1-5 Yrs	2021 Cost	
Structure	20	$575,325	5	$28,766	5	$28,766	Potential settlement at east entry causing cracking.
Roof	13	$373,961	5	$18,698	25	$93,490	Gutters backing up, causing water to run down exterior walls, saturate block and run in through north and west doors.
Glazing	1	$28,766	0	$0	2	$575	Very minimal, no reported problems.
Cladding	15	$431,494	15	$64,724	25	$107,873	Water runoff from roof saturating block walls at various locations, causing minor efflorescence.
HVAC	15	$431,494	25	$107,873	40	$172,598	One roof top unit, one college mounted gas heater, stand-alone heating/cooling unit for office space. No reported problems.
Plumbing	4	$115,065	5	$5,753	10	$11,507	No reported problems.
Primary/Secondary	3	$86,299	5	$4,315	25	$21,575	DTE transformer disconnect switch should be installed to allow for routine electrial switchgear maintenance.
Distribution	4	$115,065	5	$5,753	15	$17,260	No reported problems.
Lighting	4	$115,065	25	$28,766	25	$28,766	No reported problems.
Voice/Data	2	$57,533	0	$0	0	$0	Minimal, some data lines damaged, repairs are funded.
Ceilings	0	$0	5	$0	15	$0	None
Walls	4	$115,065	5	$5,753	10	$11,507	No reported problems.
Doors	4	$115,065	7	$8,055	5	$5,753	Door hardware needs to be upgraded including all door cyclinder cores.
Floors	4	$115,065	25	$28,766	25	$28,766	No reported problems.
Bldg., Fire, ADA, Elevator	4	$115,065	0	$0	5	$5,753	Building is 100% sprinkled. Smoke detectors only.
Immed. Site, Ext. Ltg., etc.	3	$86,299	25	$21,575	50	$43,149	Minimal, no reported problems.
CRV Totals:	**100**	**$2,876,625**		**$328,798**		**$577,339**	

First Year Data					Five Year Data				
$2,876,625	$328,798	$184,967	11.4%	Poor	$906,137	$762,306	31.5%	$57,533	$238,760
CRV	DMB	EXCESS	FCI	RATING	DMB	EXCESS	FCI	$/YR MAINTAIN	$/YR REDUCE

Deferred Maintenance Detail Report - Student Center Building

Campus:	Main	**Use Types:**	**Notes:**
Bldg. No.:	SC (004)	10% Kitchen/Food Service	With partial basement and penthouse.
Building:	Student Center	15% Student Activities	Minor Renovations in 2003-2004
Area (s.f.):	162,443	20% Classroom	
Year Built:	1976	25% Library	
Floors:	4	30% Administration	

Components	CRV of Component		% of Component Requiring Repair/Replace in:				Notes:
	%	$	0-1 Yr	2017 Cost	1-5 Yrs	2021 Cost	
Structure	19	$6,944,438	10	$694,444	40	$2,777,775	Settlement potentially causing cracking at west end of building. Exterior North Stair has critical deterioration in structure and pavers and will require major repair or should be demolished. Partial basement and tunnel under building. Basement does not leak. Tunnel has some leaking, Possible leak in sanitary line needs to be investigated. Culinary arts reach in and walk in refrigeration in need of replacement. One of six original refrigerators has presently been replaced.
Roof	7	$2,558,477	0	$0	5	$127,924	Existing single ply EPDM mechanically fastened roof was replaced in 2015 with high albedo EPDM fully adhered roofing membrane.
Glazing	4	$1,461,987	5	$73,099	10	$146,199	Seals deteriorating. Air infiltration noticed at many windows.
Cladding	7	$2,558,477	0	$0	0	$0	Cast in place concrete. Some rebar rust showing through wall.
HVAC	16	$5,847,948	25	$1,461,987	70	$4,093,564	Eight existing Air Handling units need to be replaced in the penthouses.
Plumbing	6	$2,192,981	20	$438,596	30	$657,894	Galvanized plumbing 4" and smaller has leaking at joints. Lines 2" and smaller are mostly copper, with no identified issues. Sanitary lines are deteriorating. Fixtures, drip. Fixtures scheduled and funded for replacement on first floor. Sanitary sewer and storm sewers, and drainage system in basement need to be repaired or replaced.
Primary/Secondary	6	$2,192,981	10	$219,298	25	$548,245	Transformers and electrical switchgear was replaced in 2005.
Distribution	4	$1,461,987	0	$0	25	$365,497	Walker duct makes retrofitting difficult. Power ok for present. Building scheduled to be renovated in five years.
Lighting	5	$1,827,484	20	$365,497	20	$365,497	Lighting in stairwells difficult to reach for replacement. Ballasts and lights are original. Lighting in central area of 2nd floor needs to be upgraded.
Voice/Data	4	$1,461,987	0	$0	0	$0	No reported problems.
Ceilings	4	$1,461,987	5	$73,099	10	$146,199	Most of ceiling space is exposed construction.
Walls	4	$1,461,987	25	$365,497	30	$438,596	Brick and drywall. Major areas throughout the building need to be painted.
Doors	3	$1,096,490	10	$109,649	20	$219,298	Exterior glass and aluminum doors, hardware failing. Interior doors hardware mortise locks and lever handles are wearing out. Door hardware needs to be upgraded including all door cyclinder cores.
Floors	4	$1,461,987	50	$730,994	50	$730,994	Ceramic tile on main stairs has popped and been replaced in some areas. Future popping is expected. Tile popping in one men's toilet room. Has been repaired but more popping expected. Carpet should be replaced throughout.
Bldg., Fire, ADA, Elevator	4	$1,461,987	25	$365,497	25	$365,497	Building is now fully sprinklered
Immed. Site, Ext. Ltg., etc.	3	$1,096,490	5	$54,825	15	$164,474	Extensive cracking of paving and exterior stairs and caps on concrete site walls. Repairs are funded. Exterior lighting on north side of building may be under lighted.
CRV Totals:	**100**	**$36,549,675**		**$4,952,481**		**$11,147,651**	

First Year Data					Five Year Data				
$36,549,675	$4,952,481	$3,124,997	13.6%	Poor	$16,100,132	$14,272,648	44.1%	$730,994	$3,951,020
CRV	DMB	EXCESS	FCI	RATING	DMB	EXCESS	FCI	$/YR MAINTAIN	$/YR REDUCE

Deferred Maintenance Detail Report - Technical and Industrial Building

Campus:	Main	**Use Types:**	**Notes:**
Bldg. No.:	TI1 (001)	10% Lab	Minor renovations in 1995, 2001.
Building:	Technical & Industrial	15% Administration	Major renovations in 2008
Area (s.f.):	95,690	35% Vo/tech	
Year Built:	1970	40% Classroom	
Floors:	2		

Components	CRV of Component		% of Component Requiring Repair/Replace in:				Notes:
	%	$	0-1 Yr	2017 Cost	1-5 Yrs	2021 Cost	
Structure	18	$3,875,445	5	$193,772	5	$193,772	No reported problems.
Roof	6	$1,291,815	5	$64,591	25	$322,954	No reported problems.
Glazing	5	$1,076,513	25	$269,128	50	$538,256	Some moisture through windows at faculty offices. Storefront entrances need to be replaced at the northeast and southeast
Cladding	7	$1,507,118	2	$30,142	5	$75,356	Brick/precast/cast-in-place concrete/block. No reported problems.
HVAC	15	$3,229,538	2	$64,591	10	$322,954	No reported problems.
Plumbing	8	$1,722,420	2	$34,448	5	$86,121	No reported problems.
Primary/Secondary	5	$1,076,513	0	$0	5	$53,826	No reported problems.
Distribution	4	$861,210	0	$0	5	$43,061	No reported problems.
Lighting	4	$861,210	5	$43,061	15	$129,182	
Voice/Data	4	$861,210	0	$0	5	$43,061	
Ceilings	4	$861,210	2	$17,224	15	$129,182	No reported problems.
Walls	5	$1,076,513	2	$21,530	5	$53,826	
Doors	3	$645,908	15	$96,886	20	$129,182	Exterior aluminum and glass doors has hinges and hardware wearing out. Hard to find replacement parts. Interior doors: doors ok, hardware is wearing out. Mortise locks and lever handles are failing. Door hardware needs to be upgraded including all door cyclinder cores.
Floors	4	$861,210	10	$86,121	25	$215,303	
Bldg., Fire, ADA, Elevator	4	$861,210	10	$86,121	5	$43,061	Building is fully sprinkled.
Immed. Site, Ext. Ltg., etc.	4	$861,210	5	$43,061	10	$86,121	Some paving heaving on south side of building. Exterior lighting on the south side of building was identified as being dark.
CRV Totals:	**100**	**$21,530,250**		**$1,050,676**		**$2,465,214**	

First Year Data					Five Year Data				
$21,530,250	$1,050,676	$0	4.9%	Good	$3,515,890	$2,439,377	16.3%	$430,605	$1,133,783
CRV	DMB	EXCESS	FCI	RATING	DMB	EXCESS	FCI	$/YR MAINTAIN	$/YR REDUCE

SECTION F - Implementation Plan

Washtenaw Community College
50 YEARS
OPENING DOORS

Implementation Plan

The 5-year comprehensive master plan should identify the schedule, by which the institution proposes to address major capital deficiencies, and:

a. Prioritize major capital projects requested from the State, including a brief project description and estimated cost, in the format provided. (Adjust previously developed or prior year's figures utilizing industry standard CPI indexes where appropriate.)

Priority 1

Center for Advanced Transportation Addition and Renovation Project supports the Washtenaw Community College Strategic Plan priorities to:

- Strengthen and enhance student success as it aligns with the regional training needs of employers. To this end there will be:
  - A focus on ensuring the quality of curriculum and instruction.
  - Job readiness for current business/industry needs.
  - Successful training and retraining to enter or re-enter the workforce.
  - Provide the opportunity for lifelong learning opportunities.

- Increase institutional agility and responsiveness to meet external needs, forces and trends by:
  - Addressing rapid curricular responsiveness to meet employer needs.
  - Focusing on judiciously integrating technologies into the learning process.
  - Emphasizing innovative approaches to instruction and anticipate and respond to emerging trends in higher education.

- Pursue workforce development in partnership with business and industry employers and community organizations through:
  - Identifying, developing and promoting internship and co-op opportunities.
  - Integrating credit and non-credit curricula in workforce training programs and laddered curricula.
  - Promoting entrepreneurship opportunities and programming. Leverage and pursue academic partnerships with K-12 districts and four-year colleges and universities.

The project includes the construction of a 30,000 s.f. addition to the College's existing Larry L. Whitworth Occupational Education Building along with moderate renovations to the existing building. The new space will be dedicated to teaching STEM (Science, Technology, Engineering and Mathematics) and GRIN (Genetics, Robotics, Information Technology and Nano-Technology) related advanced transportation and advanced manufacturing technology courses in a laboratory setting for a **total project cost of $12,500,000**.

b. Provide an estimate relative to the institution's current deferred maintenance backlog. Define the impact of addressing deferred maintenance and structural repairs, including programmatic impact, immediately versus over the next five years.

Current list includes the following projects. For additional details, please see the deferred maintenance report for the entire College in Section E**:**

PROJECT DESCRIPTION		BUDGET
Business Education Building		
Replace roof		$ 375,000.00
Replace smoke control system		$ 125,000.00
Replace temperature controls		$ 95,000.00
Replace ceiling tiles in classrooms and labs		$ 150,000.00
Replace exterior joint sealant		$ 40,000.00
Replace transformers		$ 80,000.00
	Total	**$ 865,000.00**
Crane Liberal Arts & Science Building		
Replace roof		$ 700,000.00
Replace roof exhaust fans		$ 175,000.00
Waterproof roof air intakes		$ 60,000.00
Replace storefront at bridge to SCB		$ 55,000.00
	Total	**$ 990,000.00**
Family Education Building		
Carpet replacement		$ 85,000.00
Replace wood doors and hardware		$ 45,000.00
Replace roof		$ 110,000.00
Replace lighting		$ 75,000.00
	Total	**$ 315,000.00**
Great Lakes Regional Training Center		
Replace carpeting		$ 60,000.00
	Total	**$ 60,000.00**
Gunder Myran Building		
Replace humidification system		$ 150,000.00
	Total	**$ 150,000.00**
Health & Fitness Center		
Replace pool(s) Diamond Brite surface with ceramic tile		$ 275,000.00
Replace carpet in main exercise area with rubber tile		$ 110,000.00
Replace locker room(s) ceiling		$ 60,000.00
Paint exterior concrete		$ 75,000.00
	Total	**$ 520,000.00**

Larry L. Whitworth OEB		
Refinish auto shop floors		$ 200,000.00
	Total	**$ 200,000.00**
Morris Lawrence Building		
Waterproof exterior masonry walls		$ 85,000.00
Replace chillers		$ 680,000.00
Replace broken under-slab storm drain lines		$ 90,000.00
Replace east and west entrances concrete		$ 60,000.00
	Total	**$ 915,000.00**
Technical & Industrial Building		
Replace exterior waterproofing and storm drains		$ 150,000.00
	Total	**$ 150,000.00**
Campus Wide		
Resurface Parking Lots 1 and 6		$ 600,000.00
Resurface access drive south of Community Park		$ 80,000.00
Water main replacement		$ 200,000.00
Resurface access drive west of Community Park		$ 120,000.00
Replace sinking parking lot storm drains		$ 75,000.00
Replace concrete sidewalks		$ 250,000.00
	Total	**$ 1,325,000.00**
GRAND TOTAL		**$ 5,490,000.00**

Deferred maintenance, by definition, is projects which have been backlogged due to lack of funding. The impact of delaying these projects will have an immense impact on academic programs. These include roof problems that result in leaks, which can result in environmental concerns such as mold. Continued deterioration will lead to structural damage that will be very costly to repair if delayed. Electrical transformers are living on borrowed time and parts are no longer available; if any of them go, we would have to close that building.

c. Include the status of on-going projects financed with State Building Authority resources and explain how completion coincides with the overall five-year plan.

The College currently does not have any on-going projects financed with the State Building Authority at this time.

d. Identify to the extent possible, a rate of return on planned expenditures. This could be expressed as operational "savings" that a planned capital expenditure would yield in future years.

Most of the projects described in the implementation plan will have a seven-year payback or less. The mechanical and electrical retrofits will have an immediate operational impact and reduction of operational expenditures.

e. Where applicable, consider alternatives to new infrastructure, such as distance learning.

The College currently offers many distance and blended courses. However, at this time we are not proposing new construction in this 5-year Capital Outlay Plan.

f. Identify a maintenance schedule for major maintenance items in excess of $1,000,000 for fiscal year 2017 through fiscal year 2021.

The College will have one major maintenance project in this category for fiscal 2016 through fiscal year 2021 which will involve the replacement of our Student Center Building Roof and Skylight which are over 20 years old, not energy efficient, and has leaked over the years causing damage to the building's interior finishes.

g. Identify the amount of non-routine maintenance the institution has budgeted for in its current fiscal year and relevant sources of financing.

The College maintains a current annual Deferred Maintenance budget of $1.5 million for non-routine maintenance. The funding source is the College's general fund.

ATTACHMENT B -
Capital Outlay Project Request

Washtenaw Community College
50 YEARS
OPENING DOORS

ATTACHMENT B

FISCAL YEAR 2017
CAPITAL OUTLAY PROJECT REQUEST

Institution Name: Washtenaw Community College

Project Title: Center for Advanced Transportation Addition and Renovation Project

Project Focus: ☑ Academic ☐ Research ☐ Administrative/Support

Type of Project: ☑ Renovation ☑ Addition ☐ New Construction

Program Focus of Occupants: Academic and Workforce Development

Approximate Square Footage: 30,000 gross square feet

Total Estimated Cost: $12,500,000

Estimated Start/Completion Dates: Construction start May 2017, Use and Occupancy September 2018

Is the Five-Year Plan posted on the institution's public internet site? ☑ *Yes* ☐ *No*
Is the requested project the top priority in the Five-Year Capital Outlay Plan? ☑ *Yes* ☐ *No*
Is the requested project focused on a single, stand-alone facility? ☐ *Yes* ☑ *No*

Please provide detailed, yet appropriately concise responses to the following questions that will enhance our understanding of the requested project:

Describe the project purpose.

The purpose of the project is to fill the gap for technician training related to green mobility (vehicle light weighting) and intelligent transportation systems (ITS) in the Greater Ann Arbor and S.E. Michigan regions. Creating an Advanced Transportation Center will position Washtenaw Community College to deploy world class applied STEM training using state-of-the-art equipment (lasers, robotics, etc.) and software used in business and industry.

Job aligned education/training to be addressed in the Center will include: ITS connected vehicle based information technology, with specific regard to cyber security, data/analytics, infrastructure and embedded systems; rapid prototyping, including *a priori* solid modeling, virtual simulation and product life-cycle management; ferrous and

aluminum welding, including fastening, bending and joining, and non-destructive testing; sheet metals cutting and bending; additive and advanced manufacturing, including composite materials, robotics, CNC, and computer measurement; automotive body and repair service, including aluminum, and automotive services, including on-board diagnostics and repair, vehicle and engine fuel economy and performance testing.

Through partnerships established with the University of Michigan and Wayne State University in support of the LIFT (ALMMII) project and Connected Vehicle, the MMTC, and the research conducted by the Center for Automotive Research (CAR), the State of Michigan's Automotive Strategic Plan and the work of the Workforce Intelligence Network (WIN) with regard to the Investing in Manufacturing Communities Partnership (IMC) proposal, Washtenaw Community College hopes to build upon its strengths to become a leader in green mobility and intelligent transportation systems technician training.

WCC is one of only two sites in Michigan that runs an American Welder Society (AWS) certification and training center, has an international award winning welding student, holds college credit articulation agreements and/or annual national training with three skilled trades unions (United Association (UA) of Pipefitters, Plumbers and Sprinkler fitters, International Iron Workers and Sheet Metal Workers); houses the UA International Training Center, providing assistance with deploying international distance learning training through the United States, Canada and Australia and has the only Michigan online blended java programming and Linux/Unix systems programs, which incorporates gaming and simulation (made possible with a USDOL TAA-CCCT 2nd round grant).

Describe the scope of the project.

The project includes the construction of a 30,000 s.f. addition to the College's existing Larry L. Whitworth Occupational Education Building along with moderate renovations to the existing building. The new space will be dedicated to teaching STEM (Science, Technology, Engineering and Mathematics), additive manufacturing, and GRIN (Genetics, Robotics, Information Technology and Nano-Technology) related advanced transportation and advanced manufacturing technology courses in a laboratory setting for a total cost of $12,500,000.

The addition will be located on the northwest corner of our existing Larry L. Whitworth Occupational Education Building which is the College's primary skilled trades training building and close to existing underutilized parking. The addition will include 15 instructional laboratories, classrooms and support spaces CAD-CAM, CAE, Non-Destructive Testing, additive manufacturing and Computer Measurement as outlined below:

- 2 laser and robotic welding laboratories,
- 1 Additive manufacturing laboratory,
- 2 sheet metal laboratories,
- 1 Non-destructive Testing laboratory,
- 1 CNC laboratory with multiple advanced manufacturing processes,
- 4 computer laboratories,
- 1 large flexible multi-discipline laboratory,
- 3 large active-learning classrooms

1. How does the project enhance Michigan's job creation, talent enhancement and economic growth initiatives on a local, regional and/or statewide basis?

The world's largest concentration of advanced manufacturers, engineering and technician talent, research and development, and infrastructure is located in S.E. Michigan, including Lansing (WIN, 2014). The WCC capital outlay project's mission is to enhance talent, job creation and economic growth initiatives at the local, regional and state level by aligning state-of-the-art advanced materials, technology and manufacturing education and training with emerging skills data provided by employers and informed by research (i.e. LIFT [ALMMII], CAR, WIN, IMCP, MAGMA, State of Michigan Automotive Strategic Plan). Investing in this opportunity will help Michigan, the Greater Ann Arbor Region and Washtenaw County to solidify its international position as "the" world's greatest ITS and manufacturing center ecosystem. This is a competitive advantage area that Michigan cannot afford to lose.

Within the nine counties surrounding Washtenaw County, there are 105,900 manufacturing based skilled trades' employees (WIN, 2014) that will need access to

automated equipment and processing training. In Washtenaw and Livingston Counties, according to Dun & Bradstreet (2014), there are approximately 1,242 manufacturing companies that generate over $10 billion annually in revenue and employ over 70,146 employees, of which 30,363 reside in Washtenaw and Livingston Counties. Additionally, it is projected that information technology jobs will increase at a minimum of 29% within the Greater Ann Arbor Region by 2019 (WIN, 2014).

By participating with organizations such as the Workforce Intelligence Network, Michigan Academy for Green Mobility Alliance, University of Michigan, Wayne State University, MMTC, A2 SPARK, MICHauto, the Investing in Manufacturing Communities Partnership (IMCP) Collaborative, the Region 9 Talent Council (which includes the region's economic developers, Workforce Development Boards and K-12 education, community colleges and universities and industry employers), WCC is uniquely positioned to have wide impact. Potential joint K-12 applied STEM educational training programs with Square One Education Network and potentially the Michigan Polytech Academy will be facilitated with this project.

2. How does the project enhance the core academic and/or research mission of the institution?

- This project supports the Washtenaw Community College Strategic Plan priorities to:
    - Strengthen and enhance student success with:
        - a focus on ensuring the quality of curriculum and instruction
        - job readiness for current business/industry needs
        - successful training and retraining to enter or re-enter the workforce
        - provide the opportunity for lifelong learning opportunities
    - Increase institutional agility and responsiveness to meet external needs, forces and trends by:
        - addressing rapid curricular responsiveness to meet employer needs
        - focusing on judiciously integrating technologies into the

learning process
        - emphasizing innovative approaches to instruction and anticipate and respond to emerging trends in higher education
    - Pursue workforce development in partnership with business and industry employers and community organizations through:
        - identifying, developing and promoting internship and co-op opportunities
        - integrating credit and non-credit curricula in workforce training programs and laddered curricula
        - promoting entrepreneurship opportunities and programming
    - Leverage and pursue academic partnerships with K-12 districts and four-year colleges and universities.

3. How does the project support investment in or adaptive re-purposing of existing facilities and infrastructure?

The project supports investment in adaptive re-purposing of existing facilities by providing major remodeling to existing space in the Larry L. Whitworth Occupational Education Building. Consolidation and leveraging of existing program functions in our Industrial Technology, Welding, and Automotive areas will allow for more efficient use of instructional space, and model the inter-operability among different advanced manufacturing processes.

Existing welding and auto body and service labs in the Larry L. Whitworth Occupational Education Building are more than 30 years old and will need to be renovated to support the new advanced transportation programs outlined in this request. Additionally, through consolidation we will be able to re-purpose existing Industrial Technology space which is currently housed in temporary warehouse space in a remote area of the campus.

4. Does the project address or mitigate any current life/safety deficiencies relative to existing facilities? If yes, please explain.

No. The College has been very diligent in maintaining and updating existing facilities with respect to life safety deficiencies in all academic buildings. Therefore, this project's funding will not be used to update life safety code deficiencies. Life safety systems were upgraded in the Larry L. Whitworth Occupational Education Building in 2010.

5. How does the institution measure utilization of its existing facilities, and how does it compare relative to established benchmarks? How does the project help to improve the utilization of existing space and infrastructure, or support the need for additional space and infrastructure?

The College tracks utilization of existing laboratory classrooms on a departmental basis (i.e. welding, HVAC, industrial technology, etc.). In connection with the review of future skilled trades training facilities conducted in support of the 2007 update of the Campus Facilities Master Plan, and the 2011 Strategic Plan, the administration identified a critical need to upgrade existing laboratory classrooms dedicated to STEM, robotics, and composite material courses because existing facilities are functionally obsolete, and cannot support active and experiential learning or interdisciplinary teaching and learning in advanced manufacturing.

Subsequently, a thorough review of our course offerings confirmed that facilities dedicated to welding, HVAC, machine tool, electrical technology, computer science, and industrial technology are heavily utilized. In addition, laboratory classroom space is not available to accommodate expected and continuing growth in skilled trades training areas.

This project helps to improve the utilization of existing space and infrastructure by combining STEM laboratory classrooms in one location which promotes interdisciplinary teaching and learning, providing a significantly improved life/safety environment for students, and freeing up space which will be made available to support growth in other emerging technologies and industry demanding STEM and intelligent transportation fields.

6. How does the institution intend to integrate sustainable design principles to enhance the efficiency and operations of the facility?

The building addition and renovation project, if approved, will be designed and constructed to meet or exceed State requirements for Leadership in Energy and Environmental Design (LEED). Three of Washtenaw Community College construction projects built in recent years have achieved LEED gold design certification. The Larry L. Whitworth Building Addition and Renovation Project will include a storm water retention system to support project site irrigation, the use of dimmable LED lighting and daylight harvesting, incorporation of occupancy and CO2 sensor technology within the building automation system program to reduce unnecessary HVAC system operation, and use of variable frequency drives to safely minimize conditioned exhaust air rates from the building. Because this project focuses on setting new standards for advanced transportation and manufacturing technology education, special consideration will be given to creating a state-of-the-art facility that has its LEED solutions on display as a "living laboratory" instructional tools for our faculty, students, and industry partners.

7. Are match resources currently available for the project? If <u>yes</u>, what is the source of the match resources? If <u>no</u>, identify the intended source and the estimated timeline for securing said resources?

Yes. The College would use reserves from its general fund, but would also aggressively seek assistance and partner with industry manufacturers for laboratory equipment and measurement control device components used by students.

The College received funding from the Michigan Strategic Fund, $4.4M from the Community College Skilled Trades Equipment Program, and state-of-art advanced manufacturing equipment will be installed in the Occupational Education building, where feasible. Other buildings may be required to house all of the equipment. The purpose is to deliver upgraded educational programs in high-wage, high-skilled and high-demand occupations, as identified by regional labor market conditions and that build and retain a talented workforce in Michigan; which is precisely what our proposed Center for Advanced Transportation Laboratory Addition and Renovation Project is poised to accomplish.

8. **If authorized for construction, the state typically provides a maximum of 75% of the total cost for university projects and 50% of the total cost for community college projects. Does the institution intend to commit additional resources that would reduce the state share from the amounts indicated? If so, by what amount?**

The total project cost including the addition and renovations, site work, furnishings, technology and equipment is expected to be $12,500,000. Washtenaw Community College is requesting capital outlay funds from the State in the amount of $6,250,000 or 50 percent of the project cost. As part of the College's overall skilled trades training facilities initiative however, it is essential that we upgrade the obsolete welding and industrial technology labs when the building addition and renovation project is completed. These closely related projects are expected to cost about $300 thousand and will be funded with the College's own resources included in its deferred maintenance and capital funds.

9. **Will the completed project increase operating costs to the institution? If yes, please provide an estimated cost (annually, and over a five-year period) and indicate whether the institution has identified available funds to support the additional cost.**

Yes. The College estimates that operations and maintenance costs for the addition and renovation project will be approximately $6.50 per square foot annually, or $195,000. Over five years this totals $975,000. These costs will be offset partially by operating and energy efficiencies in the design of the new labs and be covered within inflationary cost estimates included in the College's General Fund budget projections.

10. **What impact, if any, will the project have on tuition costs?**

This project will not have any direct impact on the College's tuition costs.

11. **If this project is not authorized, what are the impacts to the institution and its students?**

If this project is not authorized the training benefits to the region and the nation, for the high-tech skilled trades and advanced manufacturing jobs, that require STEM education outlined under Question #2 will be much more difficult, if not impossible, to achieve. Students' learning in these key fields will be challenged in sub-optimal and outdated spaces and outdated equipment and STEM graduates will lag behind local and regional employer needs. Washtenaw Community College is dedicated to educational excellence by mission and strategic vision and can only enact best practices if contemporary facilities exist to support pedagogical innovation and need. Currently, our campus is equipped primarily with basic laboratory and classrooms. A few active learning classrooms are available, but none exist to enhance laboratory instruction. This addition and renovation project will provide our students up-to-date, flexible classrooms that are equipped with enabling active learning technologies. If this project is not authorized and advanced in the FY15 State Capital Outlay, Washtenaw Community College students risk falling behind their peers both locally and regionally and deny employers in the region the skilled workforce desperately needed to fulfill both current and emerging jobs.

12. What alternatives to this project were considered? Why is the requested project preferable to those alternatives?

Other alternatives considered to address the significant need to upgrade existing teaching labs included renovating those labs in the various buildings where they are located currently with no new construction. While this would be a lower cost alternative, the requested project is preferable because it facilitates interdisciplinary teaching opportunities, enables growth in emerging skilled trades and engineering technology and other STEM fields that are currently not provided by the College.

The 30,000 s.f. of additional space being requested in the Larry L. Whitworth Occupational Education Building, for state-of-the-art advanced transportation and manufacturing facilities, will enable the College to provide a significantly enhanced life/safety environment for our Industrial Technology classroom facilities and the student population currently housed in the warehouse space of our Storage and Receiving Building. Also, renovating existing labs is not feasible because there is no lab space available to conduct classes while renovations are in progress.