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1 INTRODUCTION

1.1 INTRODUCTION AND PLANNING PROCESS

In the Fall of 2016, Arapahoe Community College (ACC) engaged gkkworks to prepare a Facility Master Plan for the college’s three campuses in Littleton, Parker, and Castle Rock. The outcome provides a plan to guide the college for five years of facility planning to support the college’s academic mission. The report utilizes the guidelines established by the Colorado Commission on Higher Education (CCHE) and Colorado Department of Higher Education (CDHE) for Facility Master Plans and academic research by Colorado Education. It includes information from the previous Master Plan prepared in November 2010 and concurrent planning and Facility Audits taken on by the college.

The design team facilitated a process to gather information cross section of stakeholders including instructional staff, student advisors, facilities staff, and members of the President’s leadership cabinet. The outcome of the Master Plan outlines four goals to be undertaken for five years starting in 2017. Due to large projected growth in Douglas County and a need to increase program services, the first of these goals is a significant expansion of space and outreach in Douglas County with the development of the Collaboration Campus in the town of Castle Rock. The second goal focuses on the renovation of the Annex Building on the Littleton Campus followed by the renovation of the Learning Commons in the Main Building on Littleton Campus. The final goal outlines deferred maintenance on each of the buildings to be implemented over time.

Underpinning the Master Planning on all three campuses, is an analysis of anticipated growth, utilization of the existing academic spaces, and need to address the changing needs academic space for various teaching and learning styles and to engage students, staff, and external stakeholders.
1.2 SUMMARY OF STAKEHOLDER CONSULTATION PROCESS

The Master Plan was developed over a three-month period beginning in October 2016. The planning process consisted of three phases:

**Phase 1**  Analysis and Goal Setting  
**Phase 2**  Concept Alternatives  
**Phase 3**  Implementation Strategy and Facility Master Plan Documentation

The design team structured the process with the same inclusive and collaboration approach ACC utilized in developing the Strategic Vision 2020 Plan. A cross section of the campus community participated in workshops, interviews, face-to-face interactions, and tours of the campus. Key stakeholder groups included the President’s Cabinet, Student Affairs Group, Instructional Group, and Students. The Facilities Manager and maintenance staff provided tours and insight into the condition of the facilities. Dr. Cindy Somers, Vice President of Administrative Services served as an invaluable resource in leading the process and providing feedback throughout the development of this document.

**Phase 1- Analysis and Goal Setting:** the process included review of background information and previously relevant documents including the Master Plan completed in 2010, the Strategic Vision 2020 Plan, Collaboration Campus Business Plan, and Facility Audits from the Littleton Campus (these documents are referenced in the Bibliography). Meetings with the stakeholder groups identified key goals, concerns, and the guiding principles for the master plan. These findings helped identify a direction for this Master Plan.

**Phase 2 - Concept Alternatives:** reviewed a number of alternative plans and images. This iterative process reviewed concept alternatives against the Strategic Vision Plan, Master Plan guiding principles and goals. Alternatives were aligned with future growth, academic space utilization, 21st century education spaces, and the physical constraint and attributes of the existing facility. Feedback from stakeholders was gathered and integrated into the final preferred plans.

In the final phase - **Implementation Strategy** and Facility Master Plan Documentation, campus plans were developed based on information gathered in Phase 2. A phased implementation strategy was outlined to assist ACC in delivering the plan over time.
1.3 MASTER PLAN VISION, GOALS, AND GUIDING PRINCIPLES

Through the Master Planning process, a number of options were discussed and evaluated. The design team in conjunction with the Leadership Cabinet developed the following goals for the Master Plan to be implemented over time. Section 4 of this report outlines the vision, need, program, and schedule for each of these goals.

ACC MASTER PLAN FACILITY GOALS

1. Castle Rock Collaboration Campus
2. Health Programs Integration Renovation: Annex Building, Littleton Campus
3. Learning Commons Renovation: Main Building, Littleton Campus
4. Maintenance of Existing Facilities

The following guiding principles were developed and refined in conjunction with the college. The principles were instrumental in guiding the Master Plan process and document and will be a critical component in the implementation of the four Master Plan goals.

ACC MASTER PLAN GUIDING PRINCIPLES

• Build upon current and previous planning documents and strategic plan outcomes;
• Plan for growth and enhance utilization of classrooms through flexible space design on each campus;
• Create synergy in programs by locating spaces in close proximity to each other;
• Create and enhance existing student spaces to support learning
• Enhance and connect to outdoor spaces;
• Maintain existing facilities and increase sustainability outcomes;
• Enhance community and business partnerships and connections through visibility of programs.
### 2.1 CAMPUS HISTORY

ACC stands on grounds with an educational heritage that began 129 years ago with the opening of a one-room school for the Peabody Housing Development in 1873. In 1964, downtown Littleton business men and women debated what could be done to revive the Main Street area. Virginia Baker, heir to some Main Street buildings, suggested a junior college. On May 4, 1965, a narrow vote (1,690 to 1,449) gave favor to bond an issue to build a college. Arapahoe Junior College was the first Junior College in the Denver Metro area. The first classes were held in the Fall of 1966 with 550 students and 23 faculty members in “temporary but adequate buildings”.

Full accreditation was granted in 1970 with 2,300 students and a college budget of $1.8 million. Also in 1970, residents voted again, this time to have the College join the Colorado Community Colleges and Occupational Education System. The local junior college district was dissolved. Arapahoe Junior College was given the name we know it by today, Arapahoe Community College (ACC).

Over the years, ACC has continued to grow in both enrollment and course offerings. It currently has over 9,200 students (Fall Census Databook) and 100 degree and certificate programs in a wide range of academic, business, and technical fields of study. The majority of classes are held in the Main Building on the Littleton Campus completed in 1974. A large Annex added in 1977 houses additional classrooms; laboratories; an art gallery; shop areas; and all physical education facilities, including a gymnasium and fitness center. The ACC Art & Design Center was acquired in 1989 and is now home to ACC’s art, fine art, and design programs.

ACC’s 55-acre Littleton Campus is located in Littleton, Colorado, adjacent to the downtown area. This campus has panoramic views of the Colorado Rocky Mountains and Denver 15 miles to the north. Completed in 2000, the $12 million library expansion and remodel of classrooms and faculty offices was completed. The remodeled facilities gave the College a new architectural face plus a state-of-the-art technological infrastructure. The college is currently in design of an $8 million renovation of science classrooms and laboratories in the Littleton Main Building that will provide access to 21st century laboratories to students. In 2001, the College acquired the Church Avenue Building, adding another 3 acres to the campus.

As an ongoing effort to remain connected to its service area, ACC also offers courses and programs in a variety of locations. Courses are offered at locations in Littleton, Jefferson County, Douglas County, as well as other off campus sites in Parker and Castle Rock. ACC is governed by CCOES policies.
2.2 CAMPUS SITES / SERVICE AREAS

ACC’s three campuses in Littleton, Parker, and Castle Rock serve Douglas, Arapahoe, and Jefferson Counties. The top 4 counties for enrollment include Douglas, Arapahoe, Jefferson, and Denver Counties. The zip codes with the highest enrollments include: 80126, 80134, 80129, 80127, and 80128 (Fall Census Databook).

ACC has enrollment with forty-eight high schools in the service area and additional relationships outside the region. ACC Student Recruitment Office has an ongoing relationship with many of these high schools as well. In addition, the college offers their local high schools with concurrent enrollment (CE).

In 2016, 3090 high school students were concurrently enrolled in one of the following four categories: ASCENT (5th year high school students taking courses at ACC campuses); enrollment at high school site; high school enrollment at ACC Littleton Campus; high school students taking concurrent enrollment at ACC.

Figure 2.6: Service Area Diagram

[Map of service area showing high schools]

High Schools served by Arapahoe Community College:

- Cherokee Trail High School
- Grandview High School
- Regis Jesuit High School
- Platte Canyon High School
- Castle View High School
- Daniel C. Oakes High School
- Douglas County High School
- Arapahoe High School
- Endeavor Academy (Cherry Creek PREP)
- Conifer High School
- Abraham Lincoln High School
- Colorado Academy
- Contemporary Learning Academy (CLA)
- D’Evelyn Jr-Sr High School
- Denver Academy
- John F Kennedy High School
- Mullen High School
- Sheridan High School
- South Denver High School
- Thomas Jefferson High School
- West High School
- SOAR Academy
- Jefferson High School
- Elizabeth High School
- Colorado’s Finest Alternative High School
- Englewood High School
- Humanex Academy
- Cherry Creek High School
- Prairie View High School
- Eagle Academy
- Highlands Ranch High School
- Mountain Vista High School
- Plum Creek Academy
- Rock Canyon High School
- ThunderRidge High School
- Bear Creek High School
- McClain Community High School
- Chatfield Senior High School
- Collegiate Academy of Colorado
- Columbine High School
- Dakota Ridge High School
- Heritage High School
- Littleton High School
- Littleton Options High School
- Heritage High School
- Chaparral High School
- Ponderosa High School
2.3 INSTITUTIONAL MISSION, ROLE, VISION AND CORE VALUES

ACC VISION STATEMENT
To be the leader in community college education in the state of Colorado

MISSION STATEMENT
To provide innovative and responsive educational and economic opportunities in an accessible, inclusive environment that promotes success for students, employees and community.

The Strategic Vision 2020 Plan intends to guide the campus from 2015 through 2020. As part of the Strategic Vision 2020 Plan, ACC reviewed their current learning environment and outlined a process to address the changing needs of the 21st century learner. The five strategic directions: Student Success, Technological Leadership, Inclusive Culture, Collaborative Partnerships, and Organizational Sustainability outlined in the Vision Plan are the foundation of the Master Plan.

STUDENT SUCCESS
Provide students with seamless opportunities to achieve educational, professional, and personal goals, from inquiry to completion, through meaningful academic and career pathways.

TECHNOLOGY LEADERSHIP
Lead through innovative and collaborative use of technology-enhanced teaching and learning with integrated, dynamic, and accessible systems across all College environments.

INCLUSIVE CULTURE
Welcome and engage individual differences, committing to collaboration and transparency in communication and decision-making.

COLLABORATIVE PARTNERS
Forge and enhance mutually beneficial partnerships that promote the vitality and relevance of our curriculum and programs.

ORGANIZATIONAL SUSTAINABILITY
Operate responsively to the needs of our students, staff and community through responsive management of human, physical, and fiscal resources.
2.4 ACADEMIC AND STRATEGIC PLAN ASSESSMENT WITH THE MASTER PLAN

A. INDUSTRY | EMPLOYMENT DEMAND

In March 2016 a series of focus groups held in conjunction with the development of the Castle Rock Collaboration Campus revealed community needs for a trained workforce in: Business (marketing, management/supervision, accounting, customer service, sales, communications), Information Technology/Programming (innovative software development, marketing/sales, social media management, project/account management), Healthcare (medical technicians for several areas; non-medical staffing for coding, records, business management; regulatory affairs and compliance; continuing education for current employees), Entrepreneurship (product development, business start-up and management, sales/marketing).

Findings from State agencies researching the relationship between jobs and education show that a college degree alone is not sufficient to fill workforce demand. A college education that places an emphasis on hands on training, critical thinking, and immersion in technology is important in today’s knowledge economy, as referenced below.

“Job qualifications are shifting. While some jobs are becoming automated, many require increasingly higher levels of technology literacy to operate more advanced systems and procedures. More than ever, workers must have a “liquid skills mindset” – a “flexible, ongoing approach to skills accumulation” in response to volatility in the labor market (Infosys, p.23). As a result of technological advancements, the “ability to work with data and make data-based decisions will become an increasingly vital skill across many job families” (World Economic Forum, 2016, p.21). Astutely, college students tend to believe that both interpersonal skills and agility with workforce related technology help improve job prospects, with business and economics and STEM major putting more emphasis on the importance of having a degree in what they perceive as a “marketable field,” over arts and humanities and social sciences majors (McGraw Hill, 2016).”

Increasingly, higher education institutions are required to keep up with technological advancements to remain attractive to perspective students and provide the tools necessary to train for today’s workforce. ACC’s Master Plan seeks to provide flexible, technology-friendly learning environments that are an environment for students to gain the skills needed to be successful. The proposed spaces within the Master Plan are influenced by this idea of how both interpersonal skills and agility with workforce related technology are important attributes to acquire for job prospects. Through the redesign of teaching spaces and programs students will gain skills both inside and outside of the classroom. Academic spaces within the institution will encourage collaboration between students of like-programs using flexible spaces with incorporated technology.

“Society can’t adapt fast enough. Nearly half of young workers in the United States find that their formal education did not prepare them for their work life (Infosys, 2016), suggesting an opportunity to fill a gap between education and employment through work-based learning opportunities. Yet, while the majority of young workers have to learn new skills for their job, more than half are optimistic about their future job prospects (Infosys, 2016).”
(Colorado Talent Pipeline Report, 2016, p.4)
This idea of the “Colorado Paradox” directly impacts the Colorado educational system and expresses the attractive nature of Colorado for educated individuals while natives are proven to be less educated. This paradox creates an opportunity to improve educational institutions throughout Colorado and provide the education necessary to be successful in the Colorado workforce as a native. The Master Plan develops strategies for ACC to remain a leader in community college education and attract and maintain perspective students in the local community.

One of the main implementation strategies of the Master Plan supporting the guiding principle to enhance community and business partnerships through visibility of programs is to incorporate community-friendly spaces on all of the campuses. These spaces will allow the college to host on-campus events such as career/job fairs, lectures, and networking opportunities. These spaces range from open atrium spaces, large/flexible seminar rooms, makerspaces, and common areas. At Littleton, the relocation of the Art Gallery from the Annex Building to the Main Building will bring the community to the heart of the campus, giving community members, perspective students, and current students and faculty the opportunity to engage in the institution and create a positive influence on the community. At the Collaboration Campus in Castle Rock, a central learning commons and makespace is at the heart of the campus. The increased utilization of these spaces will create a greater presence in the community for ACC and provide a home on campus for community outreach. ACC could become a model for other community colleges throughout Colorado and eventually rank a higher percentage of adults with postsecondary credentials as Colorado natives.
2.4 ACADEMIC AND STRATEGIC PLAN ASSESSMENT WITH THE MASTER PLAN

B. ENROLLMENT TRENDS

ENROLLMENT SIZE AND DISTRIBUTION DATA (Current and Phased Growth)

A snapshot of enrollment at ACC’s campuses indicates that 30% of the students are under 18 years old and over 30% are 18-24 years old. FTE registration by course is highest in the following five subjects: Math, English, Business, Biology and Psychology (Fall Census Databook).

As a means of projecting future enrollment trends, the Colorado Community College Service Area’s report titled “Potential Future Colorado Community College Enrollment” was used as a basis by ACC in developing this Master Plan. The report cited 16.66% growth in Douglas County and 3.47% growth in Arapahoe County through the year 2020. Using internal research and projections these numbers were adjusted to 10% and 2% respectively. In addition, the Castle Rock campus will expect to grow at a higher rate due to students; the priority expansion of services outlined in later sections of the Master Plan. It is expected that many Castle Rock students may choose to take their courses at the new Castle Rock campus.

The student enrollment analysis does not include online courses, only students who are expected to be physically present on each campus. Students engaged in hybrid courses that include traditional face-to-face instruction and distance learning components were included. (See Figure 2.11)

Figure 2.11: Student Enrollment - Head Count Duplicated/Unduplicated

<table>
<thead>
<tr>
<th></th>
<th>2016*</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Castle Rock</strong></td>
<td>474</td>
<td>521</td>
</tr>
<tr>
<td><strong>Littleton</strong></td>
<td>11,712</td>
<td>11,946</td>
</tr>
<tr>
<td><strong>Parker</strong></td>
<td>757</td>
<td>772</td>
</tr>
<tr>
<td>Growth%**: 2%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Current enrollment obtained by ACC Fall Census and EOT (5) doc

** Adjusted growth projections based on the following source: “Potential Future Colorado Community College Enrollment” by Colorado Community College
ACC maintains a consistent size in staff and faculty regardless of the changes in student attendance. The current faculty and staff size as of Fall 2016 is identified as follows:

### FACULTY

<table>
<thead>
<tr>
<th>PROGRAMS</th>
<th>FULL-TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>21</td>
</tr>
<tr>
<td>Business &amp; Technology</td>
<td>13</td>
</tr>
<tr>
<td>“Core” General Education</td>
<td>28</td>
</tr>
<tr>
<td>“Other” General Education</td>
<td>13</td>
</tr>
<tr>
<td>“Other” CTE</td>
<td>8</td>
</tr>
<tr>
<td>Science</td>
<td>13</td>
</tr>
<tr>
<td>Art &amp; Design</td>
<td>13</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>109</strong></td>
</tr>
</tbody>
</table>

Figure 2.12: Current Faculty - Fall 2016

### STAFF

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<tr>
<th>DIVISION</th>
<th>FULL-TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative Services</td>
<td>106</td>
</tr>
<tr>
<td>Instruction</td>
<td>48</td>
</tr>
<tr>
<td>Student Affairs/Services</td>
<td>69</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>223</strong></td>
</tr>
</tbody>
</table>

Figure 2.13: Current Staff - Fall 2016
2.4 ACADEMIC AND STRATEGIC PLAN ASSESSMENT WITH THE MASTER PLAN

C. ACADEMIC SPACE NEEDS | TECHNOLOGY INNOVATIONS

“the findings from 20 years of research on undergraduate education have been unequivocal: The more actively engaged students are – with college faculty and staff, with other students, and with the subject matter they study— the more likely they are to learn, to stick with their studies, and to attain their academic goals. (Student Engagement and Student Outcomes, 2007, p. 1)

The benchmarks explored in this survey generally correlate with the principles behind the ACC Master Plan. ACC is in need of consistency and functionality throughout their campuses in order for active and collaborative learning to occur. This plan is intended to improve these needs and provide the necessary adjustments when renovating in order to increase efficiency of the institution, while maintaining the active and collaborative learning demand for the current and future workforce.

The Castle Rock Collaboration Campus is positioned to provide academic spaces that support the shift towards more collaborative and active approaches to learning. Early planning of the Collaboration Campus is shifting away from lecture style classrooms to flipped classrooms, team and partnering based furniture and technology configurations, and more independent study/project rooms. The various proposed renovations throughout the Littleton campus in this Master Plan will improve the engagement of students and faculty, implement more active and collaborative learning, and improve the overall signature and functionality of ACC.

Both large and small scale modifications to the current campus will provide a more functional facility with anticipation for future technology and growth projections. This provides a pathway for the success of the students and a gesture to perspective students of the community. The educational experience provided at the college will encourage learning inside and outside of the classroom, applied learning for all areas of study, and create an environment suited to produce positive outcomes. The Master Plan encourages this idea of providing the “overall student pathway” (A Matter of Degrees, 2014, p. 34) suggesting the educational environment will inspire students to remain engaged from the moment they step foot on campus to the completion of their degrees or certificates.

The Health Programs Integration Renovation will be one of the focal points of the future ACC campus, encouraging active and collaborative learning as well as student-faculty interaction. The health programs integration renovation will provide a multitude of flexible spaces and classrooms to bring like-programs together in a single environment. These flexible spaces include classrooms with integrated technology, and simulation labs. Transparency and visibility will be provided into classrooms, fitness center, and an open informal atrium.
The atrium will be a space to promote student collaboration ranging from one on one learning, group learning, and student/faculty interaction. Concentration of health programs in the Annex Building and in flexible spaces will improve the overall function of the building and classroom utilization within the existing square footage. Simulation labs will provide an applied learning facility and actively engage the students in their field of study; an attribute that is crucial for future job prospects. The collaboration and communication that will be fostered by these academic spaces and between programs will provide the students with interpersonal skills that can be directly applied in their career.

The learning commons at both Littleton and Castle Rock are intended to accommodate similar features to encourage collaboration. The remodeled space at the Littleton Campus will provide more natural light distribution, transparent group-study spaces, classrooms, low library stacks, offices, and large open working spaces. The environment is intended to motivate students and faculty to collaborate more and create an ongoing relationship throughout the academic year. This space will create a “home” for collaboration outside of the classroom and create a destination for students to gather.

“Key Design Features of Pathways:
Connecting Classroom Learning to Applied Learning: the notion of what constitutes a “classroom” is changing. But whether face to face, online, or a combination of the two, most college experiences are structured around a traditional lecture format. This remains true despite research and student feedback affirming the value of “hands on” or applied learning. A combination of the problem – and project-based learning, out of class group projects, internships, clinical placements, fieldwork, and other discipline-appropriate activities enables educators to structure learning so that students can apply and practice newly acquired skills and knowledge.” (A Matter of Degrees, 2014, p. 34-36)

Like most educational institutions, the educational experiences currently at ACC are organized in the traditional lecture model. The Master Plan proposes a discontinuity of this traditional model with the renovation, the learning commons, and the collaboration campus at Castle Rock. The key design feature of applied learning in the classroom is reflected through these three goals of development due to the demand of today’s workforce. This present-day learning structure requires students to be more engaged in their field of study through applied learning. In order to be a desirable candidate to future job prospects these skills are necessary.

Through the implementation of simulation labs for the school’s health program, office layouts encourage interaction and collaboration between students and faculty, and a multitude of flexible spaces for group or one on one collaboration, ACC will become a milestone campus for the Denver community in which other colleges can replicate.
ACC is one college located on three campuses: Littleton, Parker, and Castle Rock. The following existing conditions analysis provides an overview of each building on each campus.

**FACILITY CONDITION INDEX BY BUILDING**

A Facility Audit process began in February 2016 for the Littleton Campus Main Building and Annex with final reports issued in Fall 2016. The square footages noted in this report are from ACC provided information or from the referenced Facility Audits.

**LITTLETON CAMPUS**

ACC’s Littleton Campus is on a 55-acre site in Littleton, adjacent to downtown Littleton, Colorado, and 10 miles south of downtown Denver. Currently, most classes are held at the Main Building on the Littleton Campus completed in 1974. The campus has spectacular views of the front range; an asset not fully utilized due to few and poorly appointed exterior spaces and balconies. The campus lacks presence in the community as the six buildings that compose the campus have various architectural styles, no consistent signage or wayfinding, and have limited pedestrian connections between buildings. Stakeholders in the Master Plan process indicated that they felt there was little connection between the academic activities within the building and community due to heavy concrete facades with minimal and dark exterior tinted glass.

The primary entrance to the Main Building is on the north facade and in shade throughout the year. While the area to the east of the main building serves as public access to the Annex Entrance and Art Gallery, the area in shadow throughout the day is primarily used for service access and for campus police vehicles. Through this Master Plan process, it was determined that public access along the east side of the building should not be encouraged and the primary entrance to the Annex should be relocated.

The pedestrian walkway and lighting between the Main Building and Church Avenue Building does not align making pedestrian connection indirect and unsafe.
SUMMARY LITTLETON CAMPUS GOALS

- Enhance connection to outdoor spaces
- Enhance community connectivity
- Enhance connections between buildings
- Maintain current parking access
- Enhance pedestrian access
- Connection to Church Avenue Building
- Littleton Campus sidewalks
- Improve vehicular circulation
- Enhance wayfinding and signage

Figure 3.1: Existing Littleton Campus Circulation Diagram
SITE EXISTING ANALYSIS

The three ACC campuses, have a variety of architectural styles and lack a cohesive architectural identity. ACC feels that the architectural differences are acceptable and that the identity between sites could be enhanced with a strong wayfinding and signage package.

The six buildings on the Littleton campus do not have a strong unified image in the Littleton community. The solid cast-in-place concrete architecture of the Main and Annex buildings lack transparency—both from the surrounding community inward and from the interior spaces looking outward. The perception and experience of these buildings could be enhanced increasing the amount of glass into the buildings, changing glass to a high performance transparent glass, and better utilizing outdoor spaces.

Currently, the use of outdoor spaces is underutilized and there are tremendous opportunities to take advantage of these spaces for both for student and the community use. These student spaces or learning landscapes will function best as extensions of the interior academic and social environments into the landscape. Ideally, these spaces will be located near entrances and promote spontaneous interactions and enhance studying and learning. If located near entrances, these spaces can enhance wayfinding by identifying entrances and program areas. Existing pedestrian walkways and connections between the buildings are weak and do not always promote uses of exterior spaces or direct connections between buildings.

The Main Building’s primary entrance is to the north with secondary public access from the west. Service access is currently served from both the east and west. Service from the west is challenging due to the distance between curb and doors. The east side of the Main Building in addition to being the primary loading zone, is the main entrance to the Annex and public access to the Art Gallery. This shaded access with service vehicles is not conducive for major public access.

Current parking access and quantities are working well for the Littleton Campus. Improved vehicular circulation should be reviewed if the overall site plan becomes a priority.

Subsurface soil conditions, 100-year flood map, utility system maps, and a storm water management narrative was collected and included in the 2010 Facilities Master Plan. As this information has not changed, it has not been repeated in this document.
3.1 PHYSICAL AND SPATIAL ANALYSIS

A. LITTLETON CAMPUS

MAIN BUILDING

FCI: 80.21% (Lower Mid-range of Major Maintenance Needed)
FCI: 86.66 (projected after completion of Third Floor Renovation)

BUILDING HISTORY

The Main Building was built in 1974 and renovated in 2001 with a large addition for the Weber Center for Learning Resources (library) on the north facade. A portion of the third floor of the building is currently in the planning phase for a major renovation to accommodate improved science classrooms and laboratories. The building is considered an architectural centerpiece of campus. The 224,104-gross square foot building (reference: Main Building Facility Audit) is a four-story structure containing classrooms, science labs, Learning Commons coffee shop, bookstore, Student Center, student support services and offices. A Facility Audit of the Main Building and Annex was completed on October 16, 2016 by Stephen Hall Architects based on observations completed between February and March 2016. The audits were performed using procedures consistent with the program established by the Colorado Office of the State Architect (OSA) with a focus on the current physical condition of the building and systems. This summary includes key findings from these reports as well as commentary on the appropriateness of the current facility for current occupied uses and projected uses over the next five years.
MAIN BUILDING 3RD FLOOR
Figure 3.9: Existing Programs Diagram

MAIN BUILDING 4TH FLOOR
Figure 3.10: Existing Programs Diagram
3.1 PHYSICAL AND SPATIAL ANALYSIS
A. LITTLETON CAMPUS
   MAIN BUILDING

ACADEMIC PROGRAM SPACE OVERVIEW
The four story building is organized around a central atrium and open stair. Student Services and general campus amenities are located on the first and second floors and classrooms and faculty offices are primarily located on the third and fourth floors. The Learning Commons is located on the north side of the building on the first and second floors. During the interview process stakeholders expressed that the Main Building spaces do not meet the needs of the current or projected needs of emerging teaching pedagogies. Key areas that the facility spaces are lacking include: flexible classrooms for a variety of teaching styles including: active or collaborative learning; dispersion and variety of spaces for informal and semi-structured learning outside of the classroom; a learning commons that represents the shift from books to digital resources; spaces that foster student and faculty interaction and tutoring. The building lacks a connection to the views and outdoor learning spaces.

CLASSROOMS AND TEACHING SPACES
The Main Building currently has 72 instructional spaces. These spaces include general classrooms, laboratories (and support areas), and lecture halls. As ACC tries to move toward more active or team based teaching style the college is finding many of the classrooms are not flexible to support these teaching styles. Reduced use of the tiered lecture style classrooms and the large computer lab on the first floor are indicative of the shift away from a lecture style delivery of content. A few classrooms are located on the first and second floor interspersed with student support spaces. These rooms are challenging to locate and lack identity and connection to the faculty. These spaces were identified in the Master Plan as areas for relocated student services or amenities. The majority of general use classrooms are located on the fourth floor. Science and math classrooms located on the third floor are currently in the process of being remodeled.

Faculty and students expressed a desire for greater identity for the various program areas through signage and informal learning areas.

INFORMAL LEARNING AREAS
The Main Building has a large student commons space on the second floor of the building with a connection to the atrium and good access to southern light. The space has a variety of large soft furniture, vending machines, and a pool table. The furniture is large and awkward to move, not allowing students to change seating configurations for group or informal study. A shared space with offices for student clubs is located adjacent to the commons. A porch is located to the south of the common areas and has some exterior furnishings. The space could be better utilized by students with improved furnishing and shading. Overall the building lacks a variety of flexible areas for informal meeting and studying. A need for these types of areas were expressed by all the group interviewed.
FACULTY OFFICES
Faculty are currently located in private offices with natural light. Opportunities to shift to shared and more collaborative office environments were discussed and it was determined that the best strategy for the Littleton Campus is for faculty to remain in individual offices. When possible, faculty should be located in close proximity to the program classrooms and students to increase student and faculty interactions. ACC indicated that there could be a shift away from individual offices to a more collaborative shared faculty office space on the Castle Rock Collaboration Campus.

CAMPUS AMENITIES
The Main Building is the location of many of the shared amenity spaces including: the bookstore and Spirit Store, Learning Commons, admissions, and student tutoring. The bookstore and supporting offices have a large footprint on the first floor with connection to the east loading dock. The store is frequently not accessible to students due to limited hours, however student supplies are available at the Spirit Store. The café and small supporting kitchen has been recently remodeled and provide coffees and a variety of grab-and-go meals.

Several large public use spaces including the Summit Room, Half Moon Room, and Waring Theater. ACC has indicted that the Summit Room is an attractive venue for public events and one of the few spaces at the college that has the capacity for an all staff and faculty meeting. The Waring Theater is a large tiered theater and is well appointed and most frequently used to support music programs that is located in a small suite adjacent to the theater. Currently, the space does not have ADA access to the stage and does not meet the spirit of the ADA code to provide a variety of seating accessible seating throughout the space.

The Half Moon Room, located below the theater has a bar area for supporting functions in the room, ACC currently uses the room for staff and faculty events. While the room is well maintained, finishes are worn. ADA access to the Half Moon is only from the exterior.

LEARNING COMMONS
The Learning Commons is currently only accessed from second floor, limiting the ability for students to use the space when there are breaks between classes. The space has excellent northern light on both floors and an opportunity to connect to exterior spaces on the north. The space has stacks of printed materials that are only partially filled. The first floor of the Learning Commons has a variety study rooms that are available for ad-hoc student reservations. The currently layout does not meet the needs of ACC to support student success so reconfiguration of the space has been identified as a goal in this Master Plan.
ADMINISTRATIVE OFFICES AND SUPPORT SERVICE
ACC recently remodeled the north-east corner of the first floor for Information Technologies (IT) offices and server. A Testing Center is located on the second floor and is used by both students as part of their academic studies and the general public for standardized tests. Marketing offices are located in the south-east corner of the second floor and were identified during the Master Planning process a service that did not need a direct connect to academic spaces in the Main Building. These spaces have been remodeled with the DIRT wall systems that are in good condition.

The Student Admissions office is currently located adjacent to the Student Commons on the second floor and identified as a space that could be relocated.

STUDENT SUPPORT SERVICES
Student tutoring is not centrally located and utilizes three separate locations on the Littleton Campus.

Outcomes from the utilization study and enrollment trends indicated that more academic space is not required, but rather a reconfiguration of the current space needs to address the changing teaching and learning paradigms.
3.1 PHYSICAL AND SPATIAL ANALYSIS

A. LITTLETON CAMPUS
MAIN BUILDING

REMODELS
ACC is currently in the design phase to renovate the existing Biology/Chemistry and Health laboratories located on the third floor of the Littleton Campus Main Building and adding a multi-disciplinary laboratory to the Parker campus. The project involves the renovation of classrooms, laboratories, and office spaces totaling approximately 32,000 assignable square feet of existing Science and Health lab space.

Four Biology and two Chemistry laboratories are currently being renovated. In addition, an Astronomy/Geography/Geology/Meteorology/Integrated Science Laboratory, Medical Laboratory Technician (MLT), and Microbiology laboratories are being updated. The layout is similar in each lab in that the utilities and fume hoods will reside along the perimeter of the room with open, flexible seating in the central floor area. The tables and chairs will be movable to accommodate mediated instruction as well as team-based discussion. There is also a mobile demonstration table for faculty instruction.

UPGRADE CAMPUS ACCESS CONTROL AND MONITORING
Due to increased public safety threats nationwide, it was recognized that facilities are slow to ACC’s lock out and the surveillance monitoring is inadequate for today’s needs. The Main and Annex buildings have some original door systems with the narrow style and drop bar exit devises that were chained up at night and needed to be replaced with modern door systems and exit devises that will accept electrified devises. The other facility’s door systems were retrofitted since they are either newer buildings or have had the door systems upgraded already. In 2016, ACC installed new door systems on the exterior doors with electrified door hardware to allow the buildings to go on lock out immediately and uniformly with the push of a button to defend against external threats which would allow additional time to secure the interior.

The classrooms and laboratories are designed as flexible spaces with movable furnishings and will be adaptable to emerging trends in pedagogy and instructional methodologies. The project involves a redesign of the existing lab workspace and complete replacement of HVAC, electrical, plumbing, furniture, and equipment.
REMODELS
NEW ROOF INSTALLATION
ACC’s two largest buildings (Main and Annex) have an EPDM roof system. In 2012, a new insulation/drainage package was installed and covered with a new generation EPDM roof membrane. To reduce constructions costs, the existing ballast system was reused to a large extent. New technology uses a flexible attachment system for the exterior walls, reducing the shrinkage and tension tears. The new system has a 20-year warranty. The library ballasted roof system has not been replaced since constructed in 1999.

ELEVATOR SAFETY UPGRADES AND MOTOR/CONTROL REPLACEMENT
Part of the original construction of the Main building in 1974 was two electric cable-hoist elevators. The original controls consisted of mechanical contractor activated drive systems and use AC hoist motors. In 2013, the elevators were upgraded by:
• Replacing two AC hoist motors with new VFD drive motors with velocity encoders,
• Providing new hoist way machine room/car wiring,
• Providing new door grabs, hoist way interlocks, HD-LM closed door loop operators and gate switches,
• Providing new control panels with electronic microprocessors with Fuzzy Logic
• Car improvements including panels, Braille, phone system, position indicators, stainless steel, tracks/hangers/rollers and visual devices, and
• New life/safety code compliant upgrades.

REPLACE OUTDOOR WALKWAY
The Main Building was built in 1974 and the Annex was built in 1976. The buildings are connected by a 1st floor enclosed walkway with heating and cooling and a 2nd floor glass walkway. The 1st floor walkway was an enclosed concrete structure and the 2nd floor walkway. The 2nd floor structure used an exterior supply fan at north end of the structure and an exterior exhaust fan at the other end as its make-up air system, therefore the walkway is cold in the winter months and hot in the summer months. In 2015, the glass walkway was replaced with a new enclosed walkway with an EPDM roof, a new gutter system that will eliminate water on the entrance below, side pane safety glass, new exit/entry doors at the north and south end, and new flooring. Also included in the project was a HVAC retrofit that will provide heating in the winter and cooling in the summer and was tied to the Energy Management System.
3.1 PHYSICAL AND SPATIAL ANALYSIS
A. LITTLETON CAMPUS
MAIN BUILDING

MAINTENANCE
Overall, the Main building is in good condition; however, a summary of the major issues are prioritized as follows:

LIFE SAFETY ISSUES
• The building is not fully fire sprinkled, as would be required under current codes.
• Emergency generator, emergency lighting and emergency circuits should be replaced within 5 years.

MAJOR MAINTENANCE
• Recommended need to replace the back-up boiler within 5 years.
• Recommended need to replace absorption chiller (uses hot water to make cold water) within 5 years.
• Recommend replacement of the cooling tower within 5 years.
• Glass curtain wall system at the library is leaning. Repair of rusting structure, re-caulk, and repaint is required.
• Replace the ballasted EPDM roofing on the library
• The concrete balconies/exterior decks that are also a roof system are cracked allowing water infiltration, requiring further investigation.

MINOR MAINTENANCE
• Need to add hot water and chilled water pump redundancies.
• Building has an over-pressurization problem, which may be solved with the installation of variable frequency fan drives on the main supply and return fans.
• Need to continue to upgrade the building controls from old pneumatic type mixing boxes to digitally controlled mixing boxes throughout.
• There are a number of single pane windows in the original portion of the building which are not energy efficient, and many are exhibiting signs of water at the interior.
• Lighting in the Summit Room needs improvement.
3.1 PHYSICAL AND SPATIAL ANALYSIS

A. LITTLETON CAMPUS

ANNEX BUILDING

FCI: 82.27% (Mid-range of Major Maintenance Needed)

BUILDING HISTORY
The Annex Building was built in 1977 and is an addition to the Main Building located on the ACC Littleton Campus. The 81,385 gross square foot building is a two-story structure containing classrooms, nursing labs, Fitness Center, the Colorado Gallery of Arts, Community Education, automotive technology department and offices. A Facility Audit of the Annex building was completed October 10, 2016 by Stephen Hall Architects.
3.1 PHYSICAL AND SPATIAL ANALYSIS

A. LITTLETON CAMPUS
   ANNEX BUILDING

ACADEMIC PROGRAM SPACE OVERVIEW
The Annex is located south of the Main Building, is the location of the Fitness Center, Art Gallery, general classrooms, automotive programs, health programs, suit of offices for community education, dean’s suite, and faculty offices.

The Annex is not well connected to the Main Building, outdoors, or natural light. Once inside the Annex, orientation is awkward as there is no hierarchy of spaces, no central gathering spaces, and inconsistent wayfinding. Access between floors is challenging as there is no elevator between the first and second floor.

CLASSROOMS AND TEACHING SPACES
Classrooms for general courses are small and irregular and the proportion of the room and furniture layout is for traditional lecture style delivery and are not well suited for flexible delivery of teaching styles. Health programs are currently using traditional classrooms for pharmacy and nursing simulation labs. The use of these spaces is awkward and undersized for the additional required equipment and active learning space required for students.

FACULTY OFFICES
Faculty are currently located in offices and are not adjacent to the classrooms they support. Business faculty located in the Annex currently teach in the Church Avenue Building.

ADMINISTRATIVE OFFICES AND SUPPORT SERVICE
Dean’s suite and offices are currently located on the west side second floor of the Annex. Layout of offices is awkward and inefficient in a large part due to the geometry of the partitions. It was determined through the Master Planning process that this suite of offices could be relocated, but would need to remain in either the Main Building or Annex.

UTILIZATION
Outcomes of the utilization study and enrollment trends indicates that more academic space is not required, but instead classroom spaces need to be renovated to address the needs of active and simulated learning. Contiguous space is required for the growth of the heath programs and informal student learning spaces are required.

INFORMAL LEARNING AREAS
The Annex has no informal gathering or study space. This is a significant detriment to the health programs that seek to develop cohort of students for learning outside the classroom.
ART GALLERY AND SUPPORT SPACES
The Art Gallery and support spaces are located on the first floor on the east side of the building. The gallery attracts both students and general public however, its remote location with a primary access through the loading dock is a deterrent for visitors. However, one advantage of the current location is access to the loading area. The space is lacking in adequate exhibition lighting and wall panels. Currently, the mortuary science classroom and support spaces are located adjacent to the gallery. These spaces will be relocating to the third floor of the Main Building with the in progress renovation of the science classrooms.

COMMUNITY EDUCATION
A suite of Community Education offices are located on the first floor. These spaces have no direct connection to classrooms and education spaces and could be relocated.

REMODELS
NEW ROOF INSTALLATION
As noted in the narrative for the Main Building on the Littleton Campus, the roof system was recently replaced.

REPLACE ROOF TOP UNITS, ANNEX BUILDING
The building consists of nine (9) HVAC rooftop units which include: one (1) rooftop HVAC unit for the fitness gym, three (3) HVAC units for the main gym, four (4) HVAC units for the automotive department, one (1) HVAC unit for the art gallery and two (2) multi-zone units for the rest of the building. The remaining two (2) units are multi-zone units which provide heating and cooling for the general classrooms and offices which consists of 39,407 GSF of the Annex Building. These two units were the only original units left on the Annex Building. Both units were replaced in 2014 with heating/cooling units the receive hot and cold water from the Main Building. These units carry a larger footprint than the previous units since they provide heating and cooling.

FITNESS CENTER
Recently, the fitness center roof top unit was replaced by an internally funded project pool conversion into a multi-purpose gym. This project is a precedent of an internally funded controlled maintenance performed on the buildings to support our needs and contribute to the building maintenance needs.
3.1 PHYSICAL AND SPATIAL ANALYSIS
   A. LITTLETON CAMPUS
      ANNEX BUILDING

MAINTENANCE
Overall the Annex is generally in good condition however, a summary of the
major issues are prioritized as follows:

LIFE SAFETY ISSUES
- Add fire sprinkler system to all portions of the Annex except the Automotive
  areas.
- Upgrade Auto Shop ventilation systems.
- ADA access between floors is limited without an elevator
  within the Annex.
- Provide better ADA accessible Restrooms and Shower rooms.

MAJOR MAINTENANCE
- Replace roof top units 7, 9 & 10 which service the automotive
  classrooms and the current art gallery areas.
- Replace Auto Shop Floors.
- Repair shower walls.
- Improve ventilation at the restrooms and locker rooms.
- Replace storefront windows at the old pool area.

MINOR MAINTENANCE
- Repair Exterior Wall concrete spalling problem.
- Re-caulk Exterior Windows.
- Upgrade lighting in the fitness areas.
3.1 PHYSICAL AND SPATIAL ANALYSIS
A. LITTLETON CAMPUS
ART & DESIGN CENTER

FCI: 84.4% (based on 2010 Master Plan)

BUILDING HISTORY
The Art and Design Center is a standalone facility located north of the Littleton Campus. The building was acquired in 1989 and ACC’s Interior Design, Multi-media Graphic Design, Engineering Graphics Technology, Architectural Engineering Technology, Construction Management, Art History, and Studio Arts (ceramics, photography, painting, drawing, and jewelry). The building was built in 1985, and is located two blocks from the ACC Littleton Campus. The 47,730-gross square foot facility consists of five separate buildings positioned in a retail mall configuration containing art, design, engineering classrooms and offices and a public gallery. The FTE at the Art & Design Center averages about 300 FTE, and the duplicated enrollment headcount runs about 1500.
3.1 PHYSICAL AND SPATIAL ANALYSIS  
A. LITTLETON CAMPUS  
ART & DESIGN CENTER

ACADEMIC PROGRAM SPACE OVERVIEW  
The art and design programs are well served in being in close proximity to each other in the five buildings that hold these programs. The faculty enjoys the synergy between programs housed in a central location. The existing buildings have a number of irregularly shaped, trapezoidal shaped rooms that do not easily lend themselves to technology or 21st century learning, and that have been remodeled as best as feasible for academic spaces.

ACC is currently remodeling into a 1,400 S.F. Maker Space with supporting spaces. The maker space is considered an opportunity to enhance community business partners and create a cross-disciplinary, collaborative environment to inspire innovation and creativity.

Parking at the building is currently an issue with limited potential solutions. The windows along the public streets are currently covered, limiting a connection between programs and the community. The building’s remote location and limited signage does not lend to making the building feel like a part of the overall ACC Littleton campus.

REMODELS  
UPGRADE CAMPUS ACCESS CONTROL AND MONITORING  
Due to increased public safety threats nationwide, it was recognized that our facilities are too slow to lock out and the surveillance monitoring is inadequate for today’s needs. The A&D building had roll up gates for access which were be replaced with a store front/gate system in the four exterior entrances. In 2016, replacement of the roll up gates at A&D building cluster allowed these buildings to be secured as a building unit during the day instead of five individual classroom and office buildings.

Since the 2010 Master Plan, ACC has completed the following renovation work: (1) ADA upgrades consisting of exterior handrails, (2) increased electrical service sub-panels to provide service for additional computers and art equipment and (3) replacement of the HVAC roof top units and duct modifications for all buildings. The replacement of 27 HVAC roof top units and duct modifications is in the design phase.

There are currently no plans for a major renovation in the next five years.
3.1 PHYSICAL AND SPATIAL ANALYSIS
A. LITTLETON CAMPUS
   ART & DESIGN CENTER

MAINTENANCE
LIFE SAFETY ISSUES
• Reconfigure sprinkler system heads.

MAJOR MAINTENANCE
• Repair failing concrete stairs.
• Repair failing exterior store front systems.
• Provide ADA accessible restrooms and public seating areas.

MINOR MAINTENANCE
• Balance heating ventilation and air conditioning systems.
3.1 PHYSICAL AND SPATIAL ANALYSIS

A. LITTLETON CAMPUS
CHURCH AVENUE BUILDING

FCI: 99.7% (based on 2010 Master Plan)

BUILDING HISTORY
The Church Avenue Building, constructed in 2000 is located on the north end of the ACC Littleton Campus and was acquired by the College in 2002. The 16,376 gross square foot building is a three-story structure containing two floors and office space and a floor of classrooms. During the Master Plan process it was discussed that classrooms in this building are limited in use due to daytime only hours. Business courses are primarily taught in these classrooms.

The site contains a minimal amount of parking accessed off the alley and a garage north of the Main Building that is used for storage or interim transitional space during remodels.
3.1 PHYSICAL AND SPATIAL ANALYSIS
A. LITTLETON CAMPUS
   CHURCH AVENUE BUILDING

ACADEMIC PROGRAM SPACE OVERVIEW
The three story building is organized around a stair, elevator and restroom core, and public spaces in the southwest corner of the building. The first two floors contain offices for administrative positions. The third floor has four classrooms set up for a traditional lecture style delivery. Currently, there are no spaces for informal student collaboration or individual study. Business and Accounting classes are primarily taught in the third floor classrooms. As the building must be secured after hours, evening business courses are taught in general classrooms in the Main Building. Displacement of these rooms for programs that have minimal connection to the Main and Annex buildings is considered advantageous.

REMODELS
The main exterior door system was retrofitted with electrified door hardware installed to allow the building to go on lock down immediately and uniformly with the push of a button to defend against external threats which would allow additional time to secure the interior.

No major deficiencies in the building’s physical conditions or systems noted in the 2010 audit or with interviews with facility staff.

MAINTENANCE
LIFE SAFETY ISSUES
• Replacement of sprinkler systems and reconfigure heads.

MAJOR MAINTENANCE
• Repair failing exterior window systems.
• Replace aging roof top units 1, 2, and 3.
• Replace ballasted roof system.

MINOR MAINTENANCE
• Balance heating ventilation and air conditioning systems.
• Enhance pedestrian connection to the Littleton Campus.
3.1 PHYSICAL AND SPATIAL ANALYSIS

A. LITTLETON CAMPUS
   NORTH BUILDING

FCI: 76.3% (based on 2010 Master Plan)

NOTE: this FCI number does not include the recent chiller replacement completed by the college.

BUILDING HISTORY

The North Building was built in the 1950’s and is located north of the Main Building. The 19,341 gross square foot building is a one-story structure containing classrooms, Child Development Center, Law Enforcement Academy, Early Childhood Education, and offices.

ACADEMIC PROGRAM SPACE OVERVIEW

The building has never been completely refurbished and is one of the oldest structures on the ACC campus. The building includes the renovation of classrooms and supporting spaces, including a food preparation area, office spaces, and a new entry, totaling approximately 12,000 assignable square feet was remodeled since the 2010 Master Plan. Programs include the Law Enforcement Academy (LEA), Early Childhood Education (ECE), and Child Development Center (CDC). The ECE and CDC portion of the building is a secure area and cannot be used for general purpose classrooms.

The ECE classrooms are anticipated to be flexible spaces with movable furnishings and will be adaptable to emerging trends in pedagogy and instructional methodologies. The CDC classrooms will meet current licensing requirements in addition to current best practices. Specifically, the redesign includes: a new entrance; replacement of all flooring; two ECE classrooms; five CDC classrooms – including new toilet rooms; new indoor gym/activity motor room; CDC staff break room/work space with computers; three offices – CDC Director and two full-time faculty; ECE adjunct work area with computers; observation areas; and upgraded ECE classroom technology.
3.1 PHYSICAL AND SPATIAL ANALYSIS
   A. LITTLETON CAMPUS
      NORTH BUILDING

REMODELS
REPLACE CLASSROOM VENTILATORS AND CHILLER
The North Building is comprised of 19,341 gross square feet and was built in 1950. The building consists of twelve (12) classrooms of which four (4) are for LEA Classes, two (2) are for ECE, and six (6) support the CDC. All programs are supported with office and storage space. Each of the rooms has one or more unit ventilators which provide the heating or cooling. The North Building had a six-stage outdoor A/C unit located on the north end of the facility which was installed in 1983. In 2015, the outdoor A/C unit feeding the North Building was replaced with a new 6 stage unit that uses the new refrigerant R410A. The A/C unit is controlled with a new Energy Management System (EMS) using the Carrier Control System. The college also replaced the 25 unit ventilators inside the building and the make-up air system for each unit.

Since the 2010 Master Plan, minor work has been completed to address safety/general repair issues, while the current infrastructure and support systems are well-worn, outdated, and/or in poor condition. Due to the age of the building and years of heavy use, the majority of furnishings, cabinetry, and flooring are worn down. The existing classrooms are generic and not designed for Early Childhood Education or Child Development classrooms. There is limited integration of technology in the existing classrooms, making it difficult to adopt newer multi-media curricula. Storage space for accompanying materials/supplies is severely limited. There are no furnishings that are conducive to student observations.

Some of the recent renovations involved a redesign of the existing classrooms and complete replacement of heating, ventilation, and air conditioning (HVAC) systems, furniture and equipment.

MAINTENANCE
LIFE SAFETY ISSUES
• Building is not sprinkled.

MAJOR MAINTENANCE
• Replace main hallway terrazzo flooring.
• Repair exterior landscaping to get positive drainage.
• Replace sidewalk system around building.
• Replace windows.

MINOR MAINTENANCE
• Replace failing interior doors.
3.1 PHYSICAL AND SPATIAL ANALYSIS
A. LITTLETON CAMPUS
SOUTH BUILDING

FCI: 77.5% (based on 2010 Master Plan)

BUILDING HISTORY
The South Building was built in the early 1950’s and originally was the South Denver maintenance facility for Mountain Bell. The College first used the building for general classrooms, concrete technology and automotive classes. In 1977, the Facilities Department moved to the South Building where it still serves the college’s operations. This building is used by Facilities as an area to perform automotive, carpentry, painting, welding, electrical, HVAC work and storage. The building houses the Grounds Department along with its vehicles and equipment. The building also serves as a general storage area for college records, building equipment storage, maintenance equipment and houses excess furniture. Structurally, the South Building is in good condition and is a usable facility; however, a few issues need addressing. These issues include (1) shop floor drainage, (2) single pane window replacements, and (3) roof replacement. The FCI number has decreased due to the need for roof replacement, weather proofing and associated exterior water drainage. These areas of repair have been requested in our Controlled Maintenance request. After the upgrades are complete, the South Building will remain a valuable facility to ACC operations and an asset to the State.

ACC has a staff of eleven (11) maintenance staff who are responsible for the day-to-day maintenance of ACC Littleton Campus and its grounds. Personnel from ACC Littleton Campus assist with maintenance projects at ACC Parker Campus as needed. Major projects at both campuses are contracted to outside vendors through a competitive bid process and are managed by the Facilities Planning and Development Department.

The South Building was built in the early 1950’s and is located on the south end of the ACC-Littleton Campus. The 14,204-gross square foot facility is a one-story building used by the Maintenance Department as an area to perform automotive, carpentry, painting, welding, electrical and HVAC work, provides general college storage and houses the Grounds Department with over a dozen vehicles, equipment, and snow removal equipment. Overall, the South Building is generally in fair condition.

## FACILITIES STAFF OVERVIEW

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</tr>
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</table>

![Image 3.33: West Facade](Image_3.33_West_Facade.png)

![Image 3.34: Facility Storage](Image_3.34_Facility_Storage.png)
3.1 PHYSICAL AND SPATIAL ANALYSIS
A. LITTLETON CAMPUS
SOUTH BUILDING

REMODELS
The building has received one Controlled Maintenance Project which was a life safety project involving replacement of the electrical systems, installing an automotive/carpentry exhaust system and modifications to the heating system.

Recently interior space was remodeled into office space was added on west side of the building and the single pane windows were replaced. The next anticipated remodel (identified in the 2010 Master Plan) will be to re-roof the structure and update shop floor drainage and water runoff, installation of a make-up air unit, and the addition of cooling in the office areas.

MAINTENANCE
Maintenance is performed internally through the Facilities Department for many of the low cost and basic needs for the College. Major maintenance is strategically planned and contracted out to correct the building deficiencies.

ROOF REPLACEMENT AND EXTERIOR IMPROVEMENTS
CURRENT PROJECT REQUEST
Over the past three decades, the only state-funded renovations for the South Building were a roof replacement in the late 1970’s, ADA modifications in 1987 and 1999 and the Life Safety improvements in 2001(exhaust/make-up air, fire alarm and electrical improvements).

LIFE SAFETY ISSUES
• Building is not sprinkled

MAJOR MAINTENANCE
• Replace failed roof and gutter system
• Repair negative drainage outside
• Upgrade interior ventilation system

MINOR MAINTENANCE
• Replace single pane windows

Figure 3.35: Existing Programs Diagram
3.1 PHYSICAL AND SPATIAL ANALYSIS

B. PARKER CAMPUS

FCI: Planned to be completed in the next five years

BUILDING HISTORY
During the next 10 years, ACC Parker Campus will continue to be a community-focused, collaborative partnership which prepares individuals for the future by providing continuing education and training opportunities. The campus offers programs that support multiple opportunities in alignment with the college’s role and mission including workforce training. The campus provides general education courses and career and technical courses that lead to workforce development designed to transfer to four-year institutions.

The ACC Parker extension campus opened in 2000 houses ACC’s Workforce Training Program. The campus has current plan to renovate the biology lab and replace the roof top unit. Additional work on the campus is not considered a goal for this 5 year Master Plan, however a Facility Audit is recommended to be completed.

ACADEMIC PROGRAM SPACE OVERVIEW
The facility is a two story structure with division offices and classrooms surrounding a central atrium. The central atrium encourages students and faculty to interact however, there is little space to collaborate. There is limited access to exterior learning landscapes and little opportunity to engage these spaces. The renovation of the science classroom will provide a flexible classroom to accommodate mediated instruction as well as team based discussion.

REMODELS
The facility was originally constructed without Biology laboratories, due to cost and program focus. As a result, student at this location can fulfill only limited science laboratory coursework, and must attend the Littleton Campus to complete these studies. The only Science related classes taught at the Parker location are courses in Human Anatomy & Physiology, and these occur in general classrooms. The goal is to convert existing spaces into a multidisciplinary science laboratory and add a biology laboratory similar to Littleton. Storage space will align one wall and fume hoods will be located on the opposite side. The remaining perimeter will host sinks and utilities, leaving the central area clear for mobile furnishings. To accommodate student backpacks, coats, and other personal items, stacked storage was allocated outside each laboratory. Currently room 220 houses the Anatomy and Physiology classes, but this space is too small to support a full multidisciplinary laboratory with preparatory and storage space. Rooms 204 and 205 total 1,403 ASF, and will support a laboratory, preparation and storage space.

MAINTENANCE

LIFE SAFETY ISSUES
• Building is not sprinkled.

MAJOR MAINTENANCE
• Replace roof top unit (remodel of the third floor includes replacement of the roof top unit serving the entire building. This replacement is internally funded with cash).

MINOR MAINTENANCE
• Replace main lobby tile floor.
3.1 PHYSICAL AND SPATIAL ANALYSIS  
C. CASTLE ROCK CAMPUS

There is no FCI as this is a leased facility

BUILDING HISTORY
ACC opened the Castle Rock Campus in October 2011 in leased space. The campus features five classrooms configured with technology and a large computer lab. ACC plans on terminating its current lease when the Castle Rock Collaboration Campus is completed in 2019.

ACADEMIC PROGRAM SPACE OVERVIEW
This leased facility primarily provides general education courses in the traditional classroom layout with one computer lab and a laptop cart. The front lobby provides a few tables for students to use as study space but has little opportunity to support collaborative and informal learning. The front office provides one office dedicated to facility management while the rest of the spaces are dedicated to administrative services.

Due to the anticipated growth of Douglas County the current lack of campus parking, inability to grow the parking and academic spaces.

REMODELS
As a leased Facility, ACC does not undertake any upgrades or remodels to the building.

MAINTENANCE
As a leased Facility, ACC does not maintain the building. Facility operations can be problematic for the college as ACC does not own the building and cannot control, oversee, or be responsive when maintenance is required.
3.2 UTILIZATION ANALYSIS  
CURRENT SPACE INVENTORY

LITTLETON CAMPUS

MAIN BUILDING & ANNEX
• The master plan evaluation was based on findings from the Fall 2016 semester.
• A space by space inventory identified 72 instructional spaces.
• A majority of the instructional spaces were utilized by multiple programs.
• General purpose classrooms in the Main Building are well utilized, with some exceptions, during the hours of 8:30 a.m. to 2:45 p.m., Monday through Thursday. Peak utilization occurs between 10:00 a.m. to 2:00 p.m., Monday through Thursday.
• The Annex is primarily used by the Health and Computer programs. Computer labs are used by computer programs in the evening. Computer labs are used by “Other” CTE and “Other” General Education programs during the day.
• Use on Fridays is limited to the morning hours.
• Some courses (MAT, COM, ENG…etc.) exceed occupancy target guidelines.
• The master plan evaluated the occupancy and hours of use for each instruction space using CDHE utilization guidelines and determined that the Main Building/Annex has a current surplus of 20 spaces. The identified surplus reduces to 19 spaces when the student growth for the year 2020 is factored.

CLASSROOM UTILIZATION

Main Building & Annex Summary

<table>
<thead>
<tr>
<th>Programs</th>
<th>Program Hours</th>
<th>Hours/Rm</th>
<th>Current Need</th>
<th>Future Need</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>208.0</td>
<td>30</td>
<td>6.93</td>
<td>7.01</td>
<td>Classrooms</td>
</tr>
<tr>
<td>Business &amp; Technology</td>
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<td>1.63</td>
<td>1.67</td>
<td>Labs</td>
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<tr>
<td>&quot;Core&quot; General Education</td>
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<td>12.10</td>
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<tr>
<td>&quot;Other&quot; General Education</td>
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<td>30</td>
<td>7.58</td>
<td>7.74</td>
<td></td>
</tr>
<tr>
<td>&quot;Other&quot; CTE</td>
<td>115.5</td>
<td>30</td>
<td>3.85</td>
<td>3.93</td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td>135.5</td>
<td>30</td>
<td>4.52</td>
<td>4.61</td>
<td>Classrooms</td>
</tr>
<tr>
<td>Arts &amp; Design</td>
<td>40.0</td>
<td>30</td>
<td>1.33</td>
<td>1.36</td>
<td>Labs</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1,262</td>
<td></td>
<td>48.95</td>
<td>49.71</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. Average “time” utilization based on weekly hours room was occupied (M-F, 8:00 a.m. - 5:00 p.m.)
2. Average “occupancy” utilization based on class size compared to room capacity.
3. Future need is based on the following growth rate: 2.00%
4. Total weekly hours per department - 2016 Fall Semester.
5. Target “time” utilization for classroom - 67% of 45 hour week per CDHE (M-F, 8:00 a.m. - 5:00 p.m.)

To meet the target standard rooms should be used 30 hours per week in total.

Figure 3.42: Classroom Utilization Analysis Summary
LITTLETON CAMPUS

CHURCH AVENUE BUILDING
• Use of the instructional space is limited between 8:00 a.m. to 5:00 p.m., Monday through Friday. The Church Avenue Building is closed after 5:00 p.m.
• A majority of the instructional spaces are utilized by the business and technology programs.
• The master plan evaluated the occupancy and hours of use for each instruction space using CDHE utilization guidelines and determined that the Church Avenue building has a current surplus of 1 space for both the current and future needs.

ART & DESIGN CENTER
• Use of the instructional space varies between 8:00 a.m. to 9:00 p.m., Monday through Friday. There appears to be, on average, more evening classes specific to certain disciplines.
• A majority of the instructional spaces are utilized by the business and technology programs.
• The master plan evaluated the occupancy and hours of use for each instruction space using CDHE utilization guidelines and determined that the Church Avenue building has a current surplus of 1 space for both the current and future needs.

NORTH BUILDING
• Two instructional spaces are dedicated to the ECE department
• Two instructional spaces are dedicated to the LEA department.
• The remainder of the North Building is utilized by ACC child care services.

See supplemental Classroom Utilization Study for detailed utilization diagrams for these specific buildings.
PARKER CAMPUS

- The master plan evaluation was based on findings from the Fall 2016 semester.
- A space by space inventory identified 12 instructional spaces.
- The Parker Campus is a general educational facility with a majority of the instructional spaces were utilized by multiple programs.
- 2 classroom spaces are being converted into laboratory spaces.
- 2 classroom spaces will be dedicated to the EMS department starting in the Spring of 2017.
- Use of the instructional spaces mainly occurred between 8:00 a.m. to 4:00 p.m. and 6:00 p.m. to 9:00 p.m., Monday through Thursday. Use on Fridays mainly occurred in the morning hours.
- The master plan evaluated the occupancy and hours of use for each instruction space using CDHE utilization guidelines and determined that the Parker Campus has a current surplus of 8 spaces for both the current and future needs.

CLASSROOM UTILIZATION

<table>
<thead>
<tr>
<th>Park Summary</th>
<th>Existing Rooms</th>
<th>Capacity</th>
<th>ASF</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIME (Hours)</td>
<td>2.7 M</td>
<td>1.8 T</td>
<td>2.1 W</td>
</tr>
<tr>
<td>OCCUPANCY (%)</td>
<td>30% M</td>
<td>32% T</td>
<td>35% W</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Programs</th>
<th>Program Hours</th>
<th>Hours/Rm</th>
<th>Current Need</th>
<th>Future Need</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>8.0</td>
<td>30</td>
<td>0.27</td>
<td>0.27</td>
<td></td>
</tr>
<tr>
<td>Business &amp; Technology</td>
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<td>0.43</td>
<td>0.44</td>
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</tr>
<tr>
<td>&quot;Core&quot; General Education</td>
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<td>1.48</td>
<td>1.51</td>
<td></td>
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<tr>
<td>&quot;Other&quot; General Education</td>
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<td>0.96</td>
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<td>&quot;Other&quot; CTE</td>
<td>8.0</td>
<td>30</td>
<td>0.10</td>
<td>0.10</td>
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</tr>
<tr>
<td>Science</td>
<td>0.0</td>
<td>30</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Arts &amp; Design</td>
<td>3.0</td>
<td>30</td>
<td>0.10</td>
<td>0.10</td>
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</tr>
<tr>
<td>TOTAL</td>
<td>101.0</td>
<td>3.37</td>
<td>3.43</td>
<td></td>
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</tbody>
</table>

Notes:
1. Average "time" utilization based on weekly hours room was occupied (M-F, 8:00 a.m. - 5:00 p.m.)
2. Average "occupancy" utilization based on class size compared to room capacity
3. Future need is based on the following growth rate: 2.00%
4. Total weekly hours per department - 2016 Fall Semester
5. Target "time" utilization for classroom - 67% of 45 hour week per CDHE (M-F, 8:00 a.m. - 5:00 p.m.)

To meet the target standard rooms should be used 30 hours per week in total.

Figure 3.43: Classroom Utilization Analysis Summary
CASTLE ROCK CAMPUS

- The master plan evaluation was based on findings from the Fall 2016 semester.
- A space by space inventory identified 5 instructional spaces
- A majority of the instructional spaces were utilized by multiple programs
- Use of the instructional spaces mainly occurred between 10:00 a.m. to 5:00 p.m. and 6:00 p.m. to 9:00 p.m., Monday through Thursday. Use on Fridays mainly occurred in the morning hours on a limited basis.
- The master plan evaluated the occupancy and hours of use for each instruction space using CDHE utilization guidelines and determined that the Castle Rock Campus has a current surplus of 3 spaces. The identified surplus is reduced to 2 spaces when the student growth for the year 2020 is factored in.
- The master plan has determined that the relative size of the Castle Rock campus does not support potential growth unless it expands more opportunities for students and provides additional community resources. This untapped potential was determined to be the main priority of the master plan.

CLASSROOM UTILIZATION

<table>
<thead>
<tr>
<th>Castle Rock Summary</th>
<th>Existing Rooms</th>
<th>Capacity</th>
<th>Avg</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIME (Hours)^1</td>
<td>M</td>
<td>T</td>
<td>W</td>
<td>TH</td>
</tr>
<tr>
<td>1.4</td>
<td>3.2</td>
<td>1.4</td>
<td>3.3</td>
<td>1.5</td>
</tr>
<tr>
<td>OCCUPANCY^2</td>
<td>61%</td>
<td>55%</td>
<td>61%</td>
<td>41%</td>
</tr>
<tr>
<td>Programs</td>
<td>Program Hours^3</td>
<td>Hours/Rm^4</td>
<td>Current Need^5</td>
<td>Future Need^6</td>
</tr>
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<td>Health</td>
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<td>0.40</td>
</tr>
<tr>
<td>&quot;Core&quot; General Education</td>
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<td>&quot;Other&quot; General Education</td>
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<td>0.37</td>
</tr>
<tr>
<td>&quot;Other&quot; CTE</td>
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<td>0.11</td>
</tr>
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<td>Science</td>
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</tr>
<tr>
<td>Arts &amp; Design</td>
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</tr>
<tr>
<td>TOTAL</td>
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<td></td>
<td>2.00</td>
<td>2.20</td>
</tr>
</tbody>
</table>

Notes:
1 Average "time" utilization based on weekly hours room was occupied (M-F, 8:00 a.m. - 5:00 p.m.)
2 Average "occupancy" utilization based on class size compared to room capacity
3 Future need is based on the following growth rate: 10.00%
4 Total weekly hours per department - 2016 Fall Semester
5 Target "time" utilization for classroom - 87% of 45 hour week per CDHE (M-F, 8:00 a.m. - 5:00 p.m.)
   To meet the target standard rooms should be used 30 hours per week in total.
3.2 UTILIZATION ANALYSIS
ACADEMIC SPACE UTILIZATION

The utilization of classrooms and teaching laboratories was examined using the ACC Fall 2016 course and facility data. The utilization analysis includes scheduled classroom use by time which is based on weekly hours the classroom or laboratory was occupied from 8:00 a.m. to 9:00 p.m. Monday through Friday. The utilization analysis also includes occupancy percentages based on the class size (number of students taking each course) compared to the student capacity of the assigned classroom or laboratory. The following tables summarize the averages of each building or group of buildings. The detailed analysis is located in the appendix.

The analysis is based on an occupancy utilization of 67% and time utilization of 30 hours per week which are key factors regulated by the Colorado Department of Higher Education.

CLASSROOM USE
On average, between 8:00 a.m. and 5:00 p.m., 93% of the classrooms are in use for scheduled instruction. The average decreases during the late afternoon (4:00 p.m. to 6:00 p.m.) with 46.5% of classrooms in use at 5:00 p.m. The average evening use (6:00 p.m. to 9:00 p.m.) shows that 76.5% of the classrooms are in use for scheduled instruction. Overall, Friday use is minimal after 1:00 p.m. This trend is consistent with a pattern of use for many community colleges.
4.1 FACILITY PLAN NARRATIVE

GOAL 1: CASTLE ROCK COLLABORATION CAMPUS

VISION
Concurrent with the Master Plan, ACC is developing a program plan for an innovative learning concept in Castle Rock in partnership with the Town of Castle Rock, Douglas County Schools Colorado State University. Various sites have been evaluated and ultimately selected in the southern portion of ACC’s service area in Douglas County and the Town of Castle Rock through a report issued in August 2016 by JLL working in collaboration with ACC. The new campus, referred to as the Collaborative Campus will bring together education, business and community to create a unique resource for delivering a seamless education in workforce training.

Early planning of the 14-acre site in includes two buildings each 54,000 square feet with a total anticipated construction cost of $40-42 million for the purchase of the land and construction of the building. The building hard and soft costs are anticipated to be between $32-34 million. The site is located at Meadows Parkway and I-25, northeast of downtown Castle Rock and provides access, visibility and flexibility for expansion. The Meadows is a 4,000-acre master-planned mixed use community, when fully constructed will have close to 11,000 dwelling units and 350 acres of commercial zoned land. The site is in close proximity to the Adventist Hospital Campus, Castle View High School and Castle Rock Middle School.

SITE PLAN: Phase 1
- 1 Building
- 2 Levels
- 27,000 S.F. per Floorplate
- Total Building Area: 54,000 S.F.
- Parking Count: 448 spaces

SITE PLAN: Phase 2
- 2 Buildings
- 2 Levels Each
- 27,000 S.F. per Floor plate
- Total Building Area: 108,000 S.F.
- Parking Count: 759 spaces
Integral to the concept of the Collaboration Campus, ACC has formed a unique partnership with Colorado State University (CSU) and Douglas County School District (DCSD) that will deliver a seamless education pathway model. This educational model will focus on needs of the 21st century learner providing students the opportunity to create a smooth pathway from a high school diploma to associates degree to bachelor’s degree. The campus will initially offer courses in business and entrepreneurship, health care, information technology/programming, general education and workforce training.

The collaboration campus will highlight Castle Rock’s and Douglas County’s public innovation and entrepreneurship. The partnership among ACC, DCSD, and CSU represents the immediate and long-term future for a coordinated commitment to students and adult learners who create economic and community development values for their community.

CSU was committed to lease space on the campus because of its ongoing engagement efforts in “hubs” across the state. Additional potential leases at the campus currently include Arapahoe/Douglas Works, the area’s workforce center; ConneXion Spot, a Castle Rock co-working space; and 3-D Printing a local business. This cross section of tenants will create an interactive community hub that will engage students, citizens, businesses and community agencies.

In early January 2017, Castle Rock Town Council approved an investment of $3 million of in-kind services to construct the Collaboration Campus. The $3 million will assist ACC with building permits, fees and land site improvements.

As a new building, the structure will be designed to meet the State and standard of LEED Gold.

NEED
As one of the fastest growing communities in Colorado, the higher education needs for Castle Rock have out paced ACC’s current campus structure. The current leased space of approximately 7,000 square feet does not begin to address the stated educational and workforce training needs of Castle Rock employers and citizens. Specifically, the five traditional-style classrooms do not accommodate science laboratory, healthcare simulation, entrepreneurship, and technology instructional requirements. Nor are they adequately designed to provide the necessary hands-on project work and clinical activities critical to relevant instruction. Further, the space is not sufficient to allow for the increased collaboration with educational partners DCSD and CSU.
According to research data cited by Douglas County Business Analyst Colbe Galston to the Castle Rock Economic Development Council, Castle Rock household growth trends and projections between 2015-2020 are expected to rise. Galston reported that data from the Demographic Trend Report, June 2016, by DemographicsNow projects an increase in Castle Rock households between 2015-2020 of 19.5%, and an increase of 20-24 year-olds (traditional college-age individuals) of 11.8%.

The Castle Rock community also continues to thrive in commercial economic development. Second quarter 2016 commercial building permits issued, as prepared by Development Research Partners, Inc. for the Douglas County Department of Community Development, were valued at over $10million.

Data collected by Dianne Lefly, the Colorado Community College System’s (CCCS) Director of Institutional Research and Decision Analytics corroborates an increase in potential enrollment projections for traditional college-aged Douglas County students for the period 2016-2020. The data indicate that the potential cohort of 19-21 year-olds and 22-24 year-olds may increase by 16.79% and 16.50% respectively.

A series of focus groups held in March 2016 with Castle Rock employer CEOs and Human Resources Directors revealed immediate community needs for a trained workforce in the following arenas: Business (marketing, management/supervision, accounting, customer service, sales, communications), Information Technology/Programming (innovative software development, marketing/sales, social media management, project/account management), Healthcare (medical technicians for several areas; non-medical staffing for coding, records, business management; regulatory affairs and compliance; continuing education for current employees), Entrepreneurship (product development, business start-up and management, sales/marketing). These employers also voiced their commitment to providing students with mentoring, internships, hands-on real-time project work and apprenticeships to enhance their education. The existing ACC campus, structured to provide primarily general education and core curriculum courses, is not sufficient to meet these educational and training demands.

“What should students’ educational experiences look like 10 years from now? Many colleges have begun answering this question by recognizing the need to move beyond discrete interventions for small numbers of students to larger-scale redesign aimed at ensuring that all students have the experiences that evidence suggests will produce better outcomes. Instead of focusing only on what happens in individual classrooms or only on certain student services, they are attending to the overall student pathway, from the point of first contact through completion of certificates and degrees, university transfer, and attainment of jobs with value in the labor market. Emphasis is on outcomes, seamless transitions, college success strategies, relevance, coherence, and embedded support. A key insight comes from converging research indicating that most students will benefit from more structure (and fewer options) in their educational experiences.”

(A Matter of Degrees, 2014, p. 34)
When ACC opened the current Castle Rock campus in October 2011, 58 students were enrolled. In 2016 spring and fall semesters the headcount was over 500 (duplicated). Based on the expected continued growth for potential college-age students and the increased needs of area employers for a mature, skilled workforce, the impetus for an expanded ACC campus in Castle Rock is clear. Adding in the collaboration nature of the project to accommodate space and programs for this unique model partnership with DCSD and CSU further warrants the need for ACC to build the Collaboration Campus. The Collaboration Campus will bring together the essential educational, business, and community elements to create a vital and unique resource for delivering seamless world-class education and ongoing workforce training.

By providing seamless integration between DCSD, ACC, and CSU, clear pathways will be available for students to go from a high school diploma to an associate degree to a bachelor degree with ease. Business integration through partnerships with local employers’ and entrepreneurs’ mentoring, internships, and project work will result in greater local job placement opportunities for students. Castle Rock employers and agencies verbally committed to partnering with the Collaboration Campus include ConneXion Spot, 3-D Printing, Arapahoe/Douglas Works!, Castle Rock Adventist Hospital, and Douglas County Libraries. The Collaboration Campus will provide an interactive hub for students, citizens, businesses, and educators that will ultimately provide ACC and the community with a long-term asset that supports the attraction, growth, and retention of primary employers and residents, thus sustaining and growing the campus into the future.
PROGRAM
Guiding principles developed during the development of the Business Plan set goals for the Collaboration Campus to be a learning environment that encourages innovation, use of technology, and fosters an interactive learning environment. Conversations with the Collaboration Campus partners and stakeholders has set the preliminary ideas for a curriculum that will focus on three industry sectors: information technology, business/entrepreneurship and health care. Degrees offered in these sectors are developed in conjunction with CSU will include: Associate of Applied Science ("AAS"), Bachelor of Arts ("BA") and Bachelor of Science ("BS"). Initial offerings will include general education courses, Career and Technical Education courses.

The physical manifestation of the guiding principles into academic spaces translates into dynamic learning environments following the lead of progressive companies such as Google, Microsoft and Apple.

Early program spaces include learning and student spaces including classrooms, learning commons, informal learning space; community rooms; and administrative spaces. Classrooms will be flexible for a variety of teaching paradigms including distance learning, interactive learning, and active learning in simulated environments. Interactive classrooms will have space for multiple group workstations that encourage connectivity. Laboratory spaces will be connected to the classroom to promote seamless movement between concepts and practical applications.

The campus will be organized around central gathering spaces for congregation, socializing and connecting with business partners. Study spaces for students for private and group work and for students to meet with faculty. Shared collaborative spaces for faculty. Touch-down spaces for visiting faculty or informal meetings between classes. It is currently anticipated that 5,000 square feet of space will be leased to partners.

With minimal access to public transportation, on site parking will be required. Approximately 450 parking spaces will be provided in Phase I.

As part of the program plan process, RNL design has begun early test fit the building footprints and parking and has developed a detailed program and adjacency diagram.
Figure 4.4: Diagrams provided by RNL
3-D Stack Plan

Figure 4.5: Diagrams provided by RNL
The following are the major project milestones related to the Castle Rock Collaboration Campus.

- Development of Castle Rock Program Plan: August 2016 - March 2017
- Approval of the Castle Rock Program Plan (to be prepared by RNL): March 2017
- Acquisition of Proposed Site: May 2017
- Construction Start: Spring 2018
- Certificate of Occupancy: June 2019
- Opening of Phase One: Fall 2019

Figure 4.6: Diagrams provided by RNL
VISION

ACC is seeking the opportunity to increase enrollment and growth in the signature health programs, through co-locating classrooms and informal learning spaces, and creating an identity for the health programs. A new central two story space, filled with natural light and soft furnishings will provide a new entrance and image for these programs. The current entrance to the Annex through the east loading dock will become secondary with a stronger entrance sequence from the Main Building and the addition of a new entrance and connection to outdoor spaces will be provided on the west side of the Annex. This western entrance will lead into a learning landscape providing informal spaces for student study.

The central atrium and gathering space will support the academic programs for events such as for job fairs and small lectures and serve as a place for informal individual and group learning. Flexible rooms for small seminars, student-teacher meetings and for nursing and emergency medical services cohorts or group study will surround the space. The existing stair will be opened between floor providing a visual connection between the floors. A new hydraulic elevator will provide ADA access between floors.

The key to 21st century learning in the Health Programs is active and simulated learning experiences. These spaces will be located with direct access to the atrium. Simulated medical check-in, pharmacy, ambulance drop off, nursing suites and an ADA restroom will be provided on the ground level to the east of the atrium. General classrooms will be provided in close proximity to these simulation labs providing a connection between classroom and lab experiences. Additional classrooms will have distributed on the second floor and designed with similar technology and to be flexible so that a variety classes and teaching styles can be used in these classrooms.

Currently, the Fitness Center is an asset to the campus used by students, staff, community, and health programs. The Fitness Center’s proximity to Health Programs will be leveraged in showcasing the connection between, health, wellness, and fitness. Its connection to the campus will be enhanced by visually connecting the fitness area to the atrium in the Annex and to the outdoors spaces. Access to the space is proposed on the south side of the atrium with a relocated reception desk in front of a glazed wall.
Remodeling of the Fitness Center in 2016 added pickle ball courts and a yoga studio on the south side of the building. Additional proposed renovation includes reconfiguring the men’s and women’s locker rooms for accessibility and correction of sightlines into the rooms. Connection to outdoor spaces, referred to as a “health quadrangle” is proposed for the lawn to the west by adding glazing and doors into the Fitness Center.

While it was determined that creating a consolidated area of Business classrooms and faculty was not a priority for this Master Plan, Computer and Business classrooms will be located in a central location at the south end of the second floor. Healthy work environments will be designed with offices continuing to have a connection to natural light and providing access to faculty collaboration spaces. Business and Computer students will share the informal learning spaces in and around the atrium.

Spaces for automotive programs will remain on the first floor of the Annex and will have minimal renovation.

The Annex’s renovation and focus on Health programs, will displace the Art Gallery, classrooms for Littleton Public Schools, Community Education Offices and Division Offices that will require phased renovations of the Main Building and Church Avenue Building concurrent with the Annex’s renovation. Renovation of the Main and Church Avenue Buildings are described below as Phase 1a of work.
ANNEX BUILDING: 1ST LEVEL FLOOR PLAN
Figure 4.11: Proposed Programs Diagram - Phase 1

Image 4.12: Precedent Image - Spaces with natural light; Source: Frederick High School (gkkworks)
ANNEX BUILDING: 2ND LEVEL FLOOR PLAN
Figure 4.15: Proposed Programs Diagram - Phase 1
NEED
The Health Programs located in the Annex is one of ACC’s signature programs. Currently the Business and Health programs have the greatest FTE growth. With a strategic investment in academic space Health Programs, anticipated growth can be accommodated.

Currently academic spaces are not configured to support the delivery of active and simulated coursework that is critically important for these programs. The size of classrooms and the limited flexibility in the infrastructure makes the placement of teaching equipment and movement of students in the space challenging. The Annex currently does not have spaces that support informal learning for groups or individuals.

Currently the following programs in health professions offered by ACC hold accreditations and or have approvals by the stated agency:

• Certified Nursing Assistant, Colorado State Board of Nursing;
• Emergency Medical Technician, Colorado State Department of Health, Emergency Medical Services Division;
• Health Information Technology, American Health Information Management Association;
• Paramedicine, Commission on Accreditation of Allied Health Education Programs (CAAHEP);
• Medical Laboratory Technology, National Accrediting Agency for Clinical Laboratory Sciences;
• Nursing (Registered), The Accreditation Commission for Education in Nursing, Inc. and The Colorado State Board of Nursing;
• Pharmacy Technician, American Society of Health-Systems Pharmacists (ASHP);
• Physical Therapist Assistant, Commission on Accreditation in Physical Therapy Education.

College accreditation is a guarantee to students that a college or program meets certain principles and provides quality education. Accreditations are vitally important in attracting and maintaining students and providing potential employers with assurance that students have been provided a quality education. The quality and type of academic space is integral with accreditation as it is integral with delivering educational outcomes; and high quality up-to-date curriculum.

Facility updates to the Annex are need to be provided to maintain the program accreditations, Enhance community and business partnerships and connections through visibility of programs.
PROGRAM
The programming goal is to reconfigure the Annex to support flexible teaching paradigms, active and simulated learning environments and create a central gathering space for informal learning supporting academic programs. A robust strategy for maintenance of the Annex will be part of the renovation.

The utilization analysis supports a decrease in traditional classrooms and a more integrated model, and real life healthcare worker interaction.

Further visioning and details to be determined with the program plan.

OPINION OF PROBABLE COSTS
The project cost is composed of two cost components: hard costs and soft costs.

Approximately 62,000 S.F. of the Annex Building is anticipated to be renovated as part of Goal #2. The building has not received a major upgrade of systems in many years. The Master Plan incorporates required life safety and operational renovation in addition to program modification and re-purposing of space.

Figure 4.16: Cost Estimate Approach Diagram

CLARIFICATIONS
1. Cost Estimate Approach: a zoned approach was used in which the various areas were multiplied by the square footage of the area by a cost per square foot based on intensity of work. (These costs/SF have been verified by a general contractor).
2. The numbers are preliminary in nature and not intended for use in defining the actual costs for the project.

Figure 4.16: Cost Estimate Approach Diagram

OPINION OF PROBABLE COST
The renovation is anticipated to be $10 million for construction costs, additional funds may be required for soft costs based on the 2017 dollar. These cost estimates are preliminary in nature and should be used only to establish the magnitude of cost to implement this phase of the Master Plan. A more detailed cost analysis of architectural and engineering documents will be required to arrive at the actual cost of construction. If work extends beyond the 2017 calendar year, further hard cost escalations may be required.
MAIN BUILDING RENOVATIONS: PHASE 1

As part of the proposed renovations of the Annex, the Art Gallery and associated support spaces will be relocated to a more publicly prominent and central location on the first floor of the Main Building. At this location the Art Gallery will have access from both main and west entrances and will have access to loading from either of these locations or the east loading dock. Proximity to program spaces with public access: the Board Room, Summit Room, and café will be an asset to both the gallery and these public meeting spaces. As part of these remodel, the computer lab will be reduced in size, and some computer stations will be distributed through the Learning Commons to offset the reductions. The Admissions office will be relocated in the southern portion of The Learning Commons.

Division Offices will be relocated to the Main Building in spaces formerly occupied by Marketing and Admissions.
CHURCH AVENUE BUILDING RENOVATIONS: PHASE 1

Spaces with limited connection to the academic programs in the Main Building and Annex were identified for relocation to the third floor of the Church Avenue building. These relocated spaces include two classrooms for Littleton Public Schools, Community Education offices and Marketing offices (from the Main Building).

**SCHEDULE**

The following are the major project milestones related to the Health Programs Integration Renovation:

- Health Programs Integration Renovation Program Plan: Late Spring 2017 - Fall 2017
- Fundraising & Capital Construction: Fall 2017 - 2018
- Capital Construction Request: 2018 - 2019

*Figure 4.19: Proposed Program Diagram - Phase 1 - Red zone depicts remodel area*
4.1 FACILITY PLAN NARRATIVE

GOAL 3: LEARNING COMMONS RENOVATION: MAIN BUILDING

VISION
The Learning Commons will be a blend of social and academic spaces for students and faculty and will continue to be located on the first and second floor of the Littleton Campus Main Building. Currently the Learning Commons serves students on all three campuses—including Castle Rock and Parker. However, the Castle Rock Collaboration Commons early planning includes a Learning Commons to serve that campus. In October 2013, ACC completed a “Learning Commons Program Plan” encompassing the existing library. Since issuing this document, portions of the plan have been implemented, requiring a revised Program Plan prior to ACC undertaking the full renovation.

The Main Building Learning Commons is intended to be a hub of the Littleton Campus, but currently lacks connection with student and academic spaces. A goal of the renovation will be to reconnect the Learning Commons to the main entrance and student gathering spaces on both the first and second floor. Planning of this goal consolidates the Learning Commons, student commons, and student support services in the center of the first and second floor of the Main Building with enhanced connections to the adjacent spaces. In order to enhance access to the Learning Commons, planning indicated reconfiguring the current north entry vestibule with an addition of a new vestibule. This new entry allows for relocation of the information and welcome desk to be on the first floor directly adjacent to the renovated entrance.

Staff at the welcome desk in the Learning Commons will provide general information to the resources greatly increasing the wayfinding and orientation for visitors and prospective students. The welcome center will be supported with staff to support new student applications. Open areas adjacent to the windows on the north façade will organized into a series of neighborhoods of activity defined by the comfortable and flexible furnishings.
These neighborhoods of spaces in the Learning Commons will provide students with a variety of collaborative and informal learning spaces, with the opportunity for the first floor to expand to the exterior into outdoor learning environments. Computer stations will be interspersed throughout the area instead of centrally located in a room designated as a computer lab and design of the environment will be attractive, encouraging students to use both the space and be part of the ACC community. Library stacks in the Learning Commons in this area will be lowered to provide access to natural light. These spaces will be flexible space encouraging passive outreach, incorporating unobtrusive activities that allow ACC to engage with students in creative and engaging ways.

As part of consolidating student support services in the center of the Main Building, student support services and resources will be located south of the Learning Commons on both the first and second floors. Student Access and Engagement and Admissions and Records are anticipated to be relocated to the second floor with access from the student commons.
LEARNING COMMONS RENOVATION: MAIN BUILDING

The Student Success Center and Math and Writing Support Lab will be clustered together on the first floor along with a reduced area for books stacks.

The second floor Student Commons area will be enhanced by the addition of a variety of flexible rooms for independent and group study. A designated space for student clubs and Veterans Affairs will be provided with access to natural light.

Work related to the renovation of the Learning Commons will be completed when incremental funds become available and as more detailed information is developed with a refreshed program plan.
LEARNING COMMONS RENOVATION: MAIN BUILDING - PHASE 2

NEED
Changes in academic libraries measured by declining circulations of print materials, reduced use of reference services and falling gate counts has led to a more social approach to academic libraries including in part expanding group study space developing an information common. ACC’s circulation of print books was down 11.8% in 2016 from 2015, ebrary ebook usage was up 19% for user session and 23.4% for pages viewed. ACC supports that students are taking advantage of “24/7” access to digital books indicating that the library extends beyond the walls. In 2015, 83% of the Learning Commons materials budget was spent on digital resources including periodicals, ebooks and streaming videos. Circulation in the course reserve section increase 15.95% in 2016, indicating that students are not purchasing books, but gathering coming to the Learning Commons for access to materials.

While ACC saw the use of the library (through gate count) and study room usage trend downward, with average use of the space at 10,000 users per month, one-on-one research sessions were up 30.5% and 92% of students are receiving one on one help with research. These trends support the need for reconfigured spaces; that are more accessible to the changing needs of students and their learning styles.

SCHEDULE
The following are the major project milestones related to the renovation of the Learning Commons:

<table>
<thead>
<tr>
<th>Revised Learning Commons Program Plan</th>
<th>Summer 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction (over time)</td>
<td>2020 - 2022</td>
</tr>
</tbody>
</table>
4.1 FACILITY PLAN NARRATIVE
GOAL 4: MAINTENANCE OF EXISTING FACILITIES

VISION | NEED
ACC leadership acknowledges the asset of the existing buildings and the benefits that well maintained facilities have in attracting and maintaining students. Maintenance is performed internally through the Facilities Department for many of the low cost and basic needs for the college. Major maintenance is strategically planned and contracted out to correct the building deficiencies. ACC provided the following list of maintenance priorities for each of the buildings.

Refer to Section 3: “Existing Conditions Analysis” for listing of maintenance needs. The needs will be prioritized on an annual basis based on fiscal resources and supporting the needs of spaces for direct instruction.
4.1 FACILITY PLAN NARRATIVE

FUTURE SITE PLANNING OPPORTUNITIES:
LITTLETON CAMPUS

VISION
Currently, outdoor spaces around the buildings are an underutilized resource. The building massing and forms of the Littleton Campus are conducive to outdoor place making—particularly on the west and south sides of the Main Building. These areas have excellent access to southern exposure and protection from western winds and are good opportunities for enhanced connections to outdoor spaces for both student use and community events.

Student outdoor spaces or learning landscapes to promote spontaneous interactions and enhance studying and learning are ideally located west of the Annex and could be an integral part of the renovation of the Annex. Secondary spaces to the north of the Learning Commons would allow this space to spill to the north. Both of these locations for outdoor spaces can contribute to campus wayfinding.

Figure 4.31: Outdoor Spaces Diagram
Future site enhancements at the Littleton Campus will be focused on improving the college’s image in the community and displaying the academic environment of the college. With one of the deficits stated by stakeholders being a lack of cohesion between the various buildings on the Littleton Campus, an improved definition of the campus edge along the RTD line, Church Avenue, and Santa Fe Drive with consistent landscaping will unify the campus. Improved pedestrian connections between the Littleton Campus and the Church Avenue Building will increase pedestrian safety and access. A cohesive signage and wayfinding package would unify the campus and assist both vehicular and pedestrian visitor’s orientation.

Parking access and quantities on the Littleton Campus are currently working well, only minor improvements to vehicular circulation could be considered with future site planning.

SCHEDULE
Site enhancements are outside the five-year time frame for this Master Plan, work will be completed by the college as funds become available.
4.1 FACILITY PLAN NARRATIVE
FUTURE SITE PLANS:
PARKER CAMPUS

VISION
The Parker Campus, similar to Littleton, currently under utilizes outdoors spaces around the buildings. ACC plans on upgrading exterior spaces at the building’s entries in Parker concurrent with site upgrades in Littleton.

Figure 4.33: Outdoor Spaces Diagram
5.1 PRIORITY, SCHEDULING AND PLANNING

ARAPAHOE COMMUNITY COLLEGE TIMELINE

2017
2018
2019
2020
2021
2022

GOALS #1-4
1. CASTLE ROCK CAMPUS
2. HEALTH & WELLNESS CENTER
3. LEARNING COMMONS
4. DEFERRED MAINTENANCE

Figure 5.1: Timeline Diagram
5.2 CAPITAL INVESTMENT STRATEGY

Prior to this year, ACC has not provided budgeted funds for controlled maintenance projects on an annual basis. However, there are a few examples where ACC has internally funded the replacement of building systems or sub systems out of cash reserves in conjunction with internally funded remodel projects. The first would be the toilet rooms, that remodeled to benefit student’s experience on campus. With the toilet room project ACC updated the ADA accessibility, replaced the sanitary sewer and domestic water supply lines including individual isolation from the entire building, and upgraded the exhaust system to better the indoor air quality of the building.

The second set of project examples in which the college we upgraded building infrastructure were the remodels at Parker and the Fitness Center. In both cases ACC replaced the RTUs in response to input from the Facilities Director, architects and/or commissioning agents. The fitness center project replaced the roof top unit for the space that was remodeled and added another roof top unit to provide better climate control and efficiency to the spaces that were remodeled. The Parker RTU replacement controls the entire building.

Another set of projects that have been internally funded fall into the category of where the maintenance costs are becoming so great that replacement seems like the best option. The Annex roof replacement was internally funded to complement the state funds used to replace the main building roof. Parking Lot A would be an additional example.

Overall, the formalized process is for the Vice President of Administrative Services (VPAS), Facilities Director, and Facilities Manager to meet annually to review the current facility audit and areas of concern. These projects are prioritized and brought to Cabinet for discussion in August for the next fiscal year. As of this year and moving forward we do have dedicated controlled maintenance dollars in the amount of approximately $150,000 annually. This budget will be spent on larger ticket items, (carpet, doors, small HVAC items). General maintenance on smaller items, (light bulbs, filters, items that break) are paid for out of our “regular” maintenance budget.

5.3 REAL ESTATE PLANNING

CASTLE ROCK
Acquisition of land for the collaboration campus has begun starting the first quarter of 2017.

LITTLETON & PARKER CAMPUS
Currently there are no plans for additional acquisitions or sales, however, ACC is open to opportunities that might arise.
BIBLIOGRAPHY

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