



Facilities Master Plan

2013

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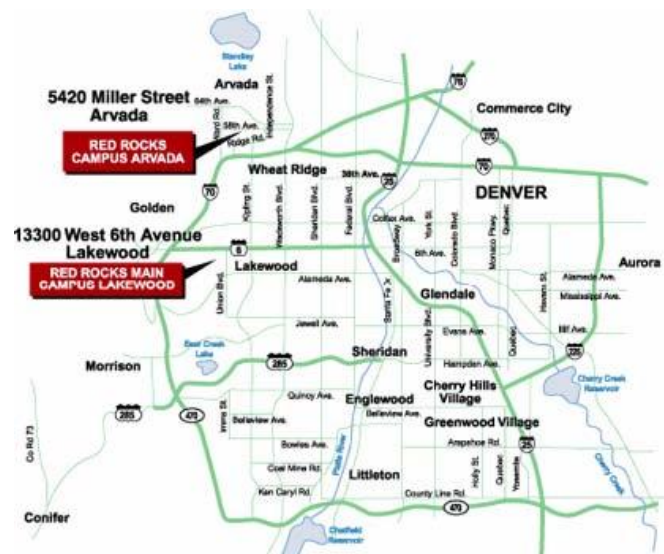
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PART ONE - INTRODUCTION TO THE 2013 RED ROCKS COMMUNITY COLLEGE FACILITIES MASTER PLAN

RRCC Values, Mission, and Vision

The institution that today is known as Red Rocks Community College was established in 1969 as one of three new campuses of the Community College of Denver. The new Community College of Denver West Campus first opened its doors at a temporary site on West Quail Street in Jefferson County. The Colorado legislature soon appropriated funds for the construction of a permanent campus. In 1971 ground was broken for construction of the present facility on 140 rolling acres with a panoramic view of the Front Range of the Rocky Mountains, in what was then unincorporated Golden.

The first phase of construction was completed by fall 1973 and students were enrolled for the first time at what was then called the Red Rocks Campus of the Community College of Denver. A link between the east and west wings of the current facility was completed in fall 1975. In a move to make each of the Community College of Denver campuses more autonomous, on July 1, 1983, the Red Rocks campus officially became Red Rocks Community College. In the late 1980s, the campus address changed from unincorporated Golden to Lakewood. In 1990 Red Rocks expanded its service to the north with the Arvada campus.



Today, through the two campus locations in Lakewood and Arvada, Red Rocks Community College serves more than 15,000 students annually, meeting the diverse educational needs of the residents of Clear Creek, Gilpin, Jefferson and Park counties and other areas by providing access to excellent higher education. Incorporating both the stability of American academic tradition and the flexibility to be responsive to community needs, the College emphasizes innovation, leadership, quality and service.

The College service area includes the western Denver metropolitan area centered in Jefferson County, and the adjacent mountain counties of Clear Creek, Gilpin, and Park. Our programs also draw students from the entire metropolitan area, the State of Colorado, and the world. Our service to local Colorado communities and our global reach is in concert with vision and mission of the Colorado Strategic Plan for Higher Education.

We envision a Colorado with a globally competitive system of higher education that builds our economy and enhances our quality of life for our citizens by:

- *Meeting the current and future needs of our workforce and our business community;*
- *Providing access to every qualified student through a tiered system of institutions;*
- *Maximizing quality, efficiencies, collaborations and affordability;*
- *Offering seamless transitions to appropriate levels of learning for all students; and*
- *Developing responsible citizens for a successful civic enterprise.*

As one of thirteen community colleges governed by the Colorado Community College System (CCCS) our college also brings the vision and mission established in the CCCS Strategic Plan to the local community through our programs and services.

Colorado Community College System Vision

Colorado community colleges are unsurpassed at providing quality educational opportunities for all who aspire to enrich their lives.

Colorado Community College System Mission

To provide an accessible, responsive learning environment that facilitates the achievement of educational, professional and personal goals by our students and other members of our communities in an atmosphere that embraces academic excellence, diversity and innovation.

The Red Rocks Community College mission and vision echo the statewide and system plans in its charge to create a passion for learning through our dedication to students, our commitment to excellence and our own love of learning. In carrying out its vision and mission, Red Rocks Community College follows these values:

- Innovation – Both internally and in the communities we serve, RRCC will promote an open exchange of ideas, and opportunities for growth and development;
- Teamwork – RRCC will strive to be a coalition builder and supportive business partner, initiating opportunities for creative problem solving through teamwork;
- Diversity – RRCC will be a proponent for diversity, providing an environment that respects differences among us.
- Communication – RRCC will foster a culture that promotes an open exchange of ideas.
- Integrity– RRCC will strive to be a model of integrity, supporting our mission with thoughtful and judicious decision making.

Central to our mission is building community through student success. The genius of a comprehensive community college, such as RRCC, is found in how it does this by bringing together career and technical education, the first two years of a four-year degree, pre-collegiate remediation, workforce training, and personal development in life and career skills. The exchange among faculty, staff, and students with a variety of backgrounds and goals create a unique type of learning community.

The very strength of RRCC - the multiplicity of student and community needs and programs - must be balanced with careful planning, data-informed resource allocation, and resource management based upon ongoing assessment of results. This is especially so for the critical resource of facilities.

The following facilities master plan is grounded in the RRCC mission, vision, and values, and based upon the needs of our students and the communities we serve. The following sections of this plan will elaborate upon those needs and, through facilities utilization analysis, link them to the facilities resources the College needs to address them. Through this process, based upon the needs and utilization analysis, we propose several capital Improvement projects that will enable us to develop new facilities and reconfigure existing ones to better serve our students and advance the health and welfare of the communities we serve.

This plan develops the following project solutions:

1. Build a new health sciences and health occupations building on the Arvada campus;
2. Create new student support space on the Arvada campus to support existing and future student needs;
3. Renovate “backfill” space on the Lakewood campus, created by the new Arvada campus building, with updated STEM labs and new economy and emerging technology programs and;
4. Provide infrastructure upgrades on the Lakewood campus for up-to-date instructional technology that will provide our students with a solid foundation for the technical, baccalaureate, graduate, and professional careers that await them.

Before turning to those projects, and the supporting documentation of needs and utilization analysis, some background on the development of this facilities master plan will be helpful.

The Development of the RRCC Facilities Master Plan

In 2009, RRCC engaged the firm of Paulien and Associates in the development of a Red Rocks Community College facilities master plan, in partnership with the faculty, staff, administrators, students, and other stakeholders of the institution. Plans were developed for the Lakewood and Arvada Campuses. The process started with the collection of data elements to determine the existing facility utilization and space needs. The space needs were then calculated for the target enrollment mix provided by the College.

Next, visioning sessions were held with the larger campus community to solicit input from faculty, staff, administrators, students, and community members on the Arvada and Lakewood Campuses. Work sessions and focus groups were also completed during this period of time to gather empirical information to test the integrity of the data collection effort and to receive input on future academic and academic support delivery methodologies.

The data used in that original study, and in following reviews and updates, included a facilities inventory, the course enrollment files, staffing data, library volumes and existing reader stations, and student enrollment and staffing projections. The Department of Higher Education (DHE) and the Colorado Community College System (CCCS) space planning guidelines were used as applicable. Where guidelines did not exist, normative guidelines for community colleges with similar enrollment levels and missions were applied.

An RRCC Master Plan Steering Committee developed a draft plan, which was then presented to the campus for review and comment. This draft plan was reviewed and validated during an All-College meeting, which included around 300 faculty, staff, and students. The resulting plan, completed in 2010, included:

- The construction of a new building on the Arvada campus to accommodate programs in health related professions and emergency services the Lakewood Campus;
- Significant renovation of facilities on the Lakewood campus to align programs on the Lakewood Campus where access, sustainability and adjacencies will provide for a more effective use of the existing space and less maintenance and oversight.

The 2010 plan was then updated further in a revision by another consultant, David Besel, from 2011 to 2012. This current draft is the result of further data updates, updated analysis, and review by RRCC staff to insure the accuracy of data, appropriate categorization of facilities resources, and coherency with current planning efforts. Both updates used the following types of documents. In addition, the current plan includes more detailed analyses of service area and student needs and the RRCC response to these needs.

- The 2010 Master Planning documents developed by Paulien & Associates, in partnership with the faculty, staff, administration, students, and other stakeholders of the institution.
- Colorado Community College Projections of Facility Needs – 2020 developed by the consultant David Besel.
- Fall 2011 and Academic Year 2011-12 course and demographic enrollment files.
- The RRCC Budget Data Book FY2011-12 with estimates for FY2012-13, submitted to CCHE – October 2012 for staffing patterns.
- The Five Year Controlled Maintenance Plan FY2012-13, submitted to State Buildings – October 2011.

- Colorado Demographer's Office and U.S. Census Bureau data on the RRCC service area counties, planning areas, municipalities, labor market demand, and business and industries size and employment patterns.
- RRCC facilities inventories and scheduling information for both "on-grid" and "off-grid" facilities use, and condition and availability of space.
- Existing campus Information regarding topography, soil conditions, flood plains, circulation, utilities, storm water management, green space, etc. is current.

All versions of this facilities master plan were developed in accordance with Colorado Community College (CCCS) guidelines, including "Campus Facility Master Plan Guidelines" and "Space Utilization Guidelines for Master Planning". In addition, "Space Planning for Institutions of Higher Education" published by the Council of Educational Facility Planners International (CEFPI) - 2006 was referenced, as necessary and appropriate. Terminology contained in this report conforms to CEFPI guidelines, referenced above. The facilities inventory is maintained by Red Rocks Community College staff in accordance with the "Postsecondary Education Facilities Inventory and Classification Manual" (U.S. Department of Education, November 1992).

At Red Rocks Community College instructional programs are offered at various sites, with several different delivery methods. Approximately 75% of instruction is provided on-campus in Lakewood or Arvada; approximately 18% is provided on-line, and the remainder (7%) is provided at satellite sites. This facilities master plan concerns only those courses delivered on the Lakewood or Arvada campus during the Fall 2011 semester. Fall end-of-term data was used with prorated adjustments for courses that were scheduled for shorter periods than fifteen weeks. Likewise, adjustments to weekly space use were made for multiple classes held in the same space at the same time, a practice used in some career and technical labs to improve space utilization while building different student skill levels.

PART TWO – RRCC SERVICE AREA, STUDENTS, AND PROGRAMS

The RRCC Service Area and Labor Market

The following table presents three different views of population change in the RRCC service area. The four counties are given first followed by Jefferson County subdivisions and major municipalities within Jefferson County. If we examine the county data, the service area seems to have been relatively stable over the past ten years when compared to the Denver metropolitan area and Colorado as a whole. However, a more focused look at the county subdivisions and the municipalities show that, within the apparent overall stability at the county level, the RRCC service area has been undergoing major change over the past ten years.

State, Metropolitan, and Service Area Population Change

	2000 Population	2010 Population	# Change	% Change
Colorado	4,301,261	5,029,196	727,935	16.9%
Denver Metropolitan Area ¹	2,109,282	2,489,661	380,379	18.0%
Clear Creek County	9,322	9,088	-234	-2.5%
Gilpin County	4,757	5,441	684	14.4%
Jefferson County ²	527,056	534,543	7,487	1.4%
Park County	14,523	16,206	1,683	11.6%
Central Jefferson County	23,952	24,390	438	1.8%
Golden Area Jefferson County	29,997	35,260	5,263	17.5%
Northeast Jefferson County	450,166	450,008	-158	0.0%
South Jefferson County	22,941	24,885	1,944	8.5%
Arvada city, Colorado	102,505	106,433	3,928	3.8%
Edgewater city, Colorado	5,287	5,170	-117	-2.2%
Golden city, Colorado	17,411	18,867	1,456	8.4%
Lakewood city, Colorado	144,089	142,980	-1,109	-0.8%
Wheat Ridge city, Colorado	33,015	30,166	-2,849	-8.6%

¹ Denver Primary Metropolitan Statistical Area

² The RRCC service area contains most but not all of Jefferson County. Small portions on the southeast and northeast are in other college service areas. Since all major communities in Jefferson County are in the RRCC service area, and the sections outside the RRCC service area in Jefferson County are small, this study will use data for Jefferson County as a whole.

Source: U.S. Census Bureau and American Fact Finder (American Community Survey Intercensal Estimates)

In Fall 2011, 75.2% of RRCC enrollment came from Jefferson County and 2.6% of enrollment came from Clear Creek, Gilpin, and Park counties. Within Jefferson County, Fall 2011 enrollment was more evenly distributed from the four subdivisions than one might guess from the 2010 Census distribution.

<i>County Subdivision</i>	<i>2010 Total Population</i>	<i>Fall 2011 RRCC Enrollment from Jefferson County</i>
Central	24,390 (4.6%)	851 (11.9%)
Golden	35,260 (6.6%)	1,866 (26.0%)
Northeast	450,008 (84.2%)	3,652 (50.9%)
South	24,885 (4.6%)	805 (11.2%)

The population of the RRCC service area aged at a faster rate between 2000 and 2010 than either Colorado or the Denver Metropolitan Area. The 19 and younger age group in Jefferson County declined by 9.6% while the 60 years or older age group increased by 43.5%. Over the past decade the median age for Jefferson County increased by 3.6 years from 36.8 to 40.4. Clear Creek, Gilpin, and Park counties also showed the same trends as did the Jefferson County cities. Arvada, Golden, and Lakewood increased residents aged 60 years or more by 6.5%, 5.9%, and 3.6% respectively.

The “graying” of the RRCC service area is one major trend that occurred between 2000 and 2010. Growth of the Hispanic population in the service area is another. Over the past decade, the Hispanic population of Jefferson County increased by 45.8%. Park and Gilpin Counties also had notable increases. In Jefferson County, the Hispanic population increase of 23,996 people offset a decrease of 20,256 in the White not Hispanic population.

Both the decline in the White, not Hispanic population and the increase in the Hispanic population were fueled by younger age groups. In Jefferson County from 2000 to 2010 the Hispanic population 17 years and younger increased from 18,419 to 26,353, an increase of 7,934 or 43.1%. In contrast, the White, Not Hispanic population 17 years and younger decreased from 106,217 to 83,380, a decrease of 22,837 or 21.5%.

These shifts in ethnic composition were echoed in Jefferson County School District enrollment. Between Fall 2000 and Fall 2011 pupil membership counts, the number of Hispanic students grew from 10,589 to 20,192 students, an increase of 90.7%. The number of White, not Hispanic students went from 72,320 to 58,295, a decrease of 19.4%. Hispanic students increased their share of enrollment from 12.1% in Fall 2000 to 23.5% in Fall 2011. The percentage of White, not Hispanic students went from 82.5% in Fall 2000 to 67.9% in Fall 2011.

The educational attainment of the population within the RRCC service area also varies. Jefferson County has the highest percentage of the population with no postsecondary credential compared to the other counties. The Northeast subdivision has the highest percentage with no post-secondary credential in Jefferson County. The service area municipalities closest to the core metropolitan area, Edgewater and Wheat Ridge, have the highest proportion of their population with no postsecondary credential.

**Educational Attainment - RRCC Service Area Counties
2010 Population Aged 25 Years and Older**

	<i>No Postsecondary Credential</i>		<i>Two-year Degree</i>		<i>Four-year Degree</i>		<i>Graduate or Professional Degree</i>		<i>Total</i>
	#	%	#	%	#	%	#	%	
Denver Metropolitan Area ¹	896,953	55.1%	118,344	7.3%	399,863	24.5%	213,995	13.1%	1,629,155
Clear Creek County	3,657	52.6%	515	7.4%	1,755	25.3%	1,022	14.7%	6,949
Gilpin County	2,444	60.5%	491	12.2%	614	15.2%	491	12.2%	4,040
Jefferson County ²	191,556	51.5%	30,872	8.3%	97,080	26.1%	52,446	14.1%	371,954
Park County	6,894	56.6%	1,169	9.6%	2,777	22.8%	1,340	11.0%	12,180
Central Jefferson County	5,377	32.4%	1,494	9.0%	5,510	33.2%	4,215	25.4%	16,596
Golden Area Jefferson County	9,000	38.9%	1,388	6.0%	7,126	30.8%	5,622	24.3%	23,137
Northeast Jefferson County	171,045	56.1%	24,391	8.0%	73,784	24.2%	35,672	11.7%	304,893
South Jefferson County	5,832	32.5%	1,328	7.4%	6,711	37.4%	4,074	22.7%	17,945
Arvada city, Colorado	41,976	58.7%	5,792	8.1%	16,161	22.6%	7,580	10.6%	71,509
Edgewater city, Colorado	2,466	74.2%	140	4.2%	495	14.9%	223	6.7%	3,323
Golden city, Colorado	5,045	42.8%	719	6.1%	3,548	30.1%	2,475	21.0%	11,787
Lakewood city, Colorado	57,451	58.3%	7,194	7.3%	22,271	22.6%	11,628	11.8%	98,543
Wheat Ridge city, Colorado	14,482	65.2%	1,621	7.3%	4,020	18.1%	2,088	9.4%	22,211

¹ Denver Primary Metropolitan Statistical Area

² The RRCC service area contains most but not all of Jefferson County. Small portions on the southeast and northeast are in other college service areas. Since all major communities in Jefferson County are in the RRCC service area, and the sections outside the RRCC service area in Jefferson County are small, this study will use data for Jefferson County as a whole.

Source: U.S. Census Bureau and American Fact Finder (American Community Survey Intercensal Estimates)

Educational attainment is an important measure of community needs, particularly since Red Rocks Community College is charged by the State of Colorado with preparing a state workforce for the emerging needs of employers. In addition, the college prepares transfer students with the foundation skills and knowledge that they need to pursue baccalaureate and advanced degrees in fields that will supply existing and emerging Colorado industries with a workforce that is competitive both locally and globally.

Through its Rocky Mountain Education Center (RMEC), Red Rocks Community College delivers regional and statewide training. The RMEC is the continuing education branch of Red Rocks Community College. Formed in 1992 as the official Department of Labor OSHA Training Institute in Region VIII, it has become responsible for most of the non-credit training programs offered at Red Rocks Community College including customized contractual and on-line training programs.

Red Rocks Community College has developed partnerships with the majority of top employers in its service area and works closely with each to ensure that courses remain relevant and continue to meet industry workforce needs. Business and industry partners populate advisory committees for each career and technical education program. Many partners host student internship sites, and are active partners in developing career ladders and related programmatic components. Jefferson County is the largest urban segment of the RRCC service area and sets the pace for the employment and educational needs that RRCC addresses. The largest employers in Jefferson County suggest the need for post-secondary credentials offered through RRCC programming in such areas as health and technology, including transfer to four-year institutions to continue student post-secondary careers in these areas.

Top Employers in Jefferson County		
Company	Product/Service	Approx. Jobs
Denver Federal Center	Federal Government Offices	6,200
Lockheed Martin	Aerospace & Defense Systems	5,550
Exempla - Lutheran Medical Center	Medical Services	2,400
National Renewable Energy Laboratory (NREL)	Renewable Energy Research Laboratory	2,300
MillerCoors Brewery Company	Beverage	1,950
CaridianBCT, Inc.	Medical Technology	1,720
Colorado School of Mines	Undergraduate and Graduate Education in Engineering and Technology	1,642
United Launch Alliance (ULA)	Space Launch Systems	1,220
Ball Corporation	Aerospace Manufacturer & Bottling Facility	1,200
CoorsTek	Ceramic Component Manufacturing	1,200
Jefferson County Public Schools	K-12 Education	1,200
Travelers Express/MoneyGram	Financial Services	850
Red Rocks Community College	Undergraduate Education in Technical Fields and Transfer to Four-Year Institutions	840
ServiceMagic	Contractor Referrals	730
Kaiser Permanente	Health Care	680

Labor market information, from Economic Modeling Specialists, Inc., produced for the Colorado Community College System, shows that the largest number of high-paying jobs in the RRCC Service Area in 2009 were in Healthcare Practitioners and technical occupations followed by Business and Financial Operations, Management Occupations, and Architecture and Engineering Occupations. These trends are also found in the target areas and niches set by the Jefferson County Economic Development Plan in Aerospace, Energy, Bioscience, Nanotechnology and Photonics, Tourism, and Consumer Product and Creative Services.

In regard to changes in employment for the service area, Service Occupations were the only occupational category that grew in each county between 2000 and 2009. This category includes healthcare support, protective services, food preparation and service, building and grounds maintenance, and personal care services. Managerial,

Professional, and Administrative Occupations increased in Gilpin and Park Counties, and declined slightly in Jefferson County. This category includes business and financial management, engineering and architecture, lab science and computer science, healthcare practitioners, education, and legal occupations. Office Support Occupations declined in Jefferson and Clear Creek Counties, and increased in Gilpin and Park Counties.

In regard to employment change by industry, Professional, Scientific, Management, and Administrative Services was the only industry category to expand in all the service area counties. Jefferson County also had expansion in Educational, Health, and Social Services as well as Art, Entertainment, Recreation, Accommodations, and Food Services. Park County was the only county with an expansion in Construction and Wholesale Trade. It should also be noted that Park County increased employment in every occupational category except Production, Transportation, and Materials Moving.

In summary, the RRCC service area has undergone several major demographic changes over the past decade. The service area has aged. This has resulted primarily from an increase in older White, not Hispanic residents. At the same time, the service area has become more diverse through a major increase in Hispanic residents, especially those in younger age groups. The increase of Hispanic residents has kept the population of the service area relatively stable, or at least has buffered what would otherwise have been major declines in such critical groups as the school-aged population and working adults in mid-career. Population growth projections for the service area counties suggest modest growth rates in the future. Therefore, it is likely that the trends of the past ten years will continue into at least the foreseeable future.

Occupational and industry growth patterns in our service area indicate the importance of preparing students for service occupations that require strong technical and general educational abilities, such as healthcare support and protective services. We also need to prepare our students for professional careers as healthcare practitioners, business,

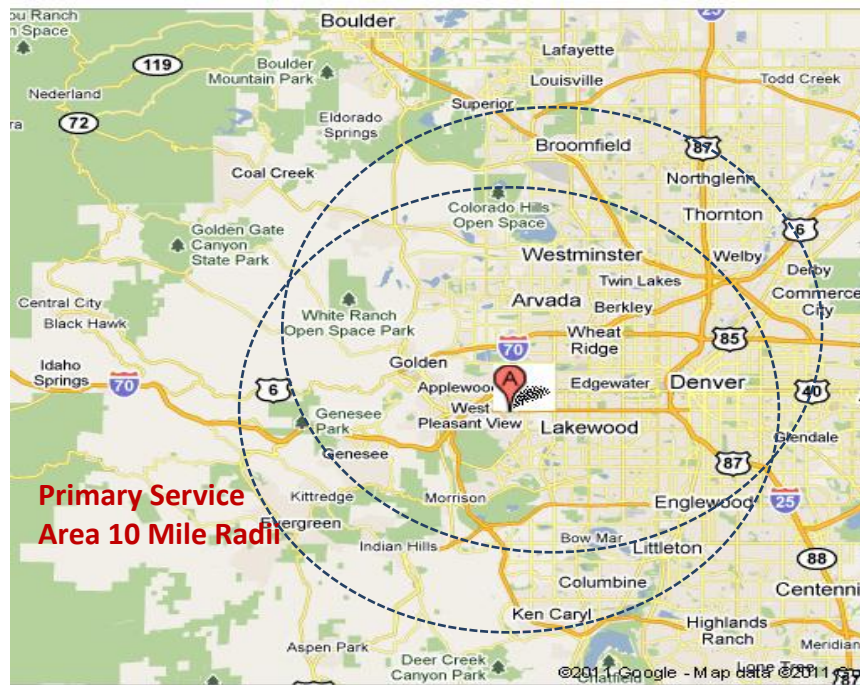
hospitality and finance managers, engineers, and education and social service providers. Many of these students will go on to complete baccalaureate, graduate, and professional degrees. RRCC needs to prepare both types of students to compete in a 21st century labor market and lay the foundation for life-long learning. We must continue to do this through articulation with other colleges and universities, and through continuing education and training that advances the careers of our students and the success of their employers.

The demographic changes over the past decade present a picture of two service areas: an aging, affluent White, non-Hispanic population living in unincorporated suburbs, and another that is less affluent, more diverse, and concentrated in the major municipalities closer to the core metropolitan area. RRCC has the opportunity to bridge these two service areas. The College must be prepared to understand and help an increasingly diverse student body to meet the demand for 21st century skills and knowledge.

This means that our facilities must provide a platform for us to anticipate emerging technologies, changes in the general knowledge and skills required of all students, and new occupational performance expectations. Allied health, protective services, business and administration, and engineering and other high tech professions will continue to grow in importance. RRCC facilities must support programming that prepares students to compete in an increasingly global labor through technical skills and knowledge, and provide the foundation for four-year, graduate, and professional degrees.

RRCC Student Characteristics and Performance Measures

The majority of students who enroll at RRCC are from the service area. Based on Fall 2010 data at least 65% of students by headcount resided within 10 miles of the Lakewood or Arvada campus. Approximately 70% of full time equivalent students (FTE) attended classes on the Lakewood campus, 5% on the Arvada campus, 7% at other sites, and 18% were enrolled online.



It is also worthwhile to observe the 2009 labor force participation rates for the key age groups that provide a large portion of RRCC's enrollment each semester.

County	Total 16-19 Years Old	% Employed	Total 20-24 Years Old	% Employed	Total 25-44 Years Old	% Employed
Clear Creek	572	47.7%	241	76.8%	2,262	87.2%
Gilpin	217	14.3%	255	52.9%	1,458	84.1%
Jefferson	29,707	39.1%	32,179	73.8%	142,871	82.3%
Park	799	45.8%	556	59.0%	4,379	75.3%

Source: U.S. Census, American Community Survey

The employment rates for these age groups suggest that our pool of traditional-aged college students, and our pool of older, returning students, balance both work and school from a very early age. As we know from our student surveys, many also balance work and school with family responsibilities as well. This suggests that the expectations for, appeal and benefit of on-line and alternative learning delivery modalities typical of postsecondary students today also apply to students from our service area. We need to create options for student choice and time, as well as the place and pace of learning.

Over the past five years Red Rocks Community College has undergone dramatic enrollment transformation. Headcount has increased by 42.8% and Full-time Equivalent (FTE) has increased by 51.3%.

<i>Term</i>	<i>Headcount</i>	<i>Semester FTE</i>
Fall 2011	9,541	5,606.28
Fall 2010	9,803	5,842.22
Fall 2009	9,105	5,232.16
Fall 2008	7,603	4,378.96
Fall 2007	7,039	3,993.84
Fall 2006	6,681	3,705.10

As the greater rate of increase in FTE enrollment suggests, the percentage of full-time students increased over the past five years. The average age of students has increased slightly over the past five years from 27 years to 28 years while the largest single age category, 21 to 30 year olds, increased their proportional share of total enrollment from 33.9% in Fall 2006 to 40.5% in Fall 2011. Enrollment has remained evenly divided between men and women over the same period. Sixty-one percent of RRCC students are employed while attending college.

RRCC minority student enrollment has also demonstrated impressive growth over the past five years. The following table also shows that it has also steadily grown as a proportion of total enrollment.

RRCC Headcount by Ethnicity: Fall Semesters

STU_ETHNIC_DESC	Fall 2006	Fall 2007	Fall 2008	Fall 2009	Fall 2010	Fall 2011
American Indian/ Alaskan Native	122	106	95	135	178	176
Asian or Pacific	197	203	215	246	272	308
Black Non-Hispanic	100	144	134	196	235	226
Hispanic - Other	747	802	920	986	1,214	1,170
Other		1		8	15	27
Unknown/Not Reported	335	282	377	223	901	813
White Non-Hispanic	5,180	5,501	5,863	6,807	6,988	6,821
Total	6,681	7,039	7,604	8,601	9,803	9,541
Total Minority	1,166	1,255	1,364	1,563	1,899	1,880
% Minority	17.5%	17.8%	17.9%	18.2%	19.4%	19.7%

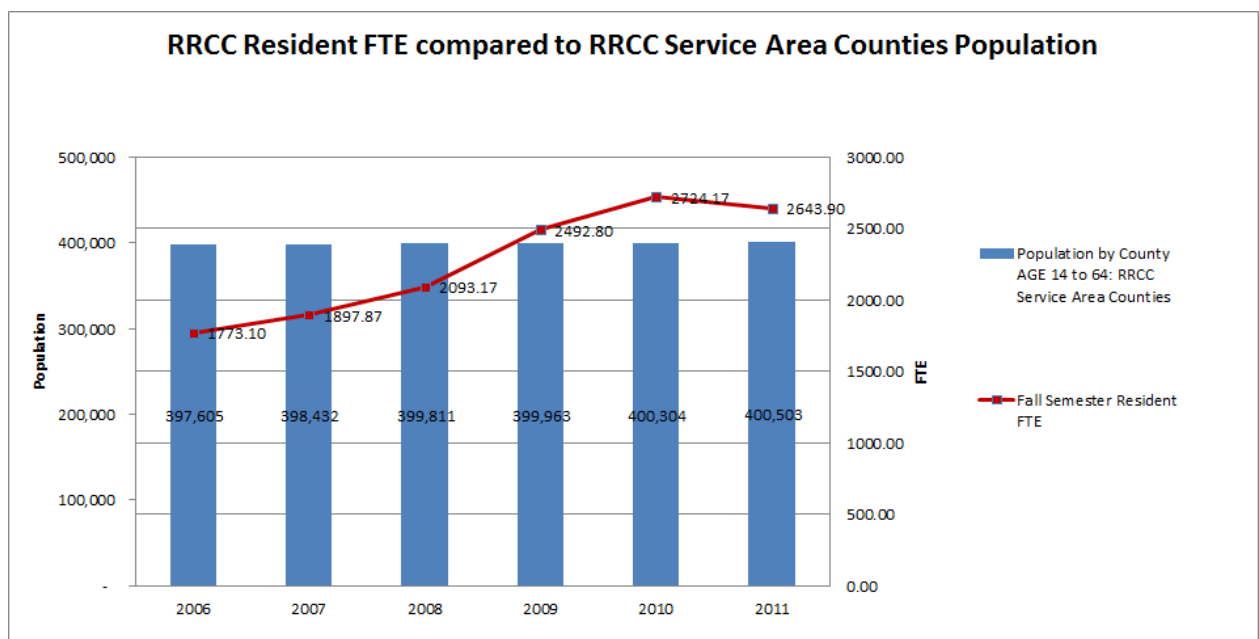
Of the 1,286 degrees and certificates that RRCC conferred in the 2010-11 academic year, 498 (38.7%) were in the health sciences, 405(31.5%) were transfer Associate Degrees, 110 (8.6%) in engineering and related technologies, 90 (7.0%) were in protective services, and 67 (5.2%) were in business and management fields. The remaining 116 awards were distributed across computer and information technology, the performing arts, culinary services, and construction and mechanical fields. These graduates reflect the responsiveness of RRCC to the employment and workforce development needs of the communities that the college serves.

The CCCS Strategic Plan defines the following Key Performance Measures. Red Rocks Community College has performed quite well on all of these key metrics.

- Percent increase in CCCS resident student FTE enrollment compared to the overall statewide percent increase in population from ages of 14 to 64.
 - RRCC has seen 49.11% increase in resident student FTE enrollment between Fall 2006 and Fall 2011 compared to 0.73% increase in service area population (Clear Creek, Gilpin, Jefferson, and Park Counties) between 2006 and 2011.
- Share of CCCS resident students relative to the Colorado population 14 to 64.
 - RRCC has increased the percent share of fall semester resident students relative to the RRCC service area population (Clear Creek, Gilpin, Jefferson, and Park Counties) between Fall 2006 and Fall 2011 from 1.61% to 2.26%.
- Increase in minority enrollment compared to the increase in service area minority population aged 14 to 64.
 - RRCC increased minority enrollment 61.2% between Fall 2006 and Fall 2011 compared to a 13.74% increase in minority enrollment in the service area from 2006 to 2010.

- Share of minority resident student enrollment compared to the service area minority population aged 14 to 64.
 - RRCC has increased the percent share of fall semester resident minority students relative to the RRCC service area population (Clear Creek, Gilpin, Jefferson, and Park counties) between Fall 2006 and Fall 2010 from 1.75% to 2.44%.
- Increase in number of resident transfers compared to the increase in statewide, four-year institution resident enrollment growth.
 - The number of RRCC First-Time Full Time Degree Seeking Cohort Transfer Out students has increased by 41.91% over a five year period compared to a 7.53% increase in Public Four-Year Resident Student FTE Enrollment.

The performance of Red Rocks Community College, and the concurrent need for increased facilities space to serve the communities of western metropolitan Denver, is well illustrated by the following graphic comparison of resident FTE increase to growth in the service area population.



Increasing enrollment over the past five years has also increased the need for remedial education. There has been a slight but steady increase in this student area of need.

First-time, Recent High School Graduates Entering RRCC in the Fall Term

<i>Semester</i>	<i>Total Entering</i>	<i>Total Requiring Remediation in at Least One Subject</i>	<i>% of Total Entering</i>	<i>Total Requiring Remediation in Math, Reading, and Writing</i>	<i>% of Total Entering</i>
Fall 2010	955	473	49.5%	162	17.0%
Fall 2009	961	381	39.6%	119	12.4%
Fall 2008	818	358	43.8%	114	13.9%
Fall 2007	741	324	43.7%	106	14.3%
Fall 2006	933	412	44.2%	130	13.9%

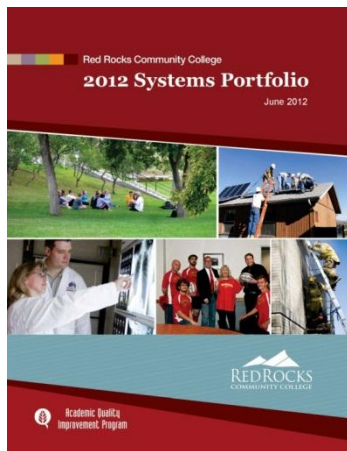
SOURCE: CDHE

The CCCS Strategic Plan specifies an additional key performance measure for students with development needs: an increase in success rates for students in the developmental sequence, both through the developmental sequence and in completion of college level work. RRCC is currently working with a state-wide CCCS task force addressing this performance metric and is in the process of improving student success through early alert, curricular change, support services, and other changes. Data from the 2012 National Community College Benchmarking Project suggests that RRCC has a positive foundation upon which it can build its efforts in this important area.

- The RRCC developmental successful completion rate (“C” grade or better) for developmental mathematics was 70.1%, for developmental English 73.8%, and for Reading 76.7%. This rate placed RRCC at or better than half of the national group of participating community colleges.
- Of the developmental students who successfully completed the developmental sequence, and went on to college level work in mathematics and English, 83.1% successfully completed college-level mathematics (“C” grade or better) and 89.6% successfully completed college-level English (“C” grade or better). This placed RRCC as

doing better than two-thirds of the national group of participating community colleges in mathematics, and better than 86% of the national group of participating community colleges in English.

In June 2012, Red Rocks Community College published the following document describing the plan for Academic Quality Improvement. The entire report can be viewed online at http://www.rrcc.edu/accreditation/pdfs_docs/RRCC_SystemsPortfolio.pdf.



Red Rocks Community College Systems Portfolio, June 2012

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Current RRCC enrollment patterns, when compared to the observed demographic changes and levels of educational attainment, suggest that there is still great growth potential in the service area. This is the case for both younger, first-time college students and older students who are returning to school for a postsecondary credential in the less affluent parts of the service area. At the same time, RRCC will continue to appeal to students in the more affluent areas of the service, particularly the Golden area, by building on its reputation for academic excellence and affordability, particularly for pre-professional and transfer programs in such areas as STEM, pre-engineering, and health care professions.

Student Enrollment and Staff Projections

Historic enrollment on campus (FTE) from 2001 to 2011 serves as a baseline to make enrollment projections for 2012 to 2020 based on population projections. These projections also take the demographic trends in the service area into account. During

the past five years, the combined enrollment on the two campuses has increased from 2,939 FTE to 4,744 FTE, which is an increase of 61%. While it seems unlikely that the current rate of enrollment growth in the college is sustainable during the next 5 years, it is reasonable to assume that enrollment projections will continue to meet or slightly exceed anticipated population growth in the service area. The population projections for the service area counties below support this assumption.

Population Projections, 2000-2040
RRCC Service Area Counties

COUNTIES	Colorado State Demographer's Office Projections							Average Annual Percent Change					
	July, 2010	July, 2015	July, 2020	July, 2025	July, 2030	July, 2035	July, 2040	10-15	15-20	20-25	25-30	30-35	35-40
COLORADO	5,046,990	5,499,618	6,043,504	6,567,980	7,058,019	7,520,178	7,958,167	1.7%	1.9%	1.7%	1.4%	1.3%	1.1%
Clear Creek	9,098	10,033	11,192	12,369	13,513	14,618	15,714	2.0%	2.2%	2.0%	1.8%	1.6%	1.5%
Gilpin	5,453	5,964	6,557	7,165	7,734	8,300	8,850	1.8%	1.9%	1.8%	1.5%	1.4%	1.3%
Jefferson	535,209	557,179	590,327	623,405	650,764	669,357	684,058	0.8%	1.2%	1.1%	0.9%	0.6%	0.4%
Park	16,291	19,714	24,100	29,285	33,404	35,638	36,519	3.9%	4.1%	4.0%	2.7%	1.3%	0.5%

Note: These projections are based on intercensal estimates. The July 2010 forecast is not consistent with exact 2010 census counts.
Source: Colorado State Demographer's Office

The supply of recent high school graduates in our service area has been fairly stable even though Colorado has experienced a demographic “trough” in the number of high school graduates over the past five years. The number of Hispanic graduates has been keeping pace with increases in the Hispanic school-aged population, although Hispanic graduation rates do lag behind White, not Hispanic rates by eleven percentage points for the class of 2011. Although the number of high school graduates is projected to increase for Colorado in the near future, the aging RRCC service area suggests that the supply of recent high school graduates will have little or modest growth in the future.

<i>Year</i>	<i>Total Service Area High School Graduates</i>	<i>Jefferson County Schools – Total Graduates</i>	<i>Jefferson County Schools – Hispanic Graduates</i>	<i>Jefferson County Schools – White, not Hispanic Graduates</i>
2010-11	5,697	5,492	913	4,164
2009-10	5,788	5,580	798	4,827
2008-09	5,701	5,496	732	4,513
2007-08	4,799	5,484	686	4,587

If the current trends continue, the pool of high school graduates in the service area is likely to stay at current levels or even undergo slight declines. The school-age

population and high school graduates will become more diverse and postsecondary competition for these students will intensify. Articulation with our local high schools will take on new importance both as an enrollment management and a program growth strategy. This will result in continuing demand for programs to develop students in high growth occupations, such as allied health, engineering technologies, business, and emergency services. Demand will also increase for general education programs that support these areas, as well as prepare students to transfer to four-year institutions.

Enrollment Projections by Program and by Campus | Student FTE

<i>Academic Areas</i>	FY 2011			FY 2016		
	Lakewood Campus	Arvada Campus	Total On Campus	Lakewood Campus	Arvada Campus	Total On Campus
Arts and Humanities	570.55	50.99	621.54	612.20	54.20	666.40
Communications	495.98	31.11	527.09	513.34	33.07	546.41
Mathematics	495.93	34.05	529.98	537.09	36.20	573.29
Physical/Life Science	553.49	34.12	587.62	593.43	36.27	629.70
Social/Behavior Science	503.88	58.78	562.66	528.62	62.49	591.11
Total Academic Areas	2,619.83	209.06	2,828.89	2,784.68	222.23	3,006.92
<i>Career & Technical Education</i>	Lakewood Campus	Arvada Campus	Total On Campus	Lakewood Campus	Arvada Campus	Total On Campus
Allied Health	170.95	55.69	226.64	193.53	59.20	252.73
Business	181.35	1.00	182.35	195.58	1.06	196.64
Computer Science	266.43	4.40	270.83	285.88	4.68	290.56
Construction/Energy	222.99	16.29	239.28	226.33	17.32	243.65
Education/Early Childhood	72.29	4.02	76.31	75.10	4.27	79.37
Emergency Service	198.96	0.00	198.96	218.47	0.00	218.47
Engineering Graphics	77.76	0.00	77.76	85.44	0.00	85.44
Fine Woodworking	148.31	0.00	148.31	152.01	0.00	152.01
Multi Media & Photography	236.22	0.00	236.22	244.49	0.00	244.49
Outdoor & Physical Education	76.26	6.90	83.16	77.40	7.33	84.74
Physician Assistant	63.75	0.00	63.75	68.40	0.00	68.40
Process Technology	0.00	23.25	23.25	0.00	24.71	24.71
Water Quality Management	88.56	0.00	88.56	94.58	0.00	94.58
Career & Technical Education Total	1,803.82	111.55	1,915.37	1,917.22	118.58	2,035.80
Total all programs	4,424	321	4,744	4,702	341	5,043

Our projected enrollment for on-campus enrollment over the next five years is an increase of 299 annualized FTE, roughly 6% over the base year of 2011-12. This is an annual growth rate of about 1.3% per year. We anticipate the largest program increases

in Allied Health and our Physician Assistant Program, Emergency Services, Engineering Technologies, Business, and Computer Sciences.

Based on these annualized FTE projections, we also developed projections for the planning horizon in Fall 2016. The following table gives the Fall 2011 actual and Fall 2016 projected semester FTE, the unduplicated headcount for each program area, and the unduplicated headcount for each campus.

Lakewood	Fall 2011		Fall 2016	
Area	Semester FTE	On-Campus Headcount	Semester FTE	On-Campus Headcount
Allied Health	95	418	102	448
Arts and Humanities	575	2,579	616	2,761
Business	212	915	227	980
Communications	581	2,780	622	2,976
Computer Science	160	689	171	738
Construction & Energy	202	693	216	742
Education/Early Childhood	51	206	55	221
Emergency Services	188	417	202	446
Engineering Graphics	45	136	48	146
Fine Woodworking	117	234	125	251
Mathematics	506	2,048	541	2,193
Multimedia & Photography	115	412	123	441
Outdoor & Physical Education	68	597	73	639
Physical/Life Sciences	444	1,487	476	1,592
Physician's Assistant	38	60	41	64
Social & Behavioral Science	442	2,109	473	2,258
Water Quality Management	104	224	111	240
Grand Total	3,944	7,371	4,222	7,891

Arvada	Fall 2011		Fall 2016	
Area	Semester FTE	On-Campus Headcount	Semester FTE	On-Campus Headcount
Allied Health	64	183	69	198
Arts and Humanities	46	209	49	226
Business	1	5	1	5
Communications	24	113	26	122
Computer Science	4	22	5	24
Construction & Energy	9	41	10	44
Education/Early Childhood	2	9	2	10
Mathematics	35	145	37	157
Outdoor & Physical Education	7	41	8	44
Physical/Life Sciences	20	74	22	80
Process Technology	14	52	15	56
Social & Behavioral Science	32	173	35	187
Grand Total	258	879	279	949

In addition to projecting enrollment by program area, this facilities master plan also takes staffing patterns, and the resultant space needs, into consideration. The baseline FTE staffing data was taken from the budgeting process prepared by all Colorado public institutions of higher education.

FY11-12 FTE				
TOTAL RRCC	Admin/staff	Faculty	PT Instr	Totals
General Fund	174.05	91.23	311.19	576.47
Auxiliaries	77.85	0.5	5.66	84.01
Grants	<u>9.6</u>	<u>1.6</u>	<u>39.05</u>	<u>50.25</u>
Total	261.5	93.33	355.9	710.73
				710.73

Arvada

	Admin/staff	Faculty	PT Instr	Totals
General Fund	9	3	16	28
Auxiliaries	0	0	0	0
Grants	<u>0</u>	<u>0</u>	<u>0</u>	0
Total	9	3	16	28
				28

Lakewood

	Admin/staff	Faculty	PT Instr	Totals
General Fund	165.05	88.23	295.19	548.47
Auxiliaries	77.85	0.5	5.66	84.01
Grants	<u>9.6</u>	<u>1.6</u>	<u>39.05</u>	<u>50.25</u>
Total	252.5	90.33	339.9	682.73

In our staffing projections, the number of faculty required increased at the same rate as projected enrollment. Staff projections are based on a growth rate one-half the rate of faculty. The Lakewood campus had 88 faculty considered full-time as of Fall 2011. The Arvada campus had three full-time faculty assigned to campus. Arvada classes and lab sessions are also taught by full and part-time faculty assigned to Lakewood as their primary campus. Part-time faculty office space needs were based on an “open plan” with shared workspace and shared computers.

For projection purposes, we are assuming that by the planning horizon in Fall 2016 the Lakewood full-time faculty will increase to 95 while the Arvada full-time faculty assigned to campus will remain at 3. The proposed projects at the end of this plan assume that the construction of new facilities on the Arvada campus would also need to consider the re-assignment of faculty from the Lakewood to Arvada campuses and, consequently, an increase in office, conference, and support space.

An Overview of RRCC Programs, Services, and Organization

Red Rocks Community College offers more than 300 programs and 650 courses leading to two-year Associate's degrees or professional certificates. Red Rocks Community College is accredited by The Higher Learning Commission, North Central Association of Colleges and Schools. The Physician Assistant Program is accredited by the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA).

RRCC served 9,544 students in Fall 2011. Since individual majors for transfer degrees (Associates of Arts and Associates of Science) are not specified, the following table gives the duplicated headcount by instructional program area, based on course enrollment information.

Unduplicated Headcount by RRCC Program Area

Allied Health	718
Arts and Humanities	2879
Business	1037
Communications	3173
Computer Science	827
Construction & Energy	507
Education/Early Childhood	350
Emergency Services	563
Engineering Graphics	172
Fine Woodworking	234
Mathematics	2828
Multimedia & Photography	486
Outdoor & Physical Education	730
Physical/Life Sciences	1614
Physician's Assistant	61
Process Technology	53
Social & Behavioral Science	2499
Water Quality Management	232

These headcount enrollment figures exclude the students served by RRCC at Warren Tech and various high school locations throughout the service area. Innovative partnerships have allowed the College to provide multiple co-enrollment options for Jefferson County high school students to earn up to thirty college credits prior to high school graduation.

RRCC prides itself on academic excellence for all of its programs. However, a few merit special mention, especially since these are at the core of our proposed facilities changes that will enable us to further strengthen these special areas of great significance to our students and the community.

Physician Assistant Program - The College is one of only six community colleges in the country to offer a Physician Assistant (PA) Certificate. The PA program is one of only two in the state of Colorado and the only program that prepares Physician Assistants for general practice. Students have the option of co-enrolling concurrently in a Master's Degree in Clinical Leadership from Regis University or a Master's Degree in Medical Science through St. Francis University.

Associates to Baccalaureate - The Emergency Services Department has developed baccalaureate options for in-service fire fighting personnel through the Associates-to-Baccalaureate initiative with Regis University. Students may transfer up to 90 credits from Red Rocks and graduate with a baccalaureate in Public Administration from Regis University within one year of transfer. The College expects to launch a similar program for law enforcement personnel. Thanks to a grant from the National Science Foundation, the College was part of a statewide initiative to create teacher education programs in Colorado's Community Colleges that, through statewide articulation agreements in early childhood and elementary education, transfer seamlessly to Colorado's public universities.

Workforce Education - The energy industries of Colorado which include power generation, oil exploration and production, and the new and expanding manufacturers of renewable technologies have partnered with Red Rocks Community College to develop and expand new programs at the College. New degree programs created as a result include Industrial Maintenance, and Renewable Energy Technology. Suncor USA Community Investment Program awarded a three year \$300,000 grant to Red Rocks Community College in January 2009 to provide resources for scholarships and training for incumbent workers. In January 2009, Colorado's Governor presented Red Rocks Community College with the institutional award of Excellence in Renewable Energy. In April 2009, Lakewood, Colorado's Mayor presented Red Rocks Community College with the Mayor's Sustainability Award.

Colorado School of Mines - Red Rocks Community College transfers the highest number of students to the Colorado School of Mines (CSM) of any college or university in the country. CSM is a public research university devoted to engineering and applied science. CSM has the highest admissions standards of any university in Colorado and among the highest of any public university in the United States. CSM has determined that Red Rocks Community College general education transfer courses are the curricular equivalent of designated CSM courses and can be applied to the undergraduate requirements in the eight engineering degree programs offered by CSM. Students may co-enroll at Red Rocks Community College and CSM and benefit by paying Red Rocks Community College tuition for the required CSM courses of EPIC 151 and EPIC 251.

The organizational characteristics of Red Rocks Community College are in some ways typical of a comprehensive Colorado community college in the Denver metropolitan area. For example, Red Rocks Community College is a commuter campus and does not have housing. However, the College does have several areas that make RRCC stand out in terms of service to students and the community.

Admissions — Red Rocks Community College is an open-access institution that welcomes anyone 17 years of age or older who can benefit from its instructional programs and courses, including high school graduates, non-graduates, or students at least 16 years old who are currently enrolled in a high school concurrent enrollment program. Students younger than age 17 who are not in a concurrent enrollment program may apply for a waiver of the age requirement through the office of the Vice President for Student Services. Benefit is defined by minimum basic skills assessment test scores.

Student Services — A newly renovated Student Services and Enrollment area was opened for business in 2008. Creating a "one-stop" concept, every service that a student needs to enroll in classes is contained in one area including: recruitment/high school relations, advising, assessment, registration, financial aid, cashiers, and records and transcripts. The area has computer stations for self service student registration, a conference room for meetings, and all the services necessary to help a student successfully enroll in classes. Once enrolled, a student has access to a full range of services to support student success as shown in the following table:

Learning Support	Connect to Success • Free Tutoring • Writing Center/Online Writing Center • Library Services • Office of Disability Services • Online Class Assistance (Desire2Learn) • Foreign Language Lab • English Language/Intercultural Services • GED Pretest and Preparation
Campus Services	Copy Machines • Fax Machine • GLBT Resource Center • Lockers • Student ID Card • Office of Disability Services • Food and Drink • Child Care Services and Resources
Bookstore/General Information	Textbook Information • Bulletin Boards • Bus Service • Campus Closure • Access to Computers for all Students • Fitness Center • Independent Health Insurance Provider Resources • Housing Resources • Insurance for International Students • Learning and

	Resource Center (LARC) • Lost and Found • Office of Disability Services • Recreation • Student Email
Student Employment and Internship Services	Student Employment Services • Internships • Employment Resource Room • Working on Campus • AmeriCorps • Resume Assistance • Career Resources (Career Assessments and Counseling, Choices CIC -Advancer for Adults, Career Development Course)
Student Life and Student Groups	Student Activities • Student Center • Student Project Center • Study Groups • Campus Clubs • Phi Theta Kappa • The Student Voice • How Your Student Fees are Spent
Campus Safety	Campus Police • First Aid • Emergency Services • Criminal Investigations • Ensuring Accessibility • HazMat Coordination • Fingerprinting • Vehicle Battery Jump-starts • Lost and Found • Campus Crime Information • Sex Offender Information • Drug and Alcohol Abuse Prevention/Referral Sources

Parking — At the Lakewood Campus, A lot expansion in 2004 added 462 parking spaces for a total of 1,700 parking spaces on campus. The majority of spaces are clustered in two lots on the east and south sides of campus. The lots are at capacity four days a week, fourteen hours a day. Two overflow lots were created in response to increased enrollment in 2010. These lots, both unimproved areas, added approximately 100 spaces. A bus stop is located at the east entrance and is serviced regularly by RTD. Light rail is scheduled to be operational in 2013 with a stop less than one-half mile away from the Red Rocks Community College campus. The Arvada Campus currently has 196 parking slots by the Main Building and 37 slots on the lower level next to the old Ridge Cafeteria (ISOD) building.

Wellness — Red Rocks Community College does not participate in intercollegiate sports competition and therefore does not have policies related to athletics. The College focuses on health and wellness by offering programs and facilities to students, faculty,

staff, and the community. A new student clinic opened in Fall 2012, initiated and funded through student fees.

Libraries — The Marvin Buckels Library is located on Red Rock Community College's Lakewood campus. Resulting from a recent renovation, the library is located adjacent to the Learning and Resource Assistance Center (LARC) to provide students with convenient and comprehensive academic support. In response to the needs of 21st century learners, the library offers much more than just traditional research help and books. Students have access to a variety of multi-media tools that can be accessed on campus and checked-out by students and faculty, including: digital SLR cameras, electronic readers, lighting kits, video cameras, laptops, video and photo editing programs, calculators, and music recording space and software. The library catalog is digital and provides access to available volumes held on premises and access to multiple databases that provide access to digital sources including digital books and scholarly articles published in peer reviewed journals. The databases can be accessed on and off campus. While the Arvada campus does not hold physical volumes, students are able to access resources through a library loan program and through online access.

Class scheduling — Instructional spaces are scheduled according to departmental preferences. Departments with dedicated lab space such as Construction Technology, Multi-media Graphic Design, and the Sciences schedule their own rooms in accordance with the courses they are offering each semester. Overflow courses or courses that are offered through departments without scheduling preferences are scheduled by staff who oversee the master schedule. Rooms are assigned based on historic course enrollment, with the larger enrollments scheduled in the larger rooms. Due to changes in course offerings once the semester has started, rooms will be re-assigned based on availability.

Facilities maintenance –Red Rocks Community College campus facilities are maintained through the Facility Services department, which includes: Grounds, Housekeeping, Mailroom, and Maintenance personnel who are members of the classified employment system. The Facility Services department has been a leader in moving Red Rocks Community College toward a more sustainable future. From landscaping to cleaning, Facility Services has implemented many environmental and cost savings measures to make the campus more "green".

Red Rocks Community College entered into an energy performance contract with Siemens in 2005. New lighting was installed (T-8 fluorescents) throughout the building, three-stage electronic ignition boilers were installed to replace the original standing pilot boiler and low flow plumbing fixtures, sensor faucets and lighting timers were installed in all rest rooms. The recycling collection program has doubled since 2007 and includes campus-wide bins for collection of cardboard, paper, metal, and glass.

In summary, Red Rocks Community College programs, services, and support are varied and complex in response to the students and communities that RRCC serves. In the next section we will examine the current capacity and utilization of the space that supports these RRCC programs, services, and support. We will also project our space needs, given our current and projected enrollment, to the planning horizon in Fall 2016.

PART THREE – UTILIZATION ANALYSIS

Existing Space on the Lakewood and Arvada Campus

The Lakewood campus is comprised of several distinct areas. These include the East Building, the West Building, the Construction Technology Center, the Environmental Training Center, and a series of six temporary trailers referred to as Annex Buildings. These areas are of unequal size and usability.

Existing Space by Building - Lakewood

<i>Building Name</i>	<i>ASF</i>
ANNEX 1A	936
ANNEX 1A	936
ANNEX 1A	1,144
ANNEX 1A	1,144
ANNEX 1A	1,144
ANNEX 1A	1,144
Construction Technology	28,735
Environmental Training Center	3,696
Lakewood East	79,734
Lakewood West	101,412
Total	220,025

Existing Space Distribution - Lakewood

<i>Space Category</i>	<i>Total ASF</i>
Classroom Space	43,465
Teaching Laboratories	40,283
Open Laboratories	9,176
Office Space	36,875
Library Space	16,003
Assembly and Exhibit	4,592
Other Departmental Space	20,197
Student Center	23,376
Physical Plant	8,710
<i>Existing ASF Included in Study</i>	<i>202,677</i>
<i>RMEC Assigned Space</i>	<i>4,552</i>
<i>Child Care</i>	<i>3,877</i>
<i>Inactive/Conversion ASF</i>	<i>8,919</i>
Lakewood Campus Total ASF	220,025

Lakewood East houses the central administration, enrollment services, the Learning Commons, the Library, business services, the college foundation, academic and administrative information services, human resources, and a number of computer laboratory/classrooms. The main entrance to the campus is located in the East section in proximity to the enrollment services such as admissions, assessment and testing, and the cashier. The recessed position of the main entrance makes it difficult to distinguish from other entrance points to the building and it is confusing for first-time students and visitors to campus to determine where the main entrance to the campus may be found.

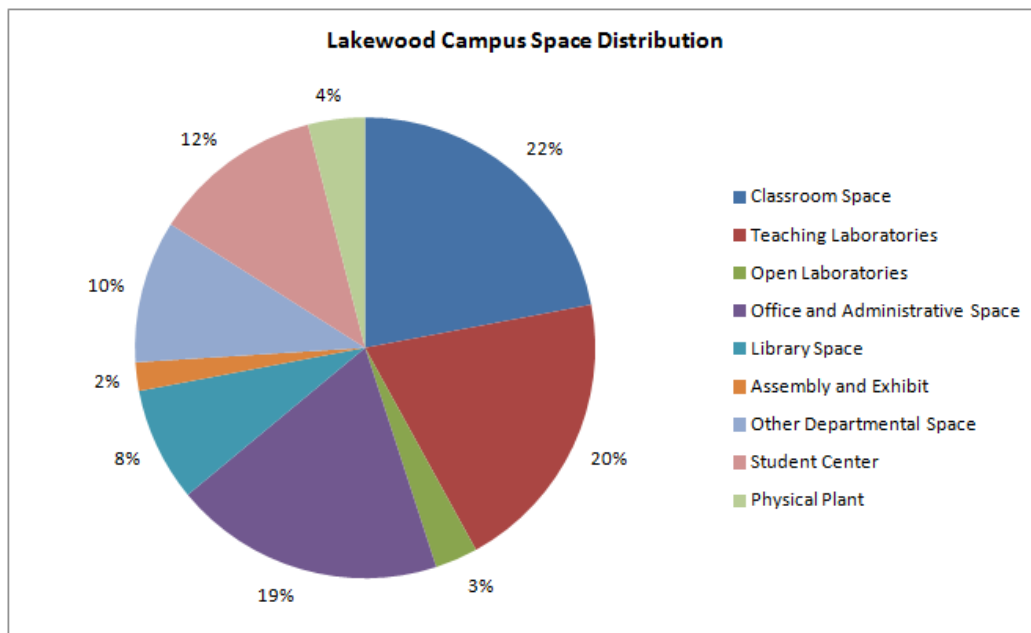
Lakewood West includes most of the campus academic space and faculty offices along with allied health programs and the Physician Assistant program. There is insufficient room for the Physician Assistant program on campus and currently off-campus laboratory space is leased to complement the existing on-campus instructional space. The Rocky Mountain Education Center (RMEC) is also housed in this section of the Lakewood Campus. As an auxiliary enterprise the instructional space for the RMEC is not considered in this utilization study. The staff and faculty, who also support for-credit and continuing education classes for RRCC, are included in the analysis of office and administrative space utilization.

Finally, a community room, the only large assembly space for the entire Lakewood campus, is located on the lower level of the West building area.

The Environmental Training Center (ETC) contains the water quality program, a dance studio, and classrooms. The water quality management program needs more dedicated space and the presence of the dance studio in the ETC illustrates the lack of a physical education facility on campus, leading to placement of these courses anywhere space can be found. In some cases, such as the use of the student fitness center, a fairly appropriate match can be found. In other cases, such as fencing classes, the emergency services fire truck must be moved so that classes can be held in a dimly lit garage space with industrial heaters.

The Construction Technology Building (CTC) includes several lab-intensive career and technical programs as well as facility maintenance and the mail room. In Fall 2011, several areas of the CTC were inactive due to life safety and other issues. The college has since been converting some of these areas into usable classroom and laboratory space, most notably the new HVAC labs which will allow the program to increase enrollment through meeting labor market demand in the service area as well as offering students the opportunity to train on the latest technology.

The six temporary trailers known as the Annexes are used primarily for academic instruction. While included in this utilization study, the quality of these structures for instruction is far from optimal and all are well past their useful life as “temporary” measures to add needed space.



Instructional space (Classrooms, Laboratories, and Open Labs) on the Lakewood campus accounts for about 45% of the space distribution. Nineteen percent is devoted to offices and administrative space. The percentage devoted to office and administrative space masks the cramped conditions on the Lakewood Campus for faculty and staff offices where “doubling up” in office space designed for one person is a common practice. The student center and library use 12% and 8% respectively. The remaining 16% is divided between supporting space for instructional and student support programs (10%), physical plant (4%), and assembly and exhibit space (2%).

The Arvada campus includes a newer building and a portion of an old dining hall formerly belonging to the Ridgeview State Home. A portion of the old facility was renovated for use by the Process Technology program and includes two classrooms, a science lab, a large equipment lab, and office space. A small area of this old facility is also used as storage for facilities maintenance. Most of the building, 17,380 of the 22,115 total ASF, is unfinished and unusable.

Existing Space by Building - Arvada

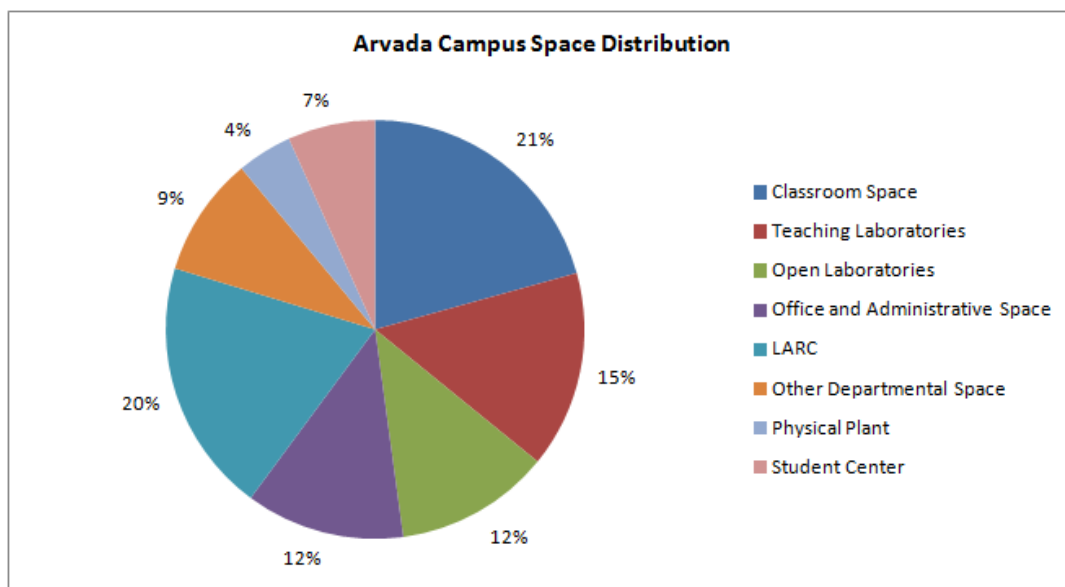
Building Name	ASF
Main Building	16,313
ISOD-Ridge Home	22,115
Total	38,428

Existing Space Distribution - Arvada

Space Category	Total ASF
Classroom Space	4,347
Teaching Laboratories	3,200
Open Laboratories	2,525
Learning and Resource Center (LARC)	4,121
Office Space	2,585
Other Departmental Space	1,951
Physical Plant	896
Student Center	1,423
Existing ASF Included in Study	21,048
ISOD Inactive/Conversion ASF	17,380
Arvada Campus Total ASF	38,428

The newer building contains a community room, three classrooms, and two labs. The community room, with seating for 50, doubles as a classroom. The necessity of using this large space in this fashion results in lower classroom utilization rates than would be the case if this space were configured in line with the other classrooms.

Instructional space on the Arvada campus (Classrooms, Laboratories, and Open Labs) accounts for 48% of the space distribution. Twelve percent is devoted to offices and administrative space. The Learning Assistance and Resource Center (LARC), student center, and other supporting space for instructional and student support programs make up the remaining 40%.



Capacity Analysis for the Lakewood and Arvada Campus

In Fall 2011, the Lakewood campus had a total of 63 classrooms. These classrooms averaged 22 ASF per station, reflecting the quantity and quality of various furniture types used. The CCCS Standard for classroom workstations is 22 ASF per station. Three of the six categories below met or were close to meeting this standard. The classroom average for the Lakewood campus met the standard.

On the average, the classroom utilization is 36 weekly room hours at 64% student station occupancy. This is somewhat lower than the CCCS standard of 42 hours per week at 68% occupancy.

Lakewood Classroom Utilization Analysis by Capacity Summary

<i>Room Capacity</i>	<i>No. of Rooms</i>	<i>Average Room Size</i>	<i>Average ASF per Station</i>	<i>Average Section Size</i>	<i>Average Weekly Room Hours</i>	<i>Student Station Occupancy %</i>
20 and under	9	500	37	9	30	64%
21-25	3	470	19	15	21	62%
26-30	14	668	24	20	37	72%
31-35	25	612	18	20	39	68%
36-40	8	788	21	20	47	53%
40 and greater	4	980	19	26	46	55%
Total	63	648	22	18	36	64%

In Fall 2011 there were 35 rooms classified as laboratories on the Lakewood campus. The average laboratory on the Lakewood campus exceeded the CCCS standard of 28 hours per week at 80% occupancy. Areas such as allied health, the sciences, computer disciplines, and multimedia graphic design, are currently at capacity. Teaching laboratories assigned to career and technical areas such as construction and electrical, have lower utilization rates when compared to standard. In some cases, such as HVAC and Physical Education, utilization rates were lowered due to unavailability of appropriate space for these programs.

Lakewood Laboratory Utilization Analysis by Capacity Summary

<i>Department</i>	<i>No. of Rooms</i>	<i>Average Room Size</i>	<i>Average ASF per Station</i>	<i>Average Section Size</i>	<i>Average Weekly Room Hours</i>	<i>Student Station Occupancy %</i>
Allied Health	5	867	33	26	32	98%
Art	3	1480	65	10	28	61%
Biology	2	926	39	25	27	86%
Chemistry	3	860	40	20	27	87%
Computer Information Sys	2	796	30	15	33	90%
Computer -Aided Design	1	660	20	13	38	84%
Computer Networking	1	788	35	16	34	85%
Construction Technology	1	841	35	15	13	61%
Dance	1	952	80	10	33	76%
Electricity Indust & Com	2	1206	50	13	14	65%
Emergency Services	1	923	27	24	30	71%
Fine Woodworking	2	1250	46	15	41	56%
Heating, Vent & Air Cond	1	1250	46	13	16	37%
Multimedia Graphics/Photo	4	642	26	16	44	83%
Physical Education	1	1553	46	24	24	46%
Physics	2	1160	37	22	30	86%
Theatre	2	560	72	14	18	70%
Water Quality Management	1	748	62	15	16	60%
Total	35	970	43	17	28	87%

In Fall 2011, the Arvada Campus had six classrooms. The classrooms average 24 ASF per work station. As mentioned above, utilization is lowered by the use of a 50 seat community room as a classroom. Even with this usage, the average classroom utilization was 31 hours per week at 65% occupancy. A greater mix of program types at Arvada would likely increase student station occupancy.

Arvada Classroom Utilization Analysis by Capacity Summary

<i>Room Capacity</i>	<i>No. of Rooms</i>	<i>Average Room Size</i>	<i>Average ASF per Station</i>	<i>Average Section Size</i>	<i>Average Weekly Room Hours</i>	<i>Student Station Occupancy %</i>
21-25	1	580	24	16	25	51%
26-30	4	535	26	18	33	68%
40 and greater	1	1029	21	18	34	35%
Total	6	715	24	17	31	65%

Arvada Laboratory Utilization Analysis by Capacity Summary

Department	No. of Rooms	Average Room Size	Average ASF per Station	Average Section Size	Average Weekly Room Hours	Student Station Occupancy %
Chem\Bio\Process Tech	1	1050	44	16	27	76%
Computer Info Systems	1	974	37	17	30	72%
Diagnostic Medical Imaging	1	612	122	18	28	93%
Radiologic Technology	1	564	113	18	38	82%
Total	4	800	79	17	31	77%

The four Arvada laboratories, with average utilization at 31 hours per week at 77% occupancy, for all intents and purposes met the CCCS standard. The allied health labs are very highly utilized.

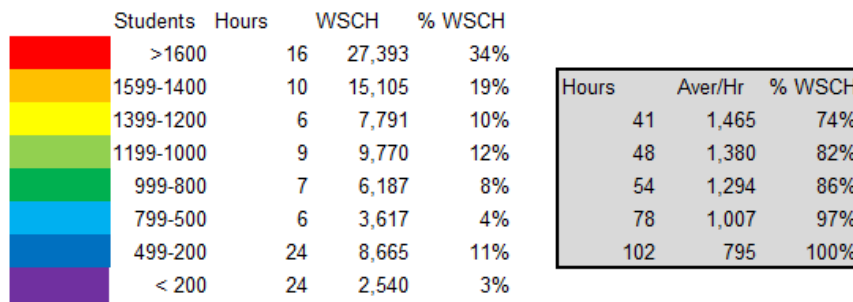
On the Lakewood Campus, course enrollment is fairly consistent on Monday through Thursday. Enrollment peaks between 9:00 and 10:00 am, between 2:00 and 3:00 PM, and between 6:00 and 7:00 pm. Peak hourly enrollment exceeds a headcount of over 1,800 students during the Monday through Thursday prime enrollment period. The average daily enrollment during these four days is over 1,000.

Students on Campus

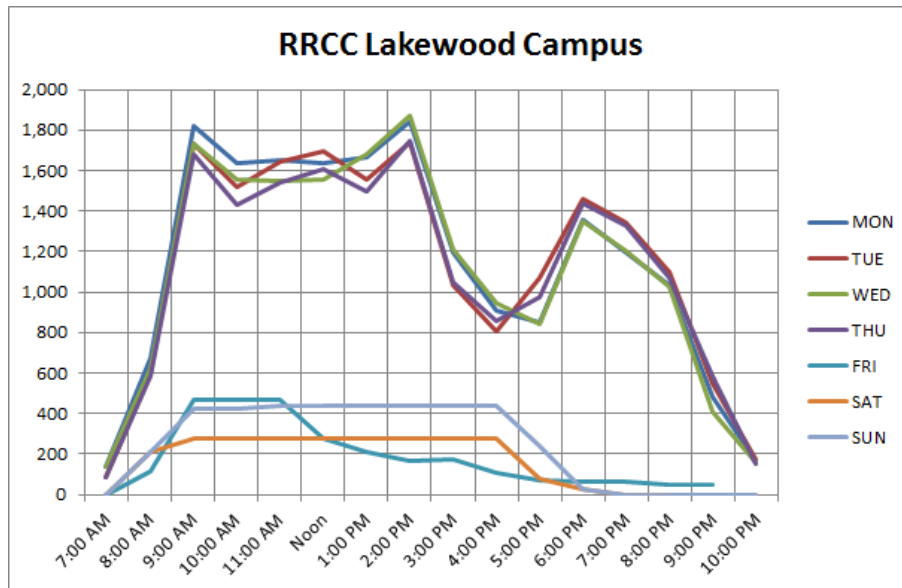
Red Rocks Community College - Lakewood Campus
Fall 2011

Time		MON	TUE	WED	THU	FRI	SAT	SUN	Total WSCH	Average WSCH
7:00 AM	7:59 AM	134	86	134	86	0	0	0	440	63
8:00 AM	8:59 AM	675	599	625	584	113	213	213	3,022	432
9:00 AM	9:59 AM	1,817	1,734	1,736	1,683	471	275	422	8,138	1,163
10:00 AM	10:59 AM	1,635	1,520	1,554	1,432	471	275	422	7,309	1,044
11:00 AM	11:59 AM	1,649	1,643	1,551	1,542	471	275	436	7,567	1,081
Noon	12:59 PM	1,639	1,696	1,556	1,611	278	275	436	7,491	1,070
1:00 PM	1:59 PM	1,666	1,555	1,680	1,500	210	275	436	7,322	1,046
2:00 PM	2:59 PM	1,844	1,741	1,874	1,745	168	275	436	8,083	1,155
3:00 PM	3:59 PM	1,194	1,034	1,213	1,046	173	275	436	5,371	767
4:00 PM	4:59 PM	912	805	944	856	105	275	436	4,333	619
5:00 PM	5:59 PM	851	1,067	843	976	72	78	239	4,126	589
6:00 PM	6:59 PM	1,357	1,457	1,348	1,438	61	27	27	5,715	816
7:00 PM	7:59 PM	1,197	1,345	1,200	1,328	61	0	0	5,131	733
8:00 PM	8:59 PM	1,037	1,100	1,026	1,069	50	0	0	4,282	612
9:00 PM	9:59 PM	482	551	409	583	50	0	0	2,075	296
10:00 PM	10:59 PM	166	177	156	154	10	0	0	663	95
Total		18,255	18,110	17,849	17,633	2,764	2,518	3,939	81,068	11,581
Average		1,141	1,132	1,116	1,102	173	210	328	-----	-----

Data excludes Online, Independent Study, and Internships/Clinicals



In contrast, the Friday through Sunday block is far less utilized. RRCC is currently working on improving utilization during Friday through Sunday in several ways. Efforts to improve course scheduling, to develop a new scheduling grid, to analyze high demand classes and student class needs, and expand weekend college offerings are all under way.



Enrollment on the Arvada Campus peaks between 9:00 and 10:00 am, and between 6:00 and 9:00 PM on Tuesdays and Thursdays. Enrollment on Monday and Wednesday shows a similar pattern but at lesser enrollment levels. Peak hourly enrollment is on Tuesday and Thursday evenings at approximately 150 students. Enrollment on Friday morning duplicates Monday and Wednesday morning, but then it drops to a much lower level in the afternoon. The Arvada campus is no open for classes on Saturday or Sunday.

Students on Campus

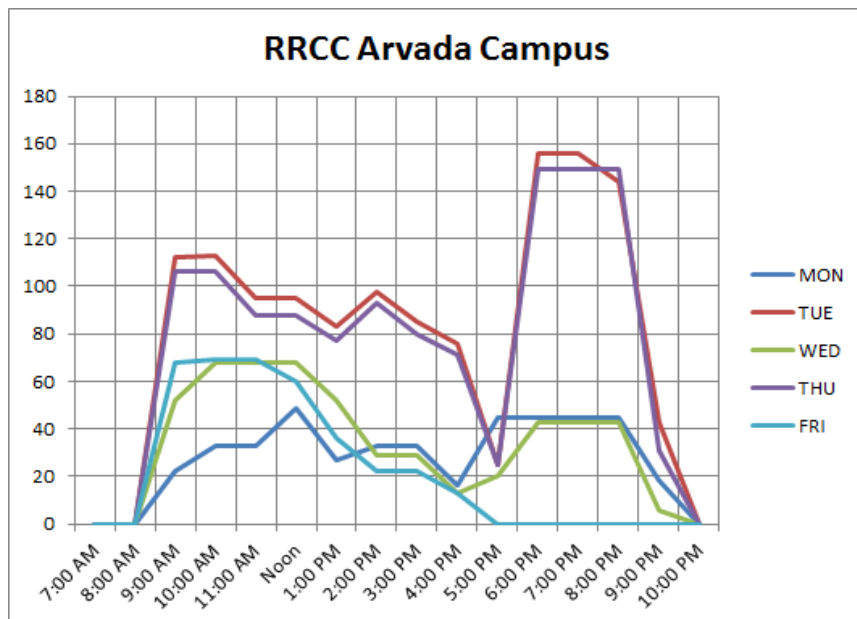
Red Rocks Community College -Arvada Campus
Fall 2011

Time		MON	TUE	WED	THU	FRI	Total WSCH	Average WSCH
7:00 AM	7:59 AM	0	0	0	0	0	0	0
8:00 AM	8:59 AM	0	0	0	0	0	0	0
9:00 AM	9:59 AM	22	112	52	106	68	360	51
10:00 AM	10:59 AM	33	113	68	106	69	389	56
11:00 AM	11:59 AM	33	95	68	88	69	353	50
Noon	12:59 PM	49	95	68	88	60	360	51
1:00 PM	1:59 PM	27	83	52	77	36	275	39
2:00 PM	2:59 PM	33	98	29	93	22	275	39
3:00 PM	3:59 PM	33	85	29	80	22	249	36
4:00 PM	4:59 PM	16	76	13	71	13	189	27
5:00 PM	5:59 PM	45	25	20	25	0	115	16
6:00 PM	6:59 PM	45	156	43	149	0	393	56
7:00 PM	7:59 PM	45	156	43	149	0	393	56
8:00 PM	8:59 PM	45	144	43	149	0	381	54
9:00 PM	9:59 PM	18	43	6	31	0	98	14
10:00 PM	10:59 PM	0	0	0	0	0	0	0
Total		444	1,281	534	1,212	359	3,830	547
Average		28	80	33	76	22	-----	-----

Data excludes Online, Independent Study, and Internships/Clinicals

	Students	Hours	WSCH	% WSCH
	>140	6	903	24%
	139-110	2	225	6%
	109-80	11	1,017	27%
	79-60	10	694	18%
	59-40	11	505	13%
	39-20	15	420	11%
	< 20	25	66	2%

Hours	Aver/Hr	% WSCH
29	98	74%
40	61	87%
55	48	98%
80	21	100%



Utilization Analysis for the Lakewood and Arvada Campus

The following utilization analysis addresses the question of how well RRCC is using the space it currently has and whether it requires more or less space to deliver its programs.

There are three important factors in measuring **classroom and lab space** utilization: (1) The number of students in (2) a space with so many workstations and a certain amount of assignable (usable) square feet for each workstation used for (3) a certain period of time each week. These three factors are combined into a coefficient for each classroom or lab called a Space Factor. This coefficient, when multiplied by the total weekly student contact hours (WSCH) that a classroom or lab is used, provides a comparable utilization rate for all classrooms or all labs. Whether that utilization rate indicates a full or under-utilized classroom or lab depends on comparison to a standard.

CCCS guidelines for determining space needs for **Classrooms and Teaching Laboratories** include the following.

- Classroom use: 22 Assignable Square Feet (ASF) per each work station scheduled 42 hours/week with station occupancy at 68%. The general formula used to calculate the Space Factor is $22/(42 \cdot .68) = .77$. This Space Factor is multiplied by the Weekly Student Contact Hours (WSCH) generated in a classroom to determine the Guideline ASF in the Fall 2011 base year and the Fall 2016 target year.
- Teaching Laboratory use: ASF per work station that varies according to discipline scheduled 28 hours/week with station occupancy at 80%. The general formula used to calculate the Space Factor divides the discipline ASF per work station by the amount $(28 \cdot .80)$. This Space Factor is multiplied by the Weekly Student Contact Hours (WSCH) generated in a

Teaching Laboratory to determine the Guideline ASF in the Fall 2011 base year and the Fall 2016 target year.

The amount of space for each classroom or lab is calculated using these standards. The total amount of this space is added for classrooms and for laboratories. This total Guideline ASF is then compared to the actual space inventory for each kind of space to see if a surplus or deficit exists.

To determine the RRCC Teaching Laboratory Space Factor, we identified 16 different kinds of teaching laboratory space distributed among the 39 teaching laboratories on the Lakewood and Arvada campuses. The following breakdown shows how we used the CCCS Guidelines for average station size by teaching lab type to determine an average teaching laboratory station size ASF for RRCC.

1. Computer Science – $37 \text{ ASF} \times 5 \text{ Labs} = 185 \text{ ASF}$
2. Health Sciences – $100 \text{ ASF} \times 7 \text{ Labs} = 700 \text{ ASF}$
3. Art (average) – $58 \text{ ASF} \times 3 \text{ Labs} = 174 \text{ ASF}$
4. Biology (Wet Lab) – $65 \text{ ASF} \times 2 \text{ Labs} = 130 \text{ ASF}$
5. Biology (Dry Lab) – $55 \text{ ASF} \times 1 \text{ Lab} = 55 \text{ ASF}$
6. Chemistry and Physics – $65 \text{ ASF} \times 5 \text{ Labs} = 325 \text{ ASF}$
7. Dance (Performing Arts) – $100 \text{ ASF} \times 1 \text{ Lab} = 100 \text{ ASF}$
8. Electrical (Building Trades) – $210 \text{ ASF} \times 2 \text{ Labs} = 420 \text{ ASF}$
9. Emergency Services – $100 \text{ ASF} \times 1 \text{ Lab} = 100 \text{ ASF}$
10. Wood Shop – $60 \text{ ASF} \times 2 \text{ Labs} = 120 \text{ ASF}$
11. Heating, Ventilation, & Air Conditioning – $210 \text{ ASF} \times 1 \text{ Lab} = 210 \text{ ASF}$
12. Construction Technology – $210 \text{ ASF} \times 1 \text{ Lab} = 210 \text{ ASF}$
13. Multimedia Graphics – $75 \text{ ASF} \times 4 \text{ Labs} = 300 \text{ ASF}$
14. Physical Education – $100 \text{ ASF} \times 1 \text{ Lab} = 100 \text{ ASF}$
15. Theatre – $100 \text{ ASF} \times 2 \text{ Labs} = 200 \text{ ASF}$
16. Water Quality Management (Wet Lab) – $65 \text{ ASF} \times 1 \text{ Lab} = 65 \text{ ASF}$

Adding all the amounts of ASF yields 3,394 ASF total. With 39 labs on the two campuses, the RRCC average station size assignable square footage = $3,394/39 = 87.03$. When this is entered into the formula to determine the space factor, we have the formula $87.03/(28*.80)$ which equals a Space Factor of 3.89. This Space Factor is multiplied by the Weekly Student Contact Hours to calculate Guideline ASF for teaching laboratories. We also used this standard for the planning horizon in Fall 2016.

Other types of space use different standards that are applied to various data, such as the number of FTE students or the staffing pattern for the college.

The Council of Educational Facilities Planners International (CEFPI) defines **open lab space** as laboratories not used on a regularly scheduled basis, such as labs with discipline specific software, computer labs with internet access, and instructional software, or other specialized workstations. Open lab space at both the Lakewood and the Arvada campuses covers space that is not used on a regularly scheduled basis and is open for student use. The most common type of usage is for individual student learning, experimentation, observation, or practice. Examples include computer laboratories, language laboratories, and tutorial and testing facilities.

There are no CCCS published guidelines for this type of space. The space requirements in this study were calculated by a Space Factor multiplied by the fall FTE. CEFPI recommends 3.7 for a campus equal to or greater than 3,000 FTE. The calculation for Lakewood is $3.7*3944 = 14,592$ Guideline ASF for Fall 2011. Given the increasing numbers of RRCC students with support and remedial needs, we also used this standard for the planning horizon in Fall 2016.

CEFPI guidelines recommend a factor of 4.9 for a campus of less than 3,000 FTE. The calculation for the Arvada campus is $4.9*258 = 1,264$ Guideline ASF for Fall 2011. As in the case of the Lakewood campus, given the increasing numbers of RRCC students with

support and remedial needs, we also used this standard for the planning horizon in Fall 2016.

In terms of **offices** and associated service space, published Commission on Higher Education (CCHÉ) guidelines were used to calculate space needs. The guidelines are as follows.

Staffing Type	Office ASF
President	300
Vice President/Dean	250
Department Chair/Manager	200
Faculty	130
Supervisor	130
Technical/Paraprofessional	120
Clerical/Secretarial	100

These standards were applied to the RRCC staffing patterns by campus for Fall 2011 and for Fall 2016 with the following results.

Lakewood Staffing and Space - Fall 2011

	FTE	Guideline	Guideline ASF
Administrative			
President	1.00	300	300
Vice Presidents/Non Acad Dean	5.00	250	1,250
Directors and Managers	19.25	200	3,850
Supervisors	23.25	130	3,023
Technical/Paraprofessional	37.60	120	4,512
Clerical/Secretarial	88.90	100	8,890
Total	175.00		21,825

	FTE	Guideline	Guideline ASF
Academic			
Vice President/Dean	6.00	250	1,500
Full-time Faculty	93.33	130	12,133
Part-time Faculty	355.90	26	9,253
Technical/Paraprofessional	32.25	120	3,870
Clerical Support	48.25	100	4,825
Total	535.73		31,581

Arvada Staffing and Space - Fall 2011

	<i>FTE</i>	<i>Guideline</i>	<i>Guideline ASF</i>
Administrative			
President	0	300	0.00
Vice Presidents/Non Acad Dean	0	250	0.00
Directors and Managers	1	200	200.00
Supervisors	0	130	0.00
Technical/Paraprofessional	2	120	240.00
Clerical/Secretarial	2	100	200.00
Total	5		640

	<i>FTE</i>	<i>Guideline</i>	<i>Guideline ASF</i>
Academic			
Vice President/Dean	1	250	250.00
Full-time Faculty	3	130	390.00
Part-time Faculty	16	26	416.00
Technical/Paraprofessional	0	120	0.00
Clerical Support	3	100	300.00
Total	23		1356

Lakewood Staffing and Space - Fall 2016

	<i>FTE</i>	<i>Guideline</i>	<i>Guideline ASF</i>
Administrative			
President	1.00	300	300
Vice Presidents/Non Acad Dean	5.00	250	1,250
Directors and Managers	21.25	200	4,250
Supervisors	23.25	130	3,023
Technical/Paraprofessional	39.60	120	4,752
Clerical/Secretarial	94.50	100	9,450
Total	184.60		23,025

	<i>FTE</i>	<i>Guideline</i>	<i>Guideline ASF</i>
Academic			
Vice President/Dean	6.00	250	1,500
Full-time Faculty	99.83	130	12,978
Part-time Faculty	380.80	26	9,901
Technical/Paraprofessional	32.25	120	3,870
Clerical Support	48.25	100	4,825
Total	567.13		33,074

Arvada Staffing and Space - Fall 2016

	<i>FTE</i>	<i>Guideline</i>	<i>Guideline ASF</i>
<i>Administrative</i>			
President	0	300	0
Vice Presidents/Non Acad Dean	1	250	250
Directors and Managers	2	200	400
Supervisors	0	130	0
Technical/Paraprofessional	1	120	120
Clerical/Secretarial	3	100	300
Total	7		1,070
<i>Academic</i>			
Vice President/Dean	1	250	250
Full-time Faculty	4	130	520
Part-time Faculty	17	26	442
Technical/Paraprofessional	1	120	120
Clerical Support	3	100	300
Total	26		1,632

Academic offices include those for full-time faculty, academic deans, adjunct instructors, and support staff. Department chair offices were treated as regular full-time faculty since the chair circulates among faculty. For part-time faculty, a suite allocation and service center arrangement is under development. CEFPI guidelines for part-time faculty recommend one-half the full-time faculty space allocation, or 60 ASF, for each FTE part-time faculty. Given the planned suite allocation, a factor of about 1/5th the Guideline, or approximately 26 ASF per part-time FTE, was used to determine the office space required for part-time faculty. The analysis indicates a deficit for academic office space as well as associated service space.

In terms of **administrative offices** and associated service space, the same CCEH guidelines were utilized in the analysis of space required to accommodate current staffing. This category includes the President, non-academic vice presidents, non-academic deans and executive directors, directors and managers, technical and professional staff, and clerical support. The analysis indicates that there is a significant

deficit in office space and shared service space for printing, assembling, distribution of documents, and general meeting and conference space.

In terms of **library space**, the original study by Paulien and Associates, utilizing guidelines published by the Association of College and Research Libraries (ACRL), indicated that recent increases in enrollment justified additional library space. This is also the case for the current study.

Guideline ASF for the Lakewood Campus was calculated based on the following factors.

Library Collections

- Fall 2011 Books and Serials at 42,000 volumes * 1.00 = 42,000 volumes;
- Fall 2016 Books and Serials at 46,200 volumes * 1.00 = 46,200 volumes;
- Fall 2011 Unbound Serials at 80 volumes *.50 = 40 volumes;
- Fall 2016 Unbound Serials at 160 volumes *.50 = 80 volumes;
- Total Fall 2011 volumes = 42,080 volumes;
- Total Fall 2016 volumes = 46,280 volumes.

ASF per volume is calculated at .10 per volume to determine Guideline Collection Space. This yields 4,208 ASF for Fall 2011 and 4,628 for Fall 2016.

The number of study stations for the Lakewood library is calculated at 10% of on-campus headcount. In Fall 2011 the Guideline number of stations were 737 and based on projected enrollment will be 789 in Fall 2016. At 20 ASF per study station, this indicates Guideline ASF of 14,740 for Fall 2011 and 15,780 for Fall 2016.

For Fall 2011, combining the Study Station and Collection ASF comes to 18,948 ASF. An additional 7.5% of the 18,948, or 1,421, is added as Service Space bringing the total Fall 2011 Guideline to a total of 20,369 ASF.

For Fall 2016, combining the Study Station and Collection ASF comes to 20,408 ASF. An additional 7.5% of the 20,408, or 1,530, is added as Service Space bringing the total Fall 2011 Guideline to a total of 21,938 ASF.

Alternative approaches to this space deficit, such as laptop wireless connections as a substitute for increasing space, are under consideration.

The Learning and Resource Center (LARC) on the Arvada campus serves as a de facto library for the campus in addition to supplemental instruction. Although the Arvada LARC does have some collections, guideline ASF was determined by using only the library study station formula. The number of study stations for the Arvada LARC is calculated at 10% of on-campus headcount. In Fall 2011 the Guideline number of stations were 87 and based on projected enrollment will be 94 in Fall 2016. At 20 ASF per study station, this indicates Guideline ASF of 1,740 for Fall 2011 and 1,880 for Fall 2016.

In terms of **assembly and exhibit space**, traditionally 5,600 ASF has been allocated for community colleges. CEFPI guidelines suggest that more space would be appropriate for the Lakewood Campus, including a “core space of 5,000 ASF for assembly, plus 1 ASF/FTE for exhibit space (3,944 ASF) The community room and the adjacent “pre-function space”, which was classified as “gallery” space in the recent facility space inventory, was included in the space analysis.

However, the location of this space, and the configuration of the space, does not satisfy the needs of the college and the community it serves. Ideally, this space would be readily accessible to the public, on an expanded schedule basis, with appropriate pre-function and gallery space, with closer proximity to food service and public parking.

The Arvada Campus has a space designated as a “Community Room” that was used as assembly and exhibit space in previous studies. However, this room is used primarily as a classroom and the Arvada Campus has no true assembly and exhibit space similar to the Lakewood Campus.

In terms of **physical plant** and associated service space, traditionally the calculation for community colleges has been based on total assignable square footage times a factor of 0.04. Based on this CEFPI guideline, the data indicates that sufficient space is available. However, the quality of this space in “temporary” Annex buildings that have outlived their usefulness is very questionable.

The **Student Center** space category, for both the Lakewood and Arvada campuses, refers to a collection of functional space types that are currently distributed around the campus, rather than concentrated in one area as might be found in a Student Union arrangement elsewhere. These functions include food service, a bookstore, a lounge, recreation space, meeting space, student government and club space, and related student service space categories.

In Fall 2011, the Lakewood Campus had 7,897 ASF in food service space. The Arvada Campus does not have food service but does have two student commons areas with vending machines for a total of 1,423 ASF. These common areas also serve the purpose of student meeting and lounge space.

In Fall 2011, the Lakewood Campus had a 2,680 ASF Fitness Center which is also used for Physical Education Classes. Lakewood student lounge and meeting space came to 11,480 ASF while student government and club space accounted for 1,190 ASF. The Arvada Campus does not have any recreational or fitness center space.

The CEFPI guideline calculation for food service combines dining and serving station preparation space with 30% preparation space. Combining these on the Lakewood Campus for Fall 2011 comes to 4 ASF per FTE for a guideline total of 15,776 ASF.

The CEFPI guideline for Lounge Space is 2.5 ASF per FTE. This calculation results in 9,860 guideline ASF for the Lakewood Campus in Fall 2011.

The CEFPI guideline for recreational space is 0.5 ASF per FTE, or a minimum of 1,000 ASF. Applying this to the Lakewood Campus in Fall 2011 we have a guideline of 1,972.

Finally, The CEFPI guideline for meeting room space in two-year colleges is 2 ASF per FTE, or a minimum of 1,000 ASF. Note that the guideline differentiates this type of space from conference space which is typically restricted to the occupants of an office suite or administrative area. When this guideline is applied to the Lakewood Campus for Fall 2011, the result is a guideline of 7,888 ASF. This space is especially important in a two-year commuter school such as RRCC. Students need meeting space on campus to meet, study, and conduct co-curricular activities for student development.

The total amount of guideline space for the Lakewood Campus in Fall 2011 comes to 35,496 ASF. The comparable space guideline for Arvada for Fall 2011 would be 2,322 ASF. This same method was used to generate guideline space for Lakewood and Arvada in the Fall 2016 planning horizon.

Other departmental space includes the Lakewood Campus Learning Commons, central technology spaces, media production, lounge areas assigned to academic or administrative departments (such as the Welcome Center and Information Desk), and locker facilities for allied health and other programs. The diversity of space types under this category have worked against the development of any kind of recognized guideline system. The method used in the previous two studies used 2 ASF per on-campus

student headcount to generate guideline space for this category. This analysis also used 2 ASF per on-campus student headcount both for the Fall 2011 baseline and the Fall 2016 planning horizon.

**Campuswide Space Needs Analysis
Red Rocks Community College**

	2011			2016		
	Existing ASF	Guideline ASF	Surplus/ (Deficit)	Existing ASF	Guideline ASF	Surplus/ (Deficit)
Lakewood Campus		FTE = 3944			FTE = 4222	
SPACE CATEGORY						
Academic Space						
Classroom & Services	43,465	36,652	6,813	43,465	39,201	4,264
Teaching Labs & Services	40,283	61,252	(20,969)	40,283	65,614	(25,331)
Open Labs & Services	9,176	14,592	(5,416)	9,176	15,621	(6,445)
Academic Offices & Services	20,596	31,581	(10,985)	20,596	33,074	(12,478)
Academic Space - Subtotal	113,520	144,077	(30,557)	113,520	153,510	(39,990)
Academic Support Space						
Admin. Offices & Services	16,279	21,825	(5,546)	16,279	23,025	(6,746)
Library	16,003	20,369	(4,366)	16,003	21,938	(5,935)
Assembly & Exhibit	4,592	8,900	(4,308)	4,592	9,822	(5,230)
Physical Plant	8,710	8,107	603	8,710	8,107	603
Other Department Space	20,197	14,742	5,455	20,197	15,782	4,415
Academic Support Space Subtotal	65,781	73,943	(8,162)	65,781	78,674	(12,893)
Auxilliary Space						
Student Center	23,376	35,496	(12,120)	23,376	37,998	(14,622)
Auxilliary Space - Subtotal	23,376	35,496	(12,120)	23,376	37,998	(14,622)
CAMPUS TOTAL	202,677	203,738	(50,839)	202,677	270,182	(67,505)
Surplus (Deficit) Guideline						
Academic + Academic Support ASF/FTE	179,301	218,020	(38,719)	179,301	232,184	(52,883)
2010 CCCS Guideline: 55 ASF/FTE - Main Campus	45	55		42	55	

Academic space in Fall 2011 on the Lakewood campus had a major deficit - 38,719 ASF - that will grow to 52,883 ASF by the planning horizon in Fall 2016. The largest deficit was in teaching laboratories followed by academic offices and services. Instructional areas with teaching laboratory space already at capacity, such as allied health and sciences, will be far in excess of capacity by the planning horizon.

Academic support space on the Lakewood campus is currently running a deficit of over 8,000 ASF. This will increase to over 12,000 ASF by the planning horizon. The two largest single categories are administrative offices and services and the library. As

discussed above, the assembly and exhibit space for the college is currently inadequate both in terms of the amount and quality of the space. Measures need to be taken to make this space a more accessible and welcoming interface between the college and the community.

The student center has a space deficit that will grow from 12,120 ASF in Fall 2011 to 14,622 ASF by Fall 2016. The deficit reflects the lack of resources for student study, meeting, and co-curricular activities that are critical for student development at an urban commuter campus such as RRCC.

The Lakewood campus as a whole has a current space deficit of 50,839 ASF that will grow to 67,505 ASF by Fall 2016.

**Campuswide Space Needs Analysis
Red Rocks Community College**

	2011			2016		
		FTE = 258			FTE = 279	
SPACE CATEGORY	Existing ASF	Guideline ASF	Surplus/ (Deficit)	Existing ASF	Guideline ASF	Surplus/ (Deficit)
Arvada Campus						
Academic Space						
Classroom & Services	4,347	2,610	1,737	4,347	2,819	1,528
Teaching Labs & Services	3,200	4,174	(974)	3,200	4,504	(1,304)
Open Labs & Services	2,525	1,264	1,261	2,525	1,367	1,158
Academic Offices & Services	1,808	1,356	452	1,808	1,632	176
Academic Space - Subtotal	11,880	9,404	2,476	11,880	10,322	1,558
Academic Support Space						
Admin. Offices & Services	777	640	137	777	1,070	(293)
Learning and Resource Center	4,121	1,740	2,381	4,121	1,880	2,241
Physical Plant	896	841	55	896	841	55
Other Department Space	1,951	1,758	193	1,951	1,898	53
Academic Support Space Subtotal	7,745	4,979	2,766	7,745	5,689	2,056
Auxilliary Space						
Student Center	1,423	2,322	(899)	1,423	2,510	(1,087)
Auxilliary Space - Subtotal	1,423	2,322	(899)	1,423	2,510	(1,087)
CAMPUS TOTAL	21,048	16,705	4,343	21,048	18,521	2,527
Surplus (Deficit) Guideline						
Academic + Academic Support	19,625	14,383	5,242	19,625	16,011	3,614
ASF/FTE	76	56		70	57	
2010 CCCS Guideline: 55 ASF/FTE - Main Campus						

Academic space on the Arvada campus shows a surplus in both Fall 2011 and for the planning horizon in Fall 2016. However, as noted in the capacity analysis, the teaching laboratories on the Arvada campus are already at capacity in Fall 2011 and will have a space deficit of 1,304 ASF by Fall 2016. Academic offices and services are approaching full capacity and will reach capacity over the planning period.

Academic support space on the Arvada campus is currently running a surplus of about 2,766 ASF. This will decrease to about 2,000 ASF by the planning horizon. The Learning Resource Center (LARC) on the Arvada campus serves as a de facto library for the campus in addition to supplemental instruction. The current space allocation to the Arvada LARC would be justified with increased enrollment growth if there were other spaces on campus to encourage students to remain and study there.

As in the case of the Lakewood campus, student space for meeting, studying, and group activities and clubs is insufficient. The Student Center at Arvada currently has a deficit of 899 ASF that will increase to 1,087 ASF by Fall 2016. Without study space, meeting space, or food service, increased student center space is a critical need that needs to be addressed. The facility needs new space that provides students with the opportunity to stay on campus to do academic work and participate in activities that promote student development.

The Arvada campus as a whole has a space surplus of 4,343 ASF that will decrease to 2,527 ASF by Fall 2016.

The above utilization analysis supports similar conclusions found in the previous two utilization efforts. These include the following findings.

- The Lakewood is currently operating with a major space deficit. This deficit will become severe by Fall 2016, even at the modest growth rates assumed. This

deficit is not spread equally across all programs. Laboratory space deficits in critical programs, and their accompanying general education courses, will become particularly severe by the planning horizon.

- The Arvada Campus lacks the instructional and student support space to provide optimal utilization of the existing facilities. The use of a community room for classroom space is a prime example of this. Neither will the existing facilities, at the center of the growth for the RRCC service area, provide the capacity to address future enrollment growth. The current programs attract a student population that is primarily evening.
- The Arvada campus is well-suited to the construction of a new building. This facility will allow programs in health-related professions and emergency services to be relocated from the Lakewood Campus. A new facility on the Arvada Campus for these types of programs could be built to address the cramped conditions that currently exist on the Lakewood campus. Relocation of these programs would also provide an opportunity for reallocation of space on the Lakewood Campus to provide for better program synergies and adjacencies.
- By relocating high growth programs to the Arvada Campus, such as Allied Health and the Physician's Assistant programs, and constructing a new facility on campus for these programs, higher and better use of all facilities will be realized.
- The availability of instructional space on the Lakewood campus would become exacerbated if, as planned, the "temporary" annex buildings on the west side of campus were demolished. These "temporary" buildings, on the west side, which have exceeded their useful life, include the grounds shop, annexes 1-6, and storage containers.

- The Lakewood Campus allied health and science teaching laboratories are at capacity or exceed it with utilization rates at or in excess of 28 hours per week at 80% student station occupancy. The laboratories are overcrowded and most are outdated and functionally obsolete. STEM initiatives and transfer courses will require additional science laboratory facilities of a contemporary design.
- Over the years the Lakewood Campus program organization and adjacencies have deteriorated. As programs have been developed, they have been placed in areas of the campus where there was available space. This lack of organization regarding program adjacencies contributes to missed opportunities for synergies and space efficiency.
- Space accessed by the general public and the campus community, such as the largest meeting room on the Lakewood Campus known as the Community Room, is embedded deep within the existing Lakewood Campus facilities. Many patrons are discouraged from attending functions at the College due to the distance to the parking facilities and the challenge of way-finding these public spaces.
- Due to the lack of basic space on the Lakewood Campus, contemporary learning environments do not exist, except in selected areas. Because of the commuter characteristics of the student demographic, collaborative learning spaces are needed for group learning activities to support and enhance the academic experience of the students.
- During the highest occupancy times in the day, parking at the Lakewood Campus can be an issue. The RTD light rail stop being constructed at the entry to the campus will not have parking space and will act as an offload/upload point only. Pedestrian access from the light rail stop to the Lakewood Campus building will need to be created to assist in a direct connection to the campus buildings for

pedestrians, with the anticipation of increased light rail use by students, faculty, and staff, and the correlative reduction of cars on campus.

PART FOUR – CURRENT FACILITIES CONDITION AND SITE CHARACTERISTICS

An assessment of campus facilities was done between 2004 and 2011. Current Replacement Value of existing buildings is approximately \$50 million, excluding land and site improvements. Current deferred maintenance is estimated to be approximately \$13.6 million. Considering the depressed economy in the State, and the lack of funds for controlled maintenance, it seems likely that deferred maintenance may be significantly higher.

The following report was submitted to State Buildings in October 2011:

Building Name	Gross SF	Current Replacement Value	Date Built	Date of Facility Audit	Facility Condition Index	Deferred Maintenance
Arvada Campus	20,000	\$3,722,400	2001	2005	98%	\$ 74,448
Arvada Campus Cafeteria	23,384	\$3,750,000	1963	2004	45%	\$ 2,051,250
Construction Technology	33,841	\$4,303,826	1973	2009	54%	\$ 1,979,760
Environmental Training Ctr	3,333	\$416,092	1988	2005	65%	\$ 145,632
Dance Studio	1,035	\$91,710	2006	2006	85%	\$ 13,757
Grounds Shop	2,400	\$60,000	1973	2004	82%	\$ 10,800
Main Bldg - East Wing	131,795	\$16,761,407	1973	2005	71%	\$ 4,911,092
Main Bldg - West Wing	156,124	\$20,418,044	1976	2011	79%	\$ 4,287,789
Storage Building	2,560	\$188,640	1995	2004	64%	\$ 67,910
Temporary Bldg 1	1,000	\$50,000	1969	2004	65%	\$ 17,500
Temporary Bldg 2	1,000	\$50,000	1969	2004	65%	\$ 17,500
Annex 3	1,650	\$94,850	1990	2004	85%	\$ 14,228
Annex 4	1,650	\$94,850	1990	2004	85%	\$ 14,228
Annex 5	1,650	\$94,850	1990	2004	85%	\$ 14,228
Annex 6	1,650	\$94,850	1990	2004	85%	\$ 14,228
Total	383,072	50,191,519	Average		73%	\$ 13,634,349
Note: Highlights added by Author			Estimated Backlog			\$ 6,553,869

On the Lakewood campus, the last assessment of the “temporary” annex buildings was in 2004. A walk through visual inspection of these structures indicates that these buildings have exceeded their useful life. They lack adequate heating and air conditioning systems and toilet facilities. They are deemed inadequate and inappropriate for current instructional programs. The Grounds Shop has also exceeded its useful life and the Storage Bldg. seems inappropriate to the context and future

development of the campus. Therefore, demolition of these structures is recommended.

Lakewood Campus – West Area



Annex 1



Annex 2



Annex 3 & 4



Annex 5 & 6



Grounds Shop



Storage Bldg.

Lakewood Campus Site

The original campus development was completed in 1973-1976, including the East Wing, West Wing, and the Construction Trades Center (CTC). The East and West Wings were separated by a gulch, or natural drainage swale, which was spanned by a bridge structure, which houses food service and dining facilities. A metal building was erected northwest of the main campus to accommodate Grounds Maintenance. Prior to

construction of the original campus, two “temporary” wood framed structures (Annexes 1 & 2) were constructed on the west side of the site, and are still in use.

In 1988, the Environmental Training Center (ETC), which accommodates the Water Quality Management program, was constructed to the north of the main campus. In 1990, four additional temporary wood framed structures (Annexes 3-6) were constructed on the west side of the site. In 1995, another wood framed structure was added to the west side of the site (Storage Bldg.).

Between 1994 and 1999 major additions and renovation were completed on the main campus. The Library and Learning Assistance Resource Center (LARC), was added to the south of the East Wing, providing a new south entrance to the campus. The Student Center was added south of the West Wing. Then, a second addition was added to the south to accommodate the Rocky Mountain Education Center (RMEC), and Emergency Services (Law Enforcement Academy, Fire Sciences, and EMT) training.

During this period, Child Care facilities were expanded on the east side, including outdoor play areas. In 2006, a metal clad, wood framed structure was located adjacent to the ETC, providing a Dance studio. The building inventory includes approximately 354,000 gross square feet (220,000 assignable square feet).

The original campus provided parking to the east and south of the main buildings. As the campus expanded, additional parking lots were added in a stair step manor up the hillside to the south.

Primary access to the campus is from the 6th Avenue frontage road, which runs parallel to the freeway. Arbutus Drive provides the east boundary to the campus. A secondary access connects the campus to Union Blvd. via Second Avenue. In 2013, a light rail stop is scheduled to be completed on the 6th Avenue frontage road.

Land Use

To the west of the campus there is single family residential development. The adjacent homes were developed during the 1970's. To the east of the campus there is multi-family residential development, which was developed in 1995-2005. To the south, the land is owned by Jefferson County Public Schools. The Warren Tech Center was constructed in the 1970's. Additional secondary educational facilities have been added to the site in recent years.

Topography

The site slopes from the south downward to the north. As previously noted, a small gulch, or natural drainage swale, runs between the east and west wings of the main building. The two wings are connected by an enclosed bridge structure. To the south and east of this site, the U. S. Army Corps of Engineers constructed a series of ponds with earthen dams to provide control for storm water from the Green Mountain area. No portion of the campus is located within a 100-Year Flood Plain.

ALTA/topographic surveys were completed between 1994-1999 in conjunction with major additions to the campus.

Soil Conditions

Geotechnical investigations were completed between 1994-1999 for major additions on campus.

Circulation Systems

Arbutus Drive is the main access to campus from an intersection with the 6th Avenue South service road. The street curves up from the service road and the first entrance to the campus leads vehicles to the parking lot adjacent to the East Entrance. The second entrance to campus is a round-about, which accesses short-term visitor and accessible parking spaces as well as the main parking lots for the campus.

Vehicular access around campus is confusing and lacks continuity. Parking lots located near the Construction Technology portion of the main building are accessed through other parking areas. Way-finding for vehicles exists, but access could be more clearly identified.

Pedestrian access is non-existent between the main building and the Environmental Training Center. Exterior pedestrian connections between the various parts of the main building are not contiguous. Access to the East Entrance from parking lots is appropriate. Walkways from other parking areas to the entrances are limited and often non-existent.

Utility Systems

Gas, sewer, water, electrical, and telecommunications have not significantly been modified since the last master plan. The water line enters the campus site from a point along Arbutus Drive. Water lines move around the south side of the buildings and enter near the main entrance and several other points. The water line wraps around the Construction Technology Building and then proceeds to the Environmental Technology Building, where it terminated. In October 2011 construction was completed to extend the water line to loop back to Arbutus Drive.

The capacity of the existing systems is adequate to provide for the existing facilities. The utilities are also believed to be sufficient to provide for the recommended capital improvement projects, but additional detailed planning will need to include evaluations of the utilities and their capacity, particularly for power and bandwidth requirements.

Storm Water Management

The previous Master Plan (May 2001) includes a graphic illustrating the slope and drainage of the Lakewood Campus site. As there have not been any significant changes to the site, the previous Master Plan's assessment of Storm Water Management is

relevant to the current plan. Please see the May 2001 Master Plan for the graphic. The following information is per the graphic.

The site contains slopes of between zero (0%) and over eight (8%) percent. The parking lots and building sites have slopes between zero (0%) and over eight (8%) percent. Around these areas the site slopes at eight (8%) percent or more. The site slopes downward to the north toward the 6th Avenue access road.

Green Space / Athletics, Parks, Recreational Fields, Open Space

The Lakewood Campus includes formal landscape such as manicured lawns, shrubs, trees, and flowers, as well as prairie landscape. The formal landscape occurs around the buildings and parking areas. Prairie landscape comprises the remainder of the site, much of which is steeply sloped.

Recreational areas include tennis courts located near the main entrance and a multipurpose field located near the east entrance on Arbutus Drive used for club sports.

An amphitheater and walking path are located between the Main Buildings and the Environmental Training Center along Arbutus Drive on the eastern side of campus.

Assessment of the Current Campus Aesthetics

The Lakewood Campus includes a mega-structure, several temporary trailers, and the Environmental Training Center. The mega-structure includes the East and West Buildings as well as the Construction Technology Building. There are also several smaller structures on the campus used for storage.

The East Building was constructed in 1973 and the West Building in 1976. An addition to the West Building was completed more recently for the Health Professions and Emergency Services programs. An addition to the East Building for the Library, Learning

Assistance Resource Center (recently renamed the “Learning Commons”), Welcome Desk, and main entry were constructed more recently. The Construction Technology Building was added in 1973. The Environmental Training Center was built in 1988 with an addition for a dance studio completed recently.

The older buildings are concrete structure with brick facades. The windows are narrow and the overhangs are deep. Newer additions incorporate expanses of glass with metal details. Architectural gestures such as the brick wall and column framing the building entry, as shown on the image, *West Building Addition*, are more commonly found on the newer construction.

Arvada Campus Site

The Arvada campus, which lies just north/west of the intersection of I-70 and Kipling, has state-of-the-art "smart" classrooms and offers a variety of courses from Anthropology to Speech. The campus also offers general education core courses and basic-skills courses in math and English. Many of our health science programs are also located at this facility.

The Learning Commons is the centerpiece of the building, housing the computer commons, assessment, online support, library services, tutorial services in math writing and basic skills, free computerized pre-GED testing, career resources, study areas and Internet access. Students can receive advising, register for classes and receive financial aid information in one convenient location.

Access to the campus is provided from Ridge Road to Miller Street from the south, Kipling to 56th Place from the east, or 58th Avenue to Oak Street from the north. Bus access to the site is available on RTD Route 100. Future Light Rail access will be available on the Gold Line, with a station planned near the intersection of Kipling and Ridge Road.

The new building was completed in 2001 on the northern portion of the campus, along with parking. The existing facility includes approximately 16,313 ASF (20,000 GSF). In addition, approximately 4,735 ASF has been remodeled in the original Ridge Home Dining Facility, on the southern portion of the site, which has approximately total 23,384 GSF.

On the Arvada campus, assessment of the Ridge Home Dining Facility (Arvada Campus Cafeteria) indicates that the building is in poor condition (FCI=45%) and deferred maintenance exceeds \$2 million. Continued use of the building will call for major renovation to enable the space to accommodate program growth in either current areas or for possible transfer from the Lakewood campus.

Arvada Campus - Ridge Home Dining Facility



Land Use

The area surrounding the campus is zoned for “mixed use”. To the south, several of the original Ridge Home structures still exist. To the north and west, recent development includes single family and multi-family residential development. North of 56th Avenue, a conservation zone has been developed with a recreation center, and play fields.

Topography

A water storage tank is located on the northwest boundary of the campus, on the ridge of the hill. The campus slopes downward from north to south.

Soils

A geotechnical investigation was completed prior to construction in 2001. Information is available from Facilities Management.

Circulation Systems

Vehicular access is from Miller Street, which is just off of Ridge Road near Kipling Street. Pedestrian access is via city sidewalks along Miller Street. The interior of the campus does not have formal sidewalks or pathways for pedestrians.

Parking and vehicular access is to the perimeter of the campus. There are no roads within the interior of the campus. Circulation from one building to the other occurs via city streets.

There are three (3) parking areas on campus. One is located to the north of the Main Building. Another is immediately adjacent to the Main Building. The third is located adjacent to the old Dining Facility Building. There are 196 parking spaces on the campus currently.

Utility Systems

Utilities on the Arvada Campus are provided by regulated utility providers. The capacity of the existing systems is adequate to provide for the existing facilities. The utilities are also believed to be sufficient to provide for the recommended capital improvement projects, but additional detailed planning will need to include evaluations of the existing utilities and their capacity.

Storm Water Management

The storm water management system for the Arvada Campus uses the topography of the site to direct collection. Water is channeled through the site to the city's storm water drainage system.

Green Space / Athletics, Parks, Recreational Fields, Open Space

The interior of the campus is open space and is predominately grass areas. This campus does not have recreational or athletic fields.

Assessment of the Current Campus Aesthetics

The Arvada Campus' Main Building was built in 2001. The Main Building is a modern-style consisting of materials including reddish masonry block and glass. The building's linear and curved form compliments the existing rolling site. The glass façade frames views of the mountains. Metal details such as overhangs over the entrances compliment the other materials.

The second building on the site is the old Ridge Home Dining Facility. The building, constructed in 1963, is representative of the architecture of that period. What were the kitchen areas of the one-story building is primarily concrete frame structure with red brick. The dining area is concrete structure with a metal and glass façade.

The landscape is manicured between the parking areas and the building. The remainder of the site is primarily natural grass seed meadow with a portion maintained as lawn.

In conclusion, there are opportunities for improving existing facilities and possible construction of new ones on both the Arvada and Lakewood campus sites. The age and condition of facilities on both campuses suggest the pressing need for new facilities resources. The characteristics of the sites do not present any major barriers to developing these new resources.

PART FIVE – THE CAPITAL IMPROVEMENT PROJECTS TO ADDRESS SPACE NEEDS

Throughout the facilities planning process, faculty, staff, and students helped to develop planning solutions through meetings and open forums. A number of issues and observations were the result. These findings, along with data gathering and analysis, have guided the capital improvement planning process. They are listed below by each reference campus.

Arvada Campus

- Due to the types of program offerings and enrollment levels, the Arvada campus is primarily an evening population.
- The Arvada Campus has a more transient student population; students don't just hang out. In part, this may be due to the lack of casual lounge, student center space, and food service on the Arvada Campus.
- Satellite components of Enrollment Services are envisioned at the Arvada Campus, but the Lakewood Campus will continue to be the nucleus of these functions.
- Elements of a more comprehensive campus, such as student center space and dedicated physical plant space, do not exist.

Lakewood Campus

- The Lakewood Campus is considered to be the more comprehensive campus.
- The Learning Commons, which includes math tutoring, writing center, and Connect to Success/tutoring services, is supported by professional staff and part-time faculty. The location is away from academic offices and therefore may not receive as much support from full-time faculty.
- The library and the Learning Commons are very welcoming spaces for students.
- The community room is not large enough for the events and the location of columns inhibits sight lines.
- The main entrance near Enrollment Services lacks a clear architectural identity.

- Parking and vehicular way-finding are issues.
- Exterior pedestrian circulation is fragmented.
- Technology and furniture in the classrooms are not consistent.
- Some functions at the Lakewood Campus are a patchwork, meaning that space has been occupied as it is available rather than in accordance with opportunities for space synergy and appropriate location of services. Examples include:
 - The community room is in the lower level and is not easily accessible from a primary entrance;
 - Central administrative functions (President, Human Resources, Marketing and Communications, Planning and Institutional Research, and the Foundation) are in the East Building, but Instructional Services (including the Vice President for Instruction) are located in the West Building. Greater synergy could be gained if these functions were located in closer proximity.
 - A dance studio was constructed at the Environmental Training Center, which is distant from the other performing and visual art spaces.
 - Academic programs such as Multi-media Graphic Design, are located in the lower level of the West Building and such space could be a showcase for the campus if it were in a more prominent location.
- Some services are appropriately located.
 - Enrollment Services is in a good location near the designated front door to campus.
 - Child care is immediately located near the east entrance with adjacent drop off/pickup and playground areas.
 - Student center space is located between the two food service options and in proximity to academic spaces in the West Building.
- Casual gathering and lounge spaces are not sufficient throughout campus. Such spaces could serve as connecting points.

- The lobby of the main entrance where the welcome desk is located was described as sterile, not very welcoming, and perceived as a transitional space rather than a place of vibrancy and community.
- There are not a sufficient number of group study rooms in the library.
- There are no collaborative learning spaces outside of the library.
- The campus was appropriately sized when the number of students was lower.
- The “Bridge” between the East and West Buildings is a “choke point” and serves as a chasm between the buildings.
- Signage is apparent, but not always current. This causes confusion as the labyrinth of spaces can be challenging to navigate.
- A sufficient number of meeting rooms do not exist. More spaces that can seat 15 to 20 people and more than 50 people are needed.
- Seating in the dining room is limited to four-person cafeteria tables and needs more contemporary seating options.
- There are wonderful views of the mountains that could be highlighted if adequate gathering space could be positioned to take advantage of these views.

These problems, issues, and strengths, in combination with the space needs identified in the foregoing sections of this plan, have been translated into Capital Improvement Projects to resolve facility requirements for Red Rocks Community College. The physical response to space needs are representative of an interactive process between faculty, staff, and students to identify appropriate, justifiable, and realistic solutions. The following projects reflect the values, mission, and vision of Red Rocks Community College within the context of the Colorado Community College System (CCCS) and the Colorado Department of Higher Education (CDHE).

During implementation, each project will consider:

- The operating capacity of programs during implementation;
- Future maintenance and operations impact;

- Compliance with CCCS space utilization ratios;
- Integration of academic and information technology planning; and
- Means to implement Executive Orders D0011 07 and C0012 07 related to the greening of state government.

Existing Capital Improvement Projects

Two Capital Improvement Projects related to this Facilities Master Plan have already been approved by the CCCS Board and are presently being implemented.

The first project is to **upgrade information technology infrastructure** on the Lakewood Campus. This project will replace and upgrade network switches and routers, replace existing cabling, improve wireless coverage and provide backup power. This includes relocation of the server room.

As part of this project, Red Rocks Community College (RRCC) will be upgrading to voice over IP as part of the Colorado Community College System initiative. RRCC has had an assessment performed in the summer of 2011 by Swanson Rink.

This project was of sufficient urgency that it required immediate prioritization. The RRCC Lakewood Campus was constructed from 1971 to 1975. It's telecom infrastructure consisted of untwisted, 2 pair, telephone cable distributed through T66 blocks mounted in custodial closets located in or near men's bathrooms. Since that time, the location of additional wiring closets to support the evolution of telephones and computers resulted in 37 separate closets located in areas that are not desirable or ideal.

Likewise, the Lakewood campus data center location was chosen during the 1980's mainframe, serial communications era because it was adjacent to the main instructional computer lab. However, the data center is not centralized or in close proximity to the central utility plant of the campus.

The estimated cost to upgrade the information technology infrastructure on the Lakewood Campus is as follows.

Estimated Cost

Land Acquisition	none	\$0
Construction		\$1,253,000
Site Development	none	\$0
Professional Services		\$165,258
Data and Communications	included	\$0
Furnishings and Equipment		\$367,207
Contingency		\$198,385
	Total	\$1,983,850

A second project currently under implementation involves improvements to the RRCC **Water Distribution Training Center**. The project is divided into three phases.

- Phase I (completed in 2010) – Olsson Associates was retained by the State of Colorado (State) to prepare a conceptual engineering study to determine the feasibility of building a water distribution system training center on the grounds of the Environmental Training Center at Red Rocks Community College (RRCC). The long-term goals of the project were to:
 - Provide a training facility to support an overall education program for public water system operators;
 - Contribute to the goal of bringing public water systems into compliance with regulatory requirements;
 - Improve public health protection by promoting sustainable drinking water quality management practices; and
 - Provide the learning environment for the public water system operators to upgrade and maintain their skills and knowledge.

- Phase II (completed in 2011) - Construction of exterior training areas including a meter vault, leak detection field, and pipe tapping and meter installation area.
- Phase III (under construction)- Renovation of the existing building, and construction of a new 5,200 square foot slab-on-grade building addition including two lecture classrooms, one larger laboratory/classroom, restroom improvements, and trench demonstration area, as well as the completion of the site infrastructure work.

The estimated cost for each phase:

Phase I	Grant funded by the State of Colorado	\$ 40,000
Phase II	Grant funded by the State of Colorado	\$ 157,500
Phase III	Cash funded by Red Rocks	\$ 2,400,488

The following are the Capital Improvement Projects we propose to address facility requirements for Red Rocks Community College.

Capital Improvement Project 1 - Arvada Campus Health Sciences Building

The goal of this project is to provide academic and support space for programs to be transferred from Lakewood – Emergency Medical Technicians, Fire Science, Law Enforcement Academy, Health Careers, Holistic Health, Physician’s Assistant, Nursing Assistant, RN Refresher, Medical Office Technology, Medical Assisting, Phlebotomy, Reflexology, and associated Core Academic Programs. In addition, some existing spaces on the Arvada Campus may require renovation to accommodate these programs and the development of new programming. The transfer of programs to Arvada will allow us to renovate or add to existing space on the Lakewood campus. Movement of these programs will open up approximately 30,000 ASF on the Lakewood Campus.

The following two tables present an impact analysis of what would happen in the planning horizon semester, Fall 2016, if we do move the programs listed above.

Campuswide Space Needs Analysis
Red Rocks Community College
Impact of Proposed Program Moves to Arvada Campus From Lakewood

Lakewood Campus	2011			2016		
	Existing ASF	FTE = 3944 Guideline ASF	Surplus/ (Deficit)	Existing ASF	FTE = 3468 Guideline ASF	Surplus/ (Deficit)
SPACE CATEGORY						
Academic Space						
Classroom & Services	43,465	36,652	6,813	43,465	29,537	13,928
Teaching Labs & Services	40,283	61,252	(20,969)	40,283	49,436	(9,153)
Open Labs & Services	9,176	14,592	(5,416)	9,176	12,831	(3,655)
Academic Offices & Services	20,596	31,581	(10,985)	20,596	28,134	(7,538)
Academic Space - Subtotal	113,520	144,077	(30,557)	113,520	119,938	(6,418)
Academic Support Space						
Admin. Offices & Services	16,279	21,825	(5,546)	16,279	21,635	(5,356)
Library	16,003	20,369	(4,366)	16,003	19,122	(3,119)
Assembly & Exhibit	4,592	8,900	(4,308)	4,592	9,068	(4,476)
Physical Plant	8,710	8,107	603	8,710	8,107	603
Other Department Space	20,197	14,742	5,455	20,197	13,176	7,021
Academic Support Space Subtotal	65,781	73,943	(8,162)	65,781	71,108	(5,327)
Auxilliary Space						
Student Center	23,376	35,496	(12,120)	23,376	31,212	(7,836)
Auxilliary Space - Subtotal	23,376	35,496	(12,120)	23,376	31,212	(7,836)
CAMPUS TOTAL	202,677	203,738	(50,839)	202,677	222,258	(19,581)
Surplus (Deficit) Guideline						
Academic + Academic Support	179,301	218,020	(38,719)	179,301	191,046	(11,745)
ASF/FTE	45	55		42	45	
2010 CCCS Guideline: 55 ASF/FTE - Main Campus						

Campuswide Space Needs Analysis
Red Rocks Community College
Impact of Proposed Program Moves to Arvada Campus From Lakewood

Arvada Campus	2011			2016		
	Existing ASF	FTE = 258 Guideline ASF	Surplus/ (Deficit)	Existing ASF	FTE =1,107 Guideline ASF	Surplus/ (Deficit)
SPACE CATEGORY						
Academic Space						
Classroom & Services	4,347	2,610	1,737	4,347	14,148	(9,801)
Teaching Labs & Services	3,200	4,174	(974)	3,200	23,467	(20,267)
Open Labs & Services	2,525	1,264	1,261	2,525	5,424	(2,899)
Academic Offices & Services	1,808	1,356	452	1,808	5,746	(3,938)
Academic Space - Subtotal	11,880	9,404	2,476	11,880	48,785	(36,905)
Academic Support Space						
Admin. Offices & Services	777	640	137	777	2,280	(1,503)
Learning and Resource Center	4,121	1,740	2,381	4,121	3,180	941
Physical Plant	896	841	55	896	841	55
Other Department Space	1,951	1,758	193	1,951	3,196	(1,245)
Academic Support Space Subtotal	7,745	4,979	2,766	7,745	9,497	(1,752)
Auxilliary Space						
Student Center	1,423	2,322	(899)	1,423	9,962	(8,539)
Auxilliary Space - Subtotal	1,423	2,322	(899)	1,423	9,962	(8,539)
CAMPUS TOTAL	21,048	16,705	4,343	21,048	68,244	(47,196)
Surplus (Deficit) Guideline						
Academic + Academic Support	19,625	14,383	5,242	19,625	58,282	(38,657)
ASF/FTE	76	56		70	209	
2010 CCCS Guideline: 55 ASF/FTE - Main Campus						

This analysis anticipates that the new Health Sciences building would add approximately 828 semester FTE to the Arvada Campus by Fall 2016. At the same time, it would reduce the on-campus enrollment of the Lakewood Campus by about 754 semester FTE in Fall 2016. It would reduce the academic space deficit on the Lakewood Campus from a projected deficit of 52,883 ASF to a deficit of 11,745 in Fall 2016. The analysis also indicates that the proposed move would reduce the overall Lakewood Campus deficit from 67,505 ASF to 19,581 ASF in Fall 2016.

Additional space will be required to accommodate academic and support services on the Arvada campus. This includes classrooms and various unique spaces required for instruction, including “Hybrid” Lecture/Demonstration (Classroom) spaces, teaching laboratory spaces, a simulation lab, clinical practice space(s), physical training space, and storage for equipment, which includes EMT and fire/rescue vehicles. From an instructional perspective, proximity to existing RTE-DMS labs is desirable, but may not be practical, based on the cost of relocating the existing labs. The additional space will also allow new program developments in such occupations as Medication Aide, Home Health Aide, and Home Health Aide – Hospice.

The new building will accommodate spaces required for the proposed program locations. Spaces will include classrooms, teaching laboratories, office space for faculty, and staff, student center space (see CIP 2), and physical plant space. We anticipate that laboratory space will include:

- General, anatomy and physiology, and microbiology labs;
- Organic and inorganic chemistry;
- General and application-specific (e.g. Health Information Technology) computer labs;
- Simulation laboratories and clinical facilities for allied health program;
- Laboratory and training space for law enforcement, emergency services, and fire science programs.

Additional detailed program planning with significant input from the departments involved will be required prior to architectural design. Several variations on the location of the new building are possible. Wherever the location, the new building will complement the existing Main Building and will mimic its existing lines and aesthetics. One possible location for a new student center could be as a connecting node between the existing and the new building.

For this master plan document, the following estimate of probable cost has been based upon current industry pricing of projects of similar scope and building type. Project pricing, of course, may vary according to changes in engineering and construction factors and before we proceed with the project a more detailed budget will be calculated upon completion of a Program Plan.

Estimated Cost

Land Acquisition	none			
Construction	GSF	Cost/GSF		
	New	56,554	\$240	\$13,572,896
	Remodel	4,000	\$140	\$560,000
Site Development	2.5 acres			\$326,700
Professional Services				\$2,168,939
Data and Communications				\$151,384
Furnishings and Equipment				\$2,119,934
Contingency				\$944,993
Total				\$19,844,846

Capital Improvement Project 2 - Arvada Campus Student Center

On the Arvada Campus, existing space at the east entrance to the current main building can be best described as “flex” space, or multi-purpose space. As enrollment increases, additional space may still be “flex” space, or multi-purpose space, depending on the needs of the students being served. The student center may be the located at or near the main entrance to the campus. Space needs include food service and dining space,

meeting space for collaborative study, and space for an exercise center. The student center should be expandable as student enrollment increases.

Student demographics may suggest a need for child care. The development of clinical practice space may also provide an opportunity to offer health care services to the students.

The space needs analysis suggests that 8,539 ASF should be added to the existing 1,423 ASF. The current parking count by the main building is 196 spaces. As enrollment increases, approximately 380 spaces will be required to accommodate 828 FTE, which is a net increase of 184 spaces. This requires development of approximately 1.2 acres.

Estimated Cost

Land Acquisition	none			
Construction	GSF	Cost/GSF		
	New	6,455	\$240	\$1,549,254
	Remodel		\$140	\$0
Site Development	1.5 acres			\$196,020
Professional Services				\$261,791
Data and Communications				\$16,138
Furnishings and Equipment				\$232,388
Contingency				\$112,780
	Total			\$2,368,371

Capital Improvement Project 3 – Lakewood Campus Re-purposing of Annex and CTC Building Space

The “temporary” Annex Buildings 1-6 have exceeded their useful life. They lack adequate heating and air conditioning systems and toilet facilities. They are deemed inadequate and inappropriate for current instructional programs. The Grounds Shop and Storage Building have also exceeded their useful life. Therefore, demolition of these structures is recommended.

At the same time, classrooms and teaching labs on the second floor of the Construction Trades (CTC) building are not accessible for students, faculty, and staff. One viable solution to these problems is to convert existing facilities management space on the main level of the CTC building to (accessible) classroom, teaching lab, and office space. This could be accomplished by consolidating existing facility offices, shops, mailroom, and other support functions, and constructing an addition to the CTC building on the west side of the campus. This addition is also under consideration as improved space for physical plant operations.

Estimated Cost

Land Acquisition	none			
Construction	GSF	Cost/GSF		
	New	13,000	\$120	\$1,560,000
	Remodel		\$140	\$0
Site Development	0.5 acres			\$65,340
Professional Services				\$243,801
Data and Communications				\$32,500
Furnishings and Equipment				\$234,000
Contingency				\$106,782
Total				\$2,242,423

Capital Improvement Project 4 Lakewood Renovation of “Backfill” Space Resulting from Program Moves to the Arvada Campus

We also propose to renovate space vacated by Arvada program re- location of programs in order to provide additional space for Science classrooms and labs and relocation of the Community Room. Additional space will be needed for STEM programs. We plan to renovate existing space to accommodate three additional “hybrid” Lecture and Demonstration (classrooms) and three science labs.

Currently, the Community Room and Gallery are located on the lower of the West Wing of the campus. This discourages the community from attending functions at the College

due to the distance to parking facilities and the challenge of way-finding these public spaces within the building. Location of the Community Room and Gallery would provide better access to parking and other amenities. The location of this public space will be discussed during the development of Program Planning, along with the possibility of a new “front door” entrance for RRCC that is more obviously accessible for new students and more welcoming for the community in general.

The needs for additional library space and physical education space will be given further attention through the development of Program Plans. Both are possible opportunities for community partnerships. RRCC students have also expressed an interest in using auxiliary funds to build new physical education space that would expand on the current fitness center. This is being addressed as part of a wider discussion of possible solutions to the need for increased student center space.

Estimated Cost

Land Acquisition		none		
Construction		GSF	Cost/GSF	
	New		\$240	\$0
	Remodel	21,624	\$140	\$3,027,360
		0.5		
Site Development		acres		\$65,340
Professional Services				\$463,905
Data and Communications				\$54,060
Furnishings and Equipment				\$454,104
Contingency				\$203,238
	Total			\$4,268,007

In conclusion, these capital improvement projects, and the Facilities Master Plan in general, provide a framework, a structured way of looking at the types and amounts of space we need, the features and capacity of existing facilities, and the directions we need to take to meet the needs of our students and the community. Additional detailed planning, with widespread participation from the college community, will follow.